

COAL AGE

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Mining Town Education

IN MOST MINING TOWNS better schools are needed than have hitherto been provided. The village has usually been planted in a farming community. The farmers pull the political strings electing their own people on the school board, which in turn selects teachers from among the sons and daughters of local families. As a result scholars at mine schools get a faulty knowledge of English that clings to them their lives long and no incentive to higher learning. The colleges find that they have to teach fundamentals to those who should come to them properly versed in English, elementary mathematics and physics. The managers and engineers of our mines must come from the industry because the urban population does not like the mines and is not willing to take up with country life. It should be the aim of every operator to provide through the schools elementary training that will afford staff material later.

Find the Facts

NO ONE CAN FAIL to have sympathy with those who wish the streams kept clear of "pollution," especially where the substances and liquids introduced are poisonous or germ-laden or where the work of removing them from effluents can be effected at reasonable cost; but it would appear nevertheless that the State of Pennsylvania will act most unwisely should it forbid, as is contemplated in the Beidelspacher bill, the discharge of untreated mine waters into the streams of the Commonwealth.

Those who debate on the extent and effect of the "acidification" or partial demineralization and clarification of streams by coal-mine water—for it is begging the issue to term it "pollution"—in a degree stultify themselves. Because it takes place over such an extent and adds such a volume of acid to the waters testifies to the fact that any bill that attempts to correct the evil will demand so much of the coal operators as to do irremedial harm to the industry on which the state's prosperity predominantly rests. For the most part in the bituminous regions the streams that run through the coal fields remain in coal fields from the time they reach the coal till they cross the state line. Thus the mines whose acid waters they carry are closely connected with the prosperity of those who live along the valleys they traverse. These people realize the situation. They are disposed to abstain from a demand for remedial action that will close down the mines and will yet leave the condition largely uncorrected, for the abandoned mines will still give forth their acid water. They know it is the coal rather than the operator that acidifies the streams. As for the rest, let them fish in home waters; let them be content with the alkaline or neutral rivers, creeks and rivulets of the counties where they live.

The anthracite region is different. The rivers of the hard-coal region flow out of that coal field and into areas

barren of coal, so that the anthracite operators have in some ways a more difficult situation than the bituminous, but on the other hand the waters their mines acidify are closely circumscribed and leave the Izaak Waltons plenty of opportunity to exercise their skill and indulge in their epicurean tastes.

As for the health of the people, it has yet to be proved that sulphuric acid has such an evil effect on the human organism as some rashly assume. When sulphuric acid is drawn in by a fish with every breath and expelled as regularly there may be and doubtless is a poisonous effect on his organism, but the little water drunk by the average human individual may be bettered by acidification. The waters of medicinal streams will not support normal fish, yet invalids from the country over go down to drink the waters at the recommendation of physicians. Some of those who are most active in the effort to keep mine water out of the rivers are putting a more active dose in the potable waters of many communities, to wit, copper sulphate. This kills the algae and yet is said not to harm the public. Perhaps it is helpful rather than harmful to put a far less potent salt, ferrous sulphate, into the germ-laden waters of the Allegheny and Ohio. After all, who knows? The doctors apparently have not been asked nor have physiologists made inquiry. Too many prefer apparently to listen to the Izaak Walton League. Before 55c. or 75c. is spent per ton of coal mined, before the state spends millions on abandoned mine workings now ownerless, why not find out the facts? Meantime let Izaak Walton cast his hook in other waters.

The health of communities using the water does not indicate that it has any ill effects, so the Izaak Walton League and the sanitarians who are demanding that a certain harmless and now lawful action be declared harmful and illegal should be required to prove that the burden they would put on the coal industry will actually benefit the public. Probably it would rather harm the health of the communities which use river water, for it will remove the germicides that now make the already polluted water harmless.

The Next Step

A SECOND CONFERENCE of operators and miners of the Central Competitive Field is in the offing. Such a meeting, of course, is the logical next step in the negotiations for a wage contract to preserve industrial peace in the organized bituminous coal industry after March 31. The situation is grave. Whether the new joint conference will yield tangible results or will merely repeat the Miami deadlock will depend primarily upon the state of mind in which the conferees approach the meeting.

Superficially the Florida fiasco left an irreconcilable breach between the United Mine Workers and the coal producers. Actually there was an undercurrent of conciliation, a desire to come to grips with the larger prob-

lems of labor relations within the industry. Only the sharp joinder of issues on specific wage rates kept this undercurrent from rising to the surface. Even in parting, the door was held open in the closing remarks of John L. Lewis, president of the union, and in the statement later issued on behalf of the Illinois operators by George B. Harrington.

These are hopeful signs pointing the way to a constructive solution of the problems in which both mine workers and mine owners of the Central Competitive Field have a common interest. Admittedly there are difficulties in the path to peace. This is particularly true in Ohio and western Pennsylvania because of the emphasis placed upon specific wage rates in those districts. And yet, even in those fields, as in Illinois and Indiana, is it not true that constructive potentialities may be revealed if discussion be shifted to production costs? Certainly it would hardly be an act of industrial statesmanship to neglect a full exploration of the possibilities in that direction.

A large part of the failure of the Miami conference may be attributed to the fact that most of the time there was consumed in futile and desultory discussion of questions upon which it was conceded at the outset that the two groups of conferees were in sharp disagreement. If the next conference is to be less unsuccessful, it would seem to be the part of wisdom to attack first those subjects upon which dogmatic declarations have not barred the door to early agreement.

There is strong reason for believing that such an attack, if honestly and patiently made, would so clear the way to a friendly understanding that the issues which wrecked the Miami conference would no longer block a settlement. Clearly nothing is to be gained by a mental attitude on either side which resolves itself into a Median determination to disagree.

The Past Is Past

WHAT EQUIPMENT is worth depends not on what has been paid for it but on what it will do. The operator should forget, if he can, what it cost and remember only what will be the investment for new equipment less the selling price of the old and what saving the new installation will effect. The past should be dead and buried, for the present and future are what really count.

The old is not worth anything as equipment if something has happened to make the new more profitable. What does it matter if the old machinery has not been written off the books and that a mistake has been made in determining the proper deterioration and obsolescence factor? The fact remains that the old does not pay, and that the new will pay for itself and yield a bigger profit than the old.

Sometimes machinery lasts longer than the deterioration and obsolescence factors would indicate. Then no matter what the books show, it is still of value. It should not be discarded but kept in use. No one would think of throwing it away or selling it as junk.

Similarly, whether the factors chosen have amortized the property or installation makes no difference; there may come a time to say the facts cannot be denied, that the chances of business have cancelled the investment whether the books show it or not. That takes financial courage which is the harbinger of success.

The general who holds onto a fort on which has been expended many men and much ammunition should for-

get both and move to a better position if the new one will cost less in men and resources, always in that case keeping in mind the morale of his troops. After all even the latter consideration is subordinate to the first, for the cost in men and resources is the real test, the importance of morale being dependent on its effect on the ultimate cost in lives, limbs and ammunition which maintaining the new position will entail.

When machinery is discarded it should not be said that a loss is sustained unless its replacement would not be profitable. The investment that is not producing a profit is no longer an investment. It is like stock in the market for which the price is zero. Its value cannot be lowered by throwing it away, for it is worth no more than the paper on which the accounts have been kept.

There are dead limbs on every tree, on which the saw or the axe can profitably be used. The limbs have in their day taken strength from the ground and sap from the tree, but now they are dead and the tree is better off without them. Nature discards them and diverts its energies to new and better limbs, ready to discard these in turn if they cannot function as well as still newer ones. But trees are wiser in their instincts than men in their wisdom. They have moreover no sentiments to satisfy, pride of opinion to appease or reputation for foresightedness to maintain. Instinct is often wiser than thought, and the instinct of nature is to forget the past and reach forward to the future. If men were but as wise!

Pooling Information

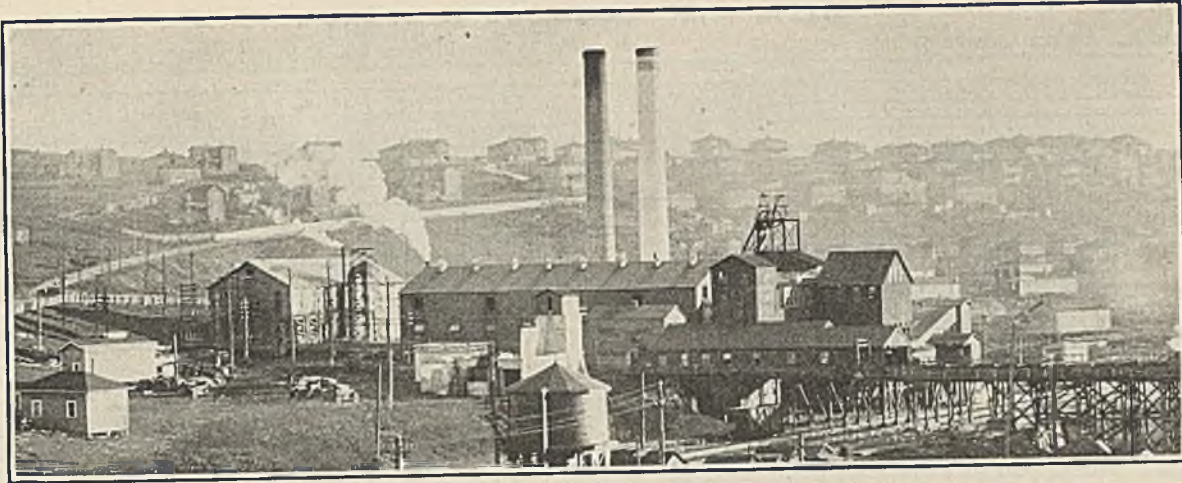
INDUSTRIES that continuously decrease costs of production and so can keep prices down grow the fastest, maintain the best public relations and obtain the largest profits. In attaining these ends those industries make most progress which have no industrial secrets and which, in their desire for better production methods, combine in the prosecution of research and inquiry. Another way of accelerating progress and thus increasing margins is by offering awards to those who develop new method and even to those who record most completely and faithfully the work of others.

The coal industry needs to do more than it is doing to hasten its progress. To this end every new development should receive prompt and full publicity among the members of the industry. The National Coal Association should be aided in making its research committee an active and aggressive body by counsel, information, and above all by liberal appropriations. Yearly rewards should be offered for those who do most to aid the progress of the industry.

The nation that makes the most rapid technical advances prospers most. The same is true of the industry that is most progressive. To this end, information should be pooled, for then there will be least lost motion and everyone will gain.

The coal industry still has its watertight compartments which yield neither statistics nor other information except as the laws demand, and some of the bulkheads are erected around captive mines or anthracite mine workings where there could be no possible reason for withholding information.

The commercial companies usually are not nearly so much disposed to begrudge giving the industry the benefit of their experiences as are those which are subsidiary to public utilities, steel and other metallurgical operations.



Coal Company Maintains Careful Control Over Its Central Power Station Loads

Growing Need for Power Has Been Met by Well-Planned Additions to Equipment—Regulation of Pumping Hours Effected by Drainage—Improvements Which in Turn Smooth Out the Station Load Curve

PRIOR to the year 1910, the Davis Coal & Coke Co. was operating only four mines in the Davis or Lower Kittanning bed of coal. These were Nos. 34 at Thomas, 35, 36 and 37 at Coketon, all in Tucker County, West Virginia. A great deal of this coal was being coked at these plants in the old bee-hive type of ovens. This coke had established itself on the market as a high-grade product, being especially suitable for metallurgical purposes and was in great demand by the steel-making industry. At Thomas, the coal from mine No. 34 was mixed with the slack from mine No. 23 which operated in the Thomas or Upper Freeport seam. It was found that this mixture also resulted in a high-grade product but had the advantage of a stronger structure than that made from the Davis coal alone.

In order to meet the increased demand for this superior product the Davis Coal & Coke Co. had to materially increase its output. It abandoned the making of coke at the Thomas and Coketon plants because the steel industry began making its own coke in by-product ovens. To increase the production it was necessary to open and develop new mines. No. 38 at Benbush, Nos. 39 and 40 at Pierce and No. 41 at Frances, W. Va., were opened, all of which were in the Lower Kittanning or Davis seam. Mine No. 42, a shaft at Kempton, the town being in West Virginia and the mine proper in Maryland, and No. 43 at Pierce, W. Va., were opened in 1914. Prior to the development of these new operations the problem of furnishing them with electric power arose. It was decided in the summer of 1910 to establish a central power station at Thomas, W. Va.

From 1911 up to the present, increasing production and its consequent increasing demands for power have been met by replacements, additions and enlargements,

The brick building to the left in the headpiece is the power station and the long structure in the center is the boiler house. The lighter colored stack was added last summer. The head-frame shown to the right serves No. 34 mine, which is a shaft. The tippie in the right center handles the output of mines Nos. 23 and 25.

which have kept the plant modern in equipment, adequate in capacity and efficient in operation.

The boilers, as will be seen in the headpiece, are installed in a fireproof building of concrete, steel and brick construction, with a tile roof. It is 150 ft. long, 45 ft. wide and 36 ft. high. There are at present installed five 400-hp. Babcock & Wilcox, two 500-hp. and one 400-hp. Keeler water-tube boilers having a total of 1,266 sq.ft. of grate surface. These operate at 175 lb.

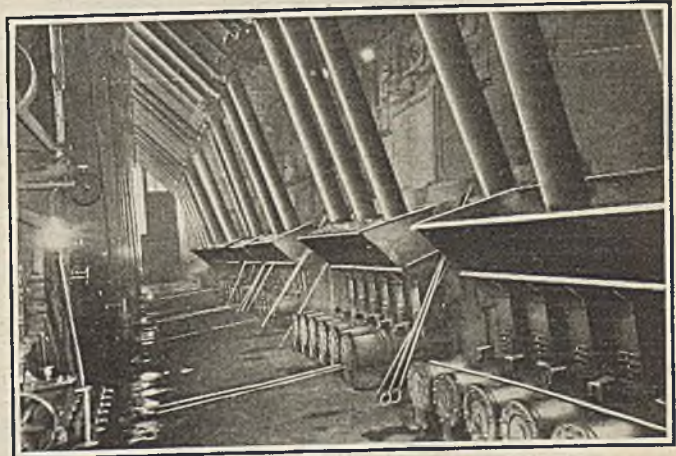


Fig. 1—Kept Modern by Replacements

Not a vestige remains of the original hand-fired boiler plant. The present equipment, besides stokers, includes many modern labor- and money-saving devices such as automatic water regulators, soot blowers and feed water heaters.

pressure and are fired by sixteen Jones underfeed engine-driven stokers. Soot blowers are used. A view along the firing aisle is shown in Fig. 1.

The coal-handling equipment supplying fuel to the boiler house consists of a distributing conveyor 125 ft. long with an automatic tripper and a 225-ton storage bin, from which sixteen downcomer pipes feed the stokers. A fireproof building contains a hammer-mill crusher and shaking screens which prepare tippie refuse as boiler fuel. A belt conveyor 87 ft. long, operating

in a steel gallery receives this product for delivery to the stoker bins. The coal-conveying equipment is installed in such a manner that either the refuse from the mine breaker or mine-run coal from mines Nos. 34, 23 or 25 can be easily conveyed to the shaker screen and crusher from which it is discharged to the conveyor leading to the overhead coal bunkers. A hopper is also installed so that coal may be taken from railroad cars. The amount of fuel consumed daily is recorded by C. J. coal meters attached to the Cole automatics of the Jones stoker system.

CAST-IRON HOPPERS FOR ASH REMOVAL

For the removal of ashes twelve cast-iron hoppers are installed in front of the boilers. These discharge into an 80-cu.ft. motor-driven ash-disposal car which operates in a tunnel running under the boiler house. This tunnel is 240 ft. long, 7 ft. 6 in. wide and 7 ft. 2 in. high. When the ashes are not discharged into railroad cars they have to be taken to a hillside about 1,500 ft. from the plant for wasting.

Adequate draft enables the boiler plant to meet any sudden demands made upon it. Forced draft is furnished by a suitable fan driven by a reciprocating engine, with a spare for "standby" service. This is augmented by two concrete stacks 156 ft. high and 10 ft. in diameter. One of these was erected within the past six months.

Feed water is received from two sources. One of these is a dam across the Blackwater River at a distance of about 2,800 ft. from the plant and the other, a dam in Pendelton Run, near Davis, W. Va. This latter supply is brought a distance of about two miles by an 8-in. line extending through No. 23 mine.

The Blackwater River dam is connected to the central power station by two lines of 24-in. spiral steel pipe 2,800 ft. long. One of these is for incoming cold condenser and feed water and the other returns the hot water from the condensers to the dam. Water supply has always been adequate, but within the past year an emergency boiler- and condenser-water supply has been provided.

Two Wilson & Snyder 14x9x18-in. boiler-feed pumps are used. Feed water regulation is automatic.

As a rule the public utilities that devote their energy to the generation and distribution of electric current seek as diversified a load as possible. Power plants prosper only when in operation and their earnings are roughly proportional to the average percentage of the time during which their generating equipment is utilized.

THE DAVIS COAL AND COKE COMPANY
MONTHLY REPORT

THOMAS CENTRAL POWER STATION Month of _____ 19__

Substation and Circuits	K W Hours	K W Hours per Ton Coal Consumed	Power Factor per Cent Coal Consumed	GENERATING COST PER K W H
Celcius				Coal
Berwick				Oil
Pierce				Miscellaneous Supplies
Porter 43				Coal and Ash Labor
Henry				Firemen
Kempston				Operators
23 Fan				Repairs
23 Pumps				Superintendence
23 Haulage				
23 Total				
25 Fan				
25 Pumps				TRANSMISSION LINES COST PER K W H
25 Haulage				Patrolling
25 Total				Repairs
34 Fan				Material
34 Pumps				
34 Haulage				TOTAL COST PER K W H
34 Total				
TOTAL				
K W H Exciters	Coal			Lbs. Water per Lb. Coal
Town Lights	Labor			Lbs. Water per K W H
K W H Fairfaxes	Material			Lbs. Coal per K W H
K W H Supt.	Supt.			Lbs. Coal per Square Foot Grate Surface
K W H Lancers	TOTAL			Lbs. Coal per Hour Boiler Room Labor
TOTAL K W H	Coal & W			K W H per Hour Boiler Room Labor
TOTAL K W H	Fairfaxes			K W H per Hour Turbine Room Labor
TONS COAL	Town Lights			K W H per Hour Total Labor
M/R				K W H per K W Capacity Operated
Pre	Cost per K W H To Mine			K W H per Boiler II P
Nut				
Foreign				
TOTAL				
Actual Cost per Ton				

Fig. 3—The Way to Find Actual Costs

With complete records accurately kept the management knows what its power costs are. Cost records are kept not only in terms of totals for material and labor but also in terms of efficient generation, distribution and use.

In other words, that plant earns most which operates continuously day and night at or near its full capacity. The load factor or average percentage of loading of the plant thus plays an extremely important role in the earnings and profits of the installation.

The foregoing is a general economic principle that applies with equal force to the power-generating stations of coal companies. The load factor usually afforded by coal mines alone is anything but good. However, the power departments of these concerns have learned much from those whose sole business is the generation, transmission and distribution of electric current. This, in connection with their intimate knowledge of mining requirements and backed by the company's operating and engineering staffs, gives them the necessary qualifications to efficiently generate the necessary power. In the instance of the Davis Coal & Coke Co. at its Thomas central power station, much attention has

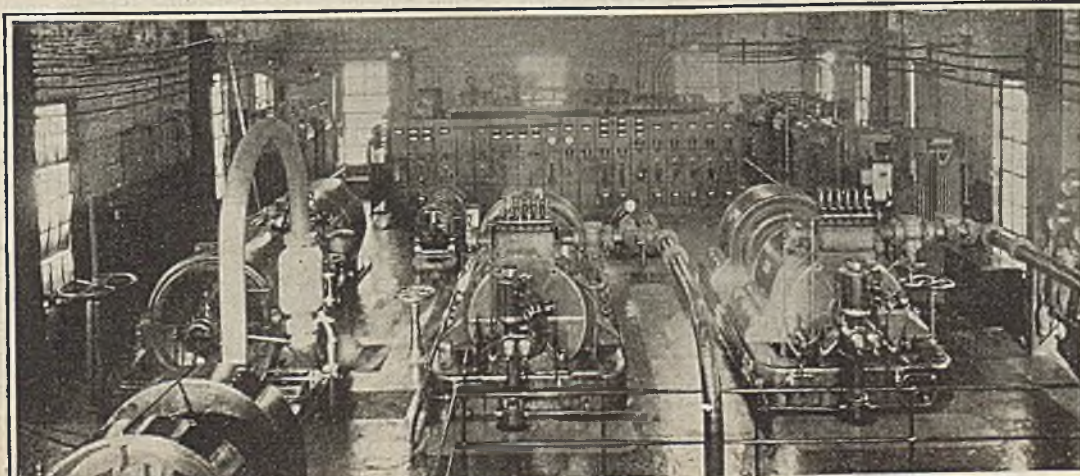


Fig. 4—The Heart of Mining Operations

This plant furnishes power to eight mines and lights five towns. The unit to the left of the illustration is a 2,500-kw. Curtis steam turbo-generator and the other two at the center and right are of 1,000-kw. capacity each. The switchboard is shown at the far center of the building with some of the step-up transformers upon either side. All dwellings using electric lights are metered.

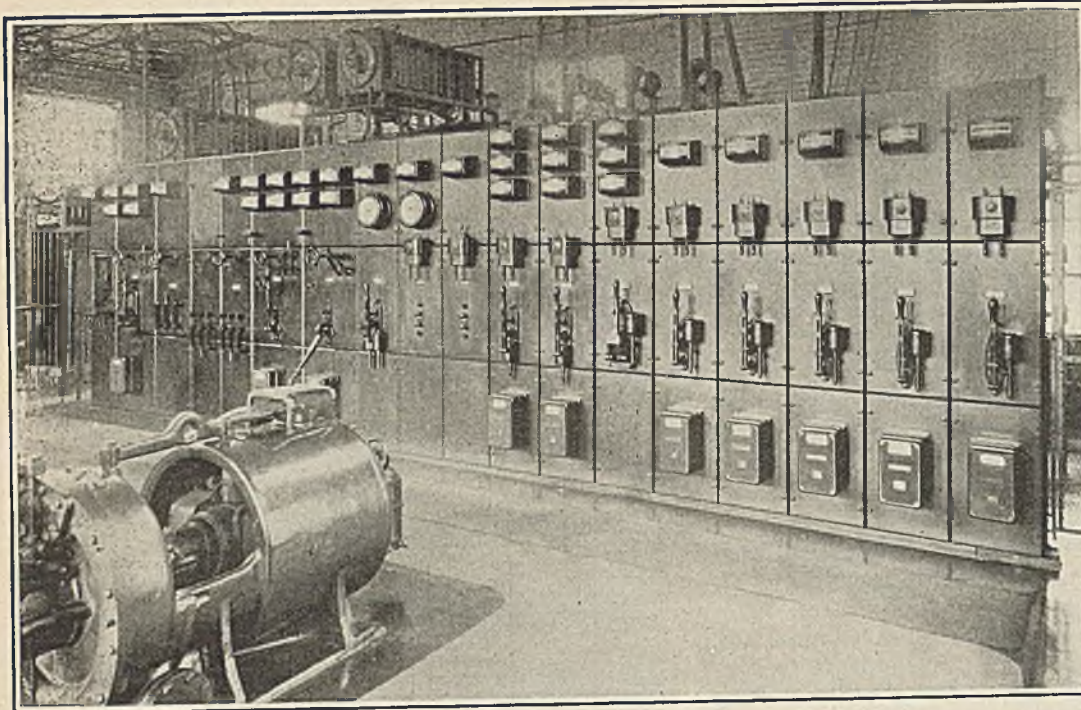


Fig. 5—Control Is Centralized in This Station

All of the separate circuits and loops are controlled from this 18-panel board. At its foot is shown the watt-hour meters which register the consumption of each circuit. The meter at the far left is for indicating the station load and output. This board, together with adequate telephone facilities, enables the operator to render reliable service, and assures prompt action in emergencies.

been given to load distribution and regulation in the control of the load factor. This work is studied and planned through the co-ordination of the power, operating and engineering departments.

In the case of the Thomas central power station, the mines served are analogous to the customers of the large public utility companies. Each operation is rated for its demand and metered at the switchboard in the power station for its consumption. Five of the eight mines served in the Thomas district are shafts, two of which have electric hoists. These are mines Nos. 42, at Kempton, and 34, at Thomas. The other three use steam. With the exception of mines Nos. 39 and 42, which are relatively deep operations, drainage is a serious problem. In the attempt at control of the load factor or the diversity of station loading, pumping in all the mines is a fertile field for study. This company has made many improvements in its load factor by rearranging pumping hours; and much work is in progress at present that will further smooth out the load curve yet simultaneously afford increased drainage facilities. For instance, at one mine dams are being built to control the water flow and at another the sumps are being enlarged.

