

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

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How Much Coal Is in Storage?

NO ONE KNOWS how much coal is in the retail yards and stockpiles of industrial consumers, and a survey should be made to find out just where the public stands. Such inquiries should be made quarterly and not in the haphazard manner that has hitherto been the practice. The mining industry, when it suggests a shortage, is blamed with starting a panic or, if it declares the reverse, with trying to lull the public into a false sense of security. Excessive estimates are likely to be made by others in order to lower the price of coal. What the public wants is the facts on reliable authority. The nation should frequently take the measure of the coal in its bin so as to assure itself that stores will be available when needed. If the funds are not on hand for such surveys, they should be provided.

Seeing the Light

AT A MINE of a subsidiary of the Pittsburgh Coal Co. the men have organized a union of their own and arranged for a living wage. Such a wage is not one that closes the mine down and leaves the men idle but one low enough to make operation possible. The basis chosen is the 1917 scale, and it is high enough to give comfortable living conditions with reasonably steady work. The men declare that they will brook no interference in their plan to seek more reasonable pay and will themselves guard the mines against violence.

Meantime the management of the Pittsburgh Coal Co. is receiving signed letters from many of their men expressing a desire for a reduction in wage that will enable the mines of that company to reopen. All such letters are promptly acknowledged, and the frequency of their receipt shows that the mine workers realize that a community of interest exists between management and men.

Enforcing the Law

WHEN COAL PRODUCING companies find themselves incapable of compelling their own men to obey mining laws, the state of affairs is strange indeed. Yet that exact state exists in parts of Indiana where union law is the only rule most of the men in certain mines recognize. We observe the peculiar spectacle of the mines inspector of Indiana arresting a group of miners and haling them into court on charges of endangering the lives of their fellow men. Warnings to the company produced no results whatever. The company replied that the "foreigners" in its employ could not be watched every moment they were at work; it would require a boss for every man. And, anyway, there was no way of applying compulsion—to compel a man to bore and load shot-holes correctly meant a strike. So the company threw up its hands.

But the state mines inspector didn't. For the first time in years that office recently resorted to courts of

law. There had been no decision from the bench when this was written. The situation leads one to feel that a matter such as this should never have to be dragged out of the mines. In the spring of 1925 a company ought to get such wholehearted co-operation from the district officials of the union that no strike could possibly arise from the discharge of men for illegal shot setting. Yet there is no such co-operation offered. Where does such conduct eventually lead the United Mine Workers?

Larger Salaries in Public Service

SO STRONGLY does service to the nation appeal to almost everyone and so great is the dignity of a government position that often these considerations overcome in a young man the disadvantage of residing in an expensive town like Washington, where not only is every item of expenditure costly but where the style of living is unusually high. But the public should not trade unduly on the lure of the national service and of residence in one of the fairest and most inspiring centers of America. In only too many cases are men of experience and ability lost to the Bureaus by such fatuous reliance on the *esprit de corps* of their personnel.

Dr. S. C. Lind has been chief chemist and chief of the division of mineral technology in the U. S. Bureau of Mines. His contacts with coal men have been few. His work has not been regarded as closely knit with coal-mining problems, but Dr. Lind is recognized by those that know him as one of the leading scientists of the capitol city. His salary was \$5,200. He was seeking an increase of \$400, and though he was offered an advance of \$800 if he would become director of the fixed-nitrogen research laboratory of the Department of Agriculture—a position he has since accepted—he would have stayed with the Bureau of Mines had he received the small increase he desired.

For twelve long years the government has invested large sums in helium production. That work needs the expert guidance of such a man as Dr. Lind, but the policy of the Interior Department was to economize in salaries, and now another chief must head its division of mineral technology. It has been repeatedly shown that the salaries paid by the government for such services are from one-third to one-half less than those paid in private employ. The experience of Dr. Lind dampens the ardor of the men with whom he is associated and makes technical graduates slow to accept government service. A doctor of science may not rise to a leading place in private employ, but those who do, thrive better than those who get such advancement in the service of the government. Every man hopes for promotion, but when he finds that leadership in a government division brings only \$5,200 a year he hesitates to enter the queue where even the front rank affords only an insignificant emolument.

Declining Effect of Winter Trade

ONE OF THE principal difficulties in the stabilization of the coal industry has been the large percentage of coal used in the winter. It is probable that better building practice will tend to reduce the quantity of coal used for house heating. Fewer houses will be built of wood, and those that are so constructed will be sheathed carefully so as to exclude air leakage. The use of sheathing will not only keep the house warm in the winter but cool in the summer. Better window casings will exclude drafts, and windows with northern and western exposures may be made double or be so arranged that double windows can be provided in the winter months. The economies in the use of coal for power, therefore, will probably be followed by conservation of heat in houses, thus lowering the peak load of the winter months. Such stabilization will not be without injury to the coal industry, but it seems bound to come. Tons of fuel no longer will be used to melt the snow on the roof and to raise the temperature of the outside air.

The people of Canada, despite the severity of the climate of the northland, burn less coal than in adjacent but more southern states of this country. When the public once realizes what warmth in winter and what coolness in summer is provided by a well-built house of permanent materials, a campaign for better housing probably will be started which will reduce the outcry against the price of coal. Hitherto the high cost of forest products has resulted in building houses of thinner and inferior lumber, thus increasing the demand for domestic fuel. This tendency has probably reached a limit, and the only influence favorable to an increase in the use of coal has been the tendency toward larger and more numerous windows especially in loft and factory buildings.

Physical vs. Administrative Choice

IN INTRODUCING new machines the physical conditions are important, but equally necessary is it to choose the right man to introduce the new mechanisms and methods. Many a new system or device fails because of the lack of sympathetic and intelligent handling. Any large company that meditates introducing machines for loading, whether scrapers, conveyors or more elaborate loading mechanisms should choose first and with care the person who is to have charge of the operation.

It is not enough to have the machine in the immediate charge of a suitable man. His superintendent or mine foreman must be sympathetic and capable also. If the conditions where the suitable man is operating are not favorable, he should be shifted to a mine where they are, and he should be allowed to operate the plant without loading machines long enough to get a full knowledge of conditions and the good will of the men. Then when he has grown into, and become a part of, the operation the change to machine loading should be made, the routine of the mine being then well organized, giving him time to attend to the new problems. For obvious reasons a small mine will be better than a large one.

One concern had a large number of scrapers idle, condemned as not suited to the conditions. A superintendent with a flair for mechanical operation got them and made them an immediate success. The mines now have scrapers, conveyors and a cutting and loading

machine. Once proved valuable in a region it is not difficult to get the most unprogressive and, at one time most unconvinced, superintendent or foreman to give them his most energetic effort, for once they have been proved successful under any given conditions he is not able to contend that the impossible is being required of him and he strives to "make good."

Leaving It to the Engineer

EXECUTIVES must take the lead in modernization programs. It is true they should leave the details to the mining, electrical and mechanical engineers, but, by and large, the executive should have a somewhat clear idea of the advantages and disadvantages of any given type of equipment, so that he can work sympathetically with his engineers in devising improvements. This has been the general habit of mine executives since the industry started. Nothing revolutionary is stated in initiating such a principle, yet too many when an exposition occurs such as that which the American Mining Congress is about to hold in Cincinnati find reasons, real or imaginary, for absenting themselves. At a time when economy of method is so necessary, when methods that have been refined need refining again, the executive cannot afford to overlook his duty to become posted as to vital facts regarding equipment and operation.

When a Mine Has the "Bends"

JUST NOW mines are not being dewatered in numbers. Nevertheless, the experience at an anthracite mine is both interesting and suggestive. It will be useful when the coal industry once more gets on its feet. It is found that when the water is lowered too fast the roof is liable to fall. This may well be due to the fact that the measures have become heavily water-logged in the years of submergence, and the water thus trapped exerts pressure on the roof, bringing it down. So long as the mine was full of water the upward fluid pressure was equal to the downward.

When the water is removed rapidly from a shaft the downward pressure of the water in the measures is but slowly abated, and the roof rock is subjected to the unbalanced action. The mine is like a "sand hog" who has been working under compressed air. Oxygen is absorbed in his blood at high pressure. If the air under which he is working is suddenly released or he is unlocked without the necessary de-compression stage, the oxygen in his blood presses against the walls of his veins and is opposed by no countervailing pressure. This state of affairs with its physiological results is known as the "bends." A mine, too speedily drained, possibly has a somewhat similar condition, only it is oxygen in the one case and water in the other, and the retaining walls in the two instances are different.

POLITICAL CONVULSIONS in Chile are causing revolutionary industrial changes. A new code of labor legislation put into effect March 26 by executive decree, which embodies radical changes, is said to have been promulgated without hearings or consultations with employers. It provides, among other things, that all plants must be unionized and that employers can deal with their workers only through the organization. Imagine John L. Lewis' reactions when he thinks of what he could do with the stage set like that!

Savings Made by Static Condensers Pay for Equipment in Few Months

Simple Installation with No Operating Attendance
Corrects Poor Power Factor and Cuts One-Third Off
Coal Company's Monthly Bill for Electric Current

By E. J. Gealy
Associate Editor, *Coal Age*,
New York City

AN OPERATING EXPENSE which must be paid as regularly as a monthly power bill, always creates a deep impression on the mind of any financial officer of a coal company. It's a good thing this is true, because often an investigation to reduce such an expense discloses serious uneconomic conditions. It did at the Richmondale mine of the Elem Coal Co. where a way was found to trim \$500 a month from the cost of electric current.

The mine, which is between Carbondale and Forest City, Pa., was bought by the company some time ago in order to insure a steady flow of anthracite to the Elem trade in New York City. Since the purchase, the progressive installation of electrically operated equipment at this mine has enabled the owners steadily to reduce the cost of coal or at least effectively meet increasing costs of mining labor as the workings become more extensive. Naturally enough, as more labor-saving and cost-reducing electrical equipment was added, the power bill increased.

The Richmondale mine purchases its power at a point near the end of a long transmission line which extends from Scranton to Forest City. This line is over 20 miles long. Like all such arteries of electrical energy the voltage regulation upon it is greatly influenced by the amount of wattless current flowing at any given time.

From the metering point in the colliery yard, the energy is distributed to the breaker, slope hoists, mining equipment and electrically operated machinery located in the repair shops. Two banks of transformers, each consisting of three single-phase 100-kva. units step the voltage down from 4,000 to 440 volts. The

motor load in the breaker consists of six induction motors having a total rating of 230 hp. Other electric machines, located outside the mines, consist of one 100-hp. hoist motor, one 50-hp. hoist motor, one 40-hp. hoist motor, two 10-hp. fan motors, one 15-hp. air-compressor motor and one 15-hp. saw motor. All of these units are either squirrel-cage or slip-ring induction types.

The electrical equipment used inside the mines comprises three 50-hp. hoist motors, one 50-hp. pump motor and one 40-hp. air-compressor motor, all of which are also induction-type alternating-current three-phase units. A storage-battery locomotive, used inside the mines, is charged from a small motor-generator set, of about 15-kw. capacity.

725 HP. IN INDUCTION MOTORS

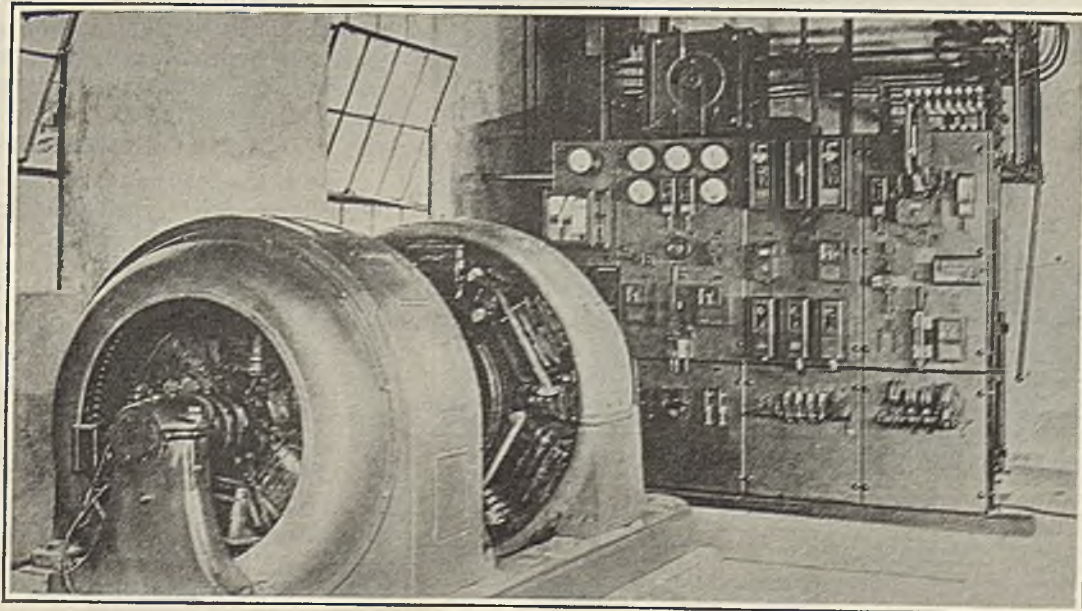
Including all the motor-driven equipment both outside and inside the mines, the total motor capacity is about 725 hp. All of these motors are either the squirrel-cage or slip-ring induction types. With such a load as this, it is apparent that the quantity of lagging current is always large. This is the case even under full-load conditions when most of the motors would be operating at their best power factor.

Power is purchased on a schedule which penalizes the consumer if he operates at a so-called "average monthly power factor" less than 85 per cent, lagging. Likewise, a reduction is made in the power rate if the "average monthly power factor" is greater than 85 per cent, lagging.

This "average monthly power factor" is determined by the comparison of a kva.-hr. meter reading with a

Another Means Of Saving

Synchronous motor-generator sets have, within recent years, become more popular than synchronous converters because of their greater flexibility and ability to correct poor power factor conditions. However, only a few synchronous machines are used to their greatest advantage to lower power costs and help stabilize voltages.



true power meter reading obtained by the power company once a month.

With an induction motor load such as that used at the Richmondale mine, the registration of wattless lagging current was continuous. Even when all the motor load was idle, the magnetizing current of the transformers registered a certain amount of wattless current. Obviously, it was never possible to operate with a leading power factor or even one which would be reasonably close to unity.

MOTORS OPERATE LESS THAN FULL LOAD

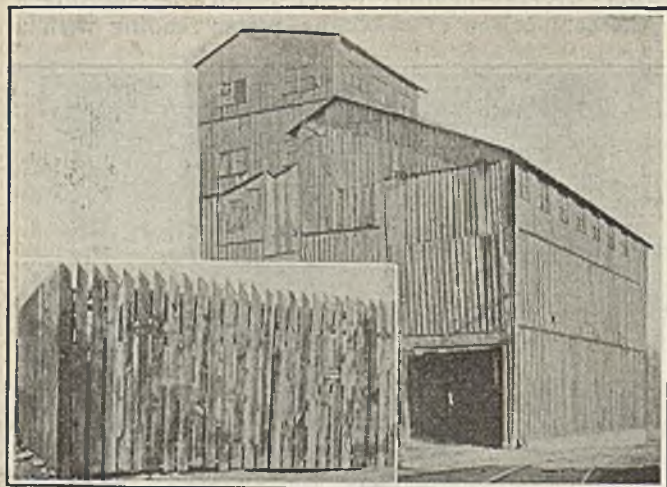
The varying character and value of the loads on the motors were such that the motors rarely operated at full load. Much of the load consists of hoist motors which must be designed to carry high peak loads which rarely occur. Consequently such motors operate a large proportion of the time at less than full load capacity and, therefore, create a poor power factor.

With no synchronous apparatus to operate as a leading power-factor load there was no hope, with the original equipment, of ever avoiding the necessity of paying a penalty for creating a heavy wattless current in the power company's lines.

The electric public utility company serving this region is at present the only one enforcing that part of its contract which permits it to penalize a consumer for operating a low power factor inductive load. But the penalty is applied only when the power factor is less than 85 per cent. For loads operated at a higher power factor value than this, a bonus is paid. However, when we consider the fact that the lowest power rate is the one to which a customer should aspire, inability to earn a rate in the bonus range is actually a penalty also. It means a greater cost for power than is necessary.

