COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

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Just How Much?

EVERY EXECUTIVE craves figures, but in most cases he cannot get them. "How much can I save by this change or by that?" says the average operator, but the information frequently is not available. The officials at the mine do not know how much energy is being wasted, how much is being used, and so any talk about saving cannot be estimated properly or, if assumed, cannot be checked. Thus we continue our wasteful practices in operation.

As for the men who run our machines there is no check on them. They cannot even keep tab on themselves. If they desire to save expense for the operator they have no way of assuring themselves that they are doing it, no way, at least, of telling to what extent it is being done. To get this information, energy, voltage and current measuring devices are necessary, for unmeasured leaks are forgotten or overlooked especially when it is an invisible entity like electricity that is being lost.

We are gradually learning to high-light waste in operation and distribution. No longer do we allow it to go entirely unmeasured. It is the skeleton at the feast, but we would not fail to place it at the head of the table, for it spurs us on to greater achievement.

At Cincinnati, W. L. Affelder will describe the charts by which the rise and fall of operating costs of every kind are kept prominently before the eye of the superintendent. The whole cost tells but little, for it may be composed of high and low items. The information should be obtained about every department of the work, so that a finger promptly may be placed on those details which need consideration. The chief who can only say that the mine cost is too high is at a disadvantage as compared with one who can indicate just where the fault lies. If it is in the matter of power, the electrical engineer should be consulted, if in haulage cost, the matter is one to be considered with the foreman and so forth.

Similarly, departing from Mr. Affelder's charts and speaking only of what they suggest, if the electrical costs are too high one should know where. Is it in the mining machine which works with dull bits or which wastes energy in short-circuits? Is it in a pump that is working at low voltage? Is it in a locomotive that causes excessive peaks by being started in parallel? In general there is no answer to these and similar questions but where graphic or other records are available, an opportunity is afforded to ascertain the causes and to figure out just what any given change will save.

It has been found that a knowledge of costs is the greatest assurance of economy. Those who have metered their operations have been found to be most successful in reducing consumption and in promoting efficiency. With such meters they have determined standards of operating cost which they are actively seeking to surpass. In engineering, as in athletics, each record is an incentive to further achievement.

Uniformity Cannot Stop at the Breakers

ALMOST EVERYBODY connected with the anthracite industry who ventures to speak publicly agrees that the uniform test standards for sizing and preparation are a wonderful thing. The few rebels at heart cloak their reactionary feelings with silence or whisper their reversionary sentiments only in the circle of their most intimate associates. The advantage of uniformity which promises an improved and a standardized quality product is so apparent that its champions need but state the case to still open opposition.

However, it is not the out-and-out opponents of the new era who are dangerous. If the success of the standards adopted last March are threatened it is by their professed friends. No group has been more clamorous in the name of uniformity than the retail coal merchants. They had a good cause and, under able leadership, they brought their fight to a happy conclusion. But what shall it profit them or the industry as a whole if here and there individual retailers to gain a temporary advantage adopt rescreening practices which go beyond those set up by the operators and deliver to the consumer coals with no undersize?

Either the standards approved by the anthracite producers are a step in the right direction or they are not. If they are, then there is no good reason apparent why these same test standards should not apply at the retail yard. In fairness the householder cannot be expected to accept coals which fall below those standards; in justice to the industry, he cannot demand more. The anthracite leaders slipped a cog when they did not emphasize this point. If their announcement of the new standards had stated clearly that they were to apply to retail yard, as well as to breaker, test screens, the situation would have been greatly simplified to the profit and advantage of all concerned.

This does not mean that as time goes on the standards will not be raised, the permissible leeway now enjoyed sharply narrowed. It would be depressing to look forward to any other development. But these changes should be worked out, as the present standards have been, in conference and by consultation. After all, the biggest thing about the present standards is not the percentages fixed, but the fact that the interests responsible for 98 per cent of the tonnage produced agreed upon uniformity. That uniformity should not be destroyed by thoughtless or ignorant individual action.

Forcing Sales

ANTHRACITE OPERATORS may for a year or two force No. 1 buckwheat and pea on the retail merchant and the evil may be overlooked, but to continue for years to bring this pressure is neither wise nor an evidence of a good merchandising sense. If the coal as sold is too largely mixed with slate to be salable without such pressure the operator should clean it so carefully that he will have no difficulty in its

distribution. In fact, if the public is well served by the pea and buckwheat that he buys, the retailer will be obliged to provide it and he will press for more rather than object to take what is offered. The future of those sizes, which are too good for the industrial furnaces and thought by many hardly good enough for the domestic grate, lies in the perfection with which they are cleaned. Any other solution of the problem can only anger the retailer and prove in the end bad business, for it will satisfy neither retailer nor customer. There was a time when pea and No. 1 buckwheat could not be cleaned, but those days are past. Today many devices to improve preparation are on the market and all sizes of coal can be and should be carefully washed.

Lewis as a Standpatter

WORD COMES AGAIN that John Lewis is sitting tight if not "pretty." Nothing moves him from his position. Men may starve, mines may be closed, but Lewis is inexorable. He wants a "civilized wage" as he expressed it at the historic dinner held at the Hotel Ambassador in New York shortly before the Jacksonville agreement was signed.

In a recent interview he asserted that a lowered wage would not help the mine worker. But no one would be helped more than the man in the mines by such a revision of wage scales, for with it the miner in union regions would get more work. It is doubtful whether a lowered wage would reduce the losses to the operator. He would run his mines more steadily and thus his costs would be decreased even more than the reduction in the wage scale would indicate, but he would still find the costs of coal provokingly higher than the selling price.

The union operator, therefore, can afford to wait better than the miner. With little to be gained from decreased wages he cannot look forward with any particular pleasure to a wage revision, but the miner has much reason to expect an improvement in his condition from such a change, and he should be the first to seek it and demand it. The operators are not expecting that the 1917 scale will be low enough for profit, and that makes them look upon Lewis' standpattism with a degree of indifference.

Should the wage be reduced in union mines, and so draw business from the non-union fields, operation would be less steady in non-union regions. With such low wages as the mine workers are now receiving they would find their weekly income so small that wages could not be further lowered without bringing the income below a living return. Miners would begin to leave the non-union mines either to return to the union mines or to enter other lines of industry. This condition would reduce non-union production and give the union mines a further advantage.

But Mr. Lewis is adamant. Only action by the union men themselves will bring him to his senses and it would have to be a concerted action. Individual desertions from the union ranks apparently will not cause him to bestir himself. He will let the union go to pieces on the rocks rather than abate one tittle of his demands. And to the rocks it is going. Fear is keeping men silent, but at some time not far distant a concerted action may come and Mr. Lewis may realize that the union men are united in but one thing—namely in finding a way individually or collectively of fixing a wage that will make it possible for them to get work. A union mine is a mine where the miner has a high wage scale and no chance to earn it. What the miner has is a large and luscious apple but one so far from the ground he cannot reach it. He is finding that the sight of such an apple will not save him from the pangs of hunger. Some day, whatever Mr. Lewis may say, the miner will appease his cravings by one of the smaller and less luscious apples growing at a level within range of his uplifted arm.

Our Growing Market

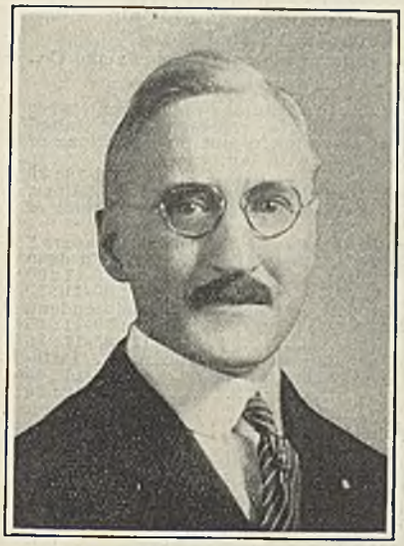
HIGH PRICES have created an economy in the use of fuel that bids fair to increase, and at the same time oil has invaded the field formerly occupied almost exclusively by coal. Concurrently has come a disposition to live in apartments, with consequent economy in heating and reduction in the number of rooms occupied. But in a survey of the future it must never be forgotten that the population is steadily increasing, and that the demand for coal tends to grow with it. Gradually with increasing wealth comes a desire for more and larger rooms, making more heat necessary. Instead of the restricted living quarters of the war, the public is demanding large high rooms with a lower density of occupancy.

Nor is that all. Many farmers in the winter, heat one room only, using a single stove without steam, hot-water or hot-air radiators. The kitchen gets a little uncertain heat from the cook-stove, and the other rooms get a modicum of warmth from living room and kitchen. That condition is not going to continue. The farmer in even the more desolate regions will demand the comfort of a house that is warm throughout. In many sections of this country he has so long enjoyed that luxury that he would question whether it is not the general condition in all farmers' homes. We can assure him that many houses in rural districts are stove-heated with only one or two rooms provided with even that degree of comfort.

Wood lots also are passing with the years, and what remains is so valuable that the farmer's stove is no place for it. The coal bin should be able to displace the wood pile more and more year by year. New uses for heat arise with every industrial development and as the country becomes more industrial and proportionately less agricultural the quantity of coal used will increase —even though the rate of increase may show, at least for a short while, a progressive decline with the passing of the years.

Opportunities to augment the use of coal are by no means lacking. The anthracite operators are decrying the inadequate flues which are being installed by speculative builders. How about the inadequate furnaces which heat satisfactorily only the lower rooms or those that have a favorable exposure? In one little village designed by architects of national reputation the first furnaces installed were all ill-calculated to do the work demanded of them. Today the furnaces provided are more nearly equal to the task assigned them, but even now larger units would be necessary to make every room in the house really comfortable in chilly weather. The hard-coal architects would do well to prepare tabulations that will enable householders to check their furnaces and so ascertain in advance whether their equipment will keep the house warm from cellar to garret without undue forcing of the fire.

American Mining Congress Assembles Men of the Coal Industry Next Week

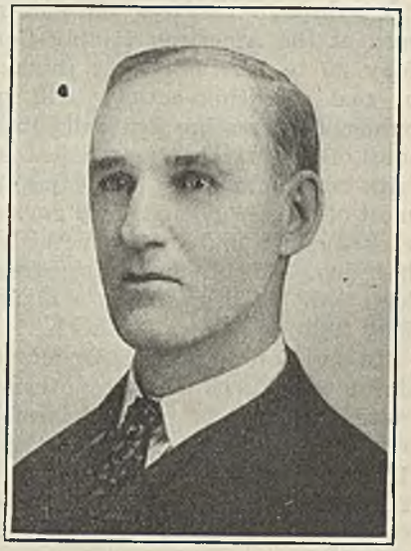


Graham Bright

Mr. Bright, a consulting engineer of note, will speak Tuesday afternoon on "Mine Haulage."

Cincinnati Meeting and Machine Exhibition Give Opportunity to Discuss and Demonstrate Modern Mining Methods — Some Foremost Engineers and Operators to Speak

Mr. McAuliffe, president of the Union Pacific Coal Co., will preside at two sessions.



Eugene McAuliffe

An Editorial Interpreting the Cincinnati Exposition

CINCINNATI WILL WELCOME an exposition on May 25-29 which will be the precursor of great change in the coal industry—the National Exposition of Coal Mining Equipment and Machinery held by the American Mining Congress. In the stalls of the manufacturers will be seen some of the mechanisms that will make that change possible and in the discussions of the engineers will be explained how those mechanical servants can be made to do effective work.

Mining is backward in the sense that it has not been able so far to effect the economies that have been made in manufacturing. This has been due not so much to an unprogressive spirit as to the natural difficulties inherent in the work of mining. We do not have in mines the height, width and length, the cubical space, in which to operate the machines that have proved effective on the surface or under cover of large factory buildings.

But we are learning rapidly to adapt such mechanisms to our limitations of space and movement, and the years before us will enable us to overcome all our difficulties. We are learning that the roof can be better controlled with speedier extraction. With rapid operation we are able to avoid dangers, as the skater does who passes scatheless over thin ice, being saved from the perils of his journey by the very speed of his travel. Our working places will advance so rapidly that the forces of nature will not have time to destroy the support of clay and coal by which the roof is upheld or to weaken the cohesion and strength by which the strata of the roof itself are maintained in place.

Years ago the copper mine was equipped with a small mill and concentrator, and little plants were economically possible. Today the necessity for spending millions in these adjuncts has eliminated from the copper industry the small operation, and fly-by-night financial ventures are at an end. When the operation of coal mines is only possible where great and expensive machines are provided, the small mine will go by the board. The mine without equipment will be unable to compete. A wage differential in its favor, short haulage distances and inexpensive ventilation and drainage will not avail to save it from relatively high costs. The mining machine was the first step in this change, but the use of excessive powder, despite its dangers and the inferior product provided, made mining machines less essential. The hand labor of undermining could be avoided by letting powder do the work, but the work of shoveling cannot be so readily evaded except by the use of expensive machines. It is true, shoveling can be made a relatively light and easy job by the introduction of conveyors, but these machines are themselves a costly addition to the equipment of the small mine.

So a big change is coming, not only in the instruments and methods of mining but in the aggregations of capital by which such mining is performed. Coal mines will be brought together by combination, and they will then operate on the same principle as big metal mines. When less coal is needed a unit will be closed down entirely and the other units will continue to work intensively. If too much coal is still being produced other units will be closed but those which work will continue running at top speed. No longer will mines operate one or two days a week at a loss to their owners.

These changes are so phenomenal and their approach will be so clearly heralded by the exposition at Cincinnati that it will behoove every mining man to be present, whether he is likely to have a hand in them or is going merely to stand by and note their overwhelming effect on his interests. It is a new world for the mining man, and he should not fail to leave his desk in the office or his tours underground to look over what it promises or portends for him. Only by resolute modernization pursued in the light of the best engineering advice can he hope to continue his place in the industry. At Cincinnati will be grouped the men who can advise and instruct with the machinery by which the advice and instruction can be made effective. Do not fail to be there.

R. DAWSON HALL.

How to Cut Costs Is Central Theme of Sessions at Cincinnati For Men of the Coal Industry

"COST CUTTING" is the central thought running through the four days of meetings for mining men at the American Mining Congress in Cincinnati, May 25 to 29. Foremost thinkers along many lines of coal operating activity will speak. A variety of subjects interesting especially to electrical men occupy most of the first day, mechanical loading with machines, with conveyors and with adaptations of both takes up most of the second and third days of the Congress while rock dusting and better methods of shooting fill the last day. Some general operating and economic problems will be discussed at a dinner on the evening of May 28.

In an effort to get the sessions of the Congress right down to bedrock and keep them there, the speakers were asked not to prepare formal papers but to come ready to put their best thought on specific subjects into 10 or 15 minutes of discussion from the floor. Each session has a general subject, the discussions to bear on various phases of it. After each speaker has made his comments on his assigned topic, the lid goes off and anyone can have the floor to say what he pleases—briefly.

The Program

The entire program for the sessions of the Congress follows:

MONDAY, MAY 25, 1925

7:30 p.m.—Music Hall Auditorium.

Formal opening National Exposition of Coal Mining Equipment and Machinery.

TUESDAY, MAY 26, 1925

10 a.m.—Music Hall Auditorium

Subject: "Mechanical and Electrical Equipment Problems."

Chairman: R. L. Kingsland, superintendent power and mechanical department, Consolidation Coal Co., Fairmont, W. Va.

1. "The Use of Acid-Resisting Metals for Mine Drainage Equipment.

Comments—J. A. Malady, electrical engineer, Hillman Coal & Coke Co., Pittsburgh, Pa. 10:00-10:10

Discussion 10:10-10:20

2. "Speed Reducers."

Comments—H. D. Smith, general superintendent, American Coal Co., HcComas, W. Va. 10:20-10:30

Discussion 10:30-10:40

3. "Economies Which Can Be Effected by the Proper Use of Watthour Meters."

Comments—William Lamont, general superintendent, Sterling Coal Co., Bakerton, Pa. 10:40-10:50

Discussion 10:50-11:00

4. "General Use of Storage Batteries in Mines."

Comments—J. B. Hicks, electrical engineer, Consolidation Coal Co., Fairmont, W. Va. 11:00-11:10

Discussion 11:10-11:20

5. "The Hazards of Stray Currents."

Comments 11:20-11:35

Discussion 11:35-12:00

TUESDAY AFTERNOON

1:30 p.m. to 3:30 p.m.—Music Hall Auditorium

Subject: "Control of Mining Equipment."

Chairman: C. Means, consulting engineer, Pittsburgh, Pa.

"Mine Pumps"

Comments—W. H. Lesser, mechanical engineer, Madeira, Hill & Co., Frackville, Pa. 1:30-1:40

Discussion 1:40-1:50

"Mine Fans."

Comments—L. W. Houscholder, chief engineer, Rochester & Pittsburgh Coal Co., Indiana, Pa. 1:50-2:00

Discussion 2:00-2:10

"Tipple Machinery."

Comments—W. C. Adams, consulting engineer, Allen & Garcia Co., Chicago, Ill. 2:10-2:30

Discussion 2:30-2:40

"Mine Haulage."

Comments—Graham Bright, consulting engineer, Pittsburgh, Pa. 2:40-3:00

Discussion 3:00-3:10

"Automatic Sub-Stations."

Comments—T. F. McCarthy, electrical engineer, Clearfield Bituminous Coal Corp., Indiana, Pa. 3:10-3:20

Discussion 3:20-3:30

WEDNESDAY, MAY 27, 1925

10 a.m. to 12 Noon—Music Hall Auditorium

Subject: "Mechanical Loading in All Its Phases."

Chairman: Eugene McAuliffe, president, Union Pacific Co., Rock Springs, Wyo.

1. "Underground Loaders in Use Today."

Introductory remarks, giving descriptions of different types of machines now in use, by a representative United States Bureau of Mines, covering recent investigations of loading machines, illustrated with lantern slides 10:00-10:30

Comments—F. E. Cash, United States Bureau of Mines, Pittsburgh, Pa.; E. H. Johnson, United States Bureau of Mines, Pittsburgh, Pa.

2. "Practical Experience in the Use of Mechanical Loaders."

Comments—Abner Lunsford, general manager, Fordson Coal Co., Stone, Ky. 10:45-11:00

Discussion 11:00-11:10

Comments—Edward O'Toole, general superintendent, United States Coal & Coke Co., Gary, W. Va. 11:10-11:25

Discussion 11:25-11:35

Comments—T. F. Whalen, general superintendent, Pittsburgh & Erie Coal Co., Pittsburgh, Pa. 11:35-11:45

Discussion 11:45-12:00

WEDNESDAY AFTERNOON

1:30 p.m. to 3:30 p.m.—Music Hall Auditorium

Subject: "Practical Experience in the Use of Mechanical Loaders."

Chairman: Eugene McAuliffe, president, Union Pacific Coal Co., Rock Springs, Wyo.

Comments—George B. Harrington, president, Chicago, Wilmington & Franklin Coal Co., Chicago, Ill. 1:30-1:45

Discussion 1:45-2:00

Comments—I. N. Bayless, general superintendent, Union Colliery Co., Dowell, Ill. 2:00-2:15

Discussion 2:15-2:30

Comments—J. W. Devison, general manager, New England Fuel & Transportation Co., Grant Town, W. Va. 2:30-2:45

Discussion 2:45-3:30

Comments—Cadwallader Evans, Jr., general manager, Hudson Coal Co., Scranton, Pa.

WEDNESDAY EVENING

Smoker and Entertainment.

THURSDAY, MAY 28, 1925

10 a.m. to 12 Noon—Music Hall Auditorium.

Subject: "Mutual Adaptation of Mining Methods and Loading Machines."

Chairman: Abner Lunsford, general manager, Fordson Coal Co., Stone, Ky.

1. "With Thick Coal and Thin Coal Under Varying Roof Conditions."

Comments—T. E. Jenkins, vice-president, West Kentucky Coal Co., Sturgis, Ky. 10:00-10:10

Discussion 10:10-10:20

Comments—Edward Graff, general superintendent, New River Coal Co., MacDonald, W. Va. 10:20-10:30

Discussion 10:30-10:40

2. Some Successful Adaptations.

Comments—H. S. Gay, general manager, Gay Coal & Coke Co., Mt. Gay, W. Va. 10:40-10:50

Discussion 10:50-11:00

Comments—F. E. Dunlap, general manager, Helena-Straven Coal Co., Straven, Ala 11:00-11:10

Discussion 11:10-11:20

Comments—W. G. Duncan, Jr., general superintendent, Duncan Coal Co., Greenville, Ky. 11:20-11:30

Discussion 11:30-12:00

THURSDAY AFTERNOON

1:30 p.m. to 3:30 p.m.—Music Hall Auditorium

Subject: "Utilization of Face and Other Portable Conveyors."

Chairman: T. W. Dawson, consulting engineer, H. C. Frick Coke Co., Scottdale, Pa.

Comments—E. F. Miller, general superintendent, Bertha-Consumers Co., Rachel, W. Va. 1:40-1:50

Discussion 1:50-2:00

Comments—A. M. Ogle, Indianapolis, Ind. 2:00-2:10

Discussion 2:10-2:20

Comments—F. G. Wilcox, president, West End Coal Co., Scranton, Pa. 2:30-2:40

Discussion 2:40-2:50

Comments—G. B. Southward, electrical engineer, West Virginia Coal & Coke Co., Elkins, W. Va. 2:50-3:00

Discussion 3:00-3:10

Comments—E. B. Raiguel, chief engineer, Coal Service Corporation, Huntington, W. Va. 3:10-3:20

Discussion 3:20-3:30

THURSDAY EVENING

6 p.m.—Hotel Gibson Ballroom.

Informal Dinner

Subject: "Watchman, Tell Us of the Night."

Speaker: H. L. Gandy, executive secretary, National Coal Association, Washington, D. C.

Subject: "Some Problems of the Anthracite Producers."
Speaker: E. W. Parker, director, Anthracite Bureau of Information, Philadelphia, Pa.
Subject: "The Real Issue."
Speaker: J. F. Callbreath, secretary, American Mining Congress, Washington, D. C.
Subject: "The Financing of Coal Mining Properties and Improvements."
Speaker: Robert K. Cassatt, Cassatt & Co., Philadelphia, Pa.

8 p.m.—Conference, Hotel Gibson Ballroom

Subject: "The Advantages of Graphic Charts in the Interpretation of Coal Mine Costs."
Speaker: W. L. Affelder, assistant to the president, Hillman Coal & Coke Co., Pittsburgh, Pa.
Illustrated with slides.

FRIDAY, MAY 29, 1925

10 a.m. to 12 Noon—Music Hall Auditorium

Subject: "Effective Practice and Actual Costs of Rock Dusting."
Chairman: A. C. Callen, University of Illinois, Urbana, Ill.
Comments—Arthur Neale, general manager of mines, Pittsburgh Coal Co., Pittsburgh, Pa. 10:15-10:30
Discussion 10:30-10:40
Comments—Dan Harrington, consulting engineer, Newhouse Bldg., Salt Lake City, Utah 10:40-10:55
Discussion 10:55-11:05
Comments—W. C. Holman, chief engineer, Phelps-Dodge Corporation, Dawson, N. M. 11:15-11:25
Discussion 11:25-12:00

FRIDAY AFTERNOON

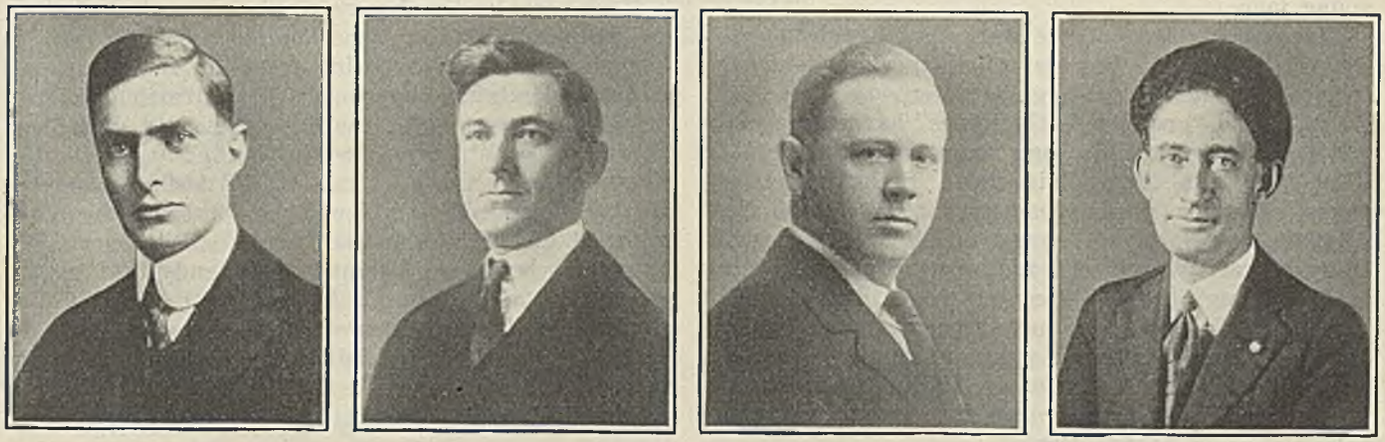
1:30 p.m. to 3:30 p.m.—Music Hall Auditorium

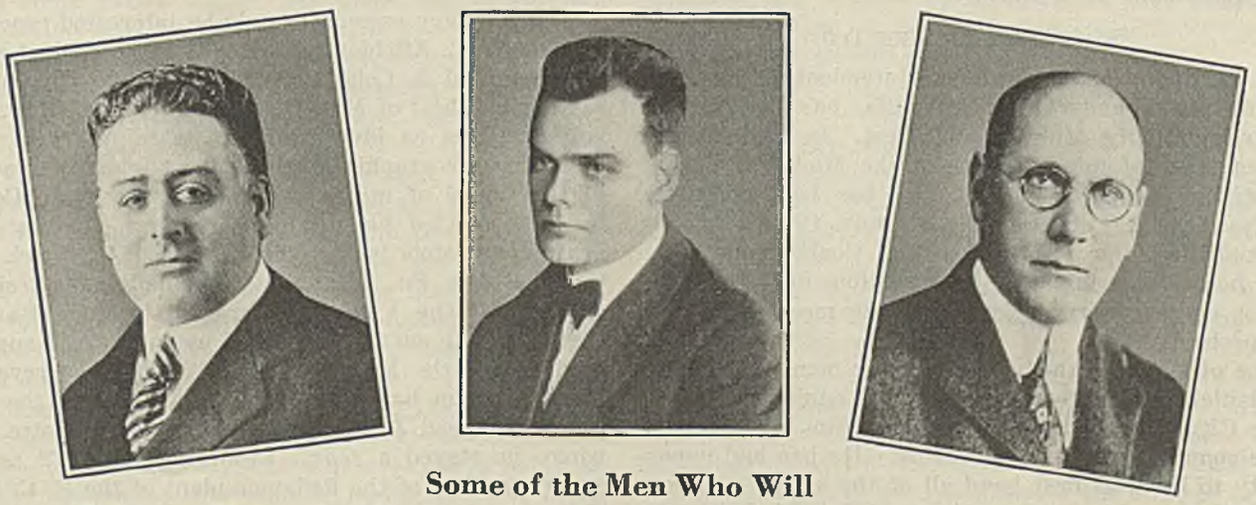
Subject: "Effective Cutting and Shooting Methods to Secure Greater Realization."
Chairman: George F. Osler, vice-president and general manager, Pittsburgh Terminal Coal Co., Pittsburgh, Pa.
1. "Horizontal Cuts in Top, Bottom and Middle."
Comments—C. E. Reynolds, mine superintendent, Allegheny-Pittsburgh Coal Co., Parnassus, Pa.....1:45-2:00
Discussion 2:00-2:10
2. "Shearing."
Comments—George Peart, general superintendent, Rocky Mountain Fuel Co., Denver, Colo. 2:10-2:25
Discussion 2:25-2:40
3. "Snubbing."
Comments—L. E. Young, general manager, Union Colliery Co., St. Louis, Mo.....2:40-2:50
Discussion 2:50-3:00
4. "Shooting."
Comments—Charles Wagner, Glen Alden Coal Co., Scranton, Pa.; T. G. Fear, general superintendent, Inland Collieries Co., Indianola, Pa. 3:00-3:10
Discussion 3:10-3:20
5. "Tipple Preparation."
Comments—C. W. Smith, chief engineer, Illinois Coal Corporation, Chicago, Ill. 3:20-3:30
Discussion 3:30-3:40

High-Caliber Men to Speak At Cincinnati Sessions

Men who have performed services of real value to the coal industry—and this is not determined alone by the titles they carry within their own companies—are the ones chosen for the program at Cincinnati. They are men whose talents and training have enabled them, in most cases, to *do* the things they are going to *talk* about next week. Photographs of some of these men appear with this article.

For instance, Graham Bright, who speaks in the electrical session Tuesday, May 26, on mine haulage, is an alumnus of the University of Pittsburgh who has been recognized for years as a specialist in the application of electric power to railways and mining. For a number of years he was in charge of the mining division of the engineering department of the Westinghouse Electric & Manufacturing Co. and is now a member





Some of the Men Who Will Help to Make the Technical Sessions of the Mining Congress Interesting

Top row, left to right: T. C. Mullins, vice-president and general manager of the Sunlight Coal Co., operating at Boonville, Ind.; I. N. Bayless, superintendent of the Kathleen Mine of the Union Colliery Co. at Dowell, Ill.; A. W. Dickinson, general superintendent of the Union Pacific Coal Co., Rock Springs, Wyo.; Daniel Harrington, consulting engineer, Salt Lake City, Utah.

Bottom row, left to right: J. D. Zook, vice-president of the Illinois Coal Corporation, Chicago, Ill.; R. L. Kingsland, general superintendent, power and mechanical department, The Consolidation Coal Co., Fairmont, W. Va.; W. L. Affelder, assistant to the president of the Hillman Coal & Coke Co., Pittsburgh, Pa.

of the firm of Howard N. Eavenson and Associates of Pittsburgh, Pa. He is a member of many professional societies and heads the transportation committee of the American Mining Congress.

Eugene McAuliffe, president of the Union Pacific Coal Co. which operates 16 mines in Wyoming and Washington, is an operator with a wealth of experience. He came out of railroading where, during the nineties he fired engines and ran them on various railroads of the American West and in Mexico—including a year as an engineer on the old steam elevated lines at Chicago—before he began a rapid rise through mechanical and operating departments until he made a real start in coal as coal agent for the Frisco and the Rock Island lines. Eventually he became president of the Union Colliery Co. at St. Louis, Mo., a North American Co. subsidiary, and sank and operated for five years the Kathleen mine at Dowell, Ill. His advanced ideas concerning coal operating and the problems of the industry have made his companies forward-looking pace-setters in some particulars.

Combines Strip and Deep Mining

T. C. Mullins, vice-president and general manager of the Sunlight Coal Co. has had the experience, at Boonville, Ind., of operating both strip and underground workings on the same properties. His experience with loading machines has been extensive. He will dilate upon them at Cincinnati. Mr. Mullins has had long training in mining, although he is still a comparatively young man.

The present "boss of the works" at Kathleen mine, Dowell, Ill., is I. N. Bayless, mine superintendent, who talks on mechanical loading the afternoon of May 27. He is 39 and "grew up in the mines" having become a full-fledged miner in his home county of Williamson, in Illinois, after finishing public school. He has been in the employ of various mining companies in Illinois and West Virginia ever since and has worked his way up through many operating positions, adding a course in mining at the Mining School in Farmington, Ill., between 1910 and 1914. For five years he has been employed by the Union Colliery Co., three years as manager and the last two as superintendent of the Kathleen mine. During his time some interesting things in machine loading have been done at Kathleen.

Some Western Men Too

A. W. Dickinson, general superintendent of the union Pacific mines under Mr. McAuliffe, has had a wide experience in the Midwest and West. In 1908 he took his engineer of mines degree at the Michigan College of Mines, Houghton, Mich., and has been with the Central Coal & Coke Co., the Western Coal & Mining Co. and the Union Pacific Coal Co. Continuously since 1911 he has been in charge of operations of mines. He, too, is on the program for discussing mechanical loading problems.

One of the best known coal mining men in the West is Daniel Harrington, a consulting engineer of Salt Lake City, Utah, who is on the pragram, May 29, for some comment about rock dusting. He has had opportunity to learn at first hand all of the safety practices of the West and has had an important hand in initiating and directing some of them. Mr. Harrington was born in Denver in 1878, graduated from the Colorado School of Mines at Golden in 1900 as mining engineer and that year entered the employ of the Utah Fuel Co. immediately after the Winterquarters, Utah, explosion which shocked the world and which, incidentally, gave Harrington a chance to get deeply into mine safety problems at the start of his career. He left the Utah Fuel Co. in 1906 when he had become chief engineer. He was superintendent of construction of the Centennial Mine at Eureka, Utah, in that year and in 1908 and 1909 was a consulting engineer in Salt Lake City. From 1909 to 1914 he was in charge of a coal mine at Crosby, Wyo., when he went into the service of the United States Bureau of Mines. Last year he resumed his consulting practice, with part of his time obligated to safety inspection for the Utah Fuel Co. and the United States Fuel Co.