MINIMIZES EFFECT OF SEASONAL LOAD

Much of this work is being prosecuted not only to control the daily power demand but also to minimize the effect of the seasonal load occasioned by rapid thaws of snow or by frequent copious rains. Such occurrences throw a heavy demand upon the pumps and through them onto the power plant. The load factor for the data shown on the log in Fig. 3 was 69 per cent.

The seriousness of this company's water problems may be best illustrated by the momentary demand which during wet seasons often reaches a peak of 6,500 kw. This comes on a station whose rated capacity is 4,500 kw. The plant has, during some wet seasons, maintained a night load of 3,500 kw. It might here be mentioned that during such times the power plant, in order to adequately carry the load, reverts to the use of the same high grade coal that is shipped to customers.

Chosen as an example of ordinary practice, rather than for spectacular performance a daily log sheet, during a season of particularly heavy pumping load, is shown in Fig. 2. This log is kept by the station operator for each shift and is used by the electrical engineer in charge of the power department to make up the monthly station performance reports shown in Fig. 3. By indicating the station loading, and recording the results for analysis, the plant efficiency is constantly safeguarded.

As the result of a well planned initial installation all subsequent enlargements both to buildings and equipment have fitted into the general scheme of efficient and reliable power generation, transmission and distribution. Geographically, the station stands in a well balanced relation to the distribution system. It thus is advantageously situated for power distribution.

CURTIS TURBINE GENERATORS USED

The present generating equipment proper consists of one 2,500-kw. and two 1,000-kw. Curtis turbine generators. The 2,500-kw. unit operates at 3,600 r.p.m. and the other two at 1,800 r.p.m. Current is generated at 600 volts 60 cycles, three phase and is distributed to the local mines at the same potential but to substations at 6,600 and 22,000 volts. Excitation of the generators is furnished by one 35-kw. turbine-driven exciter operating at 3,600 r.p.m., and one 50-kw. motor-driven unit running at 1,200 r.p.m.

Two Leblanc jet condensers with turbine driven pumps condense the exhaust from the two 1,000 kw. turbines while that from the 2,500 kw. unit is taken by an Alberger barometric condenser fitted with an air occluder and a circulating pump. The barometric condenser can be seen alongside the power house in the headpiece.

Most fundamental is the need for a supply of good water for condensing purposes in sufficient volume to maintain a reasonably low temperature during the hot season. At Thomas this requirement is adequately met by the two dams which were mentioned in connection with feed water supply for the boilers.

One of the two 24-in. spiral water lines delivers both

boiler feed and condenser water, and the other returns the hot water from the condensers. In addition an emergency condenser-water supply was provided last summer. When one of the 1,000-kw. turbine generators is running simultaneously with the 2,500-kw. unit, a booster pump installed in the incoming cold water line increases the condenser water supply. This machine has a capacity of 8,000 g.p.m. and operates against a 40-ft. head.

EIGHTEEN PANEL SWITCHBOARD UTILIZED

Auxiliary electrical equipment consists of an eighteen-panel switchboard, a view of which is shown in Fig. 5, while its position in the powerhouse can be seen in Fig. 4. This board contains the switches controlling the circuits, and the wattmeters for all the major power lines. These meters are shown at the bottom of the panels. The one to the extreme left indicates the station load. The Terrill voltage regulator is on the first panel of the board and to the left of the switchboard illustration. This board also contains the necessary circuit breakers protecting the station from overloads. The plant is adequately protected from lightning.

The following transformer equipment is installed in connection with the power plant; four 400-kw. 660/22,000-volt transformers, six 300-kw. 500/6,600-volt

transformers, six 110 kw. 6,600/370-volt transformers, one series lighting transformer and one 300 kw. 600/6,600-volt transformer.

The power house is of structural steel and brick construction with a tile roof, and is fireproof throughout. It is shown to the right in the headpiece. A ten-ton crane spans the engine room and travels the full length of the building.

In probably no other industry is continuity of service more important than in coal mining. Three of the mines in the Thomas district are closed-light operations wherein any stoppage of ventilation is undesirable.

In the design and installation of the power plant equipment and distribution system every precaution has been taken to assure reliability and uninterrupted service. In the power station duplicate or interchangeable units and auxiliary equipment have been installed; one or two boilers are regularly out of service for inspection or overhauling and two sources of feed and condenser water supply are provided. In the distribution system loop circuits are used and at the mines duplicate substation equipment is installed.

The description of the transmission and distribution system and the mine substations which are semi-automatic and unattended, will appear in a subsequent article.

Trade Association Advertising Makes Business Increase

Ten years ago the limestone quarrymen of Indiana had a very limited market for their product. Their outside competition consisted of rival materials. The Indiana Limestone Quarrymen's Association was formed, advertising was started and a splendid market has been found for limestone in the building field.

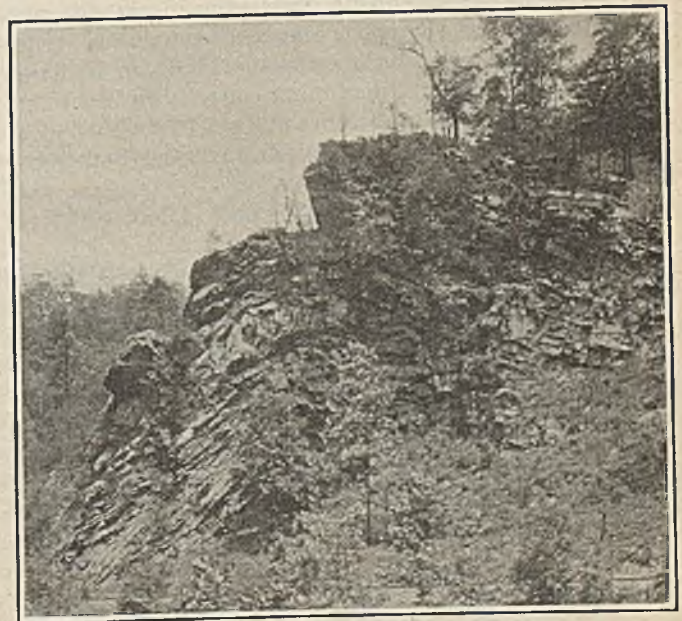
A few years ago gypsum as a fertilizer was not used much. Then the Gypsum Industries was organized, an advertising campaign inaugurated, and the splendid business the manufacturers in this line are now doing with farmers, is a direct result of this advertising.

The advertising of the Plate Glass Manufacturers of America not only assured the use of plate glass in automobile wind shields, but besides, it got the general public using plate glass in many ways where it was not used before.—*Charles F. Abbott, American Institute of Steel Construction, Inc.*

Federal Interference Not Necessary, Declares Walter Barnum

Some advocate federal interference on the ground that it is necessary to safeguard the country from the effect of strikes. There have been very few occasions during which there was any noticeable interference with our bituminous coal supply. Furthermore, at the time of the strike of 1922, at least 60 per cent of the bituminous production of the country was coming from union mines, but since then a change has taken place. During the past summer approximately 70 per cent of the entire output of bituminous coal was produced in non-union mines. For that reason the danger of serious interruption in supply through cessation of work by union labor is less today than it has been at any time since the organization of the

miners' union. The relations between miners and operators have never been more friendly than they are at the present time. Employers in this great industry are keeping pace with other American employers in caring for the welfare of their employees, and a growing consciousness on the part of the men that their interests and those of the operators are one, is creating a sentiment of mutual understanding and co-operation. The most promising outlook for future peace in the industry lies in permitting present tendencies to develop without interference from governmental agencies.—*Walter Barnum, president, National Coal Association before the International Bituminous Coal Conference.*



Evidence of an Upheaval

This view was taken in the Big Stone Gap of southwestern Virginia. On both sides of the gap the rocks are inclined at all angles in many places standing on end. The formation here shown is arched. Some of the coal measures in this vicinity are also disturbed and the roof is full of slips.

Loader Is Making Its Best Record After Nearly Two Years of Continuous Service

Has Increased Mine Capacity by 6,000 Tons per Month—Bigger Lumps Are Evident With no Change in Percentage of Nut and Slack—A New Standard of Mine Superintendence Required with Mechanical Loaders

IN MANY INSTANCES loading machines have been relegated to the scrap heap after only a few months or a year of service. Outside of misapplication two reasons for such a condition are common, namely, actual wearing out of the machine and changes in the mine management. In a certain mine in southern West Virginia a mechanical loader is in daily use that has been in continuous operation for nearly two years but which made its best production record only recently. This machine is a Goodman "electro-hydraulic" power shovel.

Those who have tried out the various types of mechanical loaders now available in room-and-pillar work well know the difficulty experienced in getting from these machines the tonnage they are capable of producing. Every detail of operation must be regulated to a certainty far beyond that usually considered necessary with hand loading methods. Thus, the full quota of working places—and a few extra as a margin of safety—must be ready at the beginning of each shift: the coal must be properly shot: the track must be in such condition that derailments will not occur: every man of the crew must be a steady worker and trained substitutes must be available on short notice.

FLOOR IRREGULARITIES CONSTITUTE OBSTACLES

These are by no means all of the requirements. Small irregularities in the bed or pavement that would be of no particular consequence with hand loading assume importance if mechanical loading is followed. At the particular mine mentioned great progress has been made in systematizing the conditions of loader operation. This has resulted in a gratifying increase in production. There is yet room, however, for much further improvement before the machine can be given a chance to produce its maximum capacity in room-and-pillar work.

During the months of July, August and September of last year, operating exclusively in rooms, this machine produced 5,592, 5,835 and 5,465 tons re-



Loading and Shifting Two Cars at a Time

After about a third of the cut has been loaded the changed position of the shovel makes it necessary to load cars one at a time. The track is laid close to one rib of the room and the parting is gobbled along the other rib. The crew consists of an operator and two face men. Although the motorman and brakeman are idle part of the time waiting on the loading operation they gather more cars than the average crew on the day shift.

spectively. This shovel is operated only at night when plenty of mine cars as well as a locomotive are available. The average for the three months mentioned or 217 tons per day loaded by the machine in a measure represents extra production or output that would not be attained without the purchase of additional mine cars, another locomotive and the erection of more houses for the employees.

Rooms in which the shovel is operated are driven from 24 to 26 ft. wide and 300 ft. long. The bed worked lies practically level and has a minimum height of



Gobbing the Heavy Parting Along the Left Rib

The scoop is discharged by means of a pusher or ejector plate that is actuated by hydraulic pressure. Because of this method of discharge only the size of the lumps to be loaded and the roof height limits the height of the car. The body of the machine is anchored in place by a hydraulic jack that is forced against both roof and floor. Releasing this jack allows the machine to be moved to another position.

68 in. The bottom is hard and the top good in that it stands in the rooms without timbering. The chief unfavorable condition with which the shovel has to contend is a 6- to 6½-in. parting of hard slate that occurs near the center of the bed.

MOST OF PARTING IS GOBBED

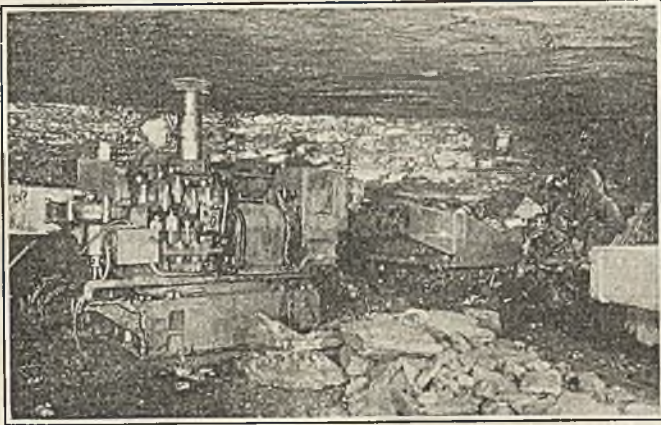
Approximately 80 per cent of this parting is gobbled at the face. Large chunks are disposed of by means of the shovel and the smaller pieces are picked out by two men whose other duties during actual loading time include trimming cars and wielding hand picks. The shovel itself, however, dislodges most of the standing coal. It is really surprising to see the lifting capacity that this machine develops even with the boom fully extended. It is also hard to understand how the mechanism can withstand the heavy stresses to which it is incessantly subjected.

In principle of operation this machine strongly simulates a shovel in the hands of a man. The only essential difference is that dumping is effected by means of an ejector plate that forms the back of the scoop and which moves forward to push the material out into the car. This action requires but little height between the top of the mine car and the roof.

All elements of the machine except the traction device

are actuated by a hydraulic pressure of approximately 1,200 lb. per square inch, acting on pistons of appropriate size. This pressure is maintained by a single-acting triplex pump of 3½-in. bore which is driven by a 15-hp. direct-current motor. The traction chains are actuated by the same motor through suitable gears and steering clutches.

Moving the shovel to new positions at the working face or shifting it through breakthroughs to adjacent rooms does not consume the time that might at first be imagined. One movement of the lever lowers the hydraulic anchoring jack permitting the machine to move. It can "turn in its tracks" and is relatively speedy in



Finishing the Loading of a Cut

It takes only a few minutes to move the shovel to the next room. There are no preliminaries; throwing a valve lever releases the jack and allows the machine to be on its way. This illustration shows the motor-driven hydraulic pump that maintains the pressure for actuating all motions except that of traction. The crawler treads are geared to the motor through steering clutches.

travel. When a "2x6" is laid beside the rail to serve as an aid in climbing, it readily crosses mine tracks.

In this mine a single track is laid in the rooms close to the rib. When loading out of a cut is started cars are filled and shifted two at a time but while the latter two-thirds of the cut is being loaded the cars are filled and shifted one at a time. This is because the reach of the scoop is limited. Each cut yields from 45 to 60 tons. During a shift from 4 to 4½ rooms are loaded out but 6 are always made ready so as to be available for the loader.

LARGER LUMPS ARE OBTAINED

These rooms are prepared by the day shift. They are undercut by a shortwall machine, the track extended, the bugdust loaded out and the coal drilled and shot. The same quantity of explosive is used as with hand loading.

Only slight difference has been apparent in the size of coal produced, in comparison with hand loading methods. The following results have been noted: Larger lumps are evident, the same amount of nut and slack is produced but the total proportion of prepared sizes is reduced by about 1½ per cent.

No coal is dumped at the tippie at night. That loaded by the shovel is stored in mine cars in rooms adjacent to those worked and is hauled to the tippie first thing in the morning. While this machine-loaded coal is being dumped, extra men are placed at the picking tables. The larger lumps loaded by the shovel are evident on the first two or three railroad cars loaded at the beginning of the day's run.

One of the objections usually raised to the use of

mechanical loaders has been their high repair cost which as a rule began after a few months of steady work. Hydraulic operation of this shovel seems to have done much toward overcoming these objections. Packing, which is really an item of operating expense rather than one of repair cost, requires the most attention. The experience of nearly two years at this mine has resulted in the stocking of less than \$500 worth of repair and spare parts for this machine.

Compared to the value of parts that would be stocked for a single mining machine or locomotive this is a small quantity. If several shovels were used at one mine the number of parts for each would be proportionately reduced and their value would, therefore, become of small consideration.

REAL TEST WILL SOON BE MADE

The management at this mine expects that within the near future this shovel will be given a chance to demonstrate its real possibilities. As soon as the present panel of rooms is developed to the property line this machine will have the close equivalent of a longwall face to work upon in bringing back the pillars. It has already been used in pillar robbing but not with the attendant conditions "tuned up" to the nicety necessary for a good showing.

Everything considered, the results secured with this shovel, at this particular mine at least, constitutes a definite forward step in the mechanical loading of high coal under a good roof. This machine's record has clearly demonstrated the necessity for closer supervision and attention to details that alone will enable mechanical loaders to function successfully.

Lignite as a Powdered Fuel

Much attention has been given in recent years to the use of powdered fuels. Lignite can be successfully burned in this form, according to Bulletin No. 255, recently issued by the U. S. Bureau of Mines. A number of factors, however, tend to limit such use. Lignite, as it comes from the mine, usually contains from 30 to 40 per cent of water and on that account it does not pulverize readily, but tends to "ball up" in the pulverizer. Furthermore, it does not easily ignite. Although all of the moisture need not be removed from lignite, in order to burn it in the pulverized form, the moisture content should be reduced to a maximum of from 10 to 12 per cent.

It is uneconomical to ship raw lignite to distant points and there dry it in rotary driers for use as a powdered fuel. Obviously, it would be much cheaper to dry the lignite at the mine for, by so doing, it would be possible to utilize cheap fuel for drying. By drying at this point also it is possible to reduce the freight and handling charges. Some lignites fire spontaneously after drying, unless carefully cooled. Therefore, such a fuel cannot readily be dried and subsequently shipped in open containers unless it is specially handled. Lignites that tend to ignite spontaneously either should be pulverized at the mine and then shipped in air-tight containers, being re-handled before they have an opportunity to fire, or they should be partly carbonized at the mine and pulverized after shipping to distant points. For a number of reasons, the latter method appears to be the most desirable. A definite field of usefulness for lignite handled in this way is believed to exist.

Coal Mining in India Is "White Man's Burden"

Fuel Is Usually of Poor Quality and Limited Extent — Transportation Companies Are Mines' Best Customers—Mine Manager, Regardless of Race, Is a Much-Harried Individual — Graft of Various Sorts Is Practiced

By George Cecil
Paris, France

COMPARED with other countries, India turns out a trifling amount of coal, the annual production averaging a little less than 8½ million tons. The area embraced by the coal fields is slightly over 500 square miles, this tract being confined almost exclusively to the Ranigunge district in Bengal. The eastern division of this circumscribed territory possesses 11 seams, their combined thickness—being 120 ft., the western district carries 13 beds, with a total thickness of 100 ft. In this locality the average bed runs from 12 to 18 ft. in thickness. In another district, forming a part of the Ranigunge area, there are but 4 beds; the combined thickness of which amounts to 69 ft. The coal is of poor quality, and, as a rule, non-coking.

Indeed, the only good field is a small affair of 11 square miles, with three beds ranging from 9 to 33 ft. in combined thickness. It is owned by the local railway company. Despite the inferiority of most Indian coal, the output meets with a ready sale. The jute, cotton, sugar, paper and flour mills, of which there are a number in various parts of the country, are excellent customers to these Bengal coal fields, while the inland steamship companies, owning many river craft, add to the prosperity of the industry. Homeward and outward bound liners and cargo steamers coal at Calcutta, Bombay and Madras; consignments are dispatched to ports across the Indian Ocean, but the railway companies, of which eight are important, use the greater part of the output.

The gas and coke works also require coal, though not in large quantities. This is well, because as much of the coal is non-coking, the supply is limited. When the gas works, for want of material, temporarily close down, oil lamps are used. This makes the oil-merchants rejoice.

The miners are natives, most of whom have been associated with the mines from boyhood. The wages demanded by these simple children of nature amount to little; nowhere in the world is the salary bill arranged on such economical lines. But the natives are an endless source of annoyance to the manager and his understrappers. Should one of them, desiring a holiday, be refused a day's leave of absence on full pay, the fellow calmly stays away. Subsequently, on being fired, he persuades the other miners to lay down their tools. On the other hand, every man in the place, declaring that the mine is haunted, may refuse to do a stroke of work until the ghost has disappeared. Hindu and Mahometan feast days are kept, whatever may be the holiday-maker's religion. Should a serious accident occur, owing to the miners' carelessness, or stupidity,

or both, none will go near the mine till compensation has been paid. Let an exasperated manager raise a hand against a malingering, or impudent rascal, and his last hour may have come. Natives, armed with brass-headed clubs, and seemingly appearing from nowhere, belabor the unfortunate manager *Sahib*, leaving him for dead. He who recovers counts himself fortunate. In short, the miners have the upper hand. It is, therefore, not surprising, inasmuch as the natives mostly prefer surface mining to descending into the bowels of the earth, that the resources of the Indian coal fields are not fully exploited. Nor are they likely to be until imported European miners replace the natives, as a coal magnate from England recently observed while being shown over the Ranigunge area. The visitor had the good fortune to be in India during the "cold weather,"—a period resembling balmy spring in Europe. Were a white man to handle pick and spade between the middle of March and the end of September,

Those who have never lived and worked—or tried to work—in a foreign country where only decidedly inferior labor is available cannot appreciate the difficulties there encountered. This brief description of conditions that prevail in India is interesting by way of contrast. Despite the backwardness of this country and its mines American safety practices have, of late, found favor there as well as in China and Japan. "Safety First" has thus spread from America to the far corners of the earth.

when the thermometer often registers 120 deg. in the shade, he probably would be dead within an hour. To sample India at its worst, one must spend a "hot weather" in Bengal.

Simple though the miners are, they have been taught to help themselves to mine stores. The castor oil, of local manufacture, with which the engine is lubricated, has their attention; brass oil-cups are removed; lengths of rope prove a temptation. The natives, like the jack-daws, are extremely acquisitive.

BRITISH OWNERS HIRE EUROPEAN MANAGERS

In British-owned mines the manager almost invariably is a European, an experienced man who, tempted by the offer of an increasing salary and commission, has thrown up a subordinate position with a mining company in England. He is allowed a furnished bungalow free of charge, a vegetable garden, kitchen fuel, lamp oil, and a native factotum, who makes himself generally useful about the premises. At night this latter individual sleeps in the verandah, thus, it is thought, guarding the house against prowling thieves. Should such marauders enter the bungalow, rob it and escape undetected, the guardian is arrested and removed to the lock-up. He is, in everybody's opinion but his own, an accessory to the robbery.

Sometimes a Eurasian (half-caste) is engaged as manager, and often with disastrous consequences. For the semi-native's mentality leaves much to be desired; he loses his head in moments of stress and difficulty; should an accident occur, the *kerani* weeps and runs

away. These people are, however, inexpensive. Working for a third of the salary demanded by a white man, their engagement is an economy, provided things go smoothly. But when trouble sets in, they are as useless as a headache.

There also is the purely native manager, who often gives a good account of himself. He is employed usually by the small colliery owner, more or less to everyone's advantage. Yet, it must be admitted that *Ram Lal*, unlike the European, seldom remains calm in an emergency. At the first sign of worry he bolts.

Periodically, the Government mine inspector puts in a not particularly welcome appearance. Overhauling the working of the colliery, asking questions which it is not always convenient to answer, and, in fact, giving the manager a "bad quarter of an hour," the members of the staff are glad to see the last of him. As the mine inspector's promotion depends on the adverse reports that he furnishes, these being considered a proof of keenness, this official is unsparing in his denunciation of the management, unless, happily for the manager, there is nothing to which exception can be taken. At the same time, the visitor is human, and, like many Anglo-Indians, having an eye to a good chance, he is amenable to—well, persuasion. Thus, there may be a rustle of flimsy paper, a meaning look, and a bank-note changes hands.

The Eurasian boiler inspector rarely has any scruples in turning the occasion to account. He looks upon the mine as a goose that lays golden eggs, and upon the manager as purse bearer. "I know the boiler is old," observes the unwilling host to his unwelcome caller. "But I have only today ordered a new one. See, here is the letter." "Tear it up, and open your note-case," is all that the inspector has to say. The boiler may burst and damage those who are in its vicinity, in which case there is trouble for everyone concerned. True economy does not always consist in pandering to official greed.

Should the boiler inspector happen to be a godfearing Scotchman, of whom there are many in the East, money is neither offered nor demanded. In such a contingency a case of whiskey may readily turn the trick.

Shaft Mine Was Converted to Slope And Belt Conveyor Operation

Introduction of belt conveyors at coal mines started only a few years ago, but the success of this type of conveyor has increased the range of preference for slopes over shafts at shallow mines. Chief among the operating advantages of slope conveying as compared to shaft hoisting are: (1) Less chance of accident, (2) high capacity with less expensive drive equipment, (3) low peak power demand, (4) saving in the wages of a



General View of Townley No. 1 Mine

In the center foreground is the roof of the conveyor gallery extending from the slope portal to the tippie. The high building at the right is the washery. The old hoisting shaft is located under the right-hand side of the tippie.



Portal of Slope Equipped with Belt Conveyor

At the right is the conveyor gallery leading up to the tippie. On the left side of the slope is a track used for handling material. Shortly after this photograph was made a new wall was built at the left. At present the mine production is 800 tons per day.

hoistman and possibly of one or two others, (5) reduced cost of tippie headframe structure.

An example of the increased preference of slope conveying may be seen at the Townley (Ala.) mine of the DeBardeleben Coal Corp. Until 1923 the coal from this mine was hoisted through a shaft 115 ft. deep. Now it is brought out through a slope (having a pitch of 19 deg. 53 min.), by a 36-in. belt conveyor 485 ft. long. This conveyor discharges at a point almost above the old shaft. The cars are discharged underground in a one-car revolving dump. The hopper holds 6 tons, the capacity of three mine cars, and the coal is fed from it onto the belt by a perforated reciprocating plate feeder.

Blasting Caps Are Source of Danger To Children near Mines

Approximately 500 children are killed or mangled each year by playing with blasting caps picked up in the vicinity of mines or quarries, according to a survey just issued by the United States Public Health Service. The survey is part of an educational program to be started this spring.

