

COAL AGE

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With the Eyes of Others

ONE LOOKS AT THE problems of his own mine till eye strain develops. After awhile it appears that only one way remains of solving one's problem, the way already followed. The enviroing conditions and the mine itself blend so completely that it seems as if no change could be made with advantage. Seen, however, with the eyes of others, with other people's experience, conditions often seem entirely different. That is why the discussions at the Cincinnati conference will be helpful.

Then again there are those steps in the dark which the progress of the industry and the drastic necessities of competition are compelling all operators to take. The discussions and the exposition will help to light up those steps and the pitfalls that surround them. It is better to be advised in advance than to have to take at a run and in the dark what we would like to accept with more caution and enlightenment. Here, at Cincinnati, will be an opportunity to meet the operator and engineer who have had experience with some certain machine and can give the plain facts without prejudice or favor, and the engineer or operator who stays away will miss the opportunity of the twelvemonth.

Not Charged With Public Interest

WITH THE DEATH of William Andrews Clark we are once more reminded that fortunes even in mining are regarded as permissible in the inverse ratio of the value of material benefits conferred on mankind in the making of the fortune. Starting as a humble sluicer of gold on Horse Prairie, Idaho, Clark later bought himself a mule team and carried provisions to the miners in the hills. Then he carried mail for the government.

What he was worth when he died no one knows, but his fortune has been estimated as between two hundred and three hundred million. His home in New York was one of the wonders of that metropolis and he maintained a palatial residence in Butte. He had the largest individual collection of Corots in the world and had devoted millions to philanthropy.

His career cannot be duplicated in coal mining. He was honored as one of the "copper kings." Had he become a coal man he might have been a mere "baron" with the usual distressed barony and dubious reputation that is associated with coal. But W. A. Clark was wise in his generation. Born in Connellsville, Pa., he traveled in a prairie schooner to Bannock, Idaho, where, with \$5 still remaining at the end of his trip, he laid the foundation of his immense fortune.

What would he have been worth at his decease had he remained in the coal regions where to charge the market price for extracted mineral is regarded as a crime?

Assuring the Public

EXCEPT THE DOMESTIC consumer in New York, Philadelphia, Boston, Washington and adjacent towns, no one is complaining of high prices of coal, for coal to them is a bituminous product and not anthracite. The public is, therefore, in general disposed to be just, unless misled by the dailies in the region outlined.

Unfortunately, however, men without the necessaries of life become opportunists, and as they cannot brow-beat labor as in earlier days they now attack capital. Whether, therefore, we believe the public justified or not we must find some way of satisfying it or it will again resent any large strike in the bituminous industry.

The non-union mines are quite generously taking up this problem and by their expansion and the expansion of the non-union area the time is coming when the union operators of the bituminous region can stage a real struggle with the union without the public becoming alarmed. The time is approaching when the dislocation of a nation-wide strike, as it is termed, will concern no one. There will be plenty of mines to supply the coal and probably plenty of equipment to haul it. Then the union mines will enforce a scale and working conditions that the non-union mines can meet only in their normal market. During the past year big strides were made to bring about this consummation, and in a few more months the public may rest easy, strike or no strike. The union will then find its supremacy is a thing of the past.

Lay Too Much Stress on Depth

COMMON repute declares that shaft mining is undesirable. However, with modern hoisting conditions, a shaft mine is more convenient than one opened by a drift, for the latter as a rule develops an area circumscribed by ravines, whereas a shaft working can be extended in all directions and so does not increase the distances of transportation so rapidly as a drift mine. As the area is unbroken the mine can be laid out with greater satisfaction.

There are disadvantages, of course. What water is found in the measures has to be pumped. However, shaft mines in more or less level measures, such as are usual in the bituminous coal fields of America, normally receive less water than drift mines, and in Illinois, where the largest shaft mines are to be found, the workings are dry. Then, again, ventilation is more difficult and, as practically all shaft mines are gaseous, electric cap lamps, flame safety lamps, permissible machines and permissible explosives are desirable.

However, no one can fail to realize that the operator with a shaft has a considerable advantage over his competitor with a long line of outside road that semi-circles round the heads of ravines in long snake-like

turns. Every winter, snow shoveling delays operation in the morning and costs much money. The greater depth of bituminous mining will not add much to its costs, provided recovery per acre can be maintained, but costs may be increased considerably by greater lateral extension of mines.

In early days a mine could be worked till the limiting radius was reached, based on costs per mile of haulage. Then the tippie was moved to another location, and another mine was opened. Now the opportunities for operating a mine adjacent to a railroad or to which a railroad can be extended, are in many regions restricted, and longer and longer hauls are inevitable. As a result we shall see higher costs, tempered, however, by the economies in transportation such as modernization provides.

A Triumph in Surgery?

WASHINGTON, with characteristic great-hearted fortitude in the face of the sufferings of others, continues to disclaim responsibility for the torments of the operators who signed the Jacksonville agreement. Government officials profess to be unimpressed by suggestions that Washington take the initiative in urging an orderly revision of the contract. They seek refuge in the contention that the agreement calls for "a major surgical operation without an anaesthetic" and, inferentially, express mild surprise that there should be whimpers when the surgeon's knife is plunged into the conscious patient.

The figure drawn from the hospital ward carries implications that may scratch political complacency as well as gash the coal trade. It raises anew the question of the diagnosis of the ills of the industry and the efficacy of the treatment prescribed. When the pact was first signed it was acclaimed as a certain purgative of debilitating overdevelopment. The excess, the uneconomical, mines were to be driven out of business; the unnecessary miners were to be absorbed into other industries and their fellows who remained were to be transformed from part-time to full-time workers. The devastating expansion in bituminous mining was to cease—a highly beneficial system of birth control was to be enforced by the inexorable logic of events. From the pills and potions, the purges and the blood-lettings was to emerge a convalescent bituminous coal mining industry, clean, lean, vigorous—a credit to itself, the nation and the political doctors who called the ambulance.

How does the condition of the patient today compare with that picture? If there has been any wholesale abandonment of properties where current costs of production have been out of line, the secret has been amazingly well kept. Mines in the union fields have been shut down, consolidations have been effected, but little has been done to reduce the potential production capacity of those operations. There is every probability that the majority of the mines now idle will start up again at the first favorable opportunity. The present plight of the union mines, however, has been a spur to non-union expansion. If a survey were taken, we should find more—not less—mines in existence as the result of one year's working of the Jacksonville agreement.

That conclusion seems to contradict the promises made in 1924. But possibly the lay mind has mis-

interpreted the diagnosis of the skillful politician practitioners who make Washington their home and the economic welfare of the country the unrelieved patient of their clinics. Union mine development is at a standstill: non-union expansion has been encouraged. Can it be that those who urged agreement upon union operators and union leaders a year ago had a deeper purpose in mind than appeared? Was the suggestion a subtle antitoxin to destroy the power of union labor in the mining industry? Certainly the developments of the past twelvemonth do not conflict with such a conjecture.

If such be their cryptic purpose, their unwillingness to permit the government to be a party to any movement which would undo what they have so assiduously and cunningly labored to bring about becomes understandable. Perchance the operators who condemn Washington do it a grave injustice in failing to appreciate its Machiavellian benevolence. Surely a genius that persuaded the leaders of the union to become partners in a plan to undermine their own organization, and is so potent that these same leaders still work loyally to make the plan successful, ought not to go unrecognized.

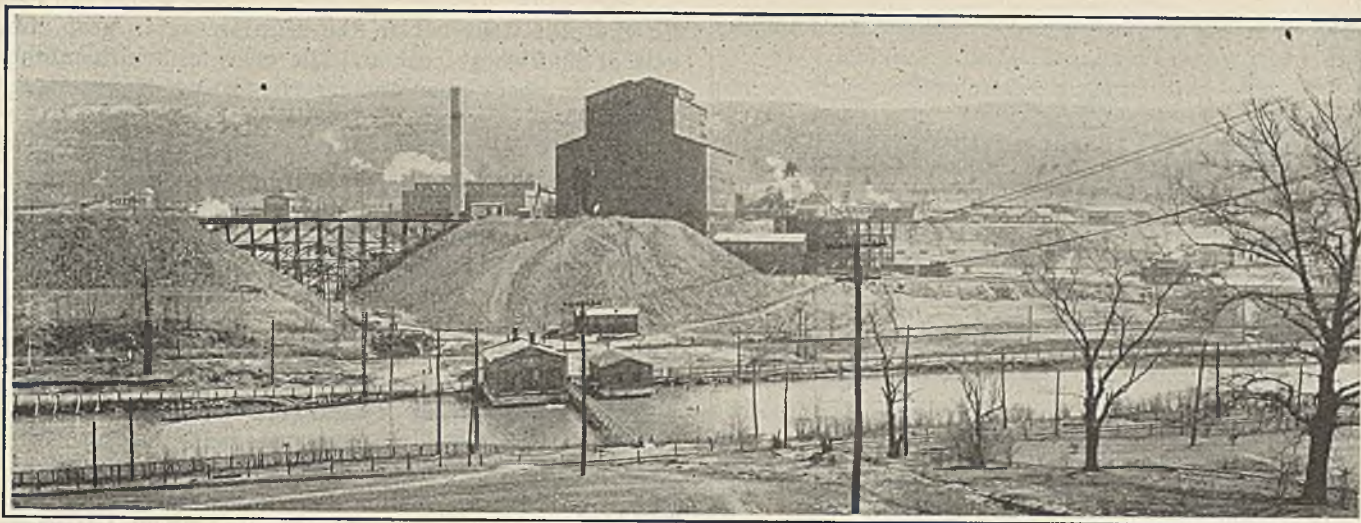
Learn How

AMAZING are the remarks that the average workman will make about "book learnin'" even in the present day, despite the fact that he knows that the only thing which separates us from the savage is the experience of the ages, as preserved to us by that same despised book learning. The human mind is little, if at all, developed, the human body is not a whit stronger and the human moral sense itself is changed little, if at all, by the progress of time. When an Indian or an alien peasant gets the benefit of this experience, he often shows himself as capable as others to make use of it.

Men vary in their natural endowments, but those who have the right quality of mind to lead and to plan are foolish if they neglect the opportunity to get the facts of experience that will give them the entire range of opportunity. When we see how much a little common-school training has done for the American people and for those of other nations who have had it and when we reflect that the training thus given is basal and not occupational, we realize what wonders could be accomplished if every man knew what generations had slowly accumulated relative to the practice of his occupation, its methods, its dangers and its materials.

Just at this time, however, as we enter the months when summer schools are held, it is only a small portion of that knowledge that is offered, namely that which mining men need to know to become foremen. Be it remembered, however, that education, like other things, has its law of diminishing returns, and a few weeks of training in mining will work a change in a man's abilities quite out of proportion to that which will be obtained by a four years' course.

By that is meant that in the thirty-six months of college training it is hardly likely that thirty-six times as much will be absorbed by the student as will be obtained in the brief month of the foreman's school. Certainly, those four weeks will be looked back to as an entry into a new world. The student will get a new slant on life, and a new attitude toward the treasury of the printed page; and if he has character he will not fail to make what he learns a step to perferment.



Truesdale Breaker, Glen Alden Coal Co.

Many Opportunities for Broadening Demand for Pea Size Anthracite Still Uncapitalized

Actual Tests Demonstrate Much Abused Size Has a Real Place in Consumer's Cellar, but Ignorance and Faulty Sales-Approach Hinder Merchandising on Service Basis

By Sydney A. Hale

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New York City

WHEN THE MERCHANDISING problems of anthracite are narrowed down to the question of the movement of individual sizes to the domestic trade, pea and No. 1 buckwheat immediately crowd into the foreground. This does not mean that demand is strong enough to absorb all the egg, stove and chestnut which could be produced with existing mine development. Nor does it mean that these sizes of hard coal occupy a fixed place—territorially or seasonally—in the scale of demand. Taking the year as a whole, however, sales resistance has not been such that the leading producers have been unable to place the tonnage of the larger sizes mined under normal operating conditions. The sales resistance felt in the movement of the more popular domestic sizes has been the result of the general tendencies in the marketing of anthracite which were outlined in preceding issues.

SMALL SIZES PRESENT PROBLEM

On the other hand, the sales resistance encountered when the producers attempt to push pea and No. 1 buckwheat in the domestic trade is definite and unmistakable. A few operators still profess unconcern over the outlook for the marketing of these sizes, but the mask of indifference is only for professional purposes. Even in those rare instances where the disposition of pea and No. 1 buckwheat has seemed to present no extraordinary difficulties, the security enjoyed is only a temporary one. There are too many producers to whom the problem of the sales of these sizes has become a merchandising bugaboo to warrant a belief that any of the operators can escape its perplexities.

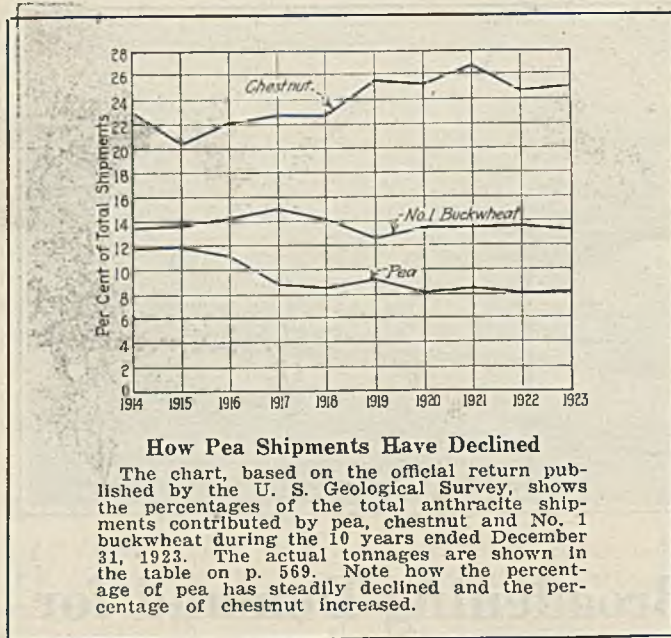
The first commercial shipments of pea coal were made about 1867. For approximately 45 years it was

classified by the operators as a steam size and was sold in competition with bituminous coal and other industrial power-producers. About a quarter of a century ago, however, the Spencer heater—the earliest of the magazine-feed type of household heating plants to establish a permanent place for itself—was placed upon the market. This adoption of the feed principle of the old-fashioned base-burner stove to modern household heating equipment created a real, but limited, domestic demand for pea. The wide differential in prices between pea and the next larger size persuaded many consumers interested in fuel economy to experiment with this coal, which in some communities became known as “the poor man’s anthracite.”

LACKS DEVELOPED MARKET

In 1912 the dominant producing interests elected to “elevate” pea coal to the domestic rank. The base price was increased 50 cents per ton. Although pea held its own and even increased in percentage shipments during the next three years, subsequent events proved that the market had not been sufficiently developed to carry over the entire production into the domestic trade. The year the change was made pea constituted 11 per cent of the shipments. The next year the percentage rose to 11.5 and by 1915 it had increased to 11.9 per cent of the total shipments.

Since that time there has been a sharp decline. In 1923 pea shipments aggregated 8.1 per cent of the total, as compared with 12.2 per cent in 1909, the earliest year for which complete records are available. To what extent the shortage of bituminous coal in the East during the early years of the World War helped to keep up the percentages and to what extent delayed conversions of boiler room equipment to burn the



buckwheat or bituminous coal sustained the industrial demand, it is impossible to state, because the official statistics reproduced in the table on p. 569 make no segregation as between coal for domestic and coal for industrial consumption.

INCREASED DEMAND FOR CHESTNUT

Two other factors also intervened to postpone the day when the industry would be compelled to recognize the marketing of pea coal as one of their major problems. These factors were the post-war slump in the demand for No. 1 buckwheat and the increasing domestic demand for chestnut coal. During the war years necessity forced the anthracite interests to recommend to industrial consumers that they piece out an inadequate tonnage of buckwheat with bituminous coal. Many steam plants liked the suggestion so well that they continued to use bituminous coal after the shortage in anthracite had disappeared.

On top of that came the fuel-oil drive which swept the Atlantic seaboard and induced hundreds of large and medium sized power plants to convert to oil. This, of course, curtailed the market for bituminous coal, the producers of which were struggling to find an outlet for the output of the developed mine capacity that had been so greatly expanded to meet war-time demands for fuel. To make this situation more acute, the bulk of the bituminous coal that enters the limited area over which the steam sizes of anthracite can be distributed comes from non-union mines that could underline their story with a price.

PUSHED SALE OF NO. 1 BUCKWHEAT

If the buckwheats were to be sold at a diminishing scale of prices which would pile up the losses to be covered by the prices fixed on the domestic sizes of anthracite, operators envisaged a time when mounting quotations on the larger coals would seriously limit their market. With government officials, newspapers, a certain school of economists and the public generally clamoring for a deflation of all war-time prices, there were some anthracite producers who were genuinely alarmed. If a wider domestic market could be found for No. 1 buckwheat, prices on that coal, if not increased, might, at least, be stabilized at circular figures.

So the plea went out to the retail trade to push the sale of buckwheat coal and the energies which might have been spent upon the merchandising of pea were diverted to a largely ineffective propaganda in favor of No. 1 buckwheat.

No one who studies the figures showing the shipments of pea and the shipments of chestnut during that period can entertain any serious doubts as to how the percentage of one declined and the percentage of the other increased. Nor will he be at a loss to understand why criticism of preparation at the mines has been growing in the past few years. That avenue of escape from the pea coal problem is nearing a cul-de-sac. Although the recent official announcement of the uniform sizing standards recommended by the Anthracite Operators' Conference carried with it the statement that the new plan would further reduce the tonnage of pea coal, competitive forces seem likely to check continued degradation of chestnut coal at the breakers.

RECOGNIZE MERCHANDISING PROBLEM

The general recognition of the existence of a real merchandising problem in pea coal is in itself the best evidence that a new analysis and a fresh viewpoint of the situation are necessary. As a basis for such a re-examination, we start out with the fundamental question: Has pea coal a real place in the domestic market? No sound or no effective campaign can be planned until this basic fact has been determined. This statement is true not only of coal, but of every other commodity which is sold to the public. It is a particularly pertinent question with respect to pea coal because the special market which this size once held against all competitors—the field of the magazine-feed heater—is being pre-empted by No. 1 buckwheat. Practically all the emphasis of the literature now put out by the manufacturers of such equipment is upon the use of the smaller coal. The Anthracite Economy Shows, held in various eastern cities the past two years, stress the same size. If the campaign to develop a strong domestic market for No. 1 buckwheat is to be a complete success, the magazine-feed heater must be eliminated in planning a sales program for pea coal.

UTILITY OF PEA COAL PROVEN

Fortunately for the anthracite industry, the testimony in support of an affirmative answer to the question raised in the preceding paragraph is strong and convincing. It has been demonstrated by actual test—not in the experimental laboratory, but in the furnaces of the consumer—that pea coal has a much wider field of usefulness than is generally realized. Pea coal has been burned successfully in the ordinary domestic heating plant. Many consumers use no other fuel during mild weather, as they have discovered that they can control and maintain a moderate fire much more efficiently with this size than is possible when burning the larger sizes. These consumers fire egg or stove only in extreme weather. Others, not yet converted to the use of straight pea, alternately fire the large and the small coal.

Another field in the private dwelling is the use of pea coal to run hot-water heaters in the summer. The gas heater in common use is both expensive in operating costs and destructive to the hot-water coils. It has a tendency to overheat the water unless closely watched and, in many cases, this overheating, besides

weakening the coils, churns up sedimentary deposits that mean dirty water at the tap. Unless the automatic gas heater is used, it is generally the case that the water is not hot when wanted and the housewife properly complains that she must run up or down stairs to light the heater whenever she wants hot water. Disgusted mistresses of the home have eliminated this bother by connecting hot-water tanks with small water-back laundry stoves such as frequently repose in rust in many basements.

USE PEA FOR BANKING

Finally, there is already a small actual and a large potential market for the use of pea as a banking fuel. This market probably presents the greatest possibilities for quick cultivation of any mentioned. Some sporadic attempts have been made to develop business along these lines, but the pressure has been weak. It will take more than a few press releases, an occasional "circular to the trade" from the operators, or an enameled sign, "use pea coal for banking your fire at night," in the retail office to get results.

None of the uses suggested is theoretical. Every one of them has been proven sound. They involve no

to bolster up their arguments with comparisons showing the increases, both in percentages and actual tonnages, in the shipments of small sizes today over 25 or 35 years ago. Others, concerned more with the foreground of the present than the background of the past, stress the unescapable fact that pea and the buckwheat are unavoidable products of the system of coal preparation and that a place must be found for them if the market requirements of egg, stove and nut are to be met. There is no evading that conclusion because the added toll that such a policy would add to the prices on the senior domestic sizes makes a resort to the old practice of dumping everything smaller than chestnut on the culm bank a commercially impossible alternative. All these facts appeal to the producer as reasons of compelling force why he must "get rid of" more pea and buckwheat through retail channels. They present no reason at all why the retail distributor or the household consumer should buy those sizes.

FORCE SALE OF SMALL SIZES

With necessity, instead of service, uppermost, it is only natural that producers' sales agents have tried to force pea and buckwheat upon the retail trade. These endeavors have not been similar to the high-pressure salesmanship in certain unrelated lines, frequently of dubious merit, in which the prospect is overwhelmed by a wave of oratory and temporarily is swept into buying something he realizes he does not want after the force of the "sign-on-the-dotted-line" flood has subsided. No; sales-pressure in the anthracite industry has been brutally frank and simple. It has been a case of compelling the buyer to agree to the purchase of the small sizes in consideration of the shipper's agreement to sell him the desired tonnage of the more popular sizes. At times the compulsion is sugar-coated with friendly phrases, even expressions of appreciation upon the part of the seller at the buyer's "good fellowship" in helping the producer out of a hole, but the compulsion is there and neither buyer nor seller is deceived. Patently such pressure can be exerted only in those territories in which anthracite is still the undisputed choice of the domestic consumer.

That such a policy encourages dealer resentment against the hard coal producers, is too obvious to require comment. But there are other drawbacks equally, if not more, dangerous. Such a practice degrades the value of the coal in the eyes of the distributor. It becomes, not a fuel with a real place in a merchandising program based upon service, but something "to get rid off." With such a feeling, there can be no honest enthusiasm in the sales methods employed by the retail distributor—unless, and until, he has learned for himself that pea and No. 1 buckwheat are sizes which he can offer with confidence. Many retailers make no attempt to merchandise the sizes forced upon them. This disaffection is communicated to the ultimate consumer. In a few cases, there are retailers who would like to solve their merchandising problems in the same manner in which the producer has attempted to solve his—to force tonnage on the buyer. The concerted action that would encourage that folly, however, is impossible of attainment.

To know the weaknesses of a program is the first step toward strengthening it. Some of the ways in which the merchandising of pea may be improved will be discussed in the next article in this series.

Changes in Percentages of Shipments of Pea, Buckwheat and Chestnut

Year	Pea		No. 1 Buckwheat		Chestnut	
	Gross Tons	Per Cent†	Gross Tons	Per Cent†	Gross Tons	Per Cent†
1923.....	5,928,618	8.1	9,641,571	13.2	18,355,255†	25.0
1922*.....	3,278,136	8.0	5,537,595	13.5	10,085,960†	24.6
1921.....	5,865,379	8.4	9,349,009	13.4	18,636,682	26.8
1920.....	5,457,588	8.0	9,167,934	13.4	17,327,540	25.2
1919.....	6,237,398	9.1	8,574,852	12.5	17,405,402	25.6
1918.....	6,471,381	8.4	10,800,796	14.1	17,408,141	22.7
1917.....	6,824,003	8.8	11,659,176	15.0	17,753,449	22.8
1916.....	7,520,804	11.1	9,569,817	14.2	14,998,499	22.2
1915.....	8,210,668	11.9	9,322,533	13.6	14,061,069	20.4
1914.....	8,277,619	11.8	9,459,788	13.5	16,224,892	23.0
1913.....	8,208,681	11.5	9,504,161	13.3	17,168,817	24.0
1912.....	7,206,239	11.0	8,698,173	13.3	14,601,082	22.4
1911.....	8,282,049	11.8	9,836,638	14.0	16,037,735	22.8
1910.....	7,850,032	11.6	9,464,528	14.4	14,354,468	21.8
1909.....	7,623,341	12.2	9,290,311	14.8	13,160,119	20.9

†Percentage of total shipments of anthracite.

* Prolonged strike.

†Includes 579,898 tons of range coal in 1922, and 2,328,843 tons in 1923.

changes in heating equipment. Their successful application calls for no specialized skill in firing. They all mean better fuel service to the consumer and economy, not only in dollars per ton, but the economy that flows out of efficiency. In short, there is no doubt whatever as to whether pea coal has a real place in the domestic market.

WHY IS PEA COAL A BUGABOO?

Why, then, has it been so difficult to move this coal? Why are operators carrying large tonnages of pea in storage? Why do retailers in some Eastern communities claim that they cannot move the coal they purchased months ago, to say nothing of taking on additional supplies? If a retailer in one city, for example, can build up such a business in pea that it has increased to 20 per cent of the total domestic tonnage of anthracite which he handles, why do dealers in other communities cry out that another car of pea will be the proverbial last straw? What are the cardinal weaknesses in the marketing program which made such conditions possible?