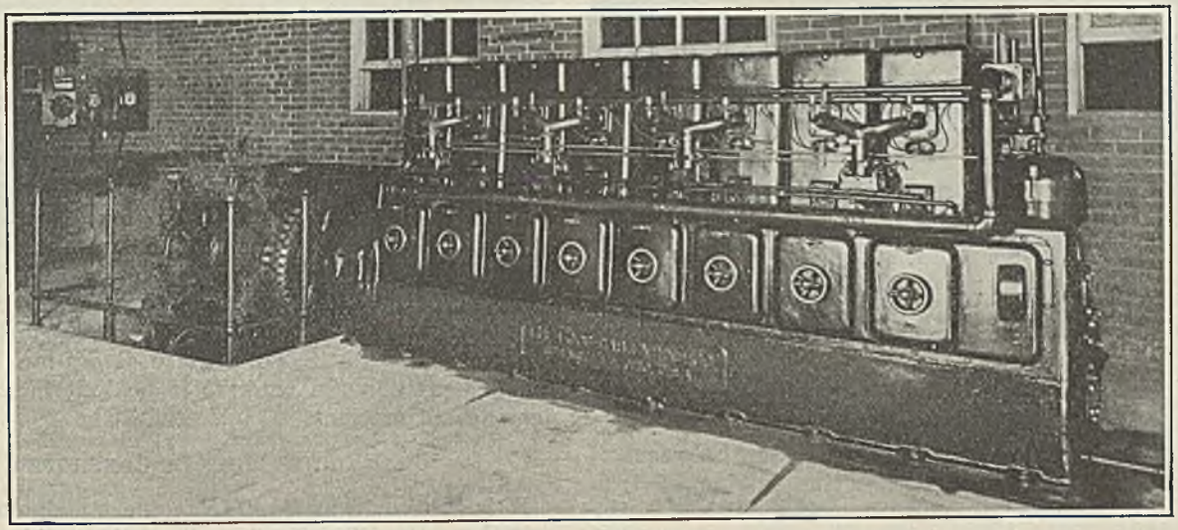
Applies Railroad Training to Mining

A man who has applied railroad training to coal company problems is Joseph D. Zook, vice-president of the Illinois Coal Corporation of Chicago, a company which has just built a huge new mine at Nason, Ill., and plans to operate it on an all-conveyor basis. Mr. Zook is 40. Upon leaving school in 1904 he entered the service of the Burlington railroad, remaining with that company and the Northern Pacific Railroad until he entered the coal business with his present company in 1918. The Illinois Coal Corporation owns and operates a small connecting railroad out of its new mining town of Nason, the Jefferson Southwestern R.R. He is scheduled to discuss the transportation of coal underground by conveyor.

Mechanical loading has received a great deal of study by engineers of the Consolidation Coal Co. R. L. Kingsland, general superintendent of the company's power and mining department, is chairman of one of the loading sessions at the Congress. Mr. Kingsland got his degree at Cornell in 1904, served an apprenticeship at the Stanley Electric Co., Pittsfield, Mass., the Weston Electric Co. of New York City, and the Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa., before he became assistant superintendent of motive power for the Pittsburgh & Butler Street Ry. Co. at Butler, Pa. He has been with the Consolidation Coal Co. at Fairmont, W. Va., since Jan. 1, 1909, in various capacities.

He Will Make Even Charts Interesting

Coal company executives may be interested especially in what W. L. Affelder, assistant to the president of the Hillman Coal & Coke Co. of Pittsburgh, Pa., has to say on the night of May 28. He is going to show, with lantern slides as illustrations, how to interpret labor costs through graphic charts. Mr. Affelder, a graduate of the school of mines at Pennsylvania State College in 1899, started his mining career by climbing on a draftsman's stool in the offices of the H. C. Frick Coke Co., Scottdale, Pa. That same year he became assistant engineer at the Vinton Colliery Co., Vinton, Pa., and the next year advanced himself by taking the superintendency of the Mosgrove Coal Works, Mosgrove, Pa. Six years later he became general manager of the Mine La Motte Lead & Smelting Co., Mine La Motte, Mo., where he stayed a year. From 1907 to 1912 he was superintendent of the Redstone plant of the H. C. Frick Coke Co. at Brownfield, Pa. Then, for a year, he was general manager of the Bulger Block Coal Co., Bulger, Pa., and since 1913 he has been assistant to the president of the Hillman Coal & Coke Co. and affiliated companies and general manager of operations.



Many Internal-Combustion Engines Used at Mines

Some Are Standbys; Others Main Power Units—Their Efficiencies Are Higher Than Those of Average Steam Plants—Diesel-Driven 75-Kw. Unit Saves $165 Monthly

By J. H. Edwards
Associate Editor, *Coal Age*,
Huntington W. Va.

IT IS ONLY NATURAL that coal mines in seeking power for their operation should accept, in the vast majority of instances, that form of energy lying nearest to hand. Thus, where electric energy is not purchased, the heat of the coal produced is employed all but universally at coal operations as a source of power. In the western portions of the Pennsylvania and West Virginia and the eastern part of Ohio, an appreciable quantity of power, however, is generated at mine plants through the combustion of natural gas. Particularly during recent years many a mine using electric energy, either generated in its own plant or purchased from some public utility, has made use of internal-combustion engines as a means for driving a part or all of its equipment in time of emergency.

No absolutely reliable and dependable source of power supply has yet been developed and, consequently, it is highly advantageous for any mine to be able in emergencies to operate such important pieces of its equipment as the fan, and sometimes also the man hoist and a few pumps when, for any reason, the power supply fails. Unquestionably the extensive use of the automobile has done much to popularize the internal-combustion engine as a source of power, and most installations of this type of machine at the mines have been made during the past few years.

But, as has been hinted, the use of internal-combustion engine units at the mines is by no means confined to standbys. Especially where natural gas is available, some of the main power units or major pieces of equipment are driven by these machines. This is particularly true of such units as are isolated from the main works and not readily reached by a power line. A recent investigation, of necessity somewhat limited in its scope, showed that out of a total of 12,998 hp. of internal-combustion engines installed nearly 73 per cent was used in continuous service, and the remaining 27 per cent was employed only in case of emergency.

Engines utilizing natural gas as a fuel probably make up 75 per cent of those used in continuous service, fuel oil supplying an approximate 21 per cent additional. Of these latter machines, about 85 per cent have been installed during the last three years. Of the emergency-service engines covered by the investigation to which reference has just been made, roughly 90 per cent have been in service less than three years.

Two Principal Types

Internal-combustion engines may be divided roughly into two general classes: Gas engines and oil engines. Those of the first type use natural or artificial gas, gasoline, kerosene or alcohol as a fuel. They are designed for low compression and are equipped with electric ignition. They operate on both the two-stroke and four-stroke cycles, but the latter constitute the majority of the machines of this type. Oil engines, depending upon their design, burn all manner of liquids from the lighter distillates or "gas oils" to fuel oils so heavy as to be difficult to handle with a pump. Some of these machines will operate on any liquid fuel whether alcohol or oil. Engines of the oil type are for the most part of the high-compression self-ignition class, but some are designed for only medium compression and consequently use the hot bulb or a modification of this means of ignition. A few years ago the majority of engines of this type operated on the four-stroke cycle.

NOTE—The headpiece shows an 8-cylinder internal-combustion engine direct-connected to a generator and employed in reserve or auxiliary power service. Units of this kind with from two to eight cylinders are becoming popular at many coal mines as a means of avoiding a complete shutdown when the electric power fails.

Fig. 1—Fan House at Dehue Mine

This building of permanent stone construction houses the mine fan and its motor drive. Had a mechanical connection between standby engine and fan been made, as was at first contemplated, an addition of appreciable size to this structure would have been necessary.

Today at least an equal number of the machines being sold have a cycle of two strokes.

The ordinary user draws no distinction between oil engines and Diesel engines. In the engine of true Diesel type, however, air only is compressed within the cylinder, this compression being carried to such a high degree as to raise the temperature of the air appreciably above the ignition point of the fuel. Into this hot atmosphere, oil is sprayed by air at still higher pressure furnished by an auxiliary compressor.

Most oil engines use the principle of high compression and self ignition, but many types differ from the true Diesel in the method of fuel injection. Thus, instead of being carried into the cylinder by an air blast it may be sprayed in mechanically or, in other words, forced into the cylinder by the action of a pump.

Thermal efficiency and fuel costs are of secondary consideration in the selection of engines for standby or emergency service. They are of prime importance, however, when choosing engines intended for continuous duty. In the ordinary gas engine employing low compression, about 19 per cent of the total energy of the fuel is converted into useful work. In the high-compression oil engine, from 30 to 35 per cent of the energy in the fuel is delivered to the engine shaft. The first of these efficiencies equals and the second far exceeds those attained in even the modern steam plant utilizing large boilers and condensing turbines.

Although the internal-combustion engine possesses a high thermodynamic efficiency as compared with the steam plant, the relatively high cost of its fuel in most cases prohibits its extensive employment for continuous stationary duty. This is particularly true of the gasoline engine but does not apply with equal force to those using gas in territory where natural gas is available at a low cost. On the other hand, the oil engine with a thermodynamic efficiency of 30 per cent or more, would appear to be a formidable competitor of the small coal-burning steam plant. The relatively high cost of the oil fuel per unit of energy contained as compared to the low costs of coal per unit of its energy, in large measure counteracts this advantage of high thermal efficiency. With fuel oil costing 6c. per gallon, delivered at the plant, approximately the same quantity of electric energy may be generated per dollar as can be attained with 13,000 B.t.u. coal costing $1.80 per ton delivered in the bunkers if utilized in a non-condensing steam plant.

Oil Engines Must Be Considered

It is thus evident that, from the standpoint of fuel cost alone, the oil engine is well worth considering when a power plant of a capacity large enough to operate a coal mine of small to average size, is contemplated. Another advantage possessed by this type of prime mover is that the labor necessary to operate an oil-engine plant is much less than that required by a steam plant of equal capacity. Many people object to the oil engine because they believe that it requires highly

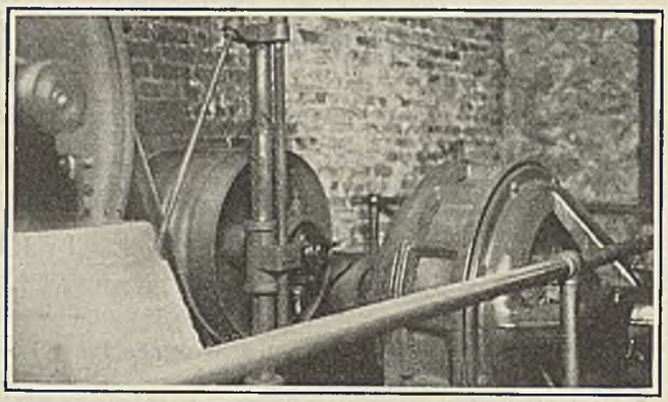


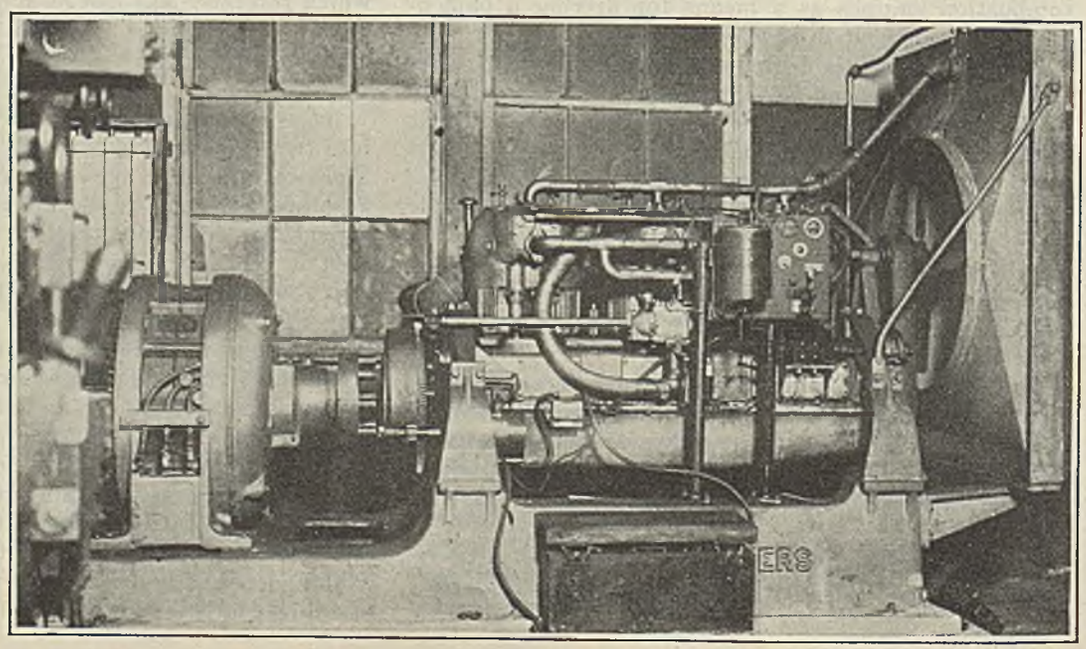
Fig. 3—Motor Drive to Mine Fan

The motor here used is a 100-hp., 220-volt, slip-ring machine short-coupled by belt to the fan. In case of power failure it is energized by the engine shown in Fig. 2. Only a few minutes are required to shift from purchased to generated power.

FIG. 2

A Pioneer

Standby power unit for driving the mine fan installed in the hoist house substation room at the Dehue mine of the Youngstown Sheet & Tube Co., at Dehue, W. Va. This is a 6-cylinder, 116-hp. engine direct-connected to a 50-kw., 220-volt generator. A self starter is provided and circulating water is cooled in a radiator.



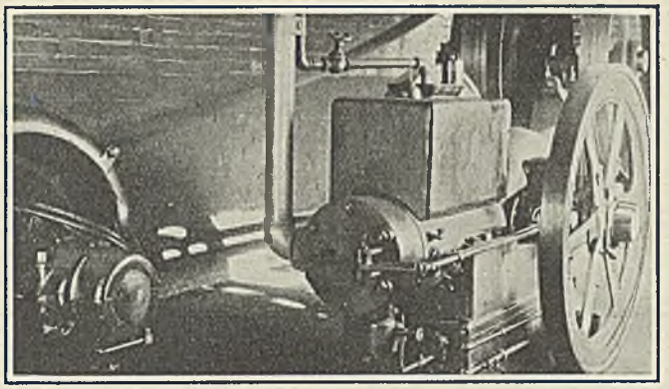


Fig. 4—Auxiliary Belt Drive to Fan

Here, in case of emergency, the engine is belted to the fan. For this purpose a second pulley overhangs the outboard fan bearing in line with the engine pulley. A belt is kept near the engine and ready for immediate use.

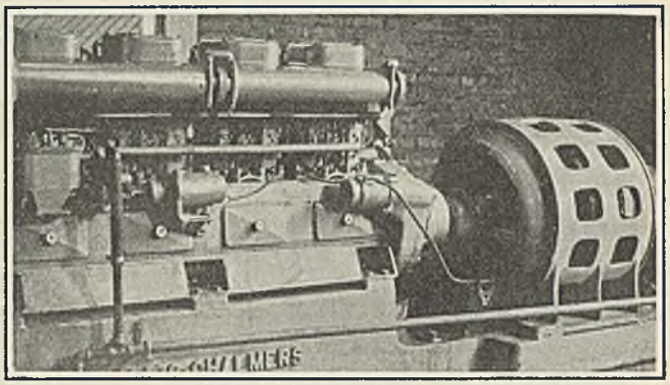


Fig. 5—Auxiliary Unit at West Virginia Mine

This is a 300-hp. gasoline engine direct-connected to a generator at the Bartley Shaft of the Pond Creek Pocahontas Co., at English, W. Va. It is of the type that has become quite popular during recent years for standby service.

skilled attendants. As a matter of fact, authentic records show that medium-sized oil engines have been operated continuously for over seven months at a stretch without stoppage or shutdown. Such records would suggest the possibility of dispensing with attendants entirely and equipping the engines with automatic protective devices which would shut them down in case of trouble. Before long it may be quite common to see oil engines thus equipped and operating regularly with only periodic inspections.

As an indication of the extent to which some coal companies have gone in the use of internal-combustion engines for regular power generation, three installations will be described briefly. The first is that of a certain company in Ohio—the name is withheld by request—which reported having 1,200 hp. of oil engines installed. These machines are in units of 150, 200 and 300 hp. each. Concerning this installation, one of the officials of the company writes: "We began installing these engines in 1922 and the last unit was put in place about a year ago. They constitute our total source of power, as we have no other power connections since installing these small engines. They have proven highly satisfactory to us. We are at present using a fuel oil shipped from West Virginia, which costs about 6c. per gallon delivered at the mine."

In January, 1923, the Laurie Coal Co., at Vaughan, W. Va., installed a three-cylinder 125-hp., Diesel engine direct-connected to a 75-kw., 220-volt direct-current Westinghouse generator. This installation was described in the Feb. 28, 1924, issue of *Coal Age*, by William Schaffer. From this article a few extracts may be here quoted.

"Compressed air at 700-lb. pressure is employed for starting. This is supplied by an Ingersoll-Rand compressor belted to the fly wheel of the engine and stored in four tanks. The selection of this equipment was based upon simplicity of operation and low maintenance costs.

Low Operating Cost

"Economy of operation is the outstanding feature of this power plant. An ordinary isolated steam plant required for producing the power requirements of this mine would use about 5 tons of coal per day which, at $2 per ton, would make a total of $10 a day for fuel.

Table I—Internal-Combustion Engines in Standby Service

		Installed	No.	Size	Fuel	Cyl-inders	Speed, R.p.m.	Engine	Generator	Kw.	Volts	Remarks
Mechanical connection to mine fan												
New River Co.	Cranberry, W. Va.		6									
New River Co.	Summerlee, W. Va.		All									
New River Co.	Carlisle, W. Va.	All about	Same	18 hp.	Gasoline	1	285	Lawson	None	...	.....	Clutch pulley on engine—belt must be
New River Co.	Scarbro, W. Va.	1915										put on each time
New River Co.	Whipple, W. Va.											
New River Co.	Lochgelly, W. Va.											
Woodward Iron Co.	Woodward, Ala.	Mar., 1921	2	100 hp.	Oil	..	.....	Fairbanks-Morse	None	...	.....	Clutches, direct drive
Warrior Coal Co.	Warriormine, W. Va.	Recently	1	50 hp.	.....	..	.....	.....	.....	...	.....	Clutch
Electric drive												
Youngstown Sheet & Tube Co.	Dehue, W. Va.	Dec., 1922	1	118 b.hp.	Gasoline	6	1,200	Wisconsin	Allis-Chalmers	50	220	100-hp., slip-ring, fan motor
West Kentucky Coal Co.	Earlington, Ky.	July, 1923	1	118 b.hp.	Gasoline	6	1,200	Wisconsin	Allis-Chalmers	50	2,300	Fan and lighting
Youghiogheny & Ohio Coal Co.	Manifold, Pa.	Oct., 1923	1	250 hp.	Gasoline	8	900	Sterling	.....	140	1,100	400 hp. hoist and 150 hp. fan, both 60 cycles operated on 30 cycles and half voltage.
Monarch Fuel Co.	Rural Ridge, Pa.	May, 1924	1	225 hp.	Gasoline	6	.....	Sterling	Westghse.	80	2,400	37.5 hp. fan and 50 hp. aux. motor on 150-hp. hoist
Union Collieries Co.	Rentou, Pa.	June, 1924	1	242 b.hp.	Gasoline	8	1,200	Sterling	Allis-Chalmers	125	2,300	75-hp. fan and 150-hp. hoist, but not run at same time
Majestic Coal Co.	Majestic, Ala.	July, 1924	1	100 hp.	.....	4	.....	Foos	.....	68	440	Only 3 mins. required to get fan running
Brier Hill Coke Co.	Brier Hill, Pa.	Aug., 1924	1	300 hp.	Gasoline	8	1,200	Sterling	.....	125	2,300	Fan and lighting
Pond Creek Pocahontas Co.	English, W. Va.	Nov., 1924	1	300 hp.	Gasoline	8	1,200	Sterling	Allis-Chalmers	125	2,300	Fan and lighting
Buckeye Coal Co.	Nemacolin, Pa.	.....	2	300 hp.	Gasoline	8	.....	Sterling	.....	250	2,300	Fan, etc.
Jamison Coal & Coke Co.	Pennsylvania and West Virginia mines	.....	4	.....	Gasoline	..	.....	Sterling	.....	80	2,200	Fans at full speed; and man hoists, which are closely counterweighted
Empire Coal Mining Co.	Aguilar, Colo.	Jan., 1924	1	.....	Gasoline	4	.....	Climax	.....	...	.....	Clutch, direct drive for fan
H. C. Frick Coke Co.	Latrobe, Pa.	Feb., 1925	.....	.....	Gasoline	..	.....	Sterling	.....	...	.....	Fan

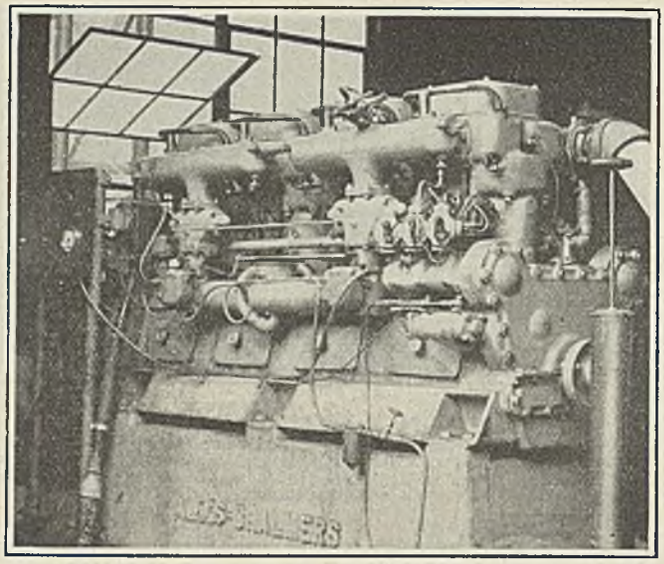


Fig. 6—Manifold Side of Engine

This shows the opposite side of the engine pictured in Fig. 5. Note the small switchboard mounted on the pipe frame at the left. Standby units now can be purchased complete with such switchboards, forming an integral part of the equipment

The Diesel engine consumes about 29 gal. of fuel oil per day, which at 6c. per gallon costs $1.74, a saving of $8.26 per day, or $165.20 per month of 20 days.

"The steam plant would require an engineer and fireman at a total cost of about $300 per month, whereas the Diesel engine requires the attendance of one man at a cost of about $175 per month, a saving of $125 per month. Therefore, the fuel and labor saving is $290 per month, or $3,480 per year."

In comment on Mr. Schaffer's article, it might be stated that the labor saving there claimed for that particular plant might not hold true for the average mine power plant of equal size, because two men might not be required in a steam plant of such small capacity.

Another concern, the S. M. Hudson Coal & Coke Co., of Rush Run, Ohio, has several engines operating on gas as a fuel. It is learned from W. C. Hudson, vice-president, that the company manufactures its own electric power, using three 70-hp. vertical gas engines, direct-connected to generators. The machines were installed in 1919 and since that time the mine has never lost an hour on account of power. Mr. Hudson says he can produce coal with a power cost of less than 1c. per ton. The engines run at 285 r.p.m.

Few radical changes in the construction of low-speed stationary gas engines have been made during recent years. One development, however, announced a short time ago is a "water-cooled engine without water jacket." In the construction of this machine instead of cored-out water jackets being provided for each cylinder, all cylinders, cylinder heads and the exhaust manifold are submerged in a large tank of water. The chief advantage of this construction lies in the fact that any accumulation of scale or sediment can easily be detected and removed.

Use Modified Automobile Engine

One development in the use of internal-combustion engines for standby or emergency service has become quite popular during recent years. This is the employment of a high-speed multi-cylinder engine of a modified automobile or marine type, direct-connected to a generator. Such units were primarily intended for emergency operation of the ventilating fan, but many recent installations are of sufficient capacity to operate the service hoist, or even in the main hoist at reduced speed in case such operation is necessary.

In Table I are listed a few emergency-drive installations which have come to my own personal attention. They are of two classes. In one the engine drives the fan through a clutch or belt, whereas in the other it is connected to a generator furnishing current to the fan motor.

The installation at the Dehue, W. Va., mine of the Youngstown Sheet & Tube Co., is the earliest of this latter type listed, and was among the first, if not the first, of this kind of installation made in this country. Figs. 2 and 1 are recent photographs of this engine and of the mine fan driven by it. It was at first the intention of this company to purchase a large single-cylinder

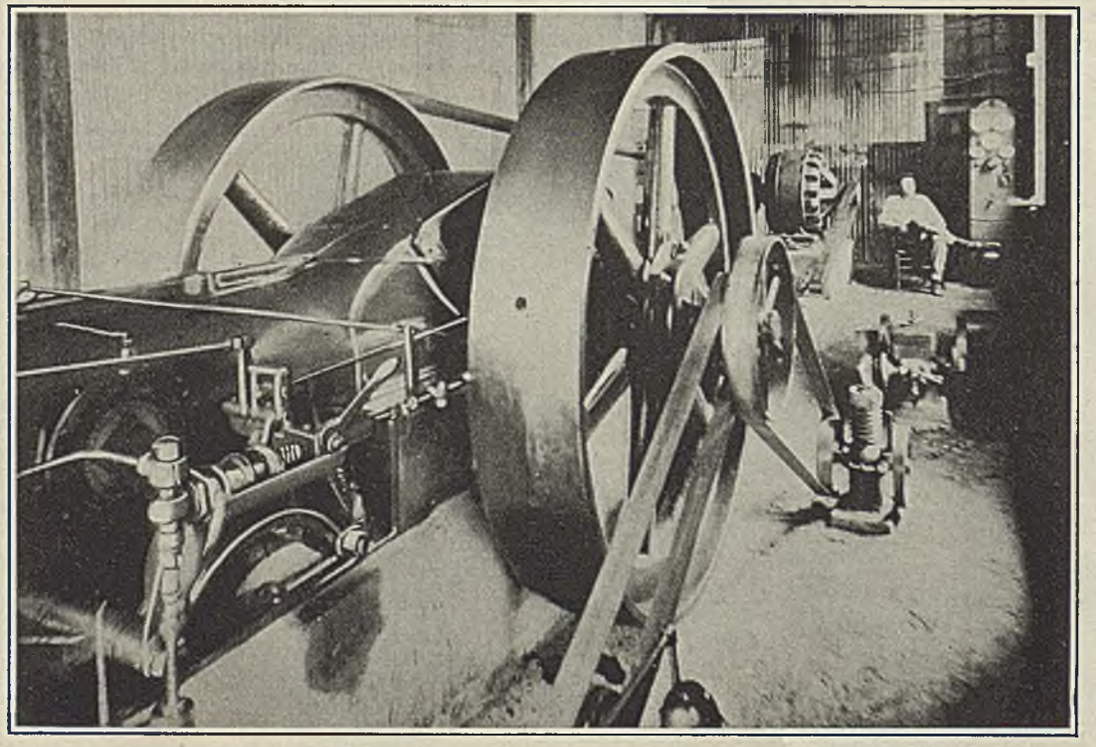


FIG. 7

Mining Coal With Oil

At the time the photograph was taken from which this illustration was made, this oil engine had been at work at a mine of the William A. Werner Coal Co. near Zanesville, Ohio, for eight months without any necessity for shutdown. The engine is belted to a 56-Kw. generator which furnishes current to cutting machines, fans and pumps. An oil engine as a prime mover for the operation of a small coal mine possesses several advantages over a steam plant of equal capacity.

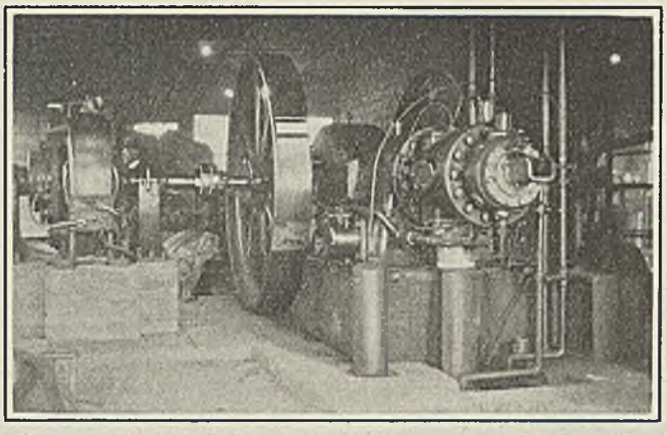


Fig. 8—Oil Engine Direct-Connected to Generator

This is a 50-hp., single-cylinder, horizontal oil engine direct-connected to a generator. It is installed at a plant of the Strattonville Coal Mining Co., Strattonville, Pa. Direct-connecting engines to the machine driven makes a compact unit and obviates the use of belts, thus tending toward simplicity and reliability.

engine and connect it to the fan shaft by mechanical means such as a clutch, a belt or the like.

With such a method as this, a large addition to the stone and concrete building which houses the fan motor would have been necessary, as well as a new shaft of greater length than that originally provided with the fan. It was discovered also that the cost would run considerably over what had been at first anticipated. As a counter proposition, a high-speed automobile-type of engine direct-connected to a generator was installed in the substation compartment of the hoist house, this location being about 200 ft. from the fan to be driven.

Inquiries sent to all the larger electrical manufacturers inviting proposals on this type of unit, revealed the fact that only one company built such a generating set, and this firm had never before received an order from a coal mine for a machine of this kind. The outfit finally purchased consists of a 6-cylinder, 118-hp., 1,200-r.p.m. gasoline engine, direct-connected to a 62.5-kva. 220-volt generator. The engine is equipped with an electric starter, a speed-control governor and a fan-cooled radiator.

Up to the present time, this outfit has been used solely for driving the mine fan during the many interruptions to the supply of purchased power that have been experienced, such interruptions lasting from a few minutes up to several hours.

The fan is driven by a 100-hp., 220-volt slip-ring induction motor, which can be controlled by the rotor-resistance method, so as to operate the fan at a reduced speed. When considering the purchase of this engine-driven unit, some doubt existed as to the result of trying to start a 100-hp. motor from a 62.5-kva. generator. After installation it was found that the generator potential had to be adjusted to about 320 volts in order that it might hold up to the normal 220 volts when the fan was being operated.

Electric Drive Preferable

In the installation just described, utilization of a high-speed engine, direct-connected to a generator, proved to be much more satisfactory than would have been a low-speed engine with mechanical connection to drive the mine fan, as was first considered. Advantages afforded were: (1) The first cost of the complete installation was much less; (2) the engine would start more quickly and certainly, the means employed for this purpose being identical with that used on automobiles; (3) the engine is installed in a substation where it is kept warm in winter and always ready for a quick start; (4) if it becomes desirable, the engine can be used to furnish power for purposes other than driving the fan.

