COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
Engineering Editor

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West Virginia Takes the Plunge

MERCHANDISING HISTORY was written when members of the Smokeless Coal Operators' Association of West Virginia decided to support their contemplated invasion of the New England domestic market with a combustion-engineering service. Heretofore the the average low-volatile producer has been as backward in marketing methods and appreciation of public contacts as was the anthracite industry during its long somnolence. Now, to widen their markets, the smokeless operators plan a service similar to that inaugurated by anthracite when it awoke to the menace of dwindling demand. They, too, propose to teach the consumer how to burn their coal efficiently and to smooth away the sharp angles of complaint.

The advantages of such a service are too obvious to call for comment. These advantages, however, cannot be fully realized unless and until certain less patent, but none the less controlling, drawbacks have been overcome. In New England, the smokeless producer is faced with the job of establishing consumer acceptance and of breaking down retailer resistance. Tradition has bound both householder and retail distributor to anthracite. They may abuse and damn hard coal, its quality, its preparation and its price, but it is still their favorite and favored fuel—and neither the fervor of the New England Governors' Fuel Committee nor the missionary zeal of Mr. Hultman can change that situation over night.

The retail distributor will handle other fuels during the present emergency as a public duty, but there will be little enthusiasm for the task. He will be ready—and willing—to forget their existence as soon as anthracite production is again in full tide. One thing only will chill this desire to ignore other fuels after the strike has ended. That one thing will be a real, an insistent demand upon the part of his customers for more of the fuel the emergency forced upon them. The New England retailer loveth anthracite much, but he loveth his customers more.

It is, of course, the work of the smokeless coal bureaus to create and to fire such a consumer demand. Anthracite has been burned so long in New England that proper handling in the domestic heating plant has become instinctive. These bureaus must teach the consumer a new combustion technique. That in itself is no easy task where habits have been ingrained by generations. If the New England character is as fixed in its mold as common report states, it will take far more than the modest sum which the association has provided for this campaign.

But the work is still further handicapped at the start by the price situation. The consumer, deprived—without consultation or consideration—of his accustomed anthracite, is in a resentful mood. It will add nothing to the kindliness of the reception or to the fairness of the trial he gives another fuel if the price charged approximates what he normally pays for hard coal. In his mind, it will be adding insult to injury. Therefore, if West Virginia desires to make a permanent conquest of New England, mine prices on prepared sizes must come down or the energies of the campaign must be concentrated upon mine-run.

We are considering here long-time merchandising, not hit-and-run speculative selling. If the latter be the goal, the proposal indorsed at Boston is an expensive and meaningless gesture. The producer may be able to justify a $6 or $7 price on lump, but New England will remain unconvinced. He cannot justify the spread between $6 lump and $2.25 mine-run—especially in view of the eagerness with which he now is willing to book orders for the latter size at $2.50. He may be able to justify all his prices, but he is not helping his cause in New England. To appear before the public in the guise of a profiteer—even if the disguise is false—is too big a handicap for any sound merchandising campaign to carry.

Checking Plans for Safety

ONE COAL COMPANY puts the words "Safety, the first consideration" on all its maps and plans as a continual reminder of the importance of safety. It would be well if, in recognition of this obligation, large manufacturers had a safety man who would check all important drawings, if not all drawings, for safety, and if smaller companies were to require a signature after the words "Inspected for Safety" even if the same engineer who signed a general approval were the man appointed to affix his name as vouching within reasonable limits for the safety of the device. Unfortunately, rarely can a device be made wholly foolproof.

More Electric Power

MOST OF THE EXPANSION in the coal market will come from increased use of electric power, and the coal operator should co-operate with the electric utility industry in promoting increased power consumption.

In the West the soil is made to give good results by judicious irrigation. Unfortunately irrigation may be extremely injudicious. The strength of the soil may be leached away and fields may be insufficiently drained. But with proper management arid land may be greatly benefited by irrigation. Farms on which the rain but rarely falls, when irrigated properly, seldom fail to produce a bumper crop.

On the other hand, in the East there is no irrigation and the crops are uncertain. The lack of rain may appreciably retard plant development and the farmer never knows what he will be able to produce. With some means of furrow or of subsurface irrigation or, if vegetables are planted with some provision for spraying from pipes, it would be possible to get a good crop

every year. The only variable remaining would be the sunshine.

The U. S. Department of Agriculture as long ago as 1917 had issued three bulletins on this subject, one on the surface irrigation of Eastern farms, one on irrigation in Florida and one on spray irrigation. Says Milo B. Williams in the last of these brochures:

> Within the past ten years the spray irrigation method has been adopted over a wide area in the United States especially in the Atlantic Coast States from Massachusetts to Florida. Many spray irrigation plants have been installed in the North Central States while scattered installations can be found in practically all Southern and Western states.

The Department says that it has received many letters asking for information regarding irrigation in Eastern localities. It appears that the pump and pipe manufacturers, and the central station could make profitable use of this irrigation movement. It should be called to their attention. In that advance the coal industry would profit.

Eye as Victim or as Culprit

WHICH ARE THE MORE important, eye accidents or accidents from faulty eyes?

At a recent executive meeting of the American Society of Safety Engineers, which is the engineering section of the National Safety Council, a member of the executive board said he had seen only one workman in either the construction or the machine industry who wore spectacles to correct his eyesight. Yet in that executive board as then assembled—and twelve were present—all but two wore glasses of one type or another.

He could not believe that the average workman had any better eyes than the men in that executive board and if they had not they were exposing themselves to many hazards. The Society mentioned is preparing to make a research into the "Influence of Faulty Vision on Accidents." It seems that the miner also must often fall a victim to faulty vision. Working in the dark, with the insufficient light of a single lamp, his condition must be perilous if his vision is defective. It is quite likely that accidents to the eye are not nearly so frequent or so dangerous as accidents caused by defective vision.

Only One Size for Coal

SOME TIME IN THE FUTURE coal will be prepared at the mine in only one size—slack—unless, indeed, it is pulverized before shipment for use in powdered-coal furnaces. The coal industry should hasten that day. Operators should everywhere be studying the possibility of a greater use of fine sizes whether as slack or as dust.

When that time comes coal will be handled at the face with less care than today, pneumatic transportation may be adopted and coal may even be taken to market hydraulically through pipes. Coal will be coal then, no matter what is its size. No one will have to consider in that day whether he can dispose of the rest of his product, if he puts his output over any given screen. It is probable that all the coal will be crushed at the mine because some of the consumers, especially those who use it for heating, may not be equipped for crushing their fuel. The power plants at that time may be all at the mines so that only the coal needed for heating will be "shipped' by pipe or car, and perhaps not even that will have to be transported for it may be converted into gas before shipment.

To make these developments possible much remains to be accomplished. At present coal should be transported to the local power stations wherever energy is needed far from a natural fuel supply. Probably it will be necessary to take coal to gas houses near where the gas is to be used unless the load is uniform the year round, which is not the case, of course, where gas is used for house heating as it is in a degree in all cities. The demand for gas for cooking is less seasonal, and where so used the possibility of piping it with profit is increased.

Certain it is that a much larger use of small coal can be made, and if the market for it improves it will be possible to raise the price to such a figure that it will be profitable to mine coal to supply the slack market alone. When that time comes for the high-volatile region one of its greatest difficulties will be solved. Fortunately, the low-volatile mines have been able to operate at all times on a run-of-mine basis.

However, he would be foolish indeed who would let the interest in the future market so influence him as to neglect preparation. So long as present equipment is used for burning coal, careful sizing will pay. No one will do well to let a distant ideal, to which we shall for years only approximate, interfere with a prudent effort to give the present market the service it demands.

Steam Better than Water

AS A RESULT of power-house economies and the skill shown by steam-station designers, hydro-electric development seems likely to be kept in check. Where, as at Niagara Falls and on the Pacific Coast there are abundant opportunities for the manufacture of hydro-electric power and no coal, there can be no conflict between water and steam as a source of power. But in other places the outcome will favor the use of steam.

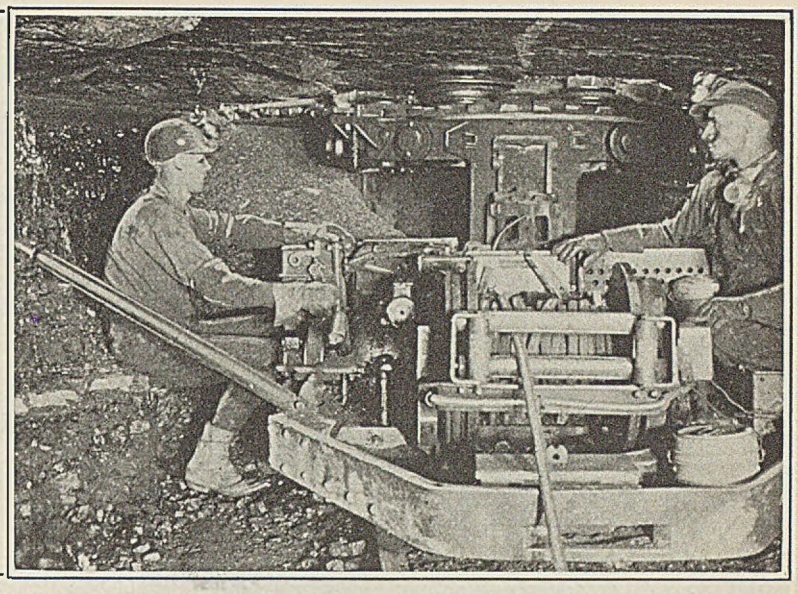
It is usually the case that hydro-electric power is generated just where no one would think of using it, in mountain fastnesses where no one lives and where there are few farms. Coal, however, many years ago surrounded itself with a large and industrious population. "White coal," or water power, might eventually do the same, but that takes time.

Droughts recently have interfered with the operation of hydro-electric systems and have made it necessary to add to the number and size of the steam auxiliaries, thus adding to the cost of water power. Steam-station engineering has developed to such a point that stations costing $125 per kilowatt of capacity have been able to produce one kilowatt-hour for six mills.

Opportunities exist for further improvement of steam plants. They are low in overall efficiency whereas hydro-electric power borders on a maximum. So, after all, the savings in the economy of steam at central station plants is not going to be altogether a disadvantage. It is going to prevent hydro-electric power from making further development. The fact that the best sites have been exploited and the jealousy with which the public watches all hydro-electric developments, especially where they detract from scenery of great natural beauty, are other reasons for feeling assured that steam power will always be a strong competitor to water.

Turret-Type Cutters Improve Coal Mining in Kentucky

Three in One Mine Save Labor Protect Weak Roof and Keep Coal Cleaner — Another Makes the Amburgy Seam Marketable



By Alphonse F. Brosky
Assistant Editor of *Coal Age*, Pittsburgh, Pa.

THE FAR-REACHING utility of coal-cutting machines that can operate in the top, bottom or middle of a seam is well demonstrated in two eastern Kentucky mines. Machines of this turret type that can cut across a face from a track position greatly reduce the time and labor factors of mining. Cutting at the top they protect a weak roof from the shattering effect of explosive. Cutting at any level they help to remove slate bands from a seam, thus not only reducing ash content of coal shipped but preventing the waste incident to operating a machine in coal itself.

The first two benefits were the ones mainly sought by the Consolidated Fuel Co. when it installed three turret machines in its Elsie No. 2 mine on Smoot Creek in Letcher County. The third was the principal consideration at the adjacent mine of the Stafford Coal Co. In both mines the arc cutters have "earned their keep" and in neither have the machines been given an opportunity to reach their full capacity. Expansion of operations will do that later.

The Consolidated Fuel Co., by using its three machines for cutting above the coal in a soft roof slate, has largely solved the problem of separating this material which otherwise comes down and mixes with the coal. In this mine, halfway between Blackey and Whitesburg, the Hazard No. 4 seam, 56 in. thick, is worked. The thickness of the cover varies from 600 to 800 ft. Rooms are driven 15 ft. wide and 200 ft. long on 50-ft. centers. Entries are mined 10 ft. wide.

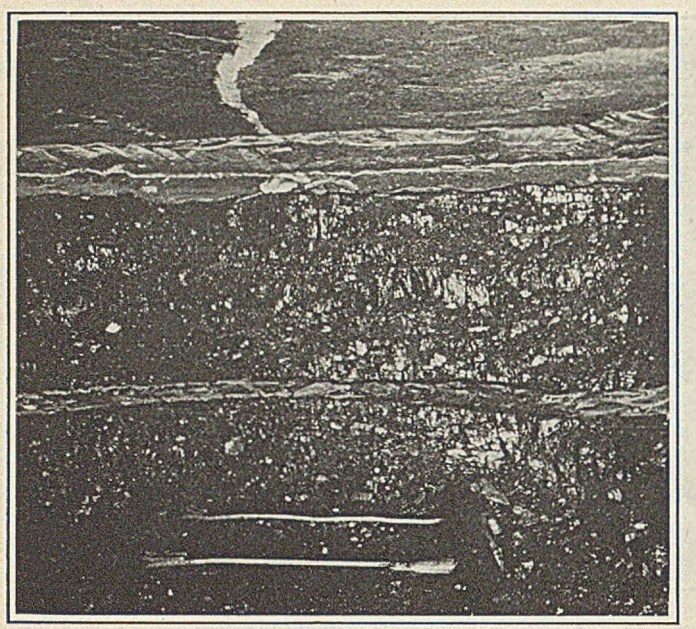
By the use of cutters such as the one shown in the headpiece the Consolidated Fuel Co. has turned into a favorable condition what before caused it considerable difficulty in drives for cleaner coal. This machine is shown cutting out a soft roof slate which always had come down and mixed with undercut coal. And, of course, a fair quantity of lump coal is added to the recovery by cutting in the slate. This place, which is 10 ft. wide, was cut in four minutes.

The region of this seam lies roughly between Hazard and Whitesburg. The thickness of the seam is greatest near Whitesburg. In the immediate vicinity of Hazard the seam is 3 to 3½ ft. thick, having a bottom of hard smooth slate which is called "jack rock." In the Elsie No. 2 mine and throughout the vicinity, where the coal is thicker, the jack rock, 4 to 6 in. thick, is underlaid by 12 to 14 in. of bottom coal which is absent where the seam is thinner.

The top above the seam is not uniform in the Elsie No. 2 mine. This creates varying mining conditions. In wide areas the coal is overlaid by a band of soft slate, the maximum thickness of which is 6 in. Because of it the turret machines were installed. In other parts of the mine the top is of a smooth harder slate, which is taken down after the coal is mined. The slate in some places is rough without regular cleavage and contains kettle bottoms. In places these shales attain thicknesses of 6 to 8 ft., being capped by a deposit of sandstone. Elsewhere the shales disappear leaving in their place the sandstone which occasions little worry to the management. Sometimes a draw slate is found between the sandstone and the coal. This multiplicity of roof conditions partly led to the adoption of the arc cutting machine. Mainly, however, the decision was dictated by the need of keeping the coal free of shattered particles from the soft slate top.

Throughout most of the region there lies, immediately above the 6-in. layer of soft slate, a 4-in. layer of hard slate which must be taken down. The latter does not contribute a higher ash content to the coal because a span of this material stays in place at least until after a cut under it is loaded. An illustration typical of this condition appears in the accompanying

CUTTING MACHINES which operate from a position on the mine track are gaining favor. This is chiefly due to the saving in time and labor in making ready to cut and also to move which these machines effect, accounting for their greater productivity. A machine which cuts a horizontal kerf at some level above the floor automatically falls into this class for it must be built heavily enough to hold against a thrust above its center of gravity and consequently must be supported by rails. In the future machines of this type are bound to be used more and more to cut out bone and ash, thereby widening the markets of some of our coals. They may redeem "lost" mines.



A Typical Condition in Elsie No. 2 Mine

About 14 in. from the floor is seen the 4-in. band of "jack rock" which is lifted out of the cut after the top bench is loaded and before the bottom bench is mined. Usually the top bench is shot and the bottom bench dug. A soft slate is directly above the coal. Harder slate is above the soft, which is taken down after the cut is loaded and above that the rather solid roof slate.

halftone showing a room face. As this hard band sometimes forms the top of the seam the cutting machine helps to prevent the shattering of this band of hard slate and upper strata during the shooting.

Little need be said about the actual operation of cutting because with these details the reader is familiar. The machine cuts in the soft slate wherever this material forms the top and in the coal where sandstone or hard slate forms the roof. It works at approximately the same rate in either material easily cutting 25 to 35 places, 10 and 15 ft. wide in a day. The output of the Elsie No. 2 mine is now about 800 tons. All of this coal is cut by the three machines. However, as they do not work under the same conditions the output of each varies. The crews do not work a full 8-hr. shift. If they did the three machines should be able to average 1,000 tons a day without difficulty.

The occurrence of the jack rock in the seam and its effect on shooting are other factors which may have influenced the adoption of this type machine. If the coal were undercut the shots would bring down the jack rock with the top and bottom benches, a condition to be avoided for obvious reasons. Furthermore, the jack rock by virtue of its comparative resistance and location in the seam is likely to reduce the effectiveness of the shots.

As it is now, a 7-ft. cut is made by an 8-ft. cutterbar. Two 1½-in. rib shot holes 7½ ft. deep are charged with either one and a half or two sticks of permissible explosive, bringing down the top bench of coal which is loaded first. The shooting of the upper bench breaks the jack rock making it easy to load, and springs the bottom bench sufficiently to produce large lump coal. Top cutting simplifies what otherwise would be a difficult condition for shooting.

The Stafford Coal Co., opening up its mine near Elsie No. 2 mine operates in the Amburgy seam which is below the Hazard No. 4 seam. It is using a low type arc-cutting machine for a different purpose. It is said this company is the only producer in Letcher County mining the Amburgy seam. Aside from a 3- to 5-in. bone parting which divides the seam into a 16-in. top bench and a 27-in. bottom bench, the seam is low in ash. The roof is generally sound and self-supporting.

This band of bone strictly is not a parting because it is more or less burnt to the upper and lower benches and, therefore, cannot be separated satisfactorily. This coal seam is fairly persistent as to thickness and has a good roof but little effort has been made in the past to mine it. The fact that wants are known to occur in the seam may be partly responsible for this but the main reason is the bone band within the seam.

Other Methods Failed

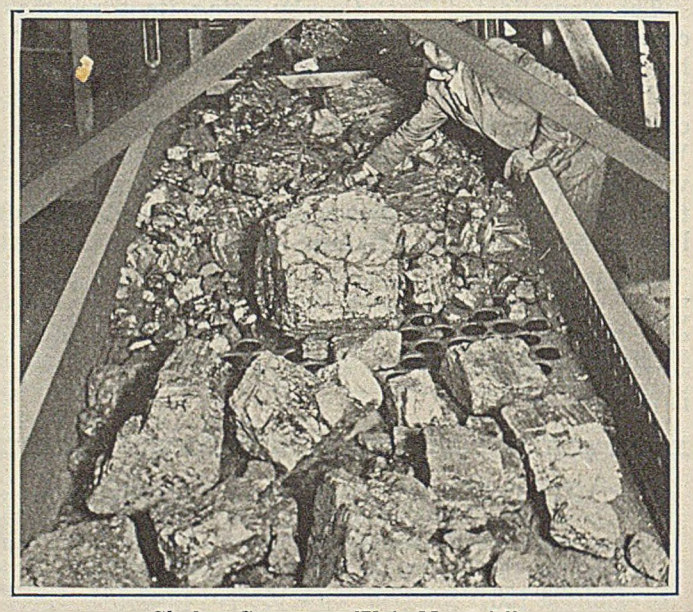
In the several attempts made to work this seam both pick mining and undercutting methods were tried. In neither case could enough of the bone be removed by hand to provide a low-ash coal. The Stafford Coal Co. reopened a mine abandoned by a predecessor, with the intention of cutting out the highly objectionable band of bone. And this is precisely what the company is now doing with the aid of the machines.

Rooms are driven 16 ft. wide and 200 ft. deep on 50-ft. centers. Room pillars are recovered immediately upon completion of rooms by open-end cuts on the backs of the pillars, the machine retreating toward the entry. In the pillar work as well as in rooms the machine (alternating-current drive) is used. Twenty-five-pound rails are laid on steel ties in rooms and pillar sections for the machine.

After the bone is cut out, requiring about 5 min. for a place 16 ft. wide, the upper bench springs sufficiently to require no shooting. Large lumps (splint coal) are dislodged from the upper bench by pick mining. Occasionally a pop shot is needed to loosen the coal in this bench. Three sticks of permissible explosive in two shots are sufficient to produce good lump coal.

As this mine is in the early stages of its development it has not been possible to determine how much work this machine will do in a full shift under the conditions described. It is believed that the machine should cut at least 25 rooms in one shift.

It is commonly thought that machines which cut a kerf above the floor add to the danger from coal dust ignition. This of course holds where the machine is

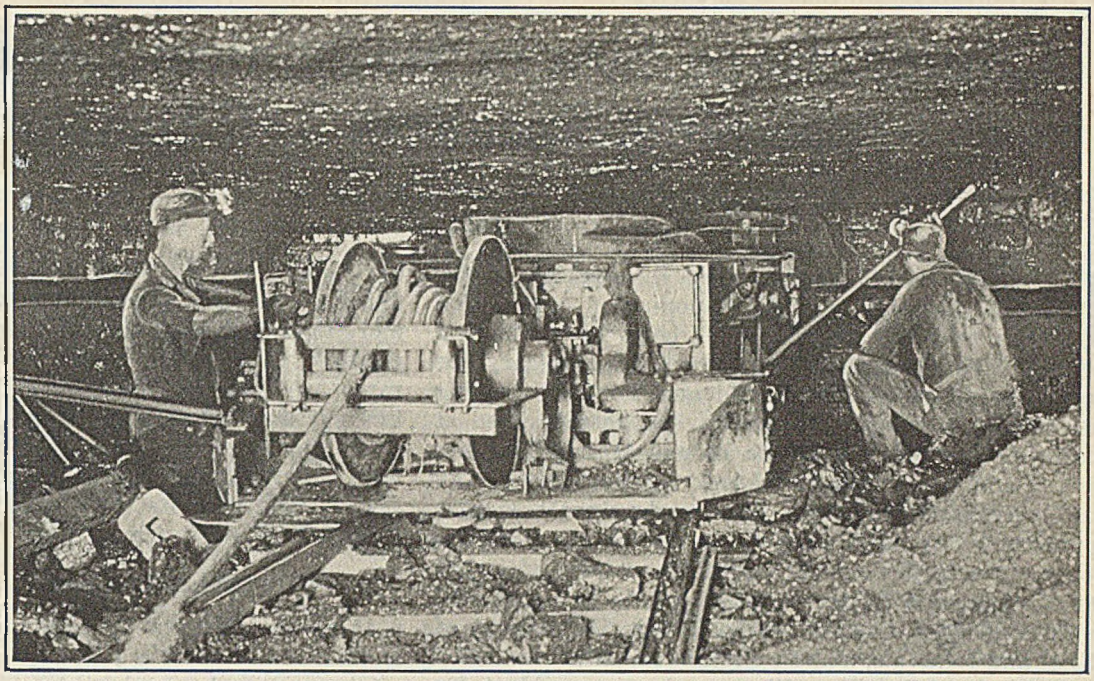


Shaker Screen at Elsie No. 2 Mine

The Consolidated Fuel Co. believes in good preparation and, therefore, has installed that equipment which will bring this about. This coal comes from the Hazard No. 4 seam.

Cutting Out Bone

This machine, and it alone, makes the Amburgy seam in this mine marketable. About 16 in. from the floor is a 3- to 5-in. band of bone which can be separated from the coal satisfactorily by no other means than cutting. Attempts have been made to mine the seam by pick and by undercutting but both schemes failed because the bone adheres tenaciously to the coal. The large-diameter cable indicates that alternating current is used for cutting.

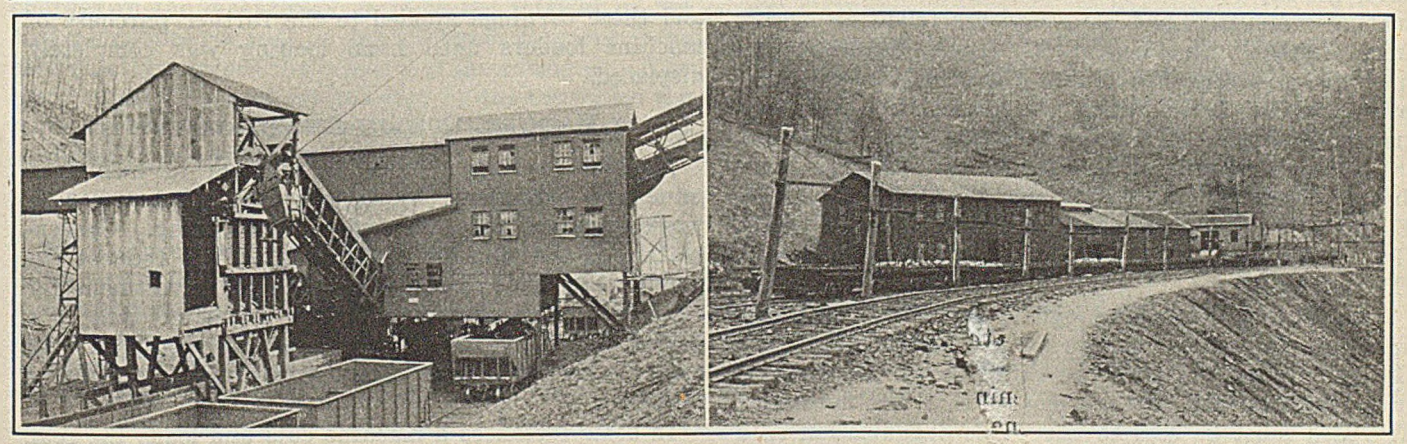


cutting a kerf in coal. It applies in lesser degree where the machine cuts in bone, and not at all where the cutting is in slate. In the latter case, cutting really serves as a measure of safety because of the slate bug dust produced. Sprinkling the cut with water taken from a pipe line or from a storage tank by an arrangement such as that described in *Coal Age*, May 14, p. 711, will prevent a dangerous quantity of dust from floating in the air. Respirators may be worn by the crew for protection against the shale dust coming from the kerf, as in the Elsie No. 2 mine where respirators are used by the crews. Electrically the top cutters are as safe as the undercutters, it being possible, of course, to procure permissible equipment in either machine.

Canada Has Much Semi-Anthracite in Alberta Reserve Beds

The Dominion Fuel Board has issued a report by James McEvoy, of the Canadian Geological Survey, on the coal areas of the Smoky River and Sheep River district in Alberta, of which Mr. McEvoy made a close examination. These coal areas are interesting but not commercially available yet. He states that there is no anthracite in these areas. In one locality on Smoky River there is coal the analysis of which shows a fuel ratio just within the semi-anthracite class, but physically it has no anthracitic properties. A large area on Smoky River and Sheep River contains semi-bituminous coal, or as it is usually called in the West, "high grade" bituminous. Considered as a new source of coal supply the principal fact is the occurrence of a large tonnage of high grade bituminous coal, one notable 14-ft. seam grading in places by analysis as semi-anthracite.

This seam will give a superior steam coal, but it is not notably better than the other high grade bituminous coals already developed in Alberta in the qualities which domestic users require. None of these coals will satisfy the domestic consumer who wants fuel to take the place of anthracite as they all have a ragged fracture which makes fine dust when handled and they will cause a deposit of soot in flues and chimneys. While Mr. McEvoy regards these areas as a valuable asset in the future, he considers that there is no need for their development on a commercial scale for many years to come.