To begin with, the common angle of approach has been, and to a large extent still is, wrong. The operators have emphasized their own necessities rather than consumer service. Those statistically minded seek

Will Rock Dusting Suffer by Industry's Enthusiasm?

Expert Fears All This Hectic Interest May Warp Judgments on Efficacy of Dust—Says Analyses Will Prove Some "Safe" Mines Need Dust—Favors Big Dust Mills and High Pressure Application

By J. E. Jones

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THE RECENT nation-wide popularity of rock dusting as a prevention of the propagation of explosions in bituminous coal mines has no parallel in the history of coal mining in the progress of safety. Its suddenness causes one to hesitate and reflect as to whether it is of short life and will lose its popularity or whether it will grow as a safety measure and become as essential as other well-established safety methods.

Experiences are possible that will make for or against rock dusting. It is quite possible for a mine that is rock dusted—or rather has the credit of being dusted—to have a disastrous explosion. Such an occurrence would unquestionably cause some to doubt the efficacy of rock dusting. It is also possible for a well-dusted mine to be so filled with gas that an explosion could occur. It is a remote possibility, since a mine requiring rock dust would require careful attention; but even if gas actually accumulated and an explosion occurred, the rock dust would lower the temperature and lessen the force.

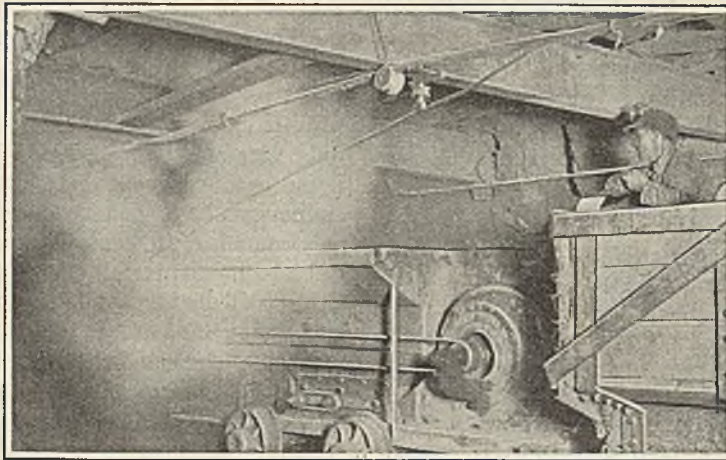
In all probability rock dusting will get more credit than is its due. It is safe to say that a hundred explosions that are localized, due to some cause or other, occur for each explosion that is widespread enough to be termed a disaster. Usually the normal high ash content of the mine or the sufficiently large space for expansion to diminish the pressure or a combination of these two factors is enough to localize an explosion. It is sometimes difficult to understand why an explosion stopped. If rock dust were used it would often get the credit for stopping explosions that would have stopped of themselves. Also, when a high percentage of the hazardous mines are rock dusted many more disasters will be reported averted than are reported now. This, too, may add some unmerited glory to rock dust's record.

An explosion occurred recently in a mine that was not rock dusted at the time of the explosion. Approximately 1,000 men were employed underground and were at work on that day. The mine is worked on the panel system, each panel being approximately eight acres in area.

The explosion originated in gas ignited by an open light. Coal dust propagated it in spite of the large

space for expansion. Approximately 75 per cent of the eight acres of coal in the panel, having an average thickness of 8 ft., had been extracted. Flame and force concentrated at the double entrance to the panel and the propagation of the explosion by coal dust to the other parts of the mine took place. When the flame had reached a distance of 300 ft. in all directions from the panel entrance, the reactionary force, due to the consumption of oxygen in the panel and the consequent cooling effect, sucked the flame back into the panel and the explosion ceased.

None but those who viewed the results of this explosion can fully realize the narrow escape that this mine had from a terrible disaster. Had the flame traveled beyond the adjoining panel entrances, a distance of 550 ft., before the suction took effect it is hardly possible that all of the flame would have been extinguished and the explosion stopped. This is an example of an experience where rock dust could have been given unearned credit for stopping an explosion. This mine is now thoroughly rock dusted.



Jones' Crew of Dusters Do Not Choke at Their Work

The distributor is hauled at the rear end of a trip comprising a locomotive, a carload of dust and the machine, traveling against the air. The motorman and one operator do the job.

ROCK DUST PREVENTS DISASTERS

It is to prevent small explosions from developing into disasters that rock dust should be installed. The tendency will be to rock dust first those mines considered hazardous. The acknowledgment that a mine is hazardous means that more than normal care is given that mine regardless of rock dusting. The experience of the industry in general is that explosions have occurred in mines that were considered relatively safe. Mines not having experienced explosions will probably be slow to install rock dust.

The Benwood disaster occurred in a mine that had had 60 years of operating experience without a bad explosion. It will be difficult to convince those in authority at any mine having such a record, that rock dust is needed.

To be fully effective rock dust must be installed in all mines where the analyses of the mine dust show that propagation of flame is possible. First, the explosion hazard of the mine should be ascertained. The explosion experience, or lack of it, is not a true measure of the hazards, because serious explosions usually occur so rarely and in such widely separated places. The

better plan is to analyze the mine dust and the mine air. This can be done locally by having the proper apparatus to make analyses or by the Bureau of Mines or some commercial testing laboratory.

The information required, regarding mine dust deposited along ribs, roof, timbers and ledges, is the amount of combustible matter in it smaller than 20 mesh to the inch and the percentage of sizes that are smaller than 20 mesh. Separate samples should be taken of the dust on the floor. The analysis also should show the amount of combustible gases in the return airways. Samples should be taken in various places throughout the mine so that the true hazard of the different sections and of the entire mine may be ascertained.

NO DIRECT APPLICATION TO FLOOR

Usually the combustible matter on the floor of haulageways is much less than elsewhere in the mine and requires no direct application of rock dust, there being a sufficient quantity falling to the floor during application to the roof, ribs and timbers. The presence of even small quantities of combustible gases in the mine air increases the propagating hazard of an explosion. A substantial safety factor should be provided by applying more rock dust than is necessary.

Of great importance is the right choice of the rock from which the dust is to be pulverized. This rock should be acceptable by the U. S. Bureau of Mines. The dust must be almost totally incombustible and of such nature as not to affect the health of the men applying it.

If the rock dust is not available the installation of a pulverizer will be necessary. The dust should be of such fineness that all of it will pass through a 50-mesh and 60 per cent of it through a 200-mesh sieve. Finer dust will be more effective. The cost of pulverizing increases rapidly with the fineness obtained. The Old Ben Coal Corporation dust is ground so that 92 per cent will pass through a 255-mesh sieve.

RECOMMENDS LARGE PULVERIZER

The capacity of the pulverizer will depend largely upon the number of mines to be supplied. However, if a small amount of dust is required it will be more economical to install a large pulverizer, keeping one man employed on grinding days and allowing the plant to remain idle between times, than to install a very small-capacity pulverizer.

Where dust is to be transported other than in mine cars it would be well to equip the plant with a dust sacking device. When dust is handled loose a large amount is wasted in transportation, unloading and

loading. Sacked dust is more economically and efficiently handled in the mine than loose dust.

It seems to be unanimous that rock dusting of roof and ribs in the mine is of first importance and that the barrier method of protection has been relegated to second place. This is the conclusion reached by the Old Ben Coal Corporation, but it is not considered that the use of the barrier system is to be stopped. A combination of the two systems gives a higher degree of safety than the use of one system alone.

ADDED SAFETY PROVIDED BY BARRIERS

Barriers give added safety in air courses where, because of the absence of track, the coating cannot be applied as efficiently as on haulage roads. In entrances to old workings troughs may be installed. It would be well to install one large concentrated barrier over the haulage to each mine section while directly opposite on the air course or air courses, a barricade of dust troughs should be placed. The barrier installations serve a double purpose: They add protection to the coating system of rock dusting and maintain a rock dust supply always within reach in the event of a mine fire.

The application of rock dust to the roof, ribs and timbers is a mechanical problem depending largely upon the kind of power available for the operation of the dust distributor. Most large mines are electrified. Therefore, an electrically driven, high-speed, fan type of distributor will probably become the most popular. Different mining conditions create different problems to solve. In Illinois coal mines, in general, conditions will not permit the application of water on the roof, ribs or floor without serious results. For this reason it is not feasible to wash down the roof and ribs.

SHOULD MIX ROCK AND COAL DUSTS

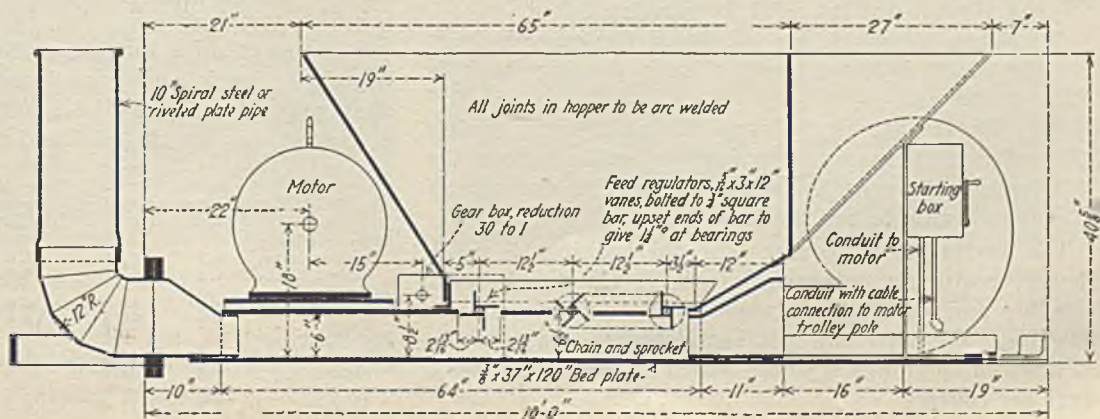
Our problem is to make the mines safe against propagation of explosions by rock dusting while accepting conditions as they are. With this in mind our idea of a rock dust distributor is one that will not only distribute the dust but will also make a thorough mixture of the coal dust and rock dust, not permitting the rock dust to form a layer on the coal dust.

This latter condition would give a false sense of security, since observation and sampling would indicate higher ash content than actually existed. The tendency of the rock dust also would be to flake off when deposited in a layer on top of the coal dust.

Another important factor in the design of a distributor is speed. This is important both economically and from the standpoint of the health of the men applying the dust. In the mine interior, where the air

Jones' Duster

The builder "Gives it to the world" by filing detail drawings with the Bureau of Mines at Washington for all to see. A 7½-hp. motor drives the blower fan by belt and operates the feed mechanism through a 14-in. pulley bearing against the belt. The 36-cu.ft. hopper holds a ton of dust or enough to cover one-half an entry for 1,350 ft.



current is of normal velocity, the dust cloud will travel a short distance against the air, thus surrounding the operators if the travel of the distributor is not fast enough to keep them away from this cloud.

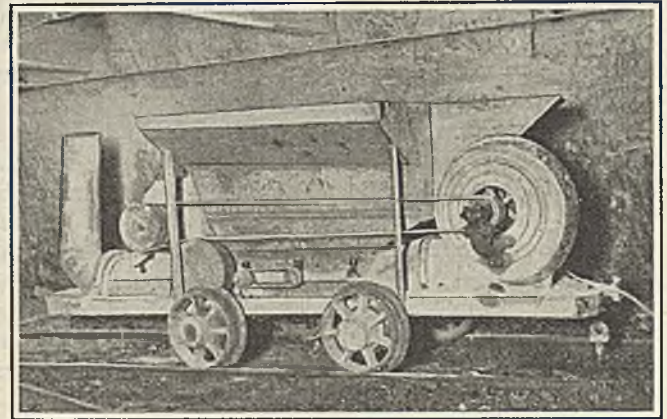
The last two rock dusting machines built by the Old Ben corporation have been made to embody these principles. These machines are designed to dust one-half the roof and one rib with each trip. Should the roof be heavily timbered or of unusual height a third trip is taken to dust the roof. The blast of air and dust is of sufficient force to blow into suspension whatever coal dust might be in its path, the resultant dust applied being a mixture of the rock dust and coal dust. The extreme force of the blast deposits rock dust on the opposite sides of timbers and in crevices to greater depths than coal dust penetrates.

DETAILS OF OPERATION OUTLINED

The automatic feed of the last machine built is so timed as to permit the distributor a travel speed of four miles per hour to rock dust one-half of the entry at the rate of one and one-half pounds of rock dust per lineal foot. The operation is as follows:

- (1) An electric locomotive, a car of rock dust and the distributor with its hopper filled with dust are coupled together in the order named.
- (2) Both positive and negative wires are connected to the locomotive from the starting box on the distributor.
- (3) The discharge pipe of the distributor is set so that it points to the intersection of one of the coal ribs and the roof.
- (4) A motorman and distributor man are required, the first being at the controller on the locomotive and the second in the car ready to shovel dust into the hopper of the distributor.
- (5) The locomotive is at the front of the train and dusting is begun at the shaft bottom, the train traveling in the direction opposite the travel of the air current. (Haulage entries in Illinois are usually return airways.)
- (6) The one rib and half the roof are dusted at the rate of four miles per hour, hesitating at cross-cuts, until the hopper and car are both empty. When necessary the trip is stopped and both men refill the hopper.
- (7) When both the hopper and car are empty the trip is pushed to the shaft bottom, the hopper refilled and the empty car exchanged for a loaded one.
- (8) The discharge pipe is pointed to the opposite rib and the same procedure is taken as before, giving a total dusting of 3 lb. per lineal foot.
- (9) When the work has advanced far enough from the shaft bottom, another rock dusting base is established.
- (10) Panels are dusted one rib at a time, giving sufficient time for the dust to settle before the machine returns to dust the opposite rib. Stops of one minute are made at rooms.

The dusting of air courses and old workings is much slower, requiring entrance into such places wherever possible and the use of tubes where entrance is not possible. We have not yet completed the installation of holes in stoppings through which to place the tube to dust air courses.



This Is Old Ben's Newest Distributor

For years J. E. Jones experimented with various types of home-made blowers, perfecting detail after detail until finally he built this satisfactory machine. The blower pressure is high enough to dislodge coal dust from even deep crevices and to deposit rock dust on roof and ribs in just the right volume with the greatest degree of comfort for the men who do the work.

One of our smallest mines, recently, was rock dusted thoroughly with the coating system for the first time. The mine was not in operation when our present coating system of protection was begun. Our first large distributor was used.

The following is a statement of work done and its costs:

Labor—50 shifts, at \$7.50 per shift.....	\$375.00
Rock Dust—95 tons, at 50c. per ton.....	522.50
Supervision	100.00
Total cost	\$997.50

The territory covered by the company up to January, 1925, was:

	Ft.
Main and cross entry haulage roads.....	20,200
Main and cross entry aircourses.....	20,200
Panel entries	23,200

Total distance63,600

The detail on cost is as follows:

Cost per 1,000 lineal ft.	\$15.68
Cost per 1,000 lineal ft., 3 dustings per year....	47.04
Total cost at three dustings per year.....	2,992.50
Cost for rock dusting per ton at three dustings per year	\$0.006
Average daily production of mine.....	2,000 tons
Annual production at 250 days worked....	500,000 tons
Amount of dust distributed per lineal foot.....	3 lb.

This cost on our smallest production mine is given, since it will probably be closer to the average size mine than would our larger mines. The cost of dusting per ton of coal produced does not give satisfactory information since mines equal in development range greatly in tonnage capacity. The cost per 1,000 ft. is probably a better standard.

Samples of mine dust taken 30 days after rock dusting show the following analyses (samples of the floor dust were taken separately, but at the same locations as those taken on the roof and ribs):

	Moisture Per Cent	Volatile Per Cent	Fixed Carbon Per Cent	Ash Per Cent	Through Mesh 48	100	200
Motor Haulage:							
Roof and ribs.....	3.7	11.0	7.6	77.7	94.8	90.7	80.8
Floor.....	4.8	17.7	23.4	54.1	68.7	49.2	30.9
Motor Haulage:							
Roof and ribs.....	2.8	10.3	6.0	80.9	95.8	91.8	84.6
Floor.....	3.2	15.3	18.9	63.6	90.5	81.9	54.7
Mule Haulage:							
Roof and ribs.....	3.7	12.5	9.1	74.7	94.1	87.7	79.0
Floor.....	5.4	22.9	32.5	39.2	89.0	74.8	57.3
Average.....	3.9	15.0	16.2	64.9	88.8	79.4	64.4

How to Determine Moisture Content of Coal with Simple Device

A general impression prevails that moisture added to coal helps in combustion. Many men still cling to this fallacy and much water is fed to furnaces continually because of the apparent increase it makes in the heating value of coal. Not only does this moisture and the superheated steam formed from it carry many heat units out through the smoke stack, but the moisture which the coal normally contains furnishes a like escape for much heat of the coal.

The tendency to take closer observations is increasing, however, and many engineers desire some simple methods to determine the moisture content in the coal. A device for making this determination may easily be constructed of parts picked up about a power house.

A wood box (A in Fig. 1) about 6 in. high is procured and two holes are bored through the top. A piece of glass tubing about 1 in. in diameter is required, but a bottle with the bottom out may be used in place of the glass tube. Each end of this glass is fitted with a cork.

A heating device is made by winding about 12 ft. of No. 14 wire on an asbestos core 1/2 in. in diameter. Asbestos paper is wrapped around the outside of this and the whole placed in a copper or brass tube, one end of which is closed. The iron wire coil is connected with a No. 14 copper wire leading to a socket which may be inserted in a lighting circuit.

Inserting a wooden plug in the bottom end of the brass tube holds the wires in place. The brass tube (F) is placed through a hole in a cork which fits the lower end of the glass tube (B). An inverted 1-gal. glass jug (D), with its bottom cut off, is supported by setting the neck of the bottle through one of the holes bored in the box. A copper tube (C) is formed into a coil and reaches from the top of the glass tube (B) through the inverted bottle (D) and through a cork so as to discharge into another glass (E).

The operation of the device is as follows: A quantity of coal is pulverized and immediately a determined quantity is placed in the glass tube (B). Sufficient kerosene is poured on the coal to well cover it and the cork and tubing at the top are put in place. The

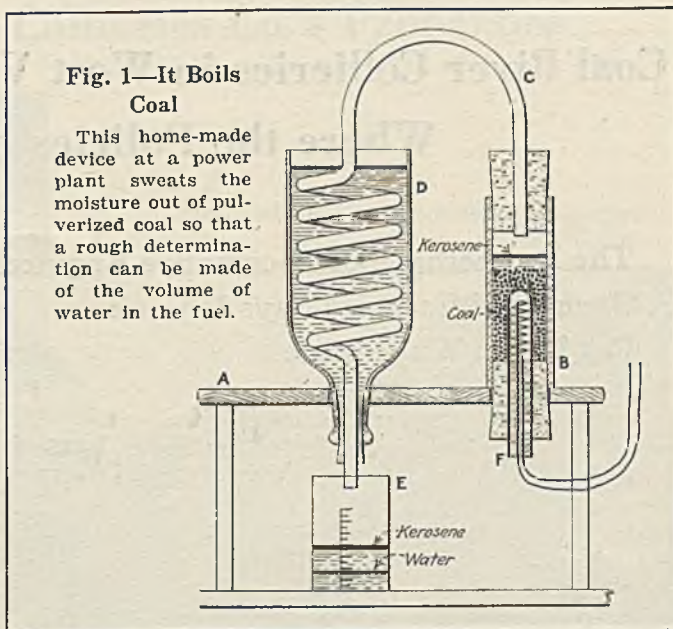


Fig. 1—It Boils Coal

This home-made device at a power plant sweats the moisture out of pulverized coal so that a rough determination can be made of the volume of water in the fuel.

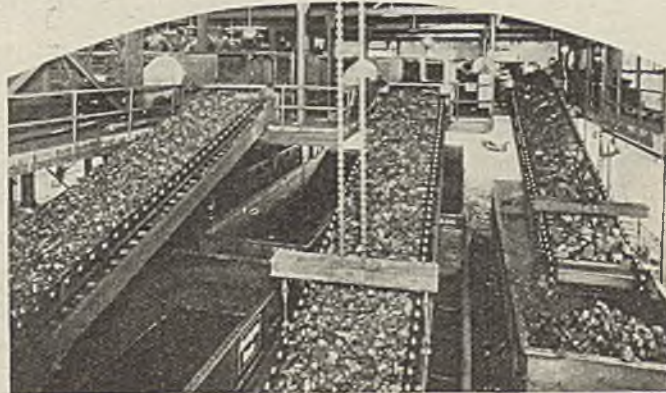
inverted bottle (D) is filled with cold water. The electric current is then turned on.

About 30 minutes are allowed for the coil to heat the kerosene to the boiling point. The heat should be controlled to prevent the kerosene boiling too soon. The water from the coal boils at 212 deg. F. and the oil does not boil until it reaches about 316 deg. F., thus the moisture is expelled from the coal and the tube before the oil boils. The steam, generated by the water, passes through the tube to the coil where it is condensed. The resulting water flows into the graduated glass below.

If the quantity of coal is measured on apothecary's scales and the graduations on the receiving glass (E) are indicated in grains, then the percentage of moisture in the coal is easily calculated. Probably some of the vapor of the oil will pass into the glass, but this will plainly show on top of the water and the line will register readily.

Several samples from different parts of the coal supply may be taken and the average of the whole will give the average moisture percentage of the fuel.

Picking and Loading Coal At "World's Largest Mine"



AT NEW ORIENT MINE of the Chicago, Wilmington & Franklin Coal Co., West Frankfort, Ill., the large sizes go over six picking tables with three men at each. At the right are the egg and lump loading booms busily loading their share of the mine's output. The plant is equipped to

produce 12,000 tons a day, but it has not yet been developed beyond an 8,000-ton capacity. The southern Illinois cyclone of March 18 struck this plant but the top works were not seriously damaged. The mine resumed producing about April 1.

Coal River Collieries in West Virginia and Kentucky

Where the Policies of Two Big Unions Are in Conflict

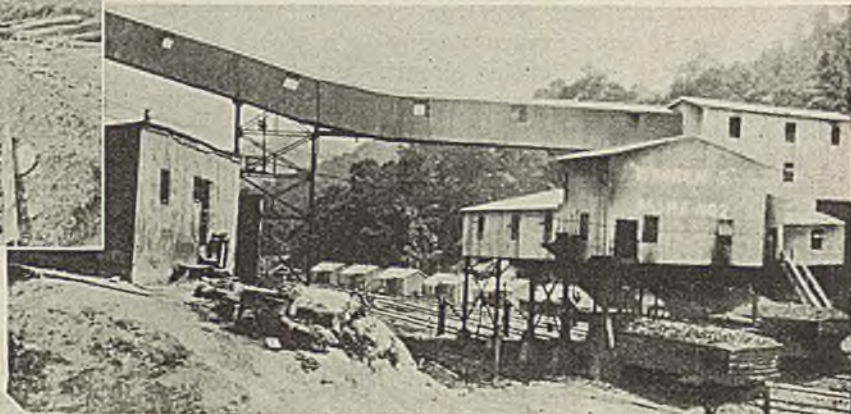
The Brotherhood of Locomotive Engineers Owns the Mines and Says It Can't Pay Union Wage Scale



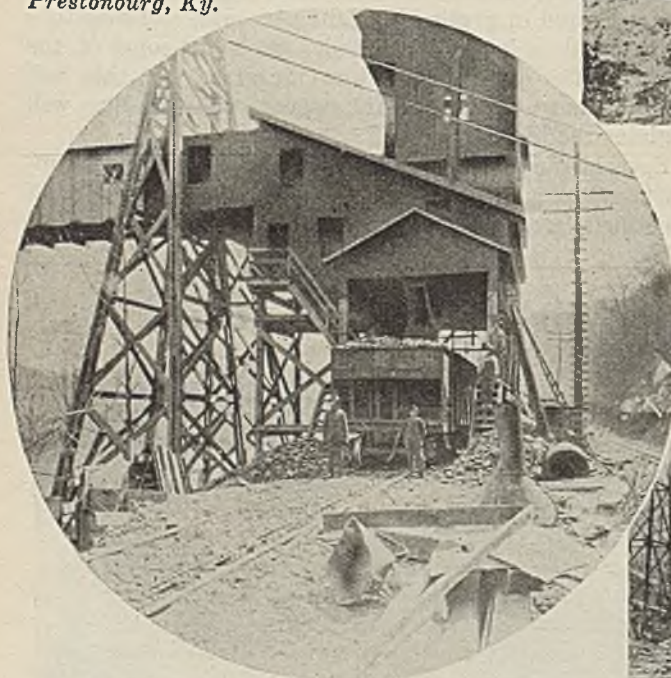
Brotherhood No. 3 Village, Seth, W. Va.