In line with what has just been stated, concerning the lower first cost of the direct-connected generating unit, it might be well to give here approximate figures concerning the cost per horsepower, or per kilowatt, of the various types of internal combustion engines and

Table II—Internal-Combustion Engines in Regular Service*

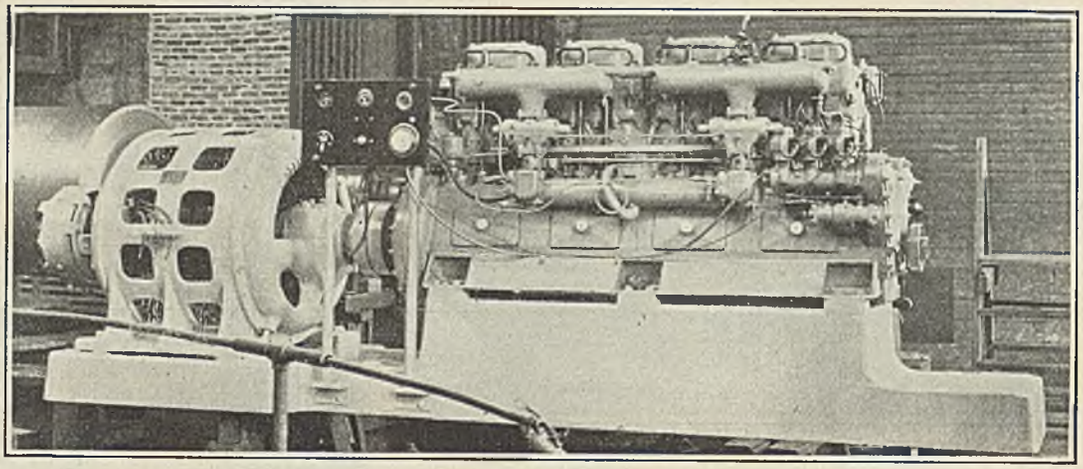
		Installed	No.	Size, Hp.	Fuel	Engine	Generator Drive	Kw.
Neill Coal Co.	Birmingham, Ala.	.....	1	18	Gasoline	Novo	None	....
Wm. A. Werner Coal Co.	Zanesville, Ohio.	1923	1	70	Oil	Primm	Belt	56
Silver Fox Coal Co.	New Lexington, Ohio.	1921	1	65	Oil	Primm	.....	....
Klein-Moore Coal Co.	New Philadelphia, Ohio.	1921	1	65	Oil	Primm	.....	....
(Name withheld by request)	Ohio.	1922 to 1924	2	150	Oil	Fairbanks-Morse	Belt	....
(Name withheld by request)	Ohio.	1922 to 1924	1	200	Oil	Fairbanks-Morse	Belt	....
(Name withheld by request)	Ohio.	1922 to 1924	2	200	Oil	Fairbanks-Morse	Direct	....
(Name withheld by request)	Ohio.	1922 to 1924	1	300	Oil	Fairbanks-Morse	Direct	....
R. J. Ross Mines	Piedmont, W. Va.	1923	1	150	Oil	Fairbanks-Morse	.....	....
D. S. German & Son	Sherodsville, Ohio.	1922	1	50	Oil	Fairbanks-Morse	.....	....
Beaber-Fickes Coal Co.	New Philadelphia, Ohio.	1922	1	50	Oil	Fairbanks-Morse	.....	....
H. R. Brown & Son Coal Co.	New Philadelphia, Ohio.	1923	2	100	Oil	Fairbanks-Morse	Belt	80
M. G. Martin	East Liverpool, Ohio.	.....	1	50	Oil	Fairbanks-Morse	.....	....
F. M. Fisher	Zanesville, Ohio.	1924	1	50	Oil	Fairbanks-Morse	.....	....
Central Coal Co.	Danville, Ill.	1921	1	37½	Oil	Fairbanks-Morse	.....	....
Bruin Coal Co.	Bruin, Pa.	1918	2	150	Gas	Bruce-Macbeth	.....	....
S. M. Hudson Coal & Coke Co.	Rush Run, Ohio.	1919 to 1920	1	60	Gas	Bruce-Macbeth	.....	....
S. M. Hudson Coal & Coke Co.	Rush Run, Ohio.	1919 to 1920	2	70	Gas	Bruce-Macbeth	.....	....
North East Coal Mining Co.	Hilliards, Pa.	1918	1	150	Gas	Bruce-Macbeth	.....	....
Consolidated Coal & Coke Co.	Butler, Pa.	.....	11	165	Gas	.....	.....	....
Bennett Coal Co.	Vinita, Okla.	.....	2	10	.....	.....	.....	....
Brady's Bend Coal Co.	East Brady, Pa.	1919	1	200	Gas	Sterling	Belt	125
Church Hill Mining Co.	Leechburg, Pa.	.....	3	200	Gas	.....	.....	125
W. J. James Coal Co.	Redbank, Pa.	.....	4	100	Gas	.....	.....	....
Laurie Coal Co.	Vaughan, W. Va.	1923	1	125	Oil	Busch-Sulzer	Direct	75
Earlston Coal Co.	Kermit, W. Va.	1921 and 1922	2	155	Gas	Bessemer	Direct	100
Katona Coal Co.	East Lynne, W. Va.	1910	1	75	Gas	Bessemer	Direct	50
Katona Coal Co.	East Lynne, W. Va.	1912	1	150	Gas	Bessemer	Chain	100
Katona Coal Co.	East Lynne, W. Va.	1913	1	75	Gas	Bessemer	Direct	50
Moose Run Coal Co.	Penfield, Pa.	1923	1	150	Oil	Bessemer	Belt	100
Harvey Coal Co.	Clarion, Pa.	1921	1	20	Oil	Bessemer	Belt	12½
Strattonville Coal Mining Co.	Strattonville, Pa.	.....	1	150	Oil	Bessemer	.....	....
Strattonville Coal Mining Co.	Strattonville, Pa.	.....	1	50	Oil	Bessemer	.....	....
W. J. James Coal Co.	Emlenton, Pa.	.....	1	500	Gas	.....	.....	....
Kenrock Coal Co.	Saxton, Pa.	.....	2	....	Gasoline	.....	.....	....
Lawsonham Coal Co.	Lawsonham, Pa.	1918	2	165	Gas	Miller	Belt	....
Monterey Coal Co.	Monterey, Pa.	.....	3	200	Gas	.....	.....	125
Rimerton Coal Co.	Rimer, Pa.	.....	3	175	.....	.....	.....	....
Emma Coal Co.	Three Mile, W. Va.	.....	1	150	Gas	.....	.....	....
Fuel Supply Co.	Canton, Ohio.	1923	1	60	Oil	Anderson	Belt	45
Snow Fork Coal Co.	Murray, Ohio.	.....	1	18	Gas	.....	.....	....
Snow Fork Coal Co.	Murray, Ohio.	.....	1	35	Gas	.....	.....	....
Buffalo Creek Coal Co.	Helenwood, Tenn.	1923	1	25	Oil	Muncie	.....	30
R. W. Shreve Coal Co.	Doran, Va.	.....	1	12	Gas	.....	.....	....

* In some of the installations the source of the information was not checked.

FIG. 9

A Compact Unit

Here a 125-kw. 80-per cent power-factor, 2,300-volt, 60-cycle, 3-phase generator is direct-connected to and mounted on the same bedplate with a gasoline engine that runs at 1,200 r.p.m. The combined unit is shown on the testing floor in the factory just before shipment to a West Virginia coal mine.



emergency generating units. These figures may be summarized as follows:

	Per Brake Hp.
Horizontal single-cylinder gasoline engines, 12- to 50-hp. sizes, cheapest makes	$30
Same type but of high-grade, intended for long service	70
Vertical multi-cylinder engines, operating on natural or artificial gas in sizes from 30 to 350 hp., speeds ranging from 300 for small machines to 225 r.p.m. for big ones	50
Diesel oil engines, four-cycle, 100 to 300 hp.	90
Diesel oil engines, two-cycle, 100 to 300 hp.	65
High-speed (1,200 r.p.m.) automobile-type engines with electric starters and throttling governors for speed control, four-, six-, and eight-cylinder types, with factory ratings ranging from 120 to 300 hp.	25

High-speed engines of the above named type may be purchased direct-connected to alternating-current generators with exciters and plain generator panels, at approximately the following prices:

	Per Kw.
Four-cylinder, 50-kw. 2,300-volt alternators	$112
Six-cylinder, 70-kw.	92
Eight-cylinder, 125-kw.	62

At some installations, the internal-combustion engine is placed near the fan and provision made to drive this machine mechanically. Thus, the Woodward Iron Co., of Woodward, Ala., has two auxiliary engines of this type at two of its air shafts. One of these duplicate installations is described by J. A. Long, general manager of the company, as follows: "The engine is a 100-hp. oil engine and was installed about March, 1921. It is used to drive the ventilating fan only in case of emergency. For regular operation, the fan is motor-driven, but in case of electric-power failure, we change the drive over to the engine. This is done by disengaging the clutch on the motor and engaging the clutch on the engine drive, thus connecting the engine directly to the fan shaft. The time necessary to make this change is that required to disengage one clutch and engage another, plus the time necessary to start the engine. Compressed air is used for starting, a small auxiliary gas engine, compressor and air receiver being installed for this purpose."

At each of its six shaft mines, the New River Co., of MacDonald, W. Va., has an 18-hp. gasoline engine as an auxiliary means of driving the ventilating fan at reduced speed in case of failure of purchased power. Fig. 4 is a recent photograph of the installation at the Cranberry mine. The fan is equipped with two pulleys, the one used in connection with the engine overhanging the outboard bearing. The engine is fitted with a friction-clutch pulley so that it can be started without load. An endless belt is kept rolled up near the machine ready for immediate use. The pulley ratio between engine and fan is such that the fan is driven at approximately 90 r.p.m., requiring about 13 hp., as compared to 132 r.p.m. and 38 hp. when driven by the motor.

At many shaft mines, it is highly desirable to have available an auxiliary source of power for operation of the hoist as well as for that of the ventilating fan. The hoist motor, however, is usually of a capacity much in excess of that of the power unit, as this machine is usually made sufficiently large to drive the fan only. Moreover, starting the hoist motor throws a sudden heavy load on the engine so that both its speed and voltage drop below a desirable limit. It appears that a 150-hp., slip-ring, hoist motor is about the largest that can be operated successfully from a standard 125-kw. gasoline-engine generating unit. This small capacity excludes most motors on main hoists and many of those serving the auxiliary or man-and-material shafts.

Some time ago, Graham Bright, of Pittsburgh, suggested a scheme that has since been put into use at a mine of the Youghiogheny & Ohio Coal Co., near Pittsburgh, whereby the hoist and fan motors are operated at half-normal frequency and half-normal voltage. In this installation a 300-hp., 8-cylinder engine operating at 1,500 r.p.m., is direct-connected to a 125-kw. alternator, generating current at 30 cycles and 1,100 volts. This operates the 400-hp. main hoist motor at about half speed and presumably requires approximately 100-hp. with light loads, as when hoisting men. So far as I have been able to learn, this is the only installation of its kind that has been made.

A sure and satisfactory way of driving a large hoist in case of emergency is that used by the Monarch Fuel Co., at Rural Ridge, Pa. Here the auxiliary unit is a 225-hp. gasoline engine, direct-connected to a 100-kva. alternator. The hoist normally is driven by a 100-hp. motor, but for operation from the standby generator, a 50-hp. auxiliary motor is provided. This is coupled to the hoist by a chain and sprocket. Ordinarily the driven sprocket idles on the hoist shaft intermediate between the large motor to the drum, but when an emergency arises it is bolted to the shaft coupling.

Coal operators who have purchased high-speed, gasoline-engine driven generators for standby service state that great care should be exercised in selecting a unit of this kind as otherwise its ability to start the hoist or fan may be disappointing. In most cases it has been found necessary to keep a man at the throttle to manually regulate the engine speed when an excessive load, such as that caused by the starting of a hoist motor, is applied.

Installations such as here described give the internal-combustion engine its chance to prove its value under certain conditions. Wider use will test it further.

Two-Unit Automatic Station with Purchased Power Aids Steam Plants at Mines

Station Has Three Control Arrangements—Iron Pipes Support Transformer Towers—Natural Draft to Cool Substation Is Provided in Construction of Building

By L. P. Read*
Frostburg, Md.

IN 1921 THE MARYLAND division of the Consolidation Coal Co. was faced with the necessity of increasing the supply of power at its various mines. Previously, electrical current came from steam-driven generators at each of the mines, but the demands had outgrown the supply. The problem was solved by erecting a switching station from which purchased power is now being distributed to add to the supply of electrical power actually generated at the individual mines, the two sources being directly connected.

To accomplish the purpose best, the power receiving station had to be placed at an isolated point near the center of the load and, consequently, it was deemed advisable to make its control automatic. The substation is located on a 60-acre tract near Wrights Crossing, not far from Frostburg, Md.

In a 22x30-ft., fireproof, brick building with a concrete roof are installed two 150-kw., synchronous converters. The control is entirely automatic. This, I believe, is the first two-unit automatic substation using rotary converters to operate in parallel with steam-driven plants. It can be controlled by push buttons or a time-switch mounted on the switchboard and by a single-pole, knife switch at Pumping shaft which is 4,500 ft. away.

*Supt. of Electrical Dept., Maryland Division, Consolidation Coal Co.

NOTE—Based on an article appearing in the "Mutual Magazine" of the Consolidation Coal Co., June, 1924. To the article as first written, the author has added, for the benefit of electrical men outside of his company, more details of the installation.

Contained in the time-switch is a clock which can be set to start or stop the converting units at any predetermined time. At the appointed moment for starting, the time-switch closes and in doing so operates other contactors on the board in a sequence which governs more accurately than manual control all the operations necessary in starting the machines. At the arranged moment for stopping, this same clock opens contact and thereby shuts down one or both machines as required.

MACHINES AUTOMATICALLY STOP

As the running schedule is now arranged, one machine is in continuous operation night and day while the other is started or stopped from Pumping shaft as the need dictates. In case of power failure, an overload or the development of hot bearings, the machines automatically stop. When power is restored after a failure or when an overload condition is remedied, the station automatically starts; but following the heating of bearings, the contactors are locked out and the machines cannot be started until the trouble is removed. Full details of the operation of a single-unit automatic station installed at one of the company mines at Van Lear, Ky., are given in *Coal Age*, Sept. 21, 1922, p. 441. The two-unit station is operated in a similar manner.

The cost of the automatic control current for the two machines is about 2 kw.-hr. or about 4 to 5c. per

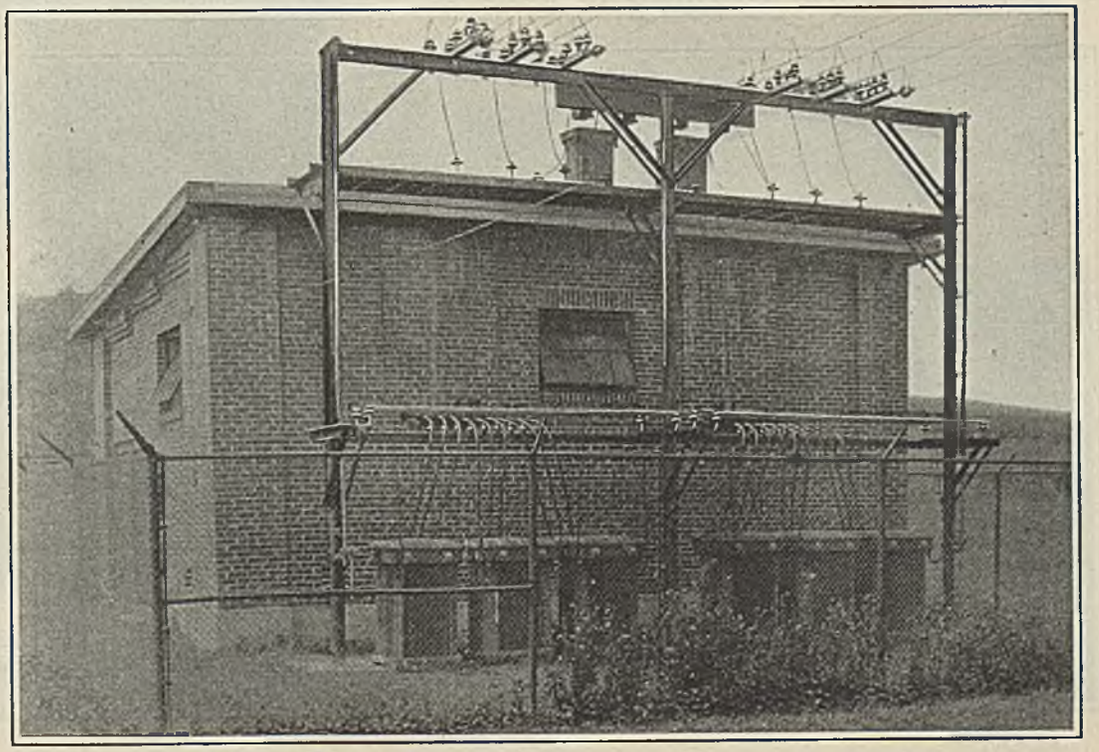


FIG. 1

An Unusual Substation

Here central station current is received to be distributed to the several mines of the Consolidation Coal Co., near Frostburg, Md. It probably is the first two-unit automatic substation using rotary converters to operate in parallel with steam-driven plants. The transformer tower is built of angle-iron supported by three 5-in. compressed-air pipes. Men can ascend at either end to avoid live conductors in case of trouble.

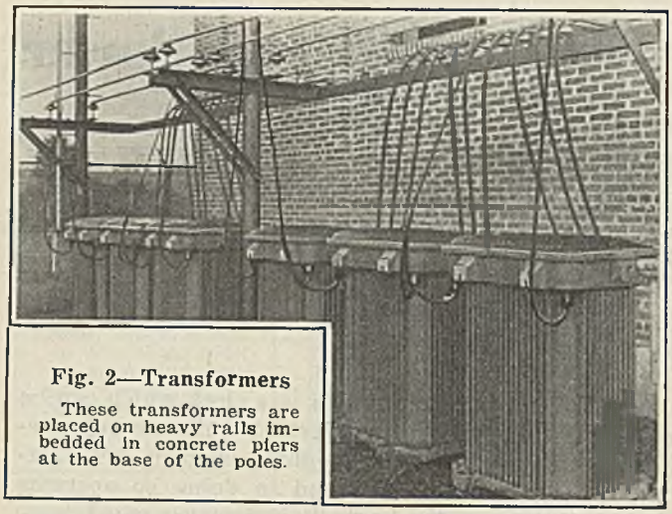


Fig. 2—Transformers

These transformers are placed on heavy rails imbedded in concrete piers at the base of the poles.

hour. By comparing the low operating cost of automatic control with the wages of attendants in manual control the saving which the former effects is the more noticeable.

The 6,600-volt high-tension lines are dead-ended on a transformer tower which stands at a distance of 5 ft. from the front wall of the substation building. Attention is called to the construction of this tower, which is different from common design. It incorporates several features which, in the future, are likely to be accepted as general practice by many companies. One public utility company in the region has adopted the plan and is applying it to new work in its system.

Reclaimed Pipe Utilized

As may be seen in Fig. 1, the tower is of angle-iron construction supported on three 5-in., high-pressure, galvanized, wrought-iron pipes which are set on a common line. The pipe utilized for this purpose was reclaimed from mine service in which it supplied compressed air to locomotives.

Six 55-kva. transformers—three for each unit—are mounted on 60-lb. rails which in turn are imbedded in concrete piers at the bases of the towers, as shown in Fig. 2. Two 10-kva. transformers for controlling the contactors on the switchboard are mounted on a platform at a level 3½ ft. below the top of the tower. This platform is 2 ft. wide and extends the entire length of the tower. Its purpose, of course, is to enable men to work in safety on the high-tension switches and fuses at the top of the tower.

Another safety feature on the tower is the location of steps on each of the two end-pipe supports, enabling the repairmen to ascend the side which is deadened by the opening of the high-tension switch to rectify a blown-out fuse or any other trouble with either bank of transformers.

Aside from the safety features, this tower invites consideration by reason of its simplicity of construction and economy. The four-cornered, rectangular type of tower which is in general usage nowadays takes up more space and requires more construction material.

The busbars on this tower are made of 1-in., tinned, brass tubing which had been used in earlier days in the coolers on old high-pressure air compressors.

Secondary cables for each unit are led from the transformers over angle-iron supports, which stand about 8 ft. above the ground, and thence through holes at the same level in the walls of the building. From the point of entrance they are carried downward through conduits in a covered offset in pilasters and thence in conduits imbedded in the floor to the rear of the switchboard. The equalizer cables are also carried through floor conduits to wall conduits at the opposite side of the building and to equalizer contactors which are mounted on the wall at a level 5 ft. above the floor. To avoid cracking of the concrete, floor conduits should be placed 2 to 3 in. below the surface.

All lighting wires and cables are concealed in conduits in the ceilings and walls. The offsets in the pilasters, in which are placed the incoming cables, are covered with asbestos board panels.

Both positive and negative feeder cables have a cross-section of 1½ million circ.mils. The positive cable is covered with cambric and lead but the negative cable is bare. From the two rotary converters they are carried in conduits under the floor, through the wall, and into a pit at the top of a borehole outside of the building

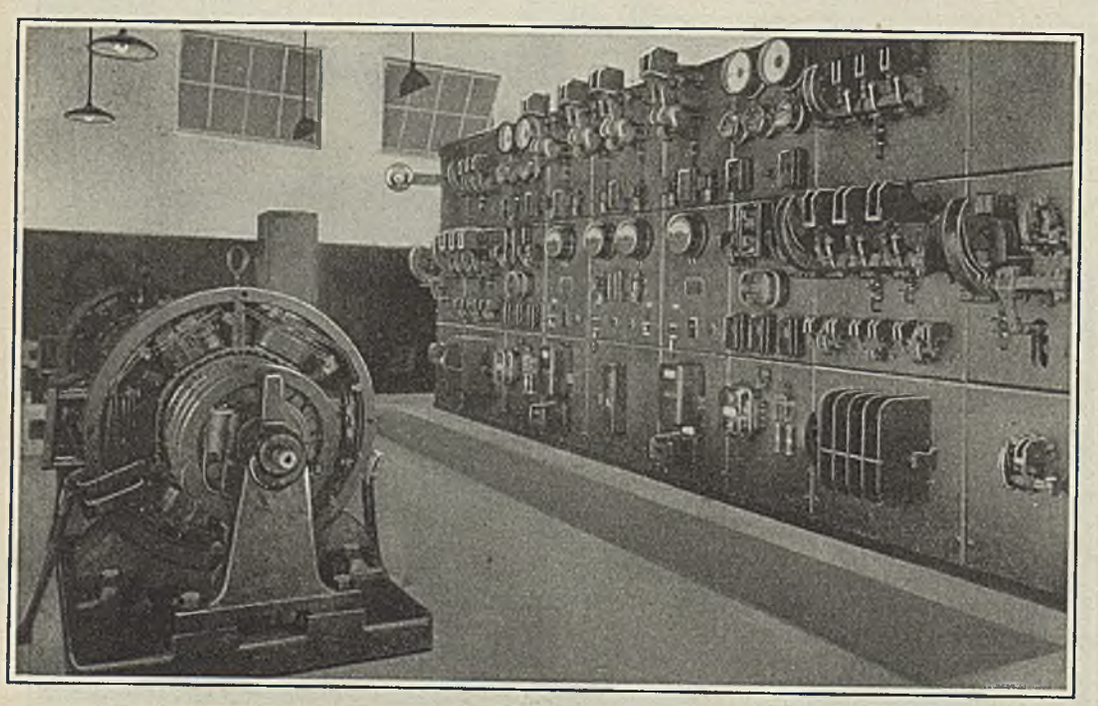


FIG. 3

Rotaries and Switchboard

Like a man with a clean shave, a substation interior without wires extending on and across the walls always makes a good appearance. Here all the wires are concealed in conduits in the walls, ceiling and floor.

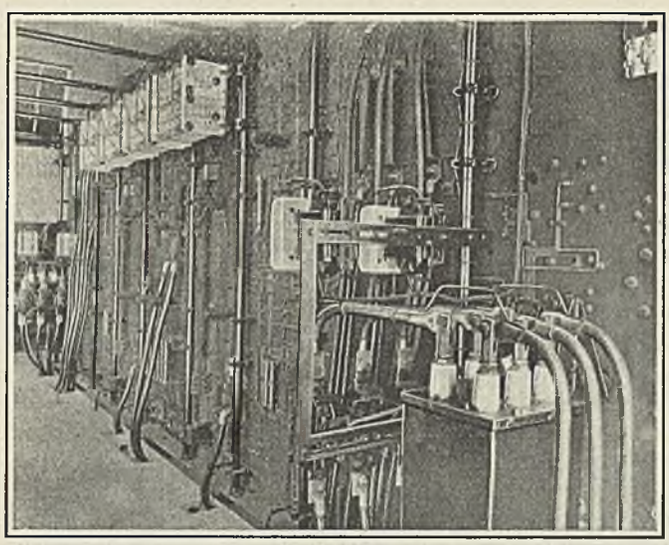


Fig. 4—Rear View of Switchboard

Here again is proven the desirability of keeping the lead wires hidden. It would be comparatively easy to locate trouble on the back of this board.

line. The cables extend down the borehole, which is 182 ft. deep, to four automatic reclosing circuit breakers in No. 10 mine from which point the power is distributed to the various feeders.

The borehole pit is 5 ft. square, inside measurement, and 6 ft. deep. It is covered with a double shelter-door of steel.

Two 40-lb. rails which straddle the sidewalls of the pit serve to anchor the borehole cables. The positive cable weighs 3,200 lb. and is suspended from a heavy iron cross bar on the rails by two §-in. steel-strand ropes which are electrically broken from the

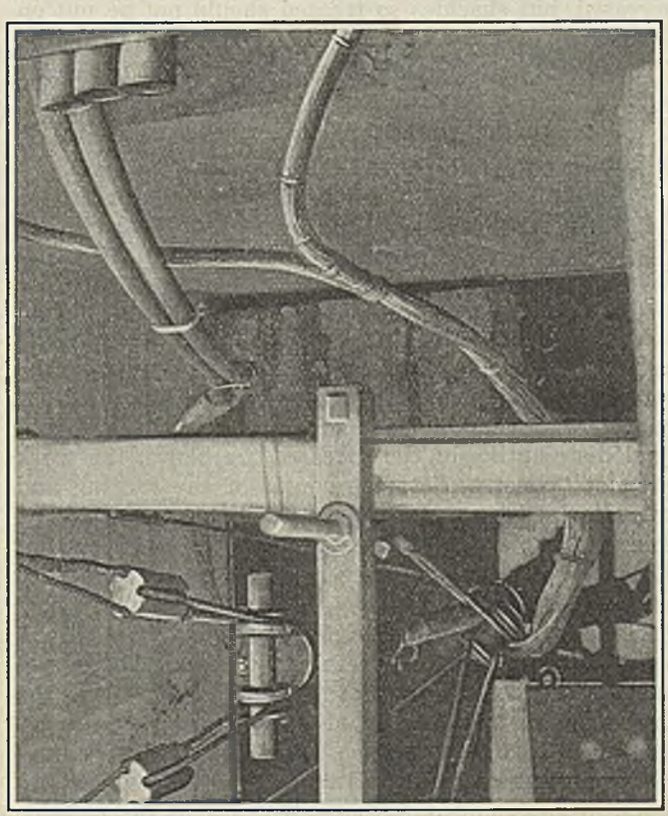


Fig. 5—Method of Supporting Borehole Cables

In this view you are looking down into the pit toward the borehole. The pipes at the top of this picture extend from the foundation wall of the building. Note how the cables are suspended by means of an ordinary rope clevis.

cable clevis by two ordinary strain insulators. These ropes encircle the pin of the cable clevis and are held in position by a washer and cotter pin. Details of this appear in Fig. 5.

A rope clevis 1½ in. in diameter is utilized as a grip for the cable. It is folded over the copper core of the cable and poured with lead. The lower end of the clevis is about 6 in. above the beginning of the lead cover on the cable itself. The clevis juncture is sealed by two funnel-shape wrappings of tar paper which are filled with pot-head compound. The negative cable is anchored with a rope clevis in the same way, except that the juncture is not covered with tar paper and compound.

LEAD COVER ANCHORED SEPARATELY

To prevent the lead cover on the positive cable in the borehole from slipping, it is anchored independently. This is accomplished by two 00 bare copper wires which are fastened from the top and wrapped to the lead cover, at intervals of about 6 ft., by six or eight turns of No. 6 soft-drawn cable.

The substation is situated on an open expanse of

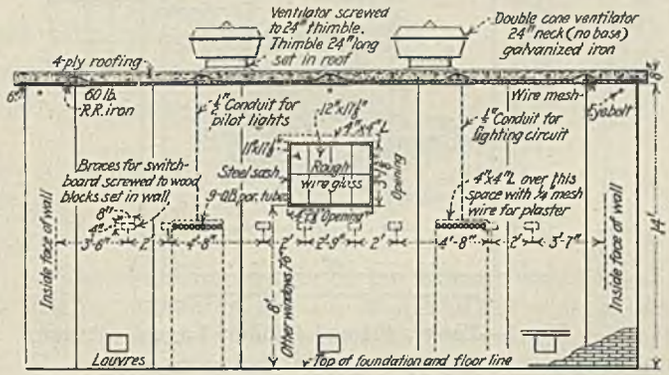


Fig. 6—Building Plan of This Substation

flat land in no way sheltered from the direct rays of the sun. The temperature within the station on a hot summer day would reach high levels, no doubt, were it not for the natural ventilation courses provided in the construction of the building.

In the walls at a level 10 in. above the floor are located nine 10x12-in. ventilation portals through which a natural draft is set up and carried out through two double-cone ventilator chimneys in the roof of the building. However, the cooling effect of these openings is hardly sufficient. I would recommend an increase of about 50 per cent in the size of the openings.

AIR DUCT COOLS MACHINES

Each of the machines is cooled by an air duct under the floor which draws in air from the outside and discharges it through an opening in the foundation under the machines. Natural ventilation is likewise depended upon to cool the machines.

It is always wise to maintain a grassy swarth in the vicinitiy of a substation. On dry days bare ground is covered with fine dust which is sure to find its way into a substation, landing in and on the electrical equipment. The substation described in this article is inclosed in an 8-ft. high woven fence, on the top of which are strung three strands of barbed wire. Within the inclosure, and for a short distance outside, the ground is covered with thick grass. To remove whatever dust enters the interior of the station, lodging on the converters and the switchboard contactors, a

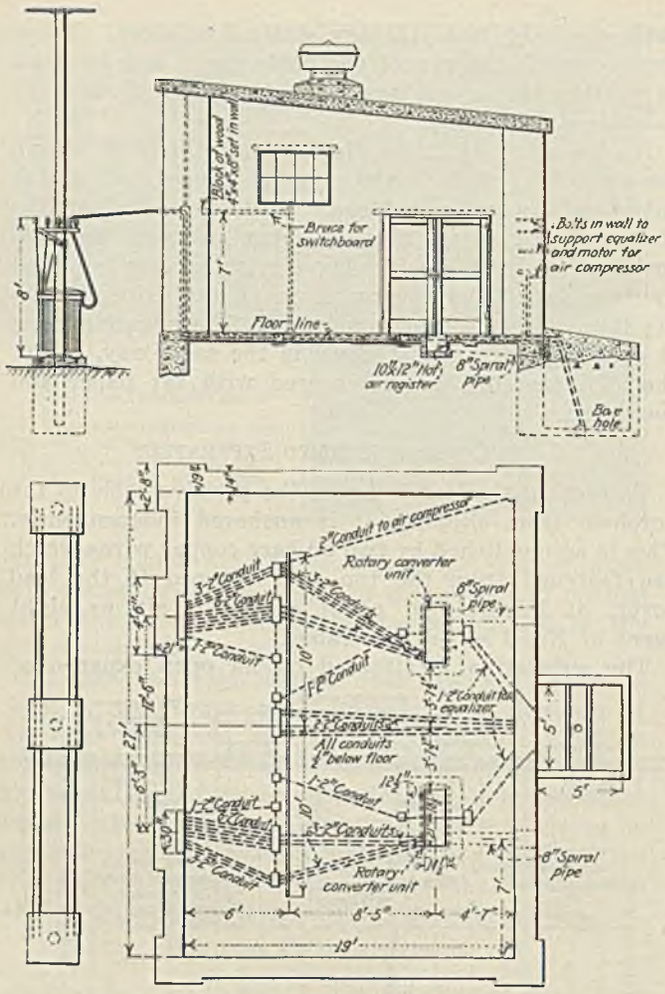


Fig. 7—Tower, Pit and Conduit Layout

small air compressor and a suitable length of hose are provided.

This station was put into operation in February, 1922, and has been running continuously ever since. No major trouble has been experienced with it. Its performance has been satisfactory and economical, proving that such an installation, even under difficult conditions of control, is entirely practicable.

How Car Couplings Should Be Forged

To forge safe mine-car couplings and, in fact, to make any forging whether of bar iron or mild steel, care must be taken to work the material at a "blue heat," avoiding higher temperatures, for fear of overheating or burning, and shunning low temperatures, because working the material when cold results in deformation of the crystalline structure.

The maximum safe temperature for forging is 1,200 deg. C. Work above this temperature, according to W. R. Jones, University College, Cardiff, Wales, in an article on "D-Links for Colliery Tram-Shackles" read before the South Wales Institute of Engineers at Cardiff, Feb. 19, is attended with grave risk, as the best material if overheated loses its useful properties, resulting in the production of an "unsafe" shackle (car coupling). An experienced workman realizes the danger. Any forging or material which has been heated above the safe temperature must be discarded. Further, if steel or iron is too hot it does not retain enough of its tensile strength and becomes too plastic, and will not withstand the blows of the hammer.

Mr. Jones declared he had found a coupling that had a fault of this kind. On examination is seemed to have been perfectly made, but it failed at little over half the proof-load. Examination under the microscope revealed overheating. Consider the result of putting this shackle in use. It might last for some time, as the proofload is well over that generally sustained in practice. Sooner or later, however, the shackle might have to take a small increase in stress, such as it could withstand if well made. With, however, this defect in manufacture, it would fail, with disastrous results.

At blue heat (316 to 370 deg. C.) iron is in its state of minimum plasticity, and forging in this range of temperature is exceedingly dangerous. The blows of the hammer will not penetrate the mass and internal stresses are induced. These stresses may locally attain to such a magnitude that incipient rupture may be produced in many of the grains, those nearest the surface becoming partially detached or loosened; a crack may thus be formed which will easily propagate, causing failure of the shackle. One blow may be sufficient to complete the manufacture, but a blow given when the material is in this range of temperature may have a damaging effect.