Blue Diamond Mine, One of the Largest Producers in the Hazard Field

At the left is the coal loading tipple and aerial refuse conveyor of the Blue Diamond Coal Co., Blue Diamond, Ky. This mine loads 2,500 tons per day. Flight conveyors retard the coal on its movement down the hillsides from the mine openings on each side of the hollow. On the right is shown the repair shop and substation on the "Old Side" of the Blue Diamond mine, which is one of the leading producers in the Hazard Field. This shop, supervised by Harry Kivett, chief electrician, does repair work for the mines of the Sapphire and Liberty Coal companies which are under the same management as the Blue Diamond.

Illinois' Hope Lies in Mechanical Loading and Cleaning, Speakers Tell Institute

By Frank F. Tirre
St. Louis, Mo.

ILLINOIS' HOPE of regaining its position in the the coal industry in spite of non-union competition lies in reducing its production costs by mechanical loading. To accomplish this it will be necessary for union opposition to be softened and for coal cleaning methods to be adopted generally, speakers insisted at the thirteenth meeting of the Illinois Mining Institute Nov. 6 and 7 at West Frankfort, in the heart of the southern Illinois coal field. The two-days' meeting gave opportunity for much good fellowship at the Franklin County Country Club, a technical session, visits at various mines, a dinner in honor of A. D. Lewis, the newly appointed director of the Illinois Department of Mines and Minerals, and an election of officers in which E. G. Lewis of Royalton, Ill., was chosen president for the coming year.

Under the guidance of "Jack" Rodenbush, mine superintendent for the Chicago, Wilmington & Franklin Coal Co., the visitors were taken down into Orient No. 2 mine, the present holder of the world's tonnage record, 11,325 tons in 8 hr., made on Nov. 4. On the day of the visit 6,000 tons were produced up to the noon hour without confusion or interruptions of any sort. Other visitors made a general inspection of the district, including strip mines, and many accompanied John E. Jones, rock dusting authority, on his safety inspection tour through Old Ben Coal Corporation mines. The fact that this was the "thirteenth" meeting of the Institute was no "hoodoo" as the gathering was a large and interesting one.

Elect E. G. Lewis President

Harvey E. Smith, retiring president, in his opening remarks spoke sadly of the recent death of Martin Bolt, former secretary-treasury of the Institute and director of the Illinois Department of Mines and Minerals. After some routine matters were disposed of the constitution was changed to provide for twelve members of the board of directors instead of five, and after the report of D. D. Wilcox, chairman of the nominating committee, had been read the following officers were elected: President, E. G. Lewis, Royalton, Ill.; first vice-president, Wm. Kidd, Peoria, Ill.; second vice-president, Dr. L. E. Young, St. Louis, Mo.; secretary-treasurer, Frank F. Tirre, St. Louis, Mo. The executive board consists of the following: Thomas Back, Jas. S. Anderson, J. A. Garcia, J. A. Jefferis, John E. Jones, F. F. Jorgensen, S. T. Jenkins, A. D. Lewis, Geo. McFadden, A. C. Callen, John Rodenbush and Ed. Coulehan.

The subject of machine loading was introduced with John A. Garcia in charge of the discussion. Mr. Garcia pointed out that the selection of the machine with which to load coal was not all that was necessary. The idea must be sold to the whole organization in a mining company.

"Many coal operators have persisted in the old method of doing this work as we used to do it 50 years ago," said Mr. Garcia, "Mechanization of coal mines is at our door. Are we going to open the door or are we going to let this opportunity, which does not knock more than once, pass on? We are confronted with competition from other states whose favorable mining rates are enabling them to take our markets. This has put our industry in Illinois in a most deplorable state and in my judgment the crisis can be met only with mechanization of our mines. This southern Illinois field with its thick seam and good coal is well equipped to meet competition."

Useless to Look for Reduction

It was pointed out by a number of speakers that it is useless to expect a reduction in the present Illinois mining rate. A complete new order of producing coal must be made if the state is to maintain itself. Many changes will be noted during the next five years, especially in the cleaning of mechanically loaded coal. This is an item of cost ranging from 3c. to 10c. per ton. It seems prohibitive until one realizes that by mechanization five times this amount can be saved. Mechanical loading will increase the quantity of impurities 1½ per cent to 3 per cent, and in some instances it may be necessary to wash the coal. A washing method was mentioned which cleans by stratification at a cost estimated at 6c. per ton as against a cost of 25c. per ton on a jig washer. With this washer there is no loss of water. It is reused.

Most southern Illinois coal smaller than 3-in. must be washed, speakers declared. Larger coal, machine loaded, can be picked as clean as if it were loaded by hand. Machine production averaged 264 tons per shift per loading machine in one mine on room work only, making a saving of 50c. per ton. Several speakers agreed that proper coal cleaning should not absorb more than 20 per cent of a loading machine's savings.

It was suggested by a prominent engineer that in the installation of mechanical methods of producing coal, only a part of the mine be equipped with loaders at first. A careful record could be kept of the earnings and these earnings applied to the further purchase of machine loaders until hand loading was completely displaced.

Machines Quickly Repay Investors

Machine loading reduces the number of men in a mine and cuts down by 60 per cent the number of working places required under hand-loading. Concentration of the working force such as this reduces the length of entry to be kept up, and the investment for rails, wire, and supplies. It was estimated that in a period of three years a mine can be fully equipped with machine loaders bought with the earnings of those first installed.

In some instances a machine cuts and loads the coal. Where this is done, shooting during the day with men in the mine is necessary. This is now considered by some to be in violation of the law. The Institute urges a speedy solution of this question.

In Illinois a joint commission of miners and operators has been appointed to work out a scale of wages for men operating loading machines. The Institute is appealing for an immediate report from this commission because further installation of loading machines in Illinois is blocked by order of the United Mine Workers, District 12, until a scale is provided.

Dr. F. C. Honnold, of the Honnold Coal Bureau in Chicago, acted as toastmaster at a dinner in honor of the new director of the Illinois Department of Mines and Minerals, A. D. Lewis, a brother of John L. Lewis, International President of the United Mine Workers.

The first speaker was T. C. Powell, president of the Chicago & Eastern Illinois Ry., who spoke about the part played by the railroads in the production of coal in this country. He congratulated the southern Illinois field upon the opportunity it has before it as the greatest coal-producing center in the world, and deplored the present competition it has to meet—a competition that is causing many of the large producers to remain idle when they ought to be in operation.

"In looking over figures," said Mr. Powell, "I find that we have 70 mines on the line of the C. & E. I. Out of the 70 operations, 37 are definitely closed. These 37 have a rated capacity of 1,036 cars per day.

Cites Record for October

"Our actual experience during October was, however, that of 33 mines in condition to operate, the fluctuation from day to day has been extreme in that only twelve mines were working on Oct. 12, and on only one day were as many as 28 mines in operation. The average for the month was about 20 mines. Instead of turning out 1,330 cars of coal per day, the volume fluctuated between 300 and 400 cars with the maximum never reached.

"Even the reduced quantity of coal that has been loaded has not all been sold. We have on hand today unbilled something like 400 cars of coal. Each railroad interested in the development of its coal mines must make a heavy investment in coal cars and as long as those cars are idle or stand under load unbilled, and all during the period that they are moving back to the mines for loading, interest charges on the cars continue to accrue. A coal car which costs $2,500 and will hold 70 tons of coal, must make at least 40 trips under load before the cost of the car has been made, to say nothing of the cost of transportation, maintenance and interest charges in the meantime. It is to the interest of the coal companies as well as the railroads to move these cars quickly between the mines and the consignee. The more quickly the cars are released by the consignee the more certain the mines will be of getting sufficient equipment for additional business.

Points to Failure of Waterways

"There has been some talk of waterways, especially in this part of the state. If any means can be found to cheapen the transportation of coal by water ways, I would say 'Amen' as I believe that the public is entitled to all such improvements that are feasible. But before our government or state is called upon to make so vast an expenditure as has been proposed, I would want you to look well into the situation, gathering information as to the experience of the C. & O. canal into Washington. I believe it has been a failure. In New York the Erie canal was constructed between 1905 and 1924 and a sum of $260,000,000 expended, and it is still unfinished. The people of New York State pay an average of $4.40 for every ton handled by this canal, and the only commodities handled are a little bit of gravel, sand, oil and grain. These two examples should make tax payers consider."

Harvey E. Smith, past-president of the Institute made a graceful address complimentary to Mr. Lewis, the new state director of mines and banquet guest of honor. He also extolled the virtues of the Institute.

Shows Cross-Section of Mining Interests

"Membership in the Illinois Mining Institute is open to those either engaged in or interested in mining," said he, "and its roll of members shows a true cross-section of the mining interests of the state. Included in its members and present at this meeting are the owners and officers of coal properties, general managers and general superintendents, pit bosses and assistants, mine examiners and top bosses, electricians and mechanics, consulting engineers, state mine inspectors, rescue men, representatives of the United States Bureau of Mines, mining engineers and geologists, college professors, railroad men, officials of the United Mine Workers, coal salesmen, salesmen selling equipment and supplies necessary to the operation of the mines, electrical engineers representing the public utilities which supply the mines with power, and, last but decidedly not least, the miners—the men who really produce the coal and who are the foundation upon which the whole structure of coal production rests.

"This Institute has in these lean years of the coal business even a greater field for service than was presented in the more prosperous years. We mining men of Illinois, even though the outlook for the immediate future is dark indeed, will not admit that the coal production of this state is to fall permanently from the record of nearly 90,000,000 tons a year to less than half that figure. We are favored in this state with coal deposits which in extent and in favorable mining conditions are second to none. With these natural riches at our command we will not admit that we are not able to devise means and methods by which this coal may be extracted so as to compete with coals from other states. The best brains of the industry have been working on this problem without as yet finding a solution, but the problem must and will be solved.

Co-operation Will Help Solve Problems

"The solution, however, will only come through the thorough co-operation of all the various interests connected with the industry. In arranging this meeting in the heart of the coal producing center of the state, affording this opportunity for the free interchange of ideas, it was with the hope that some constructive thought might be brought to light which would assist in clearing the industry's troubles which so vitally affect us all."

Dr. Honnold next called upon H. C. Miller of the Bureau of Mines, who assured the new state director of the hearty co-operation of that governmental bureau. Dr. L. E. Young spoke in behalf of the operators of the state, extending his most hearty good wishes and pledging the support of Illinois mine owners. State Senator F. C. Sneed, welcomed Mr. Lewis on behalf of the United Mine Workers, District 12, after which the honor guest made fitting reply, thus bringing the Institute's semi-annual meeting to a close.

Miners' Union Maintains Doubtful Hold on Far West and Mountain States

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

THE LABOR SITUATION in the bituminous coal producing states west and north of the area covered by the operations in the Southwestern Interstate Field on the whole has shown less change in recent years than any other part of the country outside of the strongly unionized districts of Illinois, Indiana, Iowa, Michigan, Kansas and Missouri. To this generalization, however, three striking exceptions must be made. Colorado has been in more or less turmoil for over two decades. A large part of the operations in Washington—the only important producing state on the Pacific slope—has broken away from the union and North Dakota has established an open-shop basis. In the other states in the Rocky Mountain and Pacific divisions, the balance of power between union and non-union fields struck several years ago remains unchanged.

The United Mine Workers established itself in the Northwest in the early years of the present century. Montana and Wyoming were organized in 1904, Washington came into the fold in 1905; full recognition was extended to the union in 1908. In general, the effect of that recognition has been the same as in the older organized territories farther east. Basic day rates, of course, have been controlled by the advances granted in the Central Competitive Field. These advances, it will be recalled, raised the level of the base inside day rates from $2.84 under the 1912-14 contract to $7.50 under the Jacksonville agreement. Pick-mining rates in Montana and Wyoming were increased a total of 42 to 43.5c. per ton during the same period. These advances were more than met in the non-union and open-shop mines of Colorado and Utah, where the net increases for typical groups of operations ranged from 40 to 52c. per ton.

Individual variations both in basic rates and in increases, however, were much greater at the unorganized mines. A study of wage rates, made by the United States Coal Commission, showed increases ranging from 8 to 64c. per ton at 32 mines in Colorado and 16 to 48c. per ton at nine mines in Utah. In the majority of cases, the hourly rate for typical inside labor, such as brakemen, drivers and trackmen, was slightly lower in Colorado in the spring of 1912 than it was in the Central Competitive Field. In that major group the base rate was 35.5c. per hour. A few mines paid a higher hourly rate in Colorado at that time, going as high as 40c. but in most cases the rate was between 31 and 31.5c. Rates were advanced generally in 1912 and 1913 and cut at many operations in Colorado in the second half of 1915. Advances were common in 1916 and 1917, the second half of 1919 and in 1920. Reductions were made in the second half of 1921 and in the first half of 1922, but rates were restored during the second half of 1922 so that Jan. 1 1923 found the general average a few cents per hour above the base rates in the Central Competitive Field.

This summary and the detailed figures presented in Table VI illustrate sharply the effect of organization upon the adjacent non-union states in the Mountain division. Although changes have been more frequent in the unorganized states of Colorado and Utah, it hardly can be denied that the proximity of the strongly organized union fields of Montana and Wyoming has had a stabilizing influence upon non-union rates—particularly in times of prosperity. Wartime and post-wartime increases in the organized fields have been matched by increases in the open-shop regions, but the actual changes in cents per ton or per day have not always been the same. The non-union districts, however, have been in a position to take advantage of depressed conditions with wage reductions.

This was notably true of Colorado in the first half of 1922, when the pick-mining rates were reduced to a 1917 basis. The 1920 rates, however, were promptly restored the last half of the year. At the present time, the controlling rates are substantially less than the 1920 bases. In other words, it appears to be the fixed policy in that state to give the non-union workers the benefit of any wage victory won by the United Mine Workers.

Fifth of a series of articles describing the changes in the labor status of the different bituminous coal producing districts of the United States in recent years. Preceding articles appeared in *Coal Age*, Sept. 25, Oct. 1, 8 and 29. Another article will appear in an early issue.

Table VI—Changes in Pick-Mining Rates in Mountain States

(Rates in Cents per Ton)

	1912		1915	1916		1917		1919	1920	1922		Net Increase
	Jan.-June	July-Dec.	July-Dec.	Jan.-June	July-Dec.	Jan.-June*	July-Dec.	July-Dec.	Jan.-June	Jan.-June	July-Dec.	1922 over 1912
Colorado												
Thick-seam, 132 in.	45.0	45.0	45.0	45.0	45.0	55.0	80.0	80.0	94.0	74.0	94.0	49.0
42 in. seam	85.0	90.0	80.0	80.0	83.0	93.0	109.0	124.0	133.0	109.0	133.0	48.0
Trinidad	50.0	55.0	55.0	55.0	58.0	68.0	78.0	89.0	102.0	78.0	102.0	52.0
Montana												
Red Lodge, Carbon County	65.0	65.0	65.0	67.5	67.5	72.5	84.5	96.0	108.5	108.5	108.5	43.5
Bear Creek, Carbon County	78.0	78.0	78.0	80.5	80.5	87.5	97.5	108.5	121.5	121.5	121.5	43.5
Musselshell County	73.0	73.0	73.0	75.5	75.5	82.5	92.5	103.5	116.5	116.5	116.5	43.5
Utah												
Thick-seam, 113-156 in.	50.0	50.0	50.0	50.0	50.0	60.0	75.0	85.5	94.0	94.0	94.0	44.0
72-108 in. seam	63.0	63.0	63.0	63.0	63.0	69.0	79.0	90.0	103.0	103.0	103.0	40.0
66-130 in. seam	46.0	46.0	46.0	46.0	46.0	55.0	70.0	80.0	94.0	94.0	94.0	48.0
Wyoming												
Sweetwater	58.0	58.0	58.0	61.0	61.0	67.0	77.0	88.0	101.0	101.0	101.0	43.0
Frontier, Lincoln and Carbon	54.0	54.0	54.0	56.0	56.0	62.0	72.0	82.0	96.0	96.0	96.0	42.0

*Advances in Montana and Wyoming took place in April, October and November, 1917 and in November, 1919.

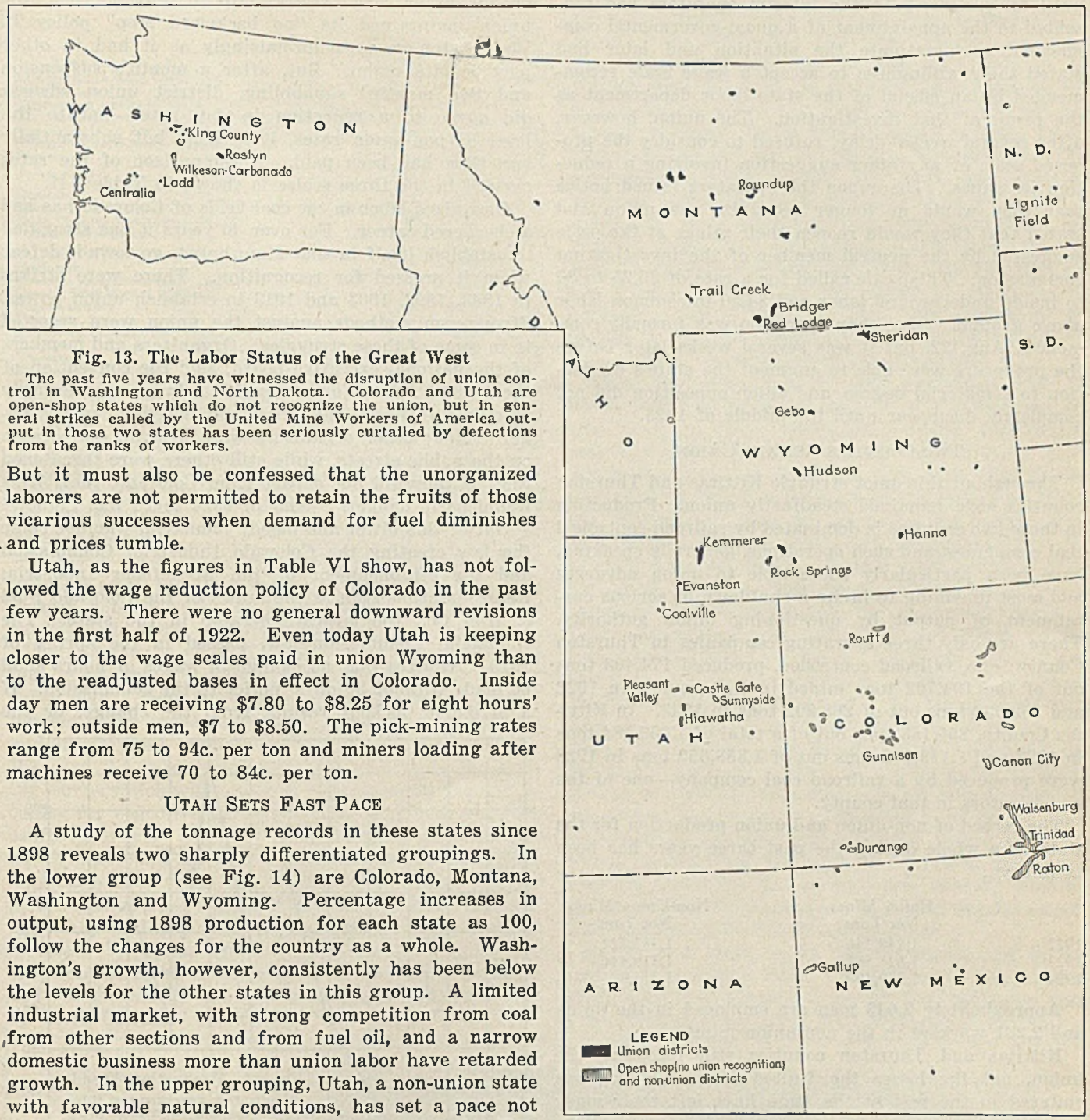


Fig. 13. The Labor Status of the Great West

The past five years have witnessed the disruption of union control in Washington and North Dakota. Colorado and Utah are open-shop states which do not recognize the union, but in general strikes called by the United Mine Workers of America output in those two states has been seriously curtailed by defections from the ranks of workers.

But it must also be confessed that the unorganized laborers are not permitted to retain the fruits of those vicarious successes when demand for fuel diminishes and prices tumble.

Utah, as the figures in Table VI show, has not followed the wage reduction policy of Colorado in the past few years. There were no general downward revisions in the first half of 1922. Even today Utah is keeping closer to the wage scales paid in union Wyoming than to the readjusted bases in effect in Colorado. Inside day men are receiving $7.80 to $8.25 for eight hours' work; outside men, $7 to $8.50. The pick-mining rates range from 75 to 94c. per ton and miners loading after machines receive 70 to 84c. per ton.

UTAH SETS FAST PACE

A study of the tonnage records in these states since 1898 reveals two sharply differentiated groupings. In the lower group (see Fig. 14) are Colorado, Montana, Washington and Wyoming. Percentage increases in output, using 1898 production for each state as 100, follow the changes for the country as a whole. Washington's growth, however, consistently has been below the levels for the other states in this group. A limited industrial market, with strong competition from coal from other sections and from fuel oil, and a narrow domestic business more than union labor have retarded growth. In the upper grouping, Utah, a non-union state with favorable natural conditions, has set a pace not equalled by any state in the first group nor by New Mexico. On a flat tonnage basis, however, Utah output is still far below that of Colorado and lags considerably behind that of Wyoming. North Dakota, not shown, has registered a still greater percentage gain, but the actual tonnage raised is relatively small.

The labor situation in Colorado has been more in the limelight, but to Washington belongs the distinction of making the first clean-cut, and successful, break with the union since the war. On March 1, 1921, a committee representing 90 per cent of the commercial (non-railroad) tonnage of the state announced that it was no longer possible to continue to pay the 1920 wage scale and proposed an average reduction of 23 per cent, to be effective two weeks later. If the district officials of the United Mine Workers, with whom the operators had been in fruitless negotiation for two months, would not assent to the plan, the mines would close down.

The miners rejected the reduction and the middle of March saw all but one company on the west side of the Cascades idle and one large company and several smaller ones on the east side down. The railroad mines in the Rosyln-Cle Elum field, however, continued to operate without reduction in wages; most of the mines in that section shipping coal commercially also continued to work. To the charge that the action of the operators closed down constituted a lockout in violation of existing agreements, the producers accused retorted that they had put the 1920 rates in effect following the decision of the United States Bituminous Coal Commission in the Central Competitive Field, but had refused to enter into any written contract guaranteeing the maintenance of those wages. Without the reduction sought, declared the operators, it would be impossible to meet the competition of Vancouver Island and Utah coal and of fuel oil.

The final severance of union relations did not come

until midsummer. In the interim operators had consented to the appointment of a quasi-governmental commission to investigate the situation and later had stated their willingness to accept a wage scale recommended by an official of the state labor department as the result of that investigation. The union, however, after several weeks' delay, refused to consider the proposed scale or any other suggestion involving a reduction in wages. Thereupon the operators issued notice that they would no longer recognize the union and stated that they would reopen their mines at the scale suggested by the neutral member of the investigating commission. This scale called for a rate of $5.25 to $6 to inside underground labor and $4.50 to common labor above ground. Open-shop operation was formally commenced Aug. 22, but it was several weeks later before the producers were able to augment the state's production to a material degree, and union opposition did not completely disappear until the middle of 1923.

TWO COUNTIES REMAIN UNION

Throughout this quiet struggle Kittitas and Thurston counties have remained steadfastly union. Production in those two counties is dominated by railroad-controlled coal companies, and such operations, generally speaking, have been particularly susceptible to union advances and most unwilling to invite a shutdown or serious curtailment of output by questioning union authority. There are only three operating companies in Thurston County: one, railroad controlled, produced 174,403 tons out of the 194,702 tons mined in that county in 1922 and 252,032 tons out of 268,202 tons in 1923. In Kittitas County, 866,183 tons out of a total of 1,053,584 tons in 1922 and 1,119,102 tons out of 1,358,359 tons in 1923 were produced by a railroad coal company—one of the six operators in that county.

The record of non-union and union production for the state as a whole during the past three years has been as follows:

	Union Mines Net Tons	Non-Union Mines Net Tons
1922	1,248,246	1,352,722
1923	1,626,561	1,319,446
1924	1,339,490	1,315,425

Approximately 2,045 men are employed in the union and 2,261 workers in the non-union mines.

Kittitas and Thurston counties still recognize the union, but the losses the United Mine Workers has suffered in the rest of the state have left their mark on the union wage scales. Up to May 1, 1923, the union maintained its "no backward step" policy in Washington as uncompromisingly as it had in other parts of its realm. But, after a month's suspension and two months' squabbling, district union officials did agree to a reduction in day rates—not to the level of non-union rates, it is true, but substantially less than had been paid. A comparison of the rates carried in the three scales is shown in Table VII.

Organized labor in the coal fields of Colorado has had a checkered career. For over 40 years it has struggled to establish itself in that state, only to go down in defeat when it pressed for recognition. There were strikes in 1883, 1893, 1903 and 1913 to establish union power. Strong-arm methods against the union were resorted to in some of these struggles. Organizers and members of the national executive board, said the convention of the United Mine Workers in 1905, "were murderously assaulted in broad daylight while traveling on passenger trains; other organizers were held up and beaten on the public streets, while still others were threatened that, if they did not depart from Colorado, their lives would be in danger." And in 1914 there was Ludlow!

Out of this bitter and bloody industrial warfare came the law creating the Colorado Industrial Commission and the establishment of the Rockefeller Industrial Representation Plan at the mines of the Colorado Fuel & Iron Co., the largest operator in the state. The Industrial Commission law, passed in the spring of 1915, "requires that no change in wages or hours shall be made without 30 days' notice to the commission. If a strike or lockout results from the change, or the

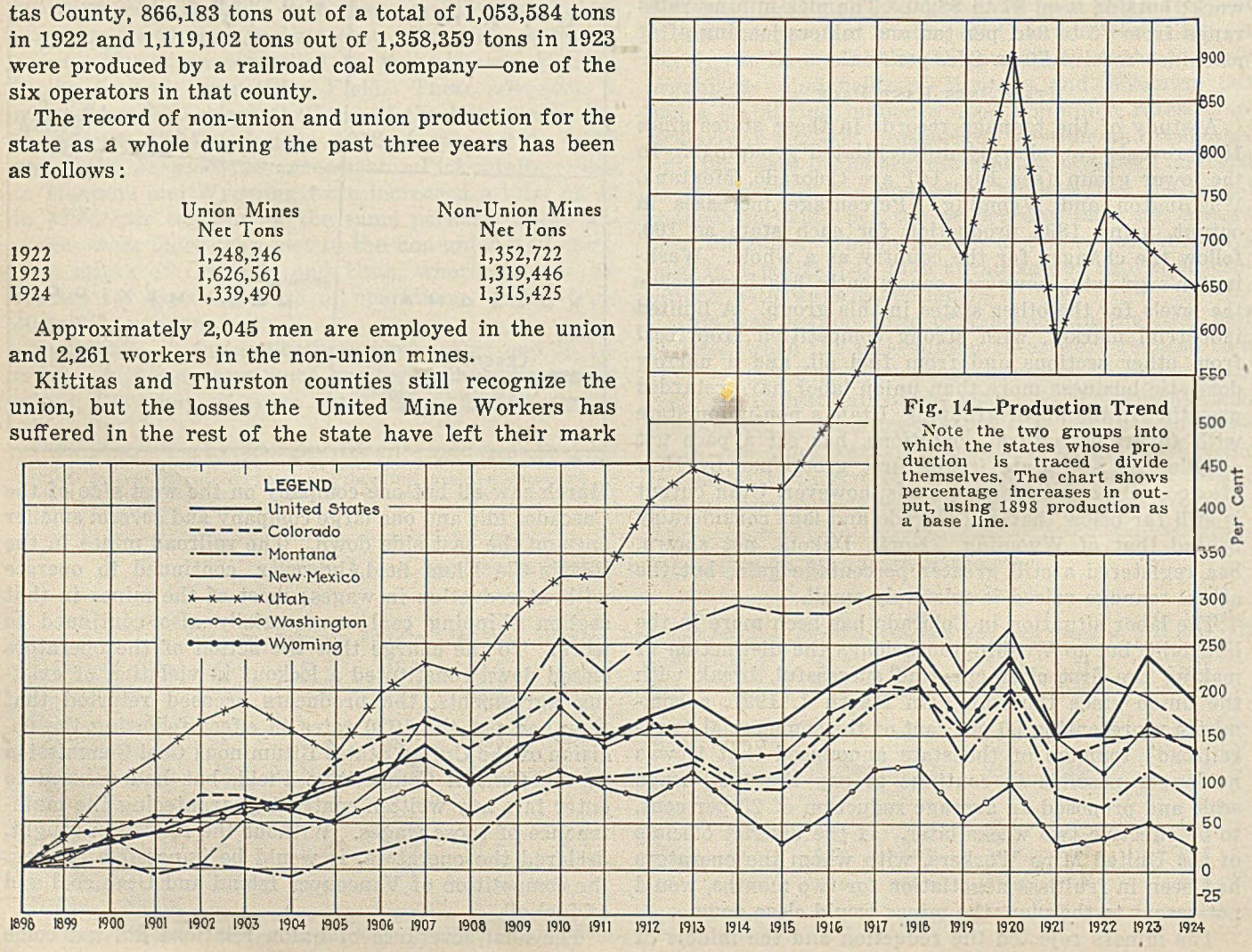


Fig. 14—Production Trend

Note the two groups into which the states whose production is traced divide themselves. The chart shows percentage increases in output, using 1898 production as a base line.