"Accidentally stepping on a cap may mean a mangled foot. Sparks, flame, heat, blows, friction—all serve to explode the cap to which they are applied. But the greatest danger is to children. They sometimes pick up a stray cap and start to investigate it. It is rare that they do this without getting hurt. They, perhaps, know the caps are dangerous, but they do not realize how sensitive they are, how violent is the explosion or how the pieces of copper fly. Even the name is misleading. It suggests the paper caps used with toy pistols, and children quickly link the similarity in name. Yet they bear the same resemblance to each other that a hungry man-eating tiger does to a gentle pussycat."

The report ends by saying: "Don't open up the cap to see what's in it; don't carry caps around in your pockets; don't take them home with you; don't leave them where children can get them; don't fool with them."

Book Reviews

Mechanical Loading Problems Analyzed In New Bulletin

Bulletin 28, on "Mechanical Loading for the Coal Mines of the Pittsburgh District," deals with clear discussions of a difficult subject from a practical as well as an engineering viewpoint. It summarizes the results of a ten-month research study by H. F. McCullough, representing the Carnegie Institute of Technology, and J. W. Paul, mining engineer of the U. S. Bureau of Mines, under the auspices of these two institutions and a mining advisory board composed of operating men. The investigation was financed by the H. C. Frick Coke Co. Although limited to the specific problems of applying mechanical loading to the Pittsburgh district, the findings are generally applicable to all fields.

The bulletin emphasizes the fact that satisfactory coal-loading and conveying equipment is already available and that consequently future endeavor should be directed toward utilizing equipment now in existence rather than to devising new apparatus. It points out that the direct savings, realized in the loading operation, are by no means a measure of the value of mechanical loading. The biggest portion of the saving is secured as a result of concentration of working places, which mechanical loading requires; faster moving working faces and the establishment of better working conditions, which mechanical loading provides.

The investigation has confirmed the much-quoted statement that the first step in the solution of the industry's operating problems is the establishment of a higher standard of mine management. Better direction of the mines would achieve much improved results even where old methods are employed. It is especially needed where mechanical loading is attempted, in order to coordinate interrelated operations.

Failure has been the general lot of mechanical loading in the Pittsburgh district partly because attempts in this direction have been few and partly because the equipment used was of an experimental type. Furthermore the trials were limited only to the loading operation, which is quite efficient in this district, and did not extend to changes in other interdependent operations. Incidentally, this analysis accounts for many failures in other fields.

Those trials that have already been made seem to confirm the belief held by many that the cost differential between mechanical and hand loading is not sufficiently wide, in room-and-pillar layouts in the Pittsburgh district, to justify the installation of the additional equipment which this scheme of mining requires, the caliber of the management being the same in each case. The authors offer this reasoning as justification for devoting the bulk of their remarks to consideration of other systems in connection with loaders and conveyors for the Pittsburgh district.

The bulletin is a meritable contribution to the knowledge necessary for the solution of problems relating to long-face mining in all fields. It deals with the in-

fluence of mining methods on mechanical loading; reasons for failures in control of long-face workings; roof action and its control; suggests various long-face layouts; considers loading and conveying devices, together with their application, and discusses the influence of the rate of mining on roof action. This bulletin is now available for general distribution. Copies may be obtained from the Carnegie Institute of Technology, Pittsburgh, Pa. The price is \$1.

"Arc Welding" the New Age In Iron and Steel

Much of the progress and development of any new process depends upon its intelligent application and correct use. Almost every improvement in industry creates a need for the recorded experience of others. Arc Welding is a book published for the guidance of those interested in the autogenous union of metals.

Devoted largely to the use of arc welding in general production manufacturing, however, the illustrations are so numerous and the descriptions so complete that the mining man will find many ideas in this book to help him get the most out of his welder. Arc welding should no longer be looked upon as a repair or salvaging process. The arc welder is a production tool and this book makes it evident that a knowledge of arc welding principles must be a part of the equipment of every operative and largely fills that need. The book contains more than two hundred illustrations, chiefly of products manufactured by arc welding. In addition there are numerous diagrams and charts showing welding speeds and costs.

The book points out that there are many fields for production welding. The first and perhaps the best known is the use of arc welding in place of riveting. It is shown that a welded joint can be 100 per cent efficient whereas the strength of a single riveted joint can never equal the strength of the members joined. Tank builders were among the first to recognize the greater economy of arc welding over riveting and today there is probably not a tank shop of any importance that does not use this process. Many other products formerly riveted but now arc welded are illustrated and described.

Another large field for arc welding is the substitution of arc welded steel for cast iron. The fundamental reason of the economy of arc welded steel over cast iron is that steel is 6 times as strong as cast iron in tension, and $2\frac{1}{2}$ times as stiff but costs only $\frac{1}{3}$ as much. Examples of complicated machinery bases and other cast-iron parts are shown reproduced in welded steel and in many instances cost figures are given.

Probably the most impressive point about the book is the wealth of illustrations showing products which are now being manufactured by means of this new process. The procedure for redesigning machine parts is treated at length and there is complete data on the strength and cost of various types of welded construction.

One chapter is devoted to automatic arc welding and there are numerous photographs of products thus constructed. This volume deserves to be called a text book as it was prepared partly in response to the demand from engineering and technical schools for an adequate treatment of this important process. The book is 6 x 9 in. and is nicely bound in imitation leather. It is published by the Lincoln Electric Co., Cleveland, Ohio, has 160 pages and the price is \$1.50.

Current Prices of Mining Supplies

Electrical prices are to the mine by jobbers in the larger buying centers east of the Mississippi. Elsewhere the prices will be modified by increased freight charges and by local conditions.

SINCE LAST MONTH

CONSIDERABLE firmness has developed in prices of mining supplies during the last few weeks. Advances from the February levels are noted in track bolts, railway spikes, cast-iron pipe, and bare copper wire. A few of the minor items such as colored cotton waste are down. All steel items on the list are experiencing an increasingly firmer market, evidently due to improvement in demand; the same, however, is not true of all of the non-ferrous materials.

STEEL RAILS—The following quotations are per ton f.o.b. in carload or larger lots

	Pittsburgh			
	Current	Year Ago	Birmingham	Chicago
Standard Bessemer rails.....	\$43.00	\$43.00	\$43.00	\$43.00
Standard openhearth rails.....	43.00	43.00	43.00	43.00
Light rails, 25 to 45 lb.....	36.00	36.00	34@36	1.80@1.90*

*Per 100 lb.

TRACK SUPPLIES—The following prices are base per 100 lb. f.o.b. Pittsburgh mill for carload lots, together with warehouse prices at the places named:

	Pittsburgh			
	Current	Year Ago	Chicago	Birmingham
Standard spikes, 1/2-in. and larger.....	\$2.80@3.00	\$2.80	\$3.55	\$3.00
Track bolts.....	3.90@4.50	3.90@4.15	4.55	3.90
Standard section angle bars, splice bars or fish plates	2.85	2.75	3.40	4.15

WROUGHT PIPE—The following discounts are to jobbers for carload lots at Pittsburgh mill:

Inches	Steel		Inches	Iron	
	Black	Galv.		Black	Galv.
1 to 3.....	62	50 1/2	1 to 1 1/2.....	30	12
2.....	55	43 1/2	2.....	23	7

BUTT WELD, EXTRA STRONG, PLAIN ENDS

1 to 1 1/2.....	60	49 1/2	1 to 1 1/2.....	30	14
2.....	53	42 1/2	2.....	23	9

LAP WELD, EXTRA STRONG, PLAIN ENDS

1 to 3.....	62	50 1/2	1 to 1 1/2.....	30	12
2.....	55	43 1/2	2.....	23	7

WROUGHT STEEL PIPE—From warehouses at the places named the following discounts hold for welded steel pipe:

1 to 3 in. butt welded.....	Black			
	New York	Chicago	Birmingham	St. Louis
2 1/2 to 6 in. lap welded.....	53%	54%	62%	49%
	48%	51%	59%	46%

1 to 3 in. butt welded.....	Galvanized			
	New York	Chicago	Birmingham	St. Louis
2 1/2 to 6 in. lap welded.....	39%	41%	50 1/2%	36%
	35%	38%	47 1/2%	33%

Malleable fittings, Classes B and C, banded, from New York stock sell at list plus 4% less 5%. Cast iron, standard sizes, 36—5% off.

CAST-IRON PIPE—The following are prices per net ton for carload lots:

	New York			
	Birmingham	Burlington, N. J.	Current	One Year Ago
4 in.....	\$42.00	\$49.00	\$51.60	\$54.60@56.60
6 in. and over.....	38.00	45.00	47.60	50.60@52.60

	Pittsburgh			
	Chicago	St. Louis	San Francisco	
4 in.....	\$49.60	\$51.20	\$47.60	\$51.00
6 in. and over.....	45.60	46.20	43.60	47.00

Gas pipe and Class "A," \$4 per ton extra.

MACHINE BOLTS—Size 1/2x1 1/2-in., per 100, \$1.70. Discount at New York warehouses on all sizes up to 1x30-in., 40%; 1 1/2 and 1 1/2x3-in. up to 12-in., 15%; with cold punched hex. nuts up to 1-in. dia. (plus std. extra of 10%) 30%; with hot pressed hex. nuts up to 1x30-in. (plus std. extra of 10%) 35%.

CARRIAGE BOLTS—Size 1/2x1 1/2-in., per 100, \$1.00. Discount on all sizes up to 1x30-in., 30%.

NUTS—Semi-finished, 1/2x1-in., 2c. each. Discount 70% for 1/4-in. and smaller and 65% for 1/2-in. and larger. Case hardened 1/2x1-in., 6c. each, less 50%.

STEEL PLATES—Following are base prices per 100 lb. in carload lots, f.o.b., for 1/2-in. thick and heavier:

Pittsburgh.....	\$1.80@1.90	Birmingham.....	\$2.00
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STRUCTURAL RIVETS—The following quotations are per 100 lb., in carload lots, f.o.b. mill, for 1/2-in.:

Pittsburgh... \$2.40@2.60	Cleveland... \$2.30@2.50	Chicago... \$2.60
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WIRE ROPE—Discounts from list price on regular grades of bright and galvanized, in New York and territory east of Missouri River:

	Per Cent
Plow steel round strand rope.....	35
Special steel round strand rope.....	30
Cast steel round strand rope.....	20
Round strand iron and iron tiller.....	5
Galvanized steel rigging and guy rope.....	7 1/2
Galvanized iron rigging and guy rope.....	+12 1/2

RAIL BONDS—28-in., 0000, stranded copper, welded, at points east of the Mississippi per 100, \$90.36.

RAILWAY TIES—For fair-sized orders, the following prices per tie hold:

	6 In. x 8 In.		7 In. x 9 In.	
	by 8 Ft.	by 8 Ft.	by 8 Ft.	by 8 Ft.
Chicago, white oak, plain.....	\$1.45	\$1.83		
Chicago, empty cell creosoted.....	1.85	2.45		
Chicago, zinc treated.....	1.65	2.15		
St. Louis, white oak, plain.....	1.20	1.45		
St. Louis, zinc treated.....	1.60	1.85		
St. Louis, red oak, plain.....	1.10	1.35		
St. Louis, sap pine-cypress.....	.95	1.20		
Birmingham, white oak.....	1.25	1.45		

STEEL MINE TIES—Prices range from \$0.38 to \$0.60 per tie, f-o-b. Pennsylvania and West Virginia Districts, depending upon gauge of track and weight of rail.

CALCIUM CARBIDE—In drums, f.o.b. producing point, per lb., \$0.05 1/2 @ \$0.06.

BRATTICE CLOTH—Jute, per sq.yd., \$0.14 to \$0.20, in Charleston, W. Va., St. Louis, Mo. and Pittsburgh, Pa., districts.

COTTON WASTE—The following prices are in cents per lb.:

	New York	Cleveland	Chicago
White.....	13.00@17.50	16.00	15.00@20.00
Colored.....	9.00@13.00	12.00	12.00@17.00

DRILL ROD—Discounts from list:

New York.....	60%	Cleveland.....	55%	Chicago.....	50%
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MACHINE OIL—Medium bodied, in 55 gal metal barrels, per gal., as follows:

New York.....	\$0.33	Cleveland.....	\$0.35	Chicago.....	\$0.29
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SCRAP IRON AND STEEL—The prices following are f.o.b. per net ton paid by dealers:

	New York*	Chicago	Birmingham
No. 1 railroad wrought.....	\$12.50@13.50	\$11.75@12.25	\$12.00@13.00
Stove plate.....	8.50@10.75	13.50@14.00	14.00@14.50
No. 1 machinery cast.....	15.00@16.00	16.00@16.50	17.00@17.50
Machine shop turnings.....	7.75@8.25	6.00@6.50	8.00@8.50
Cast borings.....	8.25@13.00	9.00@9.50	8.00@9.00
Railroad malleable.....	14.00@14.25	14.00@14.50	16.00@17.00
Re-rolling rails.....	12.00@12.50	14.00@14.50	15.00@16.00
Re-laying rails.....	23.00@24.00		21.00@22.00
Heavy melting steel.....	8.50@11.75	11.50@12.00	13.00@14.00

* Gross ton.

SCRAP COPPER AND BRASS—Dealers' purchasing prices in cents per lb.:

	New York			Chicago		
	New York	Chicago	Birmingham	New York	Chicago	Birmingham
Crucible heavy copper.....	11.62 1/2	11.87 1/2	10.75	10.75	11.25	11.25
Copper, heavy, and wire.....	10.87 1/2	11.37 1/2	11.00	9.75	10.25	10.25
Copper, light, and bottoms.....	9.50	10.00	9.50	8.75	9.25	9.25
Brass, heavy, yellow.....	7.25	7.50	7.50	6.75	7.25	7.25
Brass, heavy, red.....	9.00	9.50	9.50	9.00	9.50	9.50
Brass, light.....	5.50	5.75	6.00	6.00	6.50	6.50
No. 1 yellow rod turnings.....	7.50	8.00	7.50	7.00	7.50	7.50

COPPER WIRE—Prices of bare wire, base, at warehouse, in cents per lb. are as follows:

New York.....	18.87 1/2	Cleveland.....	18.87 1/2	Chicago.....	15.37 1/2
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FRICITION TAPE—Size 1/2-in. in 100 lb. lots in Eastern territory, per lb., \$0.31.

TROLLEY WIRE—In carload lots, f.o.b., producing point, all sizes, round, 15[c. per lb.; grooved, 15[c.; Fig. 8, 16[c.

TROLLEY WHEELS—F.o.b. Jersey City, N. J., 4-in., 95c. each; 6-in., \$1.50 each.

MINING MACHINE CABLE—F.o.b. producing point, rope lay patterns, single conductor, per M. ft.:

Size	Braided		All Rubber Covered	
Size 2.....	\$105.80		\$208.00	
Size 3.....	74.50		188.70	
Size 4.....	65.70		174.00	

LOCOMOTIVE CABLE—F.o.b. producing point, braided, Size 3, \$83.00 per M. ft.; Size 4, \$71.00 per M. ft.

FEEDER CABLE—Price per M. ft. in larger buying centers east of the Mississippi

B. & S. Size	Two Conductor		Three Conductor	
No. 14 solid.....	\$31.00 (net)		\$50.00 (net)	
No. 12 solid.....	136.00		180.00	
No. 10 solid.....	185.00		235.00	
No. 8 stranded.....	305.00		375.00	
No. 6 stranded.....	440.00		530.00	

From the above lists discounts are: Less than coil lots, 50%; Coils to 1,000 ft., 60% 1,000 to 5,000 ft., 62%; 5,000 ft. and over, 65%.

EXPLOSIVES—F.o.o. in carload lots:

Black Powder, FF, NaNO ₃ base, 800 kegs per car, per 25 lb. keg.....	Districts		
	West Virginia	Pennsylvania	Missouri
Ammunition permissible, 1 1/2 x 8 in. sticks, 20,000 lb. per car, per 100 lb.....	\$1.70@1.80	\$1.70	\$1.75
	14.50@15.50	14.25	14.50

Viewpoints Of Our Readers

Learning from the Past

Your editorial entitled "Learning from the Past," which appeared Jan. 6 carries an important message to all your readers as well as to many other business men in this country. At one time some sort of line of demarcation could be found between capital and labor, between the farmer and the public, which line of demarcation furnished an excuse for treating laborers as belonging to one class and employers or capitalists as parts of another, and while such conditions existed the labor unions did their most constructive work. However, such easily drawn lines of demarcation between various classes of human beings have long since ceased to be accurate and are maintained primarily by agitators as a ready excuse for specious remarks.

When your so-called laborer invests his savings, he automatically becomes a capitalist and embodies in himself the functions of both capital and labor. When the "farmer" operates on a large scale, as he frequently does in these days, he is likely to comprise in himself capital, labor, banking and commerce.

With these thoughts before one comes the inevitable conclusion that no longer can simple lines of demarcation be utilized by any one who wishes to make a fair presentation of an industrial problem, and it is therefore high time that the so-called "labor" unions go carefully over their present status with a view to more correctly describing their activities and more nearly justifying their existence. In order to do this it is necessary that the labor leader should be thoroughly conversant not merely with the rights and wrongs of the members of the union but with the rights and wrongs, the profits and losses of the other branch of individuals commonly referred to as capitalists or employers.

FINANCIAL HAZARDS EMPHASIZED

Everyone in the coal business knows that the industry is a most precarious one from a financial point of view due to its great overdevelopment, which in turn gives rise to competitive selling and frequently reduces the price of the commodity to a point where the owner or operator is paying more for his labor than the gross return he can realize from his properties. The mine employee is not asked to share in the ups and downs of the coal market, or rather the downs, and conversely when through any special condition the operator makes more than the ordinary margin of profit from his operations, he should not be expected to increase wages temporarily due to the temporary spread between cost and market, as that is his one opportunity to compensate himself for the losses which he has incurred in keeping his organization operating when the market was bad.

In this respect I speak with knowledge, as I have among my clients one hundred and fifty unrelated coal operators and am familiar with their general practice of operating at a loss when necessary in order to keep

their men from going elsewhere. They do this in the hope that the market will pick up and thus enable them to reimburse themselves for the losses attendant on operating during the continuance of a buyer's market.

In many cases, the mine operator has been successful in clearly depicting this condition to his employees, who have voluntarily (in West Virginia, for example) accepted a reduction in wages when without such a reduction the operation of the mine would be jeopardized. When the miners make such concessions, it is only natural that when the market again recovers the improved prices should pass along to the miners in the form of increased pay until another period of depression is reached.

CALLS FLEXIBLE AGREEMENT SATISFACTORY

This is the flexible agreement provided in some of the non-union fields. It works out in a way financially satisfactory to both miners and operators. It is, however, wholly lacking at present in the union fields, the wage scale being set by the unions at an arbitrary figure based not upon the profits of the business, but upon what is considered to be a living wage, which figure is predicated not so much on the real cost of living as on the profits which the operator makes when conditions are most favorable, that is on the peak of prices rather than their average or low levels. It takes into consideration none of the losses or bad years which are all too familiar to everybody in the coal industry.

My experience teaches me that human nature is much the same whether employee or employer is concerned. Both are striving to earn a living with the minimum risk of interruption and the maximum return which the business will supply, but our labor leaders seem to feel that they must hide from their membership the losses so frequently encountered by the operators and must only refer to the gains made in exceptional cases as a basis for the demanded pay roll. In business, other than mining, the man who invests his capital expects to, and generally does, obtain a fair rate of interest on his investment, and would not invest his money without such assurance, whereas in the mining business the investor is required to invest his money on a more speculative basis wherein the possible return from the outlay is influenced not only by a much disorganized and widely fluctuating market price, but by an equally uncontrolled labor cost.

Another point which should be brought to the attention of the miner is the fact that he receives more actual benefit by operating continuously at a low wage, or a comparatively low wage, than by sporadic operations at a high wage. If a laborer can be guaranteed employment full time, six days a week, year in and year out, at a comparatively small margin, he is generally much better off financially than a similar worker in a field where the scale of wages is considerably higher, but where the days of operation in the year are greatly reduced thereby.

SAYS CUSTOM IS NO YARDSTICK FOR WAGES

Therefore, we should not, in the question of wages, as you have pointed out in your editorial, judge the present situation by past tradition and return for industry any more than we do so in the question of output and capacity for given operations. Times change continually and the successful worker, be he so-called capitalist or laborer, is the one who adapts himself

elastically to these changes and supplies himself with progressive knowledge as to their cause and effect.

A good example of this state of affairs is evidenced by a statement which I recently overheard at a meeting to the effect that within the memory of the present generation there was a time when candles and lamps were considered to be entirely satisfactory as a means of illumination; that this form of illumination was succeeded by gas light, which was considered at the time to be equally satisfactory, and yet which has fallen entirely into disuse due to the adoption of electric light. Nobody today would be willing to take as a satisfactory means of illumination the lamps of his grandfathers, though his grandfathers considered them entirely adequate, nor should we harp upon the wrongs and rights of the same bygone generation in discussing the conditions as we now find them.

GODFREY M. S. TAIT,

Washington, D. C. Consulting Mining Engineer.

Byproducts of Coal Mining Dubbed As Distinctly Sad

Every evening for the past three weeks or in fact ever since the mine started up after being shut down for about ten months an old man has called at the foreman's office which serves also as an employment bureau. He is well along in years and his hair is silver white. The sight of one eye is gone—the result of an accidental blow from a pick sustained long ago. His face and hands, with their blue scars, plainly show the occupation that he has followed for years. He wheezes also when he talks, which is further evidence of the kind of atmosphere in which he has worked.

Yes, this old man is looking for work but somehow nobody wants him. The foreman's answer to his query is always: "I haven't a thing, Dad, where I could place you. Stop in again some other day and I may have a single place where I could put you."

The old man turns and walks away, only to come back again another day. He never complains but as he goes down the road it is easy to see that he realizes that he is old. He dreams, perhaps, as he wends his way homeward of days that are gone when he was as able-bodied a man as any young "hunk" could ever be.

PAST AGE OF USEFULNESS

After he had gone the last time I saw him, the foreman remarked to me: "It's the hardest thing in the world for me to turn that old fellow down. But what else can I do? He has passed the point of his usefulness in the mines. He isn't fit to work alone and nobody wants to buddy with him on account of his age. What makes it especially hard for me is that I have known him for years. He worked here when I was a trapper boy. And not so very many years ago I hauled coal on his entry. He was some man in those days—could do as much work as any other two men on the entry. But I guess that his case is just what we are all coming to if we follow the mining game."

How true is this last statement of the foreman! What is there in store for the man who follows mining but to be cast aside in his declining years? For there is no old age pension fund in mining as there is in some other lines of industry that are less important.

The above case is typical of that of thousands of men, who after serving for forty or fifty years, have at length become a reject and a byproduct of the coal industry.

Let me say in closing that I hope all who read this will be brought to realize that we are all growing old and that some day we may be in the place of the old man here described. Why cannot some means be provided to take care of these veterans of our industry during life's decline?

J. T. REYNOLDS.

Houston, Pa.

Coal-Mine Maladies Enumerated By Diagnostician

By experience and personal observation I view the condition of the coal operators much as a doctor regards his patients in a hospital. Nearly all operators are afflicted in some way—so are the doctor's patients. Possibly 10 per cent of the doctor's patients are out of danger—same way with the operators.

One operator has "T.B.", or bad ventilation. Accordingly he has to take a few shots in his breakthroughs, clean up his airways, put up airtight brattices, hang good curtains and see that his trapdoors are kept closed. For without air the whole mining system is dead.

Another has kidney trouble; he has no ditches with which to drain his mine water to the proper places, and only a few junk pumps or none at all. He has a number of men engaged in bailing and hauling water. Possibly one-fourth of his outfit is delayed. To effect a cure he must regulate his drainage system by cutting a number of ditches to an advantageous point and place therein an adequate number of efficient pumps.

Still another operator has intestinal trouble, or bad transportation. His output is irregular and the law of average troubles him and causes him worry. He has bad tracks or a lot of worn-out cars of various types. He may have some kidney trouble on his tracks, having no ditches along his haulageway.

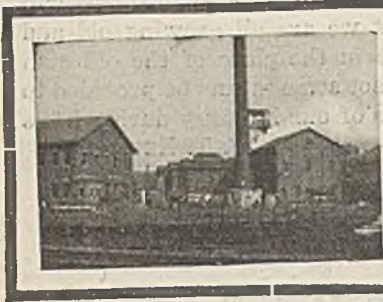
BAD EQUIPMENT—"RHEUMATISM"

Then there is the operator with rheumatism, or a complete installation of bad equipment. He is a hard patient to cure, for he needs a thorough overhauling, as the whole system is affected. He often has large coal and small cars, a long mule haul or an even longer motor haul with bad bonding. He may depend on loose fishplates to carry his return to the generator. He has a bad quality of sand for his motor. He buys any kind of oil for his machinery. He is likely to have a system for pushing motor trips instead of pulling. In his old workings may be found rails, ties and props that could profitably be used over again. In his yards soft wood ties for motor tracks may be found. Part of his equipment may be found in the open without shelter from the elements. The old equipment in use necessitates the hiring of 25 per cent more day men than a plant with modern equipment. This patient does more complaining than all the others, for his whole system is sick. His only remedy is to install modern equipment and to adopt practical mining methods, making use of all the improved devices that have been developed during recent years and which lead to profits.