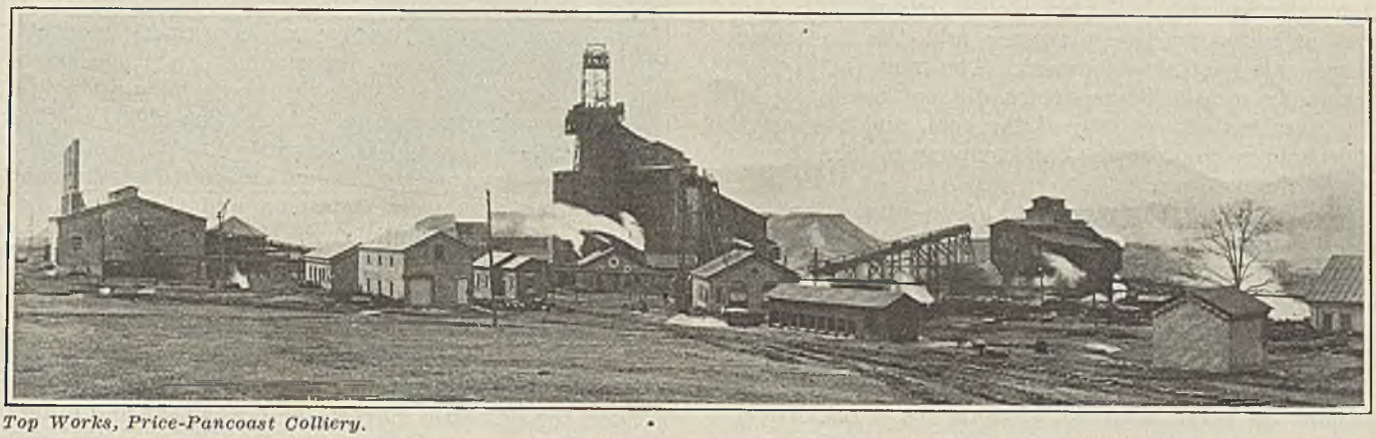
The correct finishing temperature is of importance, and, for practical purposes the limiting temperature may be taken as about 700 deg. C. By cold-working is meant working at a temperature below that at which recrystallization of the metal rapidly takes place. If a metal is worked below this temperature its crystals are distorted, the deformation being partly permanent, involving an increase in hardness (strain-hardening), and partly elastic and therefore accompanied by internal stress. Forgings which have been subjected to a small degree of strain-hardening have their tenacity increased, but shackles so treated should not be put on the market or into service.

The mistakes to avoid in the forging of mine-car-couplings are briefly these:

1. Commencing at too high a temperature, with its risk of overheating and burning.
2. Finishing at too low a temperature, with its risk of cold-working resulting in strain-hardness.
3. Excessive deformation, resulting in the formation of cracks.
4. Insufficient forging. The size of the bar should be such that the forging cannot be brought to the desired dimensions without a proper working of the material. If the piece is not sufficently forged, or if the force of the blows is too light, or there is not equal distribution of the force of the blows, the work does not "penetrate" to the center of the forging and the material is not efficiently worked throughout. The result is that, although the exterior is in a proper condition, the interior possesses a coarse structure due to excessive crystal growth.
5. Hammering in scale. The bar should be "clean" and the fire should be carefully watched. These precautions are necessary to prevent hammering into the forgings oxide scale and any dirt, with resulting surface defects.

It is always desirable that a forging should be completed in as few heats as possible. As far as possible all the essential parts of the plant should be close together to minimize the loss of time and undue loss of heat occasioned by unnecessary transportation of the hot metal.

Service Idea Should Dominate Campaign to Sell Buckwheat Coal as Domestic Fuel



Top Works, Price-Pancoast Colliery.

Top-Notch Preparation at Breakers First Step in Merchandising Small Sizes to Householder—Plan Advertising to Back Up Work of Retail Merchants

By Sydney A. Hale
Special Contributor, *Coal Age*,
New York City

IF THE ANTHRACITE PRODUCERS are to capitalize the potentialities of the domestic market for No. 1 buckwheat, they must be ready to service the consumer. As in the case of pea coal, they must first sell themselves upon the merits of their product from the consumer's—not the producer's—standpoint and they must at all times be ready to back up their enthusiasm with a product which represents the last word in careful preparation.

Dirty coal will not go. High-ash coal will not be accepted by the householder with the same indifference with which it has been received in some industrial power plants. The heat he feels in the house and the ashes he takes out of the ash-pit are the yardsticks by which the consumer measures the efficiency and the economy of the fuel he is burning.

The merchandising problem, therefore, is not one which the sales department can solve alone. The problem begins back at the mines and calls for the wholehearted co-operation of the operating personnel, the skill of the engineer and inventive mechanical genius all working toward the shipment of high grade, properly prepared coal. An ash-free fuel is beyond our present dreams. A coal which is clean, reasonably free from slate and bone and is uniformly sized is not.

If the coal leaves the breakers in first-class condition, the public will know where to place the blame if deliveries made to the consumer are below standard. A sound merchandising campaign will offer pea and No. 1 buckwheat as superior, not inferior, fuels. Such a campaign cannot succeed unless the preparation squares with the promised specifications. In a number of cases it has not.

NOTE—Seventh of a series of articles on the merchandising problems of the anthracite industry. Preceding articles in this series appeared in the issues of April 2, 9, 16, 23 and 30, and May 7.

The producing branch of the industry will gain nothing by promoting the use of special combustion equipment to burn No. 1 buckwheat if the manner in which the coal is prepared is such that the manufacturers of that equipment recommend another size. That very thing has actually happened. There is one section of New York state which should, and does, offer a big market for magazine-feed boilers, but development of that market is being impeded because the retail coal men there are discouraging the use of No. 1 buckwheat both by words and by the quality of fuel they deliver.

MANUFACTURERS WILL DEFEND PRODUCT

The manufacturers of heating equipment specially designed for the efficient combustion of No. 1 buckwheat may be expected to stand up for their product—even if the defense takes the form of an attack upon the preparation of the coal normally burned. They have no other recourse. The counter attack will hit the retailer first; but, if the fault is not his, it will eventually reach the producer of the coal. It is good business, therefore, for the producers to impress upon retail agencies the importance of handling only clean, low-ash, properly prepared coal. It follows, naturally, that the producer who gives such advice will not ship the retailer a coal which does not meet these requirements.

If the producer is so short-sighted that he does not recognize the necessity for maintaining a high standard of preparation or the retailer is so indifferent or so greedy that he is willing to deal in "cats and dogs," the zeal of the manufacturer anxious to protect the reputation of his equipment will apply the proper corrective.

This was strikingly illustrated by an incident which occurred in one of the largest cities of the country. A retail company, handling a substantial volume of

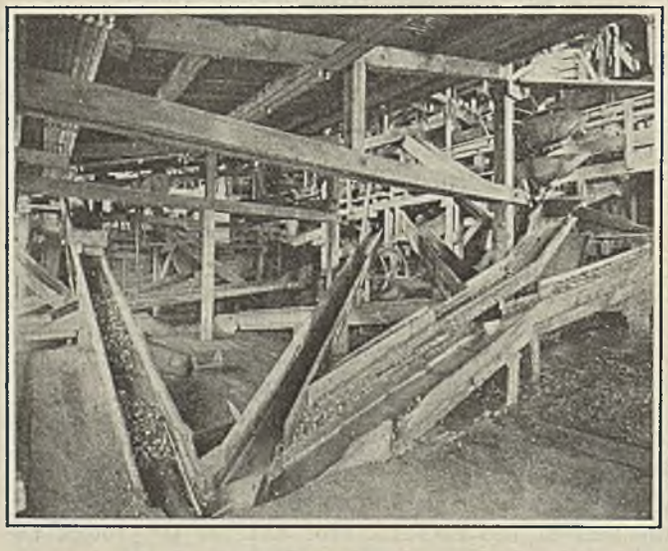
business, had been enjoying a good trade with householders who had had magazine-feed plants installed. Its purchasing policy, however, did not always look beyond the dollar paid out and the cheapest source of supply sometimes received as much consideration as the producer who took a pride in quality and preparation. Buckwheat coal that would not carry the load was delivered to the consumer and the householder blamed his heating equipment. The manufacturer was not ready to take blame which did not belong to him. He investigated, condemned the coal, and advised the householders to order the coal company to take the stuff out of their cellars.

The sequel to that action is rich in suggestion. The retail company found the experience costly and sought a truce with the belligerent manufacturer and a means to recover lost business. The manufacturer was ready and willing "to cease firing" if the retailer would purchase and deliver coal which would carry the load in the heating plant. This was done. To recover lost ground the retail company gave its No. 1 buckwheat a trade name, watched its preparation carefully, advertised it liberally—and sold the coal at 50c. a ton above the prevailing retail price in that community.

Different Sales Methods Needed

Emphasis has been placed upon the magazine-feed equipment because its installation is the strongest weapon the anthracite industry can have at the present time in the fight to check the inroads of competitive fuels. This does not mean, however, that the campaign to increase the use of No. 1 buckwheat in existing domestic heating plants should be subordinated or abandoned. But the sales approach will be different for the two classes of prospects.

In cultivating the market created by the installation of magazine-feed heaters, a general publicity campaign, launched co-operatively, perhaps, with the manufacturers of such equipment, offers attractive possibilities. Intensification of the work already started with architects and building contractors is also in line. How far the industry might be able to persuade the various associations of building materials manufacturers, who are using national advertising to comb the field of prospective home-builders, to tie in their campaigns with that of the hard coal trade is another subject meriting investigation. Direct co-operation between the producer, the retailer, the architect, building contractors and heating equipment manufacturers is still very much in its infancy.



Clean-Up Floor, Silver Creek Breaker

"Preparation's the thing" these days when the struggle to sell domestic coal output is a real one. The hard coal region takes a natural pride in establishing a system of cleaning and grading that has made anthracite sizes the standards of comparison—but even in northeastern Pennsylvania they're watching preparation closer. Coal "as is" doesn't get very far.

A national campaign to persuade consumers to substitute, but without change of equipment, No. 1 buckwheat for a part of the coal they are now burning would hardly be warranted at the present time. The cost of waste circulation would be too heavy. More effective work can be done with the same expenditure of money by educating producers' salesmen and the retail distributor on the possibilities of No. 1 buckwheat, and through localized advertising.

Co-operate with Active Retailers

Even more so that in the case of pea coal, there are retail distributors who are making a genuine effort to broaden the domestic market for buckwheat and others whose efforts are half-hearted. However, many retail coal men are secretly or openly hostile to the movement. For these reasons, it would be worth while to consider special co-operation with the retailers ready and willing to carry their part of the load.

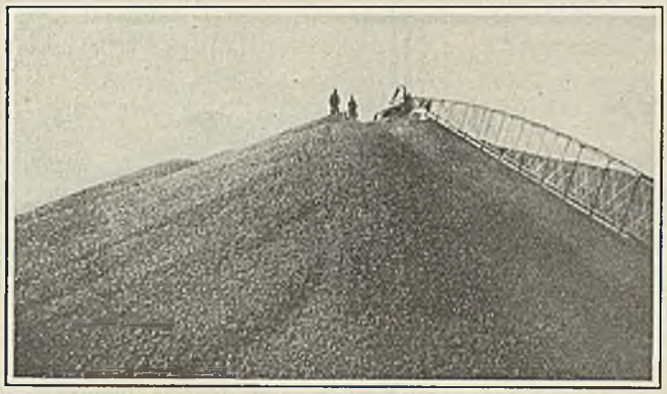
If the Jones Coal Co. of Jonesville is an active institution, it would pay the producing company from which it purchased the greater part of its tonnage to work with the Jones company in preparing local newspaper copy featuring the advantages of No. 1 buckwheat and to bear a substantial proportion of the advertising bill in the local newspapers in the community served by the Jones company. In larger communities, where there were several dealers pushing the small sizes, co-operative advertising, the expense of which would be shared by the retailers and their sources of supply, could be done upon a broad scale. The effect upon the backward dealers would not be difficult to visualize.

It is not suggested that this form of advertising support be continued indefinitely. Once the wide-awake retailers were convinced that such publicity was profitable to them they would be willing to bear their own advertising burdens. Having established buckwheat merchandising and advertising on a proper basis in one community, the work could be repeated in another. Such a campaign would give an opportunity for a study of local conditions and would test the most effective methods of approach in a way that would be impossible with a national campaign.

Long Campaign Necessary

Even with such a campaign it will be necessary to work hard, long and patiently to obtain results. The various forms of consumer resistance impeding the free movement of pea coal (*Coal Age*, April 16, p. 567; April 23, p. 613) will be interposed against No. 1 buckwheat with still greater force. A careful selection of prospects for personal solicitation will have to be made. The results already achieved by some distributors, however, demonstrate that "the game is worth the candle."

One of the outstanding successes in this line is the United Ice & Coal Co., of Harrisburg, Pa. This company has been a consistent and a persistent advertiser both in the newspapers and by direct mail. The campaign began back in 1914 and "our sales of buckwheat for domestic purposes," says M. R. Miller, sales man-



To Store or Not to Store

Anthracite producers with storage facilities accept the storing of steam sizes as a matter of course. But when steady operation of the mines means placing quantities of domestic sizes in stock piles, such as the one in the vicinity of Scranton shown in this illustration, the problem of merchandising becomes uncomfortable.

ager, "have shown an annual increase per year since the first appearance of these advertisements. During the last two years these sales have averaged about 11 per cent of our total tonnage.

Campaign for Buckwheat Succeeds

"Back in the war days when it became evident that domestic sizes of anthracite could not be obtained in sufficient quantities to meet the demand, we decided to put some emphasis on No. 1 buckwheat because we had determined that it could be used with good results when mixed with the larger sizes. Immediately following the resumption of mining after the five months' strike in 1922, we put on a campaign for buckwheat in the daily papers, advertisements appearing twice each week. When cold weather came that year, we had the buckwheat idea fairly well sold and it was not a very difficult task to induce people to buy a portion of buckwheat coal.

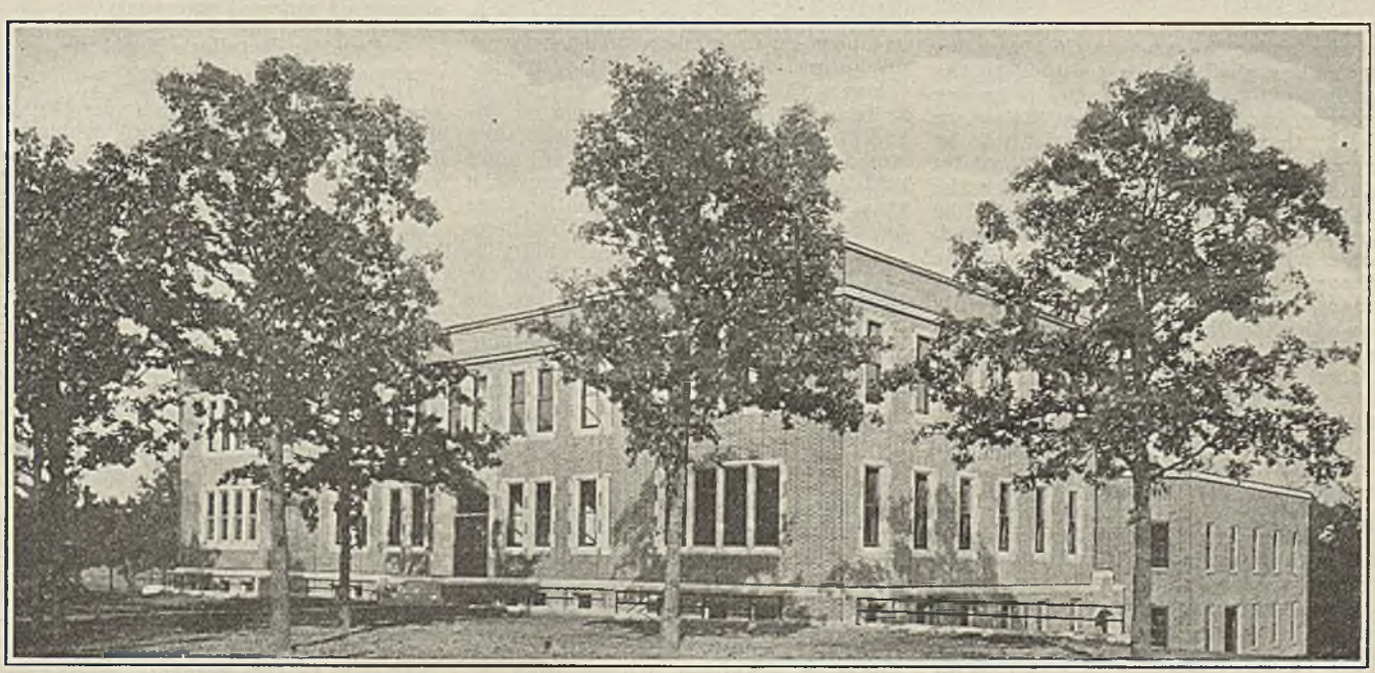
"Before the winter of 1922-1923 had gone, we were applying 50 per cent buckwheat to all orders for larger sizes. Of course, there were some serious objections to the coal, but, since the householders could not get their favorite sizes from any other source in Harrisburg, they accepted the mixtures, and, strange to relate, since that time many householders have continued using No. 1 buckwheat."

Even Rice and Barley Can Be Sold

In this particular case, the retail distributor has gone a step farther than advocated by the producers. This company is also selling rice and barley to the domestic consumer. For pea and No. 1 buckwheat it recommends natural-draft; for rice and barley, forced-draft. Forced-draft, it contends, it not satisfactory for No. 1 buckwheat because it effects a too rapid combustion. The conditions which brought about the company's entrance into the rice and barley market, however, were unusual and peculiar. Harrisburg is on the Susquehanna River and a center of dredging operations. River coal recovered in that territory is sold to power plants at from $1.50 to $2.50 per gross ton, delivered. River coal for domestic consumption is offered at about $3.50. There are, it is estimated, approximately 3,000 homes in Harrisburg equipped with forced-draft appliances: the market was too tempting to ignore.

Not every company that has taken up the movement of No. 1 buckwheat has been as successful in widening the domestic market for that size as this Harrisburg distributor. Far from it. And few companies have devoted the time, the thought, the effort, and the money in seeking to work out an answer to this merchandising problem.

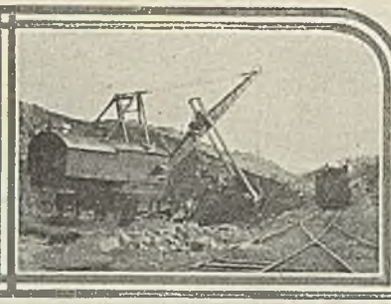
The interesting—and significant—fact which sticks out in a survey of the question from the standpoint of the retailer is this: Even in the cases where the retailer has been frankly disgusted with the outlook, he admits that any advertising he has done has had some beneficial effect. With such testimony, who can doubt what intelligent persistency will achieve?



Missouri Trains Some Men in Coal Mining in This Building

The photograph shows the mining experiment station of the Missouri School of Mines and Metallurgy at Rolla. The school offers its students a special course in coal mining methods and coal mining machinery, winding up with some field observation in Missouri and Illinois mines. The school lays especial emphasis, however, on metal mining. It has an experimental mine nearby.

News Of the Industry



Coal Retailers, in Convention, Line Up Against Oddie Bill

Urge U. S. Chamber of Commerce to Oppose Measure—Heavy Expense and Unjust Discrimination Charged Against Scheme—Object to Supplying Statistics

Outspoken "opposition to the enactment of such federal legislation as the Oddie bill and its amendment proposing the establishment of a Department of Mines with a Bureau of Coal Economics" was voiced by the National Retail Coal Merchants' Association at the closing session of its eighth annual convention, held at the Hotel Traymore, Atlantic City, N. J., May 11-14. The association, which is a member of the Chamber of Commerce of the United States, urged that organization to line up against the bill because:

"(1) The creation of an additional department of the federal government with the proposed bureau will place the mining industry, and particularly the coal industry, under bureaucratic control, involving the government in tremendous expense, without accomplishing any useful purpose.

"(2) To single out the coal industry for federal regulation and control is unjust to the coal industry, discriminatory and unwarranted.

"(3) While the proposed legislation provides for the gathering of coal statistics under the promise that such information shall not be revealed to the public, excepting such statistics as are general in their nature, nevertheless we hold that business should not be required to divulge its private affairs to government agents, even under the promise that such information will be held secret, because from our experience with the publicity feature of the income tax law we can have no permanent confidence in either the ability or the willingness of government bureaus to keep such information secret."

Stephens Against Compromise

In seconding the adoption of the resolution, Roderick Stephens, chairman, committee on government relations, referred to the frequent statements that Senator Oddie was a friend of the mining industry and offered his bill in a friendly spirit. "There should be no compromise on the principles involved in our stand," declared Mr. Stephens, "whether these proposals emanate from those who call themselves our friends or our enemies."

Other resolutions adopted urged continued co-operation between the retailers and the anthracite producers, called upon the trades relations committee to make a study of shrinkage of weight in transit and endeavor to obtain uniformity in reweighing practices and charges and a resumption of the practice of reweighing all coal at tidewater loading piers; made it the sense of the convention that all retailers should "compile comparative costs of doing business from year to year, using extreme care to include in such costs the costs of shrinkage and degradation." The convention also decided to ask C. P. White, chief of the coal division, Department of Commerce, to issue a statement impressing upon the consumer the advisability of spring and summer buying. The practice of some dealers who rescreen coal to remove all undersize was condemned. The convention went on record as favoring the continuation of the traveling anthracite economy exhibit for another year.

Retailer Must Sell Consumer

G. N. Snider, general manager, Dickson & Eddy, in his talk at the Tuesday luncheon, spoke of the progress that had been made in co-operation between producers and retailers. He sympathized with the view that it was unwise to force the smaller sizes upon an unwilling trade or in places where they would displace the larger and more profitable sizes. There was, however, a real, definite field for the smaller sizes as a complementary fuel. He mentioned particularly their desirability in late spring and early fall. While the producers stood back of the dealers, the actual job of selling the consumer, he said, was up to the retail coal merchant.

Congressman Manlove, in his address at the Tuesday night banquet, told the delegates that the oil scandals had deflected public attention from the coal industry, but once they were out of the way there would be a demand for coal legislation. The industry must be prepared to meet it. The Oddie bill, in particular, would receive serious consideration. Senator Oddie, he asserted, was friendly to the industry and offered his measure in a spirit of helpfulness.

David Knickerbocker Boyd, past president, National Association of Architects, discussed the question of "Designing and Planning for Home Heating Economies" at the Wednesday meeting. He emphasized the importance of proper flue and draft conditions. Many houses, he said, were constructed with little more than a pipe-vent to carry off gases. This vent passed through wooden sheathing. When a change was made to coal, the alleged "flue" frequently caused fires. C. A. Connell, combustion engineer, Anthracite Economies Show Co., discussed some of the experiences met with in combating oil competition.

W. R. Feuquay reported on the Fort Worth meeting of the American Petroleum Institute last December. The oil people, he said, spoke much of the virtues of their fuel, but little of the troubles met with in the operation of the burners. According to the oil men about 1.5 per cent of all the homes of the country are now heated by oil, but they hoped to increase this to 12 per cent. W. W. Griffith thought the coal men made a mistake and gave oil competition an advantage when they urged consumers to buy early to avoid a shortage; he felt that the coal trade should emphasize that coal was always available.

Harry L. Gandy, secretary, National Coal Association, closed the day's business session with an address on salesmanship. The luncheon speaker was Noah H. Swayne, 2d, former president, American Wholesale Coal Association, who saw in the recent elections here and abroad a return to sanity and an augury of renewed prosperity.

Consider Retailer's Problems

The greater part of the Thursday session was taken up with a round-table discussion of intimate retail problems. Delegates gave their experiences in meeting oil competition and their reactions to the campaign to sell pea and No. 1 buckwheat to the householder. Considerable division of opinion as to the merits of that campaign developed. Those who questioned it held that pushing these sizes hurt the sale of the larger coals. One man advocated confining the sales efforts to new buildings. Another delegate expressed the opinion that the steam business in these sizes should be handled by the retailers and not, as at present, direct by the shipping companies. "If we must handle some of the small coal, let's handle all of it," said the speaker.

The combustion engineer was hailed as a real aid to the industry. In one or two cases retailers announced that they were training members of their sales forces to become experts in the principles of combustion.

Sales policies of Eastern coke ovens were criticized. The grievance was that many of these ovens would sell to anybody, instead of confining their mer-

Better to Hold Customer Than Regain One

Harry L. Gandy, executive secretary, National Coal Association, speaking on "Salesmanship" at the annual meeting of the National Retail Coal Merchants' Association, Atlantic City, N. J., May 13, 1925, said that " 'They Knew What They Wanted,' the title of the play which recently won the Pulitzer Prize for the best 1924 production, expresses a situation different from that which exists in the fuel trade, in which the customers do not always know what they want. And it's up to the retail coal dealer, with the aid of the operator, to inform them.

"In America almost anything can be sold—once—and hence, although it is very probable the retail coal dealer will eventually recover much, if not all, of the trade he has lost to other fuels, it is disastrously true that in the meantime he suffers, and suffers to the last degree, because his erstwhile customer fights against discarding costly equipment even in the face of unbearable fuel costs.

"It is better business to hold a customer than to regain one. This means hard and systematic work, a careful survey and study of the local field and a thoroughly organized and efficiently conducted campaign of education. It should be of as personal a character as possible, a house-to-house canvass—evenings, if necessary, when the so-called head of the house is at home. Sell coal now, and with full bins your customer will be immune from other sales talk."

chandising to regular retail channels. At the same time it was freely admitted that the coke ovens were leaders in servicing, but their sales methods were contrasted, unfavorably, with those of the Middle Western plants.

The organization adopted unanimously the report of its nominating committee and elected the following officers:

Samuel B. Crowell, Philadelphia, president; Marshall E. Keig, Chicago; J. Maury Dove, Jr., Washington; W. A. Clark, Boston; Thomas Micklehame, Toledo; C. B. Staats, Albany, and F. W. Schermes, Kansas City, Mo., vice-presidents; R. J. Wulff, Brooklyn, treasurer.

As a mark of appreciation, members of the association presented Mr. Crowell, who has served two terms as president, with a Peerless sedan.

The Consolidation Coal Co. has passed its April quarterly dividend, which has been $1.50 on each share of common stock. President C. W. Watson of the company said: "It has not been possible to reduce expenses comparable to the decline in coal prices. We believe the wisest course is to conserve our resources. By so doing, I believe, we are placing our company in a position to profit quickly by any recovery in the industry."

D. & H. Approves Plan to Segregate Coal Holdings

Stockholders of the Delaware & Hudson Co. at their annual meeting held in New York City, May 12, approved the recommendation of the board of managers to transfer the company's coal properties to a new corporation or corporations, all of whose stock shall be owned by the Delaware & Hudson. The method of transfer is to be worked out by the board, which was given authority to proceed when and how they see fit. The board of managers was re-elected for the ensuing year.

There are 425,030 shares of Delaware & Hudson capital stock outstanding, and of this total 337,212 were voted at the meeting in favor of authorizing the disposition of the coal properties. More than 79 per cent of the outstanding stock thus voted to segregate the coal properties, much more than the two-thirds vote necessary under the company's charter.

During the discussions a representative from the territory between Carbondale and Wilkes-Barre suggested that the company offer its employees an opportunity to subscribe to stock on the instalment plan, thus providing an antidote for the propaganda of labor agitators.

Mr. Loree again denied that there was any real significance in the action of separating the coal properties from the railroad other than the desire to provide greater flexibility. Regarding his plans for consolidations he continued to maintain silence.

Burns Bros. May Adopt New Policy and Add 5 Directors

It is likely that several new directors will be added to the board of the Burns Brothers Coal Co., New York City, at its meeting next month, according to a letter sent last week to stockholders by a group of individuals controlling a large block of the stock. The letter, it was stated, was sent out with the knowledge of the existing management, and it was stated that there was no intention to bring about any drastic change in the executive staff.

Frank L. Burns, it is understood, will continue as president, the new directors merely co-operating in the management.

Those expected to be elected directors are A. T. Holley, W. J. Wason, Jr., W. T. Payne, S. M. Schatzkin and S. A. Wertheim, who with Max I. Schallek, signed the letter to stockholders announcing the proposed changes and requesting their co-operation. Some of the proposed new directors have offered to sever existing business connections to devote all their time to the business of building up the Burns Brothers organization, and sell the properties they now control to Burns Brothers.

Mr. Schatzkin formerly was a vice-president of the Burns company. Mr. Wertheim is president of the Wyoming Valley Coal Co. and the Steamship Fuel Co. He has offered to sell the assets, property and good will of these two companies to Burns Brothers for a "fair, reasonable and equitable consideration."

High Court Reaffirms Award To Coal Company

The judgment of the Circuit Court of Appeals awarding $27,264 to Dexter & Carpenter, Inc., in its suit against the Director General of Railroads was affirmed by the U. S. Supreme Court on May 11. No formal opinion was issued. The case arose over the payment of coal confiscated by the railroads during the régime of Director General Hines. Settlement was offered the plaintiff on the basis of the price which it had paid for the coal; the coal company insisted on compensation based upon the price at which it had contracted to sell the coal to its customers. The Director General settled on the basis of the mine purchase price without prejudice to the rights of the complainant. The coal company sued for the difference and was awarded judgment.

Bids Opened by Marine Corps Show Wide Price Range

Bids for the supply of 38,000 tons of bituminous coal, for delivery during the fiscal year beginning July 1 next, were opened May 15 by the Quartermaster, U. S. Marine Corps. Thirty proposals were received showing a wide variation in price, due to the fact that specifications of the coal desired were not stated.

Bids for 3,500 tons run of mine for delivery at the Philadelphia Navy Yard ranged from $1.40 to $2.50 f.o.b. mines, the lower price being that of the R. M. Davis Coal Co., Morgantown, W. Va.

Four thousand tons mine-run for delivery at Quantico, Va., were given a low bid of $1.50 f.o.b. mines by the R. M. Davis company. The highest was $2.14 f.o.b. mines.

The proposals for 6,000 tons domestic egg size, also for delivery at Quantico, again resulted in the lowest bid being that of the R. M. Davis company at $1.65 f.o.b. mines, from which price bids ranged to $3.50 f.o.b. mines.

The Chesapeake & Virginian Coal Co. submitted the lowest bid for 20,000 tons run of mine for delivery at Paris Island. Its figure was $1.45 f.o.b. mines. The highest bid was $2 f.o.b. mines.

The Chesapeake & Virginian company also made the lowest proposal for 4,000 tons domestic egg size for delivery at Paris Island, with a price of $1.74 f.o.b. mines as against $3.50, the highest figure asked.

Coal River Wage Conference Set for May 22

Representatives of the Coal River Collieries Co. and the United Mine Workers will meet in Huntington May 22 for their next conference in the dispute over the Jacksonville wage agreement, according to an announcement by J. T. Dunigan, president and general manager of the company. The decision to meet May 22 followed a recent conference, after which Mr. Dunigan announced that "progress had been made." He and C. C. Huffman, sales manager, represented the company, and Percy Tetlow, acting president of District 17, and G. W. Thompson, secretary, represented the union at the conference.

Sees Industry Mechanized More Intensely in America

Addressing the members of the National Industrial Conference Board in New York, May 14, Magnus W. Alexander, president of the board, in reviewing the American economic situation, declared that we are at a turning point in our economic development and at the beginning of a new and different era.

Mr. Alexander spoke at the dinner closing the ninth annual meeting of the board, during which was reviewed the studies made during the past year on the cost of living, wage rates, relation of inter-ally debts to the American taxpayer and American industry and engineering education in relation to industry. The following officers were re-elected: Chairman, Frederick P. Fish, of Fish, Richardson & Neave, Boston; vice-chairmen, Loyall A. Osborne, president of Westinghouse Electric International Co., New York, and John W. O'Leary, president of Arthur J. O'Leary & Son Co., Chicago; treasurer, Fred I. Kent, vice-president of the Bankers Trust Co., New York; president, Magnus W. Alexander, New York.

The new immigration law marked a breach with the past, Mr. Alexander said. From approximately 1,000,000 immigrants a year which arrived during the decade preceding the war, the influx of aliens now has been reduced to about 168,000 in 1924. The immediate effect, he said, is the introduction of a factor making for stabilization of our population.

One effect of restricted immigration already felt by industry, he declared, was the sustained high wage level, similar to the effect of a high tariff on manufactured goods. Actual money wages in the industries are now 116 per cent above what they were before the war, and, even allowing for the decline in the purchasing power of the dollar, assuming that the same standard of living still prevailed as existed in 1914, the wage earner today is now about 30 per cent better off than he was even at the peak of the wage level in 1920.

That despite poor business conditions in 1924 there was no general tendency to reduce wages, Mr. Alexander declared, is a striking commentary on the new attitude of American industrial managers toward the wage earners and promises a future of relative industrial peace.

John Wesley Peale

Died May 7 in New York City, as announced in *Coal Age* last week. He was a son of the late S. R. Peale and a brother of Rembrandt Peale, president of Peale, Peacock & Kerr. The late Mr. Peale was associated with Peale, Peacock & Kerr for more than 35 years as head of their anthracite department and was generally considered one of the best informed anthracite men in the coal trade.

Greater productive efficiency, due to greater mechanization of industry and increased managerial efficiency, Mr. Alexander said, had marked the last few years, partly induced by the lack of the cheaper foreign labor, now rapidly being displaced by machine power. The future, he believes, will see a more intensely mechanized industry and still greater increase in managerial efficiency.

Another outstanding phase of the present time, acording to the speaker, is the resumption of the combination and consolidation movement. While in the past, he said, the potency of "combines" for evil was primarily emphasized, today consolidation is recognized for its potency for economic good.

Canadian railways have announced that on June 1 they will no longer exact freight prepayment on coal to that territory. This regulation was first made when Canadian money was at a discount here and it has been kept on ever since, in spite of protests on the part of shippers.