Table VII—Day Wage Scales in Washington

Inside Labor	Union Mines — Prior to April 1, 1923	Union Mines — Effective May 1, 1923	Non-union Mines, 1923
Miners, timbermen, tracklayers	$8.25	$7.50	$6.00
Shot-lighters	8.25	7.50	.....
Timbermen's helpers, tracklayers' helpers, hoist-men on development work, cagers' helpers, pumpmen, inside day labor not otherwise specified	7.55	6.00	5.25
Motormen, rope-riders, cagers	7.75	6.25	5.50
Drivers	7.75	6.25	5.25
Parting boys	4.82 5.32	3.50 4.00	....
Greasers	4.77	3.50	.....
Trappers	4.52	3.25	3.25
Hoist boys on development work	5.42	4.25	.....
Locomotive engineers	7.75	.....	5.50
Outside Labor			
Engineers	8.00	6.50	6.00
Firemen, washermen (first class)	7.40	5.90	5.25
Cagers, development engineers	7.50	6.00	5.25
Cagers' helpers	7.10	5.50	5.00
Dumpers	7.10	5.60	5.00
Teamsters, blacksmiths' helpers	7.25	5.50	5.00
Couplers	4.52	3.25	3.25
Greasers	4.37	3.25	3.25
Blacksmiths (first class)	8.05	7.00	6.00
Blacksmiths (second class)	7.75	6.25	5.50
Carpenters (first class)	8.05	7.00	5.75
Carpenters (second class), bunker machinery tenders	7.55	6.00	5.25
Car repairers, choppers	7.25	5.75	5.00
Screen men, moving picking table men	6.75	5.00	4.50
Screen boys, moving picking table boys	4.72	3.50	3.50
Outside labor not otherwise specified	7.00	5.00	4.50
Machinists (first class)	8.05	6.75	6.00
Machinists (second class)	7.75	6.00	5.50
Lamp men (first class)	7.55	5.75	5.25
Lamp men (second class)	7.00	5.25	4.75
Washermen (second class)	7.20	5.70	5.00
Jig and table tenders	7.00	5.50	4.75

proposal of it, the commission has power to order that former conditions be restored until an investigation can be made and a decision rendered."

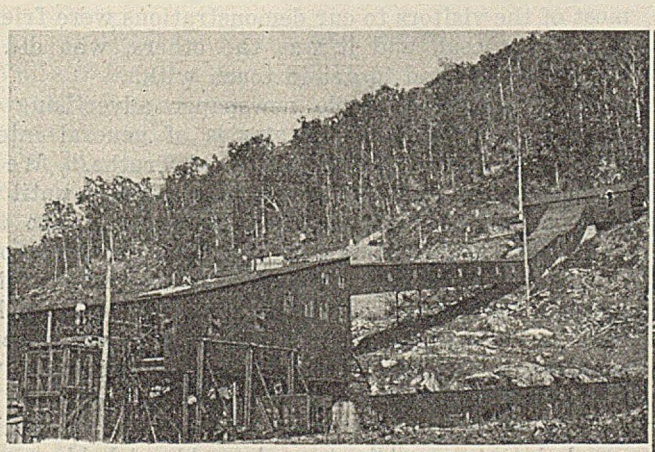
This is not the place to describe and study the workings of the Industrial Commission law or of the Rockefeller plan. That latter was designed to effect a permanent peace in the relations between the coal company and its workers without yielding to the United Mine Workers "by developing some organization in the mining camps which will assure to the employees the opportunity for collective bargaining, for easy and constant conferences with reference to any matter or grievance which may come up and any other advantages which may be derived from membership in the union." The plan, which did not recognize the United Mine Workers, but which did not prohibit proselyting for individual members by union agents, is mentioned because its adoption led to an unexpected result—a union contract and recognition by the Victor-American Fuel Co. and 16 other Colorado operators.

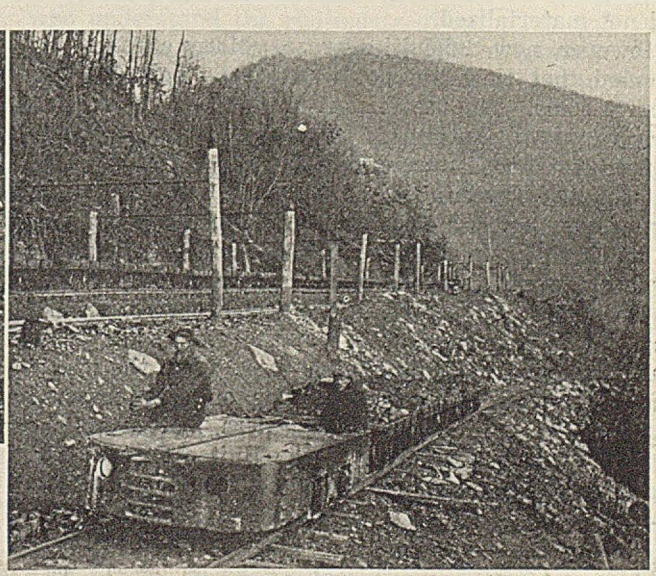
In justifying its action, the Victor-American company asserted that the Colorado Fuel & Iron Co., by adopting the Rockefeller plan, had "opened the door to the unrestricted activities of the organizers of the United Mine Workers of America" and declared that self-protection under war conditions (the contract was signed in March, 1917) made the action taken by the Victor-American and its associates necessary. The agreement expired March 31, 1920, and was not renewed. The insurgent operators were willing to be guided by wage rates in competing union fields, but declined to continue recognition of the labor organization. Possibly the general strikes in 1919 and 1922 and the failure of the 1917 agreement to stampede the Colorado Fuel & Iron Co. and other operators not parties to the 1917 contract into recognition of the United Mine Workers soured the signatories.

Since the expiration of that agreement and the unsuccessful strike of the miners in the northern lignite fields to force recognition, union organization activities have been conducted more or less under cover. Yet it should not be forgotten that more than 50 per cent of the productive capacity of the state was hit by the 1922 strike. Recently the union has become more open in its efforts to strengthen its organization and to swell its membership. In this campaign it is placing great stress on the manner in which Colorado operators have departed from the Jacksonville scale.

The disintegration of union power in North Dakota was completed last year, when the last two mines which had been giving it recognition abandoned the cause of the United Mine Workers. At the present time there is no well-defined wage scale in effect in that state. Rates range from 65c. to $1 for room work and 75c. to $1.25 for entry work. The significance of North Dakota lies not in the tonnage being raised, although the output during recent periods of scarcity has been increased ten- and fifteenfold over the 1898 base. This growth means that the state is becoming more and more self-sustaining in its coal supply, thereby blocking the expansion Montana and Wyoming might expect from cultivating North Dakota markets.

In the Far West, as in the Southwest and in the Central Competitive Field, the changes in labor status which have taken place since the war all have been unfavorable to the United Mine Workers of America.





Scenes at the Black Star Coal Co., Inc., at Alva, Ky.

The illustration above shows the tipple of the Black Star Coal Co., Inc., at the company's mine in the Harlan Field, at Alva, Ky. On the right is a storage-battery locomotive bringing up a loaded trip to the tipple. The headlights shine through the bumper.

Beating Anthracite Is Difficult in Winnipeg

By George R. Pratt
Alberta Government Fuel Engineer,
Winnipeg, Man.

FOR SEVERAL YEARS a consistent effort has been made to enable the producers of various coals in Alberta, Can., to gain and hold for their product the extensive market in and around Winnipeg in Manitoba which has been enjoyed for so long by Pennsylvania anthracite and other American coals. This campaign has progressed through many stages with varying degrees of success. There have been many obstacles to surmount, some of which have been overcome so that today the outlook is hopeful.

Winnipeg is situated far inland and, in consequence, has a long and continuous winter, without break, and a dry atmosphere. Until 1918 practically all domestic heating was confined to the use of United States anthracite.

What happened to change this? First a shortage occurred, due to a strike of anthracite miners. This was followed by a lowering of quality, a price boost considerably above its value, and a suggestion from the United States that Canada was not entitled to all the anthracite she desired because she had so much coal of her own.

It required all of these adverse conditions to convince the Alberta coal producers at the time that there was a market for their coals in Winnipeg, and this was realized by them so suddenly that they immediately began to ship coals of all descriptions, regardless of the particular use of each coal or of its adaptability to the market. At the end of the season it was found that the phophesied disasters, from the use of Alberta coal, had not materialized.

However, new difficulties arose. Many citizens were satisfied that they did not want to be bothered with Alberta coals. The reasons given were: They were too dirty to put in the house; there was too much trouble in firing; the coals were too sooty and smoky; some coals burned too quickly and the fire went out, others burned too slow and gave no heat; some coals clinkered too much, others made too much dusty ash; a particular furnace was not suitable, other furnaces were too large or too small. Some of these objections were excuses, others were valid reasons from the standpoint of the consumer. Much of the trouble arose from the opinion that the use of Alberta coal was only a temporary measure. Also, the old coal dealers had established connections with producers in the United States and it meant loss of business to introduce Alberta coals when they stood no better chance of selling these coals than had a new coal dealer.

Opposed to the viewpoint of the majority was a minority of citizens who had had satisfactory experience in using Alberta coals in the ordinary furnace equipment, and as a result were prepared to continue its use. From these conflicting experiences there arose the realization that there was a permanent market for Alberta coals *if* the public could be educated in their proper use—to buy for service instead of at a price.

During the following season some new friends of Alberta coals were made, and some were lost. The losses were mostly due to the lack of standardizing the fuels, and also to the fact that *all* coals were offered as Alberta coals. Considering the wide range of varieties offered, few customers could guess right every time in their selection. That season, one of the larger Winnipeg dealers maintained a demonstration showing how the different fuels should be burned in various equipments and by that means made hundreds of friends for Alberta coal. The results obtained by this firm convinced the Alberta government that the education of the consumer was essential for the building of a permanent market.

The first effort was the establishment of practical demonstrations to instruct the coal user how to get the best service from the fuel. This was accomplished by setting up several domestic furnaces and operating them in the office in Winnipeg. It was discovered that most of the visitors to our demonstrations were friendly to Alberta coal, and it was the others, who did not come, that we had to get in touch with.

To reach these people newspaper advertising was started, and we published stories of general interest about coal, under the title of "Coal Truths." We had depended upon holding these new customers, until they had become used to the coal, by appealing to their patriotism and by enlarging upon the national profit in using only Canadian coals. In this we were disappointed and found that it required considerable logic to persuade a person, on sentimental grounds, to use a coal which he considered was costing him more than it should.

This experience convinced us that simply teaching people how to use Alberta coal would not hold a permanent market for it and that our main efforts should be directed toward preaching and proving economy by its use. We, therefore, continued our experiments in order to establish standard instructions for the economical

WAY OF SUBSTITUTER IS HARD

IN VARIOUS parts of the United States efforts are now being made to substitute something for anthracite in the esteem—and coal bins—of householders. The effort is not new. In Manitoba and Alberta the campaign to substitute Canadian coal for Pennsylvania hard coal and for some other kinds of American coal has been going on for five years. The obstacles which must be overcome by the substituters are many. Mr. Pratt in this article describes some of them. After all, it is a tough job to wean the people of a whole geographical division away from *any* fuel to which they have become accustomed.

This article is from a paper read by Mr. Pratt at the annual western meeting of the Canadian Institute of Mining and Metallurgy, Winnipeg, Man., Nov. 4, 1925.

burning of Alberta coal, and these instructions were published in book form in 1923.

While these methods have met with some success there is a feeling that it is the duty of the Dominion Government to adopt means whereby the sale of Canadian coal may be increased, and that measures to this end should be incorporated in a national policy of solving Canada's fuel problem.

Unfortunately, intensive competition from mines, importers, wholesalers and retailers had developed a condition that resulted in the establishment of over 200 registered coal dealers in the city of Winnipeg. Profitable business for Alberta coal was therefore difficult because a large percentage of coal was distributed by men who were not competent to give the necessary information about burning the fuel—so essential for retaining a market.

Originally Sold as Soft Coal

All Alberta coals, when first entering the Winnipeg market, were sold as Alberta soft coal. Because of the confusion that this made the steam-coal mines sold coal under names that each had established for its particular product and domestic coals were again sub-divided and each coal was named after the district in which it was produced (there are now 35 districts in Alberta producing domestic coals).

It was quickly apparent that the grouping of several different coals under one district name was not satisfactory from the market point of view. Mines that had developed to the point of producing a good quality of fuel, by using proper equipment and skill in mining and preparation, were in competition with other mines, in the same district, that possessed little or no equipment and which were operated with little regard for the quality of the coal produced.

The best class of coal producer set the price according to his cost of production; the other man took advantage of this price when the market was in favor of the seller, but undercut the price when it was a buyer's market. As far as the buyer knew, or was concerned, both men were selling the same kind of coal. The variability in standards and price increased the difficulty of establishing a reliable market because the consumer could not be quaranteed value for his money at all times, nor had he means of protecting himself.

Extend Mines Responsibility

While it may be desirable, from a market point of view, to limit the varieties of coal entering Winnipeg to the best in quality, according to price, it was not possible to do so without restraint of free trading. Therefore, it was decided that the next best thing to do would be to make the mine extend its responsibility, to value received by the consumer, and to establish trade marks by which its coal could be recognized.

This proposal was made to the Alberta government, and to the coal producers in Alberta, and resulted in the compulsory registration of every mine in Alberta and the adoption of trade names, under which all coal was required to be sold. A law to this effect was passed by the Alberta government during 1923 to operate for one year, but has since been made permanent.

The city of Winnipeg finally passed a by-law which defined a coal dealer and required coal delivery tickets to show the grade name of the mine and the district in which it was situated. This had the effect of establishing some evidence as to the kind of coal delivered, but as much coal is purchased from perusal of newspaper advertising, and irresponsible dealers continued to advertise "best coal" using district names and other generalities, it did not have the entire effect desired. The by-law was subsequently changed to include the advertising of trade names, but as it was not enforced, the disadvantage continued.

Included in the Winnipeg by-law was a provision which required the dealer to state the minimum calorific value of each coal he proposed to sell, and if any of his coals were below this minimum he was liable to prosecution. In theory this seemed a very desirable feature, but it actually worked to the disadvantage of all; the consumer, the regular dealer, and the coal producer.

As there are no official standards set for the calorific value of various coals it was left to each dealer to establish a value—which he had to live up to. The regular dealer set the value according to his experience with the coal which he had been handling, usually on coals fairly well established and of high quality. The irresponsible dealer set his calorific value sufficiently low so that it would permit him to sell the lowest grade of coal obtainable. It also permitted substitution.

On making representation to the Winnipeg authorities I was assured that the city would accept analyses made by the Alberta government. There being no suitable standards available a temporary list of coals was made and instructions were given to a testing laboratory to take 250 samples of coals, as received in Winnipeg, and to establish the desired standards. However, instead of improving the situation new problems arose which caused me to withdraw the temporary list of analyses.

Prosecuted Several Dealers

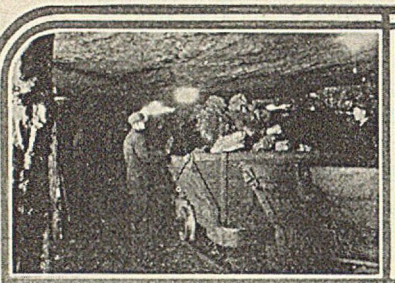
Several dealers were prosecuted by the license department on the complaint that their coals did not meet the calorific standard that had been set. Two of these had an independent chemist to take samples of the loads. These samples showed the coal to be well above the established standards. The court dismissed the case.

The method of sampling adopted by the license inspector was the result of visual inspection. If he considered the coal to be below the standard he selected a small sample which he handed in for analysis. Those who understand the rudiments of sampling will appreciate that a person making a selection in such manner can pick just whatever he desires for the purpose in mind.

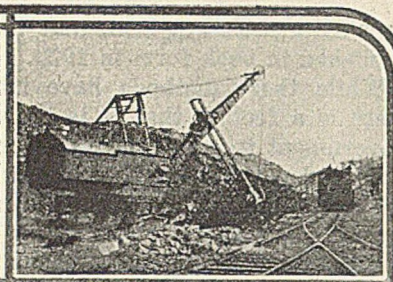
As it was made evident that the calorific value was all that the inspector looked for we withdrew our analyses. We had assumed that the calorific value would be used in conjunction with other characteristics in making a determination of quality.

The by-law is now under review with a view to its reconstruction so that it may operate as was originally intended.

In developing the market much advertising has been done, most of which has been of an educational nature; but if advertising has any value in obtaining markets for a product it also assists your competitor in taking your business away. Winnipeg is probably the most competitive coal market on the continent and it is essential that the Alberta producers should feel responsible for the economical handling of their coals if they wish to retain their hold on the domestic trade there.



News Of the Industry



Proposals for Emergency Rates Threaten Free-for-All Scramble For Eastern Domestic Coal Trade

Coal producing interests of West Virginia, eastern Kentucky, Maryland and Virginia clamored before the Interstate Commerce Commission last week for more favorable rate bases and routes into New England and the Middle Atlantic states. The low-volatile fields of the first named state, given an all-rail basis on lump, egg and nut sizes under the order of the Commission, suggested to Commissioner Campbell and Examiner Koch, before whom hearings were held in the rooms of the Merchants' Association, New York City, Nov. 12-14, that the rates should be extended to mine-run and slack during the present emergency and that other routes should be opened up if the bituminous fields were to take up the deficit in domestic supplies created by the anthracite strike.

At the tag-end of the sessions the Pittsburgh No. 8 field of Ohio came forward with an offer to shoulder some of the burdens of the East if the Commission would establish emergency rates from the mines in that district. The Virginia anthracite interests, who also desire to participate in this business, found the waiting for a chance to be heard too tiresome; when called upon to present their case, it was discovered that their spokesman had departed.

Pennsylvania Makes Protest

Central and western Pennsylvania registered vigorous dissent to the proposals of West Virginia. Pennsylvania witnesses questioned the existence of the emergency pictured by the Commission and other witnesses. If the picture be true, they argued, authorization of long-haul movements would result in dilution of transportation facilities which would defeat the purpose for which new rates and routes were established. In this position they were strongly supported by counsel for the Pennsylvania and the Baltimore & Ohio railroads. Southern originating lines expressed a readiness to co-operate in any emergency measure adopted, although the Virginian thought that the recent decision requiring joint rates from the Winding Gulf field to the West was sufficient drain upon its equipment. The railroads will be given an opportunity to present their side of the case when the hearings are resumed at Washington, D. C., this morning.

For a time the New York hearings threatened to develop into a free-for-all scramble for a chance "to save New England" from freezing. Some of the enthusiasm went out, however, when Commissioner Johnston B. Campbell, after listening to railroad protests and conferring with his associates, announced:

"This hearing was brought about primarily to consider temporary rates and routes. Of course, the question of permanent rates and routes is before us, but I think I am safe in saying that we will confine our orders as the result of these particular hearings to the establishment of temporary rates and routes. Then, of course, the case can be kept open" for more leisurely consideration of future rates. The Commissioner intimated that the rates to be ordered following the New York and Washington hearings would carry a definite time limit.

Witnesses for the New England Governors' Fuel Committee and the industrial interests of the Northeast made the opening pleas for the establishment of rates on all sizes of low-volatile coal and for movement via all recognized gateways. The basis fixed in the Commission's order to destinations on lines other than the New Haven was criticized. Although it developed that the chairman and vice-chairman of the New England committee—John Hays Hammond and Eugene Hultman—were opposed to all-rail rates on mine-run as uneconomic, the committee's representative at the hearing favored their permanent establishment and also wanted the high-volatile fields opened up to his section of the country.

New York Wants Same Advantages

New York's position, as outlined by the chairman of the state coal commission, was simply that the Empire State wanted to enjoy the same rate advantages that the Interstate Commerce Commission saw fit to extend to other parts of the East. Contrary to the hostility toward anthracite voiced by some of the New England witnesses, New York had no desire for a permanent divorce from hard coal. The state had launched a campaign to teach consumers how to burn soft coal solely as an emergency measure. Newark, N. J., asserted that over 1,100 families

Take Your Choice

Testifying before Interstate Commerce Commissioner Campbell at New York last week, Thomas F. Farrell, vice-president of the Pocahontas Fuel Co., estimated that the anthracite strike was creating a shortage of 12,500,000 tons per month which the bituminous industry must meet in the near future. Domestic anthracite consumption during the six months of the heavy coal-burning season averages 10,000,000 tons per month, or 60,000,000 tons, against which were supplies of 30,000,000 tons. Consumption of steam sizes approximates 2,500,000 tons monthly.

By the middle of next month, therefore, the stocks of anthracite will be exhausted, forcing the consumer back upon other fuels at the rate of 10,000,000 tons of domestic coal and 2,500,000 tons of steam coal each month. To meet this situation will require the best efforts of the bituminous industry and the railroads via all routes and roads.

The bituminous industry, retorted Charles O'Neill, secretary of the Central Pennsylvania Coal Producers Association, is overmanned to the extent of 200,000 workers. Its capacity is 200,000,000 to 400,000,000 tons annually in excess of normal demands. Hundreds of mines are now idle. Central Pennsylvania alone can ship 1,250,000 tons of prepared coal monthly. How then, he asked, can it be said that the suspension of anthracite mining with an annual output of 90,000,000 tons, creates an emergency?

The only danger in the situation, as Mr. O'Neill sees it, is that the commission, by opening up all-rail routes from the more distant fields, will encourage such a wasteful use of transportation facilities in uneconomic criss-crossing and long hauls that a tremendous car shortage will develop. In other words, to establish the rates suggested in the Commission's orders will tend to create the very emergency the Commission is seeking to avoid.

Pittsburgh Coal Co. Resumes At Mansfield Mine

The Pittsburgh Coal Co. has opened the fifth 1917 scale mine in the Pittsburgh district. Just a few days after Montour No. 10 was started, Nov. 9, at Library, Pa., the company got the Mansfield mine, in Scott Township, near Carnegie, which is only a few miles from Pittsburgh, started on the 1917 wage scale.

The Mansfield mine ships over the Pennsylvania, but the first coal from the mine will be supplied to the town of Carnegie for domestic purposes, the Mansfield grade being the best domestic coal produced in the Pittsburgh district.

It is expected to bring the total force at Mansfield mine to 350 men, and to bring the daily production up to about 1,400 tons daily.

Eight deputy sheriffs were posted at the mine, but no disorder was expected as there has been no trouble at any of the other four mines started by the company at the lower wage scale. Lance Linsley is superintendent. Harry M. White, division manager at Midland mine, is in charge also at Mansfield.

Mansfield mine was one of the last pits of the company to be closed down because of the depression resulting from inability to compete with Southern fields. It was shut down April 30, 1925.

The total number of employees in the five mines of the company in the Pittsburgh district is now 905.

Report of Coal Stocks Ready by Christmas

Plans for a survey of coal stocks by the U. S. Bureau of Mines, as announced in *Coal Age* last week, have been changed, and a survey as of Nov. 1 will be taken. The machinery is already in motion and the data will be available, according to general speculation, shortly before Christmas.

Westbound shipments of bituminous coal through the "Soo" canals in October, 1925, totaled 1,873,482 net tons. No cargoes of hard coal passed through during the month.

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in that city were unable to buy anthracite because supplies were exhausted and asked the co-operation of the bituminous industry in meeting the situation. The chairman of the fuel committee of the National Association of Purchasing Agents cautioned the Commission against ignoring the requirements of the rest of the country in its zeal to provide for the necessities of New England and the Middle Atlantic states.

Apparently mindful of the refusal of the Commission in its original decision to establish joint rates from the splint fields because "we have no requests by the public authorities or by the representatives of consumers in support thereof," Kanawha and related fields marshalled their battalions to meet this objection. Retail and wholesale agents told how they had demonstrated its virtues and sold splint coal in Framingham, Worcester, Holyoke, Northampton, Brockton, Providence, Fall River, Boston, Gloucester, Albany, Schenectady and Watervliet. Trial orders, they said, had led to repeat orders.

High-Volatile Has Innings

Exhibits were introduced to show that 73.5 per cent of the mine capacity of the Kanawha district—which has shipped approximately 400 cars to the Northeast in the past 60 days—has screening facilities and could furnish 25,000, to 50,000 tons to New England every month without robbing other sections. Logan, with the close of navigation, could offer 175,000 tons of prepared coal monthly; the Kenova-Thacker field, 60,000 to 75,000 tons. The northeastern and Big Sandy fields in Kentucky also wanted to share in the business.

Whether rates on mine-run would help to keep down prices on prepared sizes was a bone of contention, but every district pled for the same advantages that might be accorded others. As a rate basis eastbound, traffic experts suggested the differential adjustment over New River rates from the Kanawha field to Washington and tidewater, with possibly diminishing differentials as distance increased.

Operators in the Clinch Valley division of the Norfolk & Western attacked the failure of the carriers to include their mines in the rates effective Oct. 15. It was admitted that this disruption of a long established rate relationship was long contemplated by the Commission's order and it was indicated that an adjustment would be made. Similar assurances were forthcoming from the N. & W. following the recital of the complaints of Baltimore retailers on the Western Maryland that the new rates had not been published via their line, leaving their rates 75c. a ton higher than those applicable via Baltimore & Ohio and Pennsylvania R.R. deliveries. Another maladjustment of the same character, it was testified, exists at Philadelphia on Philadelphia & Reading deliveries.

Aside from the Baltimore testimony and that offered on behalf of the splint producers, the retail trade was without representation at the hearing. But the retail distributors were assailed a number of times by different witnesses. Every time complaint was made of high prices to the consumer, producers insisted that the responsibility was not theirs. The spokesman for the New England Governors' Fuel Committee declared that if proper co-operation was not forthcoming from the retailers, industries would purchase mine-run, screen out the lump and sell the large coal direct to their employees. Another witness intimated that the willingness of some retailers to handle high-volatile coal was due to their hope that the householders would be so troubled with smoke that they would flock back to anthracite when the strike was over.

Engineers Hold Meeting in Anthracite Region; Inspect Modern Mining Equipment

Mining, mechanical and electrical engineers of the whole anthracite field attended the meeting of the Lehigh Valley Section of the American Institute of Electrical Engineers held at Pottsville, Pa., Nov. 13. Papers were read by men representing mining, public utility and manufacturing companies.

J. H. Pierce, assistant to the president of the Buck Run Coal Co., presented a paper dealing with the question of the use and generation of power. In his paper he stressed the business aspects of engineering work in the mining field and the necessity for lower power costs.