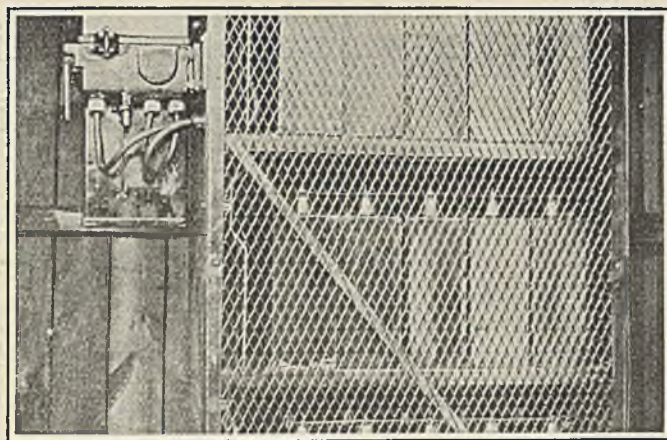
HOW TO EARN LOWEST POWER RATE

It is interesting to know that there is a way by which any consumer can earn nearly the lowest power rate quite easily. The kva.-hr. meter which is used to determine the "average monthly power factor" is so connected that when the consumer's load operates predominantly inductive, the meter turns in a direction to effect a positive reading. When the load is predom-



Condensers Reduce Power Bill Here

All the motors in this breaker are of the induction type. Before the static condenser outfit was installed these motors contributed in a large measure to the poor power factor load which caused the abnormally higher power bill. Only a few of the workmen at the mines know that the condensers are within the inclosure. They cost the management less than \$1,500 and reduce the power bill more than \$500 every full operating month.



Static Condensers Inclosed in Same Building as Power Meters

This is how the metering equipment and static condensers are made safe from injury and unauthorized tampering. The gate is usually unlocked only when the meters must be read.

inantly capacitive (generally obtained by the use of synchronous motors, or static condensers) the meter element causes the register to run in a reverse direction.

Because this meter has no ratchet to prevent it from turning backward, an inductive load causes a positive indication of the register and a capacitive load subsequently applied will cause a negative rotation. Thus, the final reading at the end of any period is the difference between the two.

HIGH POWER RATE REDUCED

At the Richmondale mine, because all the load consisted of induction motors, the kva.-hr. meter never reversed its direction. Consequently, all the wattless current caused by the load at this mine accumulated to indicate an unusually poor "average monthly power factor" and thus caused a high power rate.

The adverse conditions at this mine (it having no synchronous apparatus) were unusually bad. At other mines where synchronous motors are used, conditions should not be so bad. Nevertheless, there are probably some mines already equipped with synchronous motors whose capacity is not used to the best advantage. At these mines it is advisable to operate the synchronous machines so as to nullify the inductive load as much as possible.

Ordinarily the problem of reducing the power bill without decreasing the actual amount of work done by each machine might appear to be a job for a wizard. At the Richmondale mine this was easily accomplished, however, and a saving of over \$500 per month was made.

STATIC CONDENSER DOES THE TRICK

None of the loads at the mines appeared to be suitable for a large-sized synchronous motor. This condition and other reasons prompted the purchase of a static condenser outfit.

The condensers were installed and the distribution lines slightly revamped at a cost of about \$1,500 by the Penn Electrical Engineering Co. of Scranton, Pa. Power is metered at 4,000 volts and then distributed to the step-down transformers which reduce the voltage to 440 volts. In the same building as the meters a 60-kva. static condenser outfit was connected to the 4,000-volt lines.

The success of the installation is indicated by the fact that the equipment has given no trouble. Only the electrician and Mine Superintendent Gillen know

what's behind the high fence near the edge of the colliery yard.

In connection with this installation it must be remembered that the condensers float on the 4,000-volt line continually and, therefore, are always exerting an influence tending to make the kva.-hr. meter of the power company run in a reverse direction from that which would indicate a poor power factor. During the day, when the induction motors are operating, the capacity of the static condenser outfit to completely nullify the tendency of the motors to register a lagging power factor is insufficient, but in the evening or when the motor load is light, the static condenser action upon the meter predominates and the kva.-hr. meter runs in a reverse direction. Thus the meter reading at the end of the month does not really indicate the "average monthly power factor" but instead, indicates how successfully the static condenser unit has both increased the actual "average power factor" and reversed the kva.-hr. meter reading after a predominantly inductive load has caused the meter to register in a positive direction.

The purpose of the installation is not to gain an advantage by subterfuge. The "average monthly power

factor" of the load has actually been increased. Better voltage conditions and good regulation, which have also been obtained, have been of great value both to the coal company and power company. No doubt even when the static condensers are floating on the line alone and causing the kva.-hr. meter to run in a reverse direction they are also correcting the poor power factor of other consumers' loads and even that caused by the magnetizing currents in the power company's transformers connected all along the main line.

MANY CAN MAKE SAVINGS

Opportunities for power factor correction exist at almost every coal mine. In some instances synchronous equipment, already installed, can help a great deal to reduce the power bill. In other cases static condensers can be installed, induction motors may be changed to synchronous types or new synchronous motors can be applied to old drives.

Thousands of dollars are wasted annually on poor power factor loads. It is surprising how some coal companies continue to pay more in penalties than is necessary to buy corrective capacity which would soon pay for itself from the savings effected in a few months.

Topcutters Have Advantages; Watering Lays Their Dust

By John Forsythe

Master Mechanic, Buckeye Coal Co.,
Nemacolin, Pa.

Under the old, hand method of mining, top coal was frequently left in place to protect the roof from weathering. Undercutting does not lend itself readily to leaving this top coal in place as the explosive employed usually brings all of the coal down. With topcutting on the other hand, as much or as little coal may be left up as local conditions may render advisable. Bottom shooting in a place that has been top cut does not jar the roof and consequently avoids the evils resulting therefrom.

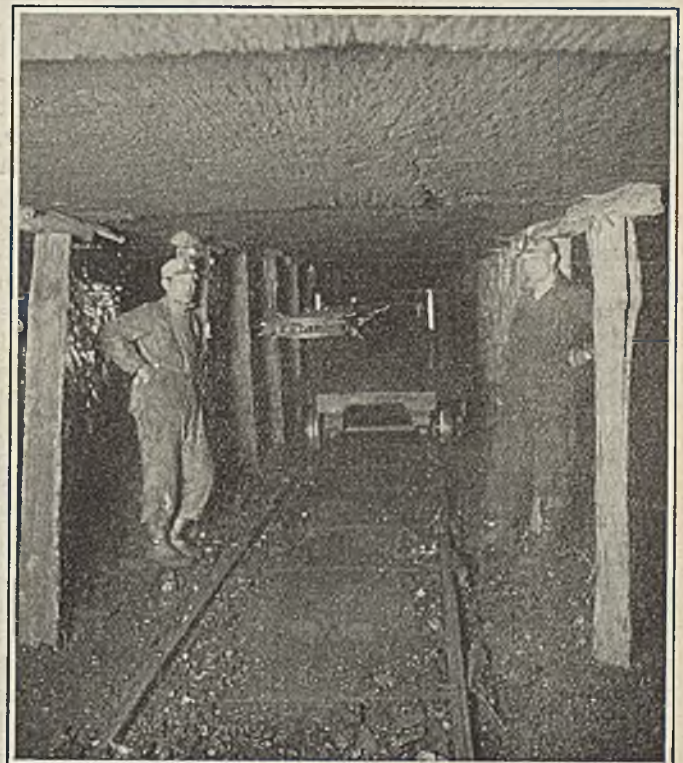
Topcutters have the further advantage over undercutters that they do not require removal from their trucks for operation. All movements of this type of machine are power actuated, making it unnecessary to invoke "strong arm" methods, and only two men are required for the machine's manipulation. As a result these machines are popular with those who operate them. Furthermore, because they need not be removed from their trucks during cutting operations, they are more rapid in their action and will cut more places per shift than undercutters.

SPRAY CUTTER CHAIN

Inasmuch as the kerf cut is near the top of the coal bed, the cuttings are raked out by the action of the chain and fall to the floor. Some people object to this because of the dust made at the face. This can be allayed readily, however, by water sprinkling. In case the mine is not fitted with a regular system of piping for this purpose a tank may be mounted on an auxiliary truck or trailer which also carries a small air compressor. A pressure of 40 lb. maintained on the surface of the water is sufficient to force it through the neces-

sary hose and pipe and spray it against the cutter chain. The flow of this water may be regulated by means of a spigot or cock.

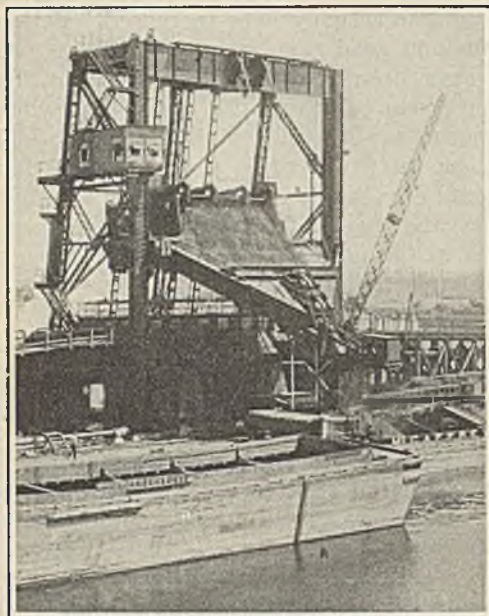
It is unnecessary to wet the dust to such an extent as to make it pasty, but only enough to dampen it sufficiently to keep it from floating in the air. Experience has shown that a flow of 3 gal. per minute or from 25 to 30 gal. per place 23 ft. wide is sufficient for this purpose. The tank, which is usually of from 200 to 250 gal. capacity, may be readily filled with mine water from any convenient drainage pump.



Topcutter and Its Work

Not only men but machines as well gain their reputations by the work they do. The topcutter here shown is one of two in the Lewis mine of the Hudson Coal Co., Clarksburg, W. Va. Each one cut an average of 1,000 tons of coal per day for over a year. This record speaks for itself.

Note—From a paper delivered at "shop talk" meeting of the Fayette-Greene Coal Producers Association, Uniontown, Pa., April 23, 1925.



Loading Barges at Port Reading

Anthracite Trade Tests Out Many Plans to Popularize Buckwheat Coal

Economy Shows Are Most Successful,
But Field Still Requires Intensive
Cultivation to Win Adequate Market

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

IN ITS SEARCH for a winning campaign to widen the domestic market for No. 1 buckwheat coal, the anthracite industry has tried out several plans. Although recent efforts have centered around the Anthracite Economy Shows, none of the other schemes tried has been wholly abandoned. The industry has attempted to move this size by forced sales to unwilling retail distributors, by propaganda and by direct and indirect advertising. In some cases the effort has been more or less perfunctory, but in others it has been determined and sincere.

Unquestionably the Anthracite Economy Show plan is the high-water mark thus far attained in this campaign. That does not necessarily imply that the other plans have been without merit. As a matter of fact, only one is deserving of unqualified condemnation. That is the policy of forcing sometimes resorted to by hard-pressed shippers. The criticism of that policy as part of the merchandising program on pea coal (*Coal Age*, April 16, pp. 567-569) is equally applicable to No. 1 buckwheat and calls for no repetitious elaboration here.

In the case of the smaller size such a policy not only promotes dealer resentment and stiffens sales resistance, but often defeats its own immediate purpose to maintain prices. Instances are not unknown where the retailer who has agreed to take "his quota" of No. 1 buckwheat at circular price as an inducement to the producer to ship him the larger sizes ordered has resold the small coal to a jobber at a loss. This tonnage, thrown upon the industrial market at bargain-counter figures, has helped to depress still further the level of steam coal prices.

Promotion by propaganda generally has been through the medium of addresses at retail coal dealers' conventions. These speeches gain further currency through incorporation in the printed reports of the conventions and occasional editorial discussion of the buckwheat problem in the columns of the trade journals circulating among the retail dealers. Some operators have backed up this publicity with booklets and circulars to the retail coal man, both for his own consumption and for

distribution to the household consumers. In a few cases, producers have gone a step farther and used daily newspaper space to impress the general public with the desirability of No. 1 buckwheat as a domestic fuel. At least one large company is now featuring pea and buckwheat in its advertisements to the retail distributors and promises them co-operation in merchandising.

The outstanding weakness of all these forms of sales promotion is their intermittency. This completely overshadows any defects in detail. Even more so than in the case of pea coal, there is a definite sales resistance to No. 1 buckwheat as a domestic fuel among both retailers and the consumers. And again paralleling the situation in pea, there are some shippers who are only half convinced that No. 1 buckwheat has a real place in the householder's cellar. This group, when it gets behind the campaign at all, is moved more by its own necessities than by any idea that the coal can be sold upon a bona fide service basis. The selling of the service idea must begin with the producer and carry on all along the line. When that has been done, half-hearted, intermittent campaigns will disappear.

ECONOMY SHOWS DRAMATIZE STORY

The Anthracite Economy Shows have dramatized the story of No. 1 buckwheat in a way that none of the other forms of publicity employed could have done. They have succeeded in arousing curiosity and interest among thousands of householders. They have been the means of getting literature on various types of buckwheat-burning equipment and anti-fuel oil arguments into the hands of thousands who otherwise might never have been reached. The traveling show, which has toured the eastern communities in which regular service stations have not been established, has had the appeal of novelty to make it easier to put across its message.

The dramatization, nevertheless, has not been as effective as it might be. In the first shows, opened late in 1923, certain featured devices were in actual operation. This was not true of the later permanent exhibits except the one at Baltimore, Md. There, however, every device exhibited was working. The failure to show the special grates, forced-draft and magazine-

Note—Sixth of a series of articles on the outstanding merchandising problems of the anthracite industry. Preceding articles in this series appeared in the issues of April 2, 9, 16, 23 and 30.

feed installations carrying a load of burning coal naturally diminished their effectiveness and made visualization of their possibilities much less clear to the average consumer.

WHERE SHOULD EXHIBITIONS BE HELD?

It is recognized that the selection of an exhibition room in which all the devices could be shown in operation involves some difficulties. Possibly it would mean the sacrifice of a central location in certain of the larger cities. Where that possibility intruded it would be necessary to weigh the value of the larger and more curious audience attracted to a central location against the value of a smaller, but more interested, attendance drawn to an exhibit in a less accessible location. It is not the number of shots fired, but the hits which count.

In the light of post-mortem judgment, it appears that the choice of equipment for exhibition at these shows has not invariably been Solomonic. Many of the auxiliary devices featured at the opening of the 1923 show are no longer displayed. The prominence given them at the start was resented by certain other exhibitors, and this may explain why some of the participants in the first show are not now represented, although they are still actively driving for business through other channels.

The manner in which the spotlight has been thrown upon one of the devices indorsed by the management of the 1924-25 shows has come in for considerable criticism on the ground that the device did not live up to the claims made for it. If such criticism is well founded, there is an obvious remedy which should be applied. No manufacturer should be allowed to exhibit a device until thorough tests and experience indisputably establish that the device will do everything claimed.

BROADER QUESTION TO BE DECIDED

There is, however, a much broader question to be considered than the efficacy of the devices exhibited. The broader question goes to the wisdom of endorsing any auxiliary equipment which requires motorized operation. The forced-draft installation may give 100 per cent performance—but does the anthracite industry want to encourage such installations? These auxiliary devices may be mechanically perfect—but are they psychologically sound? Is the consumer who invests in a motor-driven blower and fan a permanent convert to No. 1 buckwheat, or has the installation of such

equipment made backsliding away from coal more easy?

The strong talking points of the competitors of anthracite in the fuel oil and gas fields are comfort and convenience. Simplicity of operation and the perfection of automatic control also are stressed, but the promoters of these devices and these competitive fuels know that, as an engineering proposition, the more automatic a piece of equipment is, the greater are the possibilities of breakdown.