C. & O. Plans Additions and Improvements

Extensive improvements have been outlined by the Chesapeake & Ohio Ry., according to announcements May 10. Application has been made to the Interstate Commerce Commission for permission to construct 47.3 miles of new line between Gilbert and Mullens and eight miles between Stone Coal and Mullens, W. Va.

Improvements to cost $143,100 are to be made at Russell and at Seth, in Boone County. The Russell program contemplates replacement of a 150-ton track scale on the new hump with a 400-ton fulcrum base, to cost $36,100, and replacement of a similar scale on the south side of the old hump with a 2-ft. elevation in the tracks, to cost $41,400.

At Seth a passing siding to hold 110 cars will be constructed at an expenditure of $65,600. It is at Seth that one of the principal mines of the Coal River Collieries Co. is located, and the improvement will permit wide expansion in the coal operations, the road having been handicapped in the past by lack of proper siding facilities there.

At present the Guyan Valley division has its terminal at Gilbert, in Mingo County. The route of the proposed new line to Mullens will follow the Guyan River across Wyoming County and into Raleigh County. The eight mile line to link Stone Coal will connect up the Winding Gulf field, Stone Coal being the present terminal, and will afford a western outlet for these mines.

The total output of coal in British mines in the year 1924, according to advance figures just received by the Bankers Trust Co. of New York through its British information service, was 267,000,000 tons, compared with 276,000,000 tons in the previous year and with 287,329,000 tons in 1913. Of the total output of 1924, 25.8 per cent was exported, 6.7 per cent was shipped for use of steamers engaged in the foreign trade and 67.5 per cent was consumed at home, including coal shipped for the use of vessels engaged in the coastwise trade. The corresponding percentages for 1923 were 32.2, 6.6, and 61.2. At the close of 1924 there were 1,000,137 persons employed in connection with coal mining operations.

Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of April

(In Net Tons)

Ports	Railroads	1925 Cargo	1925 Fuel	1925 Total	1924 Cargo	1924 Fuel	1924 Total	1923 Cargo	1923 Fuel	1923 Total†
Toledo	Hocking Valley	739,538	21,879	761,417	449,041	12,390	461,431	112,013	3,622	115,635
	Big Four	138,101	.....	138,101	.....	.....	.....	.....	.....	.....
	N. Y. C.-Ohio Central Lines	64,280	6,204	70,484	4,505	227	4,732	57,039	1,609	58,648
Sandusky	Baltimore & Ohio	219,566	7,021	226,587	71,371	2,280	73,651	83,308	2,334	85,642
Huron	Pennsylvania	246,473	7,267	253,740	35,123	909	36,032	84,589	2,271	86,860
Lorain	Wheeling & Lake Erie	115,037	5,056	120,093	81,668	3,188	84,856	54,546	2,190	56,736
Cleveland	Baltimore & Ohio	21,848	10,308	32,156	42,739	7,976	50,715	126,999	10,901	137,900
	Pennsylvania	5,870	8,796	14,666	19,887	6,271	26,158	96,309	3,824	100,133
Fairport	Erie	16,544	933	17,477	14,315	555	14,870	74,251	4,602	78,853
Ashtabula	Baltimore & Ohio	13,037	6,187	19,224	7,921	3,595	11,516	22,392	858	23,250
	New York Central	52,180	5,800	57,980	30,397	4,063	34,460	208,511	7,192	215,703
Conneaut	Pennsylvania	36,048	2,554	38,602	26,666	4,630	31,296	29,444	902	30,346
Erie	Bessemer & Lake Erie	19,683	9,935	29,618	101,272	8,475	109,747	137,381	3,730	141,111
	Pennsylvania	5,589	5,064	10,653	4,343	5,654	9,997	18,292	3,440	21,732
Total		1,693,794	97,004	1,790,798	889,248	60,213	949,461	1,105,074	47,475	1,152,549
Storage loading		†33,017	1,048	34,065	*182,060	4,940	187,000			

*Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.
†Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.
Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, Manager.

"Peaceful Persuasion" Upheld In West Virginia Strike

Writ of Error Denied—Action on New Injunction in Twenty Days—Telegram to Governor Called Fake—Many Pickets Arrested

In the federal court of northern West Virginia, in session at Wheeling, Judge W. E. Baker on Saturday, May 16, denied a writ of error from his decision of May 8, when he ruled on that "peaceful persuasion" of miners to join the union was not a violation of the modified injunction against officials of the United Mine Workers. He announced that he will take twenty days to consider the application of the West Virginia-Pittsburgh Coal Co. for a new injunction which seeks to make even "peaceful persuasion illegal."

Two hundred union men picketed Federal mine No. 1 of the New England Fuel & Transportation Co. early Saturday morning, May 16, and ten leaders were arrested, including Attorney Ulysses A. Knapp of the local counsel of the United Mine Workers. All the prisoners were held under $200 bail each on a charge of intimidation.

Telegram Starts Controversy

Another controversy developed May 16, when Fairmont officials of the United Mine Workers denied that they sent Governor Gore a telegram, which was simply signed, "The United Mine Workers" and no official's name was attached. The miners' union intimates that the telegram was a fake intended as propaganda.

The telegram sent to the Governor was as follows: "Can the Sheriff of Marion County stop men from picketing on the public highway? Answer at once." Governor Gore sent this wire and his answer to prosecuting Attorney M. W. Ogden as follows: "Your telegram May 15th. The Sheriff of Marion County has authority to take such action not inconsistent with the law as his judgment dictates or as he is directed by the proper authorities. The question of the Sheriff's right in any matter in the first instance is one for the court and not for the Governor."

Local union No. 4009 of Shinnston, Harrison County, it is alleged, sent a letter to the officials of the United Mine Workers saying that the members had withdrawn from the organization and that the seal, charter, books and property of the local were at the disposal of the international officers. J. E. Weeks and C. M. Vincent, former president and secretary, it is claimed, sent a letter to the Bethlehem Coal Co. absolving it from its contractual relations with the union, and the members are likewise released from it. A majority of the members of the local, it is said, signed the petition, which asked that Scott mines Nos. 1 and 2 be reopened on a reduced wage scale.

The union denies that a majority of the membership signed the petition, and points out that J. E. Weeks is a brother of the general manager of the coal company.

J. E. Watson, Jr., connected with the company, said that the company had received a letter from the local union, but that no definite plans had been made for reopening the mines. On the last payroll there were 51 men employed at the mine.

In the meantime a number of former members of the local union have obtained a charter organizing the Mountaineer Coal Miners' Association, a corporation through which they propose to deal with the Bethlehem Coal Co. for resuming work. The charter was signed by J. E. Weeks, former president; C. M. Vincent, former secretary; Roy Wilson, L. E. Seckman, E. J. Curry, W. H. Drummond, O. L. Whiteman and R. D. Burnett, all of Shinnston.

In an opinion on picketing expressed to the Marion County grand jury in Fairmont, May 12, Judge L. S. Schwenck reviewed legal opinions and concluded with the decision handed down by Chief Justice Taft in December, 1921, in which he said "a single group not exceeding, say, three persons in such group, may be stationed along or near the passageway to any mine for the purpose of doing picket duty in the manner hereinabove indicated."

Following Judge Schwenck's opinion, state police and county officers assembled early Wednesday morning May 13, at Grant Town, where Federal Mine No. 1 of the New England Fuel & Transportation Co., is working non-union, and arrested 138 marchers, including 11 women. A bond of $200 each was demanded of each marcher to await the action of the grand jury, except James L. Studdard and M. A. Teti, international representatives, who were held under $1,000 bail.

Miners Try to Fill Jails

Two hundred marchers were back at Grant Town Thursday, May 14, but the county officers arrested six leaders, instead of the group. This seemed to disappoint the union miners, who apparently were bent on filling all of the jail capacity in this part of northern West Virginia.

When arraigned, May 18, counsel for the 138 men and women arrested May 13, charged with violating the injunction forbidding picketing by groups of more than three, entered pleas of not guilty. The defense was granted a continuance until Friday morning to prepare an answer to the complaint.

In Rivesville wholesale arrests were made May 9, when the chief of police ordered 150 men to march to the Mayor's office. It was alleged that the men interfered with an officer in the discharge of his duties in attempting to make an arrest.

Six pickets were arrested May 18 at the Dakota mine of the Bethlehem Mines Corporation, charged with intimidation.

The miners have contended that the Governor has allowed them to march as long as they are unarmed. Apparently this is being carried out, as the state police in Fairmont are unwilling to comment on the matter, but are ready to meet all emergencies.

John Billy, former secretary of the Wendel local union of the United Mine Workers, has confessed to burning down the tipple of the Gordie-Bailey-Fahey Coal Co. at Wendel and he implicates Frank Tigniallo, president of the same local union, and Matt Vucovich, a member of the local union.

Billy said that he and a few others were told by union organizers to stop the operation of the mines at Wendel by any means necessary.

In his confession, it is alleged, Billy told of a proposal to hide explosives in a mine car, covering it with straw, so that when the car was dumped the next day an explosion would wreck the tipple, but Billy said he would not consent to kill men.

W. D. Van Horn, of Terre Haute, Ind., an international board member and a member of the international organization committee, was in the region this week.

During the first four days of last week the non-union mines of the 12½ counties of northern West Virginia produced 4,114 cars of coal, while union mines loaded 618 cars. The peak daily non-union loading was 1,089 cars on May 14. The peak of union tonnage was 185 cars, loaded the same day. There were 144 non-union mines at work daily on the average. With 10 union operations at work Thursday there was more activity in union camps than at any time since April 20.

The Cleveland-Morgantown Coal Co. of the Pursglove interests, of Cleveland, resumed work at Mine 4 along Scotts Run on a union basis May 14 and within a few days mine No. 3, it is reported, will start. Others will resume later on a union basis.

Tridistrict Convention in Hard-Coal Field June 29

A tridistrict convention of anthracite miners has been called by Enoch Williams, secretary of District No. 1, United Mine Workers, to be held in Town Hall, Scranton, Pa., on Monday, June 29, at 10 a.m.. Representatives will be present from districts Nos. 1, 7 and 9, United Mine Workers.

Action concerning conditions of employment to become effective at the expiration on Aug. 31 of the present agreement will be taken at the convention.

Stocks of coal in the hands of industrial consumers on April 1 were estimated at 45,669,000 tons by the National Association of Purchasing Agents. This compares with reserves of 48,766,000 tons on hand on March 1. During March, it is estimated 40,782,000 tons of coal was used in industry, or about 18 per cent less than in the corresponding month of the previous year. Of the firms reporting 32 per cent showed increased consumption; 54 per cent used less coal than in February and 14 per cent used about the same amount of coal.

Interesting Disclosures In Hearing on Indiana Co-operative Injunction

Miners working in co-operative mines, particularly in the Tecumseh mine in the Bicknell (Ind.) field, and their officials, both national and district, clashed May 13 in a hearing in federal court in Indianapolis, Ind., on the question as to whether a temporary injunction should be granted to prevent the union revoking charters of local unions where the miners entered the co-operative field.

While the court deferred a ruling until May 19, several interesting bits of evidence were offered during the hearing. In the first place it was apparent that this particular co-operative mine had lost only five days' work since it started about Feb. 1, while nearby mines were working only one and two days a week. It also developed in the testimony that miners working "for themselves," as it were, will do odd jobs about the mine that they would not think of doing if the mine were privately operated.

Immediately the hearing started the mine workers moved again for dismissal for lack of jurisdiction on the ground that William H. Howe, of Chicago, plaintiff in the case, and John L. Lewis, president of the mine workers, both live in the same state and there was no need of federal jurisdiction. This motion was laid over to form part of the argument.

The lease between the Panhandle Coal Co., former operators of the mine, and the East Side Coal Co., the co-operative organization, was read. It provided that the former operators sell sufficient coal to enable the miners' organization to work four days a week and hoist at least 900 tons of coal a day. Howe, the jobber in Chicago, according to his contract with the Panhandle, was to get 10c. a ton.

Mined 1,100 Tons Daily

William Kelley, financial secretary of the local union affected and secretary of the co-operative corporation, testified he was a charter member of the miners' organization, having mined coal 40 years. He said the Tecumseh mine under the new management mined about 1,100 tons of coal daily six days a week—had lost but three days in three months. He said miners were paid exactly at the rate provided in the Terre Haute agreement. On cross-examination it was brought out that the East Side Coal Co., though composed entirely of union miners, had no formal contract with the United Mine Workers.

Phil H. Penna, secretary of the Indiana Bituminous Coal Operators' Association, in testifying to production costs, said the average labor cost in a Fifth Vein mine in Indiana should be from $1.30 to $1.35 a ton, f.o.b. mine.

Wesley S. Harris, mine superintendent for the Panhandle Coal Co., said one reason for lower costs under the co-operative movement was that one man now was doing the work of two or three under the former management.

The defense put John L. Lewis on the stand first. He testified to his Illinois citizenship. He said in giving two days' work in cleaning up the mine preparatory to opening, the miners had violated the Terre Haute agreement in that they received no compensation. He declared an investigation had shown the overhead cost per ton was 22½c. and the day labor cost 25c. a ton and the cost of machine and loaders 96c. a ton, making a total of about $1.49, leaving only 1c. to provide supplies, insurance and other necessary costs, which he said was not sufficient.

He was asked on cross-examination if his investigations were entirely responsible for his actions in threatening to revoke charters of these miners. He said, in addition to his investigations, he had relied on statements of "operators and the public press." John Hessler, former president of District No. 11, testified that where the mine formerly had 19 jerrymen and timbermen, it now had none.

On rebuttal, James E. Quallis, one of the miners, told of a meeting in international headquarters, March 18, attended by representatives of the international and district unions and of the co-operative miners. At that time he said, each mine "was tried separately." He intimated that union officials did not give them time to explain the situation.

Before leaving the Federal Building the miners said they had no idea the mine would be reopened until the hearing had been decided, the miners not wanting to prejudice the union officials.

Pittsburgh Coal Co. Closes Last of Union Mines

Forest Hill mine of the Pittsburgh Coal Co., at Smithdale, Pa., was closed May 19, making a clean sweep of the company's union operations in the Pittsburgh district. Ocean No. 2 Mine, at Scott Haven, was closed May 15. At the peak of operations in 1923 the company had fifty-four mines working in the Pittsburgh district. Two weeks ago, when the company closed four mines, T. M. Dodson, vice-president in charge of operations, said in a letter to the mine workers affected that the company was endeavoring to bring about a change in conditions that would make it possible to continue working the mines, the principal change sought being a revival of the 1917 wage scale.

Federal Trade Commission Split on New Rules

Members of the Federal Trade Commission are at odds over new rules recently adopted concerning publicity in regard to cases before the commission. The trouble reached the stage this week where the two contending groups aired their views in the newspapers last Sunday.

One of the new rules provides that if firms complained of consent to abandon their alleged unfair practices, the charges against them shall be dropped by stipulation. Another rule provides that there shall be no detailed publicity of complaints involving cases so adjusted. A hint that the minority can be subjected to fine and imprisonment for giving publicity in cases in which it is forbidden by the majority is resented in the minority statement, which contends that the majority has no power to prevent any dissenting commissioner from giving his views to the public.

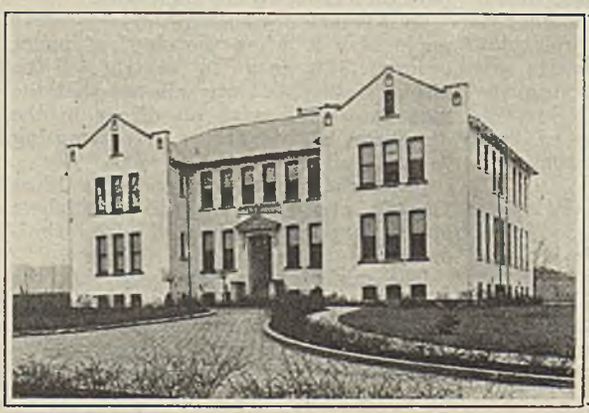
The differences in the commission have aroused interest among Senators and Representatives, and already there is talk, even by members of Congress sympathetic with the fundamental objects of the commission, of abolishing it or radically amending its functions.

Lined up on one side of the controversy are Vernon W. Van Fleet, chairman; Charles W. Hunt and former representative William E. Humphrey, of Washington, the newest member of the commission and President Coolidge's pre-conventional campaign manager in the West, forming the majority which put the new rules into effect. The opposing minority includes Huston Thompson, former chairman and close friend of President Wilson, and ex-Senator John F. Nugent, of Idaho.

The statement of the majority was written by Commissioner Humphrey, who says the changes made "have met with practically universal approval," adding that "the only protest so far has come from those who preach the doctrine that there is no honesty in the conduct of business of this country."

The dissenting opinion was written by Commissioner Nugent and concurred in by Commissioner Thompson.

The Army has undertaken a series of test flights in its dirigibles to determine the value of this method of transporting rescue crews to mine disasters. On the first of these flights H. Foster Bain, director of the Bureau of Mines, and T. T. Read, in charge of its safety division, were passengers.



St. Stanislaus Orphanage Edwardsville, Pa.

This institution, located in the anthracite region, provides a home for many children of deceased miners. Coal companies in the vicinity are generous contributors to its support, conspicuous among the number being the Kingston Coal Co.

Many Mines in Southwestern Field Drift Back to 1917 Scale

The drift back to the 1917 wage scale in the Henryetta (Okla.) field, predicted since midwinter, began with the reopening of the B. & A. mine by J. G. Puterbaugh, the week of May 4. This followed assurance by union leaders to county officials that there would be no violence. At the end of the first week after resuming work the mine, employing fifty men, was producing 170 tons of coal a day.

Mr. Puterbaugh also announced that other mines he controls would reopen under the same scale. These are the Greenwood Coal Co. and the Back Bone Coal Co., of Greenwood, Ark.; the Mammoth Vein Colliery Co., Hartford, Ark., and the Bernice Coal Co., Russellville, Ark. Cleaning up at these mines started the week after the announcement was made.

A couple of days after the opening of the B. & A. mine, the McAlester Colliery Co., operating the Kincaid mine in the Henryetta field, resumed work under the 1917 scale with thirty men, with a daily production of sixty tons.

The Crowe Coal Co. has withdrawn from the Southwestern Coal Operators' Association and has begun to clean up its Victoria mine No. 6, Henryetta. It expected to be working at least fifty men this week at the 1917 scale.

The 1917 scale provides $5 minimum for underground day labor, with $4.36 minimum for outside day labor. The 1924 scale is $7.50 for bottom day labor and $6.86 for top. The tonnage rate under the 1917 scale is 24c. less than under that of the three year contract signed in Kansas City, in May, 1924, which provided $1.82 a ton for pick mining, $1.02 a ton for loading after a machine, and 24c. a ton for cutting with a machine.

Seeks Help of International

Other operators are expected soon to follow the lead of the pioneers. In an effort to stop the movement of miners toward lower wages—and work—William Dalrymple, district president, United Mine Workers, called for help from the international. The call was answered by D. A. Franklin, an international organizer, and John P. White, former international president, who now represents the miners on the joint board, on which W. L. A. Johnson, commissioner of the Southwestern Interstate Coal Operators Association, is the operators' representative, and which constitutes a final court of appeal in disputes between union miners and members of the operators' association. Dalrymple, White and Franklin started a two weeks' speaking campaign through Oklahoma, which ended May 18. Their meetings are said to have been attended by large and enthusiastic audiences. Nevertheless the mines which reopened while the campaign was in progress had no difficulty in recruiting men.

Southwestern operators predict that next fall the only mines that will be able to work in Kansas, Oklahoma, Missouri and Arkansas will be those paying the 1917 scale. Others will be unable to meet the prices at which their competitors can sell their coal.

A group of about seventy-five union miners that gathered near Sheridan mine No. 7, in the southeastern Kansas field, which its lessees, James Price and Ed. Roberts, Jr., are said to have planned to reopen on an open-shop basis, was dispersed the morning of May 12 by Sheriff J. D. Turkington, of Crawford County, and his deputies. Afterward Matt Walters, president of District 14, United Mine Workers, who was arrested the previous week and released under bond after union demonstrations in the vicinity of the Doubleday mine, promised to exert his influence to prevent further picketing.

Says Freight Movement Will Be Heavier This Year

R. H. Aishton, president of the American Railway Association, stated following the regular spring meeting of the member roads of that association, May 15, at the Blackstone Hotel, Chicago, that total loading of revenue freight this year, it is estimated, will approximate 50,494,570 cars, an increase of about 682,450 cars, or 1.4 per cent, over 1923, when more cars were loaded than ever before for any similar period. It is also expected that the total for 1925, according to the present business outlook, will exceed 1924 by about 1,976,350 cars, or 4.1 per cent.

All commodities, during the first eighteen weeks this year, showed increases compared with the same period last year, except grain and grain products, live stock and coal.

"The lake coal movement so far shows an increase of 372,240 tons over the previous year," says the report of the Car Service division, "and our estimate of the total loading for the year is made with the idea that there will be approximately 27,000,000 tons of coal transhipped to upper lake points during the year and that the total coal production in 1925 will be approximately 480,000,000, considerably less than in 1923 but about the same as in 1924."

Utilities Consume Less Coal, But Produce More Power

Public utility power plants in the United States consumed 37,556,125 net tons of coal in 1924, according to a report just issued by the Geological Survey. This compares with 38,954,000 tons consumed in 1923 and 34,179,000 tons in 1922. Fuel oil consumption by utilities in 1924 totaled 16,629,643 barrels, compared with 14,679,000 barrels in 1923 and 13,197,000 barrels in 1922.

Total production of electricity by public utility power plants last year was 59,014,000,000 kw.-hr. as against 55,674,000,000 kw.-hr. in 1923 and 47,659,000,000 kw.-hr. in 1922.

Coal consumption by utilities in March, 1925, totaled 3,181,850 net tons compared with 3,129,795 tons in February and 3,713,583 tons in January.

This Woman Has Broad Knowledge of Coal Trade

Mrs. Gladys Kuhn, secretary and treasurer of the Big Mountain Coal Co., a wholesale concern in Columbus, Ohio, is one of the few saleswomen handling coal in the Middle West. Mrs. Kuhn has had a thorough training in the coal business and has done considerable selling on the road both to dealers and steam users. She entered the coal business at Rutland, Ohio, as office manager at the mines of the Maynard Coal Co. This position was followed by a railroad job in which she learned traffic matters completely, and later she went into the wholesale coal business with a Columbus concern in which she held a managerial position. At the organization of the Big Mountain Coal Co., about two and a half years ago, she became secretary-treasurer of the company. P. A. Coen is president of the company. At present she is in full charge of the company while Mr. Coen is on a Western trip of several months.

Fuel oil consumption in March was 834,629 barrels, as against 994,030 in February and 1,375,750 in January.

The average daily production of electricity by public-utility power plants in March was 173,000,000 kw.-hr. per day, about 3 per cent less than the average output for February. The gradual reduction in the average rate of production of electricity since the first of the year apparently is the usual seasonal decline. The total output for the first quarter of this year was 15.9 billion kw.-hr., 6 per cent larger than the output for the same period in 1924.

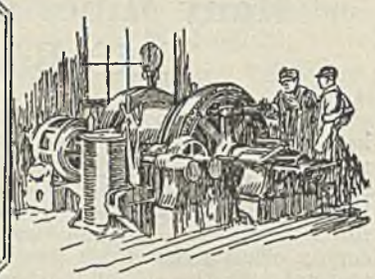
George Smart, Editor, Dies

George Smart, managing news editor of the *Iron Age*, died May 17 at his home, 45 Deepdene Road, Forest Hills Gardens, L. I., after a week's illness of erysipelas. He leaves a widow, Lucy Allen Smart; a daughter, Helen, who graduated at Wellesley last year, and a son, Charles, a junior at Harvard. Services held at his late home on Monday were private, but there will be a public memorial service at 4 p.m. next Sunday in the Church of the Gardens at Forest Hills.

Mr. Smart, born in Chilicothe, Ohio, Nov. 11, 1863, was educated at Ohio State University, and spent eight years in the Cleveland *Plain Dealer*. After a year with the Cincinnati *Enquirer* he helped establish the Columbus *Citizen*, of which he was editor for three years. From 1905 to 1917 he was editor of the *Iron Trade Review* of Cleveland, coming to the *Iron Age* in the latter year.

He had been president of Ohio State University Alumni Association, national president of Phi Kappa Psi fraternity, chairman of the Editorial Conference of the New York Business Papers Association, member of the Executive Committee of the National Conference of Business Paper Editors.

Practical Pointers For Electrical And Mechanical Men



Grinder Makes Practical the Welding Of Locomotive Tires

Building up locomotive tires by means of an electric welding outfit has been the regular practice at the Weeksbury, Ky., operation of the Elkhorn Piney Coal Mining Co. for nearly two years. Improved methods originated here have made the work a money-saving proposition. Although it is possible for an experienced operator to fill a tire with a sufficiently smooth surface so that the wheel can be put into use without machining, it was found advisable to provide a means of assuring a well-finished job.

First the work of smoothing the surface was attempted in a lathe but the newly deposited metal was found to be so hard that it could not be cut successfully with the best lathe tool available. At this point it might be well to explain that instead of using mild-steel electrodes, which had proved too soft for filling tire treads, we have gone to the use of Wanamaker ¼-in. manganese-steel rods, which form a hard and tough surface. Fig. 1 shows the grinding stand which was developed for use in connection with our shop emery grinder for smoothing the welded surface. A reason for developing this grinding machine was that the shop lathe was not large enough to swing the 30-in. tires of the 10-ton haulage locomotives.

The emery grinder utilized for the work was one which was purchased for ordinary shop use. It is a belt-driven, double-wheel type, the wheel having a 3-in. face and is 18 in. in diameter. The grinding stand was designed so that it is adjustable to every necessary position. The well-braced pedestals can be moved in their fastenings at the floor so as to accommodate several tire sizes. On the top of each pedestal there are mounted two roller bearings, these being secured in a frame which has a 3-in. adjustment across the top. The close-up view, Fig. 2, shows how the locomotive axle is supported by these roller bearings.

By means of feed screws which control the bearings, the tire when being ground is kept in proper contact with the emery wheel and is adjusted to such a position as to obtain the proper bevel on the tread. The lateral adjustment of the axle is effected by two screws, the points of which run in the axle centers. The axle is belt driven from the shop line shaft. It turns at 45 r.p.m. in a direction opposite that of the grinding wheel.

After the axle is set on the grinding stand by use of a portable floor crane, and the split pulley which has a bushing for each size of axle is assembled, the belt is put on. The grinding requires no further attention except that necessary every 15 or 20 minutes to give the feed screw a turn. This adjustment is made by the shop mechanic without greatly interfering with his regular work. When the grinding of one tire is completed, the axle is turned end for end and the other wheel is ground in the same way.

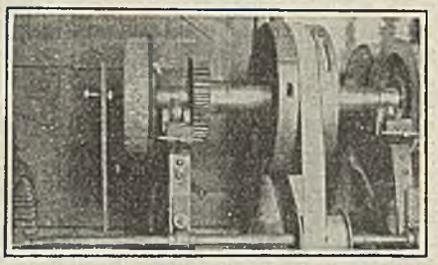


Fig. 2—Close-Up of Roller Bearings

The machine resembles a pair of balancing ways. The four roller bearings used, were removed from a scrapped mine locomotive. Note that the welding is done cross-wise to the tire tread.

The time required to grind the two tires of a pair of wheels depends entirely upon the care and skill of the man doing the welding. In our case this time ranges from 30 min. to 5 hr. per truck. Our method of smoothing welded tires has been found to be much cheaper than if it were done in a lathe. No annealing is necessary and the work does not require the constant attention of a mechanic as would be the case if a lathe were used.

The cost of wear on the grinding wheels has been found to be surprisingly low. To date forty-eight tires have been ground on the machine and the grinding wheel has worn down only 1 in. from its original diameter of 18 in. The grinding stand described is constructed so that it can be taken apart in a few minutes. This feature

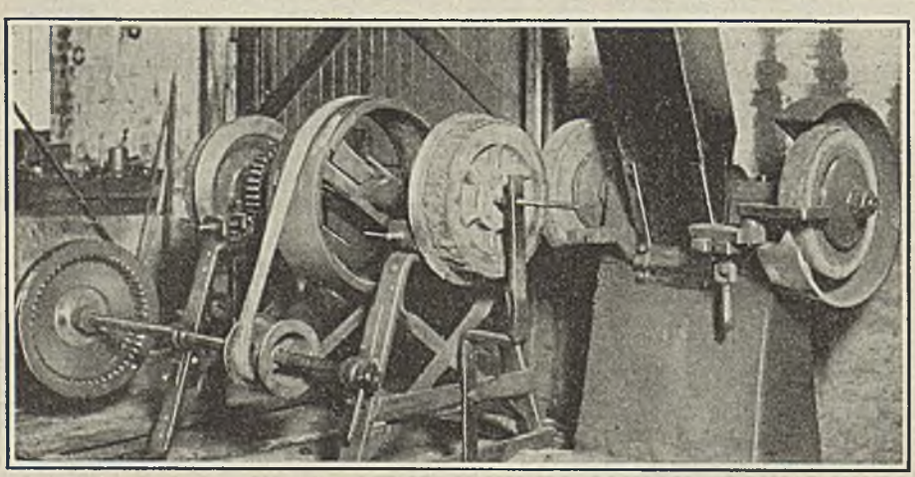


Fig. 1—Annealing Expense Eliminated and Smoothing Cost Reduced

This home-made grinding machine is adjustable to any size tire and has separate feed screws by means of which the axle alignment can be changed so as to obtain the correct bevel on the tire tread. The stand was constructed almost entirely from old parts obtained from the scrap pile. Grinding a pair of tires requires from 30 min. to 5 hr., but there is practically no labor connected with the process.

provides for setting the machine aside during periods of several weeks when no tire grinding is to be done, thus freeing shop floor space, and making it more convenient for the use of the emery grinder for regular shop work.

R. R. WEBSTER

Protective Barriers Inclose Powder House

On the main highway between Scranton and Carbondale in the anthracite region of Pennsylvania, near the town of Archibald, stands a large powder house quite similar to those seen around colliery yards. It is different in one respect from the usual type of powder house in the manner in which the surrounding area is protected in the event of an explosion.

The house and the barriers which surround it are shown in Fig. 1. The angle from which the photograph was taken shows the thickness and shape of the walls. Heavy lumber, securely bolted together, forms the outside frame. The inside is filled with sand and gravel. Fig. 2 shows the heavy planking and the reinforcing bolts.

Should an explosion occur in the powder house, it would be confined within the protecting walls. Upon the entrance side of the house the barrier is similarly constructed with an opening cut through for a door.

To facilitate the delivery or receipt of powder, portholes have been cut through the barrier. The wagon or truck remains outside and the boxes of powder or dynamite are passed from the powder house through the porthole outside or vice versa.

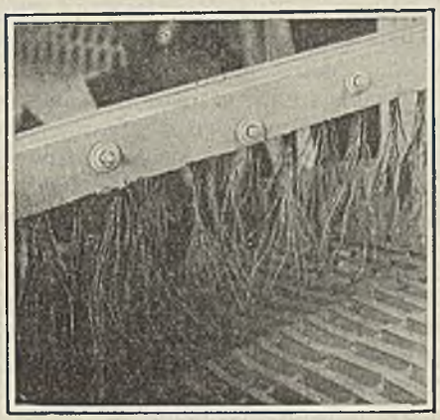
Such complete protection as shown here is seen rather infrequently around a mine, but the possibility of serious accidents are considered to justify such precautions.

How the Frame Is Made

Heavy braces hold the planks which form the wall. Through-bolts tie the sides together.

Wire Rope Retards Coal

Stationary screens must ordinarily be mounted at an angle of 45 deg. or more, in order that all sizes of coal will move freely. This pitch is such that the large lumps travel so fast as to cause considerable breakage. To counteract this speed many different types of buffers are being used.



Brush Reduces Breakage

Wooden blocks and chains are frequently used to retard the flow of coal over screens or down chutes. An improvised brush made of wire rope can also be used for this purpose.

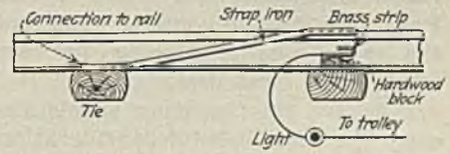
The accompanying photograph, which was snapped recently in the tipple of the Eureka mine of the Coal River Collieries at Prestonsburg, Ky., shows the use of short pieces of wire rope to retard the lumps. This wire brush is surprisingly efficient in reducing the speed of the large coal.

Track Signal Prevents Delays

On a haulage road at one of our mines there is a turnout running off to another section. Both roads are exceptionally busy at all times and, as the main road leads directly to the shaft, traffic on it is important, especially between the branch and the shaft. Trouble in the form of traffic jams occurred several times a day on this piece of track and a signal finally was installed to inform the motorman on the main road if a trip was coming out of the branch road.

The signal is a winking light. The lamp was already in place at the branch, where formerly it was used for illumination, and it was only necessary to devise a means of winking it when a trip was approaching the main road.

The device designed for the purpose consists of a piece of strap iron spiked to a tie in the road bed. A piece of brass strap is fastened to the iron in such a manner as to be pressed down against another piece of brass attached to a block of wood nailed to the next tie.