A thorough digest of the "giant power" report dealing with its engineering and financial phases was made by Farley Osgood, past president of the American Institute of Electrical Engineers. In comparing the estimates and plans proposed in the "giant" survey with present-day developments and practices of public utilities, Mr. Osgood showed wide differences and claimed that experiences have shown that power plant costs used in the survey were much too low.

H. D. James, who is in charge of the control department of the Westinghouse Electric & Manufacturing Co., spoke on control equipment. In his address he touched upon the details of the 1,200-hp. electro-pneumatic control equipment recently installed by the Lehigh Coal & Navigation Co. at its Lansford colliery. He also spoke about other new developments of control equipment suitable for meeting the exacting conditions necessitated by automatically operated pumps, hoists, elevators and special motor applications.

Inspect "Giant" Breaker

On Nov. 14, the day following the technical session, many of the engineers journeyed to Lansford, where they inspected the new breaker and equipment of the Lehigh Coal & Navigation Co. One of the first places visited by the engineers was the main hoist house where they saw a large magnetic hoist control panel and the electro-pneumatic control apparatus.

After viewing the hoisting, compressor and power distribution systems the engineers were conducted through the breaker. Here they saw the layout of a structure designed to handle 10,000 tons of product per day.

As the coal goes through the breaker it is sized, cleaned and prepared by equipment completely driven by electric motors. Many novel features in the design of the breaker to prevent rapid deterioration and degradation were thoroughly inspected. Much interest was shown in the methods by which coal is prepared because the product of the mines in this region is much different from that in the northern anthracite field. However, much valuable information was gathered by most of the engineers because the breaker structure is modern in every detail and points the way toward future progress.

Union Gains Little Ground In Upper West Virginia; Outlaw Strike Is Stopped

Non-union coal production in the twelve and one-half counties in northern West Virginia, which are breaking from the union's control, continued heavy last week. In the first four days of the week 7,254 cars of coal was produced compared to 6,859 cars in the corresponding period of the week before. The union mines showed a slight increase. In the first four days they produced 1,064 cars compared to 1,027 cars in the first four days of the previous week. As usual, the union charged non-union operators with deliberately falsifying the record of non-union production.

Union tonnage on the Monongahela Ry. continues the heaviest in the region. The union output on Scotts Run is heavier than the open-shop tonnage, which indicates that the last stronghold of the union in northern West Virginia is there. The union tonnage reached 258 cars on Nov. 12, the heaviest daily union tonnage on the Monongahela Ry. since Oct. 29, when a similar number of cars was loaded.

On the average there were 216 non-union mines at work daily in northern West Virginia in the first four days of last week as against 14 union plants.

An illegal strike occurred at mine No. 2 of the Cleveland & Morgantown Coal Co. (the Pursglove interests, of Cleveland, Ohio), one of the largest union mines on Scotts Run Nov. 10, but the men were all back in the pits the next day. The trouble, according to statement credited to Samuel Pursglove, president of the company, was that miners wanted transportation into the plant, which he says never was provided and is contrary to the state laws. From other sources it was reported that the strike resulted from a company effort to have the men push cars uphill in the mine.

Encourages Miners

As a means of bolstering up a lost cause, Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, returned from a week's visit to Washington, D. C., and gave out a statement designed to hold out a ray of hope to the striking union miners.

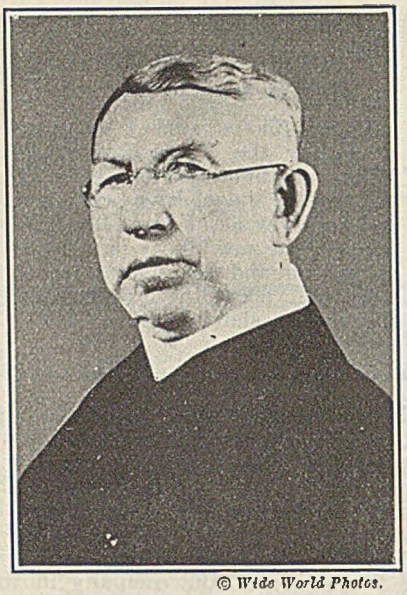
"After conferring with our representatives in the various fields I may say that the situation in northern West Virginia is becoming more encouraging every day," said Bittner. "Approximately 500 union miners have been put to work in the Scotts Run field during the past week, and with other union operations resuming, about 250 more union miners will be employed in the next few days," he declared.

The large mine of the Consolidation Coal Co., No. 63, at Monongah, ran its first coal Nov. 10, and officials of the company say that more than 100 men are at work at the plant. This is striking into the very heart of the union's stronghold, and generally is regarded as one of the most difficult mines to work on a non-union basis in the region. It is reported that the union miners have leased a lot near the pit mouth and are picketing from there.

When 45 union pickets appeared before Judge Winfield Scott Meredith in Marion County Circuit Court in Fairmont Nov. 9, he did not pronounce sentence on them on charges of contempt of court growing out of picketing at the Monongah entrance to New England mine of the company at Watson but deferred action for 30 days.

Announcement has been made that the Consolidation Coal Co. has selected John S. Forinash, of Grafton, to act as its commissioner in settling disputes between the coal company and the employees now working non-union. Forinash formerly was president of Subdistrict No. 3, District No. 17, United Mine Workers, but was dropped from the miners' force when the international union took over the autonomy of District No. 17.

The tipple at Whiteman mine of the Clarksburg Big Vein Coal Co., three miles west of Clarksburg, was burned down on the night of Nov. 11, causing a loss of several thousand dollars.



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Rev. John J. Curran

Father Curran, who is the pastor of St. Mary's Roman Catholic Church, Wilkes-Barre, Pa., is sharing the stage with Governor Pinchot in the effort to bring the anthracite miners and operators together and settle the hard-coal strike. He has discussed the situation recently with the Governor and with President Lewis and Vice-President Murray of the miners' union and when Governor Pinchot conferred last week with Mr. Lewis and Major Inglis, Father Curran said it was "the beginning of the end." He would not explain, however, on what he based his optimistic view.

Kansas Also Rock Dusts

Five mines in the Kansas field now are rock dusting, Ernest Shaw, deputy state mine inspector, announced Nov. 11. Mr. Shaw for three years has been endeavoring to persuade operators in the Kansas field to use rock dust. Those mines which now are employing it are Hamilton Coal & Mercantile Co. No. 9, Wilbert & Schreeb, Krueger Coal Co., Mackie J. and Clemens Coal Co. No. 17. Four of the five mines are dusting by hand. In the Hamilton mine, however, an electrically operated duster devised by Mr. Shaw and W. R. Hamilton and L. D. Kelley of the Hamilton company is being used with satisfactory results.

Pittsburgh Terminal Gets Big Output at Union Wages

In October the Pittsburgh Terminal Coal Corporation had the largest output in its history for a one-month period, producing 405,273 tons from seven mines, three of which are old and full of pillar-pulling operations. The average daily output during the 26 working days (including Columbus Day) was 15,000 tons. Four of its largest mines produced 332,402 tons in the month.

The peak output for one day from the seven mines during the period was 15,800 tons, showing that the record was achieved by a consistently uniform daily output from all the mines. Although its mines are in western Pennsylvania, in the Pittsburgh seam, and are operating under the Jacksonville agreement, the company has been producing consistently for some time, chiefly by reason of the many economies it has been practicing through modernization.

Kentucky Mine Owners Favor Rescue Autos; Rash Resigns

Members of the Kentucky Mine Owners Association, meeting in Louisville, Ky., Nov. 11, discussed movements for the establishment of mine-rescue stations in various sections of the coal fields. A number of operators think large motor trucks should be used in mine rescue work instead of railroad cars. The association believes it is doing some good with its series of advertisements to acquaint the public with the importance of the coal industry and to combat the movement for a tonnage tax. Other matters discussed were welfare work at mines, workmen's compensation laws, educational work, hospital service and matters pertaining to operation of mine camps. Action was postponed until spring on the resignation of President Frank D. Rash, who wants to quit because he is no longer an active coal man.

West Virginia Mining Institute Announces Full Program

The program of the West Virginia Mining Institute for its semi-annual meeting, in Morgantown, W. Va., Nov. 24 and 25, follows: "Recent Developments in Shooting Coal," by J. E. Tiffany, explosives engineer, U. S. Bureau of Mines, Pittsburgh, Pa.; "Smokeless Coals of West Virginia," by David B. Reger, of the West Virginia Geological Survey; "Preparation of Commercial Coals," by Thomas Fraser, assistant professor, mining engineering department of West Virginia University; "General Use of Gunite in Coal Mining," by B. C. Collier, president, Cement Gun Co., Allentown, Pa.; "Some Observations of New Methods of Mining," by J. J. Rutledge, chief engineer, Bureau of Mines, Baltimore, Md.; "Flameproof Motor as a Safety Measure," by Frank Haas, consulting engineer, Consolidation Coal Co., Fairmont, W. Va. An inspection trip will be made to the Nemacolin mine of the Buckeye Coal Co., at Nemacolin, Pa.

Printing of Coal Commission Report Assures Action by Congress; Coolidge To Keep Hands Off Anthracite Strike

By Paul Wooton
Washington Correspondent of *Coal Age*

Buried alive, like a Hindoo fakir, in a state of suspended animation, the report of the Harding Coal Commission has arisen and will walk into Congress at the very moment it is most likely to receive consideration.

The importance of the document to the industry lies almost wholly in the political situation which happens to exist as it emerges from the Government Printing Office. It seems likely that the anthracite strike will last long enough to cause widespread inconvenience. Every day that passes makes it more certain that:

(1) Coal will come in for a great deal of popular discussion this winter;

(2) The administration will not intervene in the strike;

(3) Regulatory legislation will be considered by Congress.

Had the Coal Commission's report been printed before it would have been overlooked and forgotten. Those volumes that had escaped the waste basket would have been festooned with cobwebs alongside that imposing array of major prophets "First Frelinghuysen," "Second Frelinghuysen," "Third Frelinghuysen," "First Calder," "Second Calder," "First LaFollette," "Second LaFollette" and "Third LaFollette," to say nothing of works of the minor prophets and epistle writers in the House of Representatives.

As authors, Mr. Hammond and the other members of his commission are in luck. The delay in its printing has insured it an amount of attention infinitely greater than would have been the case had it been issued in final form at the time it was completed.

Can Sidestep Blame

The issuance of the report at this time also is fortunate for the administration as it furnishes an additional reason for referring to Congress those who are clamoring for relief. The administration is in an enviable position in that it can point to the Commission's recommendations without coming in for blame for those that are distasteful. Mr. Coolidge is not the father of the Commission. He acts more like its bachelor uncle. He is holding the baby gingerly and uncomfortably on his knee. He will be more than glad to hand it over to Congress without venturing an opinion as to whether it is a girl or a boy and certainly without offering to adopt it.

Then, too, it must be admitted that the report clothed in the decency of print will command more respect than it did when it appeared in the shoddy of mimeograph. As it emerges from the federal print shop it is composed of four volumes of text and an appendix of statistical tables and charts. It is annotated and thoroughly indexed.

The report presents a finished appearance and is certain to create the impression in Congress that the Commission took its task very seriously and sought the facts patiently, accurately and exhaustively. The very ponderousness of the volumes is an argument against any further investigation before action by Congress. When coal comes before Congress for discussion those who seek to avert legislation will employ the usual tactics and demand that the question be given more study. Those who favor legislation now will be in a position to say: "If this Commission, composed of distinguished men, backed by a great array of expert talent, with ample funds and a year's time could not get the facts, who could get them?"

The Commission's recommendations for legislation also are being printed separately and will be available for much wider distribution than the report itself. These recommendations form a separate pamphlet of twenty-three pages.

Would Counteract Sentiment

Since many thousands of that pamphlet will be circulated there is a feeling among those who oppose any legislation that something definite and positive should done to counteract the sentiment which the document is likely to arouse. They admit that the recommendations for legislation possess a certain simplicity and plausibility and outline a public policy that is certain to appeal to the public. They feel that it is not enough for the industry just to wave aside the whole Commission program as dangerous doctrine. The feeling is that the industry must throw off its purely negative attitude and must be specific as to the errors it finds in the report and to what it objects. There is a decided conviction on the part of some within the industry that those in the business should work out a program of their own to meet definitely the criticism of the Commission and the demand of the public for the facts.

The recommendation of the Commission for fact finding and a uniform system of accounting already has many supporters. Outside the coal trade itself the recommendation that the reports be compulsory, as are those of the railroads, will not frighten. The Commission recommends that the Interstate Commerce Commission act as federal fuel distributor in periods of shortage, with such powers, in addition to those of the Transportation Act, as may be necessary. This will appeal to a considerable portion of the public as the least that should be done in emergencies. There will be some public support even for the proposal to license companies engaged in interstate commerce.

In one respect at least there is no reason to believe that Congress is ready to go further than the Commission. The Commission did not recommend compulsory arbitration of trade disputes. Instead it would authorize the President to make a compulsory investigation when the two parties are unable to agree on the renewal of a wage agreement. There can be no doubting that there is a group in Congress ready to advocate a compulsory tribunal on the ground that coal is affected with public interest.

Coal Mines Pay Heavily to Compensation Fund

An actuarial survey of the present reserve of the workmen's compensation fund of West Virginia having been authorized by the Legislature, Governor Gore has appointed Emil E. Watson, of Columbus, Ohio, to perform the work. Ten thousand dollars was appropriated for the survey, but Mr. Watson has contracted to do the work for $3,500. According to Walter H. Cunningham, secretary of the West Virginia Coal Association, total premium receipts of the commission for the fiscal year ending June 30, 1924, were $3,469,000, of which the coal industry paid $2,386,000. Premiums were paid into the fund on a total payroll of $305,000,000, of which $162,000,000 represented coal companies.

"While the number of fatal accidents is larger in the coal industry than in any other in the state, due largely to the magnitude of coal operations," says Mr. Cunningham, "the 1924 report shows that of 29,000 non-fatal accidents, only 12,000 occurred in the coal industry, against 17,000 in other industries."

Americans Acquire Control Of German Mines

W. A. Harriman & Co., of New York City, and the Anaconda Copper Mining Co., of Montana, have jointly taken over the German-Polish holdings of the Georg von Giesche Heirs, Inc., a firm that is said to have been in financial straits. The holdings include zinc mines, smelters and coal mines. The importance of the coal mines to this industry was such that in 1815, owing to the low price of zinc and the high price of coal, the zinc works were moved from Scharley to Georgschütte so as to be near the coal mines at Michalkowitz. These latter mines the new interests will direct though not own.

Soon after the passing of control to the Harriman company took place it was announced that steps were being taken to test the legality of the contract. The Prussian State Attorney General has dug up for this purpose an old law whereby an attempt will be made to show that the arrangement with the Americans is detrimental to the welfare of the people and the nation and therefore illegal. At the same time the Prussian State Mining Corporation has taken measures to enforce its contract, which it asserts was concluded with the Giesche firm before negotiations with the Americans were concluded.

Moshannon Mine Men Devote Sessions to Troublous Questions

A broad field of interest was covered by the questions and discussions at the Moshannon Coal Mining Institute's fifth annual meeting, Nov. 14, at Philipsburg, Pa., eighty-five persons being present. At the afternoon session Thomas Mather presided.

The advantages and hazards of mechanical loaders and conveyors were discussed. Joseph Knapper recalled that when mechanical undercutters were introduced the same fears were entertained as are expressed today with regard to machinery for loading. He thought and trusted that the present apprehensions, where entertained, would prove unjustified. It was suggested that the loading of coal into unbroken trips instead of into separate cars would do much to prevent accidents both from coupling and from runaways. Locomotives also would not be running all over the mine. Another speaker showed that where machine loading had been introduced the accident rate had been lowered, but questioned what could be judged from that fact as in every case cited the roof conditions were favorable.

Discussing whether it is "advisable to conduct the intake air the full length of the split or to have it enter the split at several different points" it was said that, suppose sixty men were working in a split consisting of three gassy entries, the air supply would have to be 12,000 cu.ft. per min. Would it be better to put 4,000 cu.ft. into the first entry, containing only twenty men; 8,000 in the second, containing another twenty, and 12,000 in the third, in which twenty others worked?

Regulators Prevent Power Saving

Mr. Knapper said it would be necessary to use regulators in the first and second entries to get this distribution, and consequently there would be no power saving and at the same time the current of air in the first entry would be insufficient probably to sweep out the noxious gases.

Someone wanted to know why if enough air was available for three splits and the air thus split would sweep out the noxious gases, three wholly separate splits were not used and power saved, but apparently the idea was to keep the overcosts down to the lowest possible number. It was pointed out that if the first entry gave out too much gas for 4,000 cu.ft. of air to dilute, it might be possible to go on working if 12,000 cu.ft. were carried through all three entries, provided the other two entries gave little gas. The chances were that by passing the 12,000 cu.ft. through all three entries the air would be less likely at any time to be overcharged with gas than it would be if lesser quantities of air were taken through two out of three entries.

Another question was, "What effect does a heavy short-circuit on a direct-current line have on the alternating-current demand meter? None at all, said the electrical engineer of Hale Coal Co., provided a circuit breaker operates to close the circuit. He admitted that a heavy ground—that is, a short that would not throw out the circuit breaker—might have a marked effect on the demand meter, provided it continued for sufficient time—say 15 minutes—which is apparently the time on which the demand rate is fixed in the Moshannon region.

Discussing the effect of different kinds of explosives on the quality of coal, a powder manufacturer's representative declared that the time was past when the powder salesmen would contend that as much large coal could be obtained by the use of permissibles as by the use of black blasting powder. However, the size could be improved in the use of both if care were taken. It was suggested that men leaving mines where black blasting powder was in use should be carefully instructed when entering mines where permissibles were used. In this way this work might be made more effective. F. T. Powers, state inspector at Frostburg, Md., said that experiments made by himself and Dr. J. J. Rutledge, the chief engineer of the State of Maryland, with pasteboard tubes as a means of air spacing between the permissible and the tamping had proved quite successful, increasing the percentage of lump and decreasing the need for using as much explosive. Fortunately the Maryland laws did not require tamping clear from the explosive to the mouth of the hole, and air spacing was being used of length graduated to the length of the drilling. No shots thus tamped had blown out. Several companies were using air spacing and getting larger coal as a result.

At the dinner the speakers were Dean E. A. Holbrook and Wm. R. Chedsey, both of State College; F. T. Powers, C. B. Maxwell and R. D. Hall. C. B. Maxwell presented a watch to Joseph Knapper on behalf of the mining men of the Eighth Bituminous District of Pennsylvania. Mr. Knapper recently resigned as inspector, a position he had held for thirty years. Mr. Hall's address, which was the scheduled talk of the evening, was on mining conditions in Wyoming and Utah.

At an election of officers, Joseph Knapper was elected president and T. B. Gallegher, S. H. Eastman, G. H. Brightman and Andrew Fremburg vice-presidents; Thomas Morgan and William George were re-elected as secretaries.

Arkansas Supreme Court Lifts Receivership Against District 21, United Mine Workers

Chancellor J. V. Bourland, of Fort Smith, Ark., had no right under the laws of Arkansas to appoint a receiver for District No. 21, United Mine Workers, the Arkansas Supreme Court ruled last week in granting a writ of prohibition restraining proceedings under the receivership.

The Supreme Court said that the union organization, being a voluntary unincorporated association, cannot be sued in its society name and that for that reason no proper service was had upon it in the receivership action.

The receivership was granted by Chancellor Bourland on application of the Greenwood Coal Co., the Mammoth Vein Colliery Co., and the Backbone Coal Co. These companies alleged that their properties had been damaged to the extent of $90,000 and that their workmen had been injured by members of the miners' union as a result of the strike. The receivership order named Senator J. F. Brewer, of Fort Smith, as receiver and authorized him to seize funds of the union in various banks, pending decision of the case.

After a motion to set aside the receivership had been overruled by Chancellor Bourland, the union and certain individual members applied to the Supreme Court for a writ of prohibition to restrain proceedings under the receivership.

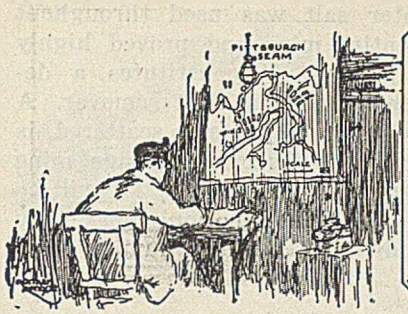
Scranton Uses Soft Coal

A striking demonstration of the horrors of war was seen in the anthracite region last week when forty-two gondolas of West Virginia bituminous coal were being sold and distributed among the householders of Scranton, Pa., in the heart of the hard-coal region. The spectacle of five retail coal yards in Scranton distributing soft coal brought home to both sides the fact that if they can not hold their local markets they have a slim chance of inducing anthracite users in New York, New Jersey, New England and the Northwest to refrain from the use of substitute fuels.

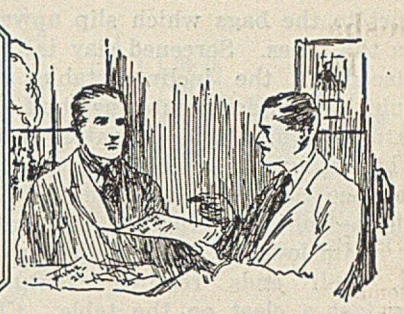
The dealers who received the soft coal are conducting a vigorous campaign of instruction to housekeepers in its use as an anthracite substitute.

Delayed Blast Entombs Three Alberta Miners

Three miners were entombed by an explosion which wrecked a new prospect coal shaft at Kirkpatrick, six miles west of Drumheller, Alta., Nov. 13. Rescue crews worked throughout the next day without being able to push through the débris that covered the victims, and hope of rescuing them was abandoned. The three men entombed are Mike Gilday, J. McLane and L. Burke. A delayed powder blast is believed to have caused the explosion.



Problems In Underground Management



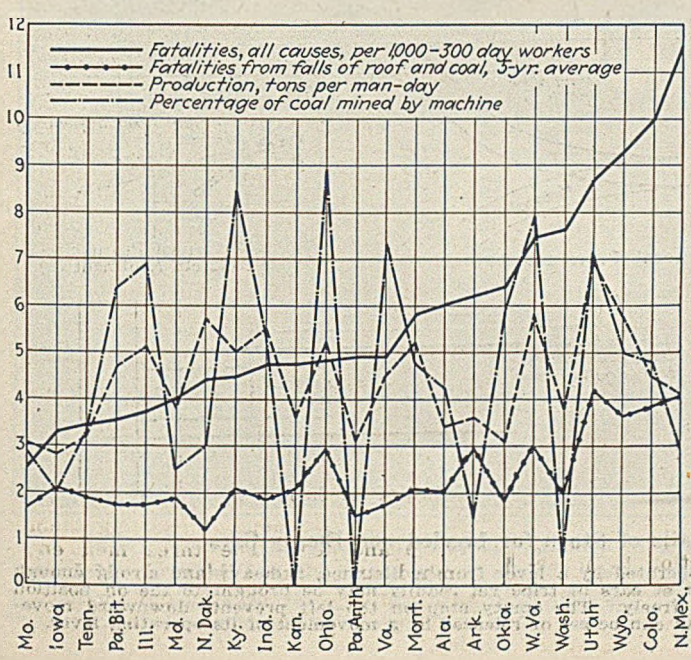
Large Output per Man Not Accompanied By Fatalities from Falls of Roof

T. T. Read of the United States Bureau of Mines at the meeting of the National Safety Council, Sept. 29, presented a chart indicating that fatalities from falls of roof had no direct relation to high output per man per day, nor to the percentage of coal mined by machine. On the chart was plotted, against the various coal-producing states, the fatalities from falls of roof and coal for a 5-yr. average, the production in tons per man-day, the percentage of coal produced by machine and the fatalities from all causes, the fatalities being based on 1,000 three-hundred-day underground workers, using the figures presented in Bulletin No. 251 of the U. S. Bureau of Mines.

The curves thus obtained seem to bear no relation to each other and indicate that machine mining does not increase fatalities nor does large production. Utah, for instance has a large output per man and a high accident rate from falls of roof, but North Dakota, which has a high output per man, has the lowest accident rate from falls of roof of any of the states.

Mr. Read stated that a study of the chart would convince any one that our high fatality rate in America has no direct relation to the demand for speed in production, and suggested that our high rate per man employed perhaps results from the smaller number of men required to do a job of work in the United States.

Mr. Read declared that even a perfect system of timbering would not entirely remove the danger of accidents from falls of roof and coal for both in England and the United States, when the roof is naturally good the fatalities usually run higher than where the roof is naturally bad, indicating that the confidence arising from a belief that falls would not take place leads to a lack of watchfulness against the possibility of accident.

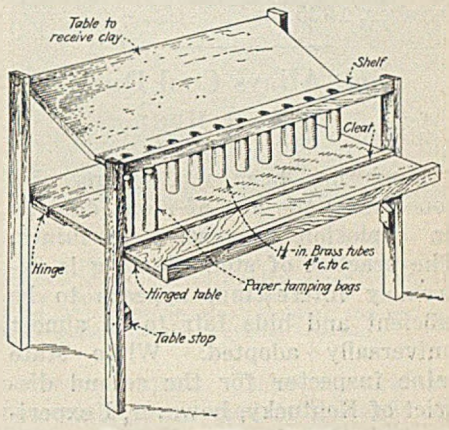


Big Output Is Not to Blame

Our large production per man is not the cause of our fatalities as the chart shows, nor is the use of machines. So, apparently, slowing down would not help us. The figures for mining machines should be taken in tens and not in units. Thus Ohio mines about 90 per cent of its coal by machines and Arkansas somewhat less than 10 per cent. Both have high fatality rates from falls.

Dummies Made Above Ground Provide Clay for Tamping

Complete detonation of an explosive which obtains the best results with a minimum quantity of noxious fumes, it is well known, is facilitated by proper tamping. It is no easy matter, however, to see to it that clay sent under ground for this purpose is properly and habitually used. Many miners are averse to filling tamping bags and charge them with bugdust if this material happens to be handier than the clay provided by the management.



Dummy-Filling Table

By aid of this simple home-made device one man is enabled to fill and prepare as many as 4,000 dummies in one shift. The work is neither arduous nor difficult and good tamping material comes to the miner in such handy shape that he gladly uses it in preference to any other material.

A number of mines, accordingly, have adopted the practice of filling tamping bags on the surface and sending them into the mine ready for use in shot holes. Frank R. Wicks, general manager of the Empire Anthracite Coal Co., of Pulaski, Va., has devised a filling apparatus by aid of which as many as 4,000 such bags may be charged and made ready for use in eight hours.

This equipment is simple. It consists of a table inclined at 35 deg. with a horizontal shelf at its lower edge. The table is intended to receive the clay and the shelf is provided with a row of holes 4 in. apart, each fitted with a brass tube 1¼ in. in diameter and 10 in. long, extending well beneath the shelf. Underneath the lower end of the tubes is a hinged drop table.

With the drop table lowered a 1½-in. tamping bag is slipped over the bottom end of each tube. This table is then raised affording sup-

port to the bags which slip upward on the tubes. Screened clay is then placed on the inclined table and quickly runs down onto the shelf and into the tubes, the operator meanwhile aiding this process by spreading the clay with a trowel. When all the tubes are full the drop table is again lowered, the bags following it, their ends resting eventually against a cleat on the table. Clay from the tubes of course flows into the bags as they descend. The operator now removes the bags from the tubes, folds over their ends, and packs the dummies, now ready for use, into boxes preparatory to sending them into the mine.—Abstracted from *Explosives Service Bulletin*, October, 1925.

Salt Allays Coal Dust

BY W. H. HUNT
Central City, Ky.