They speak softly—or not at all—of price, because a discussion of costs of heating with coal, oil and gas means venturing upon perilous ground. The drudgeries of shoveling and the terrors of the ash-can are magnified in their hands. "No trouble" is their slogan. "Turn on a valve" or "press a button" and "furnace worries are over." It is an appealing suggestion—particularly to the householders who are not concerned over the relative costs of fuels.

HAS SAFETY APPEAL BEEN OVERPLAYED?

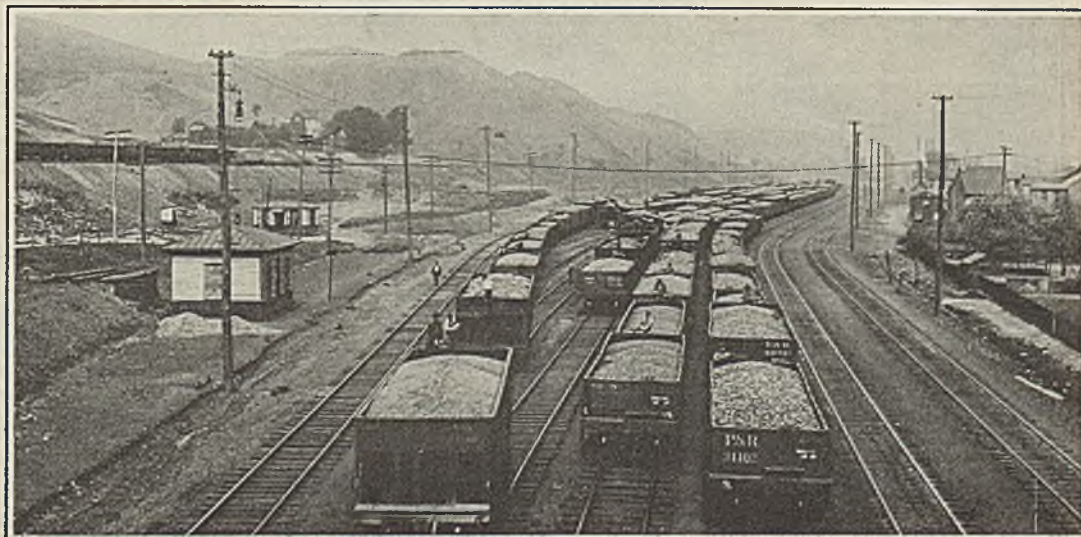
What has anthracite to put forth against that appeal? Safety? Yes; but it is questionable whether that argument has not been overplayed. The average individual can be scared into insurance and salvation, but it is hard to frighten him into changing his buying habits. There are, of course, times when serious accidents with oil give the safety arguments a temporary news value. Continual harping on the subject, however, sets up a cross-current of resistance in the average consumer's mind. Instead of becoming alarmed for his own safety, he believes that the attack grows out of the coal man's fear that fuel oil will gobble up all the business in sight. In other words, he is not at all convinced that altruism rules the coal trade when it points out the dangers—to the consumer—in the use of fuel oil in domestic heating plants.

"Must be something worth while in the stuff," he soliloquizes, "or the coal people wouldn't be getting all worked up over it."

Simplicity and ease of operation, fortunately, are not wholly on the side of fuel oil and gas. The firing of coal in the average domestic heating plant may be a crude and unscientific process, but it is a simple and a familiar one. Tradition serves in place of technique. No small part of the hold the old ways have upon the consumer is due to this simplicity. Adding an electrically-driven blower may not actually make the operation more complicated, but it creates the same effect. The furnace ceases to be a self-contained unit.

Weighing Yard of Reading System

If the anthracite industry could keep a steady stream of loaded cars flowing from the breakers over the scales and through the mine terminal yards to retail distributors and industrial consumers, sales managers could sit back and study the latest reports of the always truthful fishermen and take a crack at Col. Bogey. How to maintain that steady stream is the anthracite merchandising problem.



And there has been little or no elimination of the laborious or disagreeable features of hand-firing to compensate for the sacrifice of simplicity.

Selling the householder on the idea that a motor should be an essential part of his coal-combustion plant certainly does not make it more difficult for the salesman of an oil-burning plant which must have an electric motor. The arguments now advanced against the motor could no longer be marshalled forth by the coal man fighting the inroads of fuel oil if he had encouraged and persuaded his customer to put in a forced-draft installation to burn No. 1 buckwheat. Useless and ridiculous to talk of noise and vibration; wasted effort to point out that in communities where the outside feed wires are not carried underground there is always a real possibility of serious interruption to the service because of storms or power failures at the generating plants.

"Huh!" the vanishing coal consumer would retort, "Why didn't you tell me that when you said it'd be a fine thing if I put in one of those confounded XYZ blower contraptions?"

ADVANTAGES OF MAGAZINE FEED

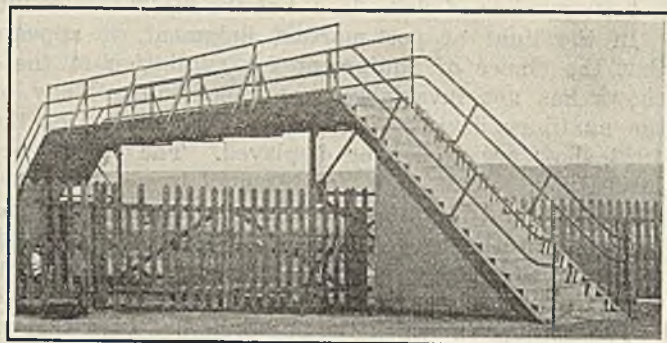
The special natural-draft grates and the magazine-feed boilers are not open to the same objections. With them in use the furnace is still a self-contained unit. And, in the case of the magazine-feed plants, the drudgery of shoveling has been largely eliminated. Moreover, where the magazine-feed type has been installed, it is not likely that the owner will rip it out to put in an oil or a gas burner. Wherever the magazine-feed is installed there is a sure, steady market for No. 1 buckwheat that only the coal trade itself can destroy. The immediate drawback, from the standpoint of the producer eager to place No. 1 buckwheat with the domestic consumer, is that the rate of increase in the use of magazine-feed boilers will be slow. Possibly high-pressure salesmanship could place auxiliary devices much more rapidly. The permanency of the magazine-feed type installation, however, is more important than mushroom growth with low vitality.

In addition to permanency, there is another phase worth considering. It was stated in beginning the analysis of the existing market for No. 1 buckwheat coal that it had become "an axiom of the trade that distribu-

tion of anthracite steam coals is limited to a territory within a 100-mile radius of the mines." No such limitation applies to the distribution of the coal for domestic purposes. The field becomes as wide as the field open to the larger sizes—with this further advantage: the consumer who has installed the magazine-feed is less likely to change to a competitive fuel than the man using an old-fashioned furnace.

Steam Heat Makes Footbridge Safe

Steam heat helps to make a footbridge near the No. 2 operation of the Kingston Coal Co., at Kingston, Pa., safe in winter weather. Once the employees of the colliery and a good many people who live near by



Warm Oil Houses Keep Stairs Safe

Beneath the approach stairways at either end of this bridge is a hollow triangular abutment that serves as a lubricant storage. This is steam heated and the warmth not only keeps the stored oils liquid but melts ice and snow from the stair steps, assuring safe footing for those who wish to cross the bridge.

crossed a set of busy mine tracks by a footpath. This was dangerous because mine trips were passing the spot frequently. Then the company built the bridge shown in the accompanying photograph.

But the snow and ice that collects in rough winter weather on approach steps to such a bridge would have constituted a new hazard had not an ingenious plan been adopted. The stairs are supported by triangular concrete abutments extending to near the top of each flight. These were built hollow to serve as places for the storage of car lubricants. The steam heat in these oil houses keep the stairs warm and free of ice, thus affording safe footing for passers-by.



Not a "Hunting Lodge"

What average city dweller would not be proud to live in this cozy mountain home? The front yard, a bower of evergreen shrubs and small trees, stands out in pleasing contrast to the temporary, early-spring bareness. The house, owned by the Harvey Coal Co., of Harvayton, Ky., is the home of F. M. Medaris, manager.

Sprinkling at Face, Rock Dusting on Entries Is Harrington's Program for All Mines

But Ventilation and Safety Precautions Should Be Improved, Not Relaxed—Blasts in Watered Mines Are Due Usually to Failure of Men More Than of System

By Daniel Harrington
Consulting Mining Engineer,
Salt Lake City, Utah

DURING THE PAST FEW years there has been a steady trend toward rock-dusting rather than toward humidifying to limit or to prevent explosions in the coal mines of the United States. This is due partly to the fact that coal mines of Great Britain have adopted rock dusting and, at least in a sense, condemned use of water. Moreover, during the past few years, particularly the latter part of 1922 and the years 1923 and 1924, several explosions occurred in the coal mines of the United States with heavy loss of life and some of the affected mines were known to have sprinkling or humidifying systems.

The flood of sentiment created by these successive disasters quickly caused a more or less general distrust or condemnation of explosion-prevention methods requiring use of water, and simultaneously started more or less of a stampede to rock dusting. Much of the wholesale condemnation of watering methods was indulged in without adequate knowledge, or at least without adequate consideration, of actual local conditions in each case; and the scurry toward rock dusting was just as unintelligent.

Curiously enough, however, mines that had been using watering methods and had been afflicted with these serious disasters, instead of abandoning the use of water, greatly extended their watering systems, at the same time taking other safety precautions. They supplemented the watering system with rock dusting where the latter was likely to be the more effective.

The worst sufferer from the recent mine disasters in the United States has been the Rocky Mountain region, especially the states of New Mexico, Wyoming and Utah, and, to a lesser extent, Colorado. Yet, anyone who could find any tendency to abandon use of water in these states would be a wizard. The Phelps-Dodge Corporation, the largest producer of coal in New Mexico, has the following in its printed rules and regu-

lations at Dawson, N. M., issued in 1923: "Fire bosses shall be instructed to examine all places and report any accumulation of dust or where places are dry. Such places shall be immediately posted with a danger sign and not allowed to work until such places have been brought into proper condition."

Here it is seen that dry coal dust is placed in essentially the same status as accumulations of methane. A study of the Dawson mine in January, 1924, showed that the fire bosses could "post" very few if any places. Practically all open parts of the mines were being kept wet except the cold intake air courses on which water could not be used because of freezing. These were rock dusted.

In southern Colorado, in 1910-12, nearly 250 men were killed by a succession of gas-coal-dust explosions. Immediately thereafter extensive systems of preheating and water and steam spraying were put into use, with also hose and water-car sprinkling in some cases. The effect was practically a cessation of ex-

plosions in the mines using this system. While in the spring of 1924, Utah took the lead among the states by making rock dusting compulsory in all coal mines, at the same time, the greatly extended use of water also was made compulsory, all mines were required to have water lines laid to all working faces, and not only were day-pay sprinklers ordered to use water, but every miner was enjoined to keep his working place sprinkled and every machine runner was required to use water on the cutting chain. A determined effort is being made to enforce these measures.

There is opposition to use of water by some mining men in Utah, partly on account of the cost, but also largely because of the fact that wet slack is difficult to screen and greatly hampers sizing of coal. Yet the majority of the companies and especially the larger ones, go much farther with use of water than the state regulations require.

In many Wyoming coal regions, water is scarce and the coal seems to be somewhat less explosive than in

HARRINGTON SUMS UP

THE CONCLUSIONS Mr. Harrington draws from his keen observations of mine protective measures are these:

Sprinkling and rock dusting should be carried on in every coal mine in this country—the sprinkling at the face, the rock dusting on entries.

Both must be kept in proper condition under constant supervision.

Sprinkling at the face keeps down fine coal dust where most of it is made, and thus gets at the root of dust troubles.

Rock dusting, without simultaneous watering is as bad as the "abominable practice" of installing safety lamps while permitting men to smoke in the mine.

Whether a mine is dusted or sprinkled or both, ventilation, flame protection and the sealing off of abandoned areas should be provided conscientiously.

The safety publications of the Bureau of Mines ought to be "books of the bible" to coal men.

NOTE—This article comprises the bulk of a paper written by Mr. Harrington for the winter meeting of the American Institute of Mining & Metallurgical Engineers in New York City.

Utah, Colorado and New Mexico. Watering methods are used to only a limited extent, as compared with Utah. However, there appears to be a definite sentiment toward adoption of state regulations in Wyoming, modeled largely after those in use in Utah; and if this is done, both rock dusting (which is now being practiced to some extent) and watering will be in extensive use in Wyoming also.

From this it will be seen that while the Rocky Mountain States are decidedly in favor of rock dusting, they are by no means against watering. Rather, they are extending the use of water both as a safety and as a health measure. The mining men of these Rocky Mountain States realize that their conditions are such that unless *all* available precautions are taken, disaster is likely to follow.

These Western mines have problems which do not usually confront coal mines of other regions.

In the Rocky Mountain States, "sweating," as found in Eastern mines, is unknown and during *all* seasons of the year the surface air is decidedly dry. Hence practically every cubic foot of air going through these Western mines abstracts moisture from the coal and thus makes the dust the more ready to explode.

WATER AND DUST NEEDED

For instance, last summer at a Utah coal mine, the surface intake air entered the mine at 88 deg. dry-bulb, 55 deg. wet-bulb temperature, thus carrying only about 2 gal. of water per 100,000 cu.ft. of air. At a point about 9,000 ft. from the surface in this main air course, this intake air (about 50,000 cu.ft. per minute) had registered 61 deg. wet-bulb and 66 deg. dry-bulb. Hence it was carrying about 9 gal. of water per 100,000 cu.ft. of air. In this case the 9,000 lin.ft. of intake air course was being deprived of about $3\frac{1}{2}$ gal. of water per minute or over 5,000 gal. per 24-hr. day, amounting to over $\frac{1}{2}$ gal. per foot of intake entry per day. It is largely due to this situation that Western coal mines are made dangerous, and that sprinkling fails locally and rock dusting must be done on intake air courses and watering must be done in the interior of the mine.

Laboratory tests of explosibility of coals of the United States show that while, under standardized conditions as to coal dust fineness and as to temperature of an electric arc causing an explosion, Eastern

bituminous coals give pressures from one or two up to about 15 lb. per sq.in., nearly every Western coal tested under similar conditions generates pressures in excess of 15 lb. per sq.in. and some of them above 20 lb., or much higher than that shown by practically *any* Eastern coal.

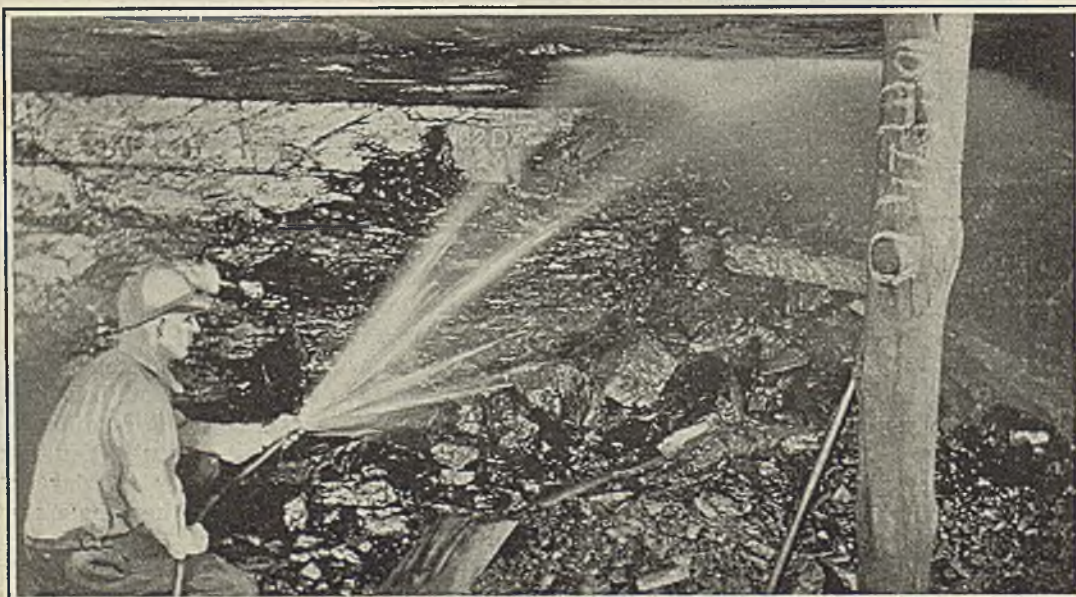
Similarly, Bureau of Mines *Bulletin* 167, page 344, shows that large-scale tests in the Bruceton experimental mine near Pittsburgh, Pa., proved Western coals in general require a larger percentage of incombustible (ash or shale or other rock dust plus moisture) to prevent propagation of an explosion than do Eastern coals. The coal with highest incombustible requirement in this series of experiments was from a southern Colorado mine. Since 82 per cent incombustible is given in this case as the amount necessary to prevent propagation of an explosion, it will be seen that whether sprinkling or rock dusting is used, a dangerous condition can be averted only by the most constant vigilance.