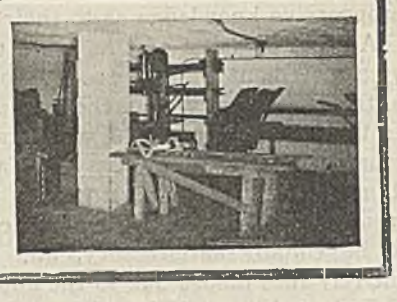
And last, but by no means least, these patients do not understand each other. They are continually nagging one another in competition for the coal markets, thereby greatly prolonging their siege of sickness and time of recovery.

A. M. ALEXANDER.

Clay, Ky.



Practical Pointers For Electrical And Mechanical Men



Electric Soldering Iron Efficiency

While visiting the electrical repair shops of several coal mines I noted the absence of the electric soldering iron. Upon inquiry as to the reason some of the workmen told me that these irons were not satisfactory for the class of work they were obliged to perform around the mines. Some stated that it took the irons too long to heat; others complained of the trouble experienced in having to turn them off and on when they were being used for work which was not as heavy as that for which they were designed; their short life and so on.

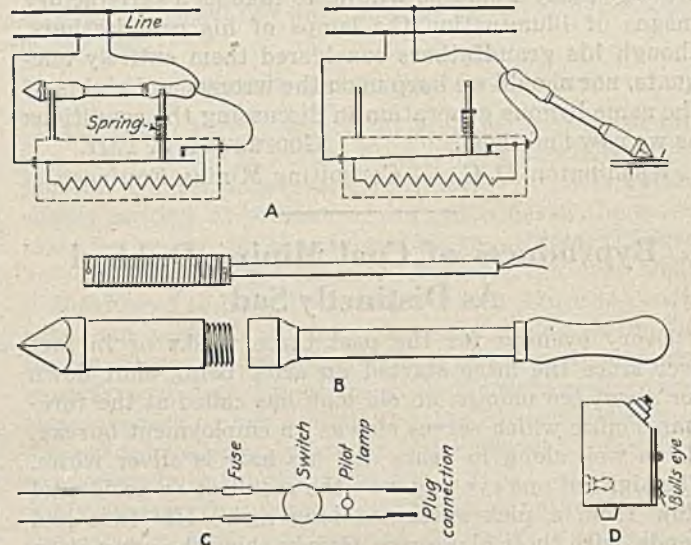
I readily agree that such difficulties may be experienced with the electric soldering iron, as well as with any other tool. Few pieces of equipment are adapted to all classes of work. However, the soldering iron can be made adaptable for most light soldering jobs by the addition of a simple auxiliary resistance such as shown at A in the accompanying illustration.

B shows diagrammatically the construction of the electric-soldering iron. These irons are in sizes which operate at from 75 watts upward; they are seldom made in sizes larger than 275 watts. Such irons are not desirable for extremely heavy work, for the larger the object to be soldered, the faster it will conduct the heat away from the point where it is applied. The heating element of the iron is constructed by winding round resistance wire over a porcelain tube having small grooves to receive and hold the turns in place. A long porcelain neck carries the lead wires out to the end of the handle where they are fastened to the flexible connecting cord.

When a soldering iron must be kept hot for long periods of time or throughout the entire day, it is best to provide a resistor such as shown at A, to limit the current when the iron is not in use or when large irons are being used for long periods on extremely light work. This resistor may be operated automatically or by means of a switch. With the proper resistance in the circuit the iron may be kept hot enough and yet will not reach an excessive temperature. The number of ohms of resistance of the rheostat will depend entirely upon conditions, such as the size of the iron and the class of work being done. A bank of lamps may be used to give the resistance required by connecting them in parallel and adding or subtracting lamps until the correct resistance is found.

When the iron is not in use, it is resting on a holder which cuts resistance into the circuit. When the iron is removed from its holder, a spring forces the contacts together and shunts out the current-limiting resistance. The contacts just mentioned should be made of carbon, thus eliminating the usual pitting experienced where heavy arcs occur.

This automatic arrangement is recommended in preference to switch control as it is only human nature to forget. The extra work required to build the automatic contactor thus will more than repay the effort put forth.



Makes the Regulation Automatic

The human element has been nearly eliminated in this plan to regulate the current supply to an electric soldering iron. The wiring diagram A makes the heat regulation depend upon whether the iron is being used or not.

The national Board of Underwriters recommend that each electric heating device shall have some suitable signal to indicate whether the appliance is turned "on" or "off." An indicating switch will perform this duty. However, in plants where large irons are used it may be found advisable to employ a pilot lamp for this purpose. In the illustration, C shows a special Crouse-Hinds heater receptacle with pilot lamp in parallel with the iron. Pilot lamps are usually red or some special color so the operator can distinguish them from lamps used for ordinary purposes.

Quincy, Ind.

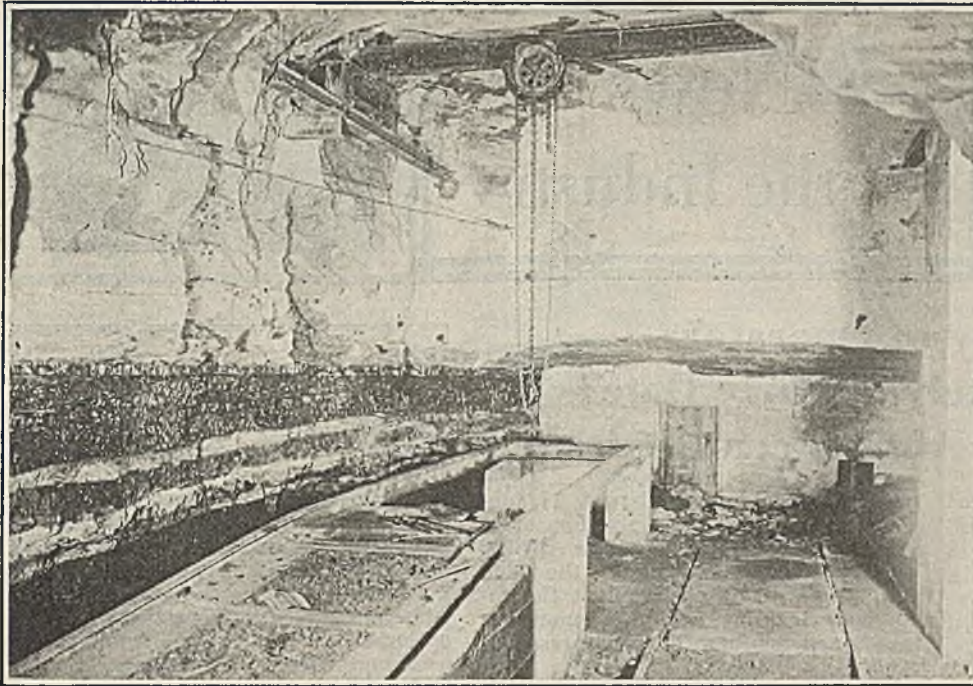
ROYCE L. GRIMES.

Elevated Repair "Pit" Is Always Dry And Affords Good Lighting

Many instances are recalled of seeing a mine electrician working in a repair pit the bottom of which was covered with several inches of water. In such cases, blocks of wood and miscellaneous pieces of plank usually formed the dry but insecure footing. If a nut or other small part was dropped or if a foot slipped there was time out for fishing or perhaps for a little "cussing."

The accompanying illustration shows a repair "pit" where water causes no difficulties. This elevated "pit" was installed recently in the No. 2 mine of the Newcastle Coal Co., Newcastle, Ala. The top of the rail is 30 in. above the floor and the removable sections of 80-lb. rail are 10 ft. in length. Above the pit is a traveling crane with a 1½-ton chain block trolley.

The elevated "pit" is convenient in retrucking a locomotive for the reason that the trucks do not have to



Elevated "Pit" in Newcastle

The removable 80-lb. rails are 10 ft. in length and are 30 in. above the floor. The traveling crane with chain block trolley is approximately 8 ft. higher. Free access from both sides reduces the necessity for a height such as is required in a pit. In re trucking a locomotive the trucks are "dropped" to the floor and are then easily handled. Water will not seep into this "pit" and make it a miserable place in which to work.

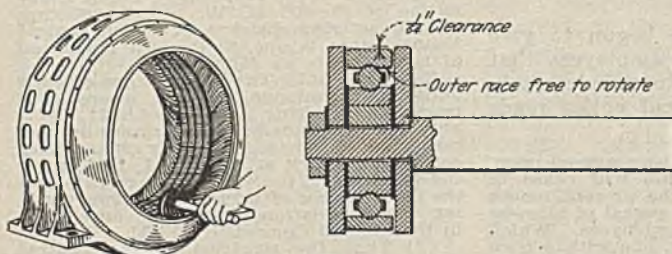
be handled in and out of a pit. They are rolled onto the track adjacent to the pit and then moved sideways to position.

If the arrangement has any disadvantage, it is probably lack of height, nevertheless because of the free access afforded from both sides, but little height is required.

Polyphase Stator Connections Checked By Ball Bearing Tester

If the stator of a polyphase motor needs to be sent to a shop for rewinding it is preferable, usually, to send the whole machine so that it can be given at least a light-load test. There are, however, several ways of proving the stator connections by trial when the rotor is not available.

A method used by the Electrical Engineering Construction Co., of Des Moines, Ia., which firm does considerable rewinding work for mines, is indicated by the accompanying sketch. The tester consists of a single-row ball bearing $3\frac{1}{2}$ in. in diameter mounted between



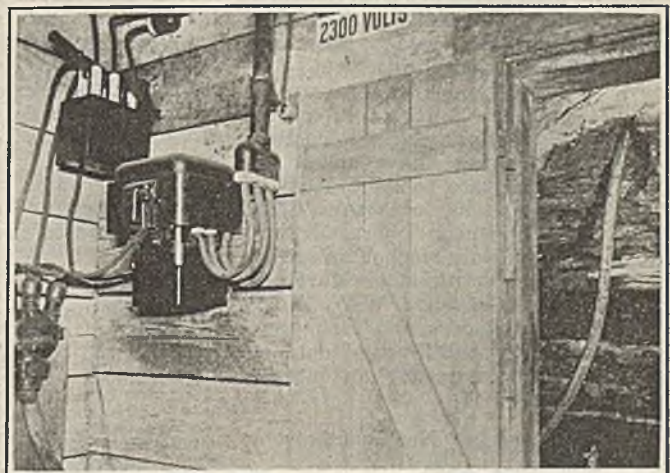
Tester and Method of Using on a Polyphase Stator

The ball bearing and fiber disks are mounted on a fiber handle 6 in. long. The bearing is about $3\frac{1}{2}$ in. in diameter and the disks $\frac{1}{4}$ in. larger. The outer race does not touch the disks and therefore is free to rotate under the influence of the rotating field when the tester is placed against the lamination of an excited stator.

two fiber disks on a fiber handle. Shims on each side of the inner race space the disks so that they will not interfere with the free rotation of the outer race.

The disks are $\frac{1}{2}$ in. larger in diameter than the outer race of the ball bearing, thus providing a $\frac{1}{4}$ -in. air

gap when the tester is against the motor lamination. In making a test the motor is excited from the alternating current supply, but by reduced voltage; the tester taken by the handle and placed against the lamination with the handle parallel to the shaft or axis of the stator. Keeping the tester in the same relative position it is rolled slowly around the inside surface of the lamination. The rotating field causes the outer race of the ball bearing to rotate at several hundred revolutions per minute. If there is a reversed coil or group the ball bearing race will show a tendency to reverse when it passes over that location. If there is a shorted coil the bearing will vibrate and make a chattering sound. The complete test is made in less than a minute on a motor of ordinary size.

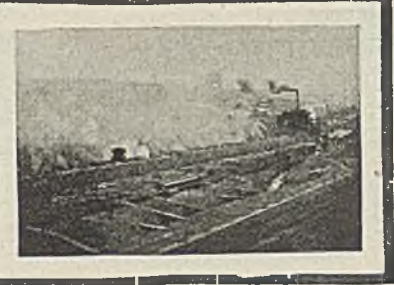


At the Bottom of Borehole in Newcastle No. 2 Mine

Alabama has more slope mines than any other type. For safety reasons the general practice is to keep electric cables off of the haulage slopes. Through the open door at the right can be seen the bottom of a borehole and the armored lead-covered cable which conducts energy into the mine at 2,300 volts. This borehole is 6 in. in diameter, 275 ft. deep and cased only for about 10 ft. at the top. At the extreme left is the pothead terminal of the armored cable. The circuit through one of the oil switches leads to a 200-kw. synchronous motor-generator set and the other to a bank of 2,300/440-volt transformers supplying a pumping station.



News Of the Industry



Second Wage Parley of Operators And Miners Likely at Early Date; No Formal Announcement Issued

The way is being cleared for a second joint conference of operators and miners of the Central Competitive Field to make another attempt to negotiate a wage agreement to succeed the Jacksonville compact, which expires March 31. No specific date for such a meeting, however, has been announced up to the time this issue of *Coal Age* went to press. Late last week it was rumored that the conference would be held at Toledo, Ohio, on March 31, but official spokesmen for the operators and the miners denied knowledge of such a meeting or that a formal call had been issued.

During the past ten days operators' associations have been holding meetings to canvass the situation. Ohio producers met at Columbus on March 10 and reiterated their demand for a continuously competitive wage scale. Central Pennsylvania mine owners, at a meeting at Altoona, Pa., on March 11, gave a qualified acceptance to the proposal of the United Mine Workers that outlying districts continue operations after March 31, paying the Jacksonville scale until a new agreement has been negotiated.

Indiana producers, meeting at Terre Haute, Ind., on March 15, heard their spokesmen at Miami review the situation. Illinois operators will convene at Chicago tomorrow. Several of the outlying districts have held conferences to decide upon a course of action. Iowa colliery owners have asked the miners in their state to meet them to take up the question of wages after March 31. Wyoming operators and district union officials reached an agreement to continue work after March 31 at a meeting at Cheyenne, Wyo., March 8. Montana producers and labor representatives met at Billings, Mont., on March 10 to arrange for an interim understanding.

Union Silent but Not Inactive

No statements have come out of union headquarters at Indianapolis, but the silence is not taken as an indication of inactivity. Considerable headway in reorganizing western Kentucky has been reported from time to time and operators in that section are frankly uneasy. A miners' convention was called at Central City, Ky., on Monday to name a scale committee to confer with the producers. Percy Tetlow, pro-

visional president of district 17, announces an active organization drive in southern West Virginia after April 1.

Following the meeting of the Ohio Coal Operators' Association at Columbus last Thursday, at which reports on the Miami conference were presented by S. H. Robbins, W. H. Haskins, Ezra Van Horn and George M. Jones, Chairman Robbins authorized the statement that it was the unanimous opinion of the Ohio operators that they could not consider any other scale after April 1, 1927, than a continuously competitive one.

"We have no other course," declared Mr. Robbins in a later statement at Cleveland, Ohio, on March 14. "Our troubles are economic. If ever the competitive wage scale is offered, we will be able to open our mines again and compete on an even basis with West Virginia."

Robbins Firm Against Renewal

The declaration of Lee Hall, president of district 6, to a subdistrict convention at Bellaire, Ohio, Monday, that the organization was prepared to ask for another joint conference if the operators would signify their willingness to attend, drew from Mr. Robbins the report that a joint conference would be possible only on the basis of the operators' proposal for the competitive scale. "If the miners hope to renew the terms of the Jacksonville agreement, it will be useless for the operators to meet with them."

Ohio operators have begun to give formal notice to their employees that the mines would close down indefinitely on March 31. A typical notice reads as follows:

As no contract has yet been agreed upon, the mines of eastern Ohio will cease to operate at the close of the present month and there will be another period of idleness for the mines and their employees. Which character of scale is best, one with a high rate which makes it certain that all the business will go to other fields or one of a competitive character that will insure steady employment, is something for all of us to think about. Under the present scale, West Virginia coal can be delivered at from 35 to 50c. a ton less than Ohio.

The Lorain Coal & Dock Co. served notice on its miners at its Lincoln mine that an indefinite suspension would begin on March 14.

The decision of the executive committee of the Association of Bituminous Coal Operators of Central Pennsylvania to continue work after April 1

Says Government Attitude Brought Prosperity

The friendly attitude of the government and the public to America's business contributed to a record-breaking income of \$89,000,000,000 for the American people in 1926, said Gilbert H. Montague of the New York bar, in an address to the National Association of Office Appliance Manufacturers at Atlanta, Ga., March 10.

"This situation," Mr. Montague said, "has resulted from the sound policy that has latterly been adopted by the courts with respect to the interpretation and enforcement of the anti-trust laws.

"Business and the law are today closer in step than they have been at any time since the passage of the Sherman act in 1890.

"The significance of this accomplishment, in the industrial and social life of America, is so great that even now it is not entirely appreciated.

"Unsettlement, anxiety, strain and loss of morale have for generations been a toll that business uncertainty has taken from men, women and children in every station of business and social life."

was embodied in the following letter from Charles O'Neill, president of the association, to John Brophy, district president of the United Mine Workers:

Referring to the proposal of Policy Committee of the U. M. W. of A., affecting certain outlying districts of which central Pennsylvania is one, and which resolution of policy reads as follows:

Resolved: (1) That the officers of each outlying bituminous district, where contracts are expiring as of March 31, 1927, authoritatively advise the operators in their respective districts that their mines may continue at work after April 1, 1927, upon the payment of the existing wage rate and the maintenance of present conditions pending the negotiation of a basic agreement in the Central Competitive Field.

(2) That the situation in the Central Competitive Field be not disturbed for the present, until the officers of each of the Central Competitive Field districts have further opportunity to canvass the situation in their own district and until it is determined whether or not it may later be possible to have another joint meeting of the operators and miners of the Central Competitive Field prior to April 1, 1927.

(3) In connection with this policy, the officers of the outlying bituminous districts are authorized to take up with the respective associations of operators under contract with the United Mine Workers of America the question of agreement to this policy. They are further authorized to take up this question with operating units not members of associated groups of operators who are under contract with the

United Mine Workers of America. In the event that associated groups of operators in the outlying districts decline to agree to work their mines after April 1, 1927, pending a settlement in the Central Competitive Field, the question of further action in this specific matter shall be deferred until the next meeting of the International Policy Committee prior to April 1.

The Association of Bituminous Coal Operators of Central Pennsylvania, by authority of its Executive Committee, elects to accept your proposal to continue at work after April 1, 1927, under existing rates of wages; observing present conditions, pending negotiations by and for the central Pennsylvania district looking toward a definite wage agreement. It is to be distinctly understood, however, that this arrangement may be terminated at any time by this association, or by any individual member acting on its own behalf, and that this acceptance does not commit this association or any of its members to any definite extension of the present wage scale agreement or to any agreement which may hereafter be made between the United Mine Workers of America and any other district or group of operators.

Union May Call Out Key Men

Union officials in southern West Virginia claim that the organization now has about 5,000 members in that part of the state. Most of these are said to be in Kanawha district. In addition, there are many non-member workers friendly to the organization who will follow the union lead. For that reason it is stated that the union will be able to accomplish its aims by calling out key men in key companies if operators decline to sign contracts with the organization when the unionization drive gets under way.

That operators will resist such a movement is a foregone conclusion. As a first step, copies of the injunction issued by the U. S. District Court at Charleston on Aug. 5, 1922, declaring certain organization activities illegal, are being posted in the Kanawha, New River and Winding Gulf fields.

Mines Awarded Holmes Association Certificates For Exceptional Safety Records

Instances of the operation of mines over long periods of time with exceptional safety have been commemorated by the Holmes Safety Award Committee of the Joseph A. Holmes Safety Association in the awarding of certificates to two coal-mining operations whose records show the production of great tonnages of coal without a fatal accident and to a metal mine and a stone quarry where no employee lost even as much as a day's time because of injuries.

A certificate was awarded to No. 6 mine of the United States Coal & Coke Co., at Gary, W. Va. This mine was operated for almost ten years, from Feb. 24, 1917, to Dec. 31, 1926, without a fatal accident. During this period 606,072 man-shifts, or approximately 5,455,000 man-hours, were worked by the underground employees of the mine, and 214,667 man-shifts, or approximately 1,932,000 man-hours, were worked by the surface employees of the mine. The production of coal during this time totaled 6,030,862 net tons.



The Misfortune Teller

—Paterson Morning Call.

The Marquette & Bessemer car ferry across Lake Erie, between Conneaut and Port Stanley, began the season of navigation on March 7. A large amount of bituminous coal for Canadian delivery is carried annually by this route.

The Michigan-Ohio-Indiana Coal Association through its Columbus office is distributing the 1927 year book, which contains much valuable information for the dealer, shipper and producer of coal. This year's book is more extensive than in former years and gives statistical data on many phases of the coal trade, not only in the Middle West but throughout the country at large.

National Council to Discuss Coal-Mine Insurance

Discussion of coal-mine insurance will be resumed on March 24 at the office of the National Council on Compensation Insurance, New York City, according to a call for a meeting issued to the special committee on coal-mine rates. The meeting was called at the instance of Colonel Joseph Button, commissioner of insurance of the State of Virginia and also chairman of the commissioners' committee, who will meet with the committee.

In issuing the call for the meeting, Colonel Button said: "The result of the committee meeting, Feb. 17, 1927, was communicated by us to the chairman of the commissioners' committee. He is of the opinion that the committee should go a step further and formulate plans for taking care of the situation in particular states in case the emergency there existing is not in fact taken care of, also with a view to the contingency which might arise should present carriers become dissatisfied with the situation and decide to withdraw. He indicates also a desire to present his views to the committee personally."

British Coal Firms Merged

The Amalgamated Anthracite Collieries, Ltd., and the United Anthracite Collieries, Ltd., two of the largest producers of anthracite in Great Britain, have been consolidated, with Sir Alfred Mond chairman of the board of directors. This represents the consummation of nearly three months' effort in working out details of the deal, announcement of a provisional agreement to merge the companies having been printed in *Coal Age* Dec. 30, last.

The two companies control twenty-one collieries and the properties have a combined area of more than 22,000 acres, located in South Wales. Their total output is said to represent nearly 70 per cent of the highest grade anthracite produced in the South Wales field. The capital of the amalgamated companies will be £4,445,014.

Esch's Reappointment Urged

Reappointment of Interstate Commerce Commissioner John J. Esch of Wisconsin, upon the expiration of his term on Dec. 31, next, was urged upon President Coolidge last week by Chairman Parker and other members of the House Interstate Commerce Commission.

Many Mine-Car Bids Sought

The Norfolk & Western has awarded a contract to the Ralston Steel Car Co., Columbus, Ohio, for rebuilding 1,000 hopper cars of 57½ tons capacity.

The H. C. Frick Coke Co. has inquiries out for 1,284 mine cars.

The Buckeye Coal Co., Nemacolin, Pa., is inquiring for 400 mine cars.

The New River & Pocahontas Consolidated Coal Co., operating in West Virginia, is making inquiries on 200 mine cars.

The Joseph A. Holmes Safety Association is named in honor of the first Director of the U. S. Bureau of Mines, now deceased. Its principal aim is to further the cause of safety among the million miners of the United States.

Reading Lease of L.&N.E. Is Rejected by I.C.C.

Proposed lease of the Lehigh & New England R.R. by the Reading Co. for 999 years was rejected March 9 by the Interstate Commerce Commission on the ground that it was not in the public interest. The Commission indicated that conditions pointed to the ultimate disposition of the Lehigh & New England, which was described as a "strategic line," by consolidating it with a New England system.

While apparently there is no present disposition on the part of the New York, New Haven & Hartford to seek control of the Lehigh & New England, the Commission declared that such control would have many advantages as compared with acquisition by one of the rival trunk-line systems.

The Lehigh & New England operates about 219 miles of line in northeastern Pennsylvania, northern New Jersey and southeastern New York. It connects with the Reading, the Delaware, Lackawanna & Western, the Lehigh Valley, the Central of New Jersey and the Pennsylvania.

The purpose of the Reading in seeking the lease, as represented to the Commission, was to facilitate movement of freight from points on the Reading and its connections to those on the Lehigh & New England. At present the coal traffic originating on the Reading moves to New England principally through Jersey City, thence by barge. The Reading agreed to pay \$1,069,000 yearly rental for the line.

The Baltimore & Ohio intervened in favor of the proposed lease, while the Western Maryland also intervened for the purpose of protecting its present route to New England by way of the Reading and the Lehigh & New England. The vice-president of the New Haven testified to the interest of his company in the maintenance of the New England as an open route, emphasizing what he declared to be the increasing difficulty of moving traffic through the New York harbor routes.

The Pennsylvania intervened in opposition to the merger upon the general ground that its approval would endanger the availability of the route over the New England and might give an undue advantage to its principal competitors, the New York Central and the Baltimore & Ohio. It questioned the sufficiency of any stipulation that might be written into the lease looking to the permanency of open routes for its traffic over the New England.