Much has been written recently concerning the use of stone dust as an explosion preventive in mines. The practice of stone dusting is extremely interesting, appears to be efficient and bids fair to be almost universally adopted. While state mine inspector for the second district of Kentucky, however, I experimented with the use of common salt as a means of allaying the combustible dust of a mine, with some decidedly interesting results.

On one of my trips of inspection to a certain big mine I noticed one entry, known as the Tenth North, that was heavier with dust than the remainder of the underground workings. Not only was the dust deep but it was particularly dry, so I believed that this entry would be an excellent place for a trial of salt. Accordingly I ordered the dust removed from all surfaces along this passage. Some 40 carloads of it were loaded out the next day. Examination of room ribs showed that they were covered with coal dust as fine as flour, every crevice being filled with it.

A barrel of salt was brought in and scattered broadcast along the roadways, ribs and all slate and refuse heaps along this entry.

Two days later I inspected the results of this test. At that time the road had the appearance of being greasy from one end to the other. I then selected four of the worst rooms I could find and when the miner loaded his shots the next day I had him tamp into each hole a 6-in. dummy containing salt. When the shots were fired this was projected into the air as a fine powder, and thus mixed intimately with the dust of floor and ribs where with it it soon formed a pasty, greasy-looking mass. This absorbed and did away with the coal dust as such. It simply made a mud of what a few days before had been a highly explosive powder.

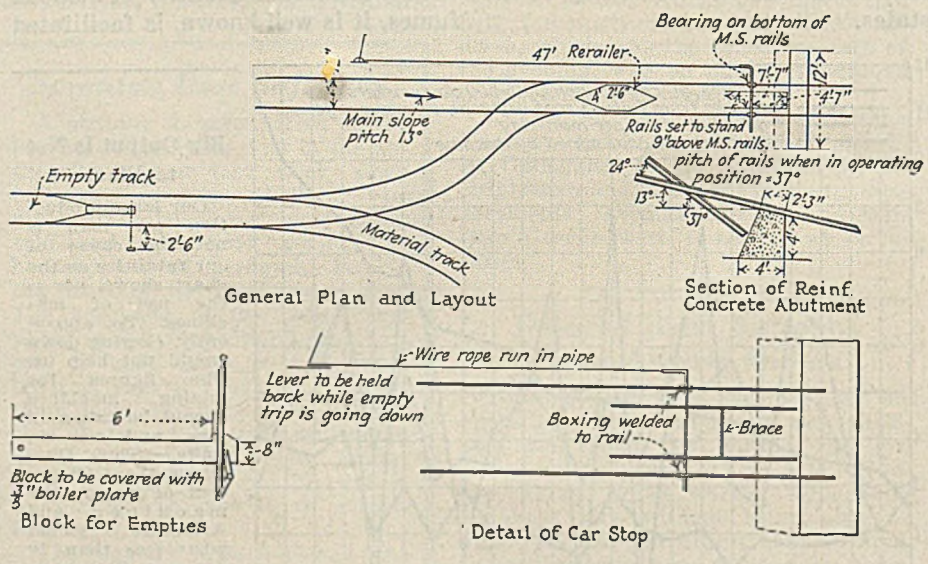
Later salt was used throughout the entire mine and proved highly satisfactory. It constitutes a decidedly economical dust remover. A barrel of it, if properly scattered, is sufficient to treat an average mine and will last indefinitely. It will be found also that it not only does away with dust but acts as a humidifier as well.

This Stop Effectually Holds Cars on Mine Slope

Where the grade of a mine track is steep and single rope haulage is employed, it is frequently advantageous to provide a dependable stop that can be set to prevent cars from passing but which can be lowered so as to allow cars and trips to pass over it freely when necessary. It is desirable also to locate the device controlling such a stop at some distance from it so that the person operating the lever may be entirely in the clear.

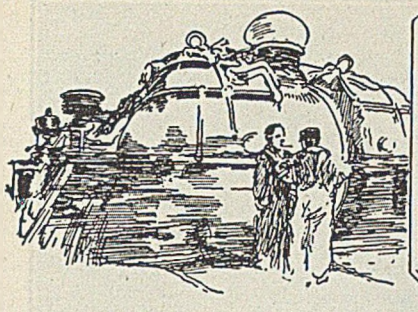
The accompanying illustration shows a stop of this kind installed on the main slope of Mine No. 7, of the Union Pacific Coal Co., at Winton, Wyo. In this mine the main track is on a slope of 13 deg. The stop consists of a pair of heavy rails carried on a shaft that turns in boxings securely welded to the flanges of the track rails. This shaft is provided with a crank at its end so that the rails may be brought into proper position for stopping the downward movement of cars or lowered into the clear as expediency may require. The stop is actuated by a rope or cable that passes up the slope to a lever working in a quadrant. The arrangement is such that the stop rails when in the operative position are backed by a heavy block of concrete, 4 ft. high and 4 ft. wide at the bottom. This device is sufficiently heavy and strong to effectively prevent the cars from passing down the slope yet can be readily brought to the off position if desired.

In this drawing also may be seen at the left a device intended for a somewhat similar purpose, yet built on an entirely different principle. This is the stop for empty cars. It is a kind of a trigger or hook, operated or raised by a lever at the side of the track. This carries a lip or hook at its forward end that may be raised to engage the axles of the empty cars. In this position it effectively prevents them from passing down the slope to either the main or material track. A slight movement of the lever, however, by means of the toggle joint links connecting it with the stop, is sufficient to lower the trigger and release the cars. The trigger is securely pinned at its forward end to the rails of the empty track, affording a grip that cannot readily be broken.

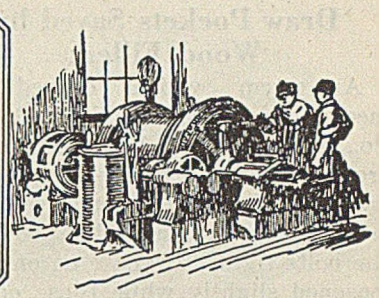


Details of Stops for Loaded and Empty Cars

This arrangement, operated by a lever from a distance, is heavy and strong enough to resist the movement of cars or trips yet readily may be brought to the off position allowing trips to pass freely. The empty stop on the left prevents downward movement of the empties, but can be set or released by a movement of its operating lever.



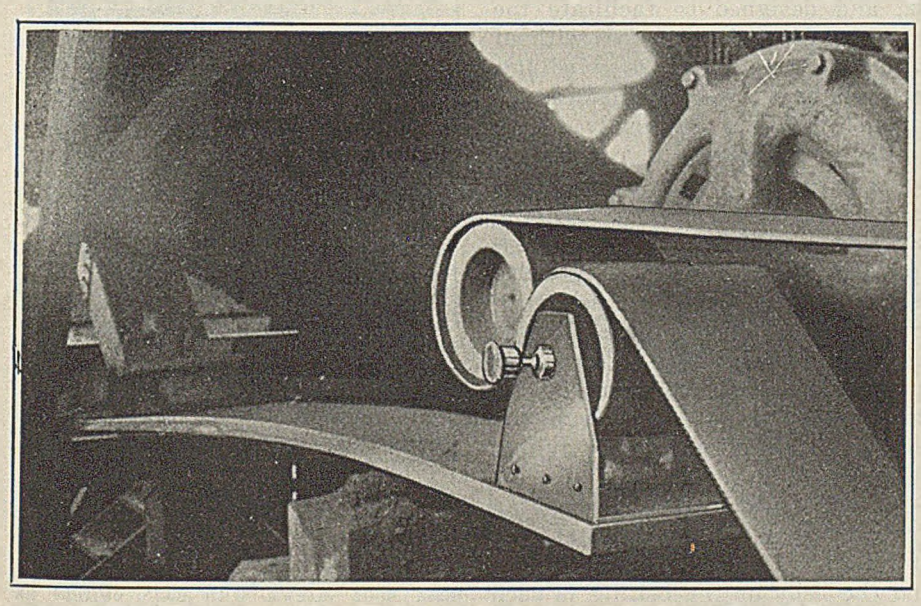
Practical Pointers For Electrical And Mechanical Men



Idler for Belt Drive in Indiana Mine Mounted on Springboard

As there are more ways than one to "hang a dog," there are likewise several ways to make an idler. An unusual but satisfactory form of idler is used on a belt drive in the modern steel tipple of the Pike County Coal Corporation, at Petersburg, Ind. This idler consists of an 8-in. pulley mounted on one end of a 1½x12-in. oak board, 8 ft. in length. The board is balanced on a fulcrum about 18 in. from the center of the idler. On the outer end of the board a weight consisting of a broken car wheel holds the pulley against the belt.

This idler is used in connection with a 40-hp., 700-r.p.m. motor which drives the shaker screens. The motor pulley is 9 in. in diameter, the shaker pulley 60 in. in diameter and the belt center distance is only 8 ft. The idler pulley is lubricated by a compression grease cup mounted on the end of the hollow shaft. The fulcrum under the board is arranged so there is no possibility of slippage. A short piece of round shafting bolted to the board forms the fulcrum and the ends of the shaft are mounted in plain solid boxes. The self-adjusting feature of the idler automatically takes care of ordinary belt stretch, and the method of lubrication is such that little attention is required.



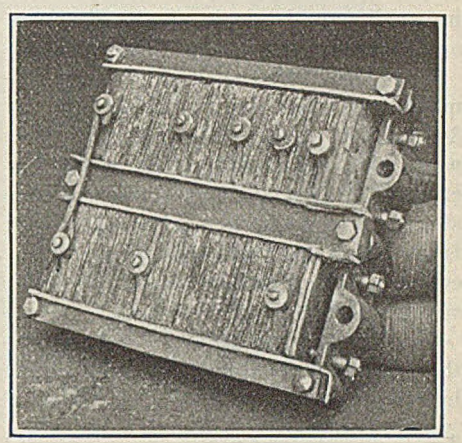
Pulley Mounted on One End of a Springboard Makes a Good Idler

A broken car wheel fastened to one end of a board provides sufficient weight to hold the idler pulley in position against the belt. A short shaft bolted to the board and having the ends mounted in solid boxes forms the fulcrum. This unusual but efficient idler is used in a large modern steel tipple.

Cap Screws Hold Resistor Plates Tightly

There are in use a great many mining machines which use a rheostat of the type shown in the illustration. This type is made up of a number of resistance plates separated by mica insulation and mounted in a cast-iron box having one open side. When repairing these rheostats it is not an easy matter, without special tools, to pack the plates tightly. This difficulty is overcome at the Fordson mines at Stone, Ky., by adding the four cap screws which can be seen at the right on the rheostat frame.

Hexagonal-head, ⅜-in. x 1½-in. cap screws are used. These act against heavy plates inserted at the ends of the stacks. By this method there is no difficulty in getting the required number of plates in the box, and the assembly is held snugly in position.



No Trouble to Get All of Them In

This photograph shows how compression screws are added to mining machine rheostats repaired in the shop of the Fordson Coal Co., at Stone, Ky. Holding the resistance plates snugly prevents trouble.

Repair Made to Breaker Carrying Current

It is not the usual practice to work on oil circuit breakers when the power is on them but occasionally some repairs not affecting the current-carrying parts can be thus made.

Recently I had a job which necessitated such a repair and hit upon a scheme which worked out quite successfully. The breaker in question had a burned-out overload relay coil and in order to remove it the back of the operating lever had to be dismantled.

To disconnect this lever and at the same time hold the contacts of the switch together, a block of wood in the shape of a wedge was placed under the crossbar upon which the contacts are mounted. When this was done, the switch was locked in the closed position and the operating handle was dismounted. In this manner the relay coil was replaced with a new one and the operating handle again put in position.

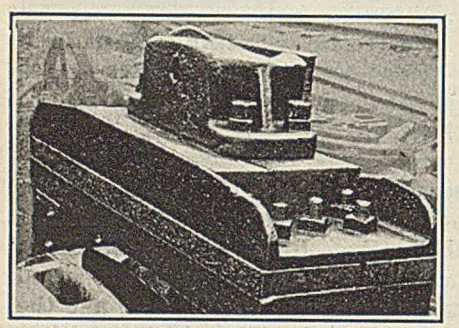
GRADY EMERSON.

Draw Pockets Saved by Wood Fillers

An item which caused the mechanics of the Island Creek Coal Co., of Holden, W. Va., considerable trouble was the breakage of draw pockets of mine locomotives. It seemed almost impossible to keep the bolts tight. If those on one side loosened slightly while those on the other remained tight, any stress imposed would break off the corners on the tight side of the draw pocket.

This breakage was overcome by mounting the draw pocket on a 3x12x23-in. oak filler block. The wood is sufficiently soft that it crushes if the bolts get loose on one side and the draw pocket is tilted from its normal position. This cushion effect under the tight side saves the lugs from breaking.

No draw pockets are changed at the mines. Instead, a complete bumper is sent out from the shop to replace an old one. The fastenings are made by means of twelve rivets. It has been found that the mine electricians can be relied upon with more certainty to do a good job of riveting, than of assembling the bolted parts of a bumper.



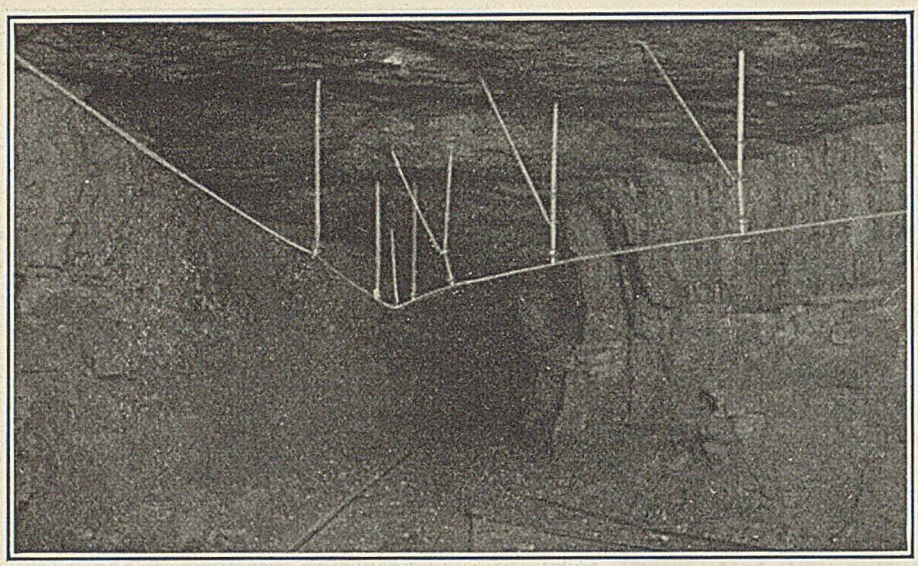
Draw Pocket With Cushion Block Does Not Break

By using a wood filler under the draw pocket the corners are saved from breaking if the bolts work loose. No draw pockets are changed at the mines, instead, complete bumpers are applied.

Braces Hold Hangers in Position on Curves

An example of good trolley construction on a high roof in a wide place is shown in the accompanying photograph of a junction point of the main haulways in the Balkan mine of the Southern Mining Co. This mine, located at Balkan, Ky., is in the TeJay seam and the average thickness of the coal is about 53 in. At the point shown, which is not far from the drift mouth, about 6 ft. of bottom has been taken up to reduce the grade.

In the narrow places the trolley is supported from brackets set in the rib but in wide places, such as shown in the illustration, roof supports are used. The extension rods in the Balkan mine are made of $\frac{3}{4}$-in. galvanized pipe. Those above the straight track are not braced but those on the curves are braced on the tension side by straps $\frac{1}{8}$ in. thick and $\frac{1}{4}$ in. wide. This construction has been in use for several years. It has proven satisfactory and presents a neat appearance.



Side Braces Hold the Wire Where It Belongs

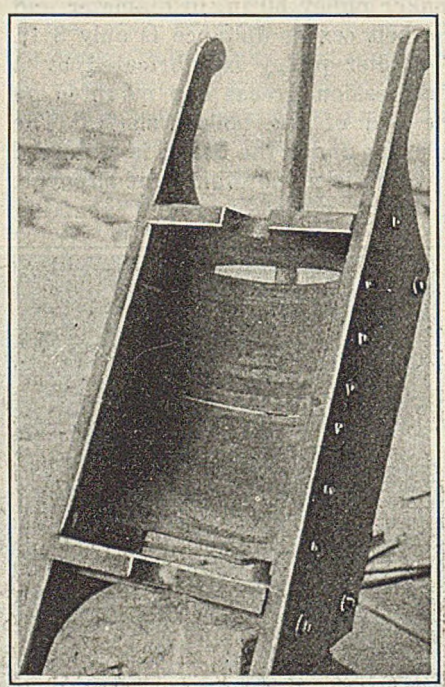
About 6 ft. of bottom has been taken up at this point to reduce the grade. The mine is in the TeJay seam and the coal averages 53 in. in thickness. Long cross supports could not be used but the extensions and braces make it possible to hold the wire in place. The side braces are used only on the line above the curved track.

"Stretcher" Insures Safe Handling of Armatures

Armatures, despite their electrical strength and reliability, are somewhat complicated and delicate from the mechanical standpoint. Accordingly, these machine parts require careful handling when they are removed from their bearings. The accompanying illustration shows an armature "stretcher" or sling used at the mine shops at Valier, Ill., and designed to facilitate the transportation of armatures without injury to such parts as windings, commutator or bearing surfaces.

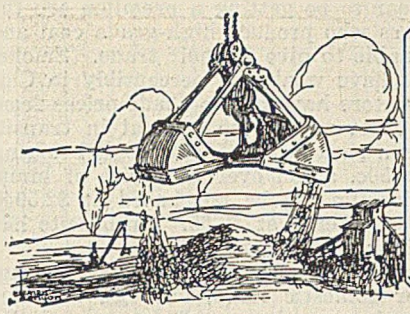
This device is extremely simple in its construction. It consists of two side pieces of light plank so cut as to form end grips to facilitate carrying. Between the side pieces are two end blocks, each provided with a notch to receive the armature shaft. These are bolted securely in place and serve as spacers; also attached securely to the sides by means of a strap and bolts are two pieces of old rubber belting.

Into the cradle thus formed an armature may be laid without fear of injury. The width of the frame and the belly of the belting is such that the "stretcher" with an armature in it may be set down upon the floor or other level support without danger of the belting touching. The armature is thus well protected and there is small chance of its receiving mechanical injury while being transported either to or from the shop.

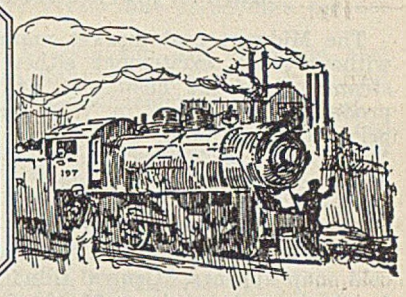


Armatures Are Carried Safely in This "Stretcher"

Even though this carrier, which will accommodate armatures of various sizes, is set down on slightly uneven ground or upon floor strewn with such objects as bolts, nuts, rivets or tools there is small likelihood of the armature being injured. The belly of the bed is less than a semicircle and even if some object, such as a nut, should come in contact with the belting this material would amply protect the armature resting upon it.



Production And the Market



Bituminous Coal Market Follows Even Pace; Undertone Is Firm

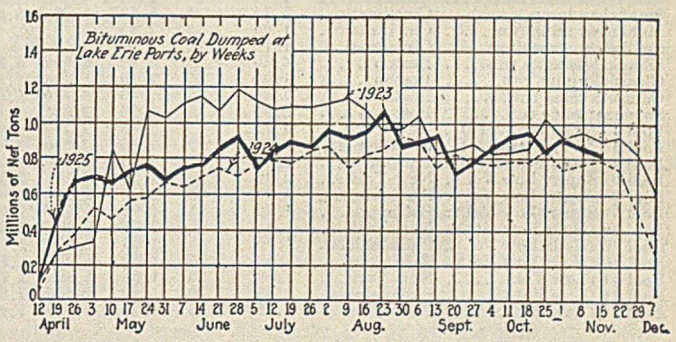
Despite the fact that production of bituminous coal continues above the twelve million-ton level the market retains much strength—a surprising amount in view of the comparatively mild weather thus far and the tendency to slump that usually appears in the wake of a sudden spurt such as that of a few weeks ago. The reaction seems to have been confined almost entirely to the market for anthracite substitutes, principally coke, which a few weeks ago was hitting only the high spots, but which took such a sudden flop that some of the top quotations have fallen $2@$2.50. Screened and prepared coals, which were next to coke in public preference as hard-coal substitutes, also have been gradually easing off as the demand for mine-run has been gaining headway. A sudden fall in temperature, which would quickly stimulate domestic demand, might, of course, cause another upturn, though it is not likely that recent high levels will again be attained.

Business in steam grades is fairly good, most holders of contracts taking full quotas, but with output at a high level and the sharp edge missing from domestic call, due to mild weather, there is no difficulty in taking care of requirements. Four mines in eastern Ohio reopened last week and several others are said to be ready to resume as soon as a favorable opportunity presents itself—when that will be, however, is somewhat doubtful in view of the closing of the lake season.

Movement of coal through the Cincinnati gateway fell off somewhat last week, 13,011 cars having passed through, which, however, was an increase of 302 cars over the corresponding week a year ago. The lake season closed with a record-breaking run of 2,103 cars.

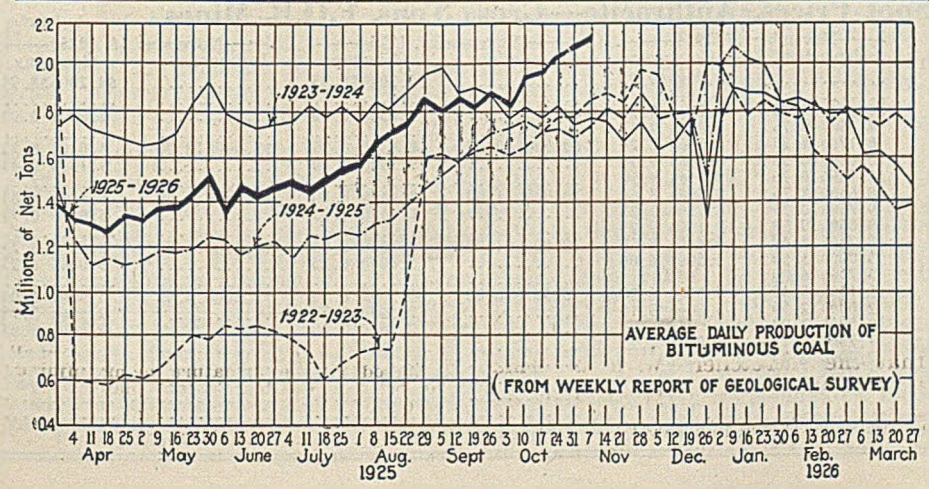
Anthracite is virtually out of the wholesale market and retailers having hard coal are apportioning it among regular customers in small lots. After holding separate conferences with President Lewis of the miners' union and Major Inglis, of the operators' scale committee, Governor Pinchot is working on a plan to get the miners and producers together and bring about a settlement of the strike.

Production of bituminous coal during the week ended Nov. 7 is estimated by the Bureau of Mines at 12,189,000 net tons, compared with 12,480,000 tons in the preceding week. The decline is attributed partly to the election holiday and partly to the observance of All Souls Day. Anthracite output in the week ended Nov. 7 totaled 28,000 net tons, an increase of 10,000 tons over the previous week.



Coal Age Index of spot prices of bituminous coal on Nov. 16 stood at 190, the corresponding price being $2.30, compared with 185 and $2.24 on Nov. 9.

Dumpings of coal at Lake Erie ports during the week ended Nov. 15, according to the Ore & Coal Exchange, were as follows: Cargo, 759,058 net tons; steamship fuel, 44,738 tons—a total of 803,796 net tons, compared with 842,813 tons in the preceding week. Hampton Roads dumpings during the week ended Nov. 12 totaled 402,152 net tons, against 398,123 tons in the previous week.



Estimates of Production

(Net Tons)

	1924	1925
BITUMINOUS		
Oct. 24	10,645,000	12,088,000
Oct. 31 (a)	10,405,000	12,480,000
Nov. 7 (b)	9,695,000	12,189,000
Daily average	1,795,000	2,138,000
Cal. yr. to date	(c) 401,889,000	431,562,000
Daily av. to date	1,531,000	1,639,000
ANTHRACITE		
Oct. 24	1,927,000	13,000
Oct. 31	1,444,000	18,000
Nov. 7	1,592,000	28,000
Cal. yr. to date	(c) 77,246,000	61,769,000
COKE		
Oct. 31	150,000	261,000
Nov. 7	140,000	292,000
Cal. yr. to date	(c) 8,223,000	8,485,000

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

Midwest Market Keeps Even Pace

The Midwest coal market maintains a fairly even pace without much excitement either in the domestic or the steam end of the business. Franklin and Saline County producers, and some in Williamson County, raised their prices on 6-in. lump a few days ago from $3.25 to $3.50. Most of the operators, finding that they were far behind on lump commitments, wished to draw some attention of the buying public to 6x3-in. furnace and 3x2-in. egg. High-grade Indiana Fourth Vein 6-in. lump has not as yet gone up to $3.50, although this is expected as soon as another cold snap appears. Central Illinois lump is reasonably firm for high-grade coal at $3@$3.25. The smaller domestic sizes are at lower levels, the price being set principally by the demand.

Steam coals are offered at all sorts of prices, ranging from 85c. on west Kentucky strip screenings up to $1.75 for good southern Illinois 2-in. screenings. Buyers are in the market, but, realizing the increase in production of steam coals, are driving as close bargains as they can for current needs. It is interesting to note that some of the largest industries are buying coal on the open market rather than on contract, as in years past.

The situation on Eastern coals is a little more complicated. There is a wide range in price on fancy grades of eastern Kentucky and West Virginia block—from $3.25 to $4. Those who appear to be getting a premium are the sales agents or operators who produce high-grade coal and have car numbers available to give to their trade. Smokeless lump, egg and nut have weakened perceptibly in Chicago; in fact, some operators have had to shade prices from 50c. to 75c. a ton in order to dispose of coal in transit. Good prepared coal has a range of $5.50@$6, egg bringing anywhere from 25c. to 50c. a ton over the price of lump. The best smokeless mine-run can be purchased at $2.50@$2.75, with plenty of coal offered at $2.25. Anthracite has practically disappeared from the market.

Seasonable weather is creating an unusually good market in southern Illinois for domestic lump, but egg and nut are slow and the other sizes are heavy. This is especially so in the Williamson-Franklin County field, where on Nov. 10 the price was raised 25c. a ton on lump, and in order to move other sizes there is a threat that lump and egg will advance another 25c. on the 18th. The shaft mines are getting pretty good working time although all of them have "no bills" on hand every night. Strip mines are doing well with a ready market. It is understood, however, that there are many idle mines in all of these fields. A car shortage is slowly developing. In the Duquoin field conditions are somewhat similar to those in Williamson and Franklin counties. Working time is about five days a week and prices range from 25c. to 50c. under the Franklin County circular.