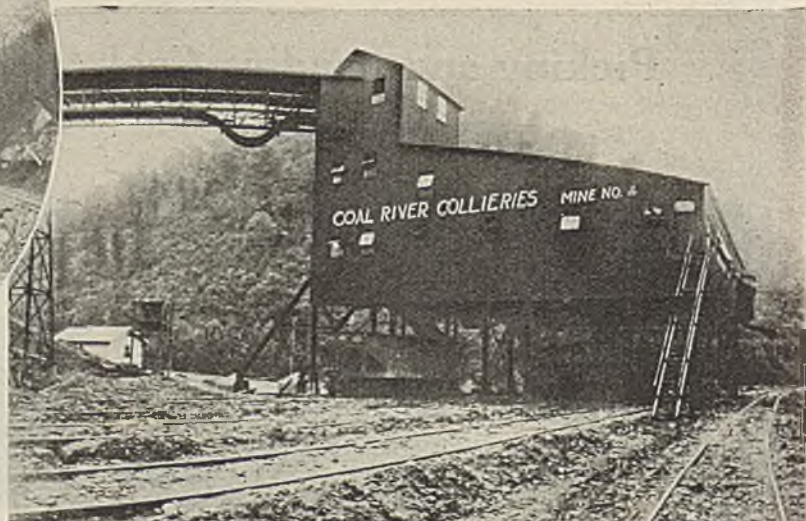
Drift of Eureka Mine, Prestonburg, Ky.



Warren S, or No. 2 Mine, Ashford, W. Va.

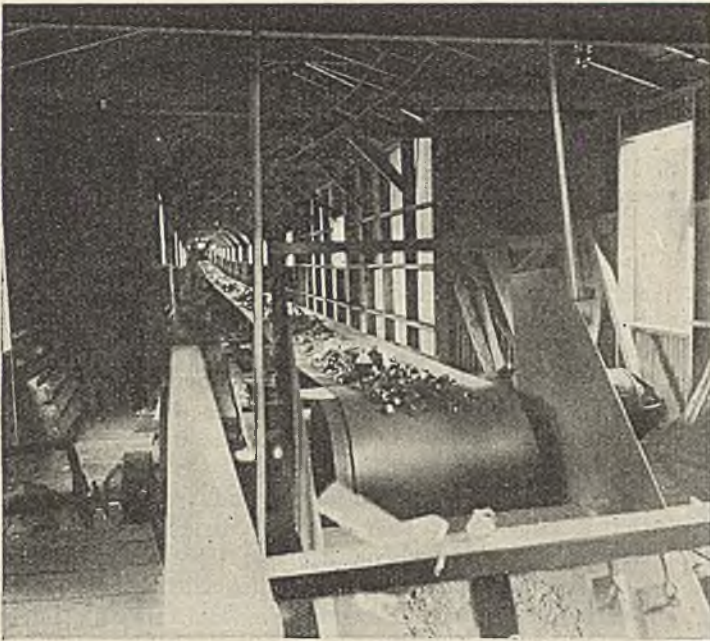


Eureka Mine, Where Conveyor Carries Coal Across Big Sandy



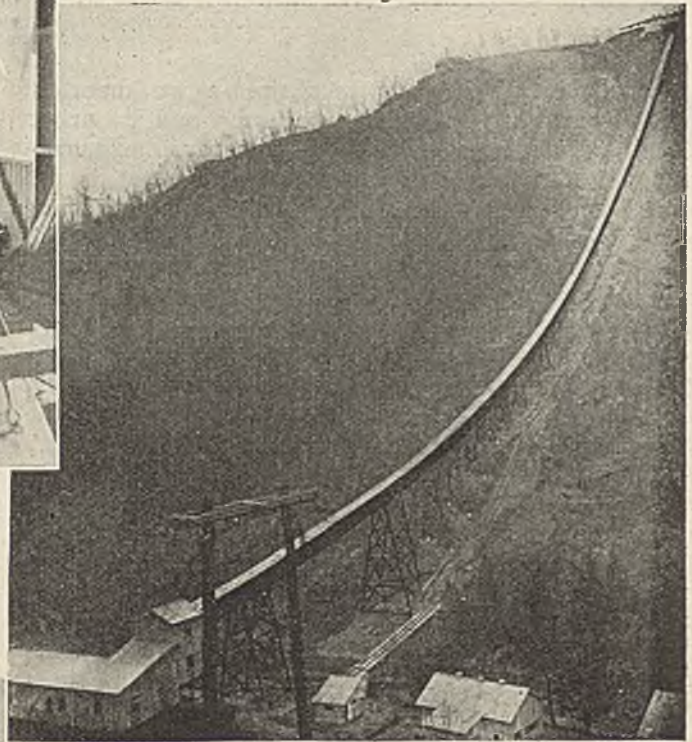
Belt Brings Coal to Tipple No. 4

More Views of Coal River Collieries Co.'s Properties

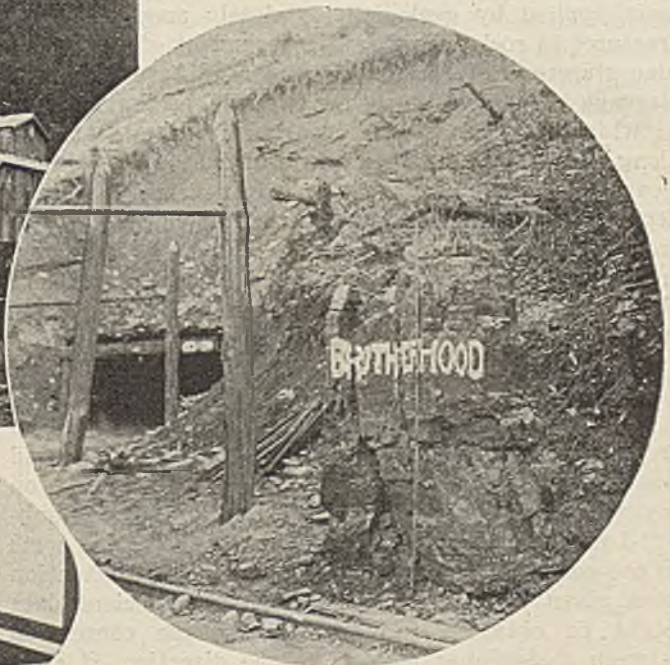
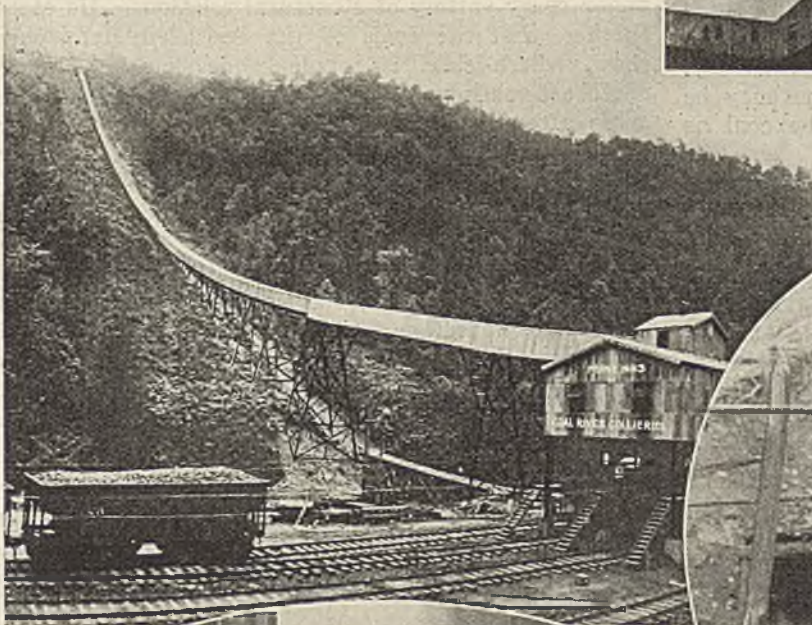


Belt Gallery Spanning Big Sandy at No. 4 Tipple

Brotherhood No. 3 Retarding Conveyor, Seth, W. Va.



Another View of the Seth Conveyor



Brotherhood No. 3 Mine, Seth, W. Va.



Harry Leaberry, President and His Secretary

Why Coal Has Cleat and the Way in Which It Runs

Cleats Vary in Direction but Face Fractures Are Always at Right Angles to Butt Cleavages—Kendall Would Ascribe Cleat to Tide Strains but Mountain-Forming Movements Are Probable Cause

By E. S. MOORE

Professor of Economic Geology, University of Toronto,
Toronto, Ont.

CLEAT has long been recognized as an important structural feature of coal seams, and its origin and direction have occasioned much argument among coal-mining men. Other terms for cleat, in use among English-speaking miners, are "cleavage," "slip" and "slyne." These terms are frequently qualified to indicate the direction, which the fractures follow with respect to the strike and dip of the beds, and to the mine workings.

The cleat parallel to the direction of strike is the "strike cleat" and that parallel to the direction of dip the "dip cleat." The working face runs parallel to the "face cleat" and the butts parallel to the "butt cleat." The face cleat is also known as the "bord." The face and butt cleats run at practically right angles to one another.

In some respects cleat in coal is similar to ordinary jointage in other rocks as it breaks the coal into roughly cubical blocks. It may originate through shrinkage in the coal due to loss of moisture and other constituents, or through slight movements in the strata resulting from adjustments in the earth's crust under the influence of varying pressures. It is more like cleavage than jointage, however, in that the fractures may be found in the most minute fragments of the coal as well as in the large blocks.

In this respect it resembles "fracture cleavage," the term applied by geologists to closely spaced parallel fractures in rocks, which are independent of the molecular structure of the fragment. It differs from the cleavage in minerals such, for example, as that in mica in which the thin sheets separate from one another along planes lying between layers of molecules. Mineral cleavage is molecular cleavage in the sense that it is dependent upon internal molecular arrangement, whereas fracture cleavage is not. Cleat is not controlled by any definite molecular structure in the coal but develops along lines in the coal where there is sufficient strain to fracture it.

CLEAT GIVEN LITTLE ATTENTION

As indicated above, cleat plays an important part in the mining operations and yet it is surprising to find how little attention has been paid to it in reports on coal fields. In searching for information on this subject I found little mention of it in the geological reports on the coal fields of this continent. If more attention were given to this structural feature sufficient data might be obtained to settle finally the contention between coal-mining men as to the direction of cleat in coal fields which appear structurally unrelated. This difference of opinion has accomplished nothing.

For a long time many coal-mining men, particularly in Great Britain, have held that the direction of face cleat is fixed not only for a given basin or field but for a whole hemisphere. This idea is indicated in the fol-

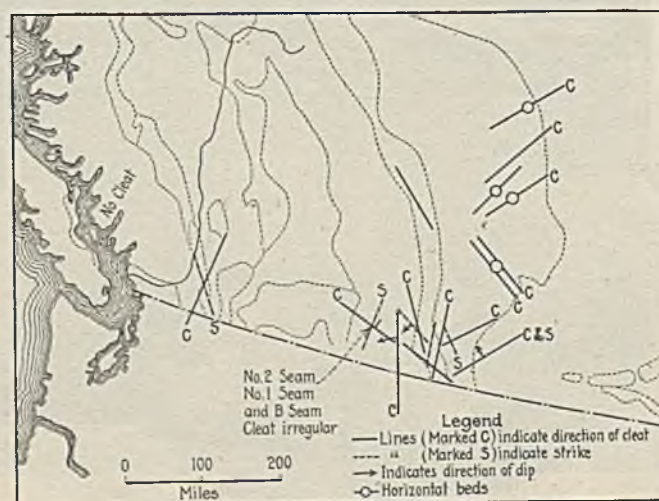
lowing question, asked in *Coal Age*,¹ by a man who signed himself, "Student," from Corona, Alabama: "Do the face cleats in all coal fields have practically the same direction?" He adds that his observations in that field had shown that they all run about N. 30 deg. W.

The answer given this question is the one that most of us would have given and it was to the effect that the direction of cleat in any locality is dependent upon the direction of the anticlinal and synclinal axes for that locality, or in other words its direction is dependent upon local structural conditions. However, when a man who has had as much experience with coal seams as Professor Kendall of Leeds, England, makes a strong statement to the contrary, it seems time that this matter be reviewed in America. In his presidential address before the Geological Section of the British Association for the Advancement of Science, at the Hull meeting,² he stated that cleat is found in the Northern Hemisphere to lie by an overwhelming preponderance in a northwest-southeast direction in coals of all ages and under every variety of structural relations. He stated, further, that the coals of the Southern Hemisphere, show, where cleat is regularly developed, a marked northeast-southwest direction. These statements were made after an investigation of coal seams in several widely scattered countries and the conclusion was drawn that, "the cause will be found in some relation to influences, tidal or other, dependent upon the earth's planetary rôle."

If it can be proved that the direction of cleat is thus uniform, and in the directions stated, then the only possible explanation apparently is that suggested by Professor Kendall, namely, that it is the result of

¹*Coal Age*, Vol. XI, p. 490, 1917.

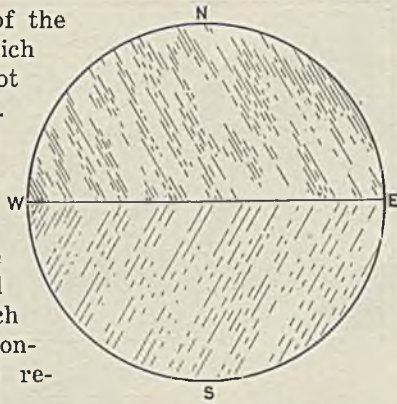
²"The Physiography of the Coal-Swamps," by Percy Fry Kendall. *Nature*, p. 811, 1922.



Cleat and Strike in Alberta and British Columbia

Sometimes there is little or no inclination in the beds, but there is cleat nevertheless. In some places cleat and strike run parallel but often at a considerable angle.

forces, such as those of the tides, the effects of which on the rocks would be not local but world-wide. This is an interesting suggestion. Must we admit that there may be a slow creep of the earth's surface due to its rotation and the direction of which would naturally be controlled by the forces resulting from rotation?



Kendall's Theory of Strike
 He believes that cleat in the Northern Hemisphere runs northwest and southeast and in the Southern Hemisphere northeast and southwest as shown.

If it be assumed that this creep takes place it must be considered as extremely slow. But, if it occurs we should expect that the older coals would possess more marked cleat than the younger ones, unless destroyed by local disturbances of some sort in the measures. There should be also some evidence of more pronounced cleat in the coal fields near the equator than there is in those farther removed from it. Of the latter condition there does not seem to be any evidence.

Another interesting conclusion, drawn by Professor Kendall from his study of cleat, although it has been mentioned by previous writers, is that the direction of the joints in the strata associated with the coal is quite independent of the direction of the cleat in the coal.

Having studied the conclusions mentioned, I undertook to investigate cleat in a number of widely separated fields, of different geological ages, in North America. Practically no data could be obtained from the printed reports on these fields as cleat is rarely mentioned in them. Accordingly a questionnaire was prepared and sent to 500 mining engineers, geologists and others connected with coal companies in various parts of the continent. Replies were received to many of these questionnaires. The results of the replies were tabulated on maps, showing the relation between the direction of cleat and the strike, and the relations between the cleat and the larger structural features of the area concerned. The direction of the cleat with reference to the equator also was made apparent.

MANY FIELDS SHOW NO MARKED CLEAT

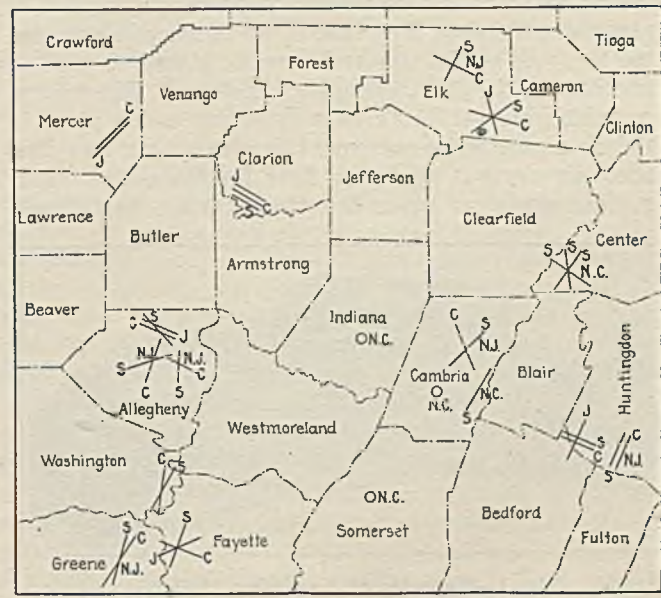
From the assembled reports it was shown that many coal fields, even where little disturbed, show no marked cleat, a circumstance which it is difficult to explain, if the cleat in all fields is greatly influenced by some tidal pull or the earth's rotary motion. There seemed to be no definite relation between the geological age of the coal and the extent to which cleat had been developed, with the exception of the fact that for a given age the coals of higher rank showed a tendency to possess more marked cleat than those of lower rank. This suggests that where the local conditions were such that the coal had undergone more change than in other localities more marked cleat developed.

There are, however, exceptions to this rule. On the other hand, anthracite in America, as in Wales, shows less cleat than other coals and in many fields shows none at all. It is shown beyond question that the joint cracks in the other rocks of the measures bear

no relation in direction to the cleat in the coal. In some fields the cleat and joints coincide and in others they run at various angles to each other. Ashley states in his report on the coal fields of Indiana, that in some shallow seams cracks between the blocks of coal have been found wide enough to permit the hand or even the arm to be inserted in them. Some are 10 in. wide, yet the roof in these instances was unbroken above these cracks. The only explanation for this condition appears to be the unequal distribution of pressure in the different strata of the measures, arising from the presence of strong beds, like conglomerate and sandstone, and weak beds, like coal and shale. When pressure is exerted on such a heterogeneous mass some beds yield easily and others resist the pressure. As a result the pressures are not transmitted uniformly throughout the strata.

No convincing evidence was found that the cleat in the coals of this continent ran in a fixed direction, although in some large fields its direction is strikingly regular. In the Indiana fields, according to Ashley, the face slips normally have the direction, N. 28 to 30 deg. W. and the butt slips N. 60 to 62 deg. E., and these directions hold with great regularity in large basins, uninterrupted by irregularities. This direction changes with the change in dip of the large monoclinial structure in this region. Reports received from central Pennsylvania indicate that a preponderance of the face fractures run nearly in a northwest direction, but that many areas have no distinct cleat.

Only in Indiana and Pennsylvania do the cleats show any marked regularity in the northwest direction. Even in large coal areas in western Canada, where the strata are nearly horizontal, no such definite direction was indicated and the same is true of some of the southern and northern fields of the United States. In some localities reports showed that the cleat in one seam runs in quite a different direction from that in the seams above or below it. Further the reports showed that the cleat bears no fixed relation to the strike in the other strata, being in some cases parallel to it, and in others at right angles. In still others it lay at various angles to it. In those fields men-



Western Pennsylvania Proves Nothing

The cleat (C) strikes (S) and the joint planes in the roof (J) run at different angles. In some cases the cleat and joints are both missing and in others only one of the two. N. C. in the illustration means no cleat and N. J., no joints.

tioned, where the direction of cleat is most nearly uniform over large areas, it is more closely related to the main structural lines than in most other fields.

These fields also show the most uniform strike and dip, except for those large areas with practically horizontal beds of lignite without much sign of cleat.

Considering all the data available I am compelled to conclude that the assumption that the direction of cleat in the coal fields of North America is sufficiently uniform to result from the slow creep of the earth's surface under the influence of rotation or tidal pull has insufficient evidence to support it. Much information, nevertheless, is yet to be collected regarding this interesting problem, and it is hoped that those interested in the geology of coal seams will be on the lookout for additional data bearing upon it. A better understanding of the development of cleat may help us to understand better the nature of some of the changes which take place in the coal as it passes from one rank to another, even though we are not able to say before a mine is opened that as the face cleat must run north-west and southeast the working face must have that direction in all cases.

Here Is a Mine Shop Designed and Equipped to Fit Its Work

Planning, erecting and equipping a central repair shop constitutes a problem often lightly treated by coal mining companies. It is not uncommon to see shops that are entirely too small or too large for their work. Many, also, are unwisely equipped. The new shop of the Raleigh Coal & Coke Co. at Raleigh, W. Va. represents good practice for a coal company of its size and will serve as an excellent example for any company that has similar conditions to meet.

The five mines which the Raleigh company operates are only 3 miles by improved highway from Beckley where a well equipped commercial shop is located. This detail is mentioned to show that it is not through absolute necessity but rather through choice that the coal company maintains a complete shop at Raleigh.

The shop building is a one-story structure 55 x 100 ft. in plan, with the concrete foundation carried up about 40 in. above the floor line, that is, up to the window sills. Practically all of the side wall area is glazed, as well as about half of the ends, including the doors. The central bay, which answers both as a driveway and a place in which to repair large equipment, is served by a traveling crane. Concrete is used as a floor for the entire building. The electrical repair department is not partitioned



Fig. 1—Exterior of New Shop Building

This structure is 55 x 100 ft. in plan. The sill of the framed portion is about 40 in. above the floor line. This is a convenience in keeping the place clean. Ample lighting is provided by numerous side and end windows as well as side lights in the roof monitor.



Fig. 2—Central Bay of Shop Interior

This bay at once forms the main passage through the shop and the area in which heavy repairing is done. Except for the wheel press on the right and the pipe machine on the left, it is unobstructed, all benches and other machine tools being installed upon either side of this passage which is spanned by a hand-operated crane.

off from the rest of the shop but space is allotted for it in one corner alongside a lathe which was provided primarily for commutator turning and armature banding.

The following is a list of the shop equipment: One 200-ton wheel press; one 24-in. slotter; one 30-in. engine lathe, 8 ft. between centers; one 20-in. engine lathe, 8 ft. between centers; one 15-in. toolroom lathe, 5 ft. between centers; one 20-in. gap lathe, 3½ ft. between centers, with the gap open and 5 ft. when it is closed; one 40-in. double-head boring mill; two two-wheel emery grinders; one 4-ft. radial drill; one 18-in. drill press; one 12-in. drill press; one 6x6-in. power hacksaw; one

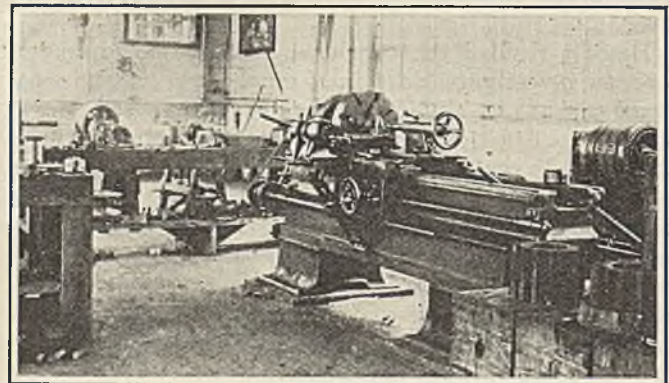
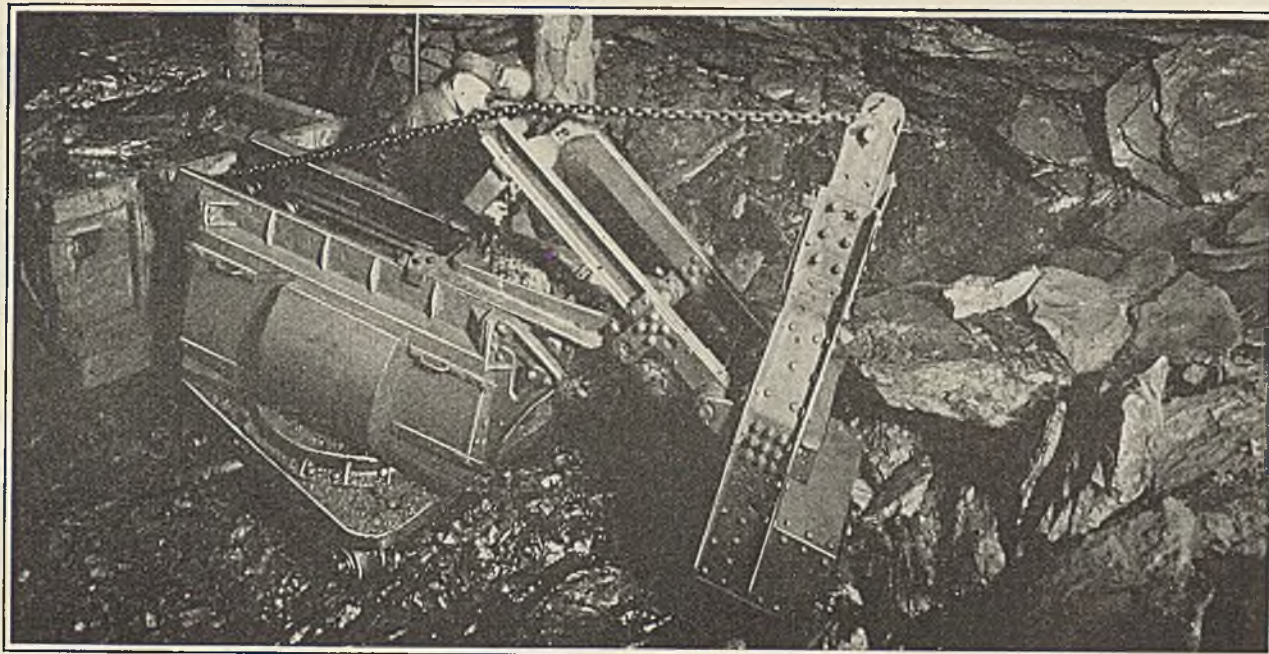


Fig. 3—The Electrical Repair Corner

The lathe shown in this illustration was installed primarily for electrical work such as banding, commutator turning and the like. In this shop the electrical repair department is not segregated into a compartment by itself but a specific portion of the floor area is assigned to this work. This has its advantages particularly in the small-mine shop.