FINE ROAD DUST CAUSED DISASTER

One of the most disastrous of recent Western coal-mine explosions probably was started by ignition of extremely fine road dust settled on timbers out of the air of an intake haulage road and the dust had an incombustible content (rock dust plus moisture) of about 65 per cent. On the other hand, when the practically pure coal dust of this property was mixed with 8 per cent water and subjected to standard ignition tests (which ignite the *dry* dust at every attempt), the dust with 8 per cent water mixed *did not ignite*. Yet dry coal dust of the same size, when mixed with dry rock dust, making a mixture 58 per cent incombustible, propagated an explosion readily. With 1 per cent methane in the air, an explosion was propagated through dry dust containing 66 per cent incombustible matter.

When one considers that fine, dry coal dust with 65 per cent incombustible has ignited and thus has started a disastrous explosion, and that the dust of the same mine with an 8 per cent moisture content would not ignite when subjected to a standard ignition test, one is likely to infer that at least as far as *ignition* is concerned the moistening is to be preferred to rock dusting.

Face operations all throw into the air much finely

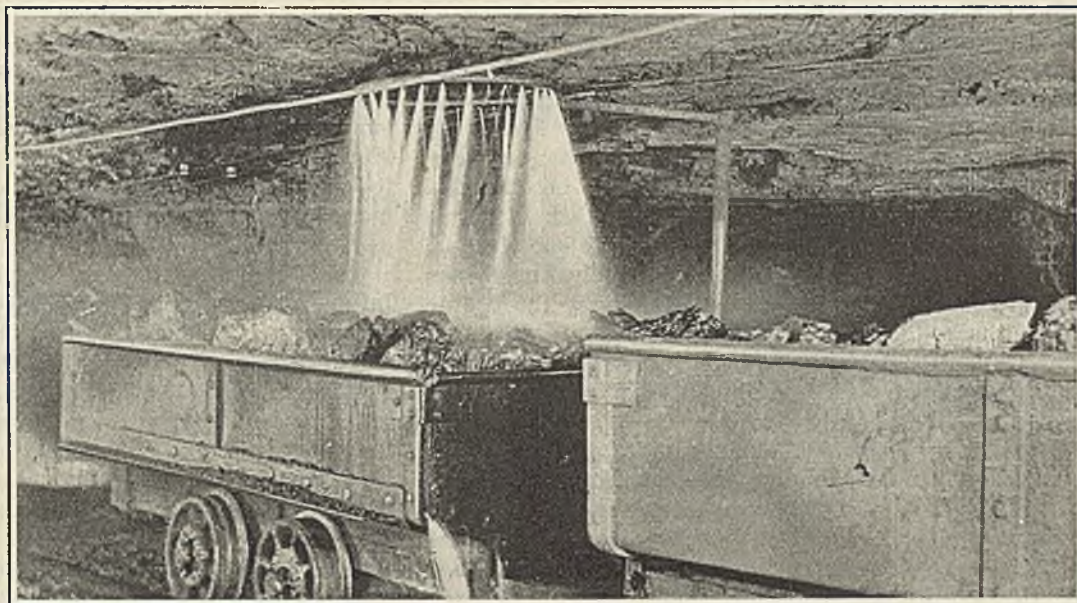


"Wet the Face"

After all, according to Mr. Harrington, the place where most of the dangerous coal dust is made is in the face region, therefore, that is the place to sprinkle most religiously. In many Rocky Mountain mines they are soaking the faces three times a day with hoses. Every miner is equipped for this part of his regular work.

Safety Soaking

It is next to impossible to build and maintain cars that do not leak coal dust, and no miner is happy unless he has loaded a car so high it needs topping—and, therefore, probably drops fine coal over-side along the entry. Furthermore, a quantity of the finest dust will blow off as the trip speeds along. The best remedy is the spray. Here we have the type used by the Phelps Dodge Corporation in Dawson, New Mexico.



divided coal dust to settle out later on props, timbers, caps, floor, rib and roof ledges and rock gob. It is, therefore, readily apparent that face regions are likely to be decidedly dangerous as to fine coal dust. Flame for ignition is found most frequently at or around the face region in open lights and methane accumulations, or electric arcs and methane or dust, or both, or blown-out shots into methane or dust. So it is extremely desirable that the dust at or near faces be "killed" and kept "dead" at all times with adequate watering.

USE OF WATER BENEFITS MINERS

The use of water at and around the face, in addition to preventing dust from igniting or propagating an explosion, also keeps out of the air the dense clouds of fine coal dust which are certainly detrimental to health of workers, particularly machine runners. Rock dusting without the use of water at the face would tend to intensify the probable health hazard to face workers from breathing dust suspended in the air.

Moreover, unless the dust is wet down at and around the face regions, it is certain that fine dry coal dust from faces and from cars will soon settle upon adjacent rock-dusted surfaces. The 15 to 30 per cent of combustible matter which makes some western coal-mine dusts inflammable, will be found to have made rock dusting ineffective almost as quickly as evaporation renders sprinkling ineffective.

It has long been known that intake air courses, especially those acting as main haulage roads, have been decidedly difficult to keep sufficiently moist. Recent explosions originating comparatively near mine entrances on intake air courses of sprinkled mines have convinced many of the most enthusiastic advocates of watering methods that the use of water on these main haulage intakes is dangerous (though in Colorado the advocates of the preheating-humidifying system still hold their position). In Utah, and, to a considerable extent, in Wyoming and in New Mexico, and to a slight extent in Colorado, the idea now is to rock dust thoroughly the main intake main haulage roads (roofs, ribs, and floor) at least as far into the mine as freezing extends in winter; and to divide the mines into sections and protect all sections of the mines by rock-dust barriers, meanwhile using day-pay men to sprinkle intensively interior auxiliary haulage roads, room necks and open gobs.

One of the worst difficulties being encountered where main haulage main intake entries are rock dusted is the fact that much coal is spilled along the tracks and this soon becomes fine and dry and upon being thrown into the air it settles and tends to make the rock dusting unsafe in a short time. While the ultimate remedies for this would be adoption of a tight car and restriction of topping, neither remedy can be applied readily and it is now proposed in some Utah mines to run a water car along these haulage entries, keeping wet the region between and immediately outside of the rails.

Failure to keep open, abandoned, or non-working places well sprinkled is responsible for the spread of most of the explosions in mines where sprinkling systems are in use. These open non-working regions are dangerous and, if they cannot be sealed, should be kept either well sprinkled or well rock-dusted. Where they cannot be traveled, stationary water sprays running continuously are being much used in the West, but by all odds the safest method is sealing, where this is feasible.

It is stated that practically 30 per cent of water must be present to prevent propagation of a violent explosion through fine coal dust. I am somewhat disinclined to accept this. I have seen "bug dust" so wet as to be almost "sopping"—but containing only 12 per cent moisture—which I am certain no explosion could ignite, irrespective of its violence, if the blast were confined to the usual duration of but a fraction of a second.

SPRINKLING MUST BE SYSTEMATIC

It is frequently stated that fine dry coal dust either will not mix with or absorb water or will do it only with difficulty and delay. Years of experience in Western mines prove that even in those mines which have no shale or slate to aid in absorption of moisture and where the coal is of a more or less oily nature, if the underground workings are sprinkled systematically even the newly deposited very fine dry dust is easily moistened. However, where sprinkling is of a haphazard nature and successive applications of water are made only after the workings have become dangerously dry, it is difficult to get fine, dry coal dust moistened. It will float for days, even weeks, remaining absolutely dry upon a pool of water.

One of the worst fallacies in connection with use of water in coal mines is that a mine is *sprinkled* when a water car or hose is run over a few workings once every week or month or year and a little dab of water placed between the rails on the floor. Real sprinkling requires that ribs, roof, timbers and floor be thoroughly washed down and *never* allowed to become dry. If this is not done, a mine is not sprinkled. If it is done, the ribs and roof and timbers will be kept free of dust and the floor will have the extremely fine, hence dangerous, dust either washed down under the coarse coal to the solid floor, or attached to larger pieces in such manner that only a violent explosion can bring it into suspension even if it should become dry.

Another fallacy as to effective use of water is that when water is placed on roof, or ribs, or floor, there is resultant damage from caving, sloughing, squeezing, etc. While it is probably true that there will be at first some falls or similar temporary trouble and possibly, in a few isolated cases, permanent difficulties, still, the localities where permanent injury is suffered are decidedly few.

While it is interesting to read of explosions stopped by rock dusting and rock-dust barriers in southern Illinois, it is decidedly dangerous to generalize from this that similar results can be obtained in all coal mines by similar methods. Illinois coal dusts are not nearly as inflammable as are coal dusts from many other parts of the country, particularly the Rocky Mountain States. I have seen a report on an explosion in a southern Illinois coal mine which was started by gas ignition by an open lamp. It blew out a considerable number of brattices and *stopped of itself* as there were no sprinkling, rock dusting, or other explosion-prevention measures; and the report stated that there was present "ample fine dry coal dust along the roads and ribs to propagate an extremely violent explosion." From this occurrence, it would appear that rock-dusting methods that would easily stop incipient explosions in southern Illinois would be of little utility in regions that have really dangerous dust.

While sprinkling is alleged to have failed in several

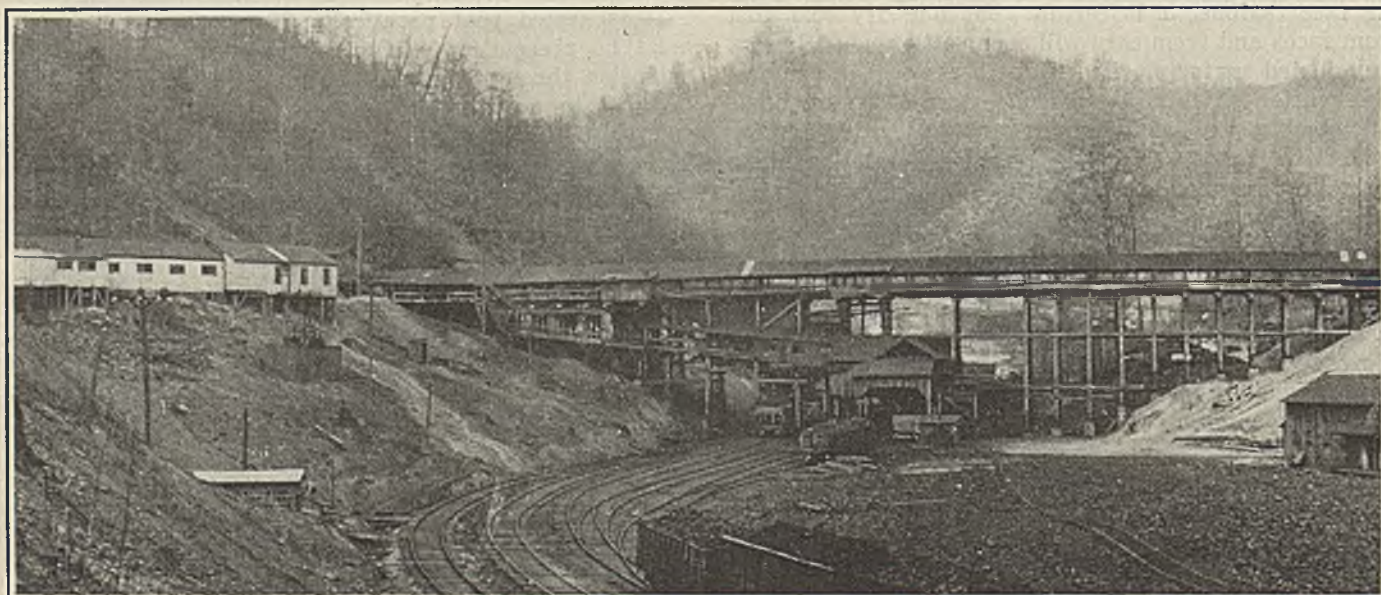
instances, it will be found that in practically every such alleged failure there were lapses from efficient sprinkling practice which caused the trouble rather than failure of the method. The Dawson No. 1 explosion in February, 1923, and the Dolomite explosion in November, 1922, proved that it is almost impossible to apply sprinkling methods safely or successfully to main intake air courses, especially those which act also as main haulage roads.

The Dolomite explosion, frequently pointed out as a failure of sprinkling, really shows how advantageous sprinkling is. The explosion, starting near the mouth of the intake haulageway, reached into the mine only about 1,000 ft. It killed about 90 men who happened to be concentrated in a limited area, yet, on account of the effectiveness of the sprinkling in this dry mine, the blast was unable to get into the interior of the mine where about 700 additional men were employed; these 700 men undoubtedly owed their lives to sprinkling.

The list of explosions stopped by water can be extended readily: I know of at least 20 authentic instances. While there have been explosions in mines having sprinkling systems, the trouble almost invariably has been not with the system but with violations of the system. Rock dusting in mines will also fail if it is neglected even temporarily.

Canadian Coals Test Better Than Some American Anthracite

The Dominion Fuel Board and the Fuel Testing Division of the Department of Mines are making a series of tests upon various types of fuels to ascertain their relative values when burned in standard types of hot-water house-heating furnaces. These tests are still in progress, but results to date show that British anthracites, cokes, and certain high-grade low-volatile bituminous coals, including Alberta coals of the Canmore class, appear to have a greater heating value than the average American anthracite sold at Ottawa. From $\frac{3}{4}$ to 1 ton of those coals produced as much heat as a ton of American anthracite.



Shops, Substation and Tipple of the Harvey Coal Co. of Harveyton, Ky.

Until recently this mining operation went under the name of the Hazard Jellico Coal Co., and was operated by Jewett, Bigelow & Brooks. This mine, like several others in the Hazard field, uses drop-bottom mine cars. The main haulways which enter the coal seam at tippie height on each side of the valley, are directly in line with the tippie.

Good Coal Advertising Has Strong Background

Indiana Mining Company Makes Sure It Is "Able and Sincere," Then It Sells to the Consumer *Itself* First and Its Coal Second



HOW SHOULD COAL be advertised? The question has puzzled many a mine owner and sales-manager. Usually they have arrived at the conclusion that there is nothing better to do than use up some white space with a lot of the standard claims of coal quality and service and let it go at that. They talk coal and nothing but coal. But out in Terre Haute, Ind., Earl Shagley, treasurer, and, incidentally, advertising manager of Walter Bledsoe & Co., has a different idea. He reverses the usual program. His advertising sells his company—first to the men in the company, then to the men in the mines and lastly to the consuming public.

His company goes through all the usual motions of advertising—that is, it uses space in about the same mediums that other coal companies do. It gets out the usual blotters and the usual envelope stuffers so familiar to users of coal. It sometimes "circularizes the trade" just as other coal companies have done for a generation, when they needed business. But there's a difference. The difference begins to make itself felt long before any advertising appears before the public.

Before a single printed appeal can be made, this Indiana company feels that it must turn the spotlight upon itself and see whether it is "able and sincere." This sounds odd. A coal producing company examining itself to see whether it is "able and sincere" might present a rather ludicrous spectacle. But this one doesn't.