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

Low-Volatile, Eastern	Market Quoted	Nov. 17 1924	Nov. 2 1925	Nov. 9 1925	Nov. 16 1925†
Smokeless lump	Columbus	$4.10	$4.85	$5.25	**$6.00@$6.50**
Smokeless mine run	Columbus	2.00	2.35	2.35	**3.00@ 3.25**
Smokeless screenings	Columbus	1.25	2.05	2.05	**2.50@ 2.75**
Smokeless lump	Chicago	4.10	5.75	6.25	*5.50@ 6.00*
Smokeless mine run	Chicago	1.85	2.25	2.50	2.25@ 2.75
Smokeless lump	Cincinnati	3.75	6.25	5.50	5.00@.6.00
Smokeless mine run	Cincinnati	1.85	2.35	2.55	*2.50*
Smokeless screenings	Cincinnati	1.15	1.95	2.00	2.00
*Smokeless mine run	Boston	4.30	4.95	4.95	**4.90@ 5.15**
Clearfield mine run	Boston	1.90	2.05	2.10	*1.90@ 2.25*
Cambria mine run	Boston	2.30	2.35	2.40	*2.10@ 2.60*
Somerset mine run	Boston	2.05	2.15	2.20	2.00@ 2.40
Pool 1 (Navy Standard)	New York	2.75	2.85	2.85	2.75@ 3.00
Pool 1 (Navy Standard)	Philadelphia	2.70	2.65	2.95	2.80@ 3.10
Pool 1 (Navy Standard)	Baltimore	2.30	2.15	2.15	2.10@ 2.20
Pool 9 (Super. Low Vol.)	New York	2.10	2.20	2.25	**2.15@ 2.50**
Pool 9 (Super. Low Vol.)	Philadelphia	2.15	1.95	2.30	2.20@ 2.45
Pool 9 (Super. Low Vol.)	Baltimore	1.70	1.95	1.95	1.90@ 2.00
Pool 10 (H.Gr.Low Vol.)	New York	1.85	1.95	2.00	**1.85@ 2.20**
Pool 10 (H.Gr.Low Vol.)	Philadelphia	1.75	1.85	2.05	2.00@ 2.15
Pool 10 (H.Gr.Low Vol.)	Baltimore	1.55	1.80	1.80	1.80@ 1.85
Pool 11 (Low Vol.)	New York	1.60	1.80	1.65	**1.65@ 1.75**
Pool 11 (Low Vol.)	Philadelphia	1.45	1.70	1.90	1.85@ 2.00
Pool 11 (Low Vol.)	Baltimore	1.45	1.55	1.55	1.50@ 1.60
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.50	1.55	1.55	1.50@ 1.65
Pool 54-64 (Gas and St.)	Philadelphia	1.50	1.60	1.60	1.55@ 1.70
Pool 54-64 (Gas and St.)	Baltimore	1.45	1.55	1.55	1.55@ 1.60
Pittsburgh sc'd gas	Pittsburgh	2.40	2.85	2.85	2.75@ 3.00
Pittsburgh gas mine run	Pittsburgh	2.10	2.35	2.35	2.25@ 2.50
Pittsburgh mine run (St.)	Pittsburgh	1.85	2.20	2.20	*2.10@ 2.25*
Pittsburgh slack (Gas)	Pittsburgh	1.15	1.30	1.30	**1.40@ 1.50**
Kanawha lump	Columbus	2.55	2.60	2.60	**2.75@ 3.50**
Kanawha mine run	Columbus	1.55	1.70	1.70	1.55@ 1.85
Kanawha screenings	Columbus	.95	1.30	1.20	1.15@ 1.25
W. Va. lump	Cincinnati	2.65	2.75	3.25	**3.00@ 4.00**
W. Va. gas mine run	Cincinnati	1.45	1.60	1.80	*1.60@ 1.75*
W. Va. steam mine run	Cincinnati	1.35	1.55	1.60	*1.50@ 1.65*
W. Va. screenings	Cincinnati	.95	1.25	1.35	*1.15@ 1.55*
Hocking lump	Columbus	2.55	2.70	2.75	**3.00@ 3.25**
Hocking mine run	Columbus	1.60	1.65	1.65	1.50@ 1.85
Hocking screenings	Columbus	.75	1.30	1.20	**1.20@ 1.30**
Pitts. No. 8 lump	Cleveland	2.40	2.55	2.55	2.10@ 3.00
Pitts. No. 8 mine run	Cleveland	1.85	1.95	1.90	**1.90@ 2.00**
Pitts. No. 8 screenings	Cleveland	1.10	1.45	1.40	1.35@ 1.50

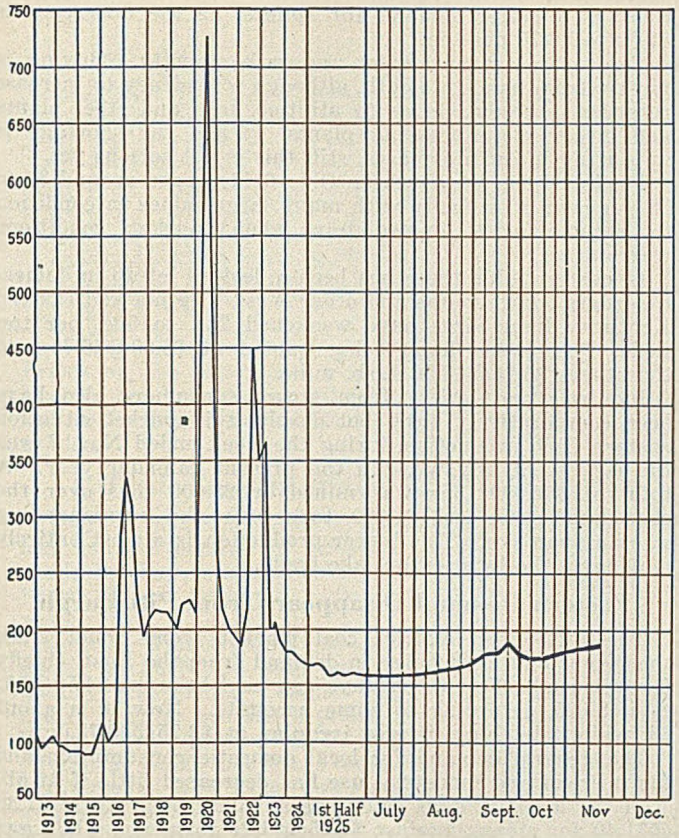
Midwest	Market Quoted	Nov. 17 1924	Nov. 2 1925	Nov. 9 1925	Nov. 16 1925†
Franklin, Ill. lump	Chicago	$3.35	$3.25	$3.25	**$3.50**
Franklin, Ill. mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Franklin, Ill. screenings	Chicago	1.35	1.60	1.60	1.50@ 1.75
Central, Ill. lump	Chicago	2.85	2.85	2.85	**3.00**
Central, Ill. mine run	Chicago	2.20	2.20	2.20	2.15@ 2.25
Central, Ill. screenings	Chicago	1.25	1.55	1.55	*1.35@ 1.50*
Ind. 4th Vein lump	Chicago	3.10	3.10	3.10	3.00@ 3.25
Ind. 4th Vein mine run	Chicago	2.35	2.35	2.35	2.25@ 2.50
Ind. 4th Vein screenings	Chicago	1.45	1.60	1.80	1.75@ 1.90
Ind. 5th Vein lump	Chicago	2.85	2.35	2.35	2.25@ 2.50
Ind. 5th Vein mine run	Chicago	2.10	1.95	1.95	1.85@ 2.10
Ind. 5th Vein screenings	Chicago	1.10	1.40	1.40	1.35@ 1.50
Mt. Olive lump	St. Louis	3.00	2.50	2.85	2.75@ 3.00
Mt. Olive mine run	St. Louis	2.35	2.00	2.00	2.00
Mt. Olive screenings	St. Louis	1.10	1.75	1.75	1.75
Standard lump	St. Louis	2.75	2.25	2.25	**2.35@ 2.50**
Standard mine run	St. Louis	1.95	1.80	1.80	1.75@ 1.90
Standard screenings	St. Louis	.65	1.15	1.15	*.75@ 1.00*
West Ky. block	Louisville	3.05	2.05	2.10	2.00@ 2.25
West Ky. mine run	Louisville	1.60	1.35	1.35	**1.25@ 1.50**
West Ky. screenings	Louisville	.80	.90	.80	.65@ 1.00
West Ky. block	Chicago	2.75	2.05	2.35	2.25@ 2.50
West Ky. mine run	Chicago	1.55	1.25	1.25	1.15@ 1.35
South and Southwest					
Big Seam lump	Birmingham	3.10	2.25	2.25	2.00@ 2.50
Big Seam mine run	Birmingham	1.70	1.75	1.75	*1.60@ 1.75*
Big Seam (washed)	Birmingham	1.85	1.85	1.85	1.75@ 2.00
S. E. Ky. block	Chicago	2.75	3.00	3.35	**3.50@ 4.00**
S. E. Ky. mine run	Chicago	1.60	1.95	1.95	**2.00@ 2.35**
S. E. Ky. block	Louisville	3.25	3.10	3.50	**3.25@ 4.00**
S. E. Ky. mine run	Louisville	1.60	1.50	1.60	1.50@ 1.75
S. E. Ky. screenings	Louisville	.95	1.20	1.35	1.25@ 1.50
S. E. Ky. block	Cincinnati	2.75	3.25	3.35	**3.25@ 4.25**
S. E. Ky. mine run	Cincinnati	1.45	1.60	1.75	*1.50@ 1.75*
S. E. Ky. screenings	Cincinnati	.95	1.25	1.35	*1.15@ 1.40*
Kansas lump	Kansas City	5.00	4.85	5.00	5.00
Kansas mine run	Kansas City	3.35	3.10	3.25	*3.00@ 3.25*
Kansas screenings	Kansas City	2.00	2.30	2.30	2.25@ 2.35

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in heavy type; declines in *italics*.

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

	Market Quoted	Freight Rates	November 17, 1924 Independent	November 17, 1924 Company	November 9, 1925 Independent	November 9, 1925 Company	November 16, 1925† Independent	November 16, 1925† Company
Broken	New York	$2.34	.....	$8.00@$9.25	.....	$8.20@$8.95	.....	$8.20@$8.95
Broken	Philadelphia	2.39	.....	9.15	.....	.....	.....	.....
Egg	New York	2.34	$8.50@$8.75	8.75@ 9.25	.....	8.65@ 8.90	.....	8.65@ 8.90
Egg	Philadelphia	2.39	9.45@ 9.75	8.80@ 9.25	.....	.....	.....	.....
Egg	Chicago*	5.06	8.17@ 8.25	8.14@ 8.20	$9.50@10.00	8.03@ 8.25	$9.50@10.00	8.03@ 8.25
Stove	New York	2.34	10.00@10.50	8.75@ 9.50	.....	9.15@ 9.40	.....	9.15@ 9.40
Stove	Philadelphia	2.39	10.10@10.75	9.15@ 9.50	.....	.....	.....	.....
Stove	Chicago*	5.06	8.63@ 8.75	8.50@ 8.64	10.00@11.00	8.48@ 8.80	10.00@11.00	8.48@ 8.80
Chestnut	New York	2.34	9.75@10.25	8.75@ 9.25	.....	8.65@ 8.95	.....	8.65@ 8.95
Chestnut	Philadelphia	2.39	9.85@10.50	9.15@ 9.25	.....	.....	.....	.....
Chestnut	Chicago*	5.06	8.26@ 8.40	8.44@ 8.60	10.00@11.00	8.50@ 8.75	10.00@11.00	8.50@ 8.75
Pea	New York	2.22	5.00@ 5.50	5.50@ 6.00	.....	5.00@ 6.25	.....	5.00@ 6.25
Pea	Philadelphia	2.14	5.75@ 6.00	6.00	.....	.....	.....	.....
Pea	Chicago*	4.79	5.13@ 5.45	5.36@ 6.20	5.50@ 6.00	5.50@ 6.00	5.50@ 6.00	5.50@ 6.00
Buckwheat No. 1	New York	2.22	2.00@ 2.50	3.00@ 3.15	.....	2.50@ 2.75	.....	2.50@ 2.75
Buckwheat No 1	Philadelphia	2.14	2.50@ 3.00	3.00	.....	2.50@ 3.00	.....	2.50@ 3.00
Rice	New York	2.22	1.75@ 2.15	2.00@ 2.25	.....	2.25	.....	2.25
Rice	Philadelphia	2.14	2.00@ 2.25	2.25	.....	.....	.....	.....
Barley	New York	2.22	1.25@ 1.50	1.50	.....	2.25	.....	2.25
Barley	Philadelphia	2.14	1.50	1.50	.....	.....	.....	.....
Birdseye	New York	2.22	.....	1.60	.....	.....	.....	.....

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



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

	1925			1924
	Nov. 16	Nov. 9	Nov. 2	Nov. 17
Index	190	185	181	170
Weighted average price..	$2.30	$2.24	$2.19	$2.06

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

The Mt. Olive field shows considerable activity. Railroad tonnage is good and domestic shows an increase, with a little steam moving slowly. Prices in this field advanced recently to $2.75 for St. Louis shipments and $3 for country shipments on domestic lump. Business in the Standard field is hand to mouth. Prices are just about the cost of production. The demand is good for lump but there is no call for anything else. Working time is anywhere from three to five days a week. Railroad tonnage is fair. The latest reports indicate that there is a possibility that the consolidation of mines in the Fifth and Ninth districts has a chance now of going through, as some of the large operators who held out in the beginning have recently indicated a willingness to come in.

Fairly seasonable weather at St. Louis means fairly good movement of domestic coal—not alone of high grade, but middle grade as well. Anthracite and smokeless show poorly, but coke continues to improve. Local wagonload steam is good and carload is fair. There is a fairly good movement of domestic to the country, preferably middle grade. Country steam is quiet. St. Louis retail coal prices are expected to advance between Nov. 15 and 20.

Heavy Tonnage Moves from Kentucky

Movement from Kentucky continues very heavy, it being reported that some coal is moving to Canada and east as far as Buffalo, and a lot is going into markets that formerly handled a good deal of smokeless coal, which has been passed up on account of the present prices. Relatively warm weather in Louisville has caused a slump in local demand for both steam and domestic sizes. River movement south from western Kentucky is getting under way again after a long shutdown due to low water.

In western Kentucky fine screenings (pea and slack) is being sold at 65@85c., with nut and slack at 90c.@$1. Not much nut and slack is offered, however, as most operators screen for nut, and buyers prefer fine screenings for use in automatic stokers.

Quotations as high as $4.50 a ton are heard on best grades of specialty eastern Kentucky 4-in. block coals, but $3.25@$3.75 catches most of the movement.

Rural movement over Kentucky and nearby states has been picking up somewhat, but the larger city retailers are not taking to higher prices very well.

Car shortage is more pronounced and distribution worse, a great deal of the trouble in eastern Kentucky being due to cars being held under load at lake ports.

All Lines Firm in Northwest

Dock operators at Duluth-Superior have been putting through substantial sales of both anthracite and bituminous coal, but warmer weather has caused a slackening as compared with the latter half of October. Markets are firm in all lines of anthracite and bituminous coal and dealers show no disposition to take advantage of any shortages of supplies. Anthracite dock prices are: Egg, $13.20; nut and stove, $13.60; pea, $11.05; buckwheat, $6.50.

Demand for Pocahontas (as a substitute for anthracite) is the heaviest in the experience of the trade here, but prepared sizes are still $8.50@$9 and other lines of bituminous coals are unchanged.

Industrial buying is steadily gaining over Minnesota and northern Wisconsin, iron-mining companies on the Minnesota ranges having increased orders for mine-run and screenings.

Domestic orders for anthracite have been on such a heavy scale that it is now figured that the exhaustion stage in all sizes will be reached by about Feb. 1.

Last month's shipments from the docks were the highest in several years—31,685 cars—as compared with 24,032 cars during the preceding month and 26,418 cars during October last year. The docks received from Lake Erie ports 1,242,816 tons of bituminous but no anthracite during October. Total receipts of soft coal to Nov. 1 were 7,688,638 tons, an increase of 1,425,975 tons over the same period last year. Anthracite receipts were 786,848 tons, a decrease of 390,423 tons from last year. Bituminous stocks on the docks are now placed at 5,450,000 tons, of which approximately 2,000,000 belongs to the railroads.

Twenty-nine cargoes of coal were unloaded at the docks last week and thirteen, including one of anthracite screenings to be used by a Superior company in making briquets, were reported en route.

Coal demand in Milwaukee has slackened due to milder weather. Anthracite virtually is out of the market, and in consequence consumers who can burn bituminous coal are turning to the better grades, which are firm in price and looking upward. There is a strong demand for coke, and prices are advancing. Local dealers now get $15 for range coke, $14 for the nut size, and $12 for pea. No anthracite has been received since Sept. 15, but cargoes of bituminous coal are coming in as usual. Receipts for the season of 1925 to Nov. 13 total 3,305,001 tons—488,234 tons of anthracite and 2,816,767 tons of bituminous coal.

A touch of Indian summer has slowed down the demand for coal in various directions in the Twin Cities, but a fair tonnage is moving, both at retail and in the steam trade. It is not at all certain that there will be any great shortage of hard coal, for the trend to other fuels has been pronounced. Prices are holding steady and fairly firm on all grades. Smokeless is holding the advance recently made. All-rail coals are stable, with southern Illinois lump firm at $3.25; Indiana, $3@$3.25; central Illinois, $2.75@$3; western Kentucky, $2@$2.15.

Southwest Output Still Behind Orders

The impetus given the coal market in the Southwest by the early arrival of freezing weather has carried it briskly through a week of moderate temperature. Kansas mines started last week two weeks behind on deliveries of lump, two days were lost for Armistice Day and pay day, and the week ended with no diminution of unfilled orders. Operators report from three days' to a week's accumulation of orders for Kansas nut. The supply of screenings is about equal to the demand. There have been no changes in prices. While some operators quote as low as $2.25 on screenings on large contracts, $2.35 is the prevailing price.

The demand for Colorado domestic coal continues to in-

crease since cold weather set in. A great many operators are booking orders now for December delivery, which is quite a contrast with this time a year ago. Labor shortage is a disquieting development, but it is hoped that this will be remedied when the sugar beet industry campaign is over, which will release a great many employees who will go back to the coal mines again. There has been no change in prices on Colorado coal during the last week. Raton and Dawson, (N.M.) mines, which produce about 90 per cent of New Mexico coal, announce these new quotations: 6-in. lump, $4.25; fancy egg, $4.25; fancy nut, $3.75; fancy pea, $3.25.

Utah mines are working about two-thirds of full-time capacity. There is a slight shortage of cars, but the situation so far is not such as to hinder the filling of orders. Generally the larger sizes are the stronger. Demand for coal for heating purposes is stronger now that cooler weather has set in. Mines and smelters are the biggest industrial customers, but there is a good demand for steam coal, due to heavy traffic on the railroads. Sugar factories are in the midst of a heavy campaign, and they are providing a good outlet for slack. Prices remain steady and the labor situation is excellent.

Cincinnati Market Retains Strength

Since the recent price spurt there has been a lull at Cincinnati, but the market is in as strong a position as it was a week ago, perhaps stronger for despite warmer weather, the closing of shipments to the lakes and a promise of 100 per cent car supply to the Louisville & Nashville fields of southeastern Kentucky there have been no drastic breaks in prices. There have been recessions, but only where the demand has moderated.

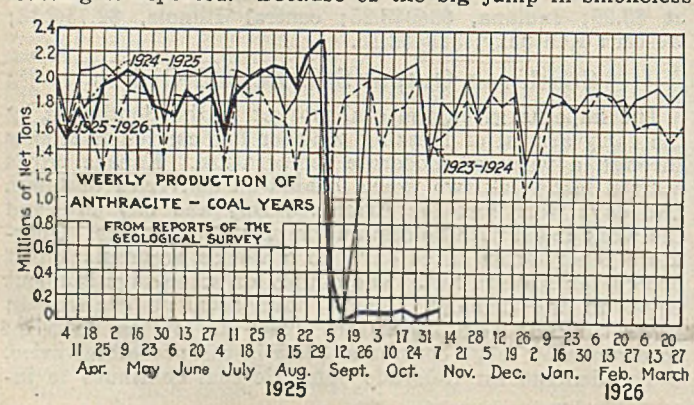
Due to a blockade at the lakes the movement has slowed up, only 13,011 cars being reported by the American Railway Association as passing through the Cincinnati gateways last week, a decrease of 1,964 as compared with the week previous, but 302 more than in the corresponding week of last year. Of these, 2,103 cars were routed to the lakes, a decrease of 770 cars from the previous week but a record movement for the closing of the season.

Most of the high-volatile demand last week was for block (4-in. and 6-in.) sizings. Miller's Creek, Coal Rivers, Elkhorns, the Jellicoes and the like were firm around $4@$4.50. West Virginia offerings range between $3 and $3.50. The Hazard price of $3.25@$3.50 held and Harlans about the same. The make of egg seemed a little more than the market would digest, so from a top of $3 these sizings fell to $2.65@$2.75 and with a slackened demand for mine-run and slack the former reverted to its old position and screenings down to a $1.25 average.

There has not been much adjustment in smokeless, lump still ranging $5@$6, with contract takers getting the better of the argument. Mine-run, which had stiffened a bit, has again struck a dead level of $2.50. Screenings are said to have sold up to $2.25, but considering volume sales the general market has not gone beyond the $2 level.

Heavy rains have given the river a good running stage, and a plentiful supply is coming down for those engaged in this trade. Cincinnati retailers are still fencing with the market with a spread of $9.50@$10.50 on smokeless lump, $6.50@$7 on mine-run, $6.50@7 on bituminous lump and $4.50@$5 on slack.

Warmer weather at Columbus has caused a slight hesitancy in the domestic trade, although the new prices announced Nov. 1 are generally maintained. Retail prices, which jumped several weeks ago, are still firm and little cutting is reported. Because of the big jump in smokeless



there is a better demand for splints, as the difference is $2.50 to $2.75 per ton.

The steam trade is quiet and rather spotty. Buying is mostly from hand to mouth, although a tendency to increase reserves is noticeable as to utilities, iron and steel plants and larger manufacturing plants. While car shortage is appearing in certain places, still this is not serious yet.

Production in the southern Ohio field ranges around 30 to 35 per cent of capacity with many large mines in condition to resume work immediately when market conditions warrant.

In eastern Ohio there has been a decided let-up in domestic orders. Pocahontas and other West Virginia and eastern Kentucky lump sizes have weakened 25c. to 50c. per ton f.o.b., Pocahontas lump being quoted at $5.50@$5.75 and the others $3.25@$3.50 f.o.b. mine.

Inquiries and orders from steam consumers also have been comparatively light, but despite this market situation eastern Ohio production during the week ended Nov. 7 was the largest of any week in the present calendar year. A total of 332,000 tons was mined or 23,000 tons over the preceding week and 21,000 tons over the corresponding week a year ago. This larger production is almost entirely moving in the late-season lake trade.

Eastern Demand Disappears from Pittsburgh

The Pittsburgh district coal market seems quiet since the recent and brief bulge in demand from the East, chiefly for egg coal. For a few days egg coal brought $4.50@$5; even $5.25, according to some accounts. Now it is about $3, while 3-in. lump is now irrgular at $3.25@$3.75.

The general demand for local domestic consumption and for railroad and industrial use has decreased little if at all.

In the last few days slack has advanced sharply to $1.30 @$1.40 for steam, against $1.15@$1.25 formerly, while gas slack is quotable at $1.40@$1.50. The upward reaction is attributed partly to ending of the bulge in lump demand.

The straight bituminous market at Buffalo is quiet. Sizes are doing something, but slack is slow of sale and the trade is wondering what will be done with the coal that is now going to the lakes. Shipping to the lakes will be over in two weeks or so and then it is for these mines to shut down or divide the remaining trade with the other mines. Quotations are: $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.26@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run. Some Youghiogheny special sizes run up as high as $4, mostly for house use, and some special Pittsburgh sizes are $1 or so up for the same trade.

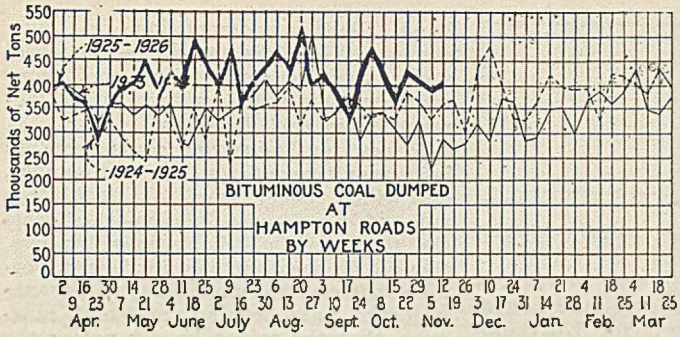
New England Trade Only Fair

In the New England market the demand for steam coal continues light. In some directions quotations are slightly firmer, but the spot market in general varies from day to day according to the pressure shippers are under to move coal. The relatively few large buyers who enter the market from time to time have now accumulated winter stocks for the most part, and from now on the spot market will be restricted to purchasers of smaller tonnages.

The Hampton Roads agencies have ample supplies available for dumping. About the usual clearances are being applied on contracts, and those factors who take coal for distribution inland are accepting liberal consignments. There is no special push for coal; neither is there any indication that shippers are likely to be seriously pressed for orders. Of course a considerable tonnage of low volatile is being moved in prepared sizes; a modicum is finding its way from the Pocahontas and New River districts all-rail to New England, but the great bulk is moving along the line and to the west in usual channels.

Quotations on lump and egg from the smokeless fields still range $5@$7.50 per net ton at the mines, though a few venturesome sales agents quote $8. No heavy tonnage is being arranged for on the higher prices, but some producers of higher grade low volatile in central Pennsylvania have modified their prices materially during the past week. Good lump and egg can be had at $5.25@$6, these coals taking the minimum Clearfield rate to all New England territory.

For mine-run from central Pennsylvania there is only scattering demand here, and then only in areas well away from tidewater competition of Pocahontas and New River.



Prices on the latter are $6@$6.35 per gross ton on cars Boston and Providence, and only at certain points can all-rail coals find a market at $2.15@$2.50 for fair to good grades.

Trade Eases in Middle Atlantic Markets

There is not much activity in the New York bituminous coal market outside of mine-run coals. The latter move easily but buyers are not overanxious about future supplies. Screened and prepared coals have eased off in the past week.

Central Pennsylvania low-volatile prepared coals are quoted at $6@$6.50 with lump coals $4@$5, depending on quality and sizing. While Pennsylvania mine-run coals are in healthy condition, prices remain firm at last week's level. Some grades of Pool 1 Pennsylvania coals are offered at $2.50, but the average market is 25c. higher.

Interest in New River and Pocahontas prepared coals was awakened late in the week by the I. C. C. hearing on rates from those fields to this territory. Some of these coals are now coming into this area to take the place of anthracite and efforts are being made to increase their use. Quotations range $6@$7.50.

Receipts at the piers are heavy but the tonnage is easily moved.

Several cargoes of Welsh coals are said to be on their way to this harbor.

The quickening of a week ago in the Philadelphia market has lost much of its force. The market for sized bituminous continues good, but it is in mine-run that most advance has been made. Orders from contract customers are in good to heavy volume, spot buyers also are taking much coal, and the shipper admits that the future is one of much promise. Tide trade is good only in bunkers, as the export trade continues to hang back.

The soft-coal trade at Baltimore has been marking time for the past week in an industrial sense. Extreme activity marks prepared sizes which can be used as substitutes for anthracite, the better grades are still bringing $5.50@$7.50 per ton, f.o.b. mine. Industrial coals continue only in fair demand and there continues an adequate supply. The export situation is entirely dormant.

The steam market is very active at Birmingham and all grades of coal are moving from the mines as promptly as car supply will permit. Spot orders are brisk and shipments against contracts are heavy. Bunker trade is showing more activity than in several months.

The domestic market is much improved over a few weeks back, demand being sufficient to absorb the production of high-grade product promptly, with a little lagging in the movement of lower qualities. Most mine prices are the same as in October, increases of 25c. to 50c being reported for a few operations.

The coke market is active and much of this product is being shipped North, East and West as well as supplying the demand in home territory, which is heavier than in some time. Several additional furnace stacks are soon to be blown in.

Quotations on some of the better grades of coal have advanced 25c. to 50c. a ton in the last week, Cahaba mine-run now ranging $2.25@$2.50; washed, $2.25@$2.75; Black Creek mine-run, $2.25@$2.50; washed, $2.50@$3; Corona mine-run, $2.50; washed, $2.75; Carbon Hill washed, $1.90 @$2.25. Foundry grades of coke are quoted for spot shipment $6@$6.50; egg sizes, $4.50; nut, $4.25 per ton ovens.