30-in. shaper, with a hole through the yoke to accommodate a 4-in. shaft for keyseating; one 14-in. shaper; one 26 x 26-in. x 10-ft. open-side planer; one plain miller with 30-in. table travel; one combination pipe and blot machine with a capacity up to 6-in. pipe and 2-in. bolts; one 10-ton hand-operated traveling crane having an 18-ft. span; two 3-ton portable floor cranes.

All of the machine tools except the wheel press and pipe machine are located in the two side bays of the building. These two machines are installed in the crane bay, but are set close to the columns so as not to obstruct the area materially. The selection of tools for this shop was no doubt influenced to some extent by the fact that the company has its own foundry where a large portion of its requirements for both brass and iron parts are cast. Such parts, as a rule, must be machined in the shop.



Reopening Thick, Flat Anthracite Beds

Insufficient Roof Support Left in Original Mining Makes Reopening Difficult
—Many Rock Falls Complicate Problem—Mechanical Shovels
Make Appreciable Savings

By Dever C. Ashmead

Anthracite Mining Engineer, Bureau of Mines,
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IN REOPENING previously mined areas in the anthracite field, especially where the beds are thick, great difficulty is often experienced because the original mining left the overlying strata with insufficient support. Failure to provide the necessary pillars may have been due to a lack of knowledge concerning the strength of the overburden and of the proper size of pillars needed for its support, or it may have arisen from a lack of system in laying out the mine. On the other hand the insufficient pillars may have resulted from a desire to obtain as high a recovery as possible on first mining, either because it was assumed that the supply of coal was practically inexhaustible or because it was believed that recovery by second mining would not be economically possible. No matter what may have been the cause, its results are evident to any one studying the old mining maps or exploring such territory as is still accessible.

An interesting illustration of a method employed to overcome the difficulty mentioned may be found at the Pancoast colliery of the Price Pancoast Coal Co., near Throop, Pa., where the Diamond bed is being reopened. The total thickness of this measure, including coal and partings, is between 11 and 12 ft. The quality of the coal produced is excellent.

The coal, itself, is fairly hard, but the roof immediately over it is brittle, and the first 4 ft. above the bed falls after a breast has been left standing. These falls consist of large slabs of rock from 12 to 18 in.

Note—The Hoar shovel, shown in the headpiece, with which we were favored by the Price Pancoast Coal Co., is that described in the article which follows.

thick, possibly 10 to 15 ft. long and in many cases as broad. In the territory which the coal company is now attempting to reopen, the chambers are about 30 ft. wide and the pillars of coal between them range from 14 to 22 ft. in width. The character of first mining can be seen by referring to the accompanying map.

CARE TAKEN TO PREVENT SQUEEZE

With this thickness of bed, and with the roof caving to the height mentioned, the total height of the pillars remaining is from 14 to 16 ft. With wide chambers and small pillars, second mining by skipping the pillars proved almost impossible. Had the pillars been skipped on the advance, the area of pillars remaining would have become so small that they would have afforded insufficient support to the roof, and a squeeze would have been brought upon this section of the Diamond bed. In fact, this was actually tried and a small squeeze occurred. In order that this coal might be recovered it became necessary to reopen the old chambers and bring back all the pillars at one operation on the retreat; by this means when the roof broke the territory would not be squeezed.

The chief problem encountered in reopening the old chambers was how to remove the fallen roof, which lay on the floor in great slabs to a height of from 1 to 8 ft. It was found that to contract this work to miners would cost more than \$20 a yard, without counting the cost of the timber. It would have been necessary also to furnish compressed air to the men. This meant that the work would be extremely expensive, and it was questionable whether the recovery of coal would warrant the outlay involved.

It was then decided to try out a mechanical loader and the removal of the rock by company men, instead of by contract. After a thorough investigation into the various kinds of such loaders available, the company purchased one of the shovel type; one that can be operated in a chamber having a minimum height of 7 ft. from the top of the rail and requires a minimum width of 7 ft. for its manipulation.

RECOVER TWO LINES OF PILLARS

In alternate chambers a roadway 12 ft. wide is cleaned up along the left-hand rib as far as the last crosscut in the chamber. The pillar beyond the last crosscut is skipped, advancing to the end of the chamber and immediately brought back, so that the small support left by the skip cut sustains the roof for only a short time. To gain access to the pillar between alternate rooms, which is not reached directly by the roadway just mentioned, branches are put across to the pillars; consequently, two lines of pillars can be recovered from each roadway. Of course, it is necessary to clear up a sufficient quantity of the fallen roof to the right of the roadway to allow a car to approach the pillar.

Four men are required to operate the shovel. These include: the shovel runner, who receives \$6.95 per day, the miner, who draws the same wage, a laborer who receives \$6.12, and a driver who gets \$5.28, making a total of \$25.30 per 8-hr. shift. These men not only operate the shovel, but do their own propping and timbering and lay their own track.

JACKHAMMER DRILL SINKS HOLES

It is necessary to shoot the rock and a jackhammer drill is used to sink the holes, which, when fired, break



Where Removal of Fallen Rock by Compressed-Air Shovel Makes Coal Recovery Possible

Original mining appears to have been conducted in a somewhat haphazard manner, probably because of the varying pitch of the coal measure. Opening the old rooms and robbing the pillars on the retreat breaks the roof, relieves its pressure and thus a squeeze is avoided.

Table I—Cars of Rock Loaded by One Shovel During August, 1924

Day	Cars	Day	Cars
Aug. 1	5	Aug. 17 Sunday	3
2	13	18	6
3 Sunday	8	19	13
4	12	20	7
5	12	21	6
6	6	22	1
7	11	23 Sunday	3
8	12	24	12
9	10	25	13
10 Sunday	5	26	7
11	13	27	12
12	9	28	7
13	7	29	12
14	12	30	7
15		Total	231
16			

the rock into sizes that the shovel can handle. Table I shows the number of cars of rock loaded during the month of August, 1924.

Each car has a capacity of 105 cu.ft. During the period mentioned, the four men employed earned \$687.51, to which must be added the cost of supplies, which amounted to \$62.75. During this period they cleaned up 58 yd. of roadway at a cost of \$12.935 per yard. This is approximately \$7 less than the lowest contract price that could be obtained for the same work without the use of a mechanical shovel. The average cost per day was \$28.856.

Were it not for the fact that the roof is in an exceedingly bad condition, and requires careful timbering, it would be possible to increase materially the number of cars loaded per day and thereby increase the yardage. At the time I visited this operation the conditions were exceptionally unfavorable. The rock was piled 8 ft. high in the room, and the shovel was operating up a pitch of about 8 to 9 deg. It was a long distance from the source of power, and the pressure of the compressed air was not as high as it should have been, which defect seriously hampered the operation of the loader. This has since been rectified.

The shovel has worked so satisfactorily and the cost of rock removal by its aid is so much lower than it would have been by hand, that the company has purchased five more machines of the same make and type for doing this character of work. These are now in operation. The accompanying map shows the conditions of the mine in the section which is being reopened. The chamber marked "A" has been cleared up and work started in that marked "B."

Electricity in English Mines in 1883

Probably the first underground electric motor in English mines was installed at Trafalgar Colliery, Gloucestershire, in January, 1883. The power was used only for pumping, current being taken by insulated cable carried on porcelain insulators, says R. M. Chalmers at the Wigan Mining and Technical College. A wire rope was used for return.

At Allerton Main Colliery, Yorkshire, Mr. Chalmers does not state when, but apparently quite early, water was pumped from inby by electrically driven pumps, and power was taken to the motors in accumulators charged at the surface and conveyed to the pump in cars. This colliery also used at that time an electrically driven coal cutter, transmission from the surface to the machine being solely by flexible cable.

At an early date also at St. Johns, Normanton, Yorkshire, electricity was applied to a ram pump delivering 40 gal. per minute against a head of 53 ft.



News Of the Industry



U. S. Supreme Court Deals Death Blow To Kansas Industrial Court

Decides Compulsory Arbitration of Labor Disputes Unconstitutional
And Strips Kansas Tribunal of Power To Fix Even
Hours of Labor and Overtime Pay

Compulsory arbitration of labor disputes is unconstitutional and, therefore, cannot be practiced in this country. This point is firmly established in a decision April 13 by which the U. S. Supreme Court deals a death blow to the famous Kansas Court of Industrial Relations. The decision, rendered on two cases of the Charles Wolff Packing Co., holds that the Kansas court cannot so much as enforce its decisions covering hours of labor and overtime pay. In 1923 the Supreme court sheared the Kansas tribunal of other authority including any power to fix wages.

The Kansas Court of Industrial Relations has had a tempestuous life since its creation under the regime of Governor Henry Allen. It has run counter to many a foe including the United Mine Workers of America and especially Alex Howat, once president of the Kansas district of the union, who was imprisoned for his activities in violation of court order.

In the Wolff case the Kansas court originally issued an order to compel fixing of wages, hours of labor, overtime pay and working conditions. The Kansas supreme court issued a writ of mandamus compelling obedience to all the clauses in the order, except the one relating to working conditions, because the latter was made without the required notice. The Wolff company took the judgment to the U. S. Supreme Court for review. This body reversed the Kansas supreme court and remanded the judgment for further proceedings. The state court then vacated its original judgment, eliminated parts fixing wages and working conditions but issued a mandamus to compel obedience to the clauses fixing hours of labor and overtime pay. The packing company appealed from the writ of mandamus to the U. S. Supreme Court on writ of error-proceedings and won.

The Supreme Court now adheres to the position it took previously that the Industrial Relations Court law undertakes to establish a system of "compulsory arbitration."

Justice Van Devanter, who wrote the decision, said:

"The survey just made of the act shows very plainly that its purpose is not to regulate wages or hours of labor either generally or in particular classes of business, but to authorize the state

agency to fix them where and in so far as they are the subjects of a controversy, the settlement of which is directed in the interest of the public.

"In short, the authority to fix them is intended to be merely a part of the system of compulsory arbitration and to be exerted in attaining its object, which is continuity of operating and production.

"The system of compulsory arbitration," says the decision, "which the act establishes, is intended to compel, and if sustained, will compel the owner and employees to continue the business on terms which are not of their making. It will constrain them not merely to respect the terms if they continue the business, but will constrain them to continue the business on those terms.

"Such a system infringes the liberty of contract and rights of property guaranteed by the due process of law clause of the fourteenth amendment; the established doctrine is that this liberty may not be interfered with under the guise of protecting the public interest by legislative action which is arbitrary or without reasonable relation to some purpose within the competency of the state to affect."

Union Makes Little Progress In West Virginia Strike

Although the union is still laboring to get more non-union miners of northern West Virginia to strike, yet during the second week of April there were 119 out of 126 non-union mines at work or more than the total operating during the first few days of the strike, according to figures compiled by George S. Brackett, executive vice-president of the Northern West Virginia Coal Operators' Association. Information from different sources indicates that his conclusion is correct, and that, so far, the union has not been able to make much progress in forcing the men to cease work.

On the other hand, the union claims that its organizers are working on individual mines and that the results of such concentrated effort will not show immediately. All the union mines on Scott's Run which were closed down on April 1 are still idle, except the two mines of the Connellsville By-

Coal Needs No More Laws

The coal industry is functioning badly and something may happen within the industry, Commerce Secretary Hoover admits. He calls attention to the fact, however, that it is a situation in which the public is not being penalized. An abundance of coal is available at a low price. For that reason there is no demand from the public for legislation or other steps looking to the creation of a more healthy industry. Bad industrial situations are hard to cure with legislation, he declared.

Product Coal Co., one on Scott's Run and the other at Mona. The Scott's Run mine produces from 40 to 50 cars per day.

Claims of the union officials of the Fifth Ohio sub-district, that non-union mines across the Ohio River in the Northern Panhandle would be closed down on April 6, failed to materialize. Four of the five mines in Marshall County were working that day and the fifth was reported closed by officials owing to a mechanical breakdown. The mine down was the Panama mine of the Ben Franklin Coal Co. which employs about 300 men.

By holding a large meeting at the union hall at the Fort Pitt mine just across the river from Moundsville, the union succeeded in closing down virtually all the non-union mines in Marshall County, one of the four northern Panhandle counties of West Virginia. The Glendale mine of the Hinchman Coal Co. was the only mine, out of four in the county, which was being operated on April 10, and at the offices of the company it was stated that only a few men were in the workings. Parr's run, Panama and Richland-Marshall mines were closed down.

Signs of trouble in the strike zone moved Governor Gore to call non-union operators and leaders of the union into conference at Fairmont.

The reopening of the union plants of the Paisley interests did not cause resumption at other union mines. A statement issued by the Cleveland-Morgantown Coal Co., the Gilbert Davis Co. and the Soper Mitchell Coal Co. said: "It is impossible to operate under the Jacksonville wage scale at the present condition of the coal market. As long as conditions remain as they now are, we see no possibility of operating except at a loss that no sensible operator is prepared to suffer."

Former Business Associates Honor R. H. Buchanan

R. H. Buchanan, former general manager of the Hudson Coal Co., and now president of the South Penn Collieries, was tendered a surprise testimonial dinner Saturday night April 4, in the Hotel Casey, Scranton, by officials of the Hudson company. Approximately 700 executives, representing all departments and collieries of the company from Forest City to Plymouth, were in attendance.

C. A. Straw, consulting mechanical engineer of the Hudson company, was toastmaster, and in behalf of the officials, presented a diamond ring and imported watch to Mr. Buchanan. He also received a set of engraved resolutions, expressing the regret of the men in his leaving the company. The recipient, in acknowledging the gifts, thanked the officials for the co-operation extended to him while connected with the company. Among others who spoke were W. A. Chandler, consulting electrical engineer; A. E. Yetter, chief mining engineer; A. M. Fine, vice-president, and D. F. Williams, vice-president and general sales manager.

International First-Aid Meet To Be in September

The Fourth International First-Aid and Mine-Rescue Contest, open to all miners, quarrymen, and workers in metallurgical plants, will be held at Springfield, Ill., Sept. 10, 11 and 12, 1925, under the auspices of the U. S. Bureau of Mines, according to recent announcement made by the Acting Secretary of the Interior.

These contests are held annually under the auspices of the Bureau of Mines, with the co-operation of the American National Red Cross, the National Safety Council, and various mine operators' associations and miners' organizations, with the object of furthering the work of training miners in first-aid and mine-rescue methods, and the consequent advancement of the cause of safety among the million miners of the United States.

A feature of the meet will be the awarding of the congressional medal, which is given annually to the team of miners adjudged to be most thoroughly skilled in first-aid and mine-rescue methods. Another interesting event will be the awarding of the medals offered annually by the Joseph A. Holmes Safety Association in commemoration of notable deeds of heroism performed by miners in succoring their comrades imperiled at mine fires and disasters.

More than 130,000 miners have already been trained in first-aid-to-the-injured and mine-rescue methods by the Bureau of Mines. All organizations interested in the contest are invited to enter one or more first-aid and mine-rescue teams. No fee is required. Entry blanks, together with the general rules of the contest, must be obtained from the Bureau of Mines, 4800 Forbes Street, Pittsburgh, Pa., before Aug. 26.



R. H. Buchanan

New president of the South Penn Collieries Co. and a vice-president of the Payne Coal Co. He graduated in 1902 from the Virginia Polytechnic Institute and was for some years engaged in the Pocahontas, Thacker and central Pennsylvania districts. Later he operated anthracite collieries for the Madelra-Hill interests and was appointed chief mining engineer for the Hudson Coal Co. in 1916. In 1918 he became general superintendent of that company and so increased its production that it advanced from fifth to third position in the list of anthracite producers. The banking interests connected with the South Penn Collieries Co., namely Lee Higginson & Co., of New York, and Cassatt & Co., of Philadelphia, chose Mr. Buchanan for his present position.

Brotherhood Mines Continue On Co-operative Basis

The United Mine Workers and the owners of the Brotherhood mines—the Coal River Collieries Co. properties in West Virginia, which are running open shop—have reached no agreement in their quarrel over the refusal of the railroad union to run its coal mines on a union basis. A conference, April 10, produced no definite result, it was announced in Huntington, W. Va. The coal company was represented by President J. T. Dunigan and Sales Manager G. C. Huffman. Percy Tetlow and W. G. Williams acted for the United Mine Workers. The series of meetings will continue.

At about the time of the conference the stockholders of the company formally approved the co-operative operating policy of the men in charge of the mines and re-elected these officers: J. T. Dunigan, president; W. B. Prenter, first vice-president; T. C. Songer, second vice-president; H. L. Porter, secretary and treasurer. Warren S. Stone, president of the Brotherhood of Locomotive Engineers, who attended the meeting, together with Mr. Prenter and Mr. Songer, constitute the executive committee, Stone being the chairman of the board of directors.

Mr. Stone described the co-operative policy of the collieries company as a sound one, adding that "The collieries company is substantially growing in its co-operative policy. I believe amity and co-ordination of effort will grow out of the present situation."

Three Killed by Explosion in West Virginia Mine

Three men were killed in an explosion at the Logan-Eagle Collieries' mine at McBeth, W. Va., April 9. The victims were Joe J. Solaski, assistant superintendent; Nicholas Fernando and Manuel Gonzalez, miners. Although the accident happened while the mine was working, nothing was known of the explosion until the men failed to come out at the end of the shift. A searching party was organized, finally finding the bodies of the three men about 2,000 feet from the slope bottom.

An investigation into the cause of the explosion was begun on Friday, by Deputy Mine Inspector J. F. White. Casual inspection leads to the belief that flames from miners' lamps ignited gas in a pocket of an unworked section of the mine into which Solaski was directing the others with the intention of resuming operations in that section.

Navy Opens Bids on Coal for Lakes Naval Hospital

Bids opened April 8 by the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., for 8,000 tons of bituminous screenings and 1,500 tons run of mine bituminous coal for delivery at the United States Naval Hospital, Great Lakes, Illinois, during April and May, were as follows:

Eight thousand gross tons bituminous screenings: J. K. Dering Coal Co., Chicago, \$2.24 per ton, f.o.b. mines, \$4.67 delivered; Great Lakes Coal & Coke Co., Chicago, \$1.55 f.o.b. mines; Great West Coal & Lumber Co., Chicago, \$2.24 f.o.b. mines; O'Gara Coal Co., Chicago, \$2.12 f.o.b. mines; Peabody Coal Co., Chicago, \$2.13 f.o.b. mines; Sterling Midland Coal Co., Chicago, \$2 f.o.b. mines; Wade Coal Co., Chicago, \$2.02 f.o.b. mines, \$4.025 delivered.

One thousand five hundred gross tons run of mine bituminous coal, f.o.b. mines: Chicago, Wilmington & Franklin Coal Co., Chicago, \$2.80 per ton; Crerar-Clinch Coal Co., \$1.96; J. K. Dering Coal Co., \$2.52, \$4.95 delivered; Great Lakes Coal & Coke Co., \$1.80; Great West Coal & Lumber Co., \$2.96; O'Gara Coal Co., \$2.80; Peabody Coal Co., \$2.80; Wade Coal Co., \$2.52; \$4.525 delivered.

Coal Consumption and Power Output by Utilities Drops

Public-utility power plants in the United States consumed 3,148,549 net tons of coal in February, according to a report by the Geological Survey. This compares with 3,715,744 tons in January. Fuel oil consumption by utilities in February totaled 999,463 barrels, compared with 1,400,822 barrels in the preceding month.

The average production of electricity by public-utility power plants in February was 178,000,000 kw.-hr. per day, a reduction of less than 1 per cent from the average output for January. In January about 31 per cent of the total output was produced by the use of water power and in February about 35 per cent.

Fields Near Non-Union Stronghold Form Dangerous Salient in Union Lines

By Paul Wooton

Washington Correspondent of *Coal Age*

Enough time now has elapsed since April 1 to appraise the changes which the opening of the new coal year has brought. The situation emphasizes that "things are not quite as good nor quite so bad as they seem." Coal still is being mined in the union districts. Though the situation has become progressively worse, acceleration of the rate, particularly in Illinois and Indiana, is not as much as had been anticipated.

Sight must not be lost of the fact that freight rates give those states no small degree of protection. Labor costs have to be low to overcome that advantage.

It is in the borderline districts of West Virginia and Pennsylvania that the most significant developments have occurred. It is there that the real fate of the United Mine Workers' present standard of wages and working conditions is hanging in the balance.

It now is fairly clear that Mr. Bittner's strike call to men working in non-union and open-shop mines produced small result. Despite that gesture, the tonnage of union coal has shrunk still further and the proportion of non-union coal has increased.

Though loadings for the first few days after April 1 fell off 25 per cent, there is every sign that they quickly will be restored to the level which existed prior to April 1. The great demonstration staged by the union in an effort to hold its lines in its last stronghold south of the Ohio has failed.

From the other critical area—the old union portion of central Pennsylvania—the news is equally interesting. There the union had not planned to make a stand and call a strike. Its policy has been that of Bre'r Rabbit, to lie low and say nothing. The district officials long have known that the Jacksonville scale has been crumbling in that region. That they have not taken vigorous steps against the operators who, openly or covertly, have cut the scale, indicates that they are in no position to force the issue.

Forecasts End of Jacksonville Scale

In central Pennsylvania, as in West Virginia, April 1 simply accentuated what has been going on before. Some large consumers are declaring that they no longer are willing to support the union by giving their business to union mines. This probably makes certain the disappearance of the Jacksonville scale from West Virginia within a few weeks and from most properties in central Pennsylvania. Some operators will close their properties rather than depart from the agreement, even if their own employees are willing to be parties to it.

The time is at hand when the union might do one of three things. It might fight for the scale, but if it does, it is foredoomed to defeat, which means the loss of its hold on these highly impor-

tant outlying fields. To this end the Bittner policy is leading.

If that course is not pursued the union might permit these outlying districts to make separate negotiations looking to the reduction of the scale. If this is done it can hold under nominal allegiance a considerable block of tonnage in northern West Virginia and some in central Pennsylvania. The result of such autonomy would be an urgent demand from the Central Competitive field for a corresponding reduction.

The third course the union could follow would be to recognize that the jig is up and consent to the negotiation of a lower scale. The loss of Fairmont and central Pennsylvania creates a dangerous salient in the Pittsburgh sector of the union line. In fact, the Pittsburgh district itself becomes a salient, which in time probably will be pinched off by the pressure from each side.

The probabilities, however, seem to favor a continuance of the drifting policy, with more union mines closing or breaking away from the scale. Such a policy, though it is the path of least resistance, cannot but be disastrous in the long run.

On paper the union continues to play the role of Shylock demanding its pound of flesh. Many operators hold themselves bound by the agreement and are about to lose hope that anyone with the wisdom of Portia is going to appear on the scene.

1,000 Miners Join Idle Army In Central Pennsylvania

The Buffalo & Susquehanna Coal & Coke Co., of Dubois, Pa., notified 1,000 miners at its Sagamore mine, in Armstrong County, last week, that the mine would be shut down April 10. The statement said: "We see no hope for resumption until general business conditions improve." The miners will be allowed to remain in the company's houses until they find work elsewhere. Since April 12,000 miners in the central Pennsylvania bituminous field have been thrown out of work by the closing of mines.

Other operations which have been shut down since April 1 include the Stineman Co., at South Fork; Shoemaker Co., at Lilly; Boucher-Cortright Co., at Beaverdale; Taylor-McCoy Co., at Gallitzin; Duncan-Spangler Co., Barnesboro; Jos. H. Reilly Co., Spangler; Madeira-Hill Coal Mining Co., Empire Co., Barnesboro, Sterling Co., Bakerton; Rockhill Co., Hastings; H. W. Shope, at Madera, and all the Allegheny River Coal Co. operations from Brookville, in Jefferson County, to Kittanning, in Armstrong County. The latter company employs 2,000 men in

Not So Dumb!

Even a coal salesman can show a sign of life now and then, along with the rest of the clever selling gentry. One sent in his card the other day. The girl returned to say that the boss was "too busy." The salesman had a bright thought. Said he: "What did he do with the card?" Said she: "Tore it up." Said he: "Tell him I want it back." She did. The boss parried this thrust by sending out a nickel to pay for the card. Said the salesman handing her another card: "He overpaid me. These cards are two for a nickel. Take him this one." The boss weakened. Said he: "Tell that darn idiot to come in here and get an order."

its various operations which have been closed.

The Sonman Coal Mining Co. closed down its mines in Cambria County and notices were posted that the mines would remain closed for at least five months. The mine mules were removed, tools taken out and the pumps will be operated by electricity. Others to close include the Cymbria Coal Co., the Delta Co. and all the workings of the Barnes & Tucker Co. in the vicinity of Barnesboro.

The Rich-Hill Coal Co., at Hastings, has posted the following notice: "Owing to the low price at which coal from other fields is being offered to our customers, this company can no longer meet the competition and is therefore compelled to shut down until such time as prices can be secured to warrant resumption of work without loss."

At Myersdale, in the Somerset County field, the Consolidation Coal Co. closed down its mines on April 1, but it was reported that they would resume later in the month. This has not been confirmed, however. The Consolidation company announced that a big contract for 1925, which the company expected to close, had not yet materialized. The miners agreed some time ago to a 25 per cent reduction in wages and, as a result of the shutdown there is considerable dissatisfaction, but the company hopes the present condition is only temporary.