It must have the ability, measured in property, mechanism and men, to produce coal that will meet certain needs of consumers. It must have the ability to prepare that coal properly after it comes out of the ground. Every man who sells coal knows what utter devastation in his business can be wrought by the delivery of poorly prepared coal to an exacting customer. And that company must have the ability to sell the coal and adequately handle the hundred and one items of distribution after it is sold. There is a great deal to be discovered by a coal company examining itself to learn its own ability.

As to its sincerity, a company has something to learn also. Are the men at the face and in the tipple awake to the fact that the president of the company and the salesmanager and the salesman in Dubuque and the one in Chicago and the one in Detroit are all counting

on "the boys at the mines" to do a careful job of producing and preparing and loading coal? Many a good coal man who has despaired of ever getting any friendly co-operation out of union mine labor will have a good laugh at this. But a few do not. They feel that, after all, mine labor is just like other labor: Properly impressed with the fact that a lot of men scattered everywhere are depending on them to do their jobs well, the chances are miners will be more sincere in their work.

That is the idea in the Bledsoe company. And so Shagley writes messages that are distributed as letters to miners. Foremen and bosses are encouraged to supervise more closely and in a spirit that will make a man want to load out clean coal. Also men are called into the headquarters office of the company—not merely into the mine office—and the lesson of clean coal is taught there with frank friendliness, not with animosity. This is unusual. The result is, the man ordinarily goes back into the mine deeply impressed with the sincere purpose of the company for which he works. And the chances are he doesn't forget it.

Then it is necessary to sell sincerity to the men out in the field, too. It is easy for salesmen of coal to feel that all their company wants is orders and that they, themselves, are only order takers. Imagine how such a man would feel when a string of letters like this caught up with him, one after another:

"Dear Dave:
"A poor coal peddler awakened in a little hotel in a tank town.
"The new-up sun shone dimly through a dirty window.
"The hoot of a locomotive hammered into his half-wakened brain the idea of a train and this made him think of coal.
"What a job! What a job! To peddle a few cars of coal today that nobody wants!
"A sinking feeling hangs around his empty middle.
"After bending over a dirty wash bowl, he slowly reaches for his vest and there drops to the floor a little book of ancient lore. Face up is this (translated from Sanskrit and written hundreds of years ago):

THE SALUTATION OF THE DAWN

Look to the Exhortation of the Dawn!
Look to this Day, for it is Life,
The very Life of Life.
In its brief course lie all the Verities
And Realities of your Existence;
The Bliss of Growth,
The Glory of Action,
The Splendor of Beauty;
For Yesterday is but a Dream,
And Tomorrow is only a Vision;
But Today well lived
Makes every Tomorrow a Vision of Hope.
Look well, therefore, to this Day!
Such is the Salutation of the Dawn.

"He sits on the edge of the mussed-up bed and reads it.
"He reads it again and again!

"The poor coal peddler fades from the scene!
"In his place sits a fuel ambassador representing the best coal distributing company in the great land.
"Why peddle a car of coal today to a reluctant buyer?
"Convince a coal user that his permanent advantage lies in tying

NOTE—In the headpiece is the picture which Walter Bledsoe & Co. uses as its symbol on letter heads, in advertising and on all occasions. It is a picture of sturdy, enduring trees suggesting a sturdy, enduring coal company.

up continuously with a concern whose business principle is—A business transaction that is not to the advantage of both parties concerned is to the advantage of neither."

"A company of ample resources.
"A company whose good will is its greatest asset and—'Good will is the disposition of the pleased customer to return to the place where he has been well treated.' (U. S. Supreme Court decision.)

"It is all irresistible!
"The dim, dirty room fades. It was only a place to stay until he could get into action.

"How he is greeted that day!
"Joy and success and work are in him. Great resources and good will are back of him.

"His noon ham and eggs are the food of the gods.
"The night reports and orders sent in mark the end of a perfect day.

"Perhaps a new customer and friend has been created for the year to come.

"It is a bully business!"

"Sincerely yours,

"(Signed) EARL SHAGLEY."

Unusual letters like this to salesmen are only one means of teaching sincerity—the sincere desire of the company to make new customers and new friends and to keep them. In a thousand ways the company tries to impress sincerity upon these men. It is not all done through Shagley's letters, but a paragraph from one of the letters is interesting.

"SINCERE"

Sincere is from the Latin and means "without wax." The great sculptors of Rome made their statues of finest marble. Later a sort of commercialized art came along and lesser sculptors made statues and filled the imperfect places in their inferior marble with wax. For a time the people were deceived but the fraud was soon out. The best marbles were then called "Sincera"—without wax. Hence our word "Sincere." Literally "without wax."

In all these communications to the whole organization two thoughts are kept to the forefront. They are these: "Good will is the disposition of the pleased customer to return to the place where he has been well treated" and, "A business transaction that is not to the advantage of both parties is to the advantage of neither." This sort of thing builds good will—and sincerity.

The company's advertising broke into print only after a consistent effort had been made to assure both the ability and the sincerity of the whole organization. And when it finally came, it wasn't like other coal advertising.

"We realize," says Mr. Shagley, "that coal advertising cannot create new and additional demand for coal. We can only get coal business by giving a superior product and service together with pleasant relations which make it a mutual advantage proposition and in that way take business away from some concern that cannot, or will not, give such service and furnish such a product as ours."

So he did not set out to write ordinary advertising for his company's coal. This is what he wrote on one occasion, for newspaper display in his principal market centers:

PRUNES AND COAL

The Western Prune Growers have spent huge sums of money in creating a demand for their product. As the mail man goes down the front walk, Mother drops into a chair and looks through her favorite magazine. Here is a whole page of wonderful recipes and how easy they are to prepare. "I must order more Prunes," she

says. The Children come home from school and, with the magazine on the floor between them, scan the pictures. "Mother, let's have prunes for dinner." In the evening Dad is lured by the picture of the luscious fruit and, as Mother darts the socks by the shaded lamp in the corner, he mentions the matter of Prunes for breakfast. Thus the ball rolls on. Great new orchards are planted and the product is sold. A wonderful growing demand for prunes is being created.

We cannot create a demand for coal. Each industry and each household uses the fuel required. No more, no less. Each user has some source of supply. Business comes to us only as we are able to render Superior Fuel Service. To induce you to trust your fuel problems to us, we must prove our ability to give you a satisfactory fuel, properly priced and with it a real and continuous service. The fact that we have been able to do this is evidenced by our Continuous Growth and by the growing list of fine industries who trust to us the important matter of their fuel needs.

Imagine a coal company buying a full page of space in a big-city newspaper to discuss, not coal, but coal advertising! That was another of Shagley's methods of getting

his company significantly and impressively before coal consumers. He told so interesting a story in such an easy-to-read typographical layout that the advertisement won widespread attention. It gave a good many coal consumers a very definite impression that this company must be a substantial concern with something worth while to offer the public or it wouldn't take the trouble to teach such wholesome lessons to its own men—the text of the advertisement was nothing but one of the Shagley letters addressed to "Everyone connected with Walter Bledsoe & Co." It ran thus:

*COAL AND ADVERTISING

All of the advertising of Walter Bledsoe & Company is written by one of the officials of the company. This does not necessarily mean that it is the best of "copy." It does mean that it is sincere and that it works from the heart of the organization outward. The thought often came to the writer—"Does everyone connected with our company realize what must be back of our advertising if it is to succeed?" From this thought grew a letter on "Coal Advertising." This letter has been

distributed to everyone connected with the production and distribution of our coal—to some two thousand miners, to our executives, to our salesmen and to our office boys.

Then came the thought—Would it interest you as a coal user? Would it give you a clearer view of our problems, our ideas and our ideals? Feeling that it would, it is printed below just as written and just sent to our people—to ourselves.

An Open Letter to Everyone Connected with WALTER BLEDSOE & CO.

The best advertising in the world is the advertising backed by the best product, the best distribution, the best and most pleasant service.

A few weeks ago there appeared in *The Saturday Evening Post* a double-page advertisement of a new brand of beans.

The advertisement was very well written, telling of the method of baking beans used by the northwoodsmen. They placed the beans and other ingredients in big stone bean pots which were buried under the ground and covered with live coals in such a way that they baked to a wonderful crispness and flavor.

It is all very convincing and you can almost see and taste the wonders of those beans. You want to try them.

* * *

Suppose, however, you order a can from your grocer and find some half dozen faulty, black and shriveled beans among the good ones and may be two or three small objects that are not beans at all. The appeal to you is gone and the force of the advertisement is lost? Why? Impurities and poor preparation!

They could not possibly pay \$12,000 or \$13,000 for this advertisement out of profit of the first can sales. To pay for this advertising, they must create good will and "good will is the disposition of the pleased customer to return to the place where he has been well treated." Impurities and poor preparation have lost them a permanent customer.

Impurities and poor preparation in this one case may have cost them several permanent customers because we tell our friends where we have been "well treated" and where we have not.

* * *

One of our salesmen may tell very convincingly of our coal and procure a new customer. Our advertising may have helped the

This Is Unusual Coal Advertising

There are no superlative claims for "our coal" in this full page in a newspaper. Instead, the copy merely lets the public see a confidence-building letter the company sent its employees. It sold coal.

salesmen to procure the order. The car of coal is shipped from the mine and, when it arrives, there are some lumps in it in which coal and impurities are mixed.

There are chunks of sulphur rock.

There are gobs of fireclay or slabs of slate.

There is rock—plain rock.

The salesman did not sell such things; the new customer did not buy them.

Or the car is poorly trimmed and loaded. The customer expected a nicely loaded sample car and this is what he got!

It is just like the beans. We have lost the money we put into our advertising. We have lost the salesmen's efforts and the money his efforts cost. We have lost what might have been a lasting friend and customer—lost on account of impurities and poor preparation.

We cannot exist on single car sales but instead must have "pleased customers" who will "return to the place where they have been well treated." To run the mines well and regularly, we must have a great number of these satisfied customers. You mine people can certainly see the point. By poorly cleaned, poorly sized or poorly prepared coal you can kill the result of our advertising and the work of our entire organization. On the other hand, by seeing that every car of coal that goes out from the mine (your mine), is a well cleaned, well sized, well loaded sample, you stand squarely back of this organization. You can make our efforts count and the result will be good running time for the mines and prosperity for everyone.

The bean advertisement carried a coupon which was to be presented at your grocer's and a free sample would be provided. This promise was definitely made. Some people carried this coupon to two or three grocery stores but could find none of the new beans. This meant that the service behind the advertising was lacking. A promise was broken! The beans were not there when wanted and needed!

Our service, of course, depends upon our traffic department, our accounting department and practically all of us. In a recent advertisement we said—

PERMANENT SERVICE

"We learn to know your fuel problems."

"By careful attention to these problems, we can serve you year after year and eliminate your fuel worries."

"If we fail to give this careful attention and fail to eliminate those fuel worries, our advertising has injured us instead of helping us."

Some more of our advertising reads—

PERMANENT MUTUAL ADVANTAGE

"The cornerstone of our business is—'A business transaction that is not to the advantage of both parties concerned is to the advantage of neither!'"

"This means that you can safely sign a fuel contract with us year after year."

This is something for our salesmen to live up to and they must feel and know that the contracts they make are to the advantage of the buyer as well as the seller. If we fail to make our sales and contracts to the advantage of both parties, we are failing in the most vital part of our business.

In another advertisement, which cost us a good deal of money, we have this to say about "Permanent Sales Policy"—

"The men who work for us in the field—who travel for us—are not 'Coal Peddlers.' They are not out 'To sell a car of coal.' They are not out 'To get an order.' They are out to serve you. They are out to convince coal users that their permanent advantage lies in tying up continuously with Walter Bledsoe & Company, as a fuel service corporation with ample

resources and great good will."

"They are fuel ambassadors."

If our advertising is to be of value and if we are to build our business on these permanent and worthy principles, our salesmen must prove them in their contact with coal users.

We promise in our advertising that, with our coal, our organization and our fuel engineer, we will bring about the ideal of a smooth running, economical boiler-room—well coaled—and that we will make this service permanent where we are permitted to do so. All of this can be done, but it is promising a great deal and means careful attention and hard work on the part of all of us.

* * *

Shall we spend more money for advertising, knowing that we have a product and a service of the best, knowing that we have the co-operation, enthusiasm and hard work of the miner, the mine management, the traffic department, the accounting department, the sales force, the executive force and everyone connected with Walter Bledsoe & Company back of this advertising?

Shall everyone know that everyone else is doing his best?

Because we know these things, let us make for Walter Bledsoe & Company the old toast of Rip Van Winkle—"MAY YOU LIVE LONG AND PROSPER."

That sort of thing is Earl Shagley's idea of true coal advertising. The examples shown in this article are typical of the spirit of his company's advertising to the public.

But what of the results? It is exactly as hard to answer this question as it is for William Wrigley, Jr., to put his finger on the definite results his company gets from its familiar chewing gum advertisements. Yet he continues to spend millions annually on them. Neither can Henry Ford tell anybody the concrete results of advertising motor cars; yet he continues to advertise them. These successful advertisers know, however, that their business is enlarged by advertising, even though people who buy those particular chewing gums and automobiles may not realize that they were influenced to do so by what they saw in print.

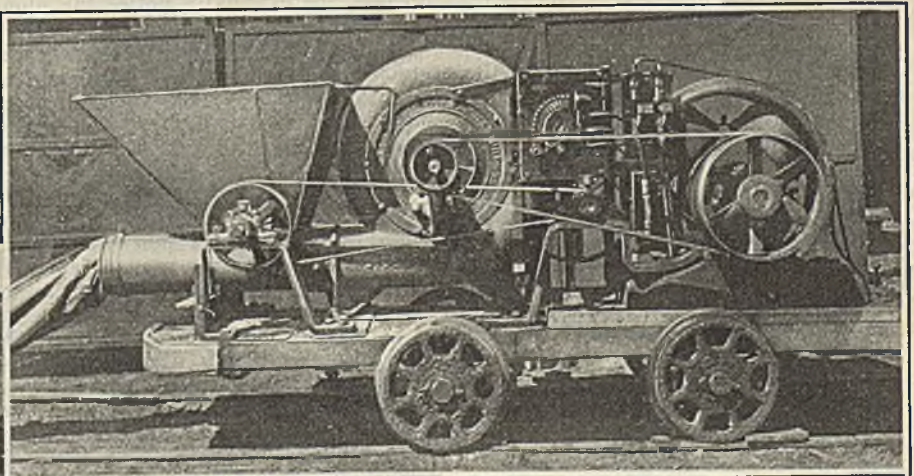
Just so with this Indiana coal company. The question was put to Charles H. Hall, active head of the company.

"Well," said he, "naturally I can't run my finger through the books and point out each shipment that can be traced directly to our advertising; though we do know of some, at that. But we are so confident that Shagley's type of advertising builds business for us that we are going to continue spending money on it. That speaks for itself."

Mining Men in the Far Southwest Are Perfecting More Rock Dusting Machinery

A New Duster

The newly completed machine (right) which the Phelps Dodge Corporation uses in its Stag Canyon mines near Dawson, N. M. The company's engineers designed it and the mine shops built it. The device feeds dust into the air line through a disc feeder rotating at the bottom of the hopper.

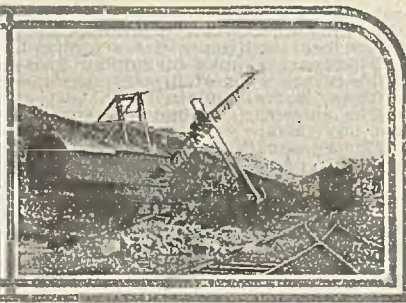


Testing It Out

A traveling blower (left) distributes dry morenci tailings from a nearby concentration mill through the coal workings. The device cannot reach trackless entries so these are covered by the use of a long section of 8-in. tubing. This company uses practically every known safety method.



News Of the Industry



Union Wins and Loses Injunctions In West Virginia Strike

Picketing Restrained in Barbour County, Is Made More Intensive
When Judge Baker Sustains Union—Bittner Predicts
Spread of Strike—Rough Work Starts

Picketing the activities at eight non-union mines in Barbour and adjoining counties of West Virginia is forbidden in a temporary injunction issued May 9 by Judge Warren B. Kittle in the Circuit Court at Phillippe, W. Va., upon application of the coal companies. Barbour County is in the Northern coal fields, where a general strike was called by the union on April 1.