Coal Traffic on Pennsy Over 110,000,000 Tons in 1926

The Pennsylvania Railroad in 1926 handled 244,052,427 tons of freight, an increase over 1925 of 15,163,062 tons, according to a statement issued last week. The tonnage last year was the largest in the company's history with the exception of that of 1923, which exceeded it by a narrow margin. Carload traffic last year accounted for 237,590,849 tons and less than carload lots for 6,461,578 tons.

Products of the mines amounting to

Fuel Economy Record Clipped by Railroads

Class 1 railroads of the United States consumed an average of 137 lb. of fuel in 1926 to haul 1,000 tons of freight and equipment, including the locomotive and tender, a distance of one mile. The previous record was made in 1925, when the average was 140 lb. This improvement in efficiency was revealed in statistics published last week.

A record efficiency in the conservation of fuel also was shown for the passenger service, the average amount for the year used in such manner having been 15.8 lb. to move each passenger train car one mile. The previous record also was made in 1925, when the average was 16.1 lb. In 1920 it was 18.8 lb.

The class 1 railroads in 1926 used for road locomotive fuel 101,007,549 tons of coal and 2,067,272,099 gallons of fuel oil. These amounts were somewhat larger than in 1925, due to increased traffic.

153,594,289 tons furnished nearly 63 per cent of the aggregate and included 99,182,673 tons of bituminous coal, 11,441,526 tons of anthracite and 20,668,871 tons of clay, gravel, sand and stone. The following classifications totaled the amounts following them: Manufacturers and miscellaneous products, 61,740,600 tons; products of agriculture, 10,552,747 tons; products of forest, 9,397,384 tons, and animals and animal products, 2,305,829 tons.

Notwithstanding the great preponderance of mineral traffic, more than three-fifths of the total freight revenue, of approximately \$504,000,000 was derived from merchandise, which yielded nearly \$330,000,000. Bituminous and anthracite combined produced a little less than \$140,000,000.

Pittsburgh Coal Co. Reports Deficit for 1926

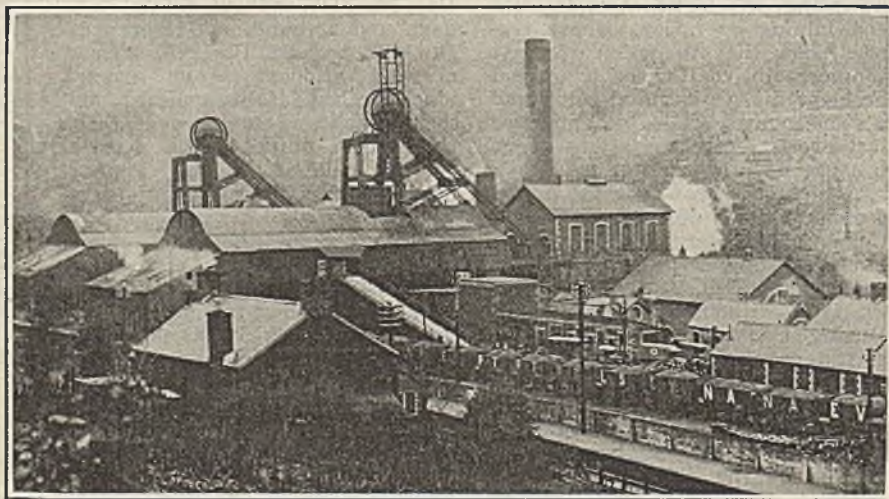
The Pittsburgh Coal Co. and subsidiaries in 1926, according to the consolidated income account in the annual report, had a net loss of \$2,114,676, subject to federal taxes, against a net loss of \$1,266,940 in 1925. The deficit for 1926 was the same amount, and that for 1925, after preferred dividends of \$2,100,000, was \$3,366,940. Gross receipts in 1926, including \$548,568 profit on the sale of capital assets, were \$37,258,548, against gross receipts of \$33,832,177, after \$651,053 profit on sale of capital assets, in 1925.

Total assets as of Dec. 31, 1926, were \$156,518,240, as compared with \$158,262,244 at the end of 1925 and \$164,634,964 at the end of 1924. The earned surplus was \$12,663,575 at the end of 1926, against \$14,918,573 and \$19,701,975 at the end of the two previous years.

Island Creek Coal Co., operating in West Virginia, for year ended Dec. 31, 1926, reports net profit of \$2,924,703 after interest, depreciation, depletion, federal taxes, etc., equivalent after \$6 preferred dividend requirements to \$22.11 a share (par \$1) earned on 118,801 shares of common stock. This compares with \$2,210,949, or \$16.09 a share, in 1925.

The report of the Lehigh Valley Coal Co. for 1926 shows a net income of \$3,526,813, after all charges and taxes, equivalent to \$2.91 each on the 1,212,160 no par certificates of interest outstanding. This compares with \$101,683, or 8c. on each certificate in 1925, and represents an increase of \$3,425,130.

The statement of the Clinchfield Coal Corporation for 1926 shows a net income of \$391,211 after federal taxes, preferred stock sinking fund and other charges, equal, after preferred dividends, to \$2.07 a share earned on 150,000 common shares outstanding, against \$445,521, or \$2.51 a share, earned on 145,476 common shares in 1925. Total assets as of Dec. 31, 1926, were \$22,090,403, against \$22,445,980 in 1925. The profit and loss surplus was \$3,410,915, against \$3,523,031.



Scene of Welsh Colliery Disaster

General view of top works of the Marine colliery, at Cwm, Monmouthshire, Wales, where, according to the latest reports, fifty-seven miners were killed in an explosion on March 1. When the explosion occurred there were 135 workers in the mine.

Wide World Photos.

Likelihood of Long Strike Foreseen In Washington as Pressure for Peace Prevailing Three Years Ago Is Absent

By Paul Wooton

Washington Correspondent of *Coal Age*

Attention has been called in Washington to the fact that some of those who were most critical of the alleged part played by the federal government in maneuvering the operators into the signing of the Jacksonville agreement now are most insistent that a continuation of the scale be signed. While it always has been denied strenuously in government quarters that the administration gave support to any terms of settlement three years ago, it is pointed out that there is no such necessity for signing an agreement at this time, as was the case in 1924. At that time, it is declared, business was hesitating and a prolonged strike might have caused serious damage to the whole commercial structure. The signing of that agreement, it is now apparent, allowed business to concentrate on its own stabilization until now it is relatively unimportant, in so far as general business is concerned, whether or not there is a suspension of production at union mines.

It is reported here that there will be no suspension of the soft-coal mines west of the Mississippi River. The desire of both the operators and the miners in that territory is said to be to continue working under the present terms until a decision is reached in the union strongholds in the East. This narrows the region of uncertainty to the territory east of the Mississippi and north of the Ohio and Potomac rivers.

In this area Washington is less certain as to the attitude of the operators than that of the union. The union seems to have burned its bridges behind it so far as the acceptance of a reduction from the Jacksonville scale is concerned. It will renew that agreement eagerly, but will fight rather than take less.

As far as the operators are concerned the attitude of the dominant groups in the East seems to be clearly against a renewal of those terms. Most of the Pittsburgh district is preparing to go non-union. Most of eastern Ohio will shut down rather than sign. The great uncertainty centers on the possible position of the Illinois and the Indiana operators. It is believed likely that they will sign, protected as they are by a larger differential in freights. If they do it is expected that the struggle then will resolve itself into an endurance test between the op-

erators and the union miners of the Eastern fields.

With the West and the anthracite region working and with the power to levy assessments, granted to the international union by constitutional amendment at the last convention, the mine workers are in a position to fight doggedly and to inflict cruel punishment on those operators whose working forces still are made up of union men.

It is conceivable that in Ohio the struggle may last nearly as long as did the famous strike over the mine-run war in 1914, which dragged along for fourteen months. In such a localized struggle the effects would not be felt nationally. With the West and the Middle West going and the non-union district pouring coal into the lake and New England trades, consumers would be able to get all the fuel they want.

If, on the other hand, Illinois and Indiana refused to renew, the area of conflict would be widened to include the whole Central Competitive Field and perhaps the remaining union organization of the East.

No Fear of National Crisis

The feeling in Washington is general that even were the struggle to assume this larger aspect it would be unlikely to force a national crisis. The non-union fields have demonstrated that they can produce 9,000,000 tons of coal a week and the railroads serving them have demonstrated that they can haul this coal to market. There are hundreds of mines in the non-union fields which have been shut down in the last two years which could resume at any time the price might warrant it. Moreover, it is known that many of the large low-cost mines have the equipment on hand ready to take full advantage of any suspension which may take place in the mines of their competitors. This would add materially to the potential production in non-union territory.

The country will enter the strike with the largest stocks in history—enough to withstand a weekly drain of 1,000,000 tons for forty weeks before reaching the danger point. There is, of course, the uncertainty as to the behavior of the miners in the non-union fields. There are at least 50,000 and probably 100,000 miners who at one time belonged to the United Mine Workers who now are working in non-union mines. The big question is will they go out if a general suspension is ordered. Many thousand miners walked out in the Connellsville, Somerset and adjacent districts five years ago.

Washington realizes that should these men go out, as they did in 1922, the country once more would feel the

British Trade Reviving

Notable improvement in British industry following the termination of the coal strike is reflected in a decrease of approximately £8,000,000 in excess imports during February, last, according to a report by the British Board of Trade.

While the industrial situation in Great Britain is still far from satisfactory, a revival of considerable proportions seems to be under way.

power of the United Mine Workers, even if it did not have to acknowledge it as the late President Harding did when he declared the country to be at the mercy of the United Mine Workers. As to the possibility of a general response to a strike call, the Washington attitude is one of skepticism.

Report New Plan Under Way To Dispose of B. R. & P.

Further negotiations in connection with the disposition of the Buffalo, Rochester & Pittsburgh Ry. were indicated as under way last week when a persistent rumor was in the air that a conference took place between General W. W. Atterbury, president of the Pennsylvania; Leonor F. Loree, president of the Delaware & Hudson, and Patrick E. Crowley, president of the New York Central. The conference was reported to be on Eastern railroad consolidation in general and the B. R. & P. situation in particular.

The Buffalo, Rochester & Pittsburgh, having freed itself from an option held until recently by the Delaware & Hudson, whose application to lease it still pends before the Interstate Commerce Commission, is considered a "bone of contention" over which the trunk lines in the East are fighting. In view of the refusal of the B. R. & P. to extend the Delaware & Hudson option, and because of the Commission's failure thus far to hold further hearings in the lease case, as it ordered, it is assumed generally that the Pennsylvania, Delaware & Hudson and New York Central are planning to proceed in effecting an independent solution to the problem.

The New York Central is considered in connection with the B. R. & P. not so much as a bidder for the latter properties but as a deeply interested observer looking after the interests of associated parties. This is taken to mean the Baltimore & Ohio, which is regarded as the logical contender for the B. R. & P.

Mention was made of the Lehigh Valley in connection with the reported conference, on the possibility that this road is being considered in connection with an alignment which will work to the satisfaction of all the large Eastern systems. Further, it was suggested, a conference between the heads of possibly the three roads most concerned in the present matter was called as a forerunner to another of larger scope both as to attendance and objects.

EDITOR'S NOTE—The foregoing Washington letter reflects certain views of official Washington. Due to the fact that policy as a rule prevents government officials from permitting their views being quoted directly, the authority for these reports is necessarily somewhat vaguely referred to. The views reflected are not those of any one group of officials, but of different men, in the legislative and executive departments. There is no necessary connection between their views and COAL AGE editorial policy; neither do they necessarily represent Mr. Wooton's personal views.

Seabury Would Have An Age of Psychology Follow That of Steel

That there is no business psychology nor will there ever be, till business men contribute their experience to develop such a study, was the dictum of Dr. David Seabury at the twenty-fifth annual dinner of the League for Industrial Rights, held in New York City, March 10. Dr. Seabury added that other scientific developments helped by the advice and the finance of business had made immense progress, but psychology had remained in the hands of pedants who still spoke an incomprehensible language and could split a hair eight ways.

The age we were approaching would be, he said, the psychologic age, in which man would be "studied" as effectively and intensively as machinery. Scientific selection of employees, he said, is an important phase of modern business. The employment of men with active brains as laboring men could result only in discontent. They should be directed into employments where their brain could be used effectively.

Character, which is the product of the blood stream of one's ancestors, cannot be changed. A cabbage is always a cabbage; whether a sick or a healthy cabbage depends on environmental influences. Disposition differs from character in being a product of environment. It is, said Dr. Seabury, the outcome of social contacts and could be directed, but the cumulative effect of past contacts—background—made even the disposition difficult to change. A study of men's dispositions and their causes would enable industry to increase human efficiency, now often at a lower ebb than most people imagine. Some have said that humanity is operating mentally at only 10 per cent efficiency.

Other speeches were made by Walter Gordon Merritt, associate counsel of the League, on the progress made in the last quarter century in the determination of industrial rights by the courts with the aid of the League and otherwise, and by Homer Hoch, a Representative from Kansas in the House, who declared that the difference between the western and the oriental civilization lay in the development of the individual in the one and the dominance of the institution in the other. With the intensification of contacts between all parts of the country, which had made it one vast neighborhood, came the necessity to adjust those contacts without weakening individual initiative.

Other speakers were Willis H. Booth, vice-president of the Guaranty Trust Co., who spoke for the New York Chamber of Commerce; Magnus W. Alexander, director, National Industrial Conference; William J. Cronin, secretary, New York & New Jersey Branch of the National Metal Trades, and J. A. Emery, National Association of Manufacturers, who spoke on behalf of those bodies. All testified to the work of the League in clarifying the industrial situation. Mr. Alexander declared that it was necessary to keep ever in mind that with the rights of person and of property went obligations to both. He said that industry could not find sufficient precedents in the past and so must

All Rail Ills Not Cured By Mergers, Says Kahn

Otto H. Kahn, of the New York banking firm of Kuhn, Loeb & Co., who is in England, was quoted March 9 in an interview, by Dow, Jones & Co., as declaring himself "opposed to the idea of railway mergers as a panacea for all railway ills."

"It is a mistaken notion to imagine that mergers necessarily mean more economical management or advantages for the consumer," he was quoted as saying. "The most important factor is personal equation. When a line gets too unwieldy for one competent head to supervise, it tends to lose its efficiency. A board of subordinates cannot replace the head effectively. Amalgamations have become a craze, but there is a too general tendency to overlook the benefits from responsible, personal management, and the fact that most real economies result through the urge of competition."

greatly venture to make its own. Judge Daniel Davenport, senior counsel of the League, was toastmaster and William Fellowes Morgan presided.

Fuel Consumed by Utilities Declines in January

Public utility power plants in the United States consumed 3,801,343 tons of coal during January, last, according to a report by the U. S. Geological Survey. This compares with 3,845,575 tons used in the preceding month, revised figures show. Fuel-oil consumption by these plants in January totalled 782,829 barrels, against 800,567 barrels in December.

Total coal consumption by such plants in 1926 was 41,304,000 net tons, a gain of 2.7 per cent over 1925, and 9,376,000 barrels of oil was used, a decline of 8.5 per cent.

The average daily production of electricity by public-utility power plants during January was 216,600,000 kw.-hr., a decrease of about 1 per cent from the revised figure of average daily output for December of 219,200,000 kw.-hr. The total output for January was 6,714,000,000 kw.-hr., an increase of about 10 per cent over the output for January, 1926, which in turn was 10 per cent over that for January, 1925.

The total annual production of electricity by public-utility power plants in 1926 was 73,398,000,000 kw.-hr., an increase of 11.4 per cent over the output for 1925. Of this quantity about 35 per cent was produced by the use of water power, an increase of 1 per cent over that for 1926. Electricity produced by the use of fuel increased 9 per cent, and electricity produced by water power increased 16 per cent. It would have required more than 25,000,000 tons of coal to generate the electricity produced by water power.

Unjust Rate Spread Charged In Washington Complaint

The Potomac Electric Power Co., Fadeley & Co., coal wholesalers of Washington, and Agnew & Co., coal retailers, filed a brief with the Interstate Commerce Commission, March 11 declaring that the freight rate of \$3.13 per ton of coal from West Virginia mines applied to all Baltimore & Ohio deliveries in the District of Columbia and to Benning, D. C., on the Pennsylvania, is unjust and unreasonable.

Through C. R. Marshall, attorney for the complainants, they contend that the present practice of applying a rate of \$2.84 on the Pennsylvania and Chesapeake & Ohio in the District of Columbia, except to Benning, and except to deliveries on the Baltimore & Ohio is unduly prejudicial, and that a just, reasonable and non-discriminatory rate for the service would not exceed \$2.84. Many precedents were cited in the complaint to justify the claim that a \$2.84 rate should apply.

At the same time supporting briefs were filed by several operators' associations in West Virginia and by other rail carriers serving competing territory. The Pennsylvania, in another brief, claimed the rate of \$3.13 would be subnormal if lowered, citing many precedents for its claim.

Claims of all the complainants and intervenors were heard before an Interstate Commerce Commission examiner several weeks ago.

The Interstate Commerce Commission has made a report in Docket 17524, John A. Whittemore's Sons vs. New York, New Haven & Hartford Ry. et al., dealing with rates on anthracite to various Massachusetts points. Its conclusion is that such rates to West Roxbury, Mass., are not unreasonable or unduly prejudicial. It finds, however, that the rates on this product to Bemis Station, Watertown, Mass., and on bituminous coal to Roxbury, Boylston Street and Forest Hills, Mass., from points in Pennsylvania and West Virginia, while not unreasonable are unduly prejudicial. The Commission says that the rates to Bemis should not exceed the rate applied to other stations in Watertown, Mass.

In decision in Docket 16678, Chamber of Commerce of Beaver Dam, Wis., et al. vs. C. M. & St. Paul Ry. Co., et al., rates on coke, bituminous coal and anthracite from certain Eastern points to Beaver Dam are found not unreasonable or unduly prejudicial and complaint is dismissed. The bituminous coal originated at points in West Virginia, Virginia and Kentucky in Groups 1 to 6, the anthracite at Wilkes-Barre, Pa., and the coke at Turkey Knob, W. Va., and Connellsville, Pa.

The Eastern Ohio Coal Operators' Association held its regular annual meeting in Cleveland March 14 and re-elected all the officers except that William F. Kutz was chosen a member of the executive committee in place of C. W. Troll. D. F. Hurd is serving his tenth term as secretary. The meeting was devoted largely to routine business.



News Items From Field and Trade



ALABAMA

Operators Buy Railroad.—The I. O. Drewery Contracting Co. and the Manchester Coal Co., operating respectively the Sunlight and Manchester mines, in Walker County, have purchased the Alabama Central R.R., a private line which serves these operations, according to report from Jasper. This line is about fifteen miles long and taps the main line of the St. Louis & San Francisco R.R. at Jasper. A new mine is being opened by J. E. Ross, at Manchester, and other developments along the line are contemplated.

COLORADO

The Mascot coal mine, near Mathe-son, has been leased by the Eagle Coal Co. of Florence, with J. T. Williams and J. Rees in charge. It is the intention of the company to install an electric generator and electrical mining machinery in the near future.

One of the important bills affecting the coal industry now on the calendar of the Legislature is a workmen's compensation measure which proposes to increase the death allowance from \$3,700 to \$10,000. Benefits for injuries also would be raised about 25 per cent by the bill.

ILLINOIS

Fire which was discovered in the Clarkson mine at Nashville, Ill., during the night of March 7, has resisted all efforts to extinguish it. The section in which fire started has been sealed and barricaded in the hope that the fire will burn itself out. That process probably will require many weeks. Several years ago fire started in the mine and gained such magnitude that it was necessary to barricade and seal the entire southern section of the workings and that portion of the mine is still unused.

The Coal Operators' Association of Illinois will meet at the Great Northern Hotel in Chicago, March 18, to hear a report of the Miami conference and to consider the future. The meeting was originally scheduled to be held March 11 but was postponed because of the absence of several of the members.

The Panama Coal Co., Panama, set a new record for production at its mine on March 7, when 4,108 tons of coal was hoisted in one day. The previous record, 3,600 tons, had been equalled on three successive preceding days. This record production required 1,490 trips of the hoist.

The St. Paul railroad is expected to close its mine at Cherry permanently in the event of a mine suspension in

the union bituminous coal fields on April 1.

The Missouri Pacific R.R. is surveying for a strip coal territory tap line from a point near Harrison to Pinckneyville.

The Cripple Creek mine, located twelve miles south of Canton, will soon be reopened under new management. The mine was closed in April, 1925, and six hundred men were thrown out of work. This mine has 2,500 acres of coal land available for mining.

United Electric Income Gains.—The net income of the United Electric Coal Cos. for the six months ended on Jan. 31 was \$368,363, after taxes and charges, comparing with \$290,519 in the same period of 1925. The net income for the quarter ended on Jan. 31 was \$199,241, after the same charges, against \$181,264 in the same period of the previous year.

KENTUCKY

Large Acreage Sold.—From Pikeville it is reported that a large land deal has been closed, whereby properties of the bankrupt York Coal Co., were sold at Warren, Ohio, to the Stiles Lumber Co., of Virginia, which came into title to several thousands of acres of coal and timber land on Robinson Creek, fifteen miles from Pikeville. It was reported that the property was sold for approximately \$100,000.

Creditors of the Continental Car Co. of America, Louisville, manufacturers of mine cars, truck bodies, etc., have filed a receivership proceeding against the concern in the federal court at Louisville. The company lost its manufacturing plant in 1925 by fire, collected a large amount of insurance, and made arrangements to continue production through the Kentucky Wagon Mfg. Co.

To Expand L. & N. Yards?—The Louisville & Nashville Ry. is contemplating the expansion of its present freight yards in the vicinity of DeCoursey and Spring Lake and possibly the removal of its Covington repair shops to the former location.

OHIO

To Amend Mining Code.—House Bill No. 261, which includes a number of amendments to the state mining code providing for greater safety, has been reported out of the committee on mines and mining of the House of Representatives and is on the calendar for final action on March 22. Sentiment is favorable to the passage of the bill, although operators have some minor amendments which will be offered on the floor when the bill is up for passage.

One of the chief provisions is for the use of rock dust in dangerous places in mines.

After a six months shutdown the C. A. Mullen Coal Co. has resumed operations at its mine near Crooksville, employing about 75 men.

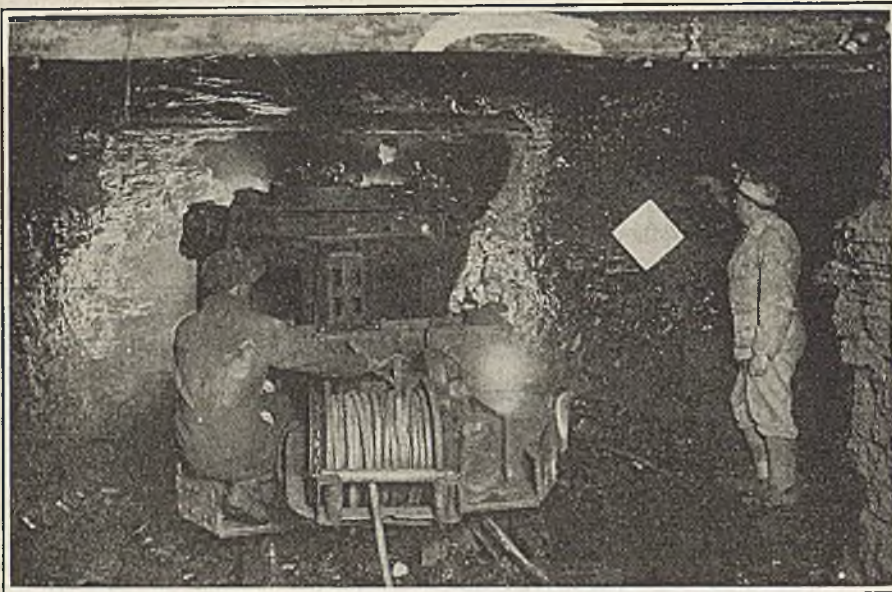
Safety Meet Off.—The Ohio Department of Mines will make no provision for holding the usual safety field day this summer, in view of the likelihood of a suspension of mining in Ohio after April 1. Efforts are being made to sell the "Black Diamond," the mine-rescue car which has been in use in Ohio for years. The department now has five motor trucks equipped for rescue work and it is planned to install an additional crew, to be located in Columbus.

PENNSYLVANIA

An explosion wrecked the Newborn mine, owned by Samuel Brown of Indiana, Pa., which is located near the Carrolltown Roads station, in northern Cambria County, on the night of March 8. The explosion or blast occurred about 1,000 ft. from the entrance where the height of the mine is 30 ft. and the roof solid rock. No men were at work at the time. The mine was filled with rock and it will require considerable time to remove the debris. Approximately 100 ft. of workings were damaged and the mine is closed pending its clearing and an investigation to determine the cause.