President John Brophy has admonished the miners to adhere to the Jacksonville agreement.

In his report for 1924, J. F. Welborn, president of the Colorado Fuel & Iron Co., says that the company's coal business is "in about the same unsatisfactory state that prevails generally in the industry throughout the country. We are adjusting our operations so as to secure every practicable reduction in producing costs." The report, which was made public on March 23, says that 2,949,641 tons of coal were produced and that 122,801 tons were purchased. Of this tonnage, 977,500 tons were used in making coke, 571,189 tons were used at the company's plants, and commercial sales totaled 1,525,290 tons.

Lewis Refuses to Confer On Wages with Ohio and Pennsylvania Operators

John L. Lewis, president of the United Mine Workers, has declined to meet the bituminous coal operators of Ohio and western Pennsylvania for the purpose of discussing the question of a wage revision in the coal mines of these districts. Faced with low priced non-union competition the producers asked Mr. Lewis to meet with them to discuss a revision of the Jacksonville wage scale signed a year ago and having two years yet to run. Mr. Lewis replied that it is "scarcely necessary" for him "to make a comprehensive analysis of the request" because he has already made up his mind that such a conference, if it resulted in a reduction in wages, would not be constructive or helpful to either the operators or mine workers.

"A year's trial of the present wage scale has shown that our fields cannot compete in our markets against non-union coal," the operators' letter said.

Mr. Lewis in his reply, dated at New York on April 6, said that "the United Mine Workers would be glad to give consideration to any practical plan which does not contemplate a modification of existing wage contracts or a reduction in earnings."

The scale committee of coal operators of western Pennsylvania and Ohio issued a statement in Cleveland April 8 regarding the failure of their efforts to arrange a meeting with the miners to discuss a revision of the Jacksonville wage scale.

"Mr. Lewis's outright refusal to consider any proposal that contemplates a modification of existing wage contracts means that the operators in union fields will be driven out of business," the statement said. "The operators are certain that they cannot continue to pay the \$7.50 union basic day wage and sell coal to industry that can buy coal produced at a \$5 wage rate."

Pinchot Signs 5 Mine Bills; Survey Board Continued

Five bills amending existing mine laws were approved April 8 by Governor Pinchot of Pennsylvania. Four of these were sponsored by Representative Heffran, of Washington, and one by Representative Armstrong, of Armstrong County.

The Armstrong bill prohibits the extension of lateral mine railroads so as to endanger existing mine workings.

The qualifications for applicants for mine foremen, assistant foremen and fireboss certificates are changed by one of the Heffran bills by requiring that they shall have had an aggregate of five years' practical experience in mining in the United States. Two of these years must have been spent in the bituminous mines of Pennsylvania. Certificates may be granted to graduates of coal-mining courses in recognized institutions of learning after they have had three years' practical experience in Pennsylvania bituminous mines.

Interchange of copies of mine maps by operators when one mine is working a seam of coal under another mine is



Coal Exchange Building,
Huntington, W. Va.

Recently the following coal companies moved their offices into the newly completed Coal Exchange Building: Elkhorn Dick Coal Co., Elkhorn & Shelby Creek Coal Co., Litz Smith Coal Co., Litz Smith Island Creek Coal Co., Litz Smith Pocahontas Coal Co., Monitor Coal & Coke Co., R. R. Smith Coal Co., and the Stone Branch Coal Co. Other coal companies which have engaged space in the new building include: the Agee Coal Co. and R. Mankin & Co. The Coal Exchange is no doubt the most modern office building in West Virginia. It contains 283 rooms and is equipped with high speed (600-ft. per minute) elevators of the automatic floor-leveling type. The rapid growth of the coal industry in southern West Virginia and eastern Kentucky has been one of the chief factors in making Huntington the largest city in the state.

made mandatory by the provisions of a second bill. A third permits the use of dust-laying substances other than water, and a fourth permits instead of compelling the use of storage-battery locomotives in gaseous mines.

The House by a vote of 100 to 92 revived the Haas bill and placed it on the calendar notwithstanding the negative vote of the committee. Representative Haas, Lehigh, sponsor of the bill, explained that it increased the weekly maximum compensation from \$12 to \$15 and decreased the waiting period from 10 to 7 days. He said 38 states now provide \$15 or more a week and 35 states have waiting periods of seven days or less. Representative Behney, chairman of the Insurance Committee, asked that the committee's action be sustained, saying that business conditions, especially in the bituminous region of the state, will not permit further burdens. Representative Miller, Luzerne, who made the motion to place the bill on the calendar, spoke for his motion.

The House Manufacturers Committee on Wednesday reported out the bill continuing for two years the Giant Power Survey Board. The bill carries an appropriation of \$150,000 and for that reason it was re-referred to the House Appropriations Committee.

The other eighteen giant power bills are virtually dead for the session, for Chairman Goodnough, sponsor of the bills, said action had been postponed.

Indiana "Co-op." Miners Say They're Being Good

Most of the miners working co-operatively in Indiana claim to have complied with the ultimatum of President Lewis of the United Mine Workers to live up to the Jacksonville scale or get out of the union. In almost every case the men who have leased mines or who otherwise have made operating deals with the owners, reported to union headquarters before the April 10 deadline that they were paying every man the union scale, that no man was permitted surreptitiously to contribute labor free for dead work and that all other evasions of the union contract had been stopped.

In nearly every case the men working the mines offered to submit their records at any time to the international investigators. President Tyler G. Lawton, of the Indiana district of the union, who is supposed to be friendly to the co-operative idea, said any further action from the union will have to be made by President Lewis. The state organization feels it has fulfilled its obligations.

Berwind-White Cuts Wages 20 per Cent

Stating that present conditions in the trade make it impossible to market coal under the wages paid since 1920, the Berwind-White Coal Mining Co., with operations at Windber and Houtzdale, in the central Pennsylvania field, posted notices of a reduction in wages of approximately 20 per cent, effective April 8, 1925. All collieries of the company are now at work, under the following scale:

Pick mining, per gross ton.....	\$1.01
Machine loading, per gross ton.....	.67
Cutting and scraping, per gross ton....	.14
Cutting, scraping and loading (entries), per gross ton.....	.51
Car pushing (Miners handle cars both ways), per gross ton.....	.05
Yardage and dead work reduced 20 per cent	
Motormen.....	6.30
Spraggers.....	6.00
Trackmen.....	6.00
Trackmen's helpers.....	5.45
Timbermen.....	6.00
Rockmen.....	6.00
Wiremen.....	6.30
Wiremen's helpers.....	6.00
Cutters.....	6.45
Scrapers.....	6.25
Other labor in proportion (a 20 per cent reduction in other labor rates)	

Class 1 railroads in January of the year saved nearly \$4,000,000 on locomotive coal, compared with January, 1924, according to the Bureau of Coal Economics of the National Coal Association. Carriers used 9,208,786 tons of coal in locomotives during January, at an average cost of \$2.82 a net ton for the entire country. In the Eastern district the average was \$2.86, in the Southern \$2.36 and in the Western \$3.08. All of the averages show decreases ranging from 25c. to 60c. a net ton for January, 1924. The actual saving to the roads was greater than the total figures noted above, as the quantity of bituminous coal used in locomotives by Class 1 roads constitutes less than 75 per cent of soft coal consumed by all railroads for all purposes.

Northwestern Dock Operators Long Ago Discontinued Acts Forbidden

Of all the long list of activities which the order of the Federal Trade Commission requires the Northwestern Coal Dock Operators Association "to cease and desist," it is understood that only one covered anything that the association now is doing. All the others which are mentioned, including the collection and dissemination of information regarding prices, were discontinued five years ago at the time one of the decisions in the Hardwood Lumber case was handed down. Therefore, the order of the Federal Trade Commission in this case, so far as it applies to the activities of the association, will have no particular force or effect. The only matter which is mentioned and which is now being done by the Association is that referring to the list of past-due accounts, which is issued monthly, in connection with the regular credit work of the association office. It is stated that this is not as pertinent as are similar lists issued periodically by various retail and other credit organizations throughout the country concerning the credit standing of customers of members of their organizations.

Concerning the numerous charges that the dock companies had conspired to fix prices, it is asserted that the association obviously would have had no knowledge of any such action, even were the allegation well founded. The only way in which the association could be linked with any such alleged conspiracy would be in the issuance of a summarized price report which was along the lines of the Eddy open-price plan and which was discontinued *in toto* at the time of the decision in the Hardwood Lumber case in 1920. Even during the period when these reports were issued by the association, there was never any divulging of the figures of any individual dock company. The report was merely a summary of past transactions upon which companies contributing the information could rely in making future sales of coal.

Discrimination Not Prevented

In the matter of discrimination in price in the team delivery of steam coal in the Twin Cities as against Duluth, it is said, that issue was particularly one in which the retail dealers other than the dock companies in the Twin Cities were interested. This was entirely outside of the activities of the association. The order of the Commission in this regard specifically provides that any dock company individually shall not be prevented from discriminating in price in the sale of bituminous coal in the same or different communities so long as they do it in good faith to meet competition or from selling their own customers in bona-fide transactions and not in restraint of trade.

One of the issues which was raised by the attorneys representing the dock companies and which has not been specifically answered by the findings or the order of the Federal Trade Commission, is that referring to the question of intrastate commerce. This was brought

up particularly in connection with the sale of coal from the yards of the dock companies located in the Twin Cities and Duluth, alleging the coal came to rest in those yards without specific identity after being shipped there for the use of no particular consumer and was, therefore, a matter concerning which the Federal Trade Commission would have no jurisdiction.

Constitutes Interstate Commerce

The Federal Trade Commission takes the ground that the coal handled by the dock companies all originates at mines in the East and because a constant current moves from those mines to consumers in the Northwest, it constitutes interstate commerce. It also finds that so far as team-delivered steam coal in the Twin Cities is concerned, the evidence shows that such coal was sold at certain periods, which are mentioned in the findings by certain individual companies, at a loss in the Twin Cities. Considering the fact that there was no evidence of record as to the cost of dock operation of the companies, it is hard to determine upon what basis the Commission could arrive at a decision that any coal was sold at a loss.

Nothing was said about the traffic activities of the association nor the collection or dissemination of regular credit information other than past-due accounts. No announcement has been made as yet by the association as to the action it now will take.

Coal Mining Course Offered By Carnegie Tech.

A coal mining course will be held at the Carnegie Institute of Technology, Pittsburgh, Pa., June 15 to July 14. The course will prepare miners for the examinations of the State Department of Mines for positions as firebosses, assistant mine foremen and mine foremen. Special examinations for these positions will be held at the institute by the Pennsylvania Department of Mines, July 15, 16 and 17.

An outline of the course follows:

Carnegie Institute of Technology

Mornings, Nine O'Clock

Mine laws and regulations; mine ventilation; mine gases; safety lamps; methods of working; mine explosives; mine timbering, and mine arithmetic.

United States Bureau of Mines

Afternoons, One O'Clock

Mine rescue and first aid training; coal-dust explosion demonstration at experimental mine; permissible explosives demonstration at experimental mine, and lectures and movies on mine safety.

To those completing the course a certificate will be awarded by the Carnegie Institute of Technology, and the U. S. Bureau of Mines will give a mine rescue and first aid certificate.

Only twenty-five candidates will be accepted. The tuition fee for the entire course is \$12. Application blanks may be obtained by addressing Supervisor, Co-operative Mining Courses, Carnegie Institute of Technology, Pittsburgh, Pa.

British Miners Refuse to Take Over Mine

When the Wyerly Colliery, in Staffordshire, shut down last week the number of operations in England and Scotland that had closed since the beginning of the year had reached a total of no fewer than 120, involving the acceptance of the unemployment dole by 20,000 workers.

William Davies, of Liverpool, owner of the Little Neston collieries, in Cheshire, who asserts that he has lost £250 weekly and a total of £60,000 on the operations of his mines, has made an offer to his men to let them work the mine for themselves for nine months, the workers to keep any profit that might be made, while he would contribute £50 weekly toward any possible loss. The district miners' federation considered the offer with interest, but could not see its way clear to accept.

The joint commission of operators and miners, representing the whole industry, planned the resumption of conferences this week.

England Sends Delegation To Arrange Co-operative Studies of Mine Safety

Another British coal mines commission is visiting the United States. On April 14 four men representing the Safety in Mines Research Board landed in New York prepared for a stay during which, it is hoped, a plan will be worked out by which duplication of effort in mine safety research by the U. S. Bureau of Mines and the Mines Bureau of Great Britain will be greatly reduced. Also it is probable an arrangement will be made for the exchange of British and American mine safety experts, who will make periodic studies of conditions in the coal operations of the two countries.

Those in the British commission are: E. J. Foley, senior executive of the Safety in Mines Research Board; Dr. R. V. Wheeler, director of the Mines Experiment Station of Great Britain; W. R. Chapman, and Dr. Coward. Mrs. Coward accompanies the party.

In response to inquiries received from labor unionists in Maryland it has been learned that an unmarked, weed-covered grave in a cemetery at Weir, Kan., is the last resting place of Robert W. Price, who is credited with originating Labor Day in 1870. Mr. Price is said to have launched the Labor Day idea at a convention of the old Knights of Labor in New York, where it found acceptance. He came to Kansas from Maryland in 1883 and was a miner near Weir until his death in 1894. William B. Bair, a representative of the United Mine Workers in Lonaconing, Md., wrote to Kansas for definite location of the grave, stating that an appropriate memorial is proposed.

Hoover, Swope and Green Discuss Waste Elimination

Representatives of Government, Employers and Labor Meet at Industrial Round Table of the National Civic Federation

Waste elimination and the minimizing of industrial controversy were discussed from the sides of employer, employee and the public at the first Industrial Round Table of the National Civic Federation, in New York, April 11. Herbert Hoover, Secretary of Commerce, and Gerard Swope, president of the General Electric Co., in striking phrase, gave the viewpoints of the public and of the employer respectfully, while William Green, president of the American Federation of Labor, made a comprehensive and dramatic pronouncement regarding the attitude of labor toward industrial controversy and waste elimination.

The Round Table, presided over by Judge Alton B. Parker, president of the Federation, is the first to be held under authority of a resolution passed at the recent memorial meeting in honor of August Belmont and Samuel Gompers, two of the early and staunch supporters of the Federation.

Mr. Hoover's text was that the greatest opportunity for increased wages and higher standards of living for the worker lay in eliminating industrial wastes. These wastes can be reduced only by collective effort. "They contain," he declared, "the paradox that if we save collectively, we will have more goods and services to expend individually." Illustrating the possibilities, he commented on the fine showing of our railways in the last three years. They have handled a 14 per cent increase in gross operating expenses. Rates have been decreased over 5 per cent, the hours of the workers have decreased and the wage has increased slightly. Service to the community has been immeasurably improved, and all this due to great effort in management, and the co-operation of the employees and of the community itself. He cited also the waste elimination efforts under way in the construction industry as typical of effective collective effort.

Making the Employee Think

Mr. Swope maintained that waste elimination can be greatly furthered if the thought of the workers can be directed to the subject. He related that in an organization of 60,000 workers, 8,000 suggestions were received in 1923 and 10,000 in 1924. Of these 5,000 had been put in practice, and \$100,000 had been paid, over and above wages, to the workers who had made the suggestions. He stood, he declared, for lower selling prices of commodities and showed that lower prices are not incompatible with higher wages. Incandescent lamps, for example, are now cheaper than they were before the war, yet the earnings of the workers have increased 100 per cent. The "labor content" of each lamp, however, has been decreased. This has been brought about by more efficient methods.

He closed his remarks with a discussion of the larger value of workers' suggestions and of the relations between management and employee:

"The effect upon the organization of these suggestions by workmen is of even greater importance than the reduction in cost and the monetary rewards to the men, because of the stimulation to the men themselves and to the *esprit de corps* of the organization as a whole, because of the recognition that the working-man is a live, integral part of the business and may contribute to a greater extent than he has heretofore in its upbuilding. This gives the workingman a greater interest and keener sense of enjoyment from his work, as he feels that he has made a constructive contribution. The recognition that has come to him is not only appreciated but causes him to be respected by his associates.

"This also often leads to finding talent and ability for bigger jobs. This is one of the most difficult and elusive parts of the problem of management—finding the *exceptional man*. It is a very widespread problem but pressing in any large industrial organization. The problem of knowing and rating the men, and giving them opportunities to do bigger jobs, is essentially a job for management.

"But probably the most tragic waste of all in industry is unemployment, where men ready and willing and able to work, are unable to secure it, and where society really needs their work. The most severe test of any social system is the consideration it gives to the human being, and our present system must find a solution of this great human problem."

Attitude of Labor

Mr. Green declared at the outset that labor believes that production costs should be lowered through the promotion of efficiency in workmanship and management, the elimination of waste and the introduction of economy processes. Unreasonable competition is one of the primary causes of waste, leading even to a disregard of human life and human welfare. Since labor organizations cannot be destroyed why not, he pleaded, "recognize their value and merit and accept from them the benefits they can give through their organized effort?"

Regarding the waste in general and waste in the bituminous coal industry in particular Mr. Green said:

"One of the primary causes of waste is unreasonable competition. This competition results in the installation of inferior equipment and in some instances in the criminal waste of indispensable public commodities. In addition, it leads to a shocking disregard of human life and human welfare. This human waste is the greatest and most indefensible waste which can exist. This

Legitimate Trade Bodies Approved by Hoover

Approval of legitimate trade associations and maintenance by them of sound statistical service, together with uniformity in contract practice, were reiterated by Secretary Hoover in a short address April 7 at the Commerce Department to delegates attending the semi-annual meeting of the National Association of Cotton Manufacturers.

Knowledge of raw material and stocks on hand made for stability of industry, Mr. Hoover observed, in advocating a sound statistical service. He declared he saw no way of obtaining representation in industry without trade associations, and that those engaged in fixing prices and production against public interest were "in an extremely small minority."

A knowledge of current prices open to the public, he said, was insurance against fraud and misrepresentation, although information disseminated within a group for the control of price movement was against public interest.

appalling waste in human life and in human values forms the basis of a strong appeal to all classes of people for the elimination of unjustifiable cheapness in production. No appeal is so strong as an appeal which has for its purpose the conservation of life.

Blames Overproduction

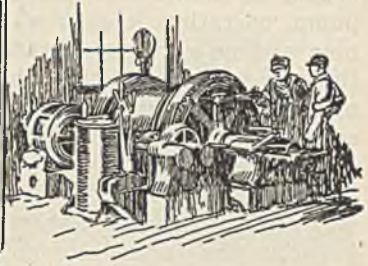
To those of us who are familiar with what is going on in varied industries the force of this statement is apparent. We know how a great basic industry in our country has been and now is suffering from the effects of merciless competition. This state of affairs is mainly due to an abundant supply of an indispensable commodity which is easily accessible. Incidentally, the war caused over-expansion and over-development in this basic industry. The capacity to produce is far in excess of market requirements.

This means that an unseemly scramble for the very limited market for their commodity is taking place among the producing interests. As a result chaos prevails throughout the entire industry, misery and suffering stalk through the communities where live the workers connected with this industry and many corporations, partnerships and companies are on the verge of bankruptcy. It is most significant that an increasing toll of human life has been exacted by these economic forces which reduced this basic industry to such a low level.

Another waste of serious import is that which the Nation suffers in the loss of an irreplaceable commodity upon which the success of future generations and our future civilization depends. This form of waste involves a moral question because it is morally wrong for society to permit such depredation.



Practical Pointers For Electrical And Mechanical Men



Three Years' Experience in Repairing Worn Locomotive Tires

One of the first coal producers to make any serious attempt to repair worn locomotive treads by the electric arc was the Sunday Creek Coal Co., of Ohio. When questioned recently regarding the success attained, C. E. Starbuck, foreman of this company's central shop at Corning, replied in effect that apparently his firm would never have to buy any more new tires, except possibly to replace those which, upon rare occasions, break.

This company is satisfied that tire welding pays. The cost of repairing a \$25 tire is approximately \$15. The practice followed is to remove the tires from the wheel cores before building up the treads by means of a 200-amp. Lincoln motor-generator set equipped with external arc-stabilizing inductance. The electrode used is a 1/4-in. round steel rod of special quality intended for this particular work. The filling metal is applied lengthwise on the tread rather than crosswise. Transverse application was tried, but the result was not considered as satisfactory as that obtained from the longitudinal method.

The usual practice of filling short sections alternately on opposite sides

of the tire so as to reduce the effect of local heating, is followed. After completion of this welding process the tires are annealed in an open oil furnace before being turned in a lathe. The heating, which is carried only to a cherry red, requires about 15 minutes, after which the tires are allowed to cool in the air without any packing of lime or sand as is sometimes recommended.

Many companies fill in worn tires without removing them from the wheel cores. It is claimed that this lessens the chance of breakage and also has the advantage of reducing the expense by eliminating the loss of time and consumption of fuel requisite for removing and replacing the tires. Again, contrary to the Sunday Creek company's method, many shops do not anneal the filled-in tires and several grind them to shape after welding instead of turning them in a lathe.

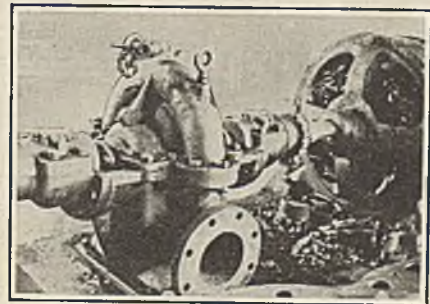
In this regard, Mr. Starbuck states that he feels that the annealing is worth while because it lessens the chance of breakage. Furthermore, even if tires are ground the cost of wear on grinding wheels incident to treating the hard metal would add

materially to the expense of tire repairs. Inasmuch as the Sunday Creek company apparently goes to greater expense (which it is felt is fully justified from the standpoint of safety) in the process of repairing tires than do many other coal companies, it is significant that after three years' experience officials of this firm believe that filling in worn places by electric welding is a paying proposition.

Centrifugal Pump Wrecked by Omitting Valve from Line

BY F. F. MACWILLIAMS
Power Department, Pennsylvania Coal & Coke Corporation, Cresson, Pa.

The accompanying illustration shows the result of neglecting to use proper care in installing a centrifugal mine pump. This machine

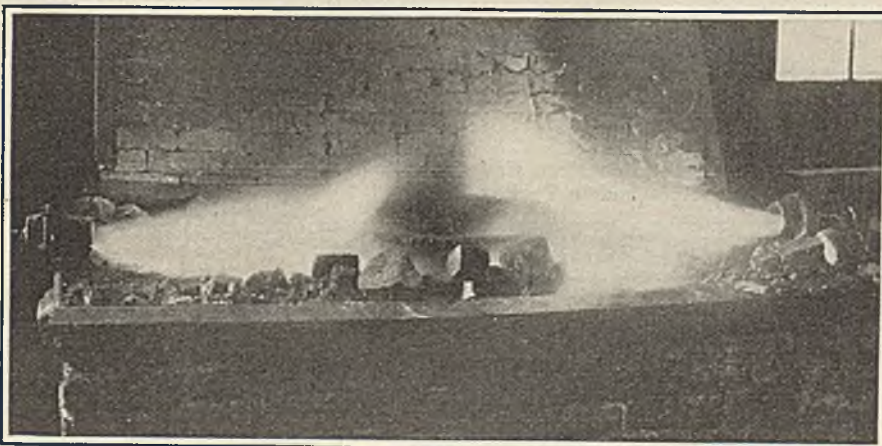


Centrifugal Pump Is Wrecked by Running as a Turbine

Water flowing back to the pump and driving it as a turbine ruined the motor and pump. A check valve would have prevented this damage.

is direct connected to an electric motor that normally operates at a speed of 1,750 r.p.m. When installed it was connected to the line with only a hand-operated gate valve in the discharge pipe. Possibly this was done because a check valve was not at hand or as the result of carelessness. A few weeks later the set was brought into the shop in the condition pictured.

Power for the pump motor was interrupted while the machine was in operation. The discharge line is long and its end at a considerably higher elevation than that of the pump. Consequently, the instant the motor circuit was opened the water



Annealing a Filled-In Locomotive Tire

Crude petroleum torches are used in annealing tires preparatory to turning up in a lathe. The fuel is atomized by compressed air and the tires heated to cherry redness only, after which they are allowed to cool in the air. It is not considered necessary to bury them in lime or sand, a process which greatly prolongs the cooling period; air cooling renders the added metal soft enough for machining.

began to flow back through the pump, operating it as a water turbine with no governor. Inasmuch as the head was comparatively high this machine soon attained a dangerous speed. The centrifugal force set up broke the armature bands of the motor allowing the coils to be thrown out of their slots until they wedged between the armature and field. This destroyed both the armature core and the field poles. By this wedging, the armature was brought to a sudden standstill with so great a shock that the coupling between motor and pump was sheared at the bolt holes, where the two halves were bolted together. The shaft of the pump also was damaged to such an extent that it broke upon being started with another motor.

From the foregoing it is evident that a check valve is a necessity in installations of this kind. Omitting it was hardly a paying investment.

Coil-Winding Forms Made of Wood and Fiber

Where a large mine or group of mines is fully electrified, possibly several hundred motors in addition to various generators and other electrical equipment must be kept in working condition. In order to do this the electrical repair shop must be prepared to wind a great variety of coils of many sizes and shapes, some of which are almost certain to be peculiar. In some instances the number of coils to be wound will not warrant the outlay necessary for the purchase of regular cast-iron forms over which to shape the coils.