The companies charged in their petition that a series of "acts of violence" have occurred in the district for which "there is no other or possible reason" except that they were "perpetrated by members of the United Mine Workers" or persons affiliated with the union, to prevent the operation of their mines on a non-union basis.

The injunction, in addition to the picketing clause, restrained members of the union from "loitering" near the mine properties.

"In the future before a temporary restraining order is granted defendants will have a right to answer the complaint and the plaintiff in each case will be compelled to file a bill of particulars, setting forth the charges preferred against the said defendants, giving the right to inspect and answer them," Judge W. E. Baker ruled in the U. S. District Court of Northern West Virginia May 8, when union miners were sustained in their contention that they were allowed to picket with "peaceful persuasion" without running afoul of an injunction issued.

Van A. Bittner, chief representative in northern West Virginia; Frank Ledvinka, of Bridgeport, Ohio, who is in charge of the strike in the Panhandle section, and others were cited for contempt in having violated an injunction issued to the Hitchman Coal & Coke Co. in 1913, but which was modified by the federal Court of Appeals at Richmond in 1914. The present injunction proceeding was brought by the West Virginia-Pittsburgh Coal Co.

Judge Baker on Monday, May 11, took up the question of whether any of the allegations in the modified injunction had been violated by acts of violence or otherwise by the defendants.

Judge Baker announced there would be no further injunctions issued in his court until a hearing had first been heard on the merits of the case.

The West Virginia-Pittsburgh Coal Co. applied to the federal court May 11 for a new injunction to restrain the union from organizing activities in the Panhandle region.

In addition the company asked a writ of error on Judge W. E. Baker's ruling upholding the union's contention of the right to organize by "peaceful persuasion." Judge Baker announced that arguments would be heard Wednesday.

Nick Manas, a union miner, was arrested May 11 by state police, charged with intent to assault workers as they entered the mine of the Constanza Coal Co. The arrest was the first to be made in connection with picketing activities started by the union following the decision on "peaceful persuasion."

The peak of non-union coal production was reached in northern West Virginia Thursday, May 7, when 1,010 cars were loaded. Plants along the Monongah Division, B. & O., loaded 492 cars the same day, which was the banner daily record on this division since April 1. Day after day additional mines are starting along the various divisions of the region, but the increases are especially noticeable along the Monongah.

A slight increase was noticed in the union tonnage toward the end of last week. On May 7, 190 cars of union mined coal was produced, which was the best showing since the latter part of April.

One hundred and thirty-nine mines were at work in northern West Virginia last week on a non-union basis, while the union mines ranged from five to seven. Two additional union mines opened up last week, one being a plant in Scotts Run and the other one of the J. A. Paisley plants at Murray, near Fairmont.

A miner's house near McIntire, Harrison County, was blown up by dynamite Monday, May 4. The house is owned by the Hutchinson Coal Co., which has closed all of its mines, but the miners work on a non-union basis at the plant of the Dawson Coal Co., at Lyon. A miner's house on the premises of the Madeira-Hill-Clark Co., at Wilsonburg, was blown up by dynamite Friday morning, May 8.

Early Wednesday morning, May 7, three transformers of the Consolida-

Says "Good Will" Is Mighty Thin Stuff

In a discussion on labor's anti-injunction bill, in the Illinois Legislature, one opponent insisted that "good will" in business is property during all of its stages, in the same sense as land or goods are property.

The defender of this theory subsided when Representative Snell replied:

"Good will! I have seen it burn by night and blow away by day. I have seen it lost over night by the discretions of its owners. I have seen it sold and the purchaser found he had bought nothing. I tell you good will is only a flimsy, fleeting something in the mind of the public, sometimes hard to acquire and easy to lose. It is mighty thin stuff."

tion Coal Co. at Highland, in Harrison County, were dynamited. The intruders, it is thought, meant to blow up the electric lines carrying power to the Francis mine of the Montfair Coal Co. and the Victor mine of the Monongah Fuel Co., at Kilarn, which are operating on a non-union basis.

"We expect to continue the strike and expect it to grow," added Mr. Bittner, who went on to say "we're going into Logan, McDowell and Mercer counties.

The miners held a number of mass meetings last week in the Fairmont region, including some at Shinnston, Rivesville, Oak Point, Enterprise and other mining towns. The picketing was especially active and every morning union miners were strung along the public roads at the Chesapeake mine of the Fairmont & Chicago Coal Co., Parker Run mine of the Fairmont & Cleveland Coal Co., Mines Nos. 8 and 9 of the Jamison Coal & Coke Co., near Farmington; the Grant Town mine of the New England Fuel & Transportation Co., the Dakota mine of the Bethlehem Mines Corporation and others.

Governor Howard M. Gore made a surprise visit to the region May 6 and remained several days. He received the reports of his personal observers, but had no comment to make to the press.

Judge W. S. Meredith, in Marion County Circuit Court at Fairmont, on May 5 dismissed 115 eviction suits brought against union miners by the Fairmont & Cleveland Coal Co. on the grounds that the words, "in the name of West Virginia" were omitted in the summonses, which made them illegal.

Many Opportunities Open to Consumer To Aid Soft-Coal Industry

By Paul Wooton

Washington Correspondent of *Coal Age*

That the consumer in his own interest and in that of the public should be active rather than passive in the face of an acute situation such as has overtaken the soft-coal industry was a thought reflected in this correspondence a week ago. A cross-section of representative opinion has been taken since which reveals that men who study coal problems all the time believe the consumer is in a position to exert great influence in such a situation. There is an inclination to think that he may not be aroused at all, and if he should be brought to realize his power, might not use it constructively. Under such circumstances as now exist, however, there is interest in any latent force that might be applied.

The condition which makes it hard for the consumer to help is the one which has caused the deadlock between the mine workers and the operators. Unanimous action is almost essential, although the consumer is much the freest agent of the three. There are certain things he can do with the consent of the other two factors. He can buy his coal in such a way as to influence the situation. He has a certain amount of control over credit resources. He is in a position himself to go into the production of coal in a large way. Through his financial resources he may help along the consolidation idea.

It is in this latter respect that the consumer is thought to have a real opportunity. The large consumer is in a position to help materially in speeding up consolidations, and the smaller consumer, who is practically synonymous with the public, can furnish the sentiment which will reassure those interested in the plan. One deterring influence thus far has been a feeling among some operators that a systematic plan for consolidation might bring about adverse public relations.

Consumer Should Study Plan

If consumers of coal will analyze the consolidation plan they are certain to find it to be in their interest and in everybody's interest. It will mean that their coal will be drawn from the low-cost mines in each district, while the competition between districts and large units in the same district will insure fair prices. Great encouragement would be given if the public would show some indication that it feels that coal consolidations may go as far as that of steel. It happens that no such concentration of coal-mine ownership is within the range of probability and moreover it is not needed. The situation can be met with a much less percentage.

Property values in coal have been liquidated to the vanishing point. Like all other trends of values they have gone too far. Some time during the present depression there will be a low point. It is obvious that it is about here. Consolidations made at that low

point would have an early chance to profit as values recover.

Much surprise is expressed that this situation does not appeal to more of the large consumers — particularly those who are seeking a guaranteed supply. This is thought to be the time of all times to take on captive mines with an adequate reserve tonnage.

The consumer will influence the situation in one way if he buys for storage this summer, or in the other way if he puts off buying until winter. The feeling is that there will be heavy buying for storage this summer. Most buyers recognize that the prices prevailing now are below the level of reasonableness and still would be below it even were union wages cut. Were the level of union wages to fall it would not be without some cessation of production, which would tend to raise the price. A flurry in prices is likely to happen at any time that stocks are low. This would only delay the deflation process now in progress.

The placing of contracts gives the consumer an opportunity to make his influence felt decidedly. Those of the consumers who are going out of their trade territory to make long contracts with non-union producers in an effort to scotch the union certainly are making their influence felt, but there is difference of opinion as to the wisdom of this course. Some think this is likely to set up counterforces of an unsettling character.

Consumers cannot contract with union operators over an extended period at present prices, but they could make plain their belief that union day rates are too high by purchasing on the spot market for lowest prices.

The consumer also could do as did Ambassador Houghton at the Pilgrims' dinner, in London, and give formal warning to operators and miners that credit may be withdrawn if they do not put their houses in order. The consumer not only has money of his own but he has the ear of the banker more frequently than the other members of the trio have.

Wholesalers to Convene at French Lick, June 1

Plans are being made for the annual convention of the American Wholesale Coal Association, to be held at French Lick, Ind., June 1 and 2. In addition to the somewhat adverse market situation confronting both wholesale and retail coal dealers in the country, the coal men will consider other questions of almost equal importance. Among the subjects to be assigned to leaders in the coal trade, yet unnamed, are "Competition of Coke, Gas and Electricity," "Consigned Coal" and "Economy in Distribution." Arrangements for the convention are in charge of G. H. Merryweather, of Chicago, secretary-treasurer of the association.

I. C. C. Refuses to Reopen Lake Rate Case

The petitions of the coal operators of the Southern fields to have a rehearing of the lake cargo case held by the Interstate Commerce Commission was denied in a formal order entered by the commission May 6. The case, on which oral arguments recently were heard, therefore will rest on the record now before the commission.

The lake cargo case involves the differential in freight rates on bituminous coal as between the Ohio and Pennsylvania fields and the fields in Virginia, West Virginia and eastern Kentucky. Pennsylvania and Ohio operators asked a widening of the differential on shipments to Lake Erie ports. The examiner of the commission has recommended a wider differential by lowering rates from Pennsylvania and Ohio points and increasing rates from the Southern fields. During the oral arguments, in which they opposed this recommendation, representatives of the Southern operators petitioned the commission to reopen the case for the purpose of taking additional testimony, on the ground that most of the testimony in the record relates to conditions in 1923 and that more recent conditions should be considered.

Pickets Hamper Officials at Nova Scotia Mines

Picketing of the collieries of the British Empire Steel Corporation at Glace Bay, N. S., was begun May 5 by representatives of the United Mine Workers, in order, as it was stated, to ascertain the number of bona fide officials engaged in the work of maintaining the mines. In the order issued by the miners' executive instructions were given that company officials should not be interfered with and good order maintained. The pickets are stated in some cases to have exceeded orders by stopping officials below the rank of underground manager.

The Dominion Coal Co. (subsidiary of the British Empire Steel Corporation) has issued the following statement, dated May 6:

"Pickets to the number of about 250 were on duty at New Aberdeen and the central power plant this morning. These pickets prevented any of the persons engaged in maintenance work under the rank of underground manager from going to their duties. This action made it impossible to relieve upward of 30 men engaged in maintenance work during the night shift. The men on the night shift carried on until 11 a.m., when they became exhausted and it was necessary to close the boiler house and power plant at No. 2. This will make it impossible to pump and ventilate a number of collieries. Picketing was also carried on at Nos. 4, 5, 10 and 24 collieries."

Pittsburgh Coal Co. Closes All but Two Union Mines

All but two of the Pittsburgh Coal Co.'s union mines are now indefinitely closed down for the season, according to the officials of the company, who say that coal cannot be produced at the present high union wages and sold in competition with southern non-union coal except at a heavy loss. The four mines closed last week were Eclipse, at California, on May 2; Banning No. 1, near Smithton; Gallatin, at Monongahela City, and Montour No. 10, at Library.

In a letter to the mine workers in the employ of the company, T. M. Dodson, vice-president in charge of operations, said that the company was endeavoring to bring about a change in conditions that would make possible the continued working of the mines, and that the company feels that the November, 1917, wage scale would go a long way toward giving the men steadier work.

Montour No. 10 mine, which was closed last Saturday, was first opened during the war, and came into production in 1919 when the output was 151,865 tons. Production increased steadily each year, reaching 804,758 tons in 1923 and 1,129,455 tons in 1924, which record made it the largest mine of the Pittsburgh Coal Co. and one of the largest soft-coal mines of the country. The payroll at this mine in the twelve months ended March 31, 1925, was \$1,725,730 and the average number of men on the payroll was 1,120.

Government Cure of Abuses Decried by Hoover

"We are confronted with the daily demand to extend government in order to cure some abuse or other," said Secretary Hoover, addressing the twenty-first annual convention of the Associated Advertising Clubs of the World, at Houston, Texas, May 11. "The arm of government is a poor cure for abuse, for it becomes at once a restraint of liberty. . . . The safeguard against the invasion of government into the lives and liberties of our people is that we shall cure abuse outside the government."

"The war drove us to great centralization of government and to great dependence upon the action of central government. The continuance of this mobilization of all effort would have destroyed the initiative of our people and destroyed the very impulses to progress. But from it came the illusion that most human ills could be cured by governmental regulation. . . ."

"We need to have the public mind turned off of the national government as the remedy for all ills. We need to get Washington off of the front page at least part of the time. . . ."

"The government can best contribute through stimulation of co-operation with voluntary forces in our national life, for we thus preserve the foundations upon which we have progressed so far—the initiative of our people."

"With vision and devotion these voluntary forces can accomplish more for America than any spread of the hand of government."

Erie Likely to Retain Coal Holdings

It is not considered likely that the coal properties of the Erie R.R. will be segregated in case the proposed consolidation with the Van Sweringen properties becomes effective. A straw pointing toward this conclusion is the recent agreement of the Van Sweringens to the terms of the contracts between the Erie's coal subsidiaries and the Globe Coal Co., of Chicago, and Pattison & Bowns, of New York, whereby the total output of the anthracite producers is disposed of to these companies. Officials of the Erie have contended that, in view of the fact that the railroad business is separate from the coal company's operations, there is no danger of interference from the government.

Owner of Herrin Strip Mine Again in Trouble

The Rio Verde Coal Co., of Denver, filed a suit in equity asking \$300,000 actual damages and involving contracts amounting to \$1,500,000 May 2 in U. S. court at Owensboro, Ky., against the Harlan Coal Co., of Louisville; the Kentucky Washed Coal Co., of Owensboro, and William J. Lester, president and principal owner of the last-named firm.

The bill of complaint charges the defendants with fraud and conspiracy to hinder the plaintiffs in the fulfillment of their contract to produce and load coal at the washed coal company's strip mine at Nonnel, in Muhlenberg County.

The plaintiffs further ask for a receivership for the washed coal company, which is alleged to be insolvent, and charged that the president had mortgaged the property to his wife to defeat the collection of claims against the company.

The petition also charged that Lester, after having urged unionizing the mines, fomented trouble among the miners and committed other acts which hindered operation of the properties.

Lester was the owner of the strip mine at Herrin, Ill., where a massacre of non-union miners occurred in 1923.

To Vote on Virginian Merger With Norfolk & Western

At a meeting of the board of directors of the Virginian Ry. in New York May 5, C. H. Hix was elected president of the road to succeed H. W. Huntington, resigned. Adrian H. Larkin was elected chairman of the board with headquarters at New York, while Mr. Hix will continue his headquarters at Norfolk.

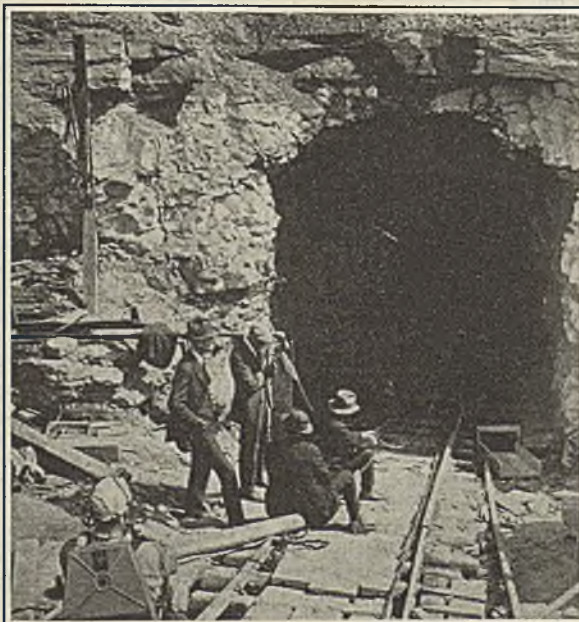
The new executive committee of the Virginian is composed of Messrs. Larkin and Hix, W. R. Coe, P. J. McIntosh, G. M. Hymans and J. H. Perkins.