Present Compensation Amendment.—The administration bill to amend the workmen's compensation act of 1915 and providing for increases in weekly payments, was introduced in the Legislature last week and reported out of committee with an affirmative recommendation. The bill was offered simultaneously in the Senate and House. The bill is said to have the approval of legislative representatives from organized labor. The minimum weekly payments are increased by the bill from \$6 to \$7 and the maximum from \$12 to \$15. The waiting period is reduced from ten to seven days. The total disability claim is raised from 60 to 65 per cent of the annual wages of the injured employee. The maximum amount that may be paid for total disability is increased from \$5,000 to \$6,500. A 20 per cent increase is provided for the maximum sum that may be paid to widows and widowers.

Protest Anti-Pollution Bill.—Opposition to the Beidlespacher bill, providing for elimination of stream pollution by giving the State Sanitary Water Board broader powers, was voiced by representatives of the coal industry,



Approaching the Cutting Position at the End of the Entry

The conductors of the parallel-duplex cable have been hooked to the trolley and rail at the point where the trolley ends; the cable is being paid out as the arc-wall cutter is trammed to position. The photograph was made in the Westbourne mine of the Royal Blue Coal Co., at Westbourne, Tenn. It indicates the high coal found at some points in the Jellico seam.

the pulp and paper manufacturers, tanners and others at a hearing at the Capitol, at Harrisburg, March 8. S. A. Taylor, Pittsburgh mining engineer, said that the bill, if enacted, would produce no benefits and would ruin the bituminous coal industry. To carry out the provisions of the bill would add 55c. to the cost of each ton of coal, he asserted. Pennsylvania bituminous operators are sufficiently handicapped, he said, by the Interstate Commerce Commission rail rate. Daniel T. Pierce, of New York, vice-chairman of the Anthracite Operators' Conference, said that the bill would be equally disastrous to the anthracite industry.

Open-Shop Men's Homes Dynamited.—An eight-room double frame house containing two families of miners employed by the Pittsburgh Coal Co. at Moon Run was wrecked by dynamite March 9. Nearby residents reported hearing a second explosion followed by a fusillade of shots. No one was injured, however. The company has been operating its mines open shop since 1925.

Within the next month the state is to have a new arrangement of mining affairs. After the Legislature adjourns the Governor hopes to have one bureau devoting its attention to the soft-coal industry and another to the anthracite mines. Each bureau will have charge of inspection work in each coal field with the two agencies working directly under a Secretary of Mines. Governor Fisher believes the new system will be more effective generally.

Receiver for Hastings Company.—On a bill in equity filed by J. G. Miller & Co., a Delaware corporation, Judge Thompson, of the U. S. District Court at Philadelphia, last week, appointed A. M. Dinsmore receiver in equity for the Hastings Coal & Coke Co., which owns and operates a coal mine at Kinport, Cambria County, with principal office in Philadelphia. The Miller company owns all of the \$100,000 capital

stock of the Hastings company, and also is liable as indorser on \$49,850 of the Hastings company's notes. The liabilities of the defendant company are estimated to exceed \$100,000, and while exact figures are not given as to its assets, it is stated they exceed the debts at book value, but as the company is short of ready cash, the appointment of a receiver to conserve the assets was necessary.

Bituminous coal transported by the Reading Co. during January, last, totaled 2,171,120 gross tons, compared with 2,303,939 tons in the corresponding month of the preceding year.

Nanticoke Miners Get Back Pay.—Nearly fifty miners employed in the No. 7 colliery of the Susquehanna Collieries Co., Nanticoke, are to receive about \$1,000 each in back pay as the result of the adjustment of a three-year old grievance last week. The dispute arose over the rate of pay received by miners in a certain vein of No. 7 mine. The men contended that they were working in a twin seam and that they should be paid a higher rate than miners working in a single seam. The case was taken up by the entire anthracite conciliation board and referred to Umpire Charles P. Neill.

The Pittsburgh Coal Co. during the week ended Feb. 26 produced 121,254 tons of coal in the open-shop mines in western Pennsylvania, a gain of approximately 6,000 tons over the preceding week. This figure is not a record, however, due to the heavy fall of snow that cut down production during the period. There was an average of 5,463 men at work in the mines during the week, the company announced.

Rescues 70 Miners from Cave-in.—Seventy miners entombed in the Dorance colliery of the Lehigh Valley Coal Co. on March 2 were rescued after three hours through an old working, all safe but one man, who suffered an injured ankle. The men were working 800 ft. below the surface. A runaway

trip on a slope tore down timbering, and a roof cave extending nearly 100 ft. followed, completely blocking the main galleries. Finally John Abraham, mine foreman, reached the men and pulled them through a manhole.

Powell Sponsors Coal Bills.—Representative O. J. Powell, Northumberland County, sponsored two coal bills introduced in the House last week. One, an amendment to the act of 1921, provides that anthracite inspectors appointed by the Governor need not reside in the district for which they were appointed. The other bill is an amendment to an act of 1891 and this strikes out a clause that mine inspectors must keep maps of mines and records in a convenient place. The keeping of the maps and records is still mandatory, however.

The Johnstown division of the Bethlehem Mines Corporation, it was stated in *Coal Age* of Feb. 24, produced 1,750,000 tons of coal in 1926 without a fatal accident. J. V. Berry, chief of mine safety, mine rescue and first aid of the company, states that the figure should be 2,347,067 tons. We are glad to make the correction.

Non-Union Mine Dynamited.—The mine of the Davidson Coal Co., South Clearfield, was dynamited on the night of Feb. 17, making it necessary to suspend operations temporarily. The explosive was stolen from the company's powder house and placed about 300 ft. inside the mine mouth. The tracks were torn up by the explosion and the roof of the mine was injured. The mine was operated with non-union labor.

SOUTH DAKOTA

A state commission is looking into the use of driers in connection with the preparation of fine or pulverized coal, believing that the use of native lignite can be increased and made far more effective, if satisfactory appliances can be found for the purpose.

UTAH

Snowslides Affect Mines.—Several Carbon County coal mines were tied up from two to four days as a result of a recent series of snowslides, the largest seen in that part of the state in years. There were four fatalities, including Gus Goodart, 65 years of age, mine foreman at Latua for the Liberty Fuel Co. and one of the best known miners in Utah. Many miners and their families were forced to abandon their homes temporarily and several were injured.

The Salt Lake City Chamber of Commerce is trying to get the state to appropriate \$50,000 in addition to the \$20,000 already recommended in the budget for maintaining the U. S. Bureau of Mines station at the University of Utah.

The Sweet Coal Co., with properties in Gordon Creek, has now placed its products on the Salt Lake City and other markets. Offices are in Salt Lake City.

The Denver & Rio Grande Western R.R. Co. is to spend \$150,000 this summer on rebuilding its line in Salina Canyon, which will tap a rich coal field in which several Utah capitalists are

interested. There was a narrow-gage line in this canyon a number of years ago, but the line was washed out by a flood and as a consequence the development of the coal properties has been held up.

The Boston Acme Coal Mines Development Co. has leased 1,080 acres of coal land in Salina Canyon from the government. The terms call for a royalty of 10c. per ton, an investment of \$75,000, and a production of 30,000 tons in the fourth year of the lease. There were no other bidders.

WEST VIRGINIA

To Modernize Sexton Mine.—Plans are under way to improve the Sexton mine of the Virginia Iron, Coal & Coke Co. at Tom's Creek. Approximately \$350,000 will be spent to increase production. At present the mine has a capacity of about 1,600 tons a day. With the installation of new equipment it is planned to increase the output to 4,000 tons a day. It is planned among other things to erect a modern tippie of 4,000 tons capacity equipped with rotary dump, aerial tramway for the disposition of refuse and a shaker screen for loading various sizes of coal. It also is proposed to remodel the entire interior of the mine and to install 80-lb. rails on all the main lines inside the mine as well as to purchase new locomotives, new standard cars and new mining machinery.

George S. Harah of Uniontown, Pa., has purchased more than 11 acres of Pittsburgh coal on Buffalo Creek in Marion County, constituting a one-fourth interest in the estate of James Clark Work, for a consideration of \$40,000. The sale was made by deed from William J. Johnson, trustee in bankruptcy, for James Clark Work and Edwina N. Work.

Herbert Jones, president of the Amerherst Coal Co., operating in Logan County, announces the opening of a sales office in Charleston and the appointment of Col. R. J. Stegall as manager of sales in charge of the Charleston office. Mr. Stegall has been auditor and treasurer of the company for several years. Offices in Charleston will be in the Virginian Land Bank Building. Colonel Stegall was for a term County Clerk of Fayette County, but several years ago left Fayette County to become identified with the Jones interests.

Branch Line Planned.—The Monongahela Ry. has announced its intention to construct a branch line from Mather, Pa., to Waynesburg, Pa., and another line from Waynesburg to Brave, Pa. The work is expected to be started during the present year. The Monongahela now controls the Chartiers Southern branch, running from Brownsville via Nemaocolin to Mather, and also controls the Scott's Run road, running from Randall to Brave, so that the extensions announced will be, in effect, an extension of the Scott's Run road beyond Brave through Waynesburg, Mather and Nemaocolin to Brownsville. The extensions are planned to enable the railroad to serve better the coal regions in Monongalia County, W. Va.,

and western Pennsylvania, and will result, it is expected, in substantial economies as well as shorter hauls. They will also place the Monongahela in a position to further the development of coal lands in the western end of Monongalia County, which heretofore have not been operated because of lack of rail facilities.

Preparations are being made to operate before long on a tract of coal land on the Durbin branch of the Western Maryland near Bemis owned by the A. J. Thompson interests. A bridge has

government will bring in at the present session of the Legislature a measure in the form of an income tax applicable to the coal-mining industry to take the place of the mine owners' tax act.

Ask 8-Hr. Day Bank to Bank.—At the public hearing, March 3, in Halifax, N. S., on the bill to revise and consolidate the Nova Scotia coal mines regulation act now before the provincial Legislature, several important amendments were asked for by the labor organizations. Among these were an eight-hour day from bank to bank, an



Tennessee Coal on the Way to the Headhouse

This photograph was made at the Eagan mine of the Royal Blue Coal Co., which formerly was the Campbell Coal Mining Co. The locomotive is a 18-ton, and the mines cars are 1½ ton capacity. H. C. Williams, general manager of the Bonny Blue Coal Co., is president and general manager of the Royal Blue.

been built by the Western Maryland across Cheat River at that point and grading for a siding is now under way. Timbers are also being secured for the construction of a large mine tippie. This company will operate in the Sewell seam.

The No. 1 mine of the Connellsville By-Product Coal Co., on Scott's Run, in which a fire made its appearance some time ago, is still under seal. The mine has not been entered since it was ordered to be closed and so far the state Department of Mines has not intimated when it would allow the company to begin the work of rehabilitation necessary before the big mine can again be operated.

The Walker Coal Co. of Pittsburgh will operate soon on a tract of about 500 acres of Sewell smokeless coal near Bemis, on the Durbin branch of the Western Maryland Ry. The company has awarded a contract for the construction of a tippie and hopes to be in a position to operate before long. The property of the Walker Coal Co. is on the same side of the Cheat River as the Western Maryland Ry.

CANADA

Appeals Tax Decision.—The Alberta Government has appealed to the Imperial Privy Council against the decision of the Supreme Court declaring the mine owners' tax act to be ultra vires. Should this decision be sustained the

embargo on the importation of mine workers, and an age limit of 15 years for boy workers. J. W. McLeod, president of district 26, United Mine Workers, declared that the demand for the eight-hour day was unanimous among the miners and had been for years. P. G. Muise, vice-president of the district, spoke against the importation of mine workers and mine examiners, which he said was not necessary.

Production of coke in Canada during January amounted to 176,445 tons, compared with 157,107 tons for the previous month and 155,700 tons reported for January of a year ago. Compared with December, production from ovens in the eastern provinces fell off slightly to 46,607 tons from 47,389 tons; output from Ontario plants rose to 111,621 tons from 91,701 tons and the production in western provinces was slightly higher at 18,217 tons, as compared with 18,017 tons in the preceding month.

Hillcrest Earnings Improve.—The annual report of the Hillcrest Collieries, Ltd., Alberta, for 1926 shows net profits of \$107,694, as compared with \$61,106 in 1925, and only \$4,797 in 1924. Miscellaneous revenue in 1926 amounted to \$37,647, making a total net of \$145,341. Working capital position of the company shows a small improvement, excess of current assets over current liabilities standing at \$564,777 as compared with \$535,496 in the previous report.

Among the Coal Men

Charles E. Stuart, a member of the National Production Committee of the U. S. Fuel Administration during the war and a member of the New York engineering firm of Stuart, James & Cooke, sailed from New York March 12 on the Minnetonka for the Soviet Union, with three engineering associates, to make a thorough study of the coal mines of the Don Basin with a view to their mechanization along the most modern American practice, methods and system. Mr. Stuart stated that several shafts will be operated under the direction of the firm to serve as model mines for the purpose of gradually extending the methods and system. "Before the employment of American engineers for this task," said Mr. Stuart, "a Russian commission made an extensive study of coal mining methods in Germany, France, Great Britain and the United States. The result was a victory for American methods and engineers."

Anton Loeffler, local superintendent of the Spring Valley Coal Co., Spring Valley, Ill., has resigned.

Harry L. Gandy, executive secretary of the National Coal Association, will address the members of the Cincinnati Coal Exchange at a banquet Tuesday evening, March 29. Mr. Gandy will address a forum meeting of the Cincinnati Chamber of Commerce at noon the same day.

William B. Hale, sales manager of the Campbell's Creek Coal Co., having its main office in Cincinnati, Ohio, and operations in West Virginia, has been elected vice-president of the company to succeed Captain R. P. Gilham, who recently became president. Clarence R. Gilham is the new secretary.

A. C. Dent of New York, A. S. McQueen of Pittsburgh and W. E. Schoyer of Pittsburgh were re-elected directors of the Pittsburgh Terminal Coal Corporation at the recent annual meeting in Pittsburgh, Pa.

Jackson K. Dering, Jr., has been elected a director and vice president of the J. K. Dering Coal Co., Chicago.

Gordon Buchanan, vice-president of the Old Ben Coal Corporation, Chicago, has recovered from a foot infection which incapacitated him for two weeks.

Moroni Heiner, vice-president and former general manager of the United States Fuel Co., Salt Lake City, Utah, has been elected president of the Morgan Canning Co., one of the largest canning companies in the world, with headquarters at Morgan, Utah.

Horace W. Bennett was elected president of the Rocky Mountain Fuel Co., Denver, Colo., at the annual meeting of the directors, March 3. Merle D. Vincent of Grand Junction was elected vice-president, George T. Peart, vice-president and general manager, and F. C. Springer, secretary-treasurer. The meeting followed the annual session of stockholders in Cheyenne, Wyo., Wednesday, when the board of directors

was elected. The company is a \$5,000,000 corporation.

Henry Pfening, Jr., general superintendent of the South-East Coal Co., Seco, Ky., recently was elected president of the Hazard Coal Operators'



Henry Pfening, Jr.

Exchange, Lexington, Ky. Mr. Pfening, who has been connected with the same company for the last twenty years, is noted not only as a departmental organizer but as a community worker for better living conditions, better schools and better roads. He also is identified with banking and real estate interests in Kentucky.

Frederick I. Cox, until recently a member of the Interstate Commerce Commission, has associated himself with C. Bascom Slemple and John W. Price in the practice of law in Washington. The offices of the firm are in the Southern Building.

Grant Stauffer, president of the Majestic Coal Co., Midland, Ark., and also president of the Sinclair Coal Co., Kansas City, Mo., has been added to the marketing committee of the National Coal Association as representative of the Southwest, according to an announcement by President Barnum last week.

Obituary

R. T. Price, general superintendent of mines of the Elk River Coal & Lumber Co., died at Dundon, W. Va., March 9. He had been an employee of the company for a number of years and had been ill for some time. Funeral services were held at Charleston.

J. Frank Rushton, Sr., age 49 a widely known local industrialist, philanthropist, civic and religious leader, died March 7 at Birmingham, Ala., after a three days' illness of pneumonia. Mr. Rushton was president of the National Coal & Coke Co., brokers and sales

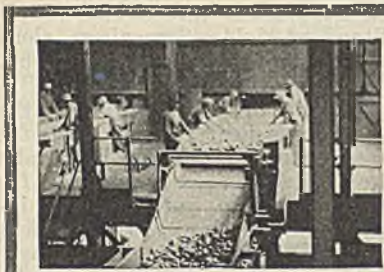
agents, and also executive head of the Franklin Coal Mining Co., with mines at Powhatan, in the western section of Jefferson County. He was also president of the Rushton Corporation, Birmingham Ice & Coal Storage Co. and a number of subsidiaries. Mr. Rushton came to Birmingham from Columbia, Tenn., with his father, the late W. J. Rushton, when seven years of age and was educated in the city schools. He entered the ice-making and cold-storage business with his father when he attained manhood and for a number of years also operated the largest retail coal business in the city, disposing of his interests in this line several years ago. During the world war, as field marshal of the "Allied Armies," which handled all the Liberty Loan drives, he rendered invaluable service and counsel and was largely instrumental in the success of those campaigns.

Duff Sawyer, a former coal operator of Glen Campbell, Pa., died recently at the home of his sister, Mrs. J. W. Clark, Johnstown, Pa., aged 55 years. He had been ill for the past four years, a nervous breakdown following an attack of influenza. For some time he was under treatment at Johns Hopkins Hospital, Baltimore.

Clifford L. Barrett, in charge of sales for Ohio the Holmes Darst Coal Co., Cincinnati, Ohio, met a tragic death in Urbana, Ohio, on March 3. Swerving his automobile to avoid striking a little girl who dashed out on the street in the rain, he ran into a telegraph pole. The impact threw him against the steering wheel and he died instantly from internal injuries. His first employment was with the Winifrede Coal Co., at Winifrede, W. Va., ten years ago. A year later he joined the Blue Diamond Coal Sales Co., and later went with Calvin Holmes when he organized the Holmes Coal Sales Co., and then amalgamated it with the Holmes Darst company. He was a brother of William H. Barrett, vice-president of the latter concern, and Miss Margaret Barrett, also prominent in its affairs. He served two years overseas during the World War, was 31 years of age and leaves a wife and son, three years old. He resided in St. Bernard, a Cincinnati suburb, where the funeral was held March 7.

J. Reed Cornelius, aged 68, a retired coal operator and one of the town's leading citizens, died at his home in Patton, Cambria County, Pa., on March 8. Mr. Cornelius was first engaged in the furniture and undertaking business and later became a coal operator. He retired several years ago. He is survived by his wife and two sons, J. Hays and Williams B. Cornelius, both prominently identified with the coal business at Patton. He was a member of the Masonic fraternity and served in the Spanish-American War with the old Sheridan troop of cavalry from Tyrone, Blair County, Pa.

Alfred Nichols, 50 years old, superintendent of the Ayres Lang Coal Co., near Paintsville, Ky., was shot to death March 6 by Charles Vanhooze, 35, a miner. The tragedy, officers said, was the result of a long standing grudge of Vanhooze against Nichols.



Production And the Market



Bituminous Market Unharmed by Threat of Strike; Anthracite Domestic Prices Reduced

Aside from sustained high production rates, there is little to distinguish the course of the bituminous coal markets of the United States at the present time from the normal March fade-out in interest. The possible effects of the threatened suspension in the Central Competitive Field next month have been so thoroughly discounted in advance that prices no longer are affected by the talk of strike. Such changes as have taken place within the past week have been due not to frantic buying but to a backing up of tonnage.

It is only in the big day-to-day movement of fuel from the mines to the stockpiles of the ultimate consumer that the coming walk-out of thousands of miners in Illinois, Indiana, Ohio and western Pennsylvania is foreshadowed. For the most part, railroads and public utilities appear to have taken out liberal insurance in the matter of augmented storage reserves. Others less provident seem secure in their belief that available tonnage from the non-union mines and from union operations which accept the invitation to continue working after April 1 will provide for their wants.

High Production Rates Maintained

The country made a rapid recovery from the slight decline in production during the most recent holiday week. Output during the week ended March 5 climbed to 13,269,000 net tons, accord-

ing to the estimates of the U. S. Bureau of Mines. Preliminary loading figures for the week ended last Saturday indicate another increase in tonnage. Car loadings on March 7 and 8 were the largest reported since Feb. 8. Cumulative production for the coal year is 51,115,000 tons ahead of the figures for the corresponding period last year.

Of this increase, approximately 11,816,000 net tons has been registered since the beginning of 1927. This record is all the more remarkable when it is remembered that bituminous production the first two months of 1926 was at a high rate because of the unusual demand created by the deficiency in anthracite tonnage. The 1927 gains have been particularly marked since the middle of February.

Slight Gain in Spot Prices

Coal Age Index of spot bituminous prices on March 14 was 171 and the corresponding weighted average price was \$2.07. This was an increase of 1 point and 1c. over the figures for March 7. Compared to the figures for March 15, 1926, it was an increase of 3 points and 4c. Compared with 1925 figures, the current levels show an advance of 6 points and 8c. Practically all the changes took place in the coals of the Appalachian Region.

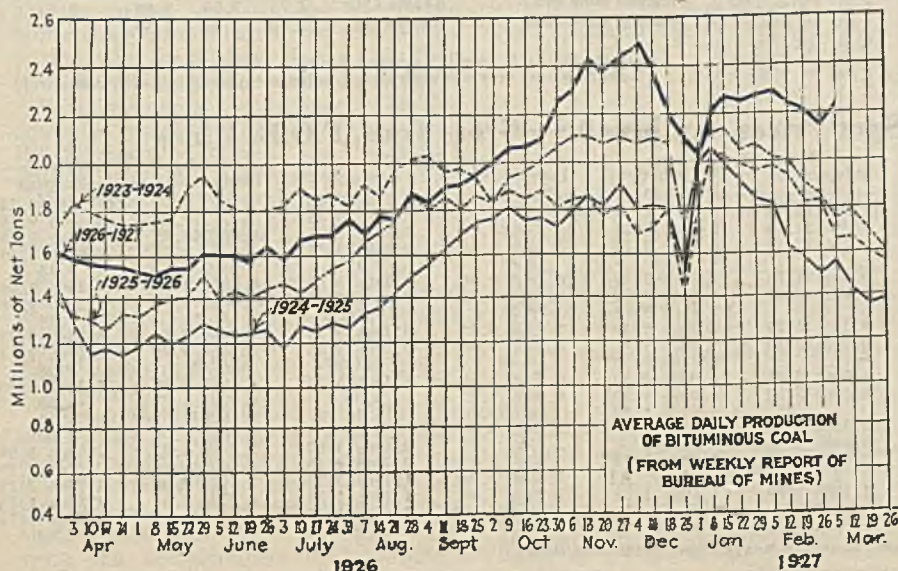
In the Midwest there was a weakening of western Kentucky block in both the Chicago and Louisville markets,

bringing down the average 25c. Mine-run at Chicago also was softer. Eastern Kentucky prepared sizes were stronger in Cincinnati and weaker in Louisville. Illinois and Indiana coals were steady, with no changes in nominal quotations. Ohio, too, missed noteworthy fluctuations. Pittsburgh gas coal prices jumped 10 to 35c.

Eastern Coals Suffer

High-volatile West Virginia coals were easier in the Cincinnati market as unbilled loads began to back up. Pool prices on high-volatile offerings also declined slightly at New York and Philadelphia. Low-volatile West Virginia mine-run regained some strength in the Boston market, but softened in the Middle West; prepared coals dragged. Mine prices on central Pennsylvania low-volatiles were unchanged, but the tidewater market was uneven.

Uncertainty as to anthracite quotations was ended early this week when some of the leading producers cut domestic prices 50c., effective March 15. Certain others made similar reductions effective April 1, with provision for increases of 25c. on June 1 and Sept. 1. Other shippers probably will follow the lead of the trail-blazers. In the meantime, production has been declining and current demand is very slow. The steam market also has been growing weaker, and this, too, has been recognized in reductions of 50c. in the circular on No. 1 buckwheat.



Estimates of Production

(Net Tons)

BITUMINOUS

	1926	1927
Feb. 19.....	11,509,000	13,193,000
Feb. 26 (a).....	10,890,000	12,763,000
March 5 (b).....	10,460,000	13,269,000
Daily average.....	1,743,000	2,212,000
Coal yr. to date (c).....	501,566,000	552,681,000
Daily av. to date.....	1,758,000	1,933,000

ANTHRACITE

Feb. 19.....	408,000	1,569,000
Feb. 26 (a).....	1,609,000	1,374,000
March 5 (b).....	1,789,000	1,211,000
Coal yr. to date (c).....	44,441,000	87,393,000

BEEHIVE COKE

Feb. 19.....	353,000	191,000
Feb. 26 (a).....	321,000	189,000
March 5 (b).....	265,000	187,000
Cal. yr. to date (c).....	2,998,000	1,697,000

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

No Life to Midwest Market

The Middle Western markets centering around Chicago were quiet last week. On the whole, steady storage buying for weeks past has taken the edge off a pre-strike panic movement. Prices on steam coals are firm and the volume of tonnage is considerable, but output is closely pressing the capacity of the market. Rumors are heard that stripping mines will continue after March 31 and that some of the larger shaft interests are against any prolonged suspension, but these reports create scarcely a ripple in the trade.