Car supply on all lines has been short of requirements at some time during the past week, causing interruptions at quite a number of operations.

Hard-Coal Substitutes Continue to Drag

Although anthracite is practically out of the New York wholesale market consumers in the metropolitan district have not taken to buying the various substitutes as it was expected they would. Retailers have some hard coal in their yards but they are distributing it among regular customers in small lots. These coals consist mostly of pea and buckwheat.

Indications are that the demand for substitutes will depend entirely on weather conditions, but thus far the retailers have not had a demand to justify filling their bins with substitute fuels.

The call for coke has flattened and quotations are now about $2 below what they were ten days ago. Beehive product is quoted at $7.50@$8.50, and run-of-oven $6.50@$7.

The tidewater market continues to hold some pea and buckwheat coals for those willing to pay the prices quoted. Independent pea coal was offered during the latter part of the week at $17 alongside and independent buckwheat at $8.

A lull in the trade developed in Philadelphia last week and consumers displayed little interest in buying. Quite a few dealers with fair stocks of pea are easily getting $15 a ton for it, and the sale of buckwheat is much improved at $9@$10.

Company pea shipments are fast reaching an end, and the company shipping buckwheat is declining further orders.

The slowing-down in retail demand has caused a decline in the price of coke at the ovens, some breaks being as much as $1.50 a ton.

The situation at Baltimore is summarized in the statement that there is no reserve except limited quantities of pea and buckwheat in a few of the yards. What hard coal is left is being distributed in one- and two-ton lots on emergency orders. Dealers are purchasing substitutes, such as soft coal and the so-called anthracite briquets. The latter in most cases are selling around $13.50, without discount, for a 2,000-lb. ton. Since Sept. 1 the records of the fire department show that 176 applications for oil-burning installations have been approved.

At Buffalo pea and buckwheat are giving out. Though the demand for coke at prices up from $6 to $10 a ton for a while exceeded the supply, it is running down now and it is carrying the prices with it. Some coke manufacturers have reduced prices $5 or so and still the jobbers are afraid of it, for they say it is quite possible for the price to come down several dollars more any day.

Connellsville Coke Market Liquidates

The past week has been one of liquidation in the Connellsville coke market. At the end of last week there was a considerable accumulation of loaded coke on track, and the railroads, with possibilities of a car shortage, would not allow it to remain. Whereas three weeks ago the market range was $8.50@$9, sales in the last few days have centered around $6.

The decline stimulated buying somewhat in the East and induced a little blast-furnace buying for reserves, as with contracts at around $3 and such fancy spot-market prices the operators have not shipped any more to blast furnaces than contracts absolutely required.

The accumulation is pretty well worked off, but as recent sales were for quite prompt shipment many operators are now practically without a backlog. With such heavy production coke may be forced on the market next week. There is quite a general prediction, however, that when the market does begin to turn upward it will move apace, for Eastern requirements should easily absorb all the coke the region can furnish and much higher prices than $6 could easily be paid.

Foundry coke has softened and is now quotable at $7@ $7.50, with a moderate running demand.

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended Oct. 31, 1925	1,091,273	194,255
Previous week	1,121,459	189,006
Week ended Nov. 1, 1924	1,073,374	182,249

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
Oct. 31, 1925	111,619	42,949	.....	.....
Oct. 22, 1925	122,597	48,533	.....	.....
Oct. 31, 1924	99,190	49,053	.....	.....

Foreign Market And Export News

Inquiry Gains Steadily In British Coal Market; Receives U. S. Orders

Though the situation in the Welsh steam coal trade shows improvement, it has not made the progress hoped for. New orders have been received to a substantial extent, but business is still fully 25 per cent below the volume necessary to give full employment at the collieries. In addition, orders are very unequally distributed, as revealed by the great contrast between the activity of the anthracite collieries in the western area and the inactivity of the semi-bituminous pits of Monmouthshire, where the acute depression has not been relieved. Improvement has been retarded by a shortage of steamers lately, due to delays occasioned by a prolonged period of stormy weather.

Some business is coming to South Wales from the United States as the result of the anthracite strike in that country. Dry nuts in particular are strong, but the supply is limited. Generally, colliery owners are better booked over November.

The improvement in the Newcastle-on-Tyne coal trade is fully maintained, inquiry being unabated for Northumberland and Durham coals, but there is a limit to the capacity of the pits to provide supplies for prompt loading, and in consequence a good deal of trade is being carried over. Business done recently includes cargoes of coal and coke for Canada and the United States as well as increased consignments to South America. Inquiry for delivery up to the end of the year and to next March is growing and bunkering and other contracts for next year are begining to command attention. There is an improving market for Durham coking coals. Coke is particularly active and strong. Stocks throughout the district are meager, while the demand is brisk for months ahead.

Output by British collieries during the week ended Oct. 31, according to a special cable to *Coal Age*, totaled 4,835,000 gross tons, compared with 4,820,000 tons in the preceding week.

French Dealers Renew Stocks When Demand Lags

In the French Coal Market industrial coals are in light demand and there is no talk of replenishing stocks. The continued rise of the pound and the Belgian franc is hampering imported coals, Belgian coals being further handicapped by an advance in the Charleroi-Paris freight rate.

Domestic coal consumption has been slow, and coal merchants have been refilling their yards which were understocked owing to delays in shipment from Belgian and French mines.

There still is some irregularity in the return of empty wagons to the mines, but barges are more plentiful.

Receipts of indemnity fuels from the Ruhr during the first seventeen days of October, included 239,400 tons of coal, 132,400 tons of coke and 18,000 tons of lignite briquets. Beginning Nov. 1 prices of anthracite dry and semi-bituminous sized were increased 10 fr. and of lignite briquets 5 fr.

During the first twenty-seven days of October the O. R. C. A. received from the Ruhr 196,735 tons of reparation coke.

Firmer Tone Brightens Outlook At Hampton Roads

Business at Hampton Roads was better last week with coastwise and bunker trade improving and inland business showing considerably greater strength. The new all-rail freight rate to New York and New England had strengthened prices in domestic trade, and inland consumers were paying a premium.

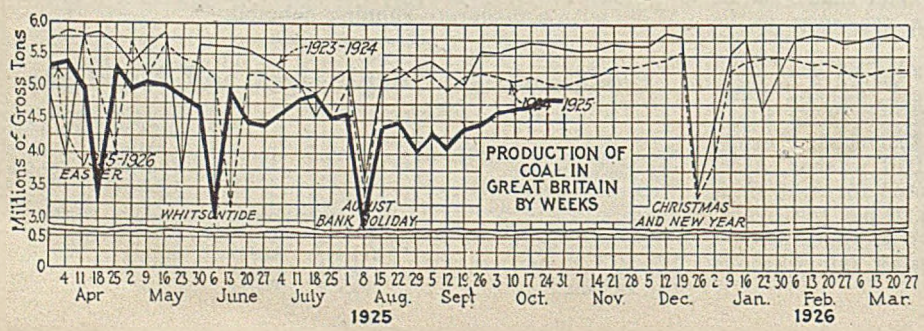
Inquiries were better and demand, except for foreign movement, was showing a substantial increase. Foreign shipments were slack, but regarded as normal for this time of the year. The tone of the market was strong and the outlook considerably brighter.

Firmer Note in Belgian Market

There has been no particular change in the situation in the Belgian coal market. In spite of the remarkable decline of the French franc, there is no considerable competition by collieries of the Nord and Pas de Calais, due to the low prices quoted by Belgian mines in the Borinage basin. On the other hand, British competition is even stronger. If, as is hoped, the Charleroi strike were to come to an end, there would certainly be an increase of demand from this direction.

Prices for industrial coals seem to be firmer, except for heavy tonnages, on which concessions are still the rule of the day. In domestic coals the tendency is still toward firmness, though the weather has not been favorable to consumption. Delays in transportation have been so persistent, however, that the mines hardly notice the diminution of consumption. There is no anthracite for disposal. Coke is slightly improved and for briquets prices are somewhat firmer owing to the high cost of pitch.

Receipts by Belgium of indemnity fuels from the Ruhr during the first nine months of 1925 totaled 1,870,000 tons.



Export Clearances, Week Ended Nov. 14, 1925

FROM HAMPTON ROADS

	Tons
For Porto Rico:	
Amer. Schr. Brina P. Pendleton, for San Juan	2,002
For Cuba:	
Swed. Str. Mongolia, for Havana	2,892
Br. Schr. Ada Tower, for Manzanillo	905
Br. Str. Willowpeak, for Havana	2,801
For Brazil:	
Br. Str. Pencarrow, for Rio de Janeiro	6,418
For Italy:	
Ital. Str. Adige, for Porto Ferrajo	9,340
Ital. Str. Giovanni, for Genoa	10,433
For French West Indies:	
Nor. Str. Fram, for Fort de France	3,961

FROM PHILADELPHIA

For Cuba:	
Br. Str. Wilston, for Havana	——

Hampton Roads Coal Dumpings*

	Nov. 5	Nov. 12
N. & W. Piers, Lamberts Pt.:		
Tons dumped for week	100,502	133,542
Virginian Piers, Sewalls Pt.:		
Tons dumped for week	97,583	89,515
C. & O. Piers, Newport News:		
Tons dumped for week	157,382	136,008

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

Pier and Bunker Prices, Gross Tons

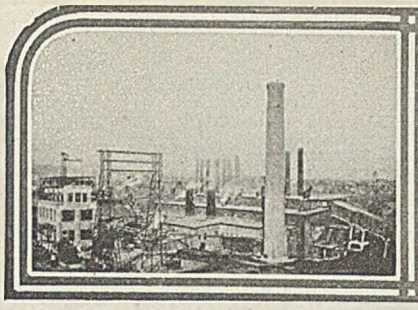
	Nov. 7	Nov. 14†
Pool 1, New York	$5.75@$6.00	$5.75@$6.00
Pool 9, New York	5.00@ 5.20	**5.00@ 5.25**
Pool 10, New York	4.65@ 4.85	**4.65@ 5.00**
Pool 11, New York	4.55@ 4.65	**4.55@ 4.70**
Pool 9, Philadelphia	5.05@ 5.30	5.05@ 5.30
Pool 10, Philadelphia	4.80@ 5.10	4.80@ 5.10
Pool 11, Philadelphia	4.50@ 4.75	4.50@ 4.75
Pool 1, Hamp. Roads	4.85@ 5.00	**5.25@ 5.35**
Pool 2, Hamp. Roads	4.60@ 4.70	**4.85@ 5.00**
Pools 5-6-7, Hamp. Rds.	4.50	**4.65**
BUNKERS		
Pool 1, New York	$6.00@$6.25	$6.00@$6.25
Pool 9, New York	5.25@ 5.45	**5.25@ 5.50**
Pool 10, New York	4.90@ 5.10	**4.90@ 5.25**
Pool 11, New York	4.80@ 4.90	**4.80@ 4.95**
Pool 9, Philadelphia	5.30@ 5.55	5.30@ 5.55
Pool 10, Philadelphia	5.10@ 5.35	5.10@ 5.35
Pool 11, Philadelphia	4.75@ 5.00	4.75@ 5.00
Pool 1, Hamp. Roads	5.00	**5.25@ 5.35**
Pool 2, Hamp. Roads	4.70	**4.85@ 5.00**
Pools 5-6-7, Hamp. Rds.	4.50	**4.75**

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

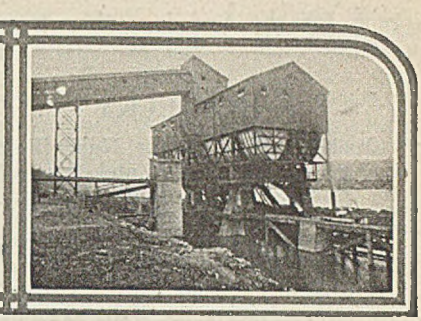
Quotations by Cable to *Coal Age*

Cardiff:	Nov. 7	Nov. 14†
Admiralty, large	23s.@23s.6d.	*22s.6d.@23s.9d.*
Steam smalls	10s.6d.	**10s.6d.@11s.**
Newcastle:		
Best steams	15s.9d.	*15s.6d.@15s.9d.*
Best gas	16s.3.@18s.9d.	*16s.6d.*
Best bunkers	15s.@16s.6d.	*14s.6d.*

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



News Items From Field and Trade



ALABAMA

The Birmingham district had as its guests during the week ending Nov. 14 J. W. Paul, chief coal mining engineer of the Bureau of Mines, Pittsburgh; R. R. Sayer, chief surgeon, Washington, and M. Van Siclen, engineer in charge of mining research work, Washington. These men are making a ten-days inspection and survey of the coal mines of the district. The tour will be directed by officials of the Birmingham office of the Bureau of Mines, J. E. Cash, W. R. Crane and F. E. Meriweather. The work of the Birmingham section of the Bureau for the coming year will be mapped out by the visiting officials. The visitors will be the guests of the Alabama Mining Institute at a safety meeting at the Overton mines of the Alabama Fuel & Iron Co. during their stay here.

The brisk coke market has brought about a resumption of several hundred beehive ovens, 200 being placed in commission by the Sloss-Sheffield Steel & Iron Co. at Flat Top and also a number in the batteries of the New Castle Coal Co., at New Castle.

Walter E. Henley, president of the Little Cahaba Coal Co., of Piper, and the Blocton-Cahaba Coal Co., Coleanor, has been elected president of the Birmingham Trust & Savings Bank, one of the oldest and the second largest financial institution in Alabama, succeeding the late Tom O. Smith.

The Connellsville Mine of the Yolande Coal & Coke Co., near Yolande, Tuscaloosa County, which has been in process of rehabilitation for several months, is expected to be producing coal soon after New Years. This opening had been idle for some fifteen years or longer and had to be pumped out and provided with new equipment both inside and out and the necessary tipple structures and washery.

ARKANSAS

The No. 2 mine of the Western Coal Mining Co., at Deming, will be reopened after having been closed for a year. A new tipple is being built at the mine.

Of the 192 coal mines listed in Arkansas, 94 were in operation at some time during the fiscal year ending June 30, 1925, and their total output was 1,398,346 net tons, an increase over 1924 of 99,555 tons, according to the annual report just published by Claude Speegle, state mine inspector. Fifty-three mines were idle last year and 49 were abandoned. The total number of men employed in and around the mines was 3,701. The number of non-fatal accidents was 39 and fatal accidents numbered 10.

COLORADO

Charles W. Brown, formerly general sales agent of the Hayden Brothers Coal Corporation, operating mines in Routt County, has been appointed general manager, to fill the vacancy created by the death of L. A. Hayden.

About 160 employees of the Pikeview mine, four miles north of Colorado Springs, refused to return to work Nov. 9, demanding an immediate raise in wages from $5.25 to $5.82 per day. The mine is owned by the Pike's Peak Coal Co., an E. A. Carlton interest, the largest coal mining company operating in the district.

ILLINOIS

The Galesburg Mining Co., Galesburg, which is mining coal from a new mine five miles east of that city, is now sinking a large air and escapement shaft, 6¼ x 10½ ft., located 500 ft. east of the present shaft. This mine is now sending from 80 to 100 tons of coal daily to the top and the bed is 4 ft. to 4½ ft. thick. The tipple has been completed and is doing excellent work.

Rice Miller and Judge Amos Miller, his father, have purchased the mine and other property of the Hillsboro Coal Co. at Hillsboro. The deal is said to have involved $100,000. Rice Miller had been superintendent of the Hillsboro Coal Co. for many years. He also is president of the Illinois Coal Operators Association. The mine employs several hundred men and has been a steady producer for a number of years.

INDIANA

Mine No. 1 of the Sargeant Coal Co., near Newburg, has resumed work after a long idleness. The Schimmel-Hampton Coal Co., of Newburg, is operating the mine with a force of 50 men.

As a result of miners of Dering mine No. 6, in the Clinton field, refusing to work because of an injunction restraining Albert C. Daily, state mine inspector, from closing the mine, officials of the company on Nov. 10 asked for a conference with the miners and the state mine inspection department. The injunction was issued in the Circuit Court at Rockville. The conference probably will be granted, according to union officials, who deplored interference with the department carrying out its lawful duties. These officials said the effects of such a ruling might establish a precedent actually courting violation of the established laws protecting the health and safety of the miners.

A loss of $75,000 was suffered Oct. 28 by the Maumee Collieries Co., owners of the Oak Grove Mine, near Sullivan, when the tipple burned to the ground. Fire departments from surrounding cities saved the other buildings.

All records for coal production in the older mines of Indiana were broken recently when the Twin mine, owned and operated by the Linton Summit Coal Co., at Linton, hoisted and loaded in eight hours a total of 3,054 tons of coal. This mine was sunk back in 1902 and miles upon miles of coal have been loaded from the mine, but not in its history, or the history of any of the other first mines of the state, has such an eight-hour production been recorded. The mine employs about 400 men.

Somerville Mine No. 1, Somerville, was damaged to the extent of $50,000 Nov. 3, when fire destroyed the tipple. Defective wiring in the weighroom is blamed for the fire. Clem J. Richards, Terre Haute, president of the General Fuel Corporation, owner of the mine, has announced that work on rebuilding the plant will be begun at once. According to Mr. Richards, the mine was working at capacity at the time of the fire, producing an average of 2,500 tons a day, with 300 men employed. He said that operations probably would be resumed within two months.

IOWA

Negotiations are still in progress for the amalgamation of several of the larger mining concerns of Polk County. Representatives of the Norwood-White, Pershing, Shuler and Scandia companies have been in session, but it was stated following the meeting that completion of the merger is still some distance in the future.

KANSAS

The international United Mine Workers' commission which recently, at the behest of President Lewis, settled the supply strikes in five southeastern Kansas mines, will return soon to investigate a dispute which followed the return to work of striking miners at the Western Coal & Mining Co.'s mine No. 21, operated by Fern & Lyons. The operators fined the men $1 a day

each for the five days they were on strike.

KENTUCKY

Justin Potter, of the Nashville Coal Co., producers, jobbers and sales agents for mines, rode to Louisville on Nov. 10, from Nashville, Tenn., driving his own airplane in 1 hr. 30 min., returning the following day after a visit to the company's local office. Potter was an army aviator at Kelly Field, San Antonio, Texas, during the war and recently bought a plane for quick service between Nashville, the offices in Louisville and mines in the western part of Kentucky.

The West Kentucky Coal Co., of Sturgis, the largest company in the western Kentucky field, with about twenty-five mines, has moved sixteen barges of coal of 600 tons each from Caseyville, south. This was the first river movement that the company has made in several months, due to low boating stages. The coal will be delivered at Memphis, Vicksburg and Greenville, on the Mississippi River.

C. E. Reed, secretary of the West Kentucky Coal Bureau, Louisville, was recently elected treasurer of the Louisville Lion's Club at its annual election.

After being out of the Middlesboro field as a coal buyer for about two years the Southern Railway Co. is again buying coal in that section and is reported to be drawing about thirty cars a day. This company appeared to have a falling out with the Louisville & Nashville R.R. over a rate on hauling coal over L. & N. tracks to its own lines and quit the field.

The Virginia Harlan Coal Corporation, Walter W. Liddle, secretary-treasurer, announces the removal of its main offices from Pineville to the mines located at Whipple, Kentucky; post office address, Balkan, Bell County.

MARYLAND

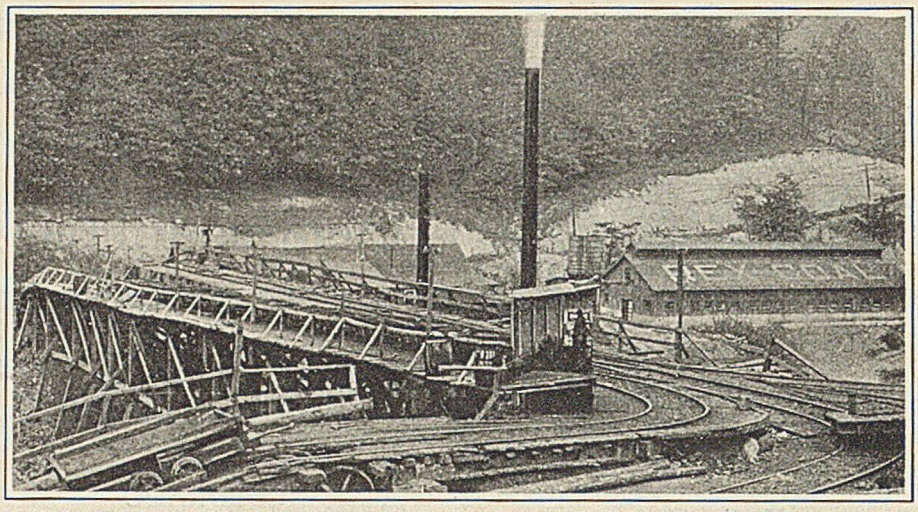
Ocean mine of the Consolidation Coal Co., at Midland, at one time known as the largest bituminous mine in the world, has started to operate after a shutdown of two years. A force is on the outside rebuilding the tracks and a force inside is laying rails a distance of over two miles from the mouth of the slope. As the new road is laid the shipping of coal will be started and a hundred or more men will be employed. The whole plant, inside and out, will be operated by electricity.

MINNESOTA

The City Purchasing Agent of Minneapolis is taking bids until 3 p.m. Nov. 25 for furnishing for the Board of Education 18,200 tons of coal. A certified check for 3 per cent must accompany bids.

NEW YORK

The Buffalo Chamber of Commerce has passed a resolution urging that the present controversy between coal operators and miners be permitted to go to its natural conclusion, so that an artificial increase in the cost of anthracite may not result from interference, as has been the case in previous strikes.



Rex No. 1 Mine, La Follette Coal & Iron Co., La Follette, Tenn.

Trips pulled out through the slope, cross the trestle, then descend on the track, seen to the left in the picture, to the tipple, which is located several hundred feet down the hollow. The smokestacks are on a small boiler plant which supplies steam for the bath house and to operate the slope hoist. The bath house is the building with the "Rex Coal" sign on the roof. At the present time the production of 600 tons of coal per day from the Rex No. 1 mine is about the only activity of the La Follette Coal & Iron Co. The beehive coke ovens and blast furnace have been down for some time. J. E. Hendren is general superintendent of the three coal mines owned by the company.

OHIO

The Plum Run Mine of the United States Coal Co., at Bridgeport, resumed operations Nov. 12 after having been idle since spring. It employs 1,225 men when running full.

Lee Lewellyn, general manager of the Houston Coal Co., Cincinnati, resigned his position effective Jan. 1, 1926, when he will return to the Pittsburgh Coal Washer Co., of Pittsburgh, Pa.; one of the leading concerns engaged in designing, manufacturing and installing coal-handling and coal-preparing plants of all kinds. Mr. Lewellyn has been with the Houston Coal Co. for the past two years.

The Ohio district of the United Mine Workers declares that it has been appealed to in an effort to help solve the financial crisis that marked the attempt to operate the Goat Hill mine, at Amsterdam, Jefferson County, on a cooperative basis. It was said $60,000 was needed. The union said it would have nothing to do with the operation.

Dumpings on the Hocking Valley Ry. docks at Toledo for the week ending Nov. 11 were 235,553 tons, which is a record for a week at this season. During the month up to the 11th the dumpings were 380,848 tons. During the season up to Nov. 11 the docks handled 7,655,318 tons, as compared with 6,140,636 tons during the corresponding period last year.

In the hearing before Justice M. L. Shores of the claim of 218 miners employed by the Cleveland & Western Coal Co., at the Franklin mine, in Belmont County, who sued for wages aggregating about $14,000, a decision was rendered for the plaintiffs. The miners sued for the wages after the operating company had sued the men for damages caused by an unauthorized strike. The decision will be appealed by the company.

OKLAHOMA

Tom Lidell, Robert Stenhouse, William Croy and Earl Franklin, all striking union miners, whose actions were held directly responsible for the sending of state troops into the coal fields of the Henryetta (Okla.) mine district last June, were acquitted Nov. 9 for the second time of the charge of rioting, according to word received from Okmulgee. The charge was made following a fight between Lidell and Andy Meitus, working as a non-union miner for the Crowe Coal Co. Meitus was admitted to citizenship last week. In the trial it was brought out that he had lived at Henryetta twenty years before applying for naturalization papers.

Osage Mine No. 5, at Krebs, has opened for work with a fair-sized force of workmen. The mine is one of several in this field which have opened up on the 1917 scale since the decision of Federal Judge R. L. Williams prohibiting the presence of large forces of pickets at mine entrances. This mine had been closed since the general strike in District 21, called on Sept. 1 by William Dalrymple, district president of the United Mine Workers.

PENNSYLVANIA

President Calloway of the Buffalo & Susquehanna Coal Co. last week addressed a letter to the company's striking miners at DuBois, calling on them to go to work and promising them full union wages till existing contracts are filled, if they would resume work on or before Nov. 16.

Pickands, Mather & Co., of Cleveland and Buffalo, have completed a coke plant at Erie, and have 50 ovens already in operation.

The McDonald Coal Co., a Pittsburgh corporation, is held by Federal Judge F. P. Schoonmaker to have no claim against the internal revenue department for $82,255.13, return of which was sought by the coal company for excess income tax. The judge said the company had not filed a waiver as required by law. He also decided there was not sufficient evidence.

The opening of the mines of the Buffalo & Susquehanna Coal Co. at Sagamore, under a lease to the Sutter-Rinn Coal Co., is held to be a violation of agreement and the union miners have entered a protest against it. They have also undertaken to stop the eviction of union miners from company houses which may be wanted for new miners.

The Northwestern Mining Co.'s operations of the Dagus (Erie) mines, which have been suspended since Sept. 1, have resumed operations with a force of 500 men.

John C. Graham, of Butler, has sold 500 acres of coal land in Sligo Borough and Toby township to the Standard Coal & Coke Corporation, Chicago, for about $75,000. The purchasers have extensive mines in half a dozen states and are supposed to be preparing to enter the Eastern trade in a large way at an early date. Heavy equipment outlays are expected to be made soon.

After a shutdown for more than six months, the Sonman shaft mine at Portage, operated by the Sonman Shaft Coal Co., has resumed operations. This mine is working under the Jacksonville scale and employs about 150 men.

For a consideration of $650,000, the Elk Hill Coal & Iron Co., a subsidiary of the Scranton Coal Co., has acquired the Mount Pleasant colliery in Scranton from Mrs. Kate Pettibone Dickson, of Wilkes-Barre, widow of Alan Dickson, a native of Philadelphia. The sale is covered by a mortgage, payable within one year. The sale involves the transfer of 227 acres of coal land and 96 acres of surface property, including the site of the Mount Pleasant breaker. For a number of years the property has been operated by the Elk Hill company on a lease from Mrs. Dickson. The property has been in the hands of the Pettibone family for almost seventy-five years. Mrs. Dickson is the sole survivor of Payne Pettibone, who made his home in Wyoming, Pa.

Loadings in the central Pennsylvania coal district approximated 72,000 cars in October, the maximum for this year, against 67,000 in October last year. According to reports from Altoona, 100 idle mines in that district have resumed operations this fall. Much of the demand is for prepared sizes for New England states.

The new tipple at the Ella mine of the Hillman Coal & Coke Co., on the Monongahela River, near Pittsburgh, has been completed.

Bituminous coal (revenue) transported by the Reading Company during September, 1925, totaled 1,748,985 gross tons, compared with 1,404,233 tons in the corresponding month of last year.

Boiler houses of the Lehigh Valley R.R. at different shops along the system have been using culm for fuel during the past few weeks. Boiler rooms at many of the breakers and mines also have been burning culm since the strike got under way.