To meet this condition the United States Coal & Coke Co., in its shops at Gary, W. Va., has built up wooden and fiber forms over which coils may be shaped almost as readily, rapidly, and accurately as over the regular cast-iron forms.

In building up these forms soft wood planks are glued together and then carved to shape much as a pattern for making castings would be constructed. Suitable pins, grooves, curves, buttons and the like are provided to facilitate forming the coils. These devices, for the most part are made up of hard fiber sawed, filed and bent to shape and given the proper contour and smoothness.

Forms built up in this manner answer the purpose for which they are intended almost as well as those made of cast iron and are at the same time somewhat cheaper. The accompanying illustration shows



Wooden Coil Forms in Use

These forms are built up of plank glued together and carved to shape. Grooves to receive the coil wire in the process of forming are made for the most part of fiber strips placed side by side and fastened in position. Buttons also are made of fiber.

two of these special forms. The girls who are so deftly wielding mallets and pliers are Miss Sadie Wood and Miss Pearl Bourne, champion coil winders of the Tug River valley.

Cable When Tied in a Knot Does Better Work

Many a mine locomotive motorman's helper knows what it means to get his fingers pinched between the cable and guide on a reel-type locomotive.

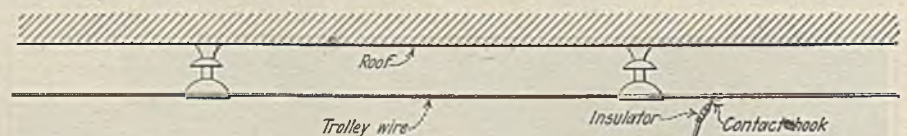
So that the cable will always remain taut when the motorman is using power through it, the reel motor exerts a torque tending to coil the cable. Frequently the contact

hook on the end of the cable is pulled tightly into the cable guide or is twisted out of alignment when the locomotive is standing under the place where the hook is attached to the trolley wire.

To avoid these difficulties, at some mines, the workmen tie a knot in the cable, as shown in the illustration. A mining man usually calls this a dog's knot. When the cable is drawn out the knot makes it easy for the cable to start to feed through the guide. As the cable is wound up the knot stops the end of the cable from coiling too far.

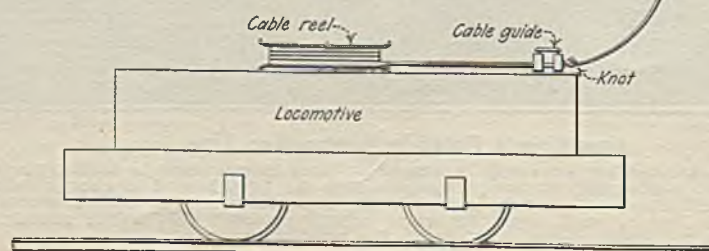
Sometimes this knot is made by wrapping tape on the cable.

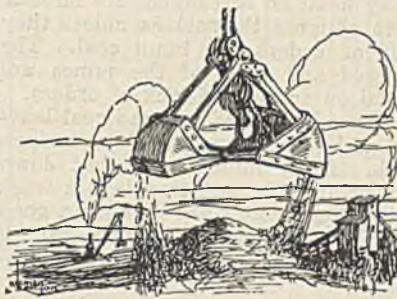
J. O'B.



With Knot in Cable Free End Can Be Readily Attached to Trolley Wire

By actually tying a knot in the cable or wrapping tape at the proper place the end of the cable is made easy to handle. Too often, when the cable is not knotted or wadded, the hook gets tangled in the guide and much time is lost in unfastening it.





Production And the Market



Soft-Coal Output Drops as Lake Season Opens— Anthracite Market Better

The general soggy of the bituminous coal market throughout the country is not disappointing. Nothing better is expected at this time of year by experienced coal operators. If contracts can be landed at fair figures during April the month cannot be said to be unduly depressing. In Kentucky some contracting is in progress, especially now that the movement to lower Lake ports is under way. Union districts are not signing up much business however.

Illinois and Indiana, handicapped both by non-union competition and new low freight rates to the great Northwest have shut down so much producing capacity that their situation is somewhat improved as to market glut. Much good strip coal is selling steadily. In that region, as everywhere, domestic sizes are backed up on the mines so that small coal here and there is a little short. This maintains screenings prices with some firmness. In Kentucky operating time in some fields is better than it was at this time last year.

In the Northwest the docks have announced bituminous circulars setting early-season prices at the levels of last year. This indicates a feeling of some confidence on the part of lake shippers. Coal moved off the docks at the Head-of-the-Lakes during March in considerable volume leaving a comparatively small carry-over into the new coal year. As the new shipments start from the Erie ports for the Northwest the situation does not look particularly bad for the dock operators.

Dumpings at Lake Erie ports started off reasonably well. The first week's activity showed a total of 139,331 tons of cargo coal and 7,821 tons for fueling purposes dumped, according to reports of the Ore & Coal Exchange.

Ohio producers feel rather badly about the forth-

coming Lake business because dock interests evidently expect to buy at lower prices than can be offered by Ohio. Domestic trade is over for the spring. This leaves the interest of Cincinnati, Columbus and Cleveland largely centered on small coal. But screenings are in excessive supply.

New England trade is as sluggish as it was last week. Too much good coal is available. An effort of several important smokeless shippers to keep down volume and get a fair price is upset by a few who are overkeen to move coal at any price. In the New York territory rail trade is overloaded. Tidewater market is in better condition than the line trade.

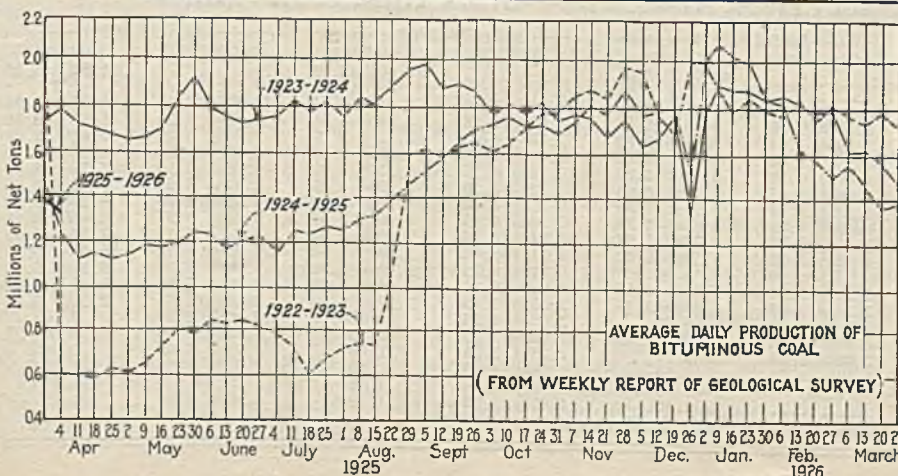
Anthracite Trade Improves Steadily

Anthracite men do not wear the blue glasses of the bituminous producers for interest in hard coal is awakening. Yard stocking is already starting. At New York demand for stove size coal is best. This gives the independent shipper a chance to get small premiums over the line company. In New York and Philadelphia demand for small sizes indicates the "burn-small-coal" campaign is having its effect. Smallest sizes for steam are weakening a little.

Coal Age Index of spot prices on bituminous coal on April 13 had declined one point to 161 during the week though the corresponding price remained at \$1.95.

Hampton Roads dumpings for the week ended April 9 totaled 372,374 net tons compared with 406,947 the week before.

The country's production of bituminous coal during the week ended April 4 was 7,412,000 tons as compared with 8,353,000 tons the preceding week. Anthracite production dropped from 1,640,000 tons to 1,482,000 tons.



Estimates of Production (Net Tons) ¹		
BITUMINOUS		
	1923-1924	1924-1925
Mar. 21.....	9,573,000	8,283,000
Mar. 28 (a).....	9,122,000	8,353,000
Apr. 4 (b).....	7,041,000	7,412,000
Daily average.....	1,280,000	1,324,000
Coal yr. to date (c)...	142,666,000	132,974,000
Daily av. to date.....	1,729,000	1,606,000
ANTHRACITE		
Mar. 21.....	1,804,000	1,513,000
Mar. 28.....	1,942,000	1,640,000
Apr. 4 (b).....	1,548,000	1,482,000
Coal yr. to date (c)...	24,469,000	22,541,000
COKE		
Mar. 28.....	296,000	221,000
Apr. 4 (b).....	278,000	220,000
Cal. yr. to date (c)...	3,860,000	3,378,000

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

Contracts Are Slow in Midwest

Although April 1 is considered the time when contracts are closed by industrial plants, the tendency has been this year to hold off as long as possible.

The prices are practically the same as last week. It seems that price is no inducement to the consumer to buy. If he is not in the market he will not buy at any price.

Cheap Western Kentucky coal still, to a very great extent, fixes the market conditions as far as Indiana coal is concerned. While screenings in the Indiana field were quite strong last week, the market has been weakening considerably this week.

In the Eastern Kentucky field, no screenings are offered. Operators are unwilling to obligate themselves unless they have a sufficient number of orders for lump coal.

In the Carterville field there is a little railroad coal leaving the shaft mines and a light movement of screenings that have been held back.

In the Duquoin and Jackson County fields some mines are working two days a week and others shut down with many "no bills" on track.

The local St. Louis situation is quiet. There is very little coal moving and it is in small quantities for domestic purposes and only of the cheaper grades.

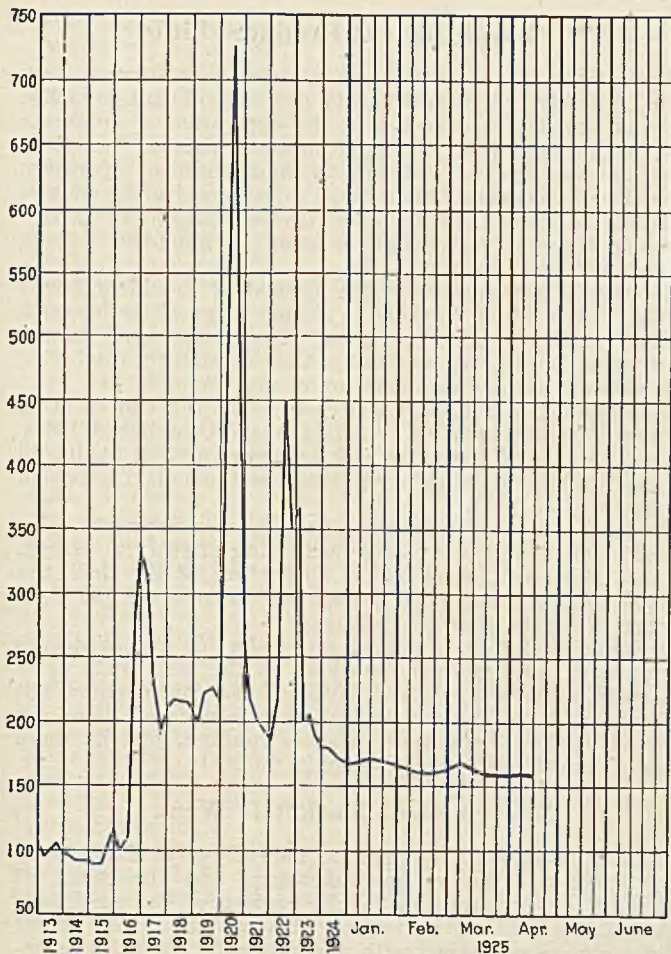
Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

Table with columns for Market Quoted, Apr. 14, 1924, Mar. 30, 1925, Apr. 6, 1925, Apr. 13, 1925†. Rows include Low-Volatile, Eastern; High-Volatile, Eastern; Midwest; South and Southwest.

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

Table with columns for Market Quoted, Freight Rates, April 14, 1924 (Independent, Company), April 6, 1925 (Independent, Company), April 13, 1925† (Independent, Company). Rows include Broken, Egg, Stove, Chestnut, Pea, Buckwheat, Rice, Barley, Birdseye.

* 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
Index	April 13	April 6	March 30	April 14
Index	161	162	161	172
Weighted averaged price	\$1.95	\$1.96	\$1.95	\$2.08

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.

Kentucky Feels Better

Production in Kentucky continues somewhat better than it was last season, and while a great many mines are barely running, there are more mines operating a day or two a week this year than was the case last season. A good deal of good business is in sight. It is reported that one of the largest concerns at Cincinnati, has a deal on for leasing a couple of additional mines in the Harlan field, and reported that the Elkhorn and Hazard operators have been securing some Lake orders.

Better feeling is reported in the Elkhorn and Hazard fields. It is claimed that the Consolidation Coal Co., South East Coal Co., Elkhorn Coal Corporation, and a few others have some good business in hand, and are planning steady operations over a period of months. The Elkhorn Coal Corporation is reported to have a year's contract for eighteen cars of coal daily from its Potter's Fork mines to the Louisville & Nashville R.R., and considerable lake tonnage booked for its Fleming and Hemphill operations. Mines in several sections of Eastern and Western Kentucky are reported to have signed up contracts with the Louisville & Nashville.

Other sections of the state are not reporting much business in hand, although some contracts are being signed. Western Kentucky strip mines, favored with low production cost, are keeping fairly busy.

Right now prepared coals, including block, lump and egg, are \$1.75@ \$2 in all state fields, with some houses quoting as high as \$2.25. Nut is \$1.50@ \$1.75; mine run, \$1.25@ \$1.50 and screenings, \$1.25@ \$1.30 in Western Kentucky and \$1@ \$1.25 in Eastern Kentucky.

Northwest Prices Same as in 1924

Ice still crowds the lake at Duluth and it is not expected that navigation will open before April 25. March shipments from the docks were above average, with 16,388 cars shipped, as against 17,666 in February and 13,619 in March of last year. This indicates that there will be very little coal left here at the opening of navigation. Official figures of stocks on docks at the beginning of April will be given out in a few days.

Demand is dead this week, with the only activity coming from the Twin Cities sector, where some anthracite as well as bituminous has been shipped. The Iron ranges are quiescent because of the announced 50-cent cut in iron ore prices. The independents without furnace connections are shutting up tighter every day.

April prices at Duluth docks do not vary materially on bituminous coals from the levels at which the season of 1924 opened. The list is: Kentucky, screened lump, \$6.25; stove, \$6; dock run, \$5.75; screenings, \$4.25.

Youghiogeny gas, screened lump, \$5.75; gas, stove, \$5.50; dock run, \$5.25; screenings, \$4; steam, screened lump, \$5.50; stove, \$5.25; dock run, \$5; screenings, \$4.

Hocking, screened lump, \$5.25; stove, \$5; dock run, \$4.75; screenings, \$4.

Splint, screened lump, \$5.50; stove, \$5.25; dock run, \$5; screenings, \$4.

Pocahontas, lump, egg, stove, \$8; mine run, \$5.50; screenings, \$4.50.

At Milwaukee the market shows no change from a week ago. Docks are getting ready for cargo coal due within a few days. The weather is mild, and the domestic demand slow, but the industries of course are taking their normal share. Prices of bituminous coal remain unchanged, but a slight cut in the price of coke is expected, to meet last week's cut in anthracite.

During the month of March, Milwaukee received 106,033 tons of coal—28,176 tons of anthracite and 77,857 tons of bituminous coal. The carferries brought in 24,728 tons of anthracite and 32,821 tons of bituminous coal—a total of 57,549. The all-rail lines brought in 3,448 tons of anthracite and 45,036 tons of bituminous coal—a total of 48,484 tons.

Little Doing in the West

Only screenings are moving in the Southwest, and mine run is being crushed to augment the supply. Few mines are open in Kansas, and these are being operated less than half time. There is no production in the McAlester, Okla., field, and little in the Henryetta. In Arkansas, little coal is being produced, and that little consists principally of screenings and crushed mine run sold on contract.

Demand for Colorado domestic lump coal is continuing to drop. The warm weather is entirely responsible for the slump and as a result of this mines are working approximately half time. Some of the smaller mines are closing down. The demand is fairly good for industrial coal. Even the reduced prices on the storage coal, which went into effect on March 20, have not stimulated the demand at all.

In Utah the coal business continues quiet outside of a little flurry in the domestic market, the result of a cold snap. The mine-owned yards of Salt Lake City—handling approximately 75 per cent of the retail tonnage consumed in the city—are storing lump coal in an effort to help the mines to produce enough slack and intermediate size to supply the demand; and yet the mines are working only around two days a week. Lower storage prices are expected around May 1. This industrial demand for coal is still largely confined to the metal and smelting industries and the railroads.

Buyers' Market at Cincinnati

A somewhat better inquiry is noted on the Cincinnati market although it is still a buyers market through and through with sufficient coal moving to take care of all orders. Prices generally on the high volatile show little change from the range of last week. There still is the disposition of the sellers of good coal to ask a top price but price cutters are numerous. Only one of the sizings was in any wise stable—screenings showed even a little improvement in price due to the scant production of prepared. Even the strike talk from northern West Virginia failed to raise more than a flutter.

Smokeless producers and sales agents are splitting the distinction between the lump and the egg in order to force sales. This is the first time this differentiation has been made in months and while the lump holds at \$2.75 there have been some instances of the sale of the egg at around \$2.50. There is also a spread of 25 cents on the nut that was not noticeable a week ago. The range now is \$2@-\$2.25. Last week \$2.25 was the ruling price. Both the run of mine and the screenings remain fairly firm.

River business has been doing well. Each day tows move to Cincinnati and on to Louisville. The river stage remains at a good depth. Retail business still is running far behind the tonnage of last year. The deadly effect of price cutting in mid-winter is now obvious.

Columbus on Firmer Base Now

At Columbus the coal trade is sluggish, this applying equally to domestic, steam and lake tonnage. The bottom seems to have been reached, however, and the market is not oversupplied to any great extent.

Domestic demand has fallen to an extreme low point, owing largely to warmer weather. Dealers are not buying to any extent, many believing that the summer stocking season will not start as soon as usual, due largely to credits being bad. Retailers are trying to clear out surplus stocks by cutting prices and retail quotations are quite irregular. Smokeless grades are quoted \$7.25@\$8; splints, \$6.25@\$7, and Hocking as low as \$5 delivered.

Lake trade is not showing much activity. Some bottoms have been loaded, but the movement so far is not large. As far as contracting for lake tonnage is concerned there is not much activity. Inquiries show that lake shippers expect to buy at very low prices. Ohio producers will not share to any extent in the lake movement this season, owing to high production costs.

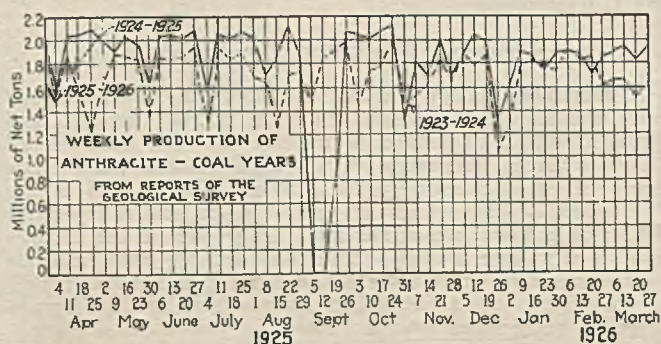
The steam trade is dull and featureless with the contracting season not yet started. While a large majority of steam contracts expired April 1, not many have been renewed, as purchasing agents are content to rely on the open market. Utilities and railroads are the larger consumers of steam tonnage in this territory. Contract inquiries show that much lower prices than last season will prevail.

The new coal year finds eastern Ohio mining operations still further depressed, with expiring contracts not renewed and demand in general at a low ebb. During the week ended April 4 this district produced 200,000 tons or about 34 per cent of its potential 584,000 tons capacity for a five-day week. This output was 51,000 tons under the preceding week and 5,000 tons under the corresponding week a year ago. It will be noted that the daily average output for the five days is a little better than 40,000 tons per day, as compared with an average of around 42,000 tons during the previous week when the mines worked six days. More mines have closed.

That the industry is hard hit is evidenced by the fact that certain operating groups of union mines have been making vigorous efforts to bring about a joint conference with the United Mine Workers Union for the purpose of modifying the existing wage scale.

There is practically no activity in the Cleveland domestic trade in view of the extreme mild weather, and the further fact that this has enabled many domestic coal users to revert to gas for fuel.

In the steam trade, industrial consumption also continues at a minimum with coal needs not developing into inquiries because nobody has to inquire. Operators are keenly combing the trade for orders. Spot prices remain practically unchanged except that screenings are 5c. per ton less than the price a week ago.



Pittsburgh District Produces Little

Operations in the Pittsburgh district have become very light, possibly not more than 15 per cent of full capacity. Part of the decrease is due to the expiration of contracts for the old coal year, without renewals, part to decreased open market demand and part to indifference of operators who close mines rather than give coal away. Hardly enough business is being done to make prices, but so far as can be seen there is no change in lump or mine-run. Slack tends upward slightly.

Nobody was surprised at the refusal of President Lewis of the United Mine Workers to discuss wage reduction with Pennsylvania and Ohio operators. There are vague rumors that some operators, especially the Pittsburgh Coal Co., will attempt to operate some mines non-union.

The opinion in Pittsburgh circles is that the United Mine Workers' strike in West Virginia has accomplished little. Except in case of distinctly new developments, all likelihood of the trouble spreading north into the Connellsville region is regarded as past.

The general tone of industrial affairs has improved. Instead of steel mill operations decreasing slightly in March, as was being estimated by the authorities at the time, the official report shows steel production at rate 3.2 per cent higher in March than in February.

Demand at Buffalo is dull all along the line and producers continue to oversupply the market. If the steel trade picks up, as is prophesied, general business and coal demand will improve with it. So far as Buffalo is concerned there are now 14 of the 22 smelting furnaces running, just as there were a month ago. Prices remain dull.

New England Market Is Weak

In New England there are no indications of firmness in any direction. Buyers are lukewarm, and the range of prices is not encouraging. While certain of the smokeless interests are still trying to restrict output there are others who are more concerned with moving coal. Agencies representing the latter continue hoping that curtailment on the part of others will restore a more favorable net price. Meanwhile there are accumulations at Hampton Roads that effectually prevent the average price rising.

On No. 1 Navy acceptable grades the spot market hovers around \$4.20@\$4.35, with a very few shippers holding for \$4.50. Sales at anything like the latter figure, however, are practically nil; there is no volume to such tonnage, and for the most part it is confined to special requirements. Most current dumpings at both Newport News and Norfolk are deliveries on contract, and it can hardly be said that today's quotations represent much coal actually changing hands.

The situation at the various re-handling points is much the same as at the Virginia terminals. Factors with facilities of their own are carrying large stocks. Current sales are scattering and for only small amounts. On cars Boston, good coals are an easy purchase at \$4.50, with an occasional "bargain" at \$4.35@\$4.40.

All-rail coal from central Pennsylvania shows no change. The relatively few mines that are being operated more than 30 per cent are making no gains; the effort is simply to hold connections that have persisted over periods of years.

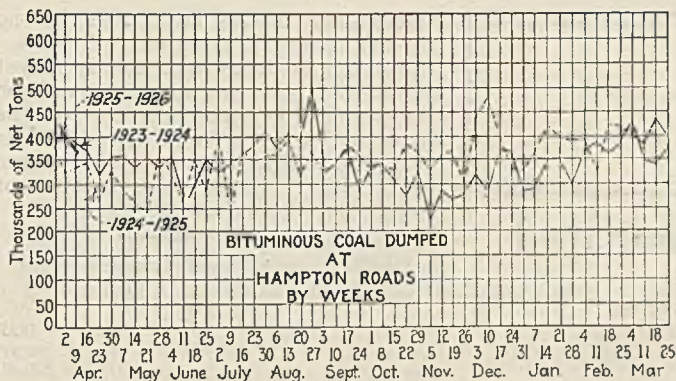
New Year Starts Slow in New York

Demand for soft coal at New York continues slow and prices show practically no change from last week. The almost complete failure of the efforts to tie up the West Virginia mines last week is somewhat of a disappointment to Pennsylvania operators and salesmen who had hoped to secure a larger distribution of their coals. Some extra business was obtained but it was not heavy.

The start of the new coal year was not auspicious in the New York metropolitan area. Consumers will not buy above actual requirements and do not appear to show any interest in the market. Operators are inquiring after railroad and other large business. City departments are preparing to contract.

The tidewater market is in better shape than the line trade. Shipments are heavy considering conditions but sellers are unable to move the tonnage without further sacrifices in prices.

The bituminous market is extremely quiet at Philadelphia. The consumer seems to buy just when he needs to, and



gets quick delivery. Dealer competition was never more active. Prices are at rock bottom.

There is a lull in contracting so operators are making some tempting contract offers to big public service corporations and other heavy consumers. Failing to get a contract the seller often makes particularly attractive offers of large tonnages for immediate acceptance.

Railroad fuel is moving in fair volume, and a good deal of tonnage has been closed for the year. The roads, however, are inclined to use up much of their stock accumulations and have not reached the replacement point.

Local industry is picking up, this seems to be the one favorable sign there is for the coal man. He feels that at least there will be no further falling off in sales for some weeks. However, to keep operating is an extremely serious problem for all operators and is going to be all summer long. Tide shipments are at a standstill, and there is little bunkering.