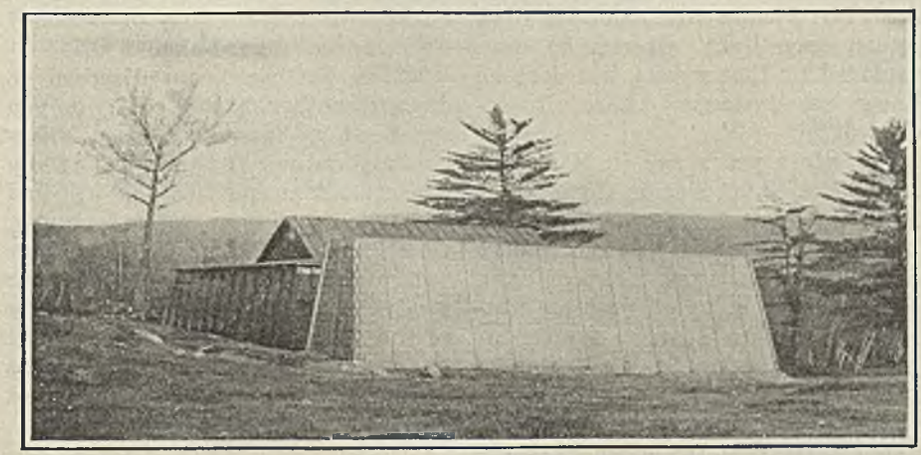


Winking Device Operates Signal

Each passing car wheel causes the switch to close and light the lamp. Thus, a winking signal is transmitted to the main haulage road.

The accompanying sketch shows the scheme and one can readily see the action of this device when a trip of cars passes over the rails at this point. The flanges of the car wheels close the circuit to the lamp as they pass over the device. During the interval when a wheel is not running over the switch the contact is open. This making and breaking device in the circuit to the lamp causes the light to wink and thus gives a signal out at the junction to the main road.

O. E. KENWORTHY



Confining the Blast Within Barracades

By surrounding the powder house with heavily built walls the danger of damage to nearby buildings is greatly lessened. The inside is filled with sand and gravel to cushion shocks.

Viewpoints of Our Readers

Booster Fan Big Aid to Progress Of Development Work

I was much interested in reading your editorial of *Coal Age*, March 26, entitled "Simplification and Concentration." The views expressed in your columns regarding the use of booster fans in coal mines coincide with mine. In development work, it is a boon to any mine to have a booster fan on each entry, forcing the air to the working face through a set of pipes or tubing and doing away with the old system of breakthroughs every 45 or 60 ft. as some of the present state mining laws call for. With booster fans in service, crosscuts could be made every 500 ft. or more, should the system of mining demand it.

In our present-day system of mining to suit conveyors and mechanical loaders it is going to be necessary to adopt the booster fan, especially in development work. I believe for the rapid development and advancement of main entries, the booster fan saves much time and yardage by the elimination of crosscuts, leaves a stronger barrier pillar, makes smoother airways and gives better air right at the working face. Then, after the mine has been fully developed there are fewer leaky stoppings to contend with, and the main fan is placing the air where it is most desired.

I believe this question should receive the most careful consideration of mining men in this country, especially the various state mining departments. It must be remembered that a booster fan is not a permanent fixture, but has to be moved to the face and the tubing advanced with it as soon as a crosscut is driven through.

In general ventilation of a mine, assistance from auxiliary means is of no value. This will be understood when it is known that the quantity increases only as the cube root of the power. Assume the horse power producing ventilation to be 125. Further assume the placing of a booster fan of 15 hp. underground as a means of assistance. The total horse power producing ventilation would then be 140, an increase of nearly 12 per cent. The volume of air would not increase in the same ratio, but as the cube root of the power—that is, from the cube root of 125 to the cube root of 140 or from 5 to 5.19. This is an increase of 3.8 per cent. Thus, to make a 4 per cent increase in the quantity circulating, the horse power would have to be increased nearly 12 per cent.

The type of booster fan to be installed for development work or out-of-the-way places should be of the compressive type. When it is moved forward to each open crosscut, the main ventilation should be capable of adequately serving all haulageways and underground workings without auxiliary assistance. This is one case in point, and again I say that a booster fan should not be a permanent fixture. But it should be part of the equipment of any mine for use in case of rescue and recovery operations after mine fires and explosions where 1,000 ft. of tubing can be run out almost as fast as a man can walk and connected to a booster fan capable of delivering 3,000 to 5,000 cu.ft. of air in a few minutes. To rebuild blown-out brattice for this distance would be far more difficult and delaying.

Wm. W. Hunter,
Clinton, Ind.

Open Light Ignites Coal Dust

In your editorial on page 530 of the April 9 issue this appears: "Coal dust, Mr. Steidle says, can be ignited by an open light. It can be even exploded by that means, but does he know an instance where it occurred?"

Seventeen years ago in Mine No. 10 of The Union Pacific Coal Co. at Rock Springs, a run-away trip displaced a number of sets of timbers and liberated a dense cloud of dust. The accident occurred just at quitting time, when a large number of men were waiting in the cross entries close to the slope and there is abundant testimony of eye witnesses and sufferers to the effect that the coal dust was ignited by open lights.

I believe Captain Steidle to be correct in his statements to the effect that closed lights should be in use in all coal mines. In the mines of the Union Pacific System, I find that there is an increased output on the part of day men, due to the better light and to the elimination of the loss of time due to the refilling and adjusting of the carbide lamp.

A. D. Dickinson,
General Superintendent,
Union Pacific Coal Co.
Rock Springs, Wyo.

Colleges for Retailers

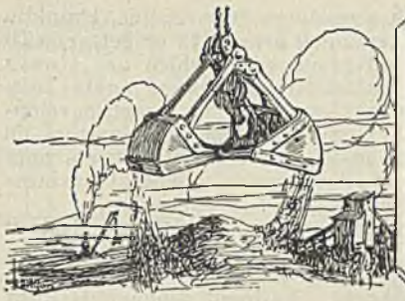
On the first page of the issue of April 9 appears an editorial entitled "College for Retailers." I entirely agree with you that courses covering such subjects as you have mentioned are desirable. It is possible to get this training in all the five subjects you detail except marketing, and, so far as I know, no school in the United States treats this last study in any satisfactory way. I am not quite sure that it can be handled in sufficient detail at any school, but at least its fundamentals could be covered.

I remember that at Illinois, Professor Stoek once gave a short course to salesmen, but in this he endeavored to give them some of the fundamentals of the occurrence, mining, preparation and combustion of coal and did not undertake to teach them how to sell it.

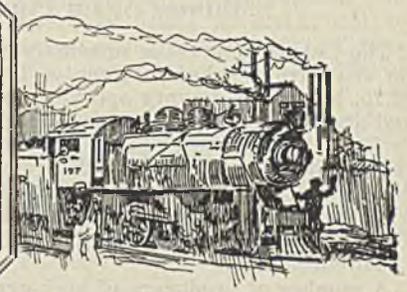
We cover the subject pretty well here at the University of Kansas with the exception of marketing, and I am not sure that this part of the necessary curriculum could not be fairly well handled in the Department of Economics. I know that we have excellent instruction in geology, chemistry and combustion, and I presume I should refrain from saying that the work of the Department of Mining Engineering of which I have charge is good also.

While writing I am disposed to discuss another matter. Why do you speak of a "gaseous" or a "non-gaseous" mine? I think that if you will consult authorities you will find that the word you want is gassy, which means "abounding in gas" or "containing gas," whereas "gaseous" means "consisting of gas" or "being in the form of gas." I know that the U. S. Bureau of Mines has adopted the term, "gaseous" but that does not settle the question.

C. M. Young,
Department of Mining Engineering
Lawrence, Kan.



Production And the Market



Dullness in Soft-Coal Market Unrelieved; Anthracite Trade Still Brisk

Patience is the badge of the coal producer these days, and he needs it, for even the least favorable development seems to last only long enough to engender hope that a turn for the better is at hand, when business eases back into the old rut. The Midwestern markets are unusually quiet, Eastern non-union coals having gotten a hold that threatens to be lasting. A crumb of encouragement is seen, however, in some orders by mail. General business conditions are improving, too. Though little change has taken place in the situation in Kentucky, business is as good as at this time last year and the outlook is considered brighter.

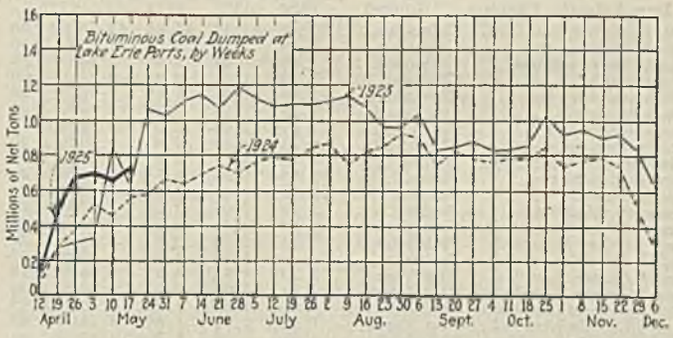
What little business is being done at the head of the lakes is spot, as contracting is dead, industrial consumers holding off in the hope that prices will drop. Coal receipts continue light. Trade in the West and Southwest is almost at a standstill, operation being limited largely to filling contracts. An attempt to start up in the Henryetta (Okla.) field at the 1917 wage scale is being watched with interest.

Ohio markets, in general, are slow, due partly to hand-to-mouth buying while awaiting a hoped-for reduction in freight rates. The only exception was a slight spurt at Cincinnati, which was of only minor effect. There is hardly any inquiry in the open market at Pittsburgh, business consisting mostly of the usual trade with regular customers. The trade in New England and the other Eastern markets continues to wrestle with the problem of forcing coal on reluctant consumers—not with glittering success.

Hard-Coal Market Brisk

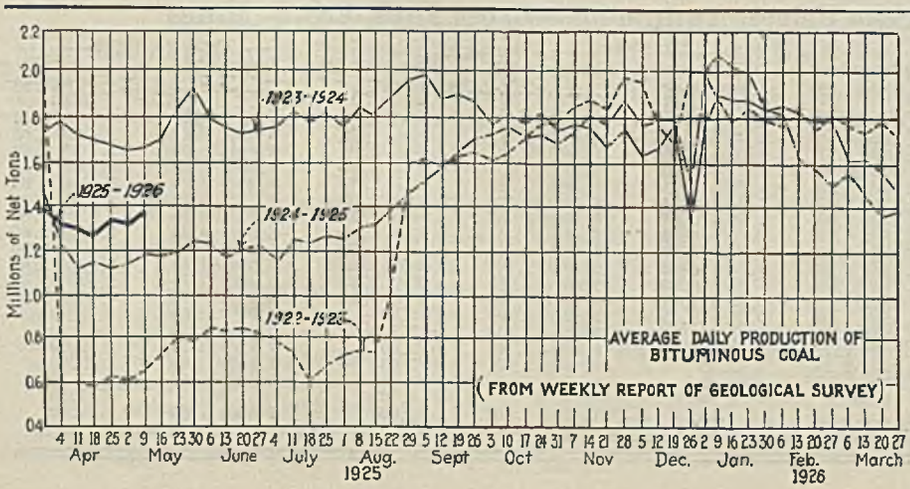
The anthracite market retains most of its recent brisk aspect. Line companies are well booked with orders and independent output is moving well. Stove is in strong demand, those insistent upon obtaining this size being at times forced to wait for deliveries. Chestnut is moving well and egg and pea are in unusually good demand. Steam sizes are doing fairly well for this time of the year.

Bituminous coal output was slightly higher in the week ended May 9, totaling 8,281,000 net tons, according to the Geological Survey. This compares with 7,975,000 tons in the preceding week, as shown by revised figures. Anthracite production in the week ended May 9 was 2,036,000 net tons, compared with 1,984,000 tons in the previous week.



Coal Age Index of spot prices of bituminous coal receded five points during the last week, standing on May 18 at 161, the corresponding price for which is $1.95.

Dumpings at Lake Erie ports rose again during the week ended May 17, when, according to the Ore & Coal Exchange, cargo dumpings were 662,424 net tons; steamship, 42,928 tons—a total of 715,352 tons, compared with 644,924 tons in the previous week. Hampton Roads dumpings for all accounts in the week ended May 14 totaled 404,320 net tons, compared with 390,878 tons in the preceding week.



Estimates of Production

(Net Tons)

	1924	1925
BITUMINOUS		
April 25	6,944,000	8,030,000
May 2 (a)	7,063,000	7,975,000
May 9 (b)	7,360,000	8,281,000
Daily average	1,227,000	1,380,000
Cal. yr. to date (c)	178,158,000	172,768,000
Daily av. to date	1,583,000	1,532,000
ANTHRACITE		
April 25	1,205,000	1,937,000
May 2	1,616,000	1,984,000
May 9	1,924,000	2,036,000
Cal. yr. to date (c)	32,693,000	31,788,000
COKE		
May 2	205,000	169,000
May 9 (b)	178,000	141,000
Cal. yr. to date (c)	4,987,000	4,292,000

(a) Revised since last report. (b) Subject to revision. (c) Minus two days' production to equalize number of days in the two years.

Midwest Again Pipes Down

The Chicago market is unusually quiet. Prices on domestic sizes from Franklin County, Illinois, continue firm at $2.75, but Saline County operators cracked under the strain and are said to be selling domestic coal anywhere from 25c. to 50c. off the $2.75 circular. These concessions are not on regular business but are made from day to day on groups of cars blocking the tipples. There is a little better feeling, however, as some orders are beginning to come in by mail. These are few and far between, but, nevertheless, are taken as an encouraging sign.

A number of producers of high-grade smokeless refuse to quote prices on lump and take business only on the basis of price current at time of shipment. Smokeless egg coal moves freely at $3; mine-run at an average price of $1.85, although some of it brings more than this. Eastern coal continues to displace Illinois and Indiana coals in the Chicago market, making the situation still more serious for Illinois and Indiana operators. Anthracite is coming in in fair volume. Some dealers are ordering a little extra May tonnage, influenced by the publicity given to the strike problem.

Industrial coals held pretty firm. A few cars of western Kentucky strip mine-run were in Chicago in distress early in the week, but not enough to create any great falling off in the market. Two-inch screenings from Saline, Franklin and Williamson counties remained firm at $2 or better, with the exception of a few off-grade coals which are always offered at a discount. Industrial users have again been scared off from the contract question, as recent developments from the United Mine Workers' headquarters in Indianapolis lead them to believe that manufacturers may gain by holding off for another month. General business in Chicago and surrounding territory is improving.

Dullness reigns in the southern Illinois field as Eastern and other non-union coals are moving right into this field. A few mines are working, getting one or two days a week—three in exceptional instances. Railroad tonnage is light at the shaft mines and good at the strip mines, which for the most part are working full time. Some shaft mines as well as some of the strip pits are crushing coal. The little coal that is moving from all mines is chiefly screenings with a little nut, but domestic sizes are hard to move.

A similar condition prevails in the Duquoin district. In these fields there has been no change in price, which usually is below the producing cost. The Mt. Olive field is almost idle. A little railroad coal is going out and steam contracts are being taken care of with crushed mine-run, but the tonnage of domestic is nil. Mines are getting one and two days a week. In the Standard field most of the coal is being sold at below cost. There is a fairly good demand for

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Low-Volatile, Eastern	Market Quoted	May 19, 1924	May 4, 1925	May 11 1925	May 18, 1925†
Smokeless lump	Columbus	$3.45	$2.85	$2.85	$2.75@$3.00
Smokeless mine run	Columbus	2.25	1.85	1.85	1.75@ 2.00
Smokeless screenings	Columbus	1.85	1.40	1.45	1.40@ 1.50
Smokeless lump	Chicago	3.10	2.85	2.85	2.75@ 3.00
Smokeless mine run	Chicago	2.00	1.95	1.85	1.75@ 2.00
Smokeless lump	Cincinnati	3.50	2.85	3.00	*2.75@ 3.00*
Smokeless mine run	Cincinnati	1.85	2.00	2.00	2.00
Smokeless screenings	Cincinnati	1.75	1.50	1.50	*1.25@ 1.50*
*Smokeless mine run	Boston	4.45	4.15	4.25	4.15@ 4.35
Clearfield mine run	Boston	2.00	1.95	1.95	*1.70@ 2.00*
Cambria mine run	Boston	2.50	2.15	2.15	*2.00@ 2.25*
Somerset mine run	Boston	2.25	2.05	2.05	*1.85@ 2.10*
Pool 1 (Navy Standard)	New York	2.75	2.55	2.55	2.40@ 2.70
Pool 1 (Navy Standard)	Philadelphia	3.00	2.60	2.60	2.45@ 2.75
Pool 1 (Navy Standard)	Baltimore	....	1.95	1.95	1.90@ 2.05
Pool 9 (Super. Low Vol.)	New York	2.20	1.95	1.95	**1.85@ 2.15**
Pool 9 (Super. Low Vol.)	Philadelphia	2.20	2.00	2.00	1.85@ 2.20
Pool 9 (Super. Low Vol.)	Baltimore	1.85	1.85	1.85	1.75@ 1.95
Pool 10 (H.Gr.Low Vol.)	New York	1.85	1.85	1.85	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.85	1.70	1.70	1.60@ 1.85
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.65	1.70	1.70	1.65@ 1.75
Pool 11 (Low Vol.)	New York	1.60	1.50	1.50	**1.45@ 1.60**
Pool 11 (Low Vol.)	Philadelphia	1.50	1.55	1.55	1.50@ 1.60
Pool 11 (Low Vol.)	Baltimore	1.55	1.45	1.45	1.40@ 1.55
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.50	1.45	1.50	1.40@ 1.60
Pool 54-64 (Gas and St.)	Philadelphia	1.55	1.45	1.45	**1.45@ 1.60**
Pool 54-64 (Gas and St.)	Baltimore	1.45	1.50	1.50	1.45@ 1.55
Pittsburgh sc'd gas	Pittsburgh	2.40	2.40	2.40	2.30@ 2.30
Pittsburgh gas mine run	Pittsburgh	2.10	2.15	2.15	2.10@ 2.25
Pittsburgh mine run (St.)	Pittsburgh	1.85	1.80	1.95	1.90@ 2.00
Pittsburgh slack (Gas)	Pittsburgh	1.35	1.50	1.50	**1.50@ 1.60**
Kanawha lump	Columbus	....	2.10	2.10	2.00@ 2.25
Kanawha mine run	Columbus	....	1.40	1.40	1.35@ 1.50
Kanawha screenings	Columbus	....	1.20	1.20	*1.00@ 1.20*
W. Va. lump	Cincinnati	2.10	2.00	2.05	1.85@ 2.25
W. Va. gas mine run	Cincinnati	1.35	1.45	1.45	*1.35@ 1.50*
W. Va. steam mine run	Cincinnati	1.35	1.30	1.30	1.25@ 1.40
W. Va. screenings	Cincinnati	1.05	1.15	1.15	*1.00@ 1.25*
Hocking lump	Columbus	2.40	2.25	2.25	2.15@ 2.35
Hocking mine run	Columbus	1.60	1.40	1.40	1.35@ 1.50
Hocking screenings	Columbus	1.40	1.25	1.30	*1.00@ 1.25*
Pitts. No. 8 lump	Cleveland	2.40	2.25	2.25	1.90@ 2.60
Pitts. No. 8 mine run	Cleveland	1.85	1.90	1.90	1.85@ 1.95
Pitts. No. 8 screening	Cleveland	1.45	1.50	1.45	*1.35@ 1.45*

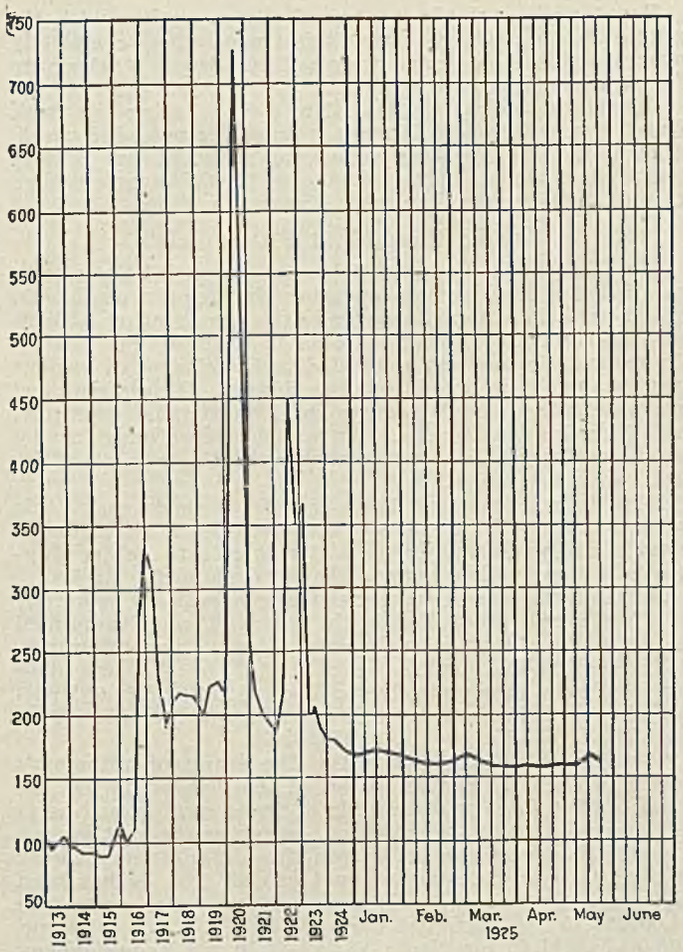
Midwest	Market Quoted	May 19, 1924	May 4, 1925	May 11, 1925	May 18, 1925
Franklin, Ill. lump	Chicago	$2.75	$2.60	$2.60	$2.50@$2.75
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	2.15	2.10	2.10	2.00@ 2.25
Central, Ill. lump	Chicago	2.60	2.35	2.35	2.25@ 2.50
Central, Ill. mine run	Chicago	2.10	2.10	2.10	2.00@ 2.25
Central, Ill. screenings	Chicago	1.90	1.85	1.85	1.75@ 2.00
Ind. 4th Vein lump	Chicago	2.85	2.60	2.60	2.50@ 2.75
Ind. 4th Vein mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Ind. 4th Vein screenings	Chicago	1.95	1.95	2.00	1.85@ 2.15
Ind. 5th Vein lump	Chicago	2.35	2.25	2.25	2.15@ 2.40
Ind. 5th Vein mine run	Chicago	2.10	1.95	1.95	1.85@ 2.10
Ind. 5th Vein screenings	Chicago	1.80	1.55	1.60	1.50@ 1.75
Mt. Olive lump	St. Louis	2.85	2.50	2.50	2.50
Mt. Olive mine run	St. Louis	2.50	2.25	2.25	2.25
Mt. Olive screenings	St. Louis	2.00	1.75	1.75	1.75
Standard lump	St. Louis	2.15	2.25	2.25	2.25
Standard mine run	St. Louis	1.95	1.80	1.80	1.75@ 1.90
Standard screenings	St. Louis	1.80	1.70	1.70	1.65@ 1.75
West Ky. block‡	Louisville	2.35	1.80	1.65	1.50@ 1.85
West Ky. mine run	Louisville	1.65	1.35	1.35	1.25@ 1.50
West Ky. screenings	Louisville	1.60	1.20	1.20	1.10@ 1.30
West Ky. block‡	Chicago	2.25	2.00	2.00	1.90@ 2.15
West Ky. mine run	Chicago	1.60	1.30	1.30	1.15@ 1.50
South and Southwest					
Big Seam lump	Birmingham	2.80	2.40	2.40	*2.25@ 2.40*
Big Seam mine run	Birmingham	2.00	1.75	1.75	1.50@ 2.00
Big Seam (washed)	Birmingham	2.20	1.85	1.85	1.75@ 2.00
S. E. Ky. block‡	Chicago	2.25	2.25	2.25	2.15@ 2.40
S. E. Ky. mine run	Chicago	1.60	1.65	1.65	**1.60@ 1.85**
S. E. Ky. block‡	Louisville	2.15	2.10	2.20	2.00@ 2.40
S. E. Ky. mine run	Louisville	1.50	1.30	1.30	1.15@ 1.50
S. E. Ky. screenings	Louisville	1.10	1.20	1.20	*1.00@ 1.25*
S. E. Ky. block‡	Cincinnati	2.35	2.20	2.20	2.15@ 2.25
S. E. Ky. mine run	Cincinnati	1.35	1.35	1.35	1.25@ 1.50
S. E. Ky. screenings	Cincinnati	.95	1.15	1.15	*1.00@ 1.25*
Kansas lump	Kansas City	4.50	4.50	4.25	*3.75@ 4.50*
Kansas mine run	Kansas City	3.50	3.00	2.85	2.75@ 3.00
Kansas screenings	Kansas City	2.50	2.60	2.60	2.50@ 2.75

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in heavy type, declines in *italics*.
‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	May 19, 1924 Independent	May 19, 1924 Company	May 11, 1925 Independent	May 11, 1925 Company	May 18, 1925† Independent	May 18, 1925† Company
Broken	New York	$2.34	$8.50@$9.00	$8.00@$8.75	.....	$8.05@$8.60	.....	$8.05@$8.60
Broken	Philadelphia	2.39	.....	8.60@ 8.75	.....	8.60	.....	8.60
Egg	New York	2.34	9.00@ 9.25	8.35@ 8.75	$8.50@$8.85	8.35@ 8.60	**$8.65@$8.95**	8.35@ 8.60
Egg	Philadelphia	2.39	8.35@ 9.50	8.70@ 8.75	8.60@ 9.30	8.40@ 8.60	8.60@ 9.30	8.40@ 8.60
Egg	Chicago*	5.06	7.68@ 7.77	7.73@ 7.81	7.86@ 8.50	7.44@ 8.18	7.86@ 8.50	7.44@ 8.18
Stove	New York	2.34	9.00@ 9.50	8.35@ 9.00	8.75@ 9.25	8.85@ 9.10	**8.85@ 9.25**	8.85@ 9.10
Stove	Philadelphia	2.39	8.70@ 9.60	8.75@ 8.95	9.20@ 9.75	8.85@ 9.00	9.20@ 9.75	8.85@ 9.00
Stove	Chicago*	5.06	8.03@ 8.17	7.94@ 8.14	8.22@ 8.70	7.92@ 8.10	8.22@ 8.70	7.92@ 8.10
Chestnut	New York	2.34	8.75@ 9.25	8.35@ 8.85	8.50@ 8.75	8.35@ 8.60	8.50@ 8.75	8.35@ 8.60
Chestnut	Philadelphia	2.39	8.75@ 8.85	8.70@ 9.60	8.60@ 9.45	8.50@ 8.60	8.60@ 9.45	8.50@ 8.60
Chestnut	Chicago*	5.06	7.90@ 8.03	7.81@ 7.99	8.14@ 8.35	7.69@ 8.00	8.14@ 8.35	7.69@ 8.00
Pea	New York	2.22	5.50@ 6.00	5.50@ 6.00	5.00@ 5.50	5.00@ 5.60	5.00@ 5.50	5.00@ 5.60
Pea	Philadelphia	2.14	5.75@ 6.25	5.75@ 6.00	5.40@ 5.75	5.00@ 5.40	5.40@ 5.75	5.00@ 5.40
Pea	Chicago*	4.79	5.36	5.36@ 5.91	4.91@ 5.36	4.69@ 5.00	4.91@ 5.36	4.69@ 5.00
Buckwheat No. 1	New York	2.22	2.35@ 3.00	3.00@ 3.15	2.00@ 2.60	2.50	2.00@ 2.60	2.50
Buckwheat No 1	Philadelphia	2.14	2.50@ 3.00	3.00	2.25@ 2.75	2.50	2.25@ 2.75	2.50
Rice	New York	2.22	1.90@ 2.25	2.00@ 2.25	1.75@ 2.10	2.00	1.75@ 2.10	2.00
Rice	Philadelphia	2.14	2.00@ 2.25	2.25	1.90@ 2.00	2.00	1.90@ 2.00	2.00
Barley	New York	2.22	1.50@ 1.75	1.50	1.40@ 1.60	1.50	1.40@ 1.60	1.50
Barley	Philadelphia	2.14	1.50	1.50	1.50	1.50	1.50	1.50
Birdseye	New York	2.22	.....	1.60	1.40@ 1.60	1.60	1.40@ 1.60	1.60

* Net tons, f.o.b. mines. † Advances over previous week shown in heavy type; declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

	1925			1924
	May 18	May 11	May 4	May 19
Index	161	166	162	169
Weighted averaged price	$1.95	$2.01	$1.96	$2.05

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

screenings, but other than that there is nothing doing. Prices here are about the same as they have been with the exception that two or three operators are selling 6-in. lump at the price of 2-in. All mines have "no bills" and only a few are working. Operators and miners both feel that unless something happens in the readjustment of the wage scale outside coal will obtain and hold the markets to which Illinois coals have been going in the past.

A little cool, wet weather in St. Louis has caused a slight demand for domestic coal in small quantities and here and there some storage, usually the better grades. Some anthracite, a little coke and a little smokeless are coming in, but other than that it is small. Country domestic is unusually quiet. Local wagonload steam is easing off in tonnage, but carload screenings remain fair. This, however, is growing inasmuch as the cost of oil is increasing and some plants are going back to coal. Country steam is slow. Local prices are unchanged.

Favorable Outlook in Kentucky

Despite some complaints the coal business in Kentucky is as good as at this time last year and the general outlook is better. Lake movement is coming along fairly well, taking 2- and 4-in. lump, egg and some mine-run, and there also is some movement of screenings for bunkerage. Railroad consumption is quite fair, and movement to general industries and utilities is good for the season.

Retail demand continues slow, as there is not much consumer demand and retailers are not showing much interest in stocking. Screenings are a shade weaker in eastern Kentucky as a result of larger production of prepared coal moving north. Efforts to boost prices of block coal to around $2.40 are not meeting with great success, in view of the fact that coal from the same districts is being offered at $2.15.

Other than a 10c. drop on eastern Kentucky screenings to a level of $1@$1.25, prices are unchanged for the week. Eastern Kentucky 4-in. is $2@$2.40; 2-in. $1.75@$2; egg, $1.75@$2; nut, $1.50@$1.65; mine-run, $1.15@$1.50 and screenings, $1@$1.25. Western Kentucky nut, egg, lump and 6-in. block are selling at $1.50@$1.85; mine run, $1.25@$1.50, and screenings, $1.10@$1.30.

All Lines Dull in Northwest

Shipments to Duluth-Superior harbor were light last week, only thirty-three cargoes having arrived, of which seven were hard coal. Fourteen are reported on the way, of which four are hard coal.

Trade is virtually dead as far as any contracting is concerned, as buyers look for a drop in prices and refuse to be caught with much high-priced coal on their hands. This is the usual time for contracting by industrials, but none has signed up as yet. The situation is unusual. All business is spot. Coal companies are trying to protect themselves by holding down their shipments and keeping the docks in condition to handle coal as needed.

The mines on the ranges have started to take coal and the amount going there is fair in the aggregate, but individual orders are as small as the particular mine can get along with.

It is expected that a big tonnage of Pocahontas will be used here this year, as ordering has started already. A fair amount of hard coal is selling throughout the country districts, North Dakota taking it for the first time in quite a while, and if the crops are good this year the rush will start as soon as the crops are sold.

Prices are firm in both hard and soft with the exception of steam coal sold for bunkerage. The competition is so keen for that class of trade that it is reported that several docks have shaved prices 25c. to get orders.

The flow of coal to Milwaukee by cargo from lower lake ports continues strong. Dock managers seem to be bent on getting in as many cargoes as possible while the going is good. Receipts up to May 15 totaled 204,689 tons, against 132,200 tons for the same period of 1924. Anthracite is coming quite freely. The receipts for May, up to the 15th, total 35,500 tons. Last year only 18,000 tons were received during the same period. Receipts of bituminous coal up to May 15 totaled 169,189 tons. Last year during the same period they amounted to only 114,200 tons. The market continues quiet.

Trade at Standstill in West

Operation, except on contract, is almost at a standstill in the Southwest. Only two large operators are producing shaft coal in Kansas, and they from only three mines. Several smaller independent shafts are working, but all are averaging less than three days working time a week. Kansas shaft lump still is listed at $4.50, but can be had as low as $3.75 a ton, and some in the last week has been sold as low as $3.50. Crushed shovel mine-run still is quotel at $2.50@$2.60. The only coal being produced in Arkansas and Oklahoma is being mined by men working under the 1917 wage scale.

Very little change has taken place in the Colorado coal market in the past week. The mines are operating about 35 per cent. The demand for slack coal has improved somewhat, which has created a larger supply of lump and nut coal that is not being absorbed. The trade is inclined to buy from hand to mouth, anticipating a reduction in freight rates. The operators are turning away men right along even at the wage scale of 1917. Prices are unchanged.

In Utah the coal market continues very quiet. Very little coal is being used for industrial purposes and domestic consumption is practically nil, due to weather conditions. Business is quiet all over the territory served by the local companies and the tendency is to lay off more men. Prices remain firm. They seem less likely to change than they did a month ago, due to the fact that every operator is agreed that a sufficient reduction cannot be allowed off present prices that would induce summer storage, and any reduction at this time would be for that purpose only.