The Meadowbrook Coal Co., at Dunmore, which is owned by Scranton men, is making extensive improvements to its properties so that when the mine suspension ends everything will be in readiness to produce the maximum amount of coal. Last May the company purchased the John J. Boland Coal Co.'s interests in Dunmore. Recently the same concern tried to buy the Kearney & Brown operation at Dunmore but when officials of that firm declined to sell outright arrangements were made whereby the property was taken over on a lease. Two score of men have been employed in making repairs to the property. These include the construction of a large concrete pit where coal from the mines will be dumped after being run through the rollers and crushed to the necessary sizes. After the coal has been prepared it will be carried by conveyor lines to the breaker, where it will pass through the chutes for distribution to the coal pockets.

The H. C. Frick Coke Co. has fired the Dorothy plant in the Latrobe district. The plant is now being electrified, but resumption of the mine will not interfere with these improvements.

J. B. Nessle, once general coal and ore agent, New York Central lines, has been made traffic manager of the Pittsburgh & Lake Erie R.R.

The "horseshoe" of the old D. &. H. gravity railroad, near Seeleyville, in Wayne County, is again the scene of much activity after being idle for years. There are enormous piles of culm near this place since the old railroad was abandoned and Sweeney Bros., of Scranton, are now engaged in removing the coal to railroad cars for shipment to a concern in New York State. This firm is said to have obtained rights to the culm reserves two years ago and has been holding them in case need for fuel developed in an emergency. It was necessary to cut through a hill and lay a track almost a half a mile long so that two steam shovels could load the cars. It is estimated that nearly a million tons of culm will be taken from the dumps before the supply becomes exhausted.

To facilitate the unloading of coal and coke supplies from upriver points, the Weirton Steel Co., Weirton, W. Va., on the Ohio River, has given a $750,000 contract for the construction of a concrete dock with loading and unloading apparatus. It will be completed by next summer.

Governor Pinchot has appointed John J. McCall, of Shamokin, as a member of the anthracite mine inspectors' examining board.

The Chartiers Creek Coal Co., one of the largest independent coal companies in Washington County, resumed operations Nov. 16 at its East End Mine, near Canonsburg, after several months' idleness. The Jacksonville wage scale will be paid, it is said.

Suit has been filed in U. S. Court by the Berwind White Coal Mining Co. against the government for the recovery of more than a million dollars. The company claims the money is due for soft coal sequestered by the President during the world war for the use of the navy. According to the company the government took 184,746 tons of coal for which the navy fixed compensation at $740,000. The Berwind White company demanded $1,591,580 for the fuel, basing its claim on the existing value for export coal. The navy paid 75 per cent of the amount fixed by the government and left the matter open for final determination by the courts.

The coal tipple at Reitz No. 3 mine, owned by the Reitz Coal Co., near Johnstown, was destroyed by fire during the past week. The blaze was mysterious, as there was no one about the mine at the time.

Soft Drink Stand, Edgewater, Ala.

During the last few years, particularly since the advent of national prohibition, the consumption of ice cream and soft drinks has increased tremendously. In some mining towns the commissary or drug store are the points where the populace seeks to quench its thirst. At Edgewater, however, the Tennessee Coal, Iron & R.R. Co. has erected this attractive brick building for the express purpose of dispensing soft drinks and commodities or necessities of a similar nature.

Approval of the merger of the Armerford Coal Mining Co. and the Margaret Coal Mining Co., both operating in Indiana County, has been announced by the Bureau of Corporations at Harrisburg. Capital stock of the merged companies, which will be known as the Armerford-Margaret Coal Co., is $260,000. The principal office is in Pittsburgh. D. E. Thompson, Blairsville, is president; D. R. Tomb, Indiana, secretary, and C. F. Armstrong, Leechburg, treasurer.

John F. Irwin, a coal operator of Latrobe, bought from the First Nationa Bank of Pittsburgh the dismantled Baggaley coal plant in the Latrobe district without the company houses. He started immediately to prepare the plant for coke making. Although the greater part of the coal at the old Baggaley mine has been taken out, a large quantity remains in the headings and in portions of the mine lost through falls. This will be reclaimed by stripping. The purchase includes 370 ovens, of which 100 are being fired.

The Snowdon Coke Co. has begun the erection of a steel 3-track tipple and steel trestle approach at the Mt. Hope Mine, at Linn, Fayette County. The tipple will be equipped with shaker screens, picking tables and loading booms and it will be possible to produce lump, nut and slack or any combination thereof. The foundation is nearly finished and the plant is expected to be completed next spring. Heretofore this plant has shipped coke exclusively.

The Republic Iron & Steel Co. has resumed full operation at the Republic Mine, in the Connellsville region, after more than a year's idleness. Two hundred and fifty ovens have been blown in.

UTAH

The Public Utilities' Commission has granted the Utah Railway Co. permission to purchase the line, nearing completion, of the National Coal Railway Co. The new line is a few miles long and is being constructed for the purpose of developing new coal properties owned by five companies, all of Salt Lake City.

Three miners were killed by falling coal in Carbon County mines during the week-end of Nov. 1.

The federal government is contesting the right of the state to sell a section to which the state gave deed on July 3, 1905. The land in question is a section just off Huntington Canyon in Emery County. The land was sold at a private sale to Henry C. Lund in January, 1902. It sold at $2 an acre and the mineral rights were not reserved. In June, 1902, the contract to purchase the land—the sale was by time payments—was transferred to P. J. Quealy of Kemmerer, Wyo., prominent coal operator. Mr. Quealy received his patent in July, 1905. The federal government claims that it was known at the time of the sale that the land was of mineral character and, therefore, should not have been sold.

VIRGINIA

The tipple of the Empire Collieries Co., at Pulaski, was burned Sunday afternoon, Nov. 8, entailing a loss of $60,000. The fire is believed to have started from defective electric wiring. As a new tipple and breaker have nearly been completed at the mines, operations will be interrupted only about three weeks. It is understood the destroyed tipple will not be rebuilt.

WASHINGTON

The California-Alaska Corporation expects to spend $500,000 immediately in reopening and developing the Snoqualmie coal mine, situated twenty-four miles from Seattle. The property is owned by Charles B. Niblock, of Seattle, and embraces about 2,000 acres. The California-Alaska Corporation has a 99-year lease on the property. Development was begun before the World War by the Western Coke & Collieries Co., but the war plunged the company into financial difficuties, it was said, and the promoting head died, and development was halted after approximately $300,000 had been spent. It is expected that the mine will produce 2,000 tons of coal a day within the next ten months. There are forty-five coke ovens on the ground, which will be increased to fifty, and $150,000 will be spent in installing a coal washing plant.

WEST VIRGINIA

The Crab Orchard Improvement Co. is making improvements on an extensive scale at its mines at Eccles, in the New River field, as a result of which it will be able to increase the number of its employees and produce more coal. Much additional equipment is being installed including 400 mine cars, 14 gathering locomotives, 2 mining machines and 1 motor generator set. The No. 6 tipple also is being equipped with shaker screens for preparing domestic coals. It will be necessary to engage about 75 additional loaders and a proportionate number of other employees.

A. B. Rawn, for many years identified with the coal business of southern West Virginia, has severed his connection with the Kingston-Pocahontas Coal Co., of which he was vice-president and general manager, to assume the active management of the Wilson Sand & Supply Co. Mr. Rawn has acquired the interests of Charles R. Wilson in that company, the transfer involving approximately $600,000, it is stated.

Six new coal companies with an aggregate capital stock of $425,000 were formed in West Virginia in September: The Vermillion Coal Co. of Orgas, capitalized at $25,000; Poca-Pack Coal Co., Bramwell, $200,000; Fort Branch Collieries Co., Logan, $50,000; Harman Thacker Coal Co. Williamson, $25,000; Columbus Darby Coal Co., Keith, 1,000 shares of no par value; the Logan Block Coal Co., Huntington, $125,000. The Brown Coal Co. has increased its capital stock from $125,000 to $300,000, and the Bentree Coal & Oil Co. has increased its capital stock from $50,000 to $100,000. Permission has been granted to the Blue Ash Coal Co., of which Charles Litkowski is secretary, at Cincinnati, Ohio, to transact business in West Virginia.

The Carnegie Coal Company has been given five more days to answer the equity suit filed by Harry F. Sinclair, the oil man of New York, in which he is asking to recover $125,000 and have the temporary receivers of the coal company removed. The answer was to have been filed on Thursday.

The tipple of the J. P. Keeley Coal Co.'s Whiteman mine, near Wilsonburg, was destroyed in an incendiary fire on Nov. 11. The loss is several thousand dollars. The mine was nonunion.

The Sitnek Coal Mining Co. has erected a new wooden tipple with a steel frame at Katherine mine, near Lumberport, Harrison County, equipped with loading booms and picking tables. The tipple has a capacity of 1,500 tons daily.

WYOMING

The Gunn-Quealey Coal Co. is prospecting its Sweetwater vein, in the Rock Springs district with diamond drills, testing the area and depth. At present one of the outfits is drilling a short distance northwest of the Quealey (Sweetwater) properties of this company.

CANADA

The commission appointed to investigate the coal industry of Nova Scotia inspected the collieries of the New Waterford district last week and also made an examination of the housing and living conditions of the miners. On Nov. 10 they inspected the coal piers at Sydney and Louisburg to ascertain the shipping facilities of the British Empire Steel Corporation. The first public session of the commission for the hearing of evidence was held in the Court House at Sydney Nov. 11, the first part of the sitting being occupied with the reading of a brief prescribing the case of the miners.

Obituary

William J. Wickes, 63, organizer of many industrial concerns in Saginaw, Mich., and one of the best known manufacturing men in Michigan, died Nov. 1 of heart trouble in New York City, where for the last two years he had been directing the affairs of the Wickes Boiler Co. and other enterprises in which he was interested. At the time of his death he was president of that company, treasurer of the Wickes Brothers, president of the Consolidated Coal Co., and the United States Graphite Co., director and vice-president of the Bank of Saginaw, vice-president of the Eastwood Plate Glass Co., a director of the Ruggles Truck Co. and was interested in many other concerns. He was a pioneer in the development of the coal districts in the Saginaw Valley. During the war he was chairman of the board of directors of the Saginaw Shipbuilding Co., which turned out many ships. He leaves his wife, three sons, three daughters and one brother, Harry T. Wickes, of Pasadena, Calif.

Charles A. Fagan, well-known Pittsburgh lawyer, died at his home last week. He was a director of the Anthracite Coal Co. of Wilkes-Barre, the Logansport Coal Co. and the Gracement Coal Co.

Coming Meetings

West Virginia Coal Mining Institute. Fall meeting, Nov. 24 and 25 at the Hotel Morgan, Morgantown, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

American Society of Mechanical Engineers. Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

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

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

American Mining Congress. Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

Recent Patents

Mining and Loading Machine; 1,549,699. Walter J. Wilson, Sewickley, Pa. Aug. 11, 1925. Filed Dec. 19, 1921; serial No. 523,451.

Clamshell Bucket; 1,549,538. Edward L. Harrington, Erie, Pa., assignor to G. H. Williams Co., Erie, Pa., Aug. 11, 1925. Filed Feb. 25, 1925; serial No. 11,514.

Cutter Arm for Mining Machines; 1,549,654. John W. Dillon, Masontown, Pa., Aug. 11, 1925. Filed Sept. 27, 1924; serial No. 740,372.

Flotation Apparatus; 1,549,492. Max Kraut, Los Angeles, Calif. Aug. 11, 1925. Filed April 16, 1923; serial No. 632,369.

Valve for Powdered Fuel, Weighing Distributing System; 1,549,966. A. J. Grindle, Chicago, Ill., assignor to Grindle Fuel Equipment Co., Harvey, Ill. Aug. 18, 1925. Filed Feb. 1, 1923; serial No. 616,258.

Coal-Pick Mounting; 1,549,974. Charles C. Hansen, Easton, Pa., assignor to Ingersoll-Rand Co., Jersey City, N. J. Aug. 18, 1925. Filed Nov. 12, 1924; serial No. 749,373.

Charcoal Briquette and Process of Making Same; 1,550,034. Walter R. Leuenberger, A. and Wm. T. Dumbleton, Tacoma, Wash., assignors to Carbon Briquet Co. Aug. 18, 1925. Filed Dec. 23, 1922; serial No. 608,774.

Reversible and Adjustably Feeding Rotatable Ring for Cutting Coal; 1,550,088. George W. McNeil, Denver, Colo. Aug. 18, 1925. Filed Aug. 12, 1924; serial No. 731,589.

Core Breaker for Mining Machines; 1,550,669. Newton K. Bowman, Bowdil, Ohio. Aug. 25, 1925. Filed Jan. 21, 1922; serial No. 530,918.

Coaling Station; 1,550,891. Henry J. Eck, Chicago, Ill., assignor to Roberts & Schaefer Co., Chicago, Ill. Aug. 25, 1925. Filed Sept. 25, 1924; serial No. 739,762.

New Companies

The L. H. & W. Coal Co., Henderson, Ky., capital $28,000, has been chartered by Henry and U. M. Gager and Harry B. Jennings.

The Spavinaw Mining & Coal Co., of Tulsa, Okla., with a capital of $15,000, has been incorporated. The incorporators are Asbery Burkhead and J. H. Callahan, both of Tulsa, and J. M. Ramey, of Verdigris.

The Prospect Park Coal Co., 3702 West Main Street, Belleville, Ill., was incorporated Nov. 1 with capital of $9,600 to mine and sell coal. The incorporators are Henry Lilburn, E. J. Bryant and William Van Hoose.

The Saline River Coal Co., Equality, Ill., has been incorporated with capital of $75,000 to mine and produce coal and manufacture all byproducts of coal. The incorporators are Charles H. Guard, Genevieve Guard and George C. Guard.

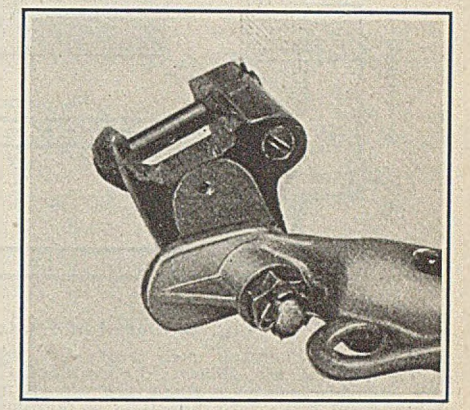
The Tip Top Coal Mining Co., Portsmouth, Ohio, has been chartered with an authorized capital of $100,000 to mine and sell coal. Incorporators are B. F. Vincent, H. C. Stalder, Ruby Praither, Alice V. Arganbright and Joseph T. Micklethwait.

New Equipment

Trolley Harp Has Grease Reservoir on Side

Geo. L. Birch, chief electrician of the Southern Mining Co., Balkan, Ky., has patented and is marketing the self-lubricating trolley harp shown in the accompanying illustration. One side of the harp contains a grease chamber. This communicates with a duct which leads through the axle, to the bearing. The chamber is formed by a tapped, ⅝-in. hole which is capped at the bottom by a slotted-head, screw plug.

One filling of the grease chamber is sufficient to lubricate the trolley wheel for several days. It is intended that at regular intervals, the motorman should give the screw plug a turn in order to force a supply of grease into the axle from which position it tends to feed gradually to the bearing. The bottom of the harp is fitted with a wearing plate which can be renewed at small cost. This device, known as the "Birch Self-Lubricating Trolley Harp," fits any standard pole socket, as illustrated. It is manufactured for Mr. Birch by the W. J. Savage Co., Inc., of Knoxville, Tenn.



Grease Enters Through the Axle

One filling of the reservoir with grease will lubricate the trolley wheel for several days. At intervals depending on the service, the screw plug should be given a few turns to force the lubricant up into the axle.

Small-Sized Anthracite Is Stoked by Spreading

Utilization of the small anthracite sizes has always represented a problem not only to the mine but to industrial plants as well. Recently Albin A. Norrman and Alfred E. M. Shafer, of Tamaqua, Pa., have developed a stoker for burning these small sizes. As may be seen in the accompanying illustration, this utilizes both the principles of the chain grate and that of spreading, which is the ordinary method by which anthracite is fired by hand.

This stoker known as the "Turbu-

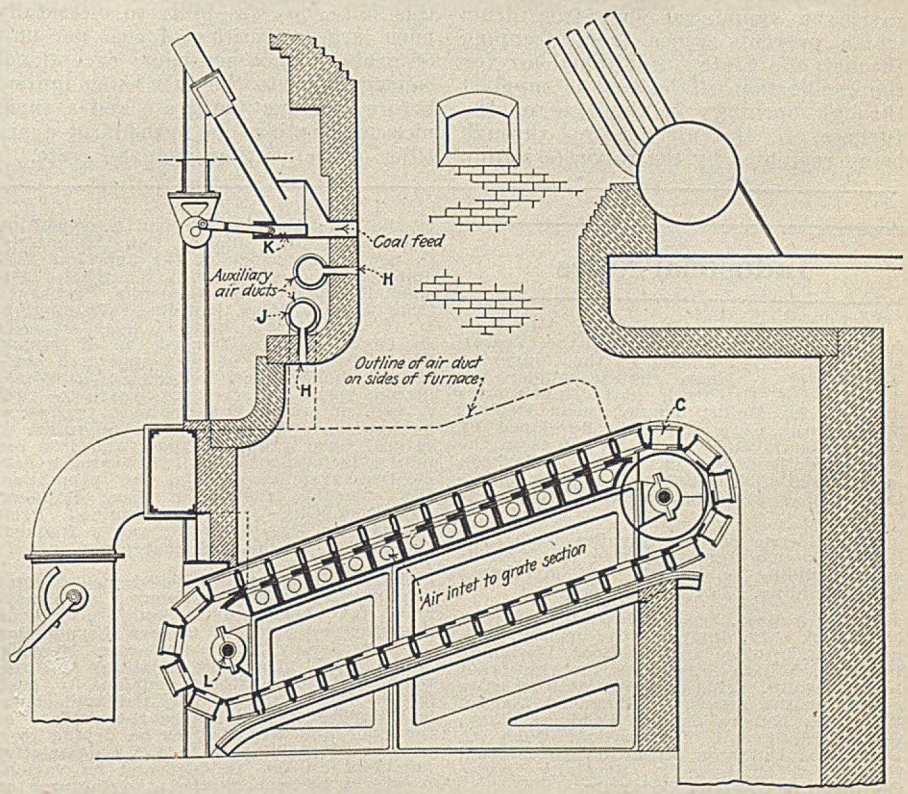


Fig. 1—Cross Section Through Turbulator and Furnace

Hollow grate bars extend entirely across the furnace. These are linked together forming a forced-draft, chain grate that is inclined against the direction of travel. Coal is fed through the front furnace wall and falls upon the grate near its middle. Much of the fuel is ignited by the time it reaches the grate.

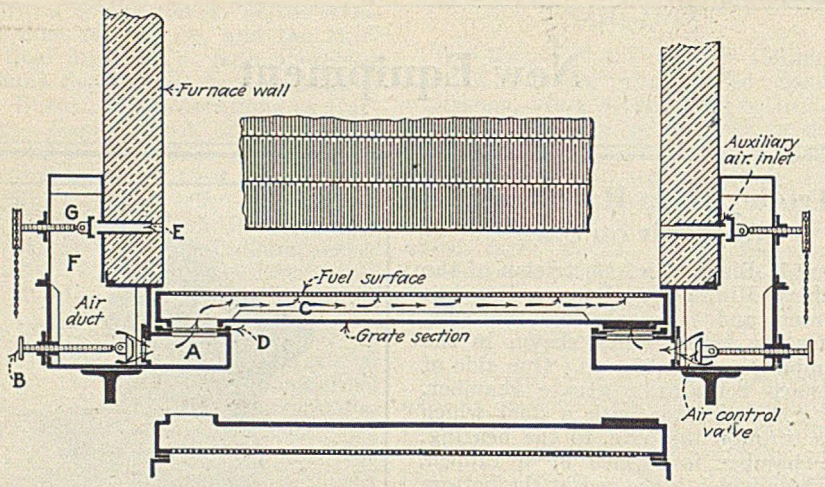


Fig. 2—Detail of Grate Bars and Air Control

Forced draft enters each grate bar separately from the air duct or wind box on the side of the stoker. Pressure of this air is controlled by a series of valves with stems extending outside the air chamber. The exact intensity of draft desired at any point in the fire may thus be obtained.

lator" consists essentially of a series of grate bars extending transversely across the furnace. These are connected together to form a continuous surface, which is inclined toward the boiler front. A series of chambers, *A*, conduct air for combustion to each section of the grate. They in turn being connected to a common air duct placed along the side of the stoker. The quantity of air entering each grate section is controlled by a valve, *B*. A wearing plate, *D*, is interposed between the bottom of the grate sections and the air chamber. The various grate sections are fastened together and pass as a chain over sprockets at both front and rear of the grate, the front sprocket being the driver. The rear sprocket carries a cylindrical sheet-iron drum which prevents ashes from dropping through the grate. Additional air for the combustion of the fuel is supplied through openings in the side of the furnace, *E*, the air passing through being regulated by the valve, *G*, within the air duct on the side. Another source of auxiliary air is that entering through the openings, *H*. This air is supplied to pipes, *J*, by a connection from the top of the wind-box on each side of the stoker. This furnishes air for combustion above the grate.

Fuel is fed to the furnace from a small hopper by means of plungers, *K*, connected to short-stroke cranks driven through a reduction gear from the main shaft, *L*. By feeding the coal to the furnace at this point, it is caused to pass through the hot gases which allows the fine particles to burn in suspension and the larger ones to become ignited before reaching the grate surface proper.

Some of the advantages claimed for this stoker are an ability to sucessfully burn large quantities of coal per unit of grate surface per hour; exceptional capacity, due to the fuel being ignited before reaching the grate and a rapid pick up of rating, due to the large quantities of fuel resting upon the grate.

Industrial Notes

St. Louis Power Shovel Co. has been formed to manufacture and sell the Conway shovel, formerly handled by the Conveying Weigher Co. These shovels, under the direction of Hitchcock and Tinkler, are digging the Moffat Tunnel, near Denver. The shovels were originally developed by the National Lead Co., at its mines in the Flat River lead district. John L. Clarkson is president and Douglas C. Corner, secretary and general manager, of the new company.

The Electric Service Supplies Co.'s Chicago office has removed from the Monadnock Building to the Illinois Merchants Bank Building, 230 South Clark St.

Porter & Ross, Inc., of 30 Church Street, New York City, announce the opening of a new branch office in the Coal Exchange Building, Wilkes-Barre, Pa., in charge of Neil Cheshire. This company acts as sales agent for the American Enameled Magnet Wire Co., Eureka Copper Products Corp., Green Equipment Corporation, John C. Dolph Co., Dutchess Insulation Co., Mutual Foundry & Machine Co., Specialty Device Co. and the Kaniksu Cedar Co.

J. W. Swaren, Mem. Am. Soc. C. E., has opened an office in the Peoples Life Insurance Building, Washington, D. C., where he will specialize in the preparation of engineering data for submission before federal departments and bureaus. Prior to the war Mr. Swaren had a consulting practice in San Francisco, Cal. He entered the engineer branch of the army in 1917 and served overseas with the Sixth Division, Regular Army. He was discharged from Walter Reed Hospital, Washington, D. C., and became general sales manager and engineer for the Duriron Co., of Dayton, Ohio. Afterward, he was appointed engineer in the Treasury Department at Washington, resigning after two years to enter private practice. For the past two years he has been engaged in the appraisal of several large groups of coal and iron ore mines, including the railways and hydroelectric systems serving the properties. His offices in the Union Trust Building, Cleveland, Ohio, will be maintained. Prior to the war Major Swaren was a frequent contributor to the technical press.

Concrete floors which have become granular are always a source of annoyance and expense. "Rockote," a product manufactured by the **Goheen Corporation** of New Jersey, paint engineers, Newark, N. J., is said to prevent "dusting" and provides a hard, dustproof surface to such floors. It is a scientifically prepared chemical liquid which dissolves the surface of the floor and recrystalizes on drying to a permanent rocklike surface. A descriptive pamphlet on this product and its various uses will be sent by the manufacturer on request.

The Chicago Fuse Mfg. Co., of Chicago, manufacturer of Union and Gem fuses and Union outlet and Gem switch boxes, has moved its Detroit office from the Transportation Building to 429 Wayne Street.

Trade Literature

Hardinge Super Thickener and Clarifier. Hardinge Co., York, Pa. Bulletin No. 30. Pp. 12; 8 x 10½ in.; illustrated. Describes operation, capacity, density of discharge, clarity of overflow and filtrate, etc.

The Delta-Star Electric Co., Chicago, Ill., has issued a net price-list on standardized outdoor substations, to take effect Oct. 15 and remain in force until March 15, 1926.

Heavy Duty Stokers (Type K). Marion Machine Foundry & Supply Co., Marion, Ind. Bulletin No. 225. Pp. 12; 9 x 11 in.; illustrated. The semi-mechanical and hand-operated stokers are also described.

C-H Magnetic Clutches. The Cutler-Hammer Mfg. Co., Milwaukee, Wis. Publication P-11. Pp. 16; 8½ x 11 in.; illustrated. Describes the uses of these clutches on synchronous motor drives where the starting is severe.

Freeman-Riff Co., Terre Haute, Ind., has issued a folder illustrating and describing the coal handling, weighing and storing equipment at the new power plant of Purdue University, Lafayette, Ind.

Automatic Switching Equipment for Reclosing Service on 275-Volt D.C. Circuits. General Electric Co., Schenectady, N. Y. Bulletin GEA-24, superseding Bulletin 47717-B. Pp. 28; 8 x 10½ in.; illustrated.

High Tension Indoor Universal Unit Type Bus Bar Supports; Adjustable Top and Bottom. Delta-Star Electric Co., Chicago, Ill. Bulletin No. 31-B, superseding Nos. 31 and 31-A. Pp. 48; 8 x 10½ in.; illustrated, tables.

Centrifugal Pumps. De Laval Steam Turbine Co., Trenton, N. J. Catalog B. Pp. 72; 8½ x 11 in.; illustrated. Engineers who have to do with the pumping of water, whether against low or high heads or in small or large quantities, should find much of interest in this publication.

Publications Received

A.S.T.M. Standards Adopted in 1925. American Society for Testing Materials, Philadelphia, Pa. Price, $1.50. Pp. 117; 6x9 in.; tables. Contains 36 revised or newly adopted standards of the society and forms the first supplement to the 1924 issue of the triennial book of standards.

The Regularization of Employment, by H. Feldman. Harper & Brothers, New York City. Price, $3.50. Pp. 437; 5½x8 in.; illustrated.

Architecture and Anthracite. Anthracite Coal Service, Philadelphia, Pa. Pp. 18; 8½x11 in.; illustrated. Contains information and practical suggestions toward providing architecturally satisfactory and economically sound results in designing and specifying for heating installations, with an article on the appropriate use of anthracite.

The Pyrotannic Acid Method for the Quantitative Determination of Carbon Monoxide in Blood and in Air, by R. R. Sayers and W. P. Yant. Bureau of Mines, Washington, D. C. Technical paper 373. Pp. 18; 6 x 9 in.; illustrated.

Procedure for Establishing a List of Permissible Storage-Battery Locomotives for Use in Gaseous Mines. Bureau of Mines, Washington, D. C. Schedule 15. Pp. 10; 6 x 9 in. First edition, November, 1919. Describes character of tests, conditions under which storage-battery locomotives will be tested and fees.

Fifth Annual Report of the Scientific and Industrial Research Council of Alberta, 1924. Industrial Research Department, University of Alberta, Edmonton, Alberta, Canada. Pp. 65; 6½ x 10 in.; illustrated.

Our World Trade, January-June, 1925. Foreign Commerce Department, Washington, D. C. Pp. 15; 6 x 9 in. Gives value and volume of principal exports and imports between the United States and chief foreign markets.

The Gas and Coke Industries. Census of Manufactures, 1923, Bureau of the Census, Washington, D. C. Pp. 37; 6 x 9 in.; tables.