The soft coal trade at Baltimore remains little disturbed in the face of the strike in northern West Virginia and the threatened tie-up of harbor activities. Coal continues in easy supply at this point, with a very poor demand, and general price quotations to the trade are practically the same as before the inception of the West Virginia strike. There has been a cessation of export movement since April 1.

Alabama Makes Some Contracts

At Birmingham the beginning of the new year brought little change or relief in the domestic market. While it is true a number of contracts were made and some are still being made, the pressing need at present is disposition of current production of lump and other domestic sizes. There is no spot demand and dealers are taking very little coal on contracts.

Steam demand has been declining in volume gradually for several weeks and spot inquiry and movement is now lighter than it has been before for six or eight weeks. There is some contracting, but this feature of the market is not what it should be at this season. The New Orleans Sewer and Water Board is asking bids on 10,000 tons of washed Alabama coal, with a view to changing over from oil. Seaboard Air Line bids are in the hands of officials for award of contract for the next year, and the Frisco System is to place its requirements soon. A local company is exporting several thousand tons of coal to Cuba this week through Pensacola. Bunker demand at gulf ports is reported off.

There has been no change in quotable mine prices on domestic and commercial coal in the past week.

Anthracite Market Gains Strength

Anthracite is moving freer at New York. The market is showing more strength and it is expected better business will continue throughout the summer.

Demand for all sizes is good but stove coal seems to head the list of sizes wanted. This is to the advantage of independent operators who are able at times to get slight premiums over line-company prices for that size although \$8.75 is the average maximum figure obtained. Both egg and chestnut are moving easily. Smaller coals are in fair demand. The call for pea is heavier than generally in this market at this season.

Retail dealers find a tendency among consumers to order one ton of chestnut for test purposes, many believing they will be able to use this size with as good results as stove coal.

Philadelphia feels a better movement of coal, but there is room for improvement. Dealers are beginning to order more freely as they start their campaign to induce the consumer to put in coal. But buying is slow. The talk of strike trouble five months hence seems to have little effect as yet.

The new sizes are moving in and the comments are various. Most retail men seem satisfied, yet the consumers not being so fully informed are somewhat chary about placing their orders, and when they do, they frequently ask for the old sizing, which most of them are still able to get.

One result of the new sizes seems to be that most shippers have a surplus of nut coal, and are at some pains to move it. However it has not reached the point where they have to shade prices. Pea on the other hand is fairly well moved, for the reason that there is less of it. Stove can be had without much trouble. The fact that most dealers have a big stock from last month eases the situation for the time being. Egg moves into summer storage in fair volume.

In the steam sizes, buckwheat loses ground and the larger producers are putting some in storage, with the independents shading quotations. Rice is in fair demand, while barley continues to find a market without much difficulty.

Some Baltimore hard-coal merchants report a fair seasonal call from customers anxious to take advantage of the recent cut in retail prices. This spurt in spring business probably will be followed by a more or less flat period in June and July, unless the public becomes convinced that there will be a hard coal strike in September and begins to get under cover. Dealers report for the most part a good supply of sizes.

Anthracite demand at Buffalo is weak. People are buying even less than they did last season in many cases so that they can use natural gas, which has not run short all winter. All that can be done to meet this and other competition is to induce consumers to burn small sizes of anthracite.

Reports from the independent producers agree that they have a slow season ahead of them. Anthracite is coming in for lake shipment faster than it is sold. From Canada also comes the report that the demand is light and is bound to remain so for the period of warm weather.

The anthracite lake shippers have so far loaded about 40 steamers and will continue till navigation opens, when a lull is looked for, as the first fleet is likely to be large enough to monopolize the unloading docks awhile. The amount already afloat is more than 300,000 tons.

Connellsville Coke Output Drops

The coke market at Connellsville shows few changes. There has been practically no demand for spot furnace coke except in small lots, for non-metallurgical purposes. Contract shipments to furnaces are adequate, generally on contracts for the whole quarter with a few short term arrangements.

The spot furnace coke market is soft at \$3.25. On contracts this is the usual asking price. Spot foundry coke has continued in poor demand at \$4@4.50. There have been negotiations on byproduct coal for short periods or for the remainder of the quarter. It is well settled that prices are going to be under \$1.75.

With ovens going out there is a plentiful supply of labor. Fear of the West Virginia troubles extending northward into the Connellsville region has died out.

The Courier reports coke production in the Connellsville and lower Connellsville region in the week ended April 4 at 99,000 tons by the furnace ovens, a decrease of 8,000 tons, and 71,660 tons by the merchant ovens, a decrease of 6,330 tons, making a total of 170,660 tons, a decrease of 14,330 tons. The decrease overcame the preceding week's increase and made the combined production the lowest for months.

Car Loadings, Surpluses and Shortages

	—Cars Loaded—	
	All Cars	Coal Cars
Week ended March 28, 1925.....	931,395	140,889
Previous week.....	909,363	139,363
Week ended March 29, 1924.....	907,389	154,649

	—Surplus Cars—		—Car Shortage—
	All Cars	Coal Cars	Cars
March 31, 1925.....	344,959	185,724
March 22, 1925.....	320,565	168,963
March 31, 1924.....	248,301	135,976	364

Foreign Market And Export News

Shutdown of British Mines Unabated In Apathetic Market

Shipments from the Welsh ports has been slightly heavier during the last week, but these do not represent an expansion of business, but efforts to overtake arrears in contract deliveries before the Easter holidays. Stocks of coal at nearly all the collieries are still very heavy and great difficulty is experienced in effecting clearances.

The recording of pit shutdowns is becoming monotonous and at several collieries notices have been given which will throw about 4,000 men out of work. In several cases the operators have invited suggestions from the men as to how the pits may be carried on, but these suggestions are seldom forthcoming, as the Welsh Miners' Federation does not look with favor on any arrangement outside of the national wages agreement. Loss of trade in exports alone from the Welsh pits in January and February totaled 1,250,000 tons as

compared with the same months of 1914.

Several appreciable contracts have been renewed, notably that with the Great Southern Ry. of Ireland for 120,000 tons of Monmouthshire locomotive coals for delivery over six months. The lowest tenders for the Egyptian State Ry.'s requirement of 150,000 metric tons are 34s. 4d. and 34s. 6d. c.i.f. Alexandria, but the contract has not yet been placed. The Newfoundland Government is inquiring for 60,000 tons.

The Newcastle market is stagnant. There are several inquiries circulating for lots up to 20,000 tons, but many orders are being lost to Germany.

Coal output by British collieries in the week ended March 28, a cable to *Coal Age* states, totaled 5,262,000 tons according to official reports. This compares with 5,258,000 tons produced in the previous week.

Demand for All Grades Sags In French Market

In the French coal market industrial grades are extremely quiet. In order to meet competition the Nord and Pas-de-Calais collieries have been compelled to make rebates in points situated at the extreme limit of their selling zone and to offer other inducements to encourage the sale of inferior qualities.

Summer prices to retail merchants were agreed upon by Belgian and French producers of sized products on March 23. All French prices show an increase of 0.20 fr. per ton, because of the "double décime" tax.

Transport tariffs have been modified once more as from March 16th. Additional expenses, which were at a set price, regardless of distance, are now proportionate to distance. To compensate the loss caused by this, the kilometer tariffs are slightly raised; for instance, from the Pas-de-Calais to Paris transport expenses are raised

about 0.90 fr. per ton; from Belgian frontier to Paris, 1 fr. per ton, and from the Moselle to Paris, 1.20 fr. per ton.

Between March 1 and 14 the Office des Houillères Sinistrées received the following quantities of indemnity fuels from the Ruhr: Coal, 109,600 tons; coke, 182,100 tons; lignite briquets, 11,900 tons, a total of 303,600 tons. During the first twenty-five days of March the O.R.C.A. received from the Ruhr 296,310 tons of coke, an average of more than 11,400 tons per day.

Supply Low at Hampton Roads; Prices Slightly Firmer

Coal business at Hampton Roads last week showed little if any improvement. Supplies at the piers had reached the lowest level in twelve months because operators were not shipping coal in the face of both sluggish demand and low prices. Dwindling supplies, however, caused prices to

strengthen somewhat, though no further favorable reaction took place.

Foreign business was at the lowest ebb of the year, and inquiries were on the wane. At one time during the week the Lamberts Point piers had four vessels awaiting bunkering and cargo, but could not serve them because of insufficient coal on hand.

Destination of Fuel Exports from United States in February (In Gross Tons)

	1924	1925
Anthracite.....	307,897	288,971
Bituminous.....	1,276,476	820,407
Exported to:		
France.....	58,928	7,942
Italy.....	58,407	51,726
Other Europe.....	23,985	6,960
Canada.....	944,016	587,205
Panama.....	12,026	46,365
Mexico.....	6,825	6,491
Br. West Indies.....	21,260	8,103
Cuba.....	38,288	39,455
Other West Indies.....	15,301	37,289
Argentina.....	23,700	6,547
Brazil.....	38,568	5,913
Chile.....	9,142	87
Egypt.....	7,220	5,126
French Africa.....	8,071	7,029
Other countries.....	10,739	4,169
Coke.....	53,752	61,130

Export Clearances, Week Ended April 11, 1925

FROM HAMPTON ROADS		Tons
For New Brunswick:		
Amer. Schr. James E. Newsom, for St. Stephen		813
For Peru:		
Peru Str. Amazonas, for Callao.....		2,327
For Canada:		
Br. Str. Rose Castle, for Halifax.....		10,858
For Cuba:		
Nor Str. Dampen, for Havana.....		3,805
FROM PHILADELPHIA		
For Cuba:		
Nor. SS. Askeladdan, for Havana....		—
For Italy:		
It. SS. Liberta, for Civitavecchia....		—

Hampton Roads Pier Situation

	April 2	April 9
N. & W. Piers, Lamberts Pt.:		
Cars on hand.....	776	218
Tons on hand.....	48,882	12,522
Tons dumped for week.....	140,546	118,816
Tonnage waiting.....	5,000	10,000
Virginian Piers, Sewalls Pt.:		
Cars on hand.....	951	751
Tons on hand.....	67,600	51,400
Tons dumped for week.....	103,818	87,363
Tonnage waiting.....	6,538	12,700
C. & O. Piers, Newport News:		
Cars on hand.....	2,252	1,900
Tons on hand.....	111,215	92,685
Tons dumped for week.....	118,983	126,305
Tonnage waiting.....	12,950	15,400

Pier and Bunker Prices, Gross Tons

	April 4	April 11†
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..	4.30@4.55	4.30@4.55
Pool 11, Philadelphia..	4.25@4.30	4.25@4.30
Pool 1, Hamp. Roads.	4.15	4.20
Pool 2, Hamp. Roads.	4.00	4.08
Pools 5-6-7, Hamp. Rds.	3.90	3.90

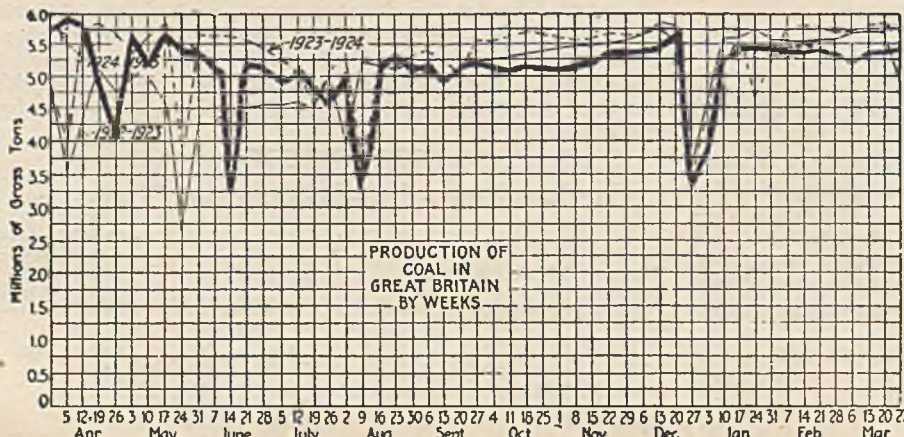
BUNKERS

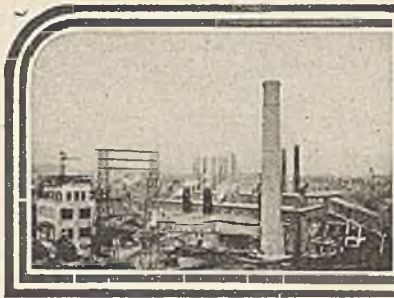
Pool 9, New York....	\$4.95@5.10	\$4.95@5.10
Pool 10, New York....	4.75@4.90	4.75@4.90
Pool 11, New York....	4.50@4.75	4.50@4.75
Pool 9, Philadelphia..	4.80@5.10	4.80@5.10
Pool 10, Philadelphia..	4.60@4.75	4.60@4.75
Pool 11, Philadelphia..	4.45@4.65	4.45@4.65
Pool 1, Hamp. Roads.	4.25	4.30
Pool 2, Hamp. Roads.	4.10	4.10
Pools 5-6-7, Hamp. Rds.	4.00	4.00

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

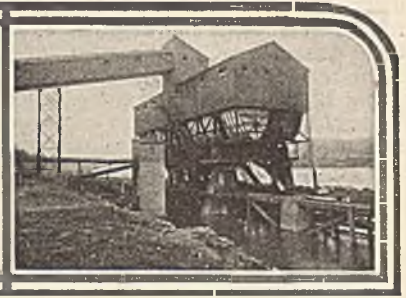
	April 4	April 11†
Cardiff:		
Admiralty, large.....	26s.@27s.	25s.9d.
Steam smalls.....	16s.6d.	16s.6d.
Newcastle:		
Best steams.....	16s.9d.@17s.	18s.@18s.6d.
Best gas.....	17s.9d.	17s.9d.
Best Bunkers.....	18s.@18s.6d.	18s.

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





News Items From Field and Trade



ALABAMA

J. W. Porter has been elected vice-president of the Hammond Iron Co., general sales agency for pig iron, pipe, coal and coke. Mr. Porter will have charge of iron, coal and coke sales, in which he has had a wide and successful experience, occupying a similar position with the Alabama Co., which recently was purchased by Sloss Sheffield Steel & Iron Co.

A contract has been awarded for about a mile of spur track to connect the Louisville & Nashville R.R., with the Fleetwood operations of the Alco Coal Co. at Cottdale, and it is understood that the company contemplates further developments and an increase in production.

It is reported that the Pratt Fuel Corporation contemplates the sinking of a new slope and other extensive improvements at Bankhead, on the properties of the Bankhead Coal Co. Negotiations for the purchase of these properties have been under way for some time, but definite announcement of closing of the deal has not been made.

A party of leading German industrialists, who are making a tour of the principal steel-making and mining sections of the United States, visited Alabama, April 8-9. Besides inspecting local steel plants and blast furnaces, they visited a number of the coal and ore-mining operations. Included in the party were A. Hasebrink and E. W. Schreiber, of Duisburg; L. I. P. Haack, H. Rickman and H. Niggermann, of Essen, and Robert Brenner, of Essen-Ruhr. All of the party were officials of industrial plants in the Essen-Ruhr district. From here the party will visit St. Louis, Chicago, Toledo and other points in the central west.

COLORADO

The Pikes Peak Consolidated Fuel Co. of Colorado Springs petitioned the Industrial Commission to revise its miners' wages to the 1917 scale. Thus the company follows the course of various other coal operators in the state. This is the first lignite mine to make application for reduction in wages. The other large lignite operators have taken no action yet.

ILLINOIS

The United Electric Coal Co. is making plans to carry on mining operations around Canton on a larger scale, contrary to the expectations of many companies in Illinois. The company has added its fourth shovel and is able to operate at less than is possible for other

large mines operating through the shaft and slope bank method.

Taylorville mines are conspicuous exceptions when shutdowns elsewhere are the usual thing. The Springfield District Coal Co. No. 58 mine has lost only three days in seven months, while Mine No. 7 has been working an average of five days a week. Mine No. 9, which reopened a few months ago, has been working an average of five days a week. Mine No. 8, at Tovey, near Taylorville, also worked up to two months ago, but it had to close down because of too many screenings. Miners are coming into Taylorville from Springfield and Carlinville, and many from other states.

Kentucky mines have made a vast change in the tonnage of coal handled by the Chicago & Alton R.R. This road formerly was one of the active coal carriers of the state, and still handles much coal, but March business shows that 1,000 fewer coal cars were handled than in March of 1924. The Alton does not obtain any of the Kentucky business, having only the mines of central Illinois to rely upon, many of which are working only part time.

Seventy-nine mines reporting to the Coal Operators' Association of the Fifth and Ninth Districts show a decrease for the week ending March 28, 1925 of 47,749 tons as compared with the production of the same mines for the week ending March 29, 1924. The net loss in production of these 79 mines for the 12 weeks this year as compared with the same period of 1924 is 722,631 tons. But one week, March 7, has shown an increase by comparison. The gain that week was 76,006 tons.

Chicago papers April 4 carried the story that Charles M. Moderwell, president of C. M. Moderwell & Co., has been appointed receiver of the Freeman Coal Mining Co. of Freeman, Franklin County, southern Illinois. This mine is the object of litigation between Fred A. Burton, of the Burton Coal Co., and J. W. McElwain, of the McElwain-Hoy Coal Co. Inquiries as to whether or not Moderwell & Co. will operate the mine and sell the coal were met with the statement that no definite plans had been made.

Mine No. 1 of the Spring Valley Coal Co., Spring Valley, opened in 1884, will be officially sealed by the end of April. The equipment is being transferred to the company's No. 3 mine, and the miners also will be put to work in the latter mine. For many years Old No. 1 provided work for 600 men and flourished until competitive coal came from Kentucky, West Virginia and Indiana. Large savings can be made by the operation of Mine No. 3, instead of

No. 1 as the former is equipped better and roof and haulage conditions are superior. The company owns 30,000 acres of unmined coal rights in Bureau, Putnam and LaSalle counties, Illinois.

Steel workers from a Pennsylvania construction concern are enlarging and re-equipping the tippie at Zeigler No. 2 mine. The mine was sunk only about six years ago but with business growth and adoption of new and more modern machinery, the company decided to make several changes in the plant. The mine will probably resume operations about May 15.

The Murphysboro Mining Co. has taken options on a large tract of land near Sato, a small village 18 miles southwest of Duquoin, according to announcements made by E. A. Doerr, president of the company. Many years ago the vein at Sato was mined but because of the bad top and the shallowness of the vein, the cost was too great for shaft mining, and operations were eventually discontinued. It is planned to strip the tract now.

Freeman Thompson, recently elected president of the Springfield sub-district, United Mine Workers, has been deposed from office by the executive committee of the state, and John A. Walker, who ran against him for president of the local union, has been appointed in his place. It is asserted that Thompson was deposed on account of irregularities connected with the election. Practically all the operators in the district are pleased over this action by the state executive committee and the more conservative group of the miners also are satisfied, as Thompson has always been considered a leader of the radical element in the union.

The miners at the Lumaghi mine, at Collinsville, are on strike. It is understood that the company, being insistent on the loading of clean coal, had discharged several men on account of loading impurities. The men retaliated by going down and loading but one box, which cut down the tonnage of the mine practically the same as a strike. This continued for one or two days. Orders were given to discharge any man, under the contract, who was caught idling while an empty car was in his room awaiting loading. Several men were sent out and discharged. The strike followed. A wire was sent April 3 to the men by President Frank Farrington ordering them back to work immediately and informing them that their case will not be taken up until they are at work.

The idle men at local 705, of O'Fallon, of which Tom Gemmel is president, recently again sent out letters for a convention. They want a special sub-

district convention and are trying to interest all locals in the sub-district to urge the calling of one. So far they have had little luck. Their letters are being ignored where men are working. These idle men are talking of forcing a strike so that none may work until the market catches up, and they think all will benefit. A good many of the idle men seem to agree in this, but the more level headed, particularly those working part time, don't want a strike now.

The mine of the Lovington Coal Co., Lovington, will be reopened Aug. 1. It has been closed for several months on account of the condition of the coal market and heavy competition. It employs ordinarily about 175 men.

INDIANA

Fire which started April 4 practically destroyed the mine buildings of the Epworth Coal Co., about a mile west of Newburg. The tippie and all the rest of the buildings were destroyed except the office, which was slightly damaged. The mine is operated by Raleigh Humphreys. This is the second fire within two weeks, a stable on the mine property having burned several days previously.

American Mine No. 1, at Bicknell, is expected to hoist all summer. It is planned to run 16,000 to 20,000 tons a week.

The purchase of 11,000 tons of non-union West Virginia coal by the State of Indiana will be protested by the United Mine Workers. The protest will be directed to Governor Jackson. The coal was bought for the southeastern hospital for insane. The decision to protest the matter was said to have been reached at a conference between representatives of wholesale coal dealers and mine operators with John L. Lewis, president of the United Mine Workers.

Checks amounting to \$182,825 have been mailed by the State Industrial Board to dependents of forty-eight miners killed in the recent explosion at the mine of the City Coal Mining Co. at Sullivan. The awards were granted under the workmen's compensation law.

Fifty-one miners were killed in the blast, but only forty-eight had dependents. More than forty total dependents received \$4,060. Partial dependents received lesser amounts. Hearing of the cases was begun March 23 by Dixon H. Bynum, chairman, and Eph P. Daily, member of the Industrial Board. The work was completed in record time.

IOWA

The Hocking Coal Co. mine No. 5, at Hocking suspended for an indefinite period April 1.

KANSAS

Representatives of operators and miners met at Pittsburg April 5 with James Sherwood, state mine inspector, and John Hynal, of the federal Bureau of Mines, to make plans for a first-aid and mine-rescue meet to be held in June. The selection of a definite place and time was entrusted to a committee, limited in its choice to Pittsburg and

All-Electric Mine In Illinois

A coal mine where the coal is mined by electricity, where the fuel is hoisted by electricity, and then hauled to market by electricity, is the property of the Gillespie Coal Co., at Gillespie, Ill. Every detail connected with the operation of the mine, from the drills along the coal face to the hoist, is electrical. The mine hoists 2,000 tons of coal per day.



Arma, and to be governed in its designation of time by the wishes of Bureau of Mines representatives. The meet probably will be held a week or ten days after the Missouri meet at Moberly, June 6. Fifteen teams are expected to compete. Ten now are training. The winning team of six men will represent the state at the national meet at Springfield, Ill., in September.

KENTUCKY

The West Kentucky Coal Co. closed its old Hecla mine, one of the former St. Bernard Group, on April 11, and will move tippie and equipment from the old entrance, in use for thirty-five years, to a new drift entrance, several miles west of the present mine mouth. The mine haul had become so long that the plant could not be operated profitably except on high markets.

Eastern Kentucky coal interests were represented at a recent meeting of the Farmers' Union of Fayette County, and discussed the probable effect on the state of a threatened coal tonnage production tax, which it was alleged would affect 300,000 persons depending on the industry directly and thousands of others employed by railroads and other organizations in which coal is a big factor. H. E. Bullock, coal operator, was one of the principal speakers, and also J. E. Johnson, secretary of the Hazard Coal Operators' Association, who answered numerous questions of farmers. The coal men held that the coal as well as agricultural industries of the state were being overtaxed and enduring a period of hard times. It was asserted that Kentucky coal, selling in competition with untaxed coal, and moving through competing fields to market, on higher freight rates than from the other competing fields, would be put out of competition with a tonnage tax, and that the entire state would suffer.

Better power service is promised for Kentucky mines in all fields by the Kentucky Utilities Co., which announces that a new high-tension line from Glasgow to Campbellsville, will be extended to connect eastern and

western Kentucky lines, so that surplus can be used wherever needed, and in the event of a breakdown in either field current will be available. The company recently installed a new super power plant at Pineville, in eastern Kentucky; completed a 40,000-hp. water power plant on the Dix River in central Kentucky, and has plans for one or two more water power projects, which with the company's steam plants will give it sufficient capacity to furnish power in the state and sell considerable outside of the state. Most of its present power is produced at mine mouth, and it has contracts for supplying power at the St. Bernard and Duncan mines in western Kentucky.

Suit was filed in the U. S. District Court at Covington on April 6 by the Darby Coal Sales Co., Cincinnati, asking that a receiver be named for the Stephen Branch Coal Co., of Alchoretta, Floyd County, the plaintiff alleging that a demand note of \$17,000 and interest had not been paid by the defendant, and charging that the defendant company has unsecured liabilities of \$84,746, ample assets, but not enough credit to carry on its business. Judge A. M. J. Cochran named J. H. Briscoe, of Covington, as receiver.

It is rumored in Louisville that the Southern Coal & Coke Co., of Cincinnati, with plans for handling big tonnage business this season, has a deal on whereby it expects to close leases on two additional mines in the Harlan field for supplying tonnage over the next year.

The Louisville Trust Company, Louisville, assignee for the Letcher Coal Mining Co., Letcher County, has announced that mine, plant, leases and all company property will be offered at public auction on the Louisville court house steps at 10 a.m., April 20. The property will be sold as a whole, terms one-third cash and balance in six months.

MINNESOTA

Sales of the Reeves coal dock property at Duluth has again been postponed for a month—this time until

May 6. This is caused by the fact that there were no bidders when the sale was held April 6.