Cincinnati Has Helpful Spurt

Stove, egg and 2-in. coal took a healthy spurt at Cincinnati last week, which in a measure offset the tendency to weakness in lump and slack. For the first time in weeks, demand for egg was sufficient to drive the price to $2 on bituminous. While smokeless did not exactly share in the uptilt, at the same time there was a marked scarcity of offerings from those who have been putting out a $2.75 price on it.

Generally speaking, business is slow. There is little snap or momentum to the market. Lake shippers seem inclined to play a waiting game to force the seller to come to them. Large sizes are hard to get rid of, the inland retailers and other takers, evidently, declaring for someone else to absorb the degradation. Slack buying has eased so that a $1 price on the bituminous as a low is possible, though sales at $1.25 for special purpose are still made. The smokeless range is $1.25@$1.50, a confession of weakness largely due to the increase in the make of sized coal. Southeastern Kentucky producers are sticking to their guns on the $2.15 price for lump. Smokeless operators profess to be well sold up for the rest of the month and still is hope held out that a June rise in price will follow.

Retail business, in spite of advertising space and door-to-door solicitors, shows little increase in volume, at least not enough to make up in part for the low turnover of April. Prices remain the same. River business still is going strong with some of the local people putting some stock on the ground.

Stockpiles Dwindle at Columbus

Columbus steam users are still holding off on contracts, but are reducing their stocks and as a result the outlook is better. Buying is low and many large users are getting fuel in the open market. Distress coal has been much reduced since both operators and shippers are loath to send out cargoes on consignment. This has relieved the tenseness of the situation and is causing some of the larger consumers to look around for contracts. Utilities are taking a good tonnage and railroad requirements are about up to normal. Iron and steel plants are buying in limited quantities. School coal is attracting a good deal of attention and a number of inquiries are out for tonnage for municipal departments and public institutions. Screenings are more plentiful due to the movement of tonnage to the lakes.

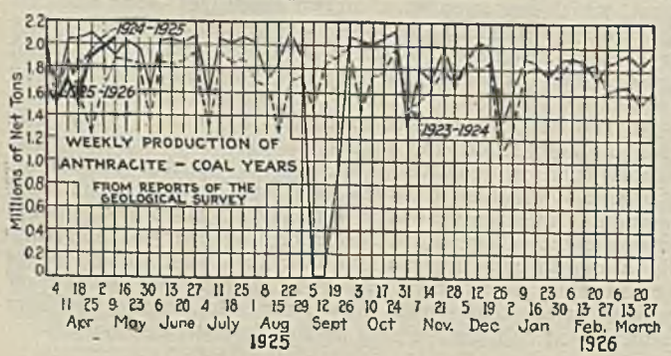
Domestic tonnage is not moving to any extent but retailers are making inquiries on fancy grades. Smokeless is being purchased to a limited extent, in preparation for the usual summer stocking period. Retailers have succeeded in cleaning up their stocks to a large extent, having cut prices to bring it about. Stocking probably will begin later than usual, due partly to poor credit conditions.

Lake trade is rather active, Ohio-mined coal is not sharing in the movement to any extent.

Production in the southern Ohio field is increasing with the opening of several mines on the 1917 scale. Output is estimated at about 20 per cent of capacity.

In eastern Ohio inquiries for coal show no change; the trade is dull, buying being from hand to mouth, perhaps because of anticipated wage reductions in the union fields. Spot prices on fine coal have receded 5c. per ton as compared with a week ago, slack being quoted at $1.35@$1.40 and nut-and-slack $1.40@$1.45. It is quite likely that the slack resulting from the heavy shipments of Lake cargo coal from other fields is finding its way into this market.

If the expected reduction in freight rates on Lake cargo coal takes place the output of Ohio mines will be stimulated by their ability to participate in this trade.



Retail yards are placing practically no orders with the mines and the opinion is that this trade is now completely over for this season, and they will not begin stocking up for 60 to 90 days.

Output in the eastern Ohio No. 8 field during the week ended May 9 increased 10,000 tons over the preceding week 217,000 tons having been mined, or about 31 per cent of potential capacity. This tonnage is 63,000 tons less than that of the corresponding week a year ago.

Trade Sluggish at Pittsburgh

The Pittsburgh coal market is very sluggish. Some business is being done between operators and regular customers, but there is hardly any inquiry in the open market. There has been a little further increase in sales of gas coal by Connellsville operators, attributed to the closing of various gas coal mines in the Pittsburgh district. Prices obtained are moderately satisfactory to the Connellsville operators, with their lower wage scale, but would mean a large loss by union producers. The Pittsburgh Coal Co. has closed its last two union mines.

Possibly mine-run and lump coal are a shade easier this week, but there is no quotable change. Slack has stiffened a trifle, and presumably this is attributable to lighter shipments of lump rather than to heavier demand for slack.

Due to a number of mines resuming operations under the 1917 scale, coal production in the central Pennsylvania field is increasing. In the week ended May 9 the output was 10,880 carloads, compared with 10,511 in the preceding week. Prices range as follows: Pool 18, $1.60@$1.65; pool 11, $1.65@$1.70; pool 10, $1.70@$1.75; pool 9, $1.80@$2; pool 71, $2@$2.15; pool 1, $2.15@$2.35.

The Buffalo coal trade is quiet. The supply of bituminous seems to keep far enough ahead of the demand to put the fixing of the price in the hands of the consumer and he is quite satisfied with the situation, so far as the cost is concerned. So far as can be learned the bituminous consumer is taking about the same amount of coal that he has been all along. Quotations, with slack scarce but not active, are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump and $1.40@$1.60 for slack; $1.75@$2 for Allegheny Valley mine run.

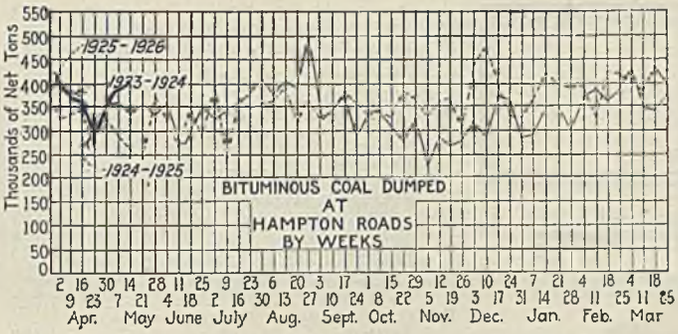
New England Market in Slough

While conditions occasionally point to slightly firmer prices in the New England market it is like grasping at straws rather than being actually pulled out of the slough that surrounds the steam coal market in practically every direction. Accumulations prevail at Hampton Roads in about the same volume, the agencies are still forcibly feeding coal to reluctant consumers, quotations naturally are quite as easy as at any time this year—in a word, there is little comfort to be extracted from the present posture of bituminous in New England. The course of the market continues to be most unsatisfactory to all but the in-and-out buyer, and even he would like to be better assured that his every purchase will not turn out to be a poor one.

The exact price situation is hard to gage. A few producers of high-grade smokeless coals for most of the time adhere to $4.35@$4.40 per gross ton f.o.b. vessel at the Virginia piers, but occasionally even these interests concede 15@20c. to move coal. And again there is mine run sold as slack or nut-and-slack to release cars and the prices of No. 2 coals of course are being used to break down quotations on preferred grades. For navy standard Pocahontas and New River the price level ranges from $4.35 down to $4.20, with occasional lapses to $4.10@$4.15. There continue to be intermittent efforts to limit output, but not for long do any of these succeed.

The situation inland from Boston, Providence and Portland is a replica of conditions at Hampton Roads, as might be expected. A few days of no arrivals gave rehandlers who have their own facilities an opening to mark prices up to $5.35@$5.45, but an influx of coal at the railroad wharves soon drove the market figure down to $5.20.

All-rail from central Pennsylvania there seem no new developments. Quotations change very little, except that on high grades there is a disposition to accept less money in order to keep work ahead for men who have agreed to take less than the union wage scale. But even then the sales price is hardly low enough to attract buyers here who are in the tidewater area.



New York Market Quiet but Hopeful

Consumers of soft coal in the New York market continue to buy in small quantities—when satisfied with the price. Tonnage coming here is being absorbed but not without intensive sales effort. Producers are hopeful, however, that the worst is over and that the long waited improvement will soon be here.

More West Virginia coal is coming into this market than usual, due to much idleness in central Pennsylvania.

Contracts to take the places of those expiring next month are in process of being renewed on the basis of present spot coal prices, according to reports.

The tidewater situation is good, though there is no heavy demand. Shipments are only a trifle heavier than actual demand, leaving comparatively little surplus coal on the piers.

Prices Hold Interest at Philadelphia

At Philadelphia, though there has been no particular change, prices are of chief interest. The closing of many mines inclined the trade to the belief that prices might advance. In the high-volatile grades there has actually been a slight price increase, but so far none of the other coals have felt it. Certainly prices couldn't go much above present levels without most of the closed mines soon coming back on the market.

Coal for institutions has brought out spirited bidding for contracts of from 10 to 20 cars. Buying for current account has been on the same level as for the last few weeks. Manufacturers remain quiescent, and there seems to be no trend whatever toward stocking. The railroads have been better purchasers recently. Possibly the slight increase in high volatiles has brought them out.

There have been a few tide clearances recently. Outside of that the local pier situation is not at all attractive to the producer. Bunkering is light, as usual, and prices are unchanged.

The soft-coal situation at Baltimore continues flat and uninteresting, with dealers reporting enough coal on hand to meet all present demands despite labor unrest in Pennsylvania and northern West Virginia. According to reports the railroads seem to be the principal sufferers in the strike, through decreased traffic. In the first fifteen days of May only two shipments of coal totaling 7,720 tons left this port. Five vessels have cleared with 3,198 tons of coke.

Slight Upturn at Birmingham

The domestic trade at Birmingham apparently gained a little strength last week. Demand for spot coal was a trifle better and dealers began to take contract tonnage a little more liberally. This improvement was negligible, however, except inasmuch as it might indicate the beginning of an upward trend and breaking of the spell of seasonal weakness which has checked market activity for some weeks, and furthermore applied only to the better grades of domestic fuel. Low grade coals are still practically without a market for domestic use and mines are either having to crush their lump or apply it as it is on steam orders.

Industrial consumption of steam coal has possibly increased a little, the situation as a whole being reported by some interests as more promising. Spot demand is still comparatively light and buying confined to requirements of the near future. Contracting is restricted to renewals, with very few exceptions.

Quotable mine prices are unchanged at figures which have ruled for several weeks past. There is no surplus coal of consequence of any grade, mines operating on schedules to take care of business in hand, as a rule.

Hard Coal Active at New York

Activity marks the anthracite market at New York. Line companies are well supplied with orders and independent producers are keeping their output moving. The nearness of vacation time has added to the troubles of the retail dealer, as consumers want their coal in the bin before leaving the city.

Stocking of winter fuel by consumers goes merrily on, those refusing to take anything but stove coal being compelled to await delivery. This size continues to be the most wanted. Egg is in good demand, especially with tidewater business. Along the line chestnut seems to be the favorite size while there is a good call for pea coal in all directions.

Some retailers report a better demand for No. 1 buckwheat for household purposes. Rice and barley are moving well for this time of the year.

The anthracite situation at Philadelphia, both wholesale and retail, can be considered as good. Company shippers are having less trouble in disposing of their output. Shipments of company coal have been unusually good to this territory this spring. Independents have a surplus from day to day, especially of nut. While this surplus is not sufficient to cause a break in prices, it is beginning to cause trouble.

Demand for egg and stove is about even, but it is likely the pressure on egg will be off before many weeks. Dealers are getting as much of any size as they desire. The belief grows that the operators are likely to fight the miners to a finish if there is a strike, and if this impression could be more definitely fixed the dealers would store up in anticipation of a suspension.

The steam trade has weakened and buckwheat is very heavy, with all shippers finding it difficult to find a market. Another week like the present and we can look for drastic cuts in the independent prices of buckwheat and rice, and possibly barley.

So far the month of May has shown no change in the hard-coal situation at Baltimore. Ordering is about as usual for this season of the year, consumers being disinclined to lay in supplies of fuel for next winter.

Dullness reigns in the anthracite trade at Buffalo, superinduced by the failure of consumers to put in their winter supply now. They do not seem to fear a shortage. The demand from Canada is light. Coke buying has been much more general there than here. The lake trade is very slow, though the April shipment will answer for some time yet. For the week the loadings were 36,000 tons, of which 20,700 tons cleared for Duluth and Superior, 9,600 tons for Milwaukee and 5,700 tons for Chicago.

Connellsville Coke Market Flat

The Connellsville coke market is practically dead. As to furnace coke, nothing else could be expected when the iron and steel industry is decreasing operations and is facing further decreases. Spot furnace coke, previously quotable at $3@$3.25, is now $3@$3.15, and there is no indication that the price could be shaded.

Spot foundry coke, which has been getting increasingly weak at $4@$4.50, may now be quoted rather at $3.75@$4.25. There is standard coke to be had at $3.75, though not of the best quality. Some choice coke that formerly commanded $4.50 can now be bought at $4.25. Two or three brands are held at higher prices, but they are always regarded as special, not a part of the ordinary market.

From time to time shipments of furnace coke on contracts decrease, as furnaces bank or blow out. There is a more rapid decrease in production by the ovens controlled by blast-furnace interests, as most of these have byproduct plants also, which they aim to keep in operation, and thus their Connellsville ovens feel nearly all their decrease in coke consumption.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended May 2, 1925	981,711	149,218
Previous week	959,225	147,330
Week ended May 2, 1924	913,550	127,188

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
May 8, 1925	329,844	149,992	.....	.....
April 30, 1925	337,181	160,913	.....	.....
May 7, 1924	324,779	180,888	.....	.....

Foreign Market And Export News

British Coal Market Slightly Steadier; Price Tendency Sluggish

The Welsh coal market has maintained the very slight improvement of last week, though progress is exceedingly slow, and business is very much below normal for this time of year. Since Easter, surplus stocks have been reduced, but prices do not show much tendency to rise. No closed pits have been reopened, though many of the collieries are operating more regularly. In one or two cases notices had been served to the men, but the partial stabilization of the market has led to these notices being cancelled; the men affected number about 3,000.

The loss of many French, Italian and British naval contracts, which were a few years ago a regular feature, is a very serious factor in impeding the recovery of the Welsh market.

The Newcastle market has steadied somewhat since last week, and there is an improved inquiry for May shipment. Few contracts are reported.

Output by British collieries in the week ended May 2, a cable to *Coal Age* states, totaled 4,950,000 tons, compared with 5,268,000 tons in the preceding week.

Demand Quiet in French Market; Stocks About Normal

The situation in the French coal market remains the same. Demand is quiet, yet it seems sufficient to absorb the output, as stocks are not above normal. This is true of household as well as industrial coals.

Beginning May 1 the price for sized anthracites was raised 5 fr. per ton; choicest grades from the collieries of Kangenbrahm, Gottfried Wilhelm, Eschweiler and Sophia Jacoba were advanced 10 fr. as follows: Nuts, 193 fr. and cobbles 190 fr., via Jeumont-Givet; through Lauterburg the prices are 5 fr. higher; second choice are cheaper by 10 fr., summer primes having been deducted.

Deliveries of indemnity fuels from April 1 to 18 were 300,900 tons, including 102,100 tons of coal, 187,500 tons of coke and 11,300 tons of lignite briquets.

During the first 28 days of April the O.R.C.A. received from the Ruhr 296,381 tons of coke, an average of a little less than 10,600 tons per day. The price of indemnity coke will be maintained during May; to the Belgians, the same coke is to be reduced 5 fr. to 125 fr.

Heavy Foreign Shipments from Hampton Roads

General coal business at Hampton Roads last week showed little improvement, the bulk of activity being confined to heavy foreign movement of distress coal. Some pool 1 coal sold for $4 and pool 2 as low as $3.85. The heaviest foreign movement of the year resulted, more than a score of cargoes of distress coal being handled. Practically all such coal was moved before the end of the week and business settled back to its old monotony. Prices weakened somewhat and demand was slight. Bunker business was fair and coastwise trade held its own.

Belgian Trade Retains Balance

The Belgian Coal Market is much the same. There is a kind of balance between offer and demand and prices have for the most part been maintained, which, in the face of circumstances, is a notable result. Storage piles are being resorted to, in consequence of a slight rally in the demand and a decrease in output.

Foreign competition is very active and, contrary to what has been commonly bruited abroad, German coals, outside reparation forwardings, penetrate into Belgian territory in steadily increasing quantities.

Export Clearances, Week Ended May 16, 1925

FROM HAMPTON ROADS

	Tons
For Argentina:	
Br. Str. Campus, for Puerto La Plata	5,151
Ital. Str. Antonietta, for Buenos Aires	6,152
For New Brunswick:	
Br. Str. Wabana, for St. John	7,215
Br. Schr. Cutty Sark, for St. John	892
For Canada:	
Dan. Str. Paris, for Three Rivers	4,472
Br. Str. Kamarouska, for Quebec	7,102
Br. Str. Halesius, for Montreal	7,017
Br. Str. Daghild, for Montreal	11,229
Amer. Schr. Tolinia, for Charlottetown, P. E. I.	1,200
Br. Str. Ingola, for Quebec	5,853
Br. Str. Oakfield, for Montreal	5,698
Br. Str. Teesbridge, for Montreal	5,581
For Italy:	
Ital. Str. Amisto, for Genoa	7,005
Ital. Str. Ariosto, for Venice	2,005
Ital. Str. Tirso, for Genoa	7,046
Ital. Str. Maria Matilda, for Genoa	5,129
Ital. Str. Aquitania, for Porto Ferrajo	6,362
For Nova Scotia:	
Br. Str. Rose Castle, for Halifax	10,436
Dan. Str. Jungshaved, for Sydney	5,525
For France:	
Fr. Str. P. L. M. 20, for Marseilles	8,252
For Brazil:	
Braz. Str. Vera Radcliffe, for Rio de Janeiro	7,686
Br. Str. Cedrington Court, for Rio de Janeiro	6,465
Br. Str. Oreland, for Rio de Janeiro	6,041
Br. Str. Barrhill, for Santos	6,727
Br. Str. Larpool, for Rio de Janeiro	5,911
Nor. Str. Ramsdalshaven, for Rio de Janeiro	9,198
For Porto Rico:	
Amer. Str. Elizabeth, for San Juan	4,664
For Miquelon:	
Nor. Str. Marie Nielsen, for St. Pierre	2,178
For French West Indies:	
Br. Str. Muneric, for Fort de France	7,163
For Newfoundland:	
Nor. Str. Svartfond, for St. Johns	3,010
For Canal Zone:	
Amer. Str. Achilles, for Cristobal	12,025
Amer. Barge Darien, for Cristobal	7,210
For Cuba:	
Nor. Str. Marstenen, for Havana	2,891
For British West Indies:	
Nor. Str. Ida, for Port of Spain	2,520

FROM PHILADELPHIA

For Newfoundland:	
Br. Str. Lake Como, for St. Johns.	——
For Nova Scotia:	
Nor. Str. Karma, for Halifax	——

FROM BALTIMORE

For Cuba:	
Br. Str. Maidenhead, for Diaguiri	7,197
For Porto Rico:	
Am. Str. Gov. John Lind, for Guanica	867
Am. Str. Major Wheeler, for San Juan (coke)	180
For Chile:	
Br. Str. Trafalgar, for San Antonio (coke)	2,507

Hampton Roads Pier Situation

N.&W. Piers, Lamberts, Pt.:	May 7	May 14
Cars on hand	1,423	1,440
Tons on hand	88,779	91,539
Tons dumped for week	116,229	116,140
Tonnage waiting	12,000	7,000
Virginian Piers, Sewalls Pt.:		
Cars on hand	644	756
Tons on hand	45,600	55,400
Tons dumped for week	74,768	78,578
Tonnage waiting	19,750	.....
C.&O. Piers, Newport News:		
Cars on hand	2,602	2,215
Tons on hand	123,435	115,055
Tons dumped for week	158,002	166,282
Tonnage waiting	35,665	18,600

Pier and Bunker Prices, Gross Tons

PIERS

	May 9	May 16†
Pool 9, New York	$4.70@$4.85	$4.70@$4.85
Pool 10, New York	4.50@ 4.65	4.50@ 4.65
Pool 11, New York	4.25@ 4.50	4.25@ 4.50
Pool 9, Philadelphia	4.65@ 4.90	4.65@ 4.90
Pool 10, Philadelphia	4.35@ 4.55	4.35@ 4.55
Pool 11, Philadelphia	4.25@ 4.30	4.25@ 4.30
Pool 1, Hamp. Roads	4.35	*4.30*
Pool 2, Hamp. Roads	4.20	4.20
Pools 5-6-7, Hamp. Rds.	4.10	4.10

BUNKERS

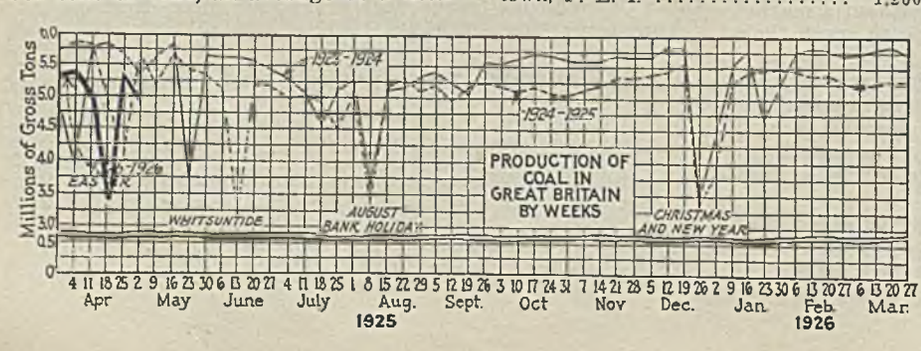
Pool 9, New York	$4.95@$5.10	$4.95@$5.10
Pool 10, New York	4.75@ 4.90	4.75@ 4.90
Pool 11, New York	4.50@ 4.75	4.50@ 4.75
Pool 9, Philadelphia	4.80@ 5.05	4.80@ 5.05
Pool 10, Philadelphia	4.60@ 4.80	4.60@ 4.80
Pool 11, Philadelphia	4.45@ 4.65	4.45@ 4.65
Pool 1, Hamp. Roads	4.40	*4.35*
Pool 2, Hamp. Roads	4.25	4.25
Pools 5-6-7, Hamp. Rds.	4.15	*4.10*

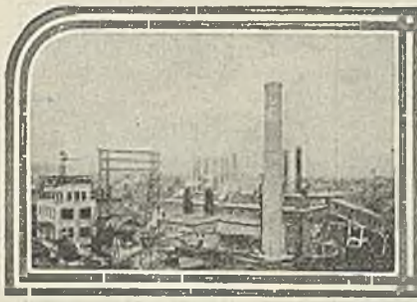
Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

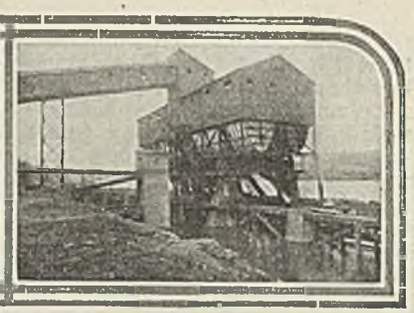
Cardiff:	May 9	May 16†
Admiralty, large	26s.@26s.6d.	**26s.3d.@26s.9d.**
Steam smalls	15s.6d.@16s.	*15s.6d.*
Newcastle:		
Best steams	19s.	*17s.6d.*
Best gas	19s.@19s.6d.	19s.@19s.6d.
Best bunkers	18s.	18s.

†Advances over previous week shown in **heavy type**; declines in *italics*.





News Items From Field and Trade



ALABAMA

Hugh Morrow, formerly operating vice-president of Sloss-Sheffield Steel & Iron Co. was elected president of the company at a meeting held May 14, succeeding the late John W. McQueen. Mr. Morrow became vice president in November, 1919, and has been in charge of the company's affairs since Mr. McQueen's death.

The Peerless Cahaba Coal Co., of Birmingham, is the new name under which the Helena Straven Coal Co. will continue business.

The Ensley plant of the Semet-Solvay Co. broke all previous records in its 26 years existence during the month of April, when it coked 63,581 tons of coal, produced 48,470 tons of coke, 1,494,709 lb. of ammonia sulphate and other by-products in proportionate quantities. Finished products shipped required the use of 1,527 cars, the peak shipping record also. With the exception of coke produced for the Yolande Coal & Coke Co., the output of this product was sold commercially by the Semet-Solvay Co. The above record was announced by Superintendent A. H. Moore .

The Alco Coal Co., of Tuscaloosa, let the contract the last of April for construction of a 600-ft. trestle.

The Connellsville shaft of the Yolande Coal & Coke Co., which it was announced recently would be placed in operation at an early date after being closed for several years, will be provided with a new washery, tipple and other modern equipment for mining, handling and preparation of the output.

Plans are being made for the improvement of the Moss-McCormack coal mines, near Carbon Hill, at a cost of about $500,000. When these improvements are completed the output of these mines will be greatly increased.

ARKANSAS

With an authorized capital of $75,000, the Central City Coal Co., composed of E. L. Packard and E. P. Lindsey, of the E. D. Packard Coal & Mining Co., will begin developing a 160-acre lease near Central City in a few weeks.

COLORADO

The Kemmerer Coal Co., of Wyoming, has been given a certificate of purchase by the public trustee of Weld County to 288 acres of land in section 31-7-65 and six shares of Larimer and Weld ditch stock and 10 shares of Windsor reservoir stock on a bid of $52,730 at foreclosure sale. The former owner was the Eaton Land & Livestock Co. and the land and water stock was part of the security for indebtedness of $150,000 to the Wyoming company.

J. F. Welborn, president of the Colorado Fuel & Iron Co., has announced that in order that he may have more time for the increased work of the office of assistant to the president, J. B. Marks has been relieved of the duties of purchasing agent, and succeeded in that office by Gerald Alley. Ward Wire has been appointed traffic manager.

ILLINOIS

The Consolidated Coal Co. of St. Louis recently posted notices at its No. 7 mine at Herrin, employing more than 700 men, that the mine would close down indefinitely. Slack business was the reason assigned by the company for the shutdown.

New mines in the vicinity of Watson Mine, near Marion, where the Sincerity Coal Co. will begin work sometime in May, will give employment to scores of miners. The new operation is said to comprise 817 acres of coal lands.

INDIANA

Lenpha A. Folsom was named receiver to take charge of the Possum Ridge coal mine May 10. The action was taken on the complaint against William Dorsey, Patrick Barr, Van Sandefur and Jeppe Bertelson, doing business under the name of the New Possum Ridge Coal Co. Gibson was asked that his miner's lien be foreclosed and that a receiver be appointed without notice. Alpha Martin, Arthur Hudson, Willie Reed, John Mitchell, John Leathco, Charles Voyles, John F. Leslie, Glay Neen, Willie Curtis, Joseph Highstreet, George Monks, Lon Davis, Lawrence Bramer, John T. Monks, Charles Waters and Andy Grandstaff filed a petition asking to be made parties plaintiff and, the petition being granted, each filed a complaint in the case.

The Comet Coal Co., Evansville, has increased its capital stock from $30,000 to $100,000 by the issuance of $70,000 additional common stock.

Word was received May 6 from Covington that Charles Wert, giving his address as Wabash, is being held for violation of the new "blue sky" laws. Wert formerly was secretary of the Liberty Coal & Engineering Co. He is said to have sold stock for the Liberty company which is being investigated by the securities division commission. Benjamin J. O'Reilly, an officer of the company, was arrested in Terre Haute. Wert and O'Reilly were both arrested on affidavits signed by Frank E. Wright, investigator for the securties division commission.

KANSAS

Decision by Judge J. C. Pollock in U. S. District Court at Fort Scott, May 5, that workmen's compensation cases involving more than $3,000 and in which one of the parties is not a resident of Kansas are transferable from the Kansas state courts to federal court is regarded by attorneys for both operators and miners as the most important development in regard to the Kansas compensation law since its enactment more than a decade ago.

The Kansas "blue sky" board has authorized the Coal River Collieries Co. of West Virginia to sell an additional $50,000 of stock in the state. This stock is to be sold only to locomotive engineers, according to a statement filed with the board.

KENTUCKY

The South Diamond mine, Mortons Gap, of the St. Bernard group of the West Kentucky Coal Co. resumed operation May 12 for the first time since April 15, when the mine stopped while repairs were being made. The Lutontown mine of the same group has ceased operation until a new tipple is constructed. This probably will require two or three months.

The plant of the Tierney Mining Co., located on Pond Creek near Stone, has been closed down according to information received in Welch, W. Va., on May 11, the suspension being for an indefinite period. The company has found it difficult to move coal at any price. Approximately 100 men were thrown out of employment for the time being by the closing of the mine.

Millers Creek Kentucky Mining Co., Louisa, has changed its name to Millers Creek Collieries Co.

The Reliance Coal Co., Glomawr, will soon begin the construction of a hotel building at Whitesburg.

MARYLAND

The Upper Potomac Coal Association, of Cumberland, Md., was discontinued as of April 30. A number of the member companies of that association have become members of the National and it is thought practically all of the other companies there will join individually in the near future. J. F. Palmer, who has been secretary of that association, has become secretary of the Baltimore Coal Exchange, of Baltimore, Md.

MISSOURI

The Blackfoot Coal Co., owning the Blackfoot mine, about three miles north of Columbia, was sold at auction last week to William R. Prather for $3,200. The sale came as the result of a voluntary dissolution. Those having holdings in the company were S. M. Stephenson, J. S. Rollins, W. R. Prather, Ed Keene and Ray Warren. Mr. Prather has been manager for this company for about six years.

OHIO

Among additional mines that have been opened in the Pomeroy Bend field under the 1917 scale since the New Pittsburgh Coal Co. resumed are: Mine No. 5 of the Essex Coal Co. and the Brocalsa Chemical Co., which operates salt mills in that section also has a mine to produce fuel for its works. The total output is now in excess of 1,000 tons daily and it is being gradually increased. Up to May 15 there was no violence reported although union officials have been trying in every way possible to stop the operation of the mines. It is estimated that the cut in cost of production under the 1917 scale as compared with the present scale amounts to at least 35c. a ton and this will enable operators to compete with West Virginia non-union fields. Other mines plan to open soon at the same scale.

Colonel Mike Roach of Charleston, W. Va., and Cincinnati, and H. V. Schermerhorn, of Detroit, have withdrawn from the Logan Pocahontas Coal Co. and since May 1 have been identified with the operating end of the Harlan-Wallins Coal Co. of southeastern Kentucky. Colonel Roach was one of the organizers of the Logan Pocahontas company and for many years has been a spectacular figure in the trade. Mr. Schermerhorn had the Detroit office. The Harlan Wallins Coal Co., whose operations are on Wallins Creek, took part in long drawn out arbitration negotiations a year ago over acceptance of union conditions. The Logan Pocahontas Coal Co. has reorganized with T. T. Wright, of Cincinnati, as president; B. K. Littlepage, of Charleston, W. Va., vice-president and general counsel, and C. F. Armitage, of Charleston, as secretary-treasurer. The company owns mines in West Virginia and the Harlan-Hazard district.

As soon as estimates are received, the state purchasing agent will be urged to place orders for coal for state institutions. Appropriations for the next fiscal year will be available July 1. As in the past three years, all coal for state institutions will be Ohio mined, to provide work for Ohio miners. In 1924 the state used 250,000 tons, but it is expected that during the coming year the amount may reach 300,000 tons.

PENNSYLVANIA

The Philadelphia & Reading Coal & Iron Co and subsidiaries for the year ended Dec. 31, 1924, report net income, including $676,430 profit from sale of property and securities, of $1,697,023 after federal taxes, interest, depreciation and depletion, equivalent to $1.21 a share earned on 1,400,000 shares of no par capital stock. This compares with $4,068,694 or $2.90 a share in 1923. Consolidated income account for 1924 compares with that of 1923 as follows:

	1924	1923
Coal sales	$83,511,650	$89,195,635
Oper. and other exp., etc.	77,641,497	78,682,659
Operating income	5,870,153	10,512,976
Other income	612,406	1,270,935
Total income	6,482,550	11,783,911
Federal taxes, etc.	2,346,771	4,784,651
Interest	1,610,692	1,306,593
Depreciation and depletion	1,504,503	1,623,973
Balance	1,020,593	4,068,694
Profit from sale of property and securities	676,430	.....
Net income	1,697,023	4,068,694
Minority interests	4,919	.....
Surplus	1,692,104	4,068,694

Operations continue at the Heisley Coal Co.'s mines at Nant-y-Glo, Cambria County, since opening two weeks ago under the 1917 scale. The United Mine Workers declared a strike and the coal company placed guards about the property. Interference on the part of the strikers was stopped when injunction proceedings were started in the Cambria County courts against a large number of union men and women. A mass meeting was held on Sunday, May 16, at which time President John Brophy called upon the miners to stick to the union. However, it is reported that miners in large numbers are breaking ranks, preferring to live by working rather than starve by striking.