Mr. Hix has been vice-president and operating head of the Virginian since March, 1, 1920, having previously been federal manager of the Virginian, the Belt Line and of all Norfolk terminals during the period of government control. No successor as vice-president was named by the board.

The board is reported to have taken no further action with reference to the lease of the Virginian to the Norfolk & Western, as agreed upon by the boards of the two roads last month. The stockholders of the Virginian have been called in special meeting at Norfolk May 25 to act on the lease, and Norfolk & Western stockholders are to meet at Roanoke, May 23.

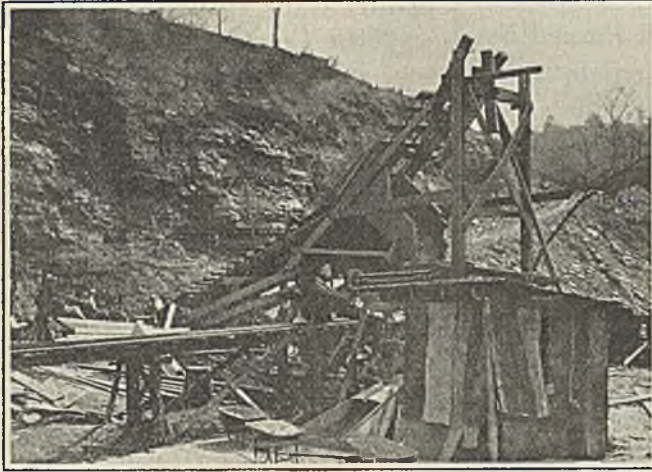
Railway Fuel Convention Has Elaborate Program

The International Railway Fuel Association will hold its seventeenth annual convention at the Hotel Sherman, Chicago, Ill., May 26-29. An elaborate program comprising a schedule of thirty-one numbers and extending through seven sessions is being arranged and many prominent speakers will take part in the discussions. Among those who will deliver addresses are L. F. Loree, president of the Delaware & Hudson Co.; J. D. Battle, traffic manager of the National Coal Association; P. E. Bast, fuel engineer, Delaware & Hudson Co., and Mark Kuehn, chairman of fuel committee, National Association of Purchasing Agents.



On the Job

At the mouth of the Humphrey Mine of the Westmoreland Coal Co., near West Newton, Pa., following the explosion of April 26, which caused the deaths of five construction workmen. The men on the track are holding the signal rope which is carried by the rescue party within the mine, while the man in the immediate foreground, who is fully equipped with a first-aid rescue outfit, is waiting his turn to enter the mine.



Blast Wrecks Tippie

What was left of the tippie at the Humphrey Mine of the Westmoreland Coal Co. after the recent explosion. A workman on the tippie, when it was wrecked by the blast, was blown to bits.

Non-Union Operations Gain in Central Pennsylvania

The critical situation in the coal industry in the central Pennsylvania field is gradually adjusting itself and each week sees more mines in operation.

At DuBois, one of the leading mining towns in the district, many of the larger mines have been closed down and will be abandoned because the thinness of the veins makes it unprofitable to work them any longer.

Sterling mine No. 6, located at Bakerton, Cambria County, closed down for some time, has resumed operations on a small scale and is expected to drift back to normal as the miners come to realize that the mine cannot be operated under the union scale.

At Nant-y-Glo, Cambria County, where the Heisley Coal Co. has extensive operations, which had been closed down for some time, mining was started again on May 4 with a greatly reduced force, but the mines are now producing around three carloads of coal daily. The United Mine Workers declared a strike in the Nant-y-Glo section and the coal company has employed coal and iron police to guard its property. Union men are picketing the property and numerous arrests have been made and a number of women and men were fined on charges of disorderly conduct.

Accept 1917 Wage Scale

The H. B. Swoope Sylvania operations at Madera, Clearfield County, opened operations on April 27, and are giving employment to several hundred miners. This mine also resumed under the 1917 scale. Prior to the opening District President John Brophy advised the miners to remain away from the mines, but the men chose work at the 1917 rate rather than starve under the Jacksonville agreement.

At Osceola Mills ninety-seven miners employed in Moshannon No. 10 mine earned \$40,140.24 between Nov. 6, 1924, and March 30, 1925, working under the 1917 scale.

All other mines in the district operating under the 1917 scale are reporting increased loadings. The total production for the month of April was 43,802 carloads, compared with 58,286 carloads in March. Loadings for the first four months of 1925 fell slightly

below 1924, the comparative figures being: 1924, 238,274, and for 1925, 235,556 carloads. The loss in production has been largely at the expense of the union mines. While output is not satisfactory, the outlook is brighter than for many months, movement to the lakes being heavy.

Operators agree that a modification of the Jacksonville agreement is the only solution to the situation and that the longer the union defers making concessions the longer it will be until the entire field gets back to normal production.

Ohio Union Miners Take Cut To Get Work

The first step toward breaking away from the United Mine Workers organization and operating Ohio mines under the 1917 wage scale has been taken by about 150 miners at the Dark Hollow Mine of the New Pittsburgh Coal Co., in the Pomeroy Bend district. After an idleness of 18 months, due to the company's inability to compete with the non-union wages of West Virginia, the men became dissatisfied and on their own volition circulated a petition asking the company to reopen the mine. The men were backed by the Chamber of Commerce of Pomeroy and business men in general and a branch of the Independent Mine Workers' Association was formed agreeing to the 1917 scale, which is a reduction of about 25 per cent on the present mining scale, day work being cut from \$7.50 to \$5 per day.

Work was started May 4 and some coal has been loaded. The lower scale will enable the New Pittsburgh Coal Co. to compete for lake business and an active run is expected during the entire summer. The capacity of the mine is about 1,200 tons daily. The New Pittsburgh Coal Co. has four additional operations in the same location and word has been received that miners at the Forest Run Mine are circulating a petition to open that mine on the same basis. Officials of the United Mine Workers are making strenuous efforts to stop the men from working.

Legal Action Will Test Indiana Mining Law

A suit which southern Indiana mining men say threatens the future of the deep-vein industry in that field was filed in the Gibson County Circuit Court, at Princeton, Ind., May 7, by State Mine Inspector A. C. Dally against Bruce Rogers, foreman of the Deep Vein mine, near Princeton. It alleges that shots have been placed and fired while men were at work in the mine, contrary to the Indiana mining law. The suit is in 120 counts, each covering one day of alleged violation of the law.

Efforts to bring about an adjustment of the working of the law with the state mining inspection department have been in progress for several months. Should the ultimate findings be against the mining company, it is declared that mines such as that owned by the defendant company will practically be put out of business.

Officers of the company declare that the suit is a test of the law, part of which has been rendered antiquated through the introduction of more progressive methods. They declare that while the law is technically violated, the dangers that once surrounded the men under such circumstances have now been obviated.

Deep Vein officials contend that in opening up the mine they have made a radical change in the usual method. The company has under lease more than 5,000 acres. Instead of beginning to open up rooms for miners off the entries near the shaft and driving the entries forward only as coal is taken out, the company for the past year has done nothing but drive entries, officials say, so as to work the mine on a retreating basis.

Mine officials further say that the Deep Vein mine, as well as others in Indiana being operated on the same basis, uses permissible powder in quantities less than 2 lb. to a shot and there is no danger of igniting gas.

\$40,000,000 Ohio Merger Reported Under Way

Negotiations are said to be under way for the merger of twenty-five coal properties in eastern Ohio, with a valuation of \$40,000,000, according to information from Uniontown, Pa., where a committee of seven men has been appointed to represent Fayette County certificate holders of the Gladdis Coal Co. in the negotiations. The proposed consolidation would involve 100,000 acres of coal lands.

Production of coal from the public lands of the United States in 1924 was 1,495,026 tons, according to the Interior Department. Output of coal in 1924 from public lands by states was as follows: Colorado, 275,040 tons; Montana, 36,847 tons; New Mexico, 21,013 tons; North Dakota, 152,650 tons; Oregon, 270 tons; South Dakota, 554 tons; Utah, 181,015 tons; Washington, 35,722 tons; Wyoming, 791,911 tons. Records of the Interior Department also show that 1,100,000 tons from restricted and segregated Indian lands was produced in Oklahoma, which was more than 89 per cent of all coal produced in that state.

Retailers, in Convention, Discuss Improved Service And Other Trade Problems

Representatives of the retail coal interests from the Atlantic seaboard to the Missouri River opened a four-day session May 11, at the Hotel Traymore, Atlantic City, to discuss how they might better their service to the public and solve the problems peculiar to their branch of the industry. The occasion was the Eighth Annual Convention of the National Retail Coal Merchants' Association, with a membership embracing associations in forty states.

Co-operation again assumed a commanding position in the deliberations. In opening the convention Monday afternoon, President Samuel B. Crowell pointed to the deplorable conditions now existing in the union bituminous fields as a horrible example of what follows lack of co-operation. Without a strong association, he said, the retail situation might be much worse than it now is. Continued support is necessary, not only in solving industrial trade problems but in combating the menace of government regulation.

Richard J. Wulff, treasurer, reported that the organization had expended over \$21,000 in the past year and had a balance of over \$3,000 on March 31. Resident Vice-President Joseph E. O'Toole, reviewing the year's work, said that it had been necessary to cut the suit to the cloth. The business depression had caused a number of association resignations, but a number of individual companies had joined the ranks. He urged a policy of national publicity on oil competition.

Merritt Talks on Anthracite

The report of the trade relations committee, presented Tuesday morning, was devoted to a detailed consideration of the steps leading up to the standards of anthracite sizing and preparation indorsed by the operators a few weeks ago. This was followed by a talk by Walter Gordon Merritt, of New York, on "The Anthracite Situation." Mr. Merritt, who represented the hard-coal producers before the U. S. Coal Commission and during the Pinchot fight two years ago, took the place of Samuel D. Warriner.

G. N. Snider, general manager, Dickson & Eddy, and formerly coal traffic manager, New York Central R.R., was the speaker at the luncheon which closed the formal business session of the day. Representative Manlove, of Missouri, made an address at the annual banquet, Monday evening.

Mr. Merritt's address was an exposition of the new spirit of co-operation in the hard-coal industry. The producers, he said, could not live without the retailers and recognized the necessity of working in close contact with them. Coal must show itself capable of self-government to forestall regulation; only the industry itself by its own actions could bring on control contrary to the spirit of American institutions. Touching upon the coming wage negotiations Mr. Merritt declared that the industry must appear at the bar of public opinion as the plaintiff, not as defendant; that it must get its story

Anti-Strike Bill Passed by Nova Scotia Legislature

Premier E. H. Armstrong, of Nova Scotia, on April 30 introduced in the Legislature a bill for the prevention of strikes and lockouts, which has received a third reading. The measure is in part based upon the Industrial Disputes Investigation Act, which after being in force in Canada for seventeen years was declared unconstitutional by the British Privy Council on the ground that it was a matter for provincial jurisdiction. It provides for the appointment of Boards of Conciliation, rendering it illegal for employees to strike or employers to declare a lockout before the case has been investigated and a report made by the board.

The bill further provides that on proclamation by the Lieutenant Governor a permanent arbitration commission shall be established as a court of last resort, to which either party dissatisfied with the finding of the Board of Conciliation may appeal. The Commission of Arbitration is given full authority to effect a settlement binding on all concerned and their award may be made an order of the Supreme Court with penalties for its violation by employers or employees.

After a public hearing at Halifax, at which representatives of labor and capital both unanimously voiced their opposition to its principal features, the "Industrial Peace Act," as it is called, was given a third reading and passed by the Nova Scotia Legislative Assembly, with amendments restricting the scope of its operation to public utilities and coal mines, and rendering it retroactive to cover strikes or lockouts in progress when the act goes into effect.

over to the people. The new competition must be with other fuels and not a competition of one size of hard coal with another. He urged strongly that any retailer, receiving coal below the new standards report the operator, so that he might be brought to time.

No formal report was offered by the bituminous section of the trade relations committee, because, it was explained, the bituminous producers were not so organized that effective contact was possible.

Satisfaction was voiced in the report of the governmental relations committee over the fact that the year had been comparatively free from proposals to inject more political control into business. The past policies of the Federal Trade Commission were sharply criticized and the hope expressed that the recent changes in personnel and rules would restore that body to its original position as friend and counsellor of legitimate business. The committee saw no chance for any early change in the federal policy on the Government Fuel Yard at Washington. The Oddie bill was mentioned as a subject worth watching.

Court Bans Interference With Co-operative Mines By Indiana Union Officials

Judge R. G. Baltzell of the U. S. District Court, at Indianapolis, Ind., granted a temporary restraining order, May 9, against interference by United Mine Workers' officials with co-operative coal mining in Indiana. The order was granted on the application of William H. Howe, Chicago coal dealer, who has a contract to market the output of co-operative mines at Bicknell, Ind.

Howe, it is understood, is one of the owners of the Martin mine at Bicknell, Ind., which for several months has been on a co-operative basis.

A hearing was to be held on Wednesday on Mr. Howe's petition for a permanent injunction against interference by miners' officials with the co-operative mines.

Judge Baltzell, in granting the order, said the case apparently involved the question whether miners working in the co-operative operations were earning the union wage scale or were earning less, and thereby violating the wage agreement which the union has with the Coal Operators' Association.

Most Miners Follow Order

District union officials said May 7 that most of the miners engaged in co-operative mining already had complied with the order and closed the mines which they had leased or turned them back to the owners. The Briar Hill mine at Jasonville, the Keeley mine at Dugger and the Carlisle mine at Carlisle have been closed within the last few days.

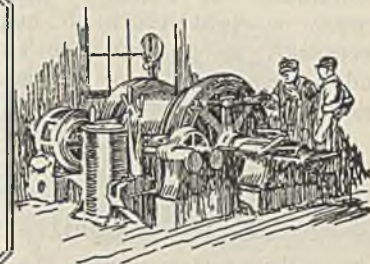
Approximately 200 miners at the Enos mine at Oakland City, the largest strip mine in Indiana, who have been on an outlaw strike since May 8, have refused to go to work on the orders of Tyler G. Lawton, president of District No. 11, United Mine Workers. International President John L. Lewis and board members C. C. Webster, of District No. 11, and O. C. Gassoway, of District No. 8, will investigate. Few mines in district 11 operating on a co-operative basis, were working May 11, according to reports received in Terre Haute, although a temporary restraining order against the union officials from revoking the charters of any of the locals involved was granted by Judge Baltzell.

Mines in the Bicknell field were idle Monday, pending the outcome of the temporary restraining order issued by Judge Baltzell in the Terre Haute division of the federal court May 9. A hearing at which the court will determine whether the order shall become permanent or not scheduled to be held in Indianapolis May 13. In the meantime the Martin, Columbia and Knox co-operative mines were idle. The Martin mine was marked up for work Monday but the miners decided at the last minute to await the outcome of the litigation.

The Geological Survey plans a survey of coal stocks as of June 1. As the compilation involves about five thousand inquiries it is probable that the information will not be made public before the middle of July.



Practical Pointers For Electrical And Mechanical Men



Unusual Hoist Is Manually Operated From a Remote Position

The early designs of electric light fixtures were patterned after their predecessors, the gas light fixtures, not through necessity but as a natural development. Likewise the control methods for electric hoisting, which is a comparatively new development, are patterned after that for steam hoisting.

Due to the difficulty of arranging remote control equipment for a steam engine, the operator was located at the hoist itself. With an electric motor, remote control apparatus is now simple and inexpensive, yet in most cases of electric hoisting the operator's platform is located in the hoist house. In this practice it was quite natural for electric hoisting to follow the established practice in steam hoisting, but time may see a change in conventional methods, for instance in the position of the control handles or buttons.