OHIO

The Tropic Mine, located at Rose Farm, near Zanesville, which was known as one of the best producers in the Crooksville district, is to be abandoned. All machinery is being removed and the mine will be closed permanently, because of inability to operate it profitably.

Involuntary bankruptcy proceedings have been filed in the federal court at Columbus against the Blanchard-Zanesville Mining Co., of Zanesville, by James M. McNeill and Lewis Roser, of Pittsburgh, and the Fairmont Mining Machinery Co., of Fairmont, W. Va. The petition avers that the defendant is insolvent and is indebted to the three petitioners in the sum of about \$35,000. The company has been mining coal north of Zanesville and using barges to transport it to steam users along the Muskingum River.

The directors of the Mahoning Coal Railroad Co. have declared a quarterly dividend of \$12.50 a share on the common stock, payable May 1 to stockholders of record April 15. A similar dividend was paid for the first quarter of 1925. Prior to this year the dividends have been \$40 a share. If the present rate continues, however, the stock will be on a \$50 basis. The New York Central is the principal beneficiary of the large dividend, as it owns \$894,650 of the \$1,500,000 common stock outstanding. The Central also owns \$448,900 of the \$661,367 preferred stock of the road and leases it in perpetuity. So far this year it has received \$447,325 in dividends on its holdings.

Mines are rapidly closing in the Nelsonville district of the Hocking

Valley. Recently two mines of the Carbondale Coal Co. and the Poston Coal Co., located at Carbondale and Millfield, were shut down indefinitely, throwing about 300 men out of employment. The mine of the Penn Coal Co. at Crooksville, which is known as the Elk Mine, likewise was closed. In the eastern Ohio field the Cambria Collieries Co. announced that the Pultney mine, employing about 350 men, would be closed indefinitely.

Columbus operators are closely watching the contest between the Ohio union officials and the miners who have been operating co-operative mines. Officials of the Ohio Miners' Union have closed down all these co-operative mines and are scanning the books of the mines in an effort to see if the men, working co-operatively, are able to earn as much as the union wage. If they are not making the union wages they will be barred from operating co-operative mines. These mines have been able to cut the price quoted by union mines because of the lessened overhead.

OKLAHOMA

All doubt regarding whose hand officially shall control the destiny of District 21 (Arkansas and Oklahoma), United Mine Workers, the next year was removed April 1, when William Dalrymple, of McAlester, assumed the duties of president. Dalrymple's inauguration followed the announcement, March 26, by investigators of the International board, that he had been elected over his opponent, Andrew McGarry, of Tahona, who was president last year. At the regular district election in December, no candidate got a majority of votes. In the run-off, Feb. 10, each side claimed the victory. Then both sides charged fixing of the vote. The international executive board finally settled the case.

PENNSYLVANIA

The Pittsburgh Coal Co., will construct a new tippie at Douglas Hollow, on the west bank of the Youghiogheny River. It will have a capacity of 4,000 tons a day, and coal will be assembled on the new tippie from three mines now in production, the tipples of which will be abandoned.

On May 5 the vast industrial enterprises of the Joseph E. Thropp interests, which formerly contributed to the wealth of the Board Top region in Huntingdon and Bedford Counties, will be offered for sale at a receiver's sale. The property consists of the Everett blast furnaces, coal mines, coal, ore and timber rights and limestone quarries. The silence of the furnaces and idleness at the mines and in all other component divisions of the industry, which has been in evidence for many months, points to the primary cause of the forthcoming sale. Andrew S. Webb, of Philadelphia, is the receiver.

The first bill affecting the State Department of Mines, that of Representative Henderson, reappropriating \$4,000 from the Department of Mines to the Department of Public Instruction for the use of the Anthracite Mine Inspectors' Examining Board, was approved by Governor Pinchot, April 4. The money is an unexpended balance provided for the examination of candidates for inspectors and foremen of mines and as reappropriated the money can be used for salaries and expenses of the examining board.

The Oliver & Snyder Steel Co., has closed down its three coke plants and the Snowdon Coke Co. also has shut down, and it is thought that others will soon follow.

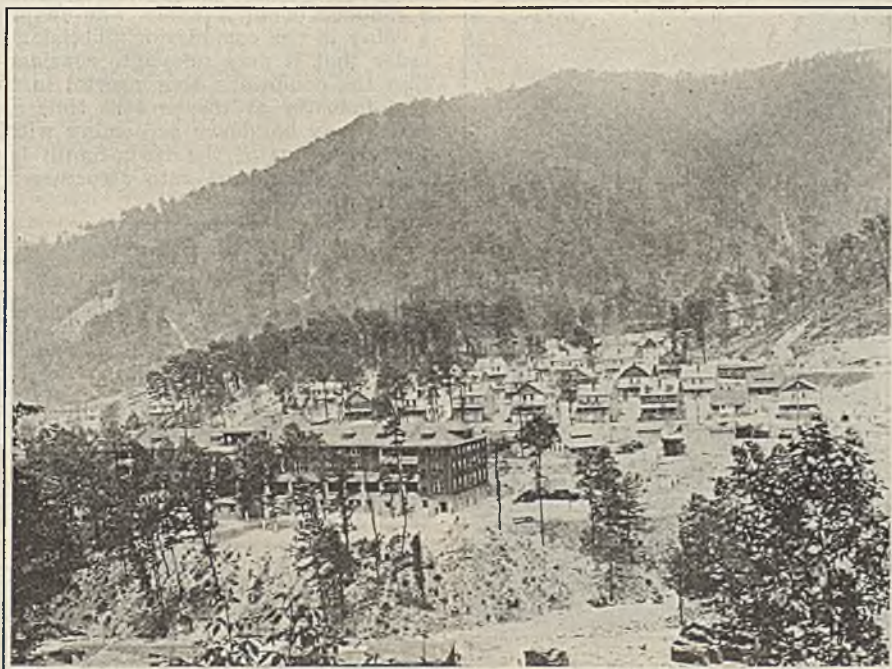
The Mangan bill providing that 2,000 lb. shall constitute a legal ton of coal in Pennsylvania in all transactions and allowing a tolerance of 40 lb. a ton has been reported out in the House and on April 1 on third reading it was amended so that a penalty of \$50 applies for each offense. The tolerance provision was added at the same time.

A bill introduced in the House by Representative Peelor amends an act of 1911 to provide that in longwall or other systems of mining in non-gaseous mines where it is desirable to drive single entries such entries may be driven a distance of 300 ft. if in the judgment of the mine inspector adequate ventilation can be supplied to the working face. The bill applies to bituminous mining.

Representative Stadlander has offered an amendment to an act of 1911, relating to bituminous mines, which would permit owners or lessees to enter adjoining mines if the owners of these neglect or fail to furnish a true map of the mines. Such entry to verify the plots of the mines may be made five days after a written request is made.

Eli T. Conner, mining engineer, specialist in coal and coke, announces the removal of his offices from the Hudson Coal Co. Building, 434 Wyoming Avenue, to Rooms 1202-1204, Union National Bank Building, Scranton.

Work has been started by the Shamokin Collieries Co. on the new



The City Coal Built in a Wilderness

This is one end of Lynch, Ky., where more than 8,000 people have been drawn into a big modern town with paved streets and other metropolitan advantages laid out among big green hills. The double mine of the United States Coal & Coke Co. is down the valley at the left. The large building in the foreground is the company hotel.

Neilson breaker, which is to be one of the most modern in the anthracite field. This breaker will not have jigs and on this account the necessity of employing boys will be overcome. The slate is to be separated from the coal by Chance separators and the grading and sorting of various sizes of coal will all be done by specially devised machinery. The capacity of the breaker will be 1,500 tons a day. It is estimated that four months will be required to build the structure. The new Neilson shaft has been sent down a distance of 500 ft. and one slope has been driven 250 ft.

The Haddock Supply Co.'s store in Luzerne operated for almost fifty years by the Haddock Mining Co., has been sold to a private merchant in Luzerne. With the passing of the store out of hands of the coal company Thomas Kelly, manager of the business place for 41 years, goes on the retired list.

J. E. Grass, of Scranton, an independent coal operator, has purchased the interests held by John J. Boland in the Carbondale Coal Mining Co. Mr. Grass is already owner of several independent mining concerns in the anthracite region.

TENNESSEE

The Smallwood-Manker Coal Co., 1315 Slayton Street, Chattanooga, increased its capital stock to \$25,000 the last of March.

The office, sheds, oil house and stables of the Mutual Coal Co., Chattanooga, were destroyed by fire the last week in March, with a loss of \$10,000.

UTAH

The Sevier Valley Coal Co., of Richfield, is equipping its mine in Salina Canyon ready for operations at an early date. A big force of men are opening new shafts, erecting buildings and in other respects putting the mine on a production basis.

In its annual report for the year ending Dec. 31, 1924, the Utah Railway showed a surplus for the year amounting to \$80,475.99, compared with \$23,000 the previous year. This road operates 43 miles of its own main line and seven miles of branch line. In addition it operates over 52 miles of the Rio Grande line. Practically its entire revenue last year came from handling 1,430,000 tons of bituminous coal originating on its own lines.

WEST VIRGINIA

It is announced that the Elk Ridge Coal & Coke Co., one of the oldest companies in operation in McDowell County, has ceased operation. The company was organized in 1892 and has been in continuous operation since. Just what disposition will be made of the houses and land of the company has not been definitely decided, but it is generally understood that the property will be leased. The officers of the company are as follows: Isaac T. Mann, Bramwell, president; E. P. Bramwell, New York, vice-president; A. K. Parker, Northfork, treasurer and general superintendent; J. L. Lincoln, Elkhorn, general manager. The company during the last year has been employ-

ing about 100 men and has been producing about 60,000 tons.

The new steel loading tippie at the No. 6 mine of the Raleigh Coal & Coke Co., at Raleigh, has been put in commission and its performance is regarded as highly satisfactory. It has a capacity of 300 tons of screened coal per hour.

The report of the Pond Creek-Pocahontas Coal Co. for the year ended Dec. 31, 1924, shows a deficit of \$50,053 after all charges, depreciation and depletion, against a profit of \$19,354 in 1923. In order to finance new construction work and pay for the acquisition and development of the By-Products Company, directors of the Pond Creek Pocahontas company have recommended to stockholders the issuance of \$1,250,000 ten-year 7 per cent convertible debentures, which will be offered to stockholders at par. The debentures will be convertible at the holders' option any time before maturity into stock on the basis of six shares of stock for each \$100 par of debentures. Stockholders also will be asked to approve an additional 75,000 shares of stock to provide for the conversion of the debentures. The company now has a capitalization of 125,000 shares of no par stock.

CANADA

The Canadian Welsh Anthracite Co. has contracted to bring 170,000 tons of Welsh coal to the port of Montreal during the coming season of navigation. This will represent an increase of 70,000 tons as compared with last year's shipments and will constitute a new record in the history of coal shipments from Wales to the St. Lawrence route. All the coal will be brought to Canada in British ships and broken up into various sizes at the company's new big plant at the east end of the Montreal



Headframe Comes First

Building the top works for the main shaft at the new Bartley mine of the Pond Creek-Pocahontas Co., near English, W. Va. This picture shows the 10-ton skip going into position. It is operated by a 500-hp. hoist.

harbor. This season, in addition to serving the Montreal field and surrounding districts, arrangements have been completed for several large shipments into Toronto for the first time.

The deadlock of the Nova Scotia miners and operators continues without any indication of a settlement in prospect. The economic loss to the miners and the corporation up to April 6, one month from the commencement of the strike is conservatively estimated at \$3,250,000. Volunteer maintenance men have kept the pits practically clear of water, though some of the older tunnels have been allowed to fill up and will not be used again. In a few of the deep workings heavy falls of stone from the roofs and sides of the rooms have taken place, so that when operations are resumed considerable clearing up will have to be done before actual production begins.

The tug Joseph E. Russell, towing the barge Quebec with 2,000 tons of steam coal pulled into Toronto harbor on April 5. Never before has a coal consignment come to Toronto by water so early. The tug came from Sodus Point, N. Y., and tied up at the Century Coal Co.'s dock.

The Kelly mine at Minto, N. B., comprising about 200 acres adjoining the Bothwell Coal Co.'s mine, has been purchased by Welton, Henderson, Ltd., a coal company operating at Minto.

Traffic News

I. C. C. to Consider Further Hearing of Lake Cargo Cases

Agreement has been reached by the Interstate Commerce Commission to take up the question of a further hearing in the so-called lake cargo cases, when oral arguments are heard by the commission on April 27 and 28. This action was taken on petitions filed by a number of intervenors who favored a delay in the commission's decision in order that it may take into consideration the conditions that prevail in the coal industry at the present time and which may be shown as coming within the provisions of the Hoch-Smith law, covering a general rate structure investigation.

C. R. & E. Ry. Requests Case Be Reopened

Another effort is being made by the Coal River & Eastern Ry., owned by the Coal River Collieries Co., which, in turn, is owned to a great extent by the members of the Brotherhood of Locomotive Engineers, to obtain permission to operate a line extending from Ashford to Warren, W. Va., and to consolidate application has also been made to issue certain securities. The railway company has asked that its case be reopened, the Interstate Commerce Commission recently having refused the necessary permission to the company to operate an independent line. Formal request for the reopening of the case, according to information received at Huntington, was made on March 28.

The question at issue involves the mines of the Coal River Collieries Co.

Publications Received

Connecting and Testing Direct-Current Machines, by F. A. Annett and A. C. Roe. McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City. Pp. 237; 6 x 9 in.; illustrated. Price, \$2.50. A practical presentation of the problems arising in the reconnecting of direct-current machinery for changes in speed and voltage, with methods of making tests for locating faults and directions for making repairs.

Coming Meetings

American Welding Society. Annual meeting, Engineering Societies Building, 29 West 39th St., New York City, April 22-24. Secretary, Miss M. M. Kelly, 33 West 39th St., New York City.

California Retail Fuel Dealers' Association. Twelfth annual convention, Women's Club of Tulare, Tulare, Calif. April 23-25. Secretary, J. B. Muir, Oakland, Calif.

National Retail Coal Merchants Association. Annual convention Traymore Hotel, Atlantic City, N. J., May 11-14. Resident vice president, Joseph E. O'Toole, Transportation Bldg., Washington, D. C.

The American Society of Mechanical Engineers. Spring meeting, May 18-21, Milwaukee, Wis. Secretary, C. W. Rice, 29 West 39th St., New York City.

Mine Inspectors' Institute of America. Annual convention, Jefferson Hotel, Peoria, Ill., May 19 and 20. Secretary, G. B. Butterfield, 179 Allyn St., Hartford, Conn.

Chamber of Commerce of U. S. A. Thirtieth annual meeting, May 20-22, Washington, D. C.

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.

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 the first half of June. The exact date will be decided upon soon.

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

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.

Coal Mining Institute of America. Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

New Equipment

Steam-Jet Ash Conveyor Has Large Capacity

A new steam-jet ash conveyor designed for handling ashes from large or small power plants or operating under unusually severe conditions has been developed by the Conveyors Corporation of America, Chicago, Ill. Heretofore, one objection to the steam-jet ash conveyor has been its inability to handle in one system high tonnages of ashes without undue forcing, wear and replacement.

This new unit consists of a plurality of semi-cylindrical hard metal sections, bolted to a steel frame to form a conveyor line of 9 in. internal diameter. Similar to the early types of steam-jet conveyors, it consists of an assembled line of pipe laid in a trench in the boiler-room floor, or up in the stoker tunnel with intakes conveniently situated before the ashpit doors. One section fits into another longitudinally through the use of a tongue and groove. The joint is then cemented.

The steel structure, to which the conveyor sections are bolted, carries the entire weight of the conveyor. The conveyor sections, themselves, have nothing to do with supporting the conveyor line. Consequently, the sections are sustained without any stress or strain being thrown on them, thus making it possible to design these sections of a metal which has been selected more for its hardness than for any other consideration. For instance, it has not been necessary to choose a metal having high tensile strength.

By virtue of the size of the conveyor, the size of the feed opening and the capacities that it is possible to handle, the steam consumption per ton of material handled is said to have been found lower than with any other type of steam-conveyor equipment.

When long overhead discharge lines are necessary between the top of the risers and the ash bin, the steel supporting structure of the conveyor is worked into a light truss that carries a walkway adjacent to the conveyor pipe. The repairs to the upper line are made from this walkway, which makes a safe method of doing this work at these heights and also cuts the labor repair cost at these points to a minimum.

On account of the large internal diameter

of this conveyor, a large quantity of the material handled will float in the line, rarely coming in contact with the pipe, thus insuring a lower repair cost. The old problem of suction-line wear is said also to be answered in the design of this conveyor. The entire lower half of the suction line is renewable in a practical manner and at a low cost.

Controllers to Keep Pace With Motor Development

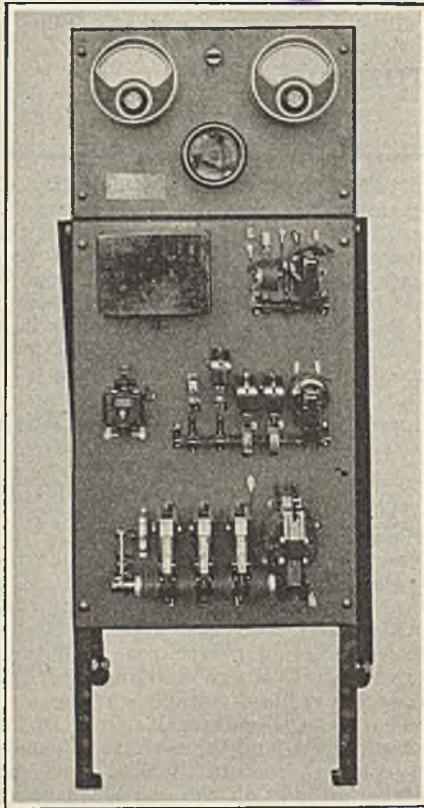
Among the recent developments in industrial control are three new types of starters now being marketed by the General Electric Co. These are an inclosed magnetic switch for starting two- and three-phase alternating-current motors, and two types of automatic starters for synchronous motors, one for full-voltage starting and the other for reduced-voltage starting.

The inclosed magnetic switch is for use with two- and three-phase alternating-current motors which can be thrown directly on the line when being started. This switch is also used to handle the primary circuit of a slipping motor in conjunction with a secondary drum switch. The controller was developed for starting larger motors than can be handled by the popular types now on the market. Overload protection is provided by



Nine-Inch Diameter Tubes

Standardized repair parts and tube sections make this a desirable unit. All joints are cemented and provided with a cast-iron cap to make them airtight.



For Slow Speed Motors

The sheet-iron cover incloses the thermal relay supplied with this starter. Other necessary protective features and operating instruments are furnished on this across-the-line type of controller.

means of a relay which follows closely the heating curves of the motor. This switch can be operated by a push button, pressure governor, float switch or similar device and, when used as a primary switch for slip-ring motors, a drum switch is the only accessory needed.

STARTERS COMPLETELY AUTOMATIC

The two new synchronous motor starters are for full- and reduced-voltage starting one for each service. Both starters are completely automatic and provide an easy and dependable means of starting synchronous motors. Special features are a temperature overload relay for close protection of the motor from overload, a definite time relay, which determines the accelerating period during which the motor is

connected to the compensator taps, and a field-controlling relay for closing the field contactor.

One of these starters is recommended for use with slow-speed synchronous motors intended for driving pumps, compressors, and other general applications. The other starter is recommended for use with medium and high-speed synchronous motors for driving pumps, motor-generators, etc.

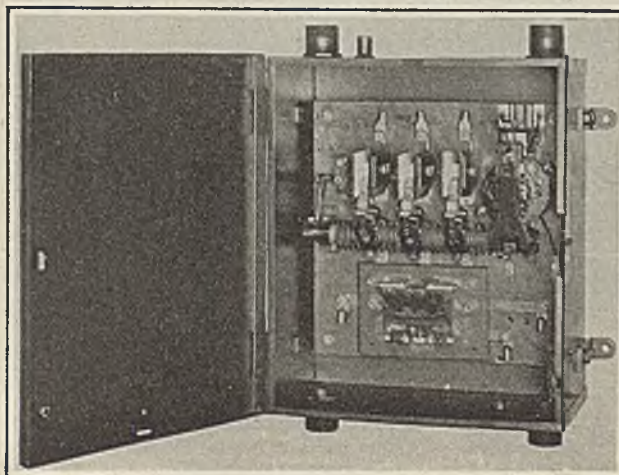
Compressor Cylinders Ground Like Those of Automobiles

In the early days of the automobile, the cylinders were bored in the regular way, making the cut as smooth as possible, which was in keeping with the standard practice for such work on larger size cylinders. But the automobile engine being a delicate piece of mechanism and placed in the hands of inexperienced operatives, it was viewed as desirable to take more care with all parts, especially the finish of the cylinder bore, so various tools or devices were devised for the purpose of making the finish as smooth and true as possible.

GRINDING ONLY SOLUTION

However, in all of these operations more or less heat was generated, affecting the internal strains of the casting, so when it cooled off it would distort slightly, leaving the bore of the cylinder in most cases out of true, both longitudinally and cross-wise. Considerable effort was expended on these devices, and in the end it was agreed that grinding was the only solution of the problem, because with a grinder very little material is removed per stroke or revolution of the wheel; therefore, heating in this operation is nil, resulting in the cylinder being almost perfectly round and straight when the grinding operation is completed.

For some time only a few of the better makers of automobiles adopted the grinding method of finishing the cylinder bores, but now about eighty to ninety per cent of them finish their cylinder bores by grinding. So sure are some of the leading manufacturers in the efficacy of this method it is said that the Chicago Pneumatic Tool Co. has standardized on the ground finish of the cylinder bores on all of its portable compressors.



Magnetic Switch

Motors which can be started by being thrown across the line can use this controller. The contactor may be used also to handle the primary current of a slip-ring induction motor.

Obituary

John McGonegal, one of central Pennsylvania's best known coal mining men, died at his home in Philipsburg on Thursday, April 2. He was born in Petersburg, Huntingdon County, Feb. 22, 1848. Mr. McGonegal opened the first large model mine in the Beech Creek region, known as the Troy mine. Thirty years ago he assumed charge of the mines of R. B. Wigton & Sons, later the Morrisdale Coal Co., at Morrisdale, and in 1900 took over the Troy mine on contract. He retired from active business in 1908. He is survived by his wife and eight children. Mr. and Mrs. McGonegal just recently celebrated their golden wedding anniversary.

James McCready, retired coal operator, formerly of Summit Hill, Pa., died last April 6 at his home, 70 Riverside Drive, New York City. Mr. McCready, who was 75 years old, spent the greater part of his life in Summit, where for nearly fifty years he was connected with the Lehigh Coal & Navigation Co. He retired from active business in 1910. Born in Glasgow, Scotland, he was brought to this country at the age of 5. His first wife was Susan Hart, of Summit. She died in 1913. In 1919 Mr. McCready married Mrs. Margaret Trumbour, of New York. Besides the widow, he is survived by two daughters, Mrs. Louis E. Kirk, of Philadelphia, and Mrs. Otto Krueger of Summit, Pa., and a son, William McCready. Funeral services were held April 8 at his late residence, and interment took place the following day at Middleburg, N. Y.

Winfield Scott Courtright, aged 73, a well known retired coal operator of Columbus, Ohio, died at his apartments at the Normandie Hotel recently of apoplexy. He came from Fairfield County and in 1883 became president of Courtright & Co., operating a number of mines in the Hocking Valley. Later he was president of the Union National Bank. Of late years he was connected with the Columbus office of the Pittsburgh Coal Co. He leaves a widow and four daughters.

Oliver L. Garrison, member of an old St. Louis family, died at his home in that city April 7 from a sudden heart attack. He was born in St. Louis, 76 years ago and lived there all his life. Mr. Garrison was a director of the Missouri Pacific Railroad at the time that his father was President of the road. He was connected with the Illinois Operators Association for many years. He was president of the Big Muddy Coal & Iron Co., with mines at Murphysboro and Herrin, Ill., which sold out a few years ago to the Consolidated Coal Co., of St. Louis. He had been heavily interested in the tie and timber business for many years and his estate will consist of several thousand acres of Ozark (Mo.) timber and iron ore property. He was, however, more prominent as a coal operator than in any of his other connections.

New Companies

The Johnson Mining Co., of Wellsburg, W. Va., has just been organized with a capital stock of \$25,000 to operate in Brooke County. Chiefly interested in this company are W. P. Johnson, J. H. Johnson, Charles A. Johnson, Ralph K. Cox and L. E. Jones, all of Wellsburg.

The Beaver Mining Co., Ashland, Ky., capital \$500,000, has been incorporated by R. D. Davis, E. R. Stephens and J. J. Christman. It is reported that the company will install a new operation on the Baltimore & Ohio R.R. branch in eastern Kentucky, on Beaver Creek. A fine new plant is reported to be planned.

Recent Patents

Signaling System for Mines; 1,523,805. Albert J. Gurney, Canton, Ohio, assignor to American Mine Door Co., Canton, Ohio. Jan. 20, 1925. Filed Nov. 7, 1923; serial No. 673,329.

Coke-Oven Door; 1,524,119. Joseph Becker, Pittsburgh, Pa., assignor to the Koppers Co., Pittsburgh, Pa. Jan. 27, 1925. Filed Oct. 16, 1919; serial No. 330,989.