The domestic side of the market is near stagnation. Weather does not support purchases for current consumption. Most dealers who felt it advisable to build up stocks of Illinois and Indiana grades have completed their storage programs. There is little demand for Eastern coals, which come from non-union mines, despite some attractive price concessions. Anthracite and coke are quiet.

In the mining fields the warm weather which softened the domestic market at Chicago a fortnight ago made its influence felt last week. Although a few southern Illinois mines were well sold up on certain sizes, in general there was a glut of prepared coal which clogged tracks with "no bills." Railroad and ordinary industrial business also was lighter, with much of the sharply competitive tonnage going to the stripping mines. Strip-pit prices on the whole were 25 to 50c. under the quotations of the shaft mines.

Duquoin-Jackson District Holds Up

The Duquoin-Jackson County sector had fairly good running time, but it was purchased at the price of increasing accumulations of unbilled loads. As for months past, railroad buying was the mainstay of the Mt. Olive district, taking up the load of diminished spot domestic and industrial buying. The combination of unbilled loads and un-

willing buyers cut into production in the Standard field. Screenings alone retained a semblance of strength, but there was no real scarcity.

Kentucky, too, was caught in the downward movement in price levels for prepared coals, while a basically stronger market was developing for steam fuel. Strike rumors have induced many large buyers to augment their stockpiles. This was particularly noticeable in the western Kentucky field, where loadings to Northern and Western points increased 500 cars the first week in March. Slack and screenings also move more freely out of the eastern section of the state. In fact, it is claimed that buyers were unable to place all the orders they desired.

Because of strike possibilities, western Kentucky coals, other than block, are commanding as high or higher prices than rule in the eastern Kentucky market. Screenings are \$1.30@ \$1.60 and the minimum on eastern slack is 5c. less. Mine-run from both fields

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

Low-Volatile, Eastern				Midwest				South and Southwest						
Market Quoted	Mar. 15 1926	Feb. 28 1927	Mar. 7 1927	Mar. 14 1927†	Market Quoted	Mar. 15 1926	Feb. 28 1927	Mar. 7 1927	Mar. 14 1927†	Market Quoted	Mar. 15 1926	Feb. 28 1927	Mar. 7 1927	Mar. 14 1927†
Smokeless lump.....	Columbus.....	\$3.85	\$3.10	\$2.85	\$2.75@ \$3.00	Franklin, Ill. lump.....	Chicago.....	\$3.00	\$3.15	\$3.15	\$3.15	\$3.15	\$3.15	\$3.15
Smokeless mine run.....	Columbus.....	2.10	2.35	2.10	2.00@ 2.25	Franklin, Ill. mine run.....	Chicago.....	2.40	2.60	2.60	2.50@ 2.75	2.50@ 2.75	2.50@ 2.75	2.50@ 2.75
Smokeless screenings.....	Columbus.....	1.15	1.60	1.50	1.40@ 1.70	Franklin, Ill. screenings.....	Chicago.....	1.85	2.15	2.60	2.50@ 2.75	2.50@ 2.75	2.50@ 2.75	2.50@ 2.75
Smokeless lump.....	Chicago.....	3.10	3.25	2.85	2.80@ 3.00	Central, Ill. lump.....	Chicago.....	2.60	2.55	2.55	2.35@ 2.75	2.35@ 2.75	2.35@ 2.75	2.35@ 2.75
Smokeless mine run.....	Chicago.....	1.95	2.50	2.10	1.75@ 2.25	Central, Ill. mine run.....	Chicago.....	2.10	2.10	2.10	2.00@ 2.25	2.00@ 2.25	2.00@ 2.25	2.00@ 2.25
Smokeless lump.....	Cincinnati.....	3.60	3.25	3.00	2.80@ 3.00	Central, Ill. screenings.....	Chicago.....	1.40	1.85	1.85	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00
Smokeless mine run.....	Cincinnati.....	2.25	2.35	2.10	2.00@ 2.25	Ind. 4th Vein lump.....	Chicago.....	2.75	3.05	3.05	3.00@ 3.15	3.00@ 3.15	3.00@ 3.15	3.00@ 3.15
Smokeless screenings.....	Cincinnati.....	1.35	2.00	1.95	1.90@ 2.00	Ind. 4th Vein mine run.....	Chicago.....	2.20	2.45	2.45	2.40@ 2.50	2.40@ 2.50	2.40@ 2.50	2.40@ 2.50
Smokeless mine run.....	Boston.....	4.45	4.60	4.35	4.50@ 4.65	Ind. 4th Vein screenings.....	Chicago.....	1.70	2.30	2.30	2.25@ 2.50	2.25@ 2.50	2.25@ 2.50	2.25@ 2.50
Clearfield mine run.....	Boston.....	2.05	1.70	1.80	1.65@ 2.00	Ind. 5th Vein lump.....	Chicago.....	2.15	2.50	2.50	2.40@ 2.65	2.40@ 2.65	2.40@ 2.65	2.40@ 2.65
Cambria mine run.....	Boston.....	2.35	2.10	2.15	2.00@ 2.35	Ind. 5th Vein mine run.....	Chicago.....	1.95	2.20	2.20	2.10@ 2.35	2.10@ 2.35	2.10@ 2.35	2.10@ 2.35
Somerset mine run.....	Boston.....	2.15	1.90	1.95	1.80@ 2.10	Ind. 5th Vein screenings.....	Chicago.....	1.30	1.65	1.85	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00
Pool 1 (Navy Standard).....	New York.....	2.80	3.00	3.00	2.75@ 3.25	Mt. Olive lump.....	St. Louis.....	2.75	2.75	2.85	2.75@ 3.00	2.75@ 3.00	2.75@ 3.00	2.75@ 3.00
Pool 1 (Navy Standard).....	Philadelphia.....	2.80	3.05	3.05	2.75@ 3.15	Mt. Olive mine run.....	St. Louis.....	2.15	2.50	2.50	2.50	2.50	2.50	2.50
Pool 1 (Navy Standard).....	Baltimore.....	2.10	2.60	2.60	2.55@ 2.75	Mt. Olive screenings.....	St. Louis.....	1.40	1.65	1.65	1.60@ 1.75	1.60@ 1.75	1.60@ 1.75	1.60@ 1.75
Pool 9 (Super. Low Vol.).....	New York.....	2.25	2.25	2.30	2.15@ 2.50	Standard lump.....	St. Louis.....	2.50	2.45	2.45	2.40@ 2.50	2.40@ 2.50	2.40@ 2.50	2.40@ 2.50
Pool 9 (Super. Low Vol.).....	Philadelphia.....	2.35	2.40	2.40	2.15@ 2.40	Standard mine run.....	St. Louis.....	1.80	1.80	1.80	1.75@ 1.90	1.75@ 1.90	1.75@ 1.90	1.75@ 1.90
Pool 9 (Super. Low Vol.).....	Baltimore.....	2.05	2.15	2.25	2.20@ 2.45	Standard screenings.....	St. Louis.....	1.15	1.35	1.35	1.25@ 1.50	1.25@ 1.50	1.25@ 1.50	1.25@ 1.50
Pool 10 (H.Gr.Low Vol.).....	New York.....	1.95	2.00	2.00	1.80@ 2.25	West Ky. block.....	Louisville.....	1.85	2.10	2.10	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00	1.75@ 2.00
Pool 10 (H.Gr.Low Vol.).....	Philadelphia.....	2.05	2.10	2.10	1.80@ 2.20	West Ky. mine run.....	Louisville.....	1.35	1.45	1.55	1.40@ 1.75	1.40@ 1.75	1.40@ 1.75	1.40@ 1.75
Pool 10 (H.Gr.Low Vol.).....	Baltimore.....	1.80	1.90	1.95	1.85@ 1.90	West Ky. screenings.....	Louisville.....	.95	1.40	1.45	1.30@ 1.60	1.30@ 1.60	1.30@ 1.60	1.30@ 1.60
Pool 11 (Low Vol.).....	New York.....	1.75	1.80	1.80	1.60@ 1.90	West Ky. block.....	Chicago.....	1.75	2.25	2.25	1.75@ 2.25	1.75@ 2.25	1.75@ 2.25	1.75@ 2.25
Pool 11 (Low Vol.).....	Philadelphia.....	1.80	1.80	1.80	1.65@ 1.80	West Ky. mine run.....	Chicago.....	1.15	1.85	1.85	1.60@ 1.75	1.60@ 1.75	1.60@ 1.75	1.60@ 1.75
Pool 11 (Low Vol.).....	Baltimore.....	1.65	1.75	1.70	1.70@ 1.80									

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

	Market Quoted	Freight Rates	March 15, 1926		March 7, 1927		March 14, 1927†	
			Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.34		\$8.25@ \$9.25		\$8.25@ \$9.25		\$8.25@ \$9.25
Broken.....	Philadelphia.....	2.39	\$9.00@ 12.50	9.00@ 9.25		8.50@ 9.15		8.50@ 9.15
Egr.....	New York.....	2.34	9.25@ 11.50	8.75@ 9.25	\$8.25@ \$8.75	8.75@ 9.25	\$8.50@ \$8.75	8.75@ 9.25
Egr.....	Philadelphia.....	2.39	9.25@ 12.50	9.15@ 9.25	8.35@ 9.50	9.00@ 9.15	8.35@ 9.50	9.00@ 9.15
Egr.....	Chicago*.....	5.06		8.13		8.13		8.13
Stove.....	New York.....	2.34	9.60@ 11.75	9.25@ 9.50	8.25@ 9.00	9.25@ 9.60	8.50@ 9.00	9.25@ 9.60
Stove.....	Philadelphia.....	2.39	9.60@ 12.50	9.35@ 9.50	9.00@ 9.75	9.25@ 9.50	9.00@ 9.75	9.25@ 9.50
Stove.....	Chicago*.....	5.06		8.33@ 8.58		8.71		8.58
Chestnut.....	New York.....	2.34	9.25@ 11.75	8.75@ 9.15	8.25@ 8.75	8.75@ 9.25	8.00@ 8.75	8.75@ 9.25
Chestnut.....	Philadelphia.....	2.39	9.25@ 12.50	9.00@ 9.15	8.60@ 9.40	9.00@ 9.15	8.60@ 9.40	9.00@ 9.15
Chestnut.....	Chicago*.....	5.06		8.33@ 8.53		8.48		8.53
Pea.....	New York.....	2.22	6.00@ 8.25	6.00@ 6.35	6.00@ 6.50	6.35@ 6.50	6.00@ 6.50	6.35@ 6.50
Pea.....	Philadelphia.....	2.14	6.50@ 7.50	6.00@ 6.50	6.00@ 6.75	6.50	6.00@ 6.75	6.50
Pea.....	Chicago*.....	4.75		5.65@ 5.80		6.03		6.10
Buckwheat No. 1.....	New York.....	2.22	2.50@ 3.50	3.00@ 3.50	2.75@ 3.00	3.00	2.50@ 3.00	3.00
Buckwheat No. 1.....	Philadelphia.....	2.14	3.00@ 3.50	3.00	2.75@ 3.75	2.50@ 3.00	2.75@ 3.75	2.50@ 3.00
Rice.....	New York.....	2.22	2.00@ 2.25	2.00@ 2.25	2.00@ 2.25	2.00@ 2.25	1.75@ 2.00	2.00@ 2.25
Rice.....	Philadelphia.....	2.14	2.25	2.25	1.85@ 2.25	1.85@ 2.25	1.85@ 2.00	1.75@ 2.25
Barley.....	New York.....	2.22	1.50@ 1.75	1.60@ 1.75	1.25@ 1.50	1.50@ 1.75	1.25@ 1.50	1.50@ 1.75
Barley.....	Philadelphia.....	2.14	1.75	1.75	1.50	1.50@ 1.75	1.50	1.50@ 1.75
Birdeye.....	New York.....	2.22		2.00		2.00		2.00

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

is \$1.40@1.75; nut is \$1.50@1.75, with some eastern Kentucky coal bringing \$2. Western Kentucky block, lump and egg are \$1.75@2; eastern Kentucky egg is \$1.50@2; the minimum on lump is \$1.75 and block goes as high as \$2.50.

Active Year On Docks

The Head of the Lakes is winding up one of the most active seasons in its history. February shipments from the docks were 21,091 cars, as against 19,219 cars in February, 1926, and 17,666 cars in 1925. January shipments this year were 27,547 cars. March totals are expected to exceed last year's figure of 14,836 cars. Industrial buying by Minnesota and North Dakota is the backbone of the heavy movement. Retail purchases are on a hand-to-mouth basis.

Smokeless coals continue in relatively good demand and a still wider market is promised next season. Free tonnage of prepared sizes is close to the vanishing point. The railroads are moving large tonnages of locomotive fuel off the docks. There has been a sharp drop in the quantity of anthracite ordered forward by the retail dealers. It now looks as if approximately 225,000 tons will be carried over into the new season. Dock quotations are firm and unchanged.

Spring-like weather has cut down domestic consumption of coal in the Twin Cities section. Industrial consumers seem to have ample stocks to take care of their requirements in the near future and are not worried over the possible shutting off of union tonnage. Railroads and public utilities, however, appear a little uneasy and are active buyers. Milwaukee docks have cleaned up most of their bituminous supplies, but stocks of anthracite are fairly liberal. Current trading is colorless.

"No Bills" Plague Southwest

Accumulations of "no bills" of lump and nut have forced Kansas operators to so curtail production that screenings are in a strong position, with the bulk of the tonnage going at \$2.50. Crushed mine-run brings \$2.90. There has been no change in quotations on large coal, but the undertone is easier. Summer storage prices on Arkansas and Oklahoma coals probably will be announced within the next few days. Neither state is worrying about a strike April 1.

Weather came to the rescue of the domestic market for Colorado coals the forepart of March, but "no bills" still plague the southern field. The ruling price on Walsenburg and Canon City domestic lump is \$6; nut, \$5; washed chestnut, \$3; Trinidad coking lump, \$4; nut, \$3.75; fancy chestnut, \$3.25. Crested Butte anthracite runs from \$8 to \$9. Steam bituminous slack is \$1.25. Rock Springs-Kemmerer lump is \$4.25; nut, \$3.75; slack, \$1.65@1.80.

Higher temperatures early in the month had an adverse effect upon production in Utah. Working time is not averaging over three days a week and unbilled loads of the larger sizes have been increasing. Slack is easy. Despite the accumulation of "no bills,"

however, mine prices are well maintained. Retail buying is limited to immediate requirements. The labor outlook continues very favorable.

Unbilled Loads Worry Cincinnati

The Cincinnati market is floundering about in an effort to move the loads piling up in the southern West Virginia and eastern Kentucky fields. Notwithstanding the partial shutdowns now in effect at many mines, coal is offered faster than the market can absorb it. Lake loading relieved the pressure for a short time, but buyers and shippers are again wrangling over prices and a stalemate on this movement is threatened.

Slack alone retains strength. Some southeastern Kentucky coal brought as high as \$2 and West Virginia high-volatile reached \$1.75. Mine-run enjoyed some of this activity. On the other hand, certain shipments of lump and egg went at mine-run prices. The fact that railroads have completed their storage buying was partially responsible for the lack of support given the larger sizes. However, inquiries now are circulating on 1927-28 contracts. Prepared smokeless is demoralized.

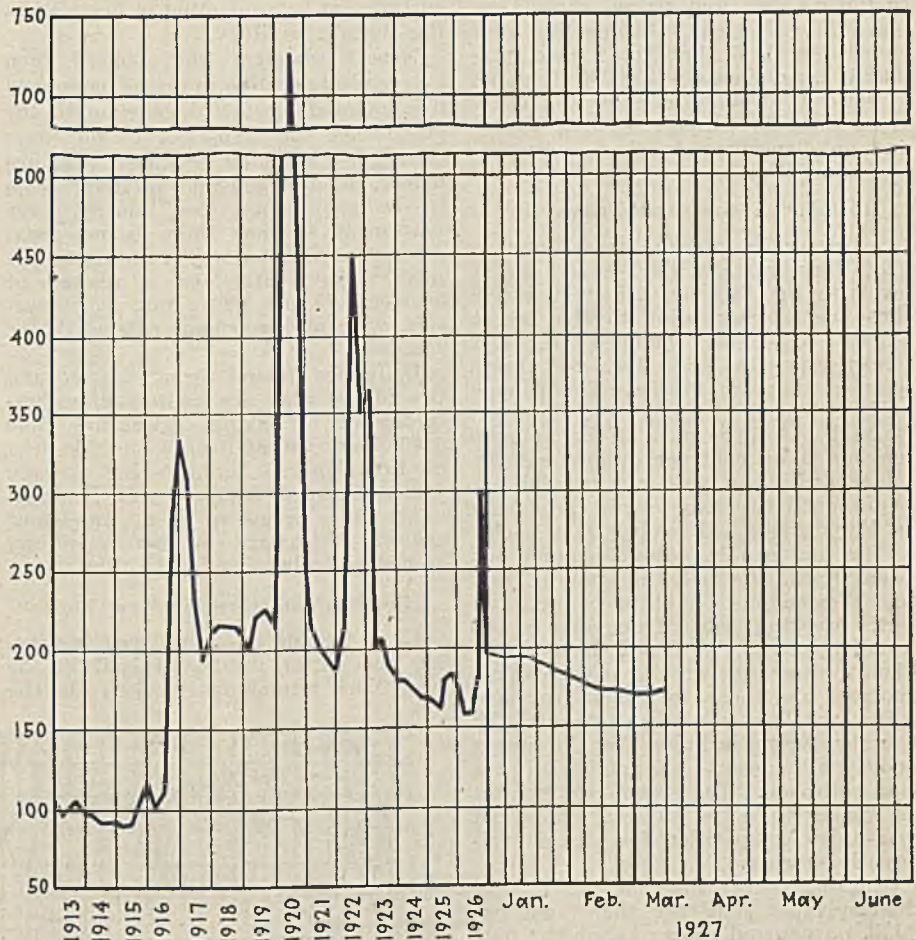
An increase of 780 cars was registered in the number of coal loads in-

terchanged at Cincinnati last week. The total for the week was 13,424. Compared with a year ago this was an increase of 2,864 cars. By far the greatest gain was made by the Chesapeake & Ohio Ry., which reported an increase of 757 cars over the preceding week. Norfolk & Western interchange decreased 77 cars. The number of empties en route to the mines dropped from 12,255 to 11,497 cars. Empties to the Louisville & Nashville declined 814 cars.

Ohio Markets Sluggish

Except for some stocking of Southern coals at April prices the domestic market in central and southern Ohio is dead. Steam business is featureless. Only the larger industrial consumers show any interest in adding to their reserve supplies. Railroads, public utilities and some of the iron and steel plants already have piled up large storage stocks. There is some contract inquiry, but most of the requests circulating are for three to six months and this short-term business is scorned by the average producer.

The lake trade is in the limelight. A number of contracts at \$1.65@1.75, mine-run basis, have been closed with Kentucky and West Virginia operators.



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

Index	1927				1926	1925
	Mar. 14	Mar. 7	Feb. 28	Feb. 21	Mar. 15	Mar. 16
Index	171	170	171	173	168	165
Weighted average price	\$2.07	\$2.06	\$2.07	\$2.09	\$2.03	\$1.99

This diagram shows the relative, not the actual, price on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportion 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, 1924, 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.

Car Loadings and Supply

	Cars Loaded		All Cars	Coal Cars
	All Cars	Coal Cars		
Week ended Feb. 26, 1927.....	923,849	201,959		
Week ended Feb. 19, 1927.....	960,873	213,794		
Week ended Feb. 27, 1926.....	912,658	180,434		
Week ended Feb. 20, 1926.....	931,743	169,913		

	Surplus Cars		Car Shortages	
	All Cars	Coal Cars	All Cars	Coal Cars
Feb. 28, 1927.....	275,153	83,252		
Feb. 23, 1927.....	273,031	76,069		
Feb. 27, 1926.....	207,683	74,151		

public up to the time this issue of *Coal Age* went to press were as follows:

D. L. & W. Coal Co.	Broken	Egg	Stove	Nut	Pea
	\$8.25	\$8.75	\$8.25		
Lehigh Coal & Navigation Co.	\$8.35	8.35	8.85	8.35	\$6.00
Lehigh & Wilkes-Barre Coal Co.	8.25	8.25	8.75	8.25	6.50
Hudson Coal Co.	8.25	8.25	8.85	8.25	6.00
Phila. & Reading Coal & Iron Co.	8.25	8.85	8.25	6.50	

On steam sizes the L. C. & N. is quoting \$2.50, \$2.25 and \$1.50 and the L. & W.-B. \$2.50, \$2 and \$1.50. Other companies issued no steam circular.

Philadelphia Retail Buying Slow

While the trade was waiting for the price situation to clear up, retail buying was extremely slow. In the independent market, minimum quotations were somewhat stronger, but sales were few. More weakness also was shown in the movement of No. 1 buckwheat and rice. Barley was firm. Philadelphia also was in a waiting mood in so far as domestic coal was concerned and such strength as appeared was due to curtailed production. Unlike the situation at New York, the steam sizes were tighter as the result of the closing down of mines.

Domestic demand at both Baltimore and Buffalo marked time. As at other consuming centers, dealers were more anxious to clear up existing stocks, in anticipation of the spring reduction, than to increase their inventories. One result of the dull market was more activity in lake loading at Buffalo. Although only one company had done anything along this line up to March 10, that particular shipper was loading its eighth cargo to leave the harbor as soon as navigation opens.

Foundry Coke in Better Demand

The spot market for furnace coke in the Connellsville district still drags. Foundry coke, on the other hand, is looking up and prices have stiffened to \$4.50@5—an advance of 25c. Spot furnace is easy at \$3.35@3.50. Independent furnaces are reluctant to enter into second-quarter contracts at \$4@4.25. The Steel Corporation interests have fired 970 ovens. Coal loadings have increased slightly. One large independent operator has closed a contract for 240,000 tons of coal at a price reported to be a little under \$2.

Production of beehive coke in the Connellsville and Lower Connellsville region during the week ended March 5 was 133,540 net tons, according to the *Connellsville Courier*. Furnace-oven production was 61,800 tons, a decrease of 4,400 tons when compared to the preceding week. Merchant-oven output was 71,740 tons, a decrease of 2,560 tons.

Coal Produced in Principal Countries Of the World, 1922-1925

(In metric tons of 2,204.6 lb.)