An agreement was reached in the Somerset County Court last week whereby Judge John A. Berkey directed four verdicts in favor of the Wilmore Coal Co. against as many school districts and townships for the return of taxes which it was alleged were illegally assessed.

A few more union mines near the edge of the Connellsville coke region have closed down, resulting in increasing operations at some of the non-union mines in the region. The Vesta Coal Co., a subsidiary of the Jones & Laughlin Steel Corporation, has closed down its Nos. 5 and 6 mines on the Monongahela River just above Brownsville, in Washington County. The Hillman Coal & Coke Co. has resumed operations at the Warwick Mine and increased operations at the Isabella mine, both non-union, on the Monongahela River above Brownsville. W. J. Rainey, Inc., has resumed operations at Allison No. 2 Mine, which had been closed down for a few weeks, and has increased operations at Allison No. 1 mine. The Harah Coal & Coke Co. resumed operations last week, employing 50 men and producing 200 tons of coke per day. The Connellsville Central Coke Co. closed down its plant at Herbert last week and the Century Coke Co. closed down all but eighteen ovens.

Where Miners Are Housed in Liévin

Here the second story is covered by a mansard roof. Note the quaint and pretentious fence, the only elaboration in the design.

The Northwestern Pennsylvania Coal Operators' Association, of Butler, Pa., has discontinued its activities, at least for the time being. Sixteen out of twenty-two member companies of that association have already become individual members of the National Coal Association. Besides these nine other companies in that field that did not belong to the local association have joined the National.

Governor Pinchot has reappointed Charles B. Maxwell, Morrisdale; James Craig, Yatesboro, and John E. Struble, Connellsville, as members of the Mine Inspectors' Examining Board for the bituminous coal mines.

The Dauphin County Court last week excluded the defense offered in the anthracite tax appeal of the Hudson Coal Co. and a verdict for the state aggregating $43,530 was taken Monday. This sum includes interest and the Attorney General's commission. The company desired to show the difference between anthracite and bituminous coal and by that means show the unconstitutionality of the taxing act. The Commonwealth contended that the appelate courts had ruled upon this question in prior cases. A motion for a new trial and for judgment regardless of the verdict will be made by the company and when they are disposed of an appeal will be carried to the Supreme Court. More than fifty appeals will be determined by the decision finally reached in the Hudson Coal action and the amount of taxes involved is between $4,000,000 and $5,000,000.

SOUTH DAKOTA

Ross Miller, of Pierre, has resigned from the State Coal Commission, it has been announced at the office of Governor Carl Gunderson. Mr. Miller has served as a member and engineer for the commission for two years. No reason was given for his withdrawal.

UTAH

A lease on approximately 1,578 acres of public coal land in Sevier County, Utah, was awarded May 4 to Herbert Z. Lund and others. The Lund interests must invest $100,000 in developing

the property during the next three years and must produce a minimum of 75,000 tons of coal beginning with the fourth year. The government is to get a royalty on all coal mined. Work on the development of the property will start within the next thirty days, it was announced by Henry C. Lund, attorney for the Lund interests. The property is located on the north fork of Queatschuppah Creek, 34 miles east of Salina. Mr. Lund announced that plans were being made for the expenditure of from $200,000 to $300,000 this year. Persons associated with the Lund interests are Dr. Lund, Prof. A. C. Lund, O. R. Lund, William A. Lund, T. C. Peterson, Mrs. Bertie Beal, all of Salt Lake, and Mrs. Charles Jensen and Mrs. Sarah Jensen, both of Ephraim.

VIRGINIA

The Virginia Iron, Coal & Coke Co. for the first quarter of 1925 reports net income of $217,306, after all expenses and charges for interest and taxes. This, after allowing for preferred dividends, was equal to $1.75 a share earned on the 100,000 shares of common stock outstanding. In the first quarter of 1924 the company reported net income of $5,792, equal to 11c. a share on the $5,000,000 preferred stock.

WEST VIRGINIA

According to notices posted at the McKinleyville plant of the Richland Coal Co. on May 8, there is to be a sheriff's sale on May 28 of all personal property at the plant, such action being taken to satisfy a judgment in excess of $44, ordered in Brooke County at the May term of court in favor of the Ferguson Coal & Coke Co. for royalties due them for operation of the Saldeka mine at Cliftonville, owned by the Ferguson company, and operated under lease by the Richland company.

Having failed to win its suit to evict 115 families from its houses at the Parker Run mine, the Fairmont-Cleveland Coal Co. proposes at the first opportunity to institute new action to regain possession of its property. The fact that the words "in the name of the State of West Virginia" had not been used in the summonses made the latter invalid and Judge W. S. Meredith of the Marion County Circuit Court dismissed the suits.

E. E. White, president and general manager of the E. E. White Coal Co., one of the large smokeless producing companies in the Winding Gulf district of Raleigh and Wyoming counties, on May 9 awarded a contract for rebuilding and remodeling the tipple at Stotesbury, the present layout to be replaced by a steel structure.

Announcement has been made of the appointment of William Yates as superintendent of the Bailey-Wood Coal Co., with two mines at MacAlpin, succeeding L. C. Deem, resigned.

All the holdings of the Joseph T. Thropp Co., including the Everett and Saxton furnaces, four coal mines, 500 coke ovens and 5,000 acres of coal lands, were sold at Huntington May 6 under the direction of Receiver Andrew S. Webb, of Philadelphia, for $800,000. An equity suit a year ago against the company resulted in the appointment of a receiver and a court order for the sale. In the absence of the purchaser's name being announced, it is believed the property was bought in the interests of Philadelphia creditors.

The Monongahela Ry., it is reported, will soon let a contract to build a spur from its main line to the Domestic Coke Corporation, probably the largest by-product plant in central West Virginia, located on the outskirts of Fairmont. The B. & O. R.R., it is reported will reroute its coal shipments off the M. & K. branch by the way of Rowlesburg and Keyser, instead of by Morgantown and Connellsville, Pa., a plan which went into effect only a few weeks ago.

The Soper-Mitchell Coal Co., operating on Scotts Run in the Monongalia field, has leased its property to the Monon Gas Coal Co. and preparations are being made to operate the mines on a non-union basis. A new scale has been posted at the mines. It is stated by officials of the leasing company that many former employees of the company had signified their desire to return to work at the 1917 scale and that many other applications are being received.

Governor Howard M. Gore has approved the Tutwiler Bill—House Bill 441—increasing the inspection force of the West Virginia Department of Mines from 22 to 25 men, increasing their salary from $3,000 to $3,600 per year, at the discretion of the head of the department, increasing the salary of the head of the department to $6,000 a year, and making certain changes in the mining laws relating to ventilation, etc. The bill encountered no serious opposition in either branch of the Legislature. House Bill 146, relating to the issuance of scrip and making such scrip non-transferable, also has become a law. Two bills introduced, both relating to the weighing of coal, were not acted upon by the Legislature, inasmuch as payment to miners at most of the mines in the state is made on the basis of weight, even in the absence of compulsion. The Willis bill relating to the mining of coal in underlying and overlying seams was not acted upon by either branch of the Legislature, nor was any action taken on a bill backed by the union to prohibit the payment of deputy sheriffs by private corporations.

Eleven families have been evicted recently from houses owned by the Rosedale Coal Co. at its plant four miles north of Morgantown.

It is shown in an analysis of the annual report of Robert M. Lambie, chief of the West Virginia Department of Mines, that 5,000,000 tons more of coal was produced in the state in 1924 than in 1923 notwithstanding the fact that 4,500 less miners were employed. A survey recently completed by the Department of Labor discloses the fact the wages paid today in Kanawha mines surpass the average earnings, both per day and per hour, during the high-wage days of 1921 and 1922.

The Banks-Miller Supply Co., of Huntington, began early in May the distribution of its catalog, listing the complete line of the company. The catalog contains 1,400 pages and approximately 14,000 illustrations are used. Specialists of the company worked a year compiling data for the catalog. Two freight cars were required to deliver the catalog to Huntington. The company has eight thousand firms on its mailing list.

WYOMING

The Union Pacific Coal Co., Rock Springs, has made a number of changes recently in its operating department. Thomas Foster, mine superintendent at Reliance since March 26, 1921, has been transferred to the Winton mines as mine superintendent, replacing William Redshaw, who resigned to rejoin the Megeath Coal Co. as superintendent at the Rock Springs mine. John O. Holen has been transferred from Superior as mine superintendent to Reliance, in the same capacity. William McIntosh succeeds to his old post. Arthur T. Henkell, assistant general master mechanic, has been promoted to the position of general master mechanic. succeeding Robert Muir, who has been placed on the retired list after nearly forty-three years of active service. H. J. Harrington, employment agent, has been appointed supervisor of compensation.

Coal produced in Wyoming in 1924 totaled 6,730,372 tons, a decrease from the 1923 output of 823,694 tons, according to the report made by the state coal mine inspectors for the two districts in the state, to Governor Ross. The number of men employed and the number of mines worked were approximately the same as in 1923, the decrease in tonnage being due to the

Kingston Coal Co., No. 3 Shaft

This young man and his four-footed blonde and brunette companions are engaged in haulage in the Red Ash anthracite seam. the colliery being located at Kingston, Pa.

fewer days worked. During the year there were 73 fatal accidents in the industry and 463 non-fatal ones. Thirty-nine of the fatalities were caused by the gas explosion at No. 5 Sublet, the property of the Kemmerer Coal Co., on Sept. 16, 1924.

WASHINGTON, D. C.

Isaac T. Mann, president, Pocahontas Fuel Co., of West Virginia, Michael Gallagher, general manager, M. A. Hanna Co., of Cleveland, Ohio; P. H. Penna, secretary, Indiana Bituminous Coal Operators Association of Terre Haute, Ind.; W. H. Cunningham, president, Meriden Smokeless Coal Corp., of Huntington, W. Va., and L. C. Madeira, 3d, of the Medeira-Hill & Co. of Philadelphia, Pa., have been appointed by President S. Pemberton Hutchinson to represent the National Coal Association at the thirteenth annual meeting of the Chamber of Commerce of the United States, at Washington, D. C., this week.

George Otis Smith, director of the U. S. Geological Survey, has contributed a paper on the distribution of power to the new quarterly journal *Economic Geography*, published by Clark University. In the second number, which appears next month, after picturing the world distribution of energy resources, Dr. Smith mentions the centers of production of power in the United States, and refers to future demands, in which connection he has figured the center of electric power generation to be in Illinois, about 50 miles southeast of Chicago.

The following bituminous coal operators have accepted appointment to represent the National Coal Association at the annual meeting of the International Chamber of Commerce at Brussels, Belgium, June 21-27, according to President S. Pemberton Hutchinson: Alexander Bonnyman, president, Blue Diamond Coal Co., Knoxville, Tenn., Chairman; Roy Brenholtz, president, Western Fuel Co., Columbus, Ohio; Edmund Hannay Watts, London representative of the Wyatt Coal Sales Co., Charleston, W. Va., and A. Sicard, president, West Helena Coal Co., Sicard, Ala.

CANADA

The "Industrial Peace Act," designed to prevent strikes and lockouts having been passed by both houses of the Nova Scotia Legislature, was assented to by the Lieutenant Governor May 7 and is now a law.

The picketing of the collieries at Glace Bay by the striking miners was attended with violence May 7 when P. E. Ogilvie, chief employment clerk of the Dominion Coal Co., who was heading a party of maintenance men going on shift at collieries Nos. 5 and 10, was struck on the head with a stone and severely cut. District President McLeod of the United Mine Workers, stated that the instructions of the executive called for peaceful picketing and expressed regret that violence had been resorted to. A telegram from Premier Armstrong to the district president intimated that the provincial government was prepared to call out the military, or the provincial police as guards for the maintenance men should the picketing operations jeopardize public property. Simon Gallant, a striking miner, was arrested May 8 charged with the assault on P. E. Ogilvie and afterward released on $1000 bail. Picketing has been discontinued at most of the collieries and everything was quiet over the week end.

The miners at Hillcrest, Alberta, on April 24 signed a direct agreement with their employers, thus breaking away from the United Mine Workers. Other mines in the same district which broke away last month and accepted reduced wages are reported as working steadily with good prospects ahead for a summer's job.

The first indication of coal in the Vermilion district of Alberta was met with about April 5 of this year when a farmer living five miles north of the town struck a 3-ft. steam while digging a well. The coal was found at a depth of 30 ft. Samples sent to Montreal for analysis having been found to be of high quality, two well-known Eastern geologists are now at Vermilion looking over the land to ascertain whether the seam is an outcropping, and if so, its direction and extent. Test holes will be bored at once and the fuel will be examined as to suitability for commercial uses.

Employees of the Corbin Coal & Coke Co. have withdrawn from the United Mines Workers and have formed the Corbin Miners' Association. The new association has entered into an agreement with the Corbin company for a wage contract that is practically the same as that in force at the Crows Nest Pass Coal Co.'s mines. All the steam-coal mining companies in the Crows Nest Pass field, with the exception of the Hillcrest Collieries, have now made an independent agreement with their employees.

The Ontario Fuel Controller has received orders for 90,000 tons of Alberta coal, although the arrangement for experimental shipments entered into by the provincial government limits the amount to 25,000 tons. No further orders will be received at present but Charles McCrea, Minister of Mines, announces that after the 25,000-ton order has been filled and data as to transportation costs obtained, the Department may permit further orders to be placed.

Traffic

I. C. C. "Advises" Adjustment In Southwestern Rates

The Interstate Commerce Commission on May 9 prescribed a readjustment of the rates on coal in carloads from Colorado and northern New Mexico producing districts to Missouri River points and destinations in Kansas, Nebraska, and western South Dakota. No order was issued by the commission but the carriers serving the territory involved were advised by the commission to comply with the new rate structure during the next ninety days.

The new structure is designed by the commission to remove the criticisms voiced by the Colorado & New Mexico Coal Operators' Association. Screening specifications also were prescribed by the commission.

Hearings Called on Proposals To Advance Rates

The Coal and Coke Committee, Trunk Line Territory, announces a hearing in Room 401, 143 Liberty Street, New York City, at 11 a.m., daylight saving time, Thursday, June 4, 1925, on a carriers proposal to advance rates on bituminous and cannel coal from mines on various originating roads to points on the Erie R.R., Overbrook, N. J., to Essex Fells, N. J., inclusive, from $3.34 per gross ton to $3.47 per gross ton (Clearfield basis), with usual differentials over from other groups of origin. The reason for the proposal is to place rates on the same basis as published to corresponding points on other roads.

A hearing also will be held at noon on the same day and at the same place on a carriers' proposal to advance rates on anthracite, pea and smaller sizes from mines on the Jersey Central, Lehigh & New England, Reading, Delaware & Hudson, N. Y., O. & W. and D., L. & W. railroads to Hartford, Conn., Central New England Ry. delivery. It is proposed to make the rate on pea $3.65 and on buckwheat No. 1 and smaller $3.40 per gross ton. The reason for the proposal is to place rates on the same basis as carried generally to Hartford, Conn., via the New York, New Haven & Hartford R.R.

Calls Rates to Iowa Reasonable

Car load rates on anthracite coal moving from Pennsylvania producing points to Iowa are not unreasonable according to a recommendation to the Interstate Commerce Commission May 6 by W. A. Disque, an examiner. The Board of Railroad Commissioners of Iowa complained that the rates were "unjustly discriminatory and unduly prejudicial," as compared with rates to Chicago and Peoria, Ill., and St. Paul, Minn.

Whether the flat Boston rate should apply to all stations within the corporate limits of the Massachusetts capital is the question which the Interstate Commerce Commission will be called upon to decide in the complaint recently filed with it by the Boylston Coal Corporation et al, of Boston, against the New Haven road. The complainants allege that the existing rate structure on bituminous coal from Pennsylvania and West Virginia to Boston stations is unjust, unreasonable and discriminatory. Reparation is asked.

The Harbor Coaling Corporation has petitioned the Interstate Commerce Commission to grant a rehearing or a supplemental hearing on its complaint attacking rates on bituminous coal from Pennsylvania, West Virginia and Maryland to the Black Tom pier of the Lehigh Valley R.R., New York Harbor, for tidewater delivery. The case was heard before C. W. Griffin, special examiner for the commission, at New York on April 25.

Trade Literature

Arc Weld Rail Bonds. The Electric Railway Improvement Co., Cleveland, Ohio. Circular No. 13. Pp. 13; 6x9 in.; illustrated. Gives detailed information, including actual dimensions of arc weld bonds. Data on welding currents, welding rod, etc., also are given. Copies free on request.

Small Size Evaporators. The Griscom-Russell Co., 90 West St., New York City. Leaflet No. 401, describing and illustrating the Reilly evaporator set for supplying small quantities of boiler feed makeup or makeup water for enclosed-jacket water-cooling systems.

Crouse-Hinds Co., Syracuse, N. Y., recently issued bulletin No. 2055, a four-page folder describing and illustrating "Arktite" plugs and receptacles.

Coming Meetings

Manufacturers' Division of the American Mining Congress. National exposition of coal-mining equipment, Cincinnati, Ohio, week of May 25. Secretary of American Mining Congress, J. F. Callbreath, Munsey Building, Washington, D. C.

National Association of Purchasing Agents. Tenth annual convention, Milwaukee, Wis., May 25-28. Secretary, W. L. Chandler, Woolworth Building, New York City.

International Railway Fuel Association. Seventeenth annual convention, Hotel Sherman, Chicago, Ill., May 26-29. Secretary, J. B. Hutchinson, 6000 Michigan Ave., Chicago, Ill.

American Wholesale Coal Association. Ninth annual convention, French Lick Springs Hotel, French Lick, Ind., June 1 and 2. Secretary, G. H. Merryweather, 1121 Chicago Temple Bldg., Chicago, Ill.

Illinois & Wisconsin Retail Coal Dealers' Association. Annual meeting, June 9-11, at Lake Delavan, Wis. Secretary, I. L. Runyan, Great Northern Bldg., Chicago, Ill.

Mid-West Retail Coal Association. Annual meeting at Kansas City, Mo., June 9-10, Baltimore Hotel.

Pennsylvania Retail Coal Merchants' Association. Annual convention, June 11 and 12, Hotel Bethlehem, Bethlehem, Pa. Secretary, W. M. Bertolet, Reading, Pa.

Retail Coal Dealers Association of Texas. Annual convention June 15 and 16 at Houston, Texas. Secretary, C. R. Goldman, Dallas, Texas.

The Colorado and New Mexico Coal Operators' Association. Annual meeting, June 17, Boston Building, Denver, Colo. Secretary, F. O. Sandstrom, Boston Building, Denver, Colo.

National Coal Association. Annual meeting, June 17-19, Edgewater Beach Hotel, Chicago, Ill. Executive Secretary, Harry L. Gandy, Washington, D. C.

West Virginia Coal Association. Annual meeting, June 17-19, at Edgewater Beach Hotel, Chicago, Ill. Assistant secretary, James E. Hart, Huntington, W. Va.

Illinois Mining Institute. Annual meeting, June 18-20, on board boat leaving St. Louis, Mo. Secretary, Martin Bolt, Springfield, Ill.

International Chamber of Commerce. Third general conference, Brussels, Belgium, June 21-27.

American Society for Testing Materials. Twenty-eighth annual meeting, week of June 22, Chalfonte-Haddon Hall, Atlantic City, N. J. Secretary-treasurer, C. L. Warwick, 1315 Spruce St., Philadelphia, Pa.

American Institute of Electrical Engineers. Annual convention, Saratoga springs, N. Y. June 22-26. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

Chemical Equipment Exposition. June 22-27, Providence, R. I. Association of Chemical Equipment Manufacturers, 1328 Broadway, New York City.

Twelfth National Foreign Trade Convention, Seattle Wash., June 24-26. Chairman, James A. Farrell, National Foreign Trade Council, Hanover Square, New York City.

Tenth Exposition of Chemical Industries, Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

Fourth National Exposition of Power and Mechanical Engineering, Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

New Equipment

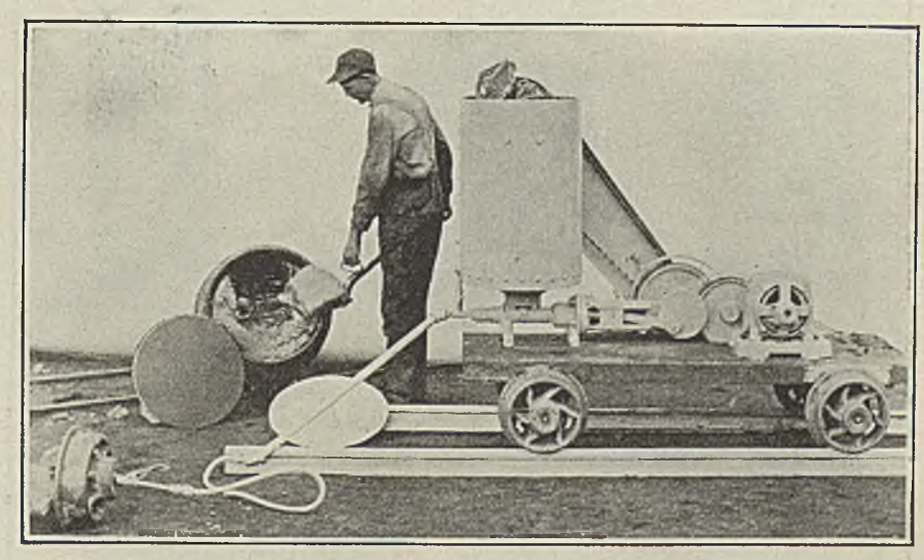
Car Wheels Lubricated by High-Pressure Greaser

Properly lubricating roller bearing mine car wheels with the right kind of grease is an important but difficult operation. In order to be most effective the grease should be "hard," that is, solid at ordinary temperatures so that it readily can be handled with a hand scoop or shovel. While it is entirely possible to force a lubricant of this consistency into a roller bearing by hand, even though this requires a pressure of approximately 1,000 lb. per square inch, it is far faster and, in most cases, more economical to employ a power-driven device for this purpose.

With this end in view the Sanford-Day Iron Works, of Knoxville, Tenn., has recently placed upon the market the electric grease pump shown in the accompanying illustration. This consists of a reservoir or tank capable of holding a half barrel of grease (which, for best results, should be of such consistency that, as shown, it can be handled with a shovel), a power-driven pump capable of developing a pressure of 1,000 lb. per square inch, and a flexible hose or pipe terminating in a hand-controlled nozzle. The motor driving this machine is of about 3 hp. and is triple back-geared from the pump.

In place of the portable machine mounted on truck, as here shown, this grease pump may be permanently installed at some convenient point, a branched delivery pipe laid, and two flexible delivery hoses used so that both sides of a car may be greased simultaneously. About 4 lb. of grease per minute is delivered by this machine.

Use of a gun of this kind greatly reduces the time and labor necessary to lubricate mine cars. Furthermore, the employment of a heavy grease under high pressure "packs" a bearing with lubricant so tight that no dirt or grit can enter. One greasing every six months is all that is necessary with roller bearings when an outfit of this kind is employed. The nozzle is especially adapted to wheels fitted with standard spring valve grease screws, but, if necessary, may be used on wheels equipped with ordinary plugs.

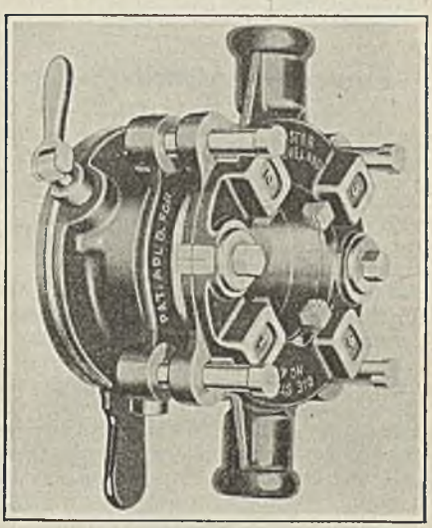


High-Pressure Greaser in Operation

This equipment may be mounted portably as here shown, or it may be set on a permanent foundation at some convenient point. In either case it may be fitted with a double outlet so that wheels on both sides of a trip may be greased simultaneously. A bypass with a spring valve relieves the pump when the pressure rises over 1,000 lb. per square inch.

Easy-Pull Pipe Threader

Many pipe threading devices are already on the market but the one shown in the accompanying illustration, recently introduced by the Oster Mfg. Co., of Cleveland, Ohio, is designed to produce true, perfect threads with the



"The Thoroughbred"

The true, accurate threads that this tool cuts, with small effort on the part of the operator, take some of the uncertainty and guesswork out of pipe fitting.

least effort on the part of the operator. This machine will thread pipe ranging from 1 to 2 in. in diameter. A special lead on the dies employed enables the operator to start a thread quickly and easily. The cutting angle or rake, which has been scientifically worked out, brings the efficiency of the cutting edges to a maximum and makes the operator's job easier.

The die head of this device is so constructed that it may be quickly and easily adjusted to cut either under- or over-sized as well as standard threads. The lead screw is protected from dirt and chips by an efficient shield. This greatly prolongs the life of this screw —a highly important detail in the construction of a tool of this kind. A self-centering chuck forms part of the standard equipment, but bushings fastened in place by set screws may also be supplied. The chuck, however, possesses its obvious advantages. This new threader has been dubbed the "thoroughbred of pipe tools."

Controller Affords Safety In Gaseous Mines

In these days when every effort is being made to increase the safety of mines and mining, the word "Permissible" as applied to underground equipment has come to mean safe for use in gaseous atmospheres. In order to be classed as "Permissible" the equipment to which this term is applied must have passed the tests of the U. S. Bureau of Mines.

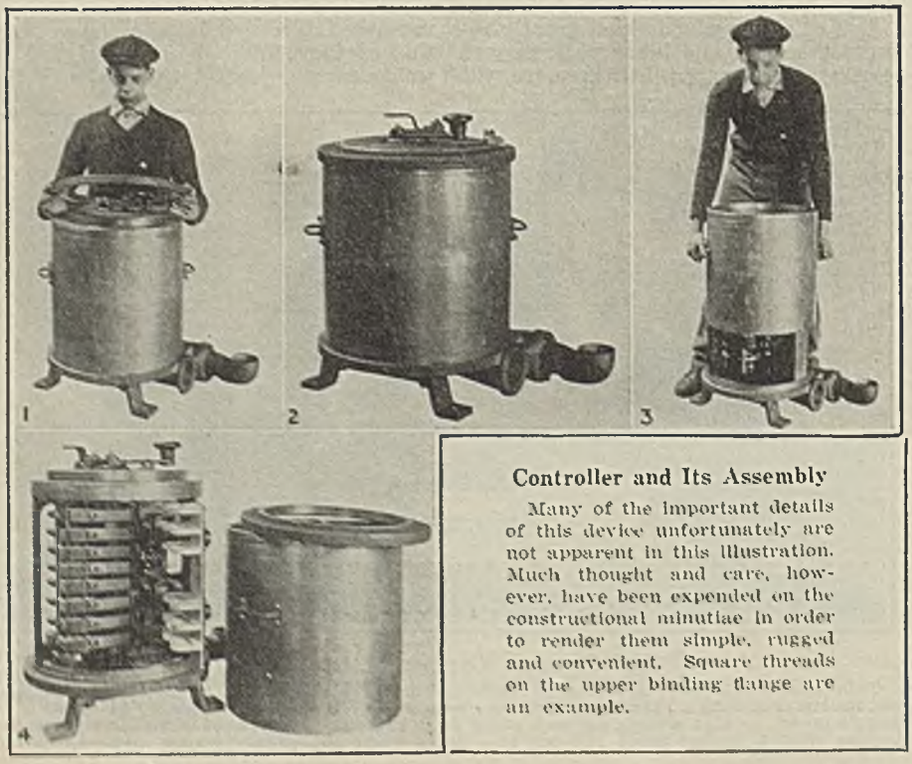
One of the newer pieces of equipment of this class, intended to make the operation of storage-battery locomotives and power trucks within the mines safe and free from external sparks and flashes, is the controller shown in the accompanying illustrations. This is the product of the Mancha Storage Battery Locomotive Co., of St. Louis, Mo., and is employed on that company's locomotives and power trucks of 8 tons weight.

This controller itself is not materially different from those of ordinary type, chief interest from the safety standpoint centering in the shell or casing. This description, therefore, will be confined to the mounting of the controller rather than to its mechanical operating features.

The controller drum is mounted vertically between two disks with a standard or separator upon either side. Both upper and lower disks are shouldered, the projection on the upper one being provided with a square thread to receive the binding flange that holds the casing in place. The flange is suitably recessed to slip over the upper end of the casing tube. All joints are machined to assure a tight fit.

Reference to the accompanying group of illustrations will make the construction easy to understand. In this group, 2 shows the assembled controller. In 1 the binding flange has been unscrewed and is being lifted off. This releases the bronze casing which is being removed in 3. In 4 the casing has been entirely withdrawn leaving the controller mechanism open for ready inspection and repair.

As may be seen, the construction is extremely simple and rugged in design. Much thought has been expended on details apparently insignificant yet important to the practical electrical man or mechanic. The reason for this extra care in details is to make the arrangement such that no electrical part of the locomotive or power truck may be opened in a gaseous section of the mine. Thus failure of any part that would necessitate opening the unit takes the locomotive or power truck out of service until the required repair has been made and the machine must necessarily be sent to the bottom of the shaft or to the outside of the mine while these repairs are going on. The result of this construction is that delay arising from failure of any part of the electrical equipment is reduced to a minimum.



Controller and Its Assembly

Many of the important details of this device unfortunately are not apparent in this illustration. Much thought and care, however, have been expended on the constructional minutiae in order to render them simple, rugged and convenient. Square threads on the upper binding flange are an example.

Obituary

Edward J. Scott, head of the John Scott Railroad Contracting Co., died at St. Mary's Hospital, St. Louis, Mo., May 7, following an operation for the removal of an abscess on the brain. He was 61 years old. As head of the contracting company, which was founded by his father, John Scott, and his coal mining interests at Duquoin, Ill., and in a steel castings plant in Elyria, Ohio, Mr. Scott was widely known in business circles. He was one of the pioneers in strip mining in the southern Illinois fields and during the past ten years was interested chiefly in his coal mining properties. His funeral was held at 9.30 a.m., Saturday, May 9. Interment was in Calvary Cemetery, St. Louis.

Industrial Notes

The Timken Roller Bearing Co., Canton, Ohio, has purchased the physical assets of the Gilliam Manufacturing Co. The production of both Timken bearings and Gilliam bearings will be continued in their respective plants.

The Cutler-Hammer Mfg. Co. has consolidated its two New York City offices, one of which formerly was located at 50 Church Street, and the other in the Times Building, which was the headquarters of the printing equipment sales-engineering force. The new offices are located at 8 West 40th Street.

New Companies

The Graham Fuel Co., Graham, Okla., has been incorporated with a capital stock of $10,000. The incorporators are: T. F. Griffith, Homer B. Burrow and Evelyn B. Griffith.

The United McAlester Coal Mining Co., of Delaware, has been incorporated at 1126 West Twenty-fifth Street, Oklahoma City, Okla., with a capital stock of $50,000, in Oklahoma. Una Lee Roberts has been appointed service agent.

The Highview Mining Co., Prentiss, Ky., has been incorporated with a capital stock of $40,000. The incorporators are: William Hamilton, Clarence James and Moscow Taylor.

The Amsterdam Coal Co., Amsterdam, Ohio, has been chartered with an authorized capital of $50,000 to mine and sell coal. E. D. Myers, Frank S. Davidson, Charles B. Baker, Leonard McAbier and Joseph Evans are the incorporators.

The Low Volatile Coal Co. has been chartered with a capital of 500 shares, no par value designated, to operate mines in the low volatile fields of West Virginia. Headquarters will be at Columbus, Ohio. The incorporators, all of whom are Cleveland men, are: William P. Belden, C. D. Mason, Earl H. Jaynes, George B. Young and Thomas F. Veach.

Canadian Coke Corporation, Ltd., has been incorporated with head office in Montreal and a capital of 10,000 shares without nominal or par value, to manufacture and deal in coke, coal and byproducts, by Francis C. Dobell, George Bush, George R. Drennan and others.

The Etna Super Fuel Co., Clearfield, Pa., has been incorporated under the laws of Pennsylvania. This company will take over the mines of the Etna Coal Mining Co., and has taken out a license to manufacture Trent super fuel. The Pittsburgh Trent Corp. has contracted to erect a 500-ton super fuel plant at the mine, 5 miles from Clearfield. The plant will be located on the New York Central R.R., which line has established a rate on super fuel practically equivalent to the bituminous coal rate. Officers of the Etna Super Fuel Co. are: A. J. Peterson, president and general manager, Clearfield; Harry C. Ritter, vice-president, Jersey Shore, Pa., and E. A. Peterson, secretary-treasurer, Clearfield.

Clark Coal & Mining Co., Picher, Okla., has been incorporated by E. E. Long, Welch, and M. L. Smith and Pearl Smith, both of Commerce, capital $10,000.

Saylor Mines, Inc., has been organized with $50,000 capital to do a general mining, mineral marketing and trading business, by Charles A. Woolley, Harry J. Ellis, Walton Fitzroy, Grant L. Saylor, W. Frank Smith. Atty. Robt. C. Grier, 1809 Arcade Bldg., St. Louis, Mo.