	1922	1923	1924	1925
NORTH AMERICA				
Canada				
Coal.....	10,587,611	12,163,901	9,138,841	13,134,968
Lignite.....	3,162,907	3,249,605	3,233,459	2
Greenland.....	2,100	2,117	2,500	2
Mexico.....	932,550	1,261,541	1,226,696	2
United States				
Anthracite.....	49,607,344	84,675,282	79,765,491	56,079,281
Bituminous and lignite.....	383,073,174	512,161,770	438,790,754	471,781,446
SOUTH AMERICA				
Argentina.....	2	2	2	2
Brazil.....	500,000	324,154	342,200	392,376
Chilo.....	1,053,001	1,164,028	1,539,141	1,440,425
Colombia.....	2	2	2	2
Peru.....	294,492	3253,000	151,735	102,124
Venezuela.....	420,782	418,050	416,695	416,798
EUROPE				
Austria				
Coal.....	165,727	157,650	171,959	145,200
Lignite.....	3,135,902	2,685,467	2,785,816	3,033,378
Belgium.....	21,208,500	22,922,340	23,361,910	23,133,160
Bulgaria				
Coal.....	46,725	61,600	69,670	73,000
Lignite.....	983,311	1,012,594	1,155,291	1,156,006
Czechoslovakia				
Coal.....	10,464,990	12,347,251	15,178,942	12,754,456
Lignite.....	19,174,296	16,265,530	20,459,690	18,789,098
France				
Coal.....	31,141,096	37,679,314	44,011,240	47,047,630
Lignite.....	772,014	877,123	944,080	1,007,270
Germany				
Coal.....	129,964,597	62,316,134	118,768,748	132,729,097
Lignite.....	137,207,125	118,784,997	124,637,201	139,789,714
Saar ⁶	11,240,000	9,192,275	14,032,120	12,989,850
Greece—Lignite.....	131,515	126,000	129,530	2
Hungary				
Coal.....	941,380	793,075	744,394	805,019
Lignite.....	6,776,230	6,894,958	6,333,286	5,520,760
Italy				
Coal.....	195,352	173,700	126,985	188,520
Lignite.....	745,402	953,460	917,491	1,105,474
Netherlands				
Coal.....	4,866,371	5,595,478	6,180,182	7,116,970
Lignite.....	28,919	54,185	191,202	207,623
Poland				
Coal.....	723,974,814	36,097,997	32,224,680	29,080,499
Lignite.....	219,983	171,035	88,038	65,675
Portugal				
Coal.....	127,279	137,613	124,802	123,450
Lignite.....	14,380	15,952	8,121	16,970
Rumania				
Coal.....	254,642	291,983	297,288	313,572
Lignite.....	1,861,579	2,229,410	2,479,083	2,615,278
Russia.....	7,781,400	14,504,300	13,918,000	14,334,970
Spain				
Coal.....	4,435,843	5,971,446	6,127,586	6,117,342
Lignite.....	329,680	394,268	411,773	402,690
Spitzbergen.....	316,000	340,942	451,914	413,412
Sweden.....	378,861	419,569	437,856	2
Switzerland.....	3,380	2	2	2
United Kingdom				
Great Britain.....	253,613,054	280,430,369	271,405,414	238,852,913
Ireland.....	2	2	2	2
Yugoslavia				
Coal.....	101,861	136,267	131,633	178,456
Lignite.....	3,624,707	3,864,998	4,053,607	3,973,870
ASIA				
British Borneo.....	88,948	2	2	2
China.....	22,681,000	19,955,000	20,969,000	13,800,000
Chosen.....	317,330	279,978	399,415	634,257
Dutch East Indies.....	1,032,310	1,156,625	1,446,757	1,400,725
Federated Malay States.....	286,351	322,994	378,778	414,278
India, British.....	19,316,112	19,972,376	21,516,491	20,198,000
Indo-China.....	988,991	1,056,921	1,235,880	1,265,970
Japan (including Taiwan and Karafuto)				
Coal.....	29,163,727	30,584,316	31,816,662	2
Lignite.....	166,302	151,462	176,764	2
Philippine Islands.....	42,420	43,446	47,183	47,912
Russia.....	1,276,900	2	2	2
Turkey.....	681,000	2	2	2
AFRICA				
Algeria.....	8,855	3,562	9,228	10,037
Belgian Congo.....	33,000	65,000	81,000	83,000
Nigeria.....	123,027	173,422	183,000	2
Rhodesia, Southern.....	467,787	559,999	591,526	689,201
Tunisia.....	343	620	305	2
Lignite.....	9,271,948	11,252,305	11,819,988	12,321,728
Union of South Africa.....				
OCEANIA				
Australia				
New South Wales.....	10,346,572	10,646,693	11,804,688	11,579,108
Queensland.....	973,903	1,077,686	1,141,143	1,196,067
Tasmania.....	70,349	82,014	77,208	83,009
Victoria.....	660,113	603,240	656,170	1,433,356
Western Australia.....	445,480	427,466	428,635	444,482
New Zealand				
Bituminous.....	983,981	950,715	1,102,418	1,044,726
Lignite.....	903,656	1,050,735	1,014,224	1,070,269
Total, all grades.....	1,226,000,000	1,360,000,000	1,357,000,000	1,352,000,000
Lignite (total of items shown above).....	179,000,000	159,000,000	169,000,000	182,000,000
Bituminous and anthracite (by subtraction).....	1,047,000,000	1,201,000,000	1,188,000,000	1,170,000,000

¹Compiled by U. S. Bureau of Mines. ²Estimate included in total. ³Includes a small quantity of asphaltite. ⁴Exclusive of the output of the State of Falcon (about 8,000 tons), for which estimate is included in total. ⁵Includes entire output of Upper Silesia for January-May inclusive; for June-December, inclusive, only that part of the province allocated to Germany. ⁶Territory under French control. ⁷Includes the output June-part of the province allocated to Poland. ⁸Russia in Asia included under Russia. ⁹December, inclusive, of that part of Upper Silesia allocated to Poland. ¹⁰Including estimates for Canada, Greece and Japan in Europe. ¹¹Data for operating year, ended Sept. 30.

Foreign Market And Export News

British Mines Hope to Profit From American Strike

London, England, Feb. 28.—“Turn about is fair play,” in the opinion of many British colliery owners. Remembering how their American cousins were flooded with orders last summer when the coal pits of this country were down, many factors in the trade here are reluctant to sell much forward tonnage, preferring to have a free hand if the American miners walk out on April 1.

At the present time, however, while the Welsh market is steady, current demand is not heavy enough to effect any real improvement in prices. Domestic trade has made only modest gains. European business is fairly active and there is a wider inquiry from Spanish sources. South America and the Mediterranean countries also are in the market for increasing quantities of coal.

Two British railroads have closed for 100,000 tons of Monmouthshire large for the year at 20s.@21s. at the pithead. The Danish State Rys. is in the market for 100,000 tons of best Northumberland or Durham steams and the Norwegian State Rys. is inviting tenders for 60,000 tons from the same fields.

In the spot market best Admiralty is 22@23s.; small steams, 15s.; best gas, 17s. 6d.; best bunkers, 17s. 6d.

Production and export figures continue to show an upward tendency. Output for the week ended Feb. 26 was 5,371,700 gross tons, which is only 300 tons less than the corresponding week in 1926; furthermore, it was produced by 1,012,700 miners, as against 1,107,500 employed a year ago. The longer working day accounts largely for the relatively much better output now reported while production would have been larger still had transport facilities been better.

During February the weekly output rose by 104,000 tons, although the increase in the number of miners was only 12,000. Exports of coal are steadily improving, but they are still below last year. February exports were 4,172,856 tons, against 4,340,006 tons last year and 4,344,088 in 1922. In 1913 exports in February were 5,569,917 tons and in January of that year they reached 6,070,318 tons.

Comparison of exports this year and last, however, makes a sufficiently good showing to reflect that Great Britain has not lost her coal export trade, while indications are that lost ground will soon be more than recovered.

Belgian Market Quiet

Brussels, Belgium, Feb. 24.—The process of normalization of the Belgian coal market continues without serious upsets in the position of the collieries. Prices are gradually declining under the pressure of lessened demand and

increasing foreign competition. Unless compelled by necessity—and few are—most consumers are buying most sparingly in the hope that such a policy will accelerate the rate of price reduction.

German competition has weakened the position of semi-bituminous sellers. In the household trade anthracite alone is unaffected by the growing weakness. Coke movement has been limited. Softness in the patent-fuel department of the trade is spreading and there is talk of reducing the output. A still more general, and possibly sharper, decline in prices on all coals except anthracite, is forecast for next month.

French Consumers Ignore Threat of Wage Crisis

Paris, France, Feb. 24.—The possibilities of labor troubles at the French mines after March 31 are ignored by industrial and domestic consumers. Steam coal trade has slowed up to such an extent that many collieries are storing fuel at the mines. A cold weather flurry increased household demand, but the increase did not pass beyond the retail distributors.

In the meantime, there is no promise of a reduction in mine prices earlier than April 1, when the collieries take up the question of wages. According to current reports, the Nord and Pas-de-Calais fields will decrease labor rates on that date. Such a move would be welcomed by the consumers, but the spirit in which such action will be accepted by the miners is doubtful.

Following the recent reduction in pithead prices on Belgian coals, re-ailers in the metropolitan district have announced cuts of 5 to 110 fr. in the various classes of fuel suitable for domestic purposes, effective March 1. Belgian and French bituminous and semi-bituminous grades will be reduced 5 to 27 fr.; Belgian anthracites, 12 to 47 fr.; Welsh anthracites, 83 fr.; Russian cobbles, 110 fr.; “British style” anthracites, 25 to 40 fr.

The French Government plans to levy a tax of 5 per cent of the c.i.f. value of all anthracites imported into the country and to place these coals in the luxury class. A slight increase in the tax on foreign briquettes also is contemplated. Coke duties, too, will be increased.

During January France imported 1,606,103 metric tons of coal, chiefly from Great Britain and Germany; 528,861 tons of coke and 54,923 tons of patent fuel. Exports the same month were: Coal, 329,715 tons; coke, 15,608; patent fuel, 13,967 tons.

From an official communication it is learned that total deliveries made by Germany to France as “reparations” during 1926 amounted to 4,142,000 tons of coal, 2,677,900 tons of coke and 253,500 tons of lignite briquets. (Since September no briquets have been delivered

as indemnity). This makes a total of 7,073,000 tons in all as against 8,229,200 tons during the preceding year.

To Develop Coal Deposits In South Africa

Cape Town, South Africa, Jan. 3.—Serious efforts to exploit the recently discovered coal deposits on the coast of Kenya Colony, South Africa, are indicated by the report that an influential South African mining syndicate has taken over the prospecting work, and a gang of drillers has been employed and will be directed by an expert mining engineer.

The mining of coal in paying quantities is likely to revolutionize East Africa's industrial prospects by cheapening the cost of operating the railways and lake steamer services, and it may also increase the importance of the port of Mombasa by making bunkering facilities available there.

Export Clearances of Coal, Week Ended March 10

FROM HAMPTON ROADS

For United Kingdom:	Tons
Ital. Str. Ansaldo Primo.....	6,063
For Nova Scotia:	
Swed. Str. Adolf Bratt, for Halifax..	2,904
Dan. Str. Bornholm, for Halifax....	1,156
For Cuba:	
Can. Str. Emperor of Halifax, for Havana	3,853
Dan. Str. Venus, for Clenuegos....	3,003
For Jamaica:	
Nor. Str. Ada, for Kingston.....	3,269
Nor. Str. Krosfond, for Kingston...	3,061
For Spain:	
Ital. Str. Laura C., for Malta.....	4,490
For Portugal:	
Port. Str. Mello, for Lisbon.....	5,057
For Danish West Indies:	
Nor. Str. Bergsdalen, for Curaçao...	5,216
For Trinidad:	
Br. Str. Mayaro, for Trinidad.....	4,375
For French West Indies:	
Br. Str. Hochelaga, for Fort de France	6,513

Hampton Roads Coal Dumpings*

(In Gross Tons)

	Mar. 3	Mar. 10
N. & W. Piers, Lamberts Pt.:		
Tons dumped for week.....	171,400	172,378
Virginian Piers, Sewalls Pt.:		
Tons dumped for week.....	115,698	145,944
C. & O. Piers, Newport News:		
Tons dumped for week.....	165,015	167,843

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers protest.

Pier and Bunker Prices

(Per Gross Ton)

	PIERS	
	March 3	March 10†
Pool 1, New York....	\$5.75@ \$6.00	\$5.75@ \$6.00
Pool 9, New York....	5.25@ 5.50	5.25@ 5.50
Pool 10, New York....	5.00@ 5.25	4.85@ 5.20
Pool 11, New York....	4.50@ 5.00	4.50@ 5.00
Pool 9, Philadelphia..	5.25@ 5.45	5.15@ 5.30
Pool 10, Philadelphia..	4.90@ 5.20	4.85@ 5.05
Pool 11, Philadelphia..	4.45@ 4.85	4.45@ 4.65
Pool 1, Hamp. Roads.	4.75@ 4.85	4.85@ 5.00
Pool 2, Hamp. Roads.	4.50@ 4.60	4.55
Pool 3, Hamp. Roads.	4.00@ 4.10	4.00@ 4.15
Pools 5-6-7, Hamp. Rds.	4.15	4.30@ 4.50

BUNKERS

Pool 1, New York....	\$6.00@ \$6.25	\$6.00@ \$6.25
Pool 9, New York....	5.50@ 5.75	5.50@ 5.75
Pool 10, New York....	5.25@ 5.50	5.10@ 5.45
Pool 11, New York....	4.75@ 5.25	4.75@ 5.25
Pool 9, Philadelphia..	5.50@ 5.70	5.40@ 5.65
Pool 10, Philadelphia..	5.15@ 5.45	5.10@ 5.35
Pool 11, Philadelphia..	4.70@ 5.10	4.70@ 4.80
Pool 1, Hamp. Roads.	4.85	5.00
Pool 2, Hamp. Roads.	4.60	4.85
Pools 5-6-7, Hamp. Rds.	4.20	4.35@ 4.55

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

Coming Meetings

Smoke Eaters' Association. Dinner, followed by meeting, at Cupp's Cafeteria, Johnstown, Pa., April 2, at 6 p.m. Secretary, C. O. Roberts, California, Pa.

American Society of Civil Engineers. Spring convention, Asheville, N. C., April 20-22. Secretary, George Seabury, 29 West 39th St., New York City.

American Welding Society. Annual meeting, April 27-29, at Engineering Societies Building, 29 West 39th St., New York City. Secretary, M. M. Kelly, 29 W. 39th St., New York City.

International Railway Fuel Association. Nineteenth annual convention, Hotel Sherman, Chicago, Ill., May 10-13. Secretary, L. G. Plant, Railway Exchange Bldg., Chicago, Ill.

American Mining Congress. Annual convention May 16-20, Cincinnati, Ohio. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

American Society of Mechanical Engineers. Spring meeting, May 23-26, at White Sulphur Springs, W. Va. Midwest regional meeting at Kansas City, Mo., April 4-6. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

Society of Industrial Engineers. Fourteenth national convention, Hotel Stevens, Chicago, Ill., May 25-27. Executive secretary, E. Van Neff, 17 E. 42d St., New York City.

International Railway Fuel Association. Nineteenth annual meeting, Hotel Sherman, Chicago, Ill., May 10-13. Secretary, L. G. Plant, 80 E. Jackson Boulevard, Chicago, Ill.

American Wholesale Coal Association. Annual convention June 1-3, Toronto, Canada. Secretary-treasurer, R. B. Starek, Chicago Temple Bldg., Chicago, Ill.

National Retail Coal Merchants Association. Annual convention June 6-8, Detroit, Mich. Resident vice-president, Joseph E. O'Toole, Washington, D. C.

Association of Iron and Steel Electrical Engineers. Annual convention in conjunction with the Iron and Steel Exposition, at Pittsburgh, Pa., June 13-18. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

New England Coal Dealers' Association. Annual meeting June 14-16, Hotel Griswold, New London, Conn. Executive secretary, E. I. Clark, Boston, Mass.

Colorado and New Mexico Coal Operators Association. Meeting at Boston Building, Denver, Colo., June 15. Secretary, F. O. Sandstrom, Denver, Colo.

National Coal Association. Annual meeting June 15-17, at Edgewater Beach Hotel, Chicago. Assistant secretary, J. C. Crowe, Washington, D. C.

American Institute of Electrical Engineers. Summer convention, June 20-24, at Detroit, Mich. Regional meetings, April 21-23, Bethlehem, Pa., and May 25-27, Pittsfield, Mass. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

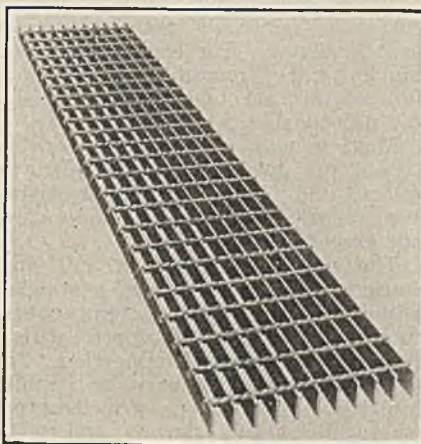
Michigan-Ohio-Indiana Coal Association. Annual convention at Cedar Point, Ohio, June 28-30. Secretary, B. F. Nigh, Columbus, Ohio

New Equipment

Steel Flooring Is Welded

Representing, it is claimed, a radical departure from general practice, the Blaw-Knox Co., Pittsburgh, Pa., announces its "Security Grating." The full value of all the metal in the grating is utilized by the process used in manufacture, the big feature of which is welding. None of the metal is cut, slotted or riveted. This, the company states, gives an actual one-piece construction.

This grating is non-slip, because of the twisted cross bars, more than one



Non-Slip Features Add to Safety

Steel grating with longitudinal cross bars are joined by resistance welding forming a one-piece construction.

of which are always in contact with each shoe of the person crossing a section of this type of flooring. The standard type of security grating contains eleven longitudinal bars to the foot. The cross bars at the top are spaced on 2½-in. centers. The longitudinal bars are ordinarily made ¾ in. to 1 in. thick. But the thickness, spacing and depth of bars can be modified to suit any specifications, and the product also can be galvanized.

Electric Hammer Is Portable

Marketing of the Ajax, portable, Type B-2 electric hammer is announced by the Ajax Electric Hammer Corp., 117 W. Sixty-third St., New York, N. Y. This unit weighs approximately 10 lb., is driven by a universal motor consuming 220 watts, and can be operated directly from any electric lighting circuit. This hammer was designed primarily for drilling and chipping materials, such as brick, stone, and cement, and chipping metals, but it is also adaptable to many other fields. A chuck which holds standard tapered shank drill points fits directly in the hammer and is provided with a handle for rotating the drill while in operation.

The mechanism, as described by the manufacturer, consists of only three moving units: Motor, crankshaft and plunger, which are housed in an alumi-

num frame. The crankshaft is driven at right angles to the motor by a 4.75:1 bevel gear reduction. Extending from the face or end of the crankshaft is a hardened steel pin and roller which operates in a curved slot cut in the face of the plunger, imparting to it a reciprocating movement. Approximately two-thirds of the revolution of the pin is devoted to lifting the plunger and one-third to throwing it with accelerating velocity against the tool head. As the plunger is thrown and not forced against the tool head no shock is transmitted to the gears or motor. With this method of operation it is claimed that it is impossible to overload or stall the motor and that the hammer delivers approximately 2,400 blows per min. independent of the size of drill or chisel being used. The drilling speed of this hammer with a 1-in. drill in hard concrete is about 2 in. per min., it is stated.

Adjustable Diestocks

Marketing of the No. 70 Series of Beaver adjustable diestocks is announced by the Borden Co., Warren, Ohio. This series is adapted for power drive and is made in five units which range in capacities from ¼ in. minimum to 2 in. maximum, in plain and ratchet types. The dies may be thrown open after the thread is cut, thus saving backing off by hand.

Each tool threads several different sizes of pipe without changing dies or bushings and left-hand threads may be cut in the same tool by inserting left-hand dies, according to the manufacturers. The die adjusting cam is beneath the dies. It is stated that the three-jaw universal chuck quickly and accurately centers all sizes of pipe; also, that no locking is necessary.

30-Ton Gasoline Locomotive

The Dupont Rayon Co. recently purchased a 30-ton gasoline locomotive from the Geo. D. Whitcomb Co., Milwaukee, Wis. With the possible exception of a type for experimental purposes, this unit is one of the largest pieces of gasoline haulage equipment that has ever been built.

This big machine is powered with a



Built for Heavy Work

Where this locomotive can be used, the manufacturer claims that its design and construction assures satisfactory and economical results.

6 cylinder 6½x7 Beaver engine, capable of developing 160 hp. at 1,000 r.p.m. It has a draw bar pull of 17,500 lb. on low gear without sand.

The frame is of solid-type construction, axles of forged steel, and wheels with chilled tread, or of any type required by the purchaser. Transmission allows for all speeds, either forward or reverse, and sand is furnished to all four wheels.

Welding Blowpipe Is Featured By Mixing Device

The outstanding feature claimed for the new Prest-O-Weld W-101 blowpipe, recently offered to the trade through jobbers by the Oxweld Acetylene Co., 30 E. 42nd St., New York City, is that it is designed so that the oxygen and acetylene enter the inlets at about equal pressures and are thoroughly mixed in a simple mixing chamber. The mechanical efficiency of this chamber, it is stated, insures intimate mixing of gases under all working conditions, eliminates waste of gases, and saves the time of the operator in maintaining the neutral or working flame.

This new welding blowpipe is of all brass construction and is said to be simple in design. It is screwed together on metal-to-metal seats, with no soldered or packed joints, to facilitate ease of disassembling and reassembling when minor repairs are necessary.

Small Safety Switch For Light Work

Announcement is made by the Trumbull-Vanderpoel Electric Mfg. Co., Bantam, Conn., of the marketing of its new 77 safety switch. This is a small, compact unit for direct application to the control of motors up to ½-hp. rating driving light machinery, electric pumps, and the like. The manufacturer states that the switch is only 3¼ in. wide, 5 in. high, and 2½ in. deep, not including the bulge in the cover. It is a double-pole, 30-amp., 125-volt polarized switch arranged for single-plug fusing. It is stated that because of the special construction of the end plate, which can be easily removed, or replaced with the switch in position, the wiring and installation are considerably simplified and greatly speeded up.

1,000-Lb. Melting Pot Put On Market

A new metal-melting pot, with a capacity of approximately 1,000 lb., has been added to the General Electric line and is now on the market. This pot, utilizing the electric heating principle, is practically the same as other standard pots made by the company except that three cast-in, sheath-wire immersion heating units are used instead of two.

Each heating unit is rated 5 kw. The pot may be operated either on 110- or 220-volt, a.c. or d.c. circuits, and the use of three heating units will also permit balanced three-phase operation.

The pot itself consists of a sheet-steel cylindrical casing in which is sup-



1,000 lb. metal-melting pot equipped with three 5-kw. cast-in, sheath-wire-immersion units

ported a cast-iron crucible of the following dimensions: Inside, 18 in. in diameter and 15 in. in depth; outside, 29 in. in diameter and 31 in. in depth. The space between the casing and the crucible, measuring about 3 in., is efficiently insulated with a compact heat insulator. The leads of the heating units are brought over the top of the pot into a connection box fixed to the unit itself.

Melting pots of this type are designed for melting lead, babbitt, tin, solder, and similar alloys or metals, except spelter or zinc, at temperatures not exceeding 850 deg.

The maker recommends full automatic control, consisting of a standard automatic panel and a temperature-control instrument equipped with a special bulb for metal immersion. Separate heating units may be installed in existing installations of melting pots where dimensions permit and where temperatures do not exceed 850 deg. F.

New Companies

North East Colliery Corp., New York City, organized to develop coal mines, etc., has been chartered at Albany, N. Y., with a capital of 100 shares of no par value. Walter E. Godfrey, Aaron H. Marx and Milton Reichgott, 42 Broadway, New York City, are directors and subscribers.

The Doran Red Ash Coal Corporation, Tazewell, Va., with a capital stock of from \$2,000 to \$25,000, has been granted a charter to mine coal in the State of Virginia and elsewhere. The incorporators are J. H. Harman, president; Robert W. Harman, secretary; W. T. Gillespie, James W. Harman and Barnes Gillespie, all of Tazewell.

The Mammoth Vein Coal Mining Co., McAlester, Okla., with a capital of \$10,000, has been incorporated by J. G. Puterbaugh and E. P. Joyner.

The Bluff View Coal Co., Collinsville, Ill., has been chartered with a capital of \$50,000 to mine coal and operate a coal mine near Collinsville. The following are the incorporators: Henry Rissi, Harry Paul, Sam Davis and Ed. Schoeck.

The Sabine Smokeless Coal Co. has been organized with a capital stock of \$100,000 and principal operation at Otsego, W. Va. It has been chartered to mine, prepare, buy and sell coal and coke and all of its products. Incorporators are N. H. Mannaker, R. B.

Farrish, George Woolfolk, H. E. DeJarnette and T. B. Beckwith.

Articles of incorporation have been filed in Indianapolis, Ind., by the Fick Brothers Coal Co. of Terre Haute, Ind. The company has an initial capital stock of \$10,000 and was formed for the purpose of mining coal. The incorporators are George Fick, Charles Fick and C. E. LaRue.

The Meigs County Coal & Land Co., Steubenville, Ohio, has been incorporated with a capital of \$50,000 to mine and sell coal and to deal in coal and mineral lands. The incorporators are H. O. Cooper, G. E. Walters, F. V. Stephenson, James G. Rogers and J. E. Peterson.

The Apex Coal Corporation, 37 West Van Buren Street, Chicago, has been incorporated with a capital of \$1,050,000, to mine and deal in coal. The incorporators are A. M. Oliver, George H. Haase and Edward C. Reagin.

The Daniels Colliery Co., with principal offices in New York, has been incorporated under the laws of West Virginia to mine, buy and sell coal, oil, iron ore and other materials. The company is capitalized at \$125,000 and has the following incorporators: J. D. Christian, F. L. Grigsby, T. B. Jackson, S. D. Richmond and Phyllis M. Bauer.

The Central West Coal Co., Terre Haute, Ind., has filed articles of incorporation, the incorporators being Lloyd L. Lehman, Fred V. Beal, Rice R. Pennington and Elmer Jameson.

The Roeder Coal Co., Canton, Ohio, has been incorporated with a capital of \$10,000 to mine and sell coal and also distribute coke and other fuels. Incorporators are O. C. Roeder, H. E. Pritchard, Katherine Pariso, Rosamond Brutschy and Theodore L. Roeder.

The Filmer-Carbon-Products, Ltd., of Toronto, Canada, has been incorporated with a capital of 1,000,000 shares of no par value to manufacture coke and byproducts, by John A. Campbell, Ethel Foster and Dorris M. Roe.

The Martin Coal & Coke Co. was incorporated in Howe, Okla., late in February, with a capital stock of \$50,000, by R. D. Martin and others.

Industrial Notes

Trico Fuse Mfg. Co., Milwaukee, Wis., announces the appointment of B. M. Slieting as sales promotion manager, in charge of the sales promotion work at the company's main office in Milwaukee. Arthur E. Bacon, of 1429 Eighteenth St., Denver, Colo., has been appointed as sales representative for the States of Colorado, New Mexico, Utah and Wyoming.

W. J. Johnson, of Pittsburgh, Pa., has severed his connection with the Lidgerwood Mfg. Co. and will hereafter devote his time to his private interests. Mr. Johnson is president of the Allegheny Equipment Corp., Pittsburgh, and is actively associated with that company at present. During his 28 years with the Lidgerwood company he had charge of branch offices in Pittsburgh, Philadelphia, Scranton, Columbus, Cleveland and Birmingham, Ala.