A specific instance of such a

change is at a new mine in Greene County, Pennsylvania, where the operator of the man hoist rides on the cage, as the operator of an elevator in a building does. Another instance is at mine No. 8 of the Sunday Creek Coal Co., at Corning, Ohio. Here the hoist controls are mounted at the dump, in the headframe above the shaft. This arrangement is illustrated in Figs. 1 and 2.

The hoist shown in Fig. 1 is driven by a slip-ring induction motor located in a combination hoist house and substation close to the shaft. From the small size of the motor one would hardly guess that 1,200 tons per day are hoisted at this mine. The use of such a small motor is possible because the shaft is not much more than 50 ft. deep and the mine cars are loaded to an average of over 3 tons each.

The hoist operator is shown in Fig. 2 in his regular position in the headframe of the tippie, facing the

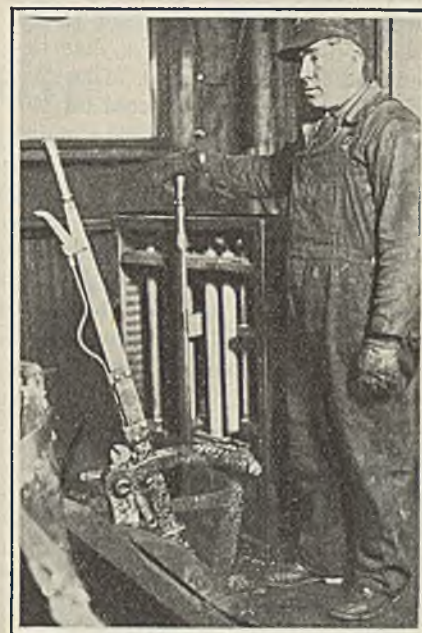


Fig. 2—Operator Sees the Car Dump

His position in the top of the tippie facing the shaft and within a few feet of the dump is of special advantage when anything goes wrong in the dumping operation.

dumps. The lever on which his hand rests operates the controller, and the other lever in front of him controls the hoist brake. This lever is connected to the brake by a steel cable running directly from the headframe down into the hoist house. The control of this hoist motor is remote, only in so far as the stator connections are concerned. The rotor resistance, which is of the carbon pile type, is mounted in the controller proper. This makes it necessary to have a large three-phase line from the motor up to the dump house.

At this mine there seems to be a particular advantage in the operator being stationed at the dump. The mine cars are of the swing end gate type and it has been found difficult to arrange an automatic device which will, without fail, open the gates when the cage tips. When an end gate sticks, the operator sees it the moment it happens and without delay, reverses the hoist for another trial. He needs no indicator, he is governed entirely by the position of the cage itself. In case of trouble at the dump there is no delay by

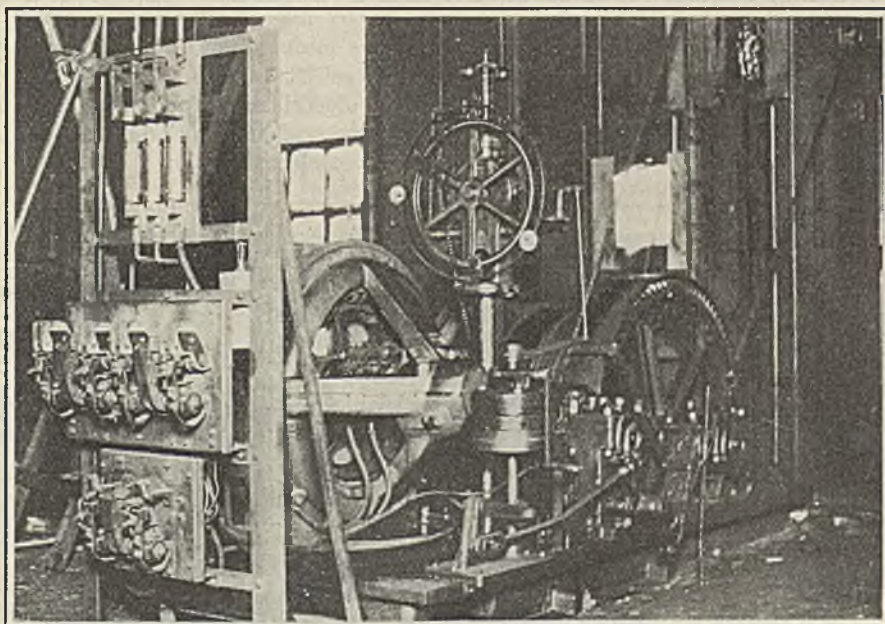


Fig. 1—This Hoist Looks Peculiar Without an Operator's Platform

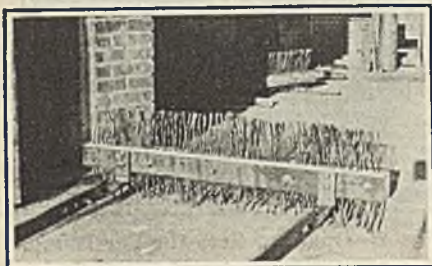
The 150-hp. motor is hoisting 1,200 tons per day up a 50-ft. shaft. Three-ton cars are hoisted on self-dumping cages. The hoist is controlled from a point in the top of the tippie near the dump. The magnetic contactors mounted beside the hoist are the 440-volt forward and reversing switches of the stator circuit.

interchange of signals. The operator is right there to help, if necessary, in clearing the trouble and need not wait for a signal to resume hoisting.

Brush Saves Labor and Recovers Coal

The illustration shows the wire brush which W. A. Hunt, general superintendent of the Island Creek Coal Co. of Holden, W. Va., has devised and is trying out at Mine No. 14 for brushing the fine coal off the bottom of a conveyor at the point where the return enters the slope.

It is made from old $\frac{3}{8}$ -in., 6 x 19, wire rope. The rope is cut into 12-in. lengths and then divided into the 6 strands of 19 wires each. These strands are clamped between two 2 x 4-in. wooden strips which are fastened to a pair of forged iron brackets.



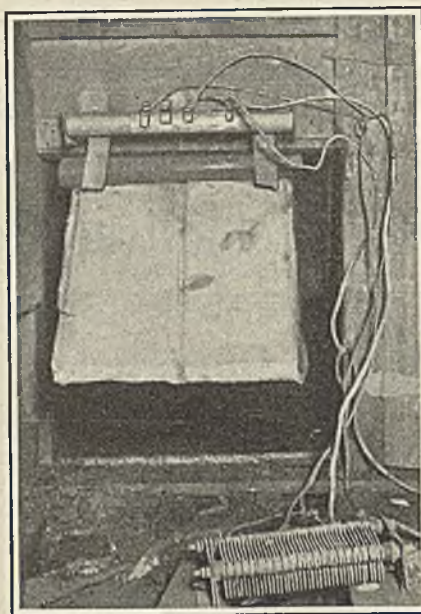
Bristles of Old Wire Rope

The strands obtained by dividing a 6-strand $\frac{3}{8}$ -in. steel rope are stapled, with proper spacing, to one of two wooden strips and then clamped securely between the two pieces of wood.

Home-Made Motor Starter Operates by Air Current

It is out of the ordinary to see in use a home-made, automatic, motor starter. The one here illustrated is doing temporary duty in a mine of the Harvey Coal Co. at Harveyton, Ky. It controls a 20-hp., direct-current motor which drives a small auxiliary fan located near the drift mouth of an opening, which is somewhat remote from the tippie.

The starter is nothing more than a drum controller, the cylinder of which is actuated by the air current produced by the mine fan. A "paddle" made of asbestos roofing is fastened to the cylinder and hangs downward across an air discharge as shown in the illustration. On this cylinder are mounted three contact segments of graduated length, and, fastened to a board, beside the cylinder, are the contact fingers which engage the successive segments, as the current of air from



Air Paddle Cuts Out Resistance

When the mine fan stops for any reason, such as a power failure, the paddle hanging in the discharge drops to a vertical position, cutting all of the resistance into the auxiliary fan motor circuit. Upon return of power, the small motor starts automatically and is brought up to full speed by the outward movement of the paddle

the main fan increases in velocity and moves the paddle higher. This movement short circuits the resistance by steps and, at the extreme point, connects the small motor directly across the line.

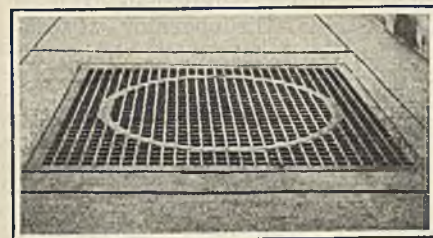
CRUDE BUT SERVICEABLE

The cylinder used is a straight, round piece of wood with the bark on. The segments and fingers are those from a mine locomotive, and the grid resistance is that belonging to a mining machine. F. S. Spurllock, the mine electrician who put this device together in its present form admits that it is crude and far from being an ideal starter, but he asserts that it has done well as a temporary device.

Furnace Heats Electrically Operated Hoist House

Whenever a steam-operated mine hoist is changed over to electric drive or a new electric hoist is installed, the problem of providing a suitable means for heating the building must be solved. At the Clifford shaft near Forest City, Pa., the upper end of the anthracite region, the Hillside Coal & Iron Co. solved it with a well-installed pipeless furnace. Underneath the hoist room floor is an inclosed cellar, part of which is separated for a large pipeless furnace. Just above the furnace is the outlet for the hot air.

The arrangement of the furnace and location of the grating is such that the building can always be kept neat and clean. An outside door near the furnace makes it easy to clean out ashes or stoke the fire. Coal is readily at hand because the hoist house is near the mine shaft.



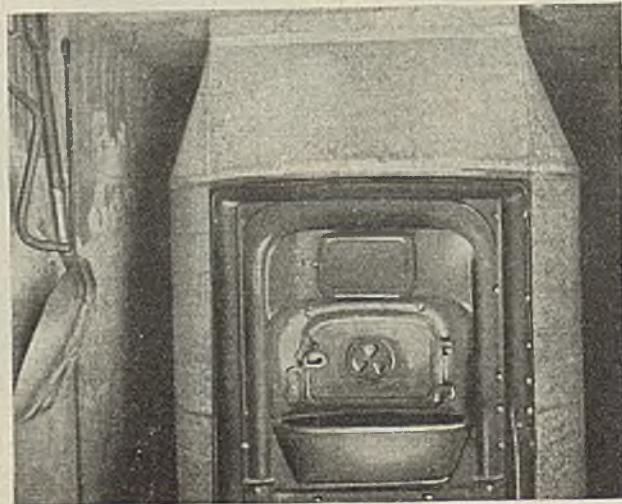
Hot Air Grating

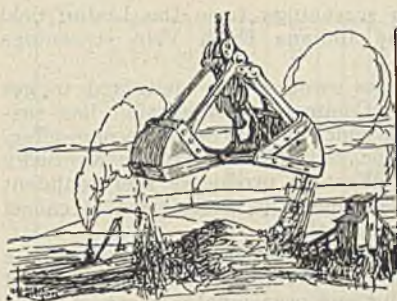
Only clean fresh air enters the hoist room through this grating, therefore, it is an easy matter to keep the place clean enough for one to feel as though he could eat off the floor.

At a steam hoisting mine the hoist room usually is heated either by the use of exhaust steam from the engine or by live steam taken directly from the main steam line. Some of the makeshift installations made at many electrically-operated hoist rooms are real hazards and also give the idea of electrification a black eye.

Furnace Under Hoist House

There is no wasteful use of electricity or serious fire hazard occasioned by the use of this pipeless heater which is easy to care for.





Production And the Market



Soft Coal Market Still Quiet but More Cheerful; Anthracite Trade Active

Temperatures more like March than May continue to linger in portions of the Middle West, to the immense—even if only temporary—relief of the coal shipper. Some producers thought the long-awaited big turn had come and overplayed the market, and as a result most Illinois and Indiana producing districts are buried under "no bills" of lump and egg. Demand for prepared smokeless is so active, however, that some operators are accepting orders only on the basis of prices at the time of shipment. Steam business is listless and though screenings are more plentiful than for several weeks, prices are holding fairly well. Running time is still low in Illinois. Industrial demand is fairly active in Kentucky, but the lake demand has eased off as a result of supplies having to wait for vessels. Receipts at the head of the lakes have tapered off somewhat and movement off the docks is slow. Trade in the West and Southwest is very quiet.

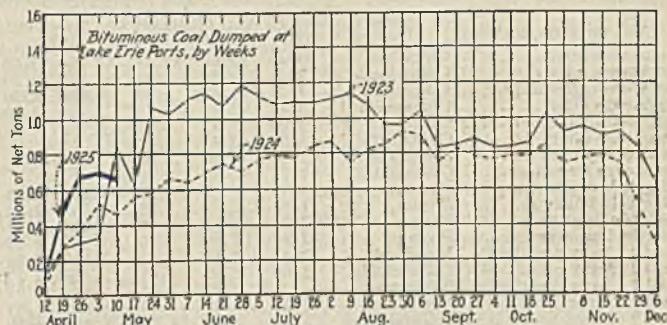
Recent gains in Ohio markets not only have been maintained but a firmer tendency has developed. The Pittsburgh Coal Co. has closed four more union mines in the Pittsburgh district, leaving only two in operation. As a result of the reduced output less distress coal is in evidence and prices are a little stronger. New England and the other Eastern markets reflect but little change, competition being keen for the little business that is going. Despite the generally quiet aspect of the trade it is significant that a more cheerful tone is evident.

Active Demand for Hard Coal

Notable activity pervades the anthracite market. Stove is in particularly good demand, egg continues to improve and even pea is doing well. Though chestnut has fallen behind stove, there is a good call for it. A number of contracts are reported to have been closed

for buckwheat and rice at full company circular. Most of the larger companies are well booked ahead, but none find it difficult to move domestic sizes. Good independent domestic coals readily bring prices 10c. above company quotations.

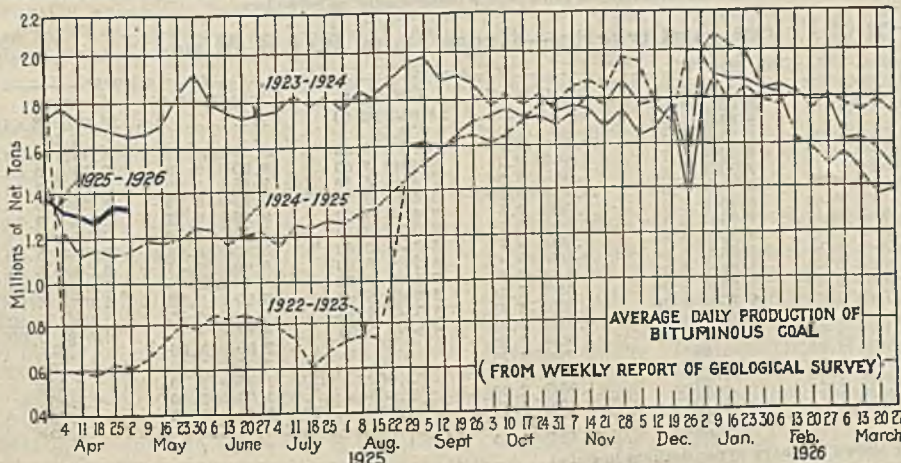
There was little change in the rate of output of bituminous coal in the week ended May 2, when, according to the Geological Survey, 7,964,000 net tons



was produced, compared with 8,029,000 tons in the preceding week, as shown by revised figures. Anthracite production in the week ended May 2 was 1,984,000 net tons, as against 1,937,000 tons in the preceding week.

Coal Age Index of spot prices of bituminous coal rose four points during the week, standing on May 11 at 166, the corresponding price for which is \$2.01.

Dumpings at Lake Erie ports receded during the week ended May 10, when, according to the Ore & Coal Exchange, cargo dumpings were 605,482 net tons; steamship fuel, 39,442 tons—a total of 644,924 tons, compared with 684,408 tons in the previous week. Hampton Roads dumpings for all accounts in the week ended May 7 totaled 390,878 net tons, compared with 355,739 tons in the preceding week.



Estimates of Production

(Net Tons)

BITUMINOUS

| | 1924 | 1925 |
|-------------------------|-------------|-------------|
| April 18..... | 7,142,000 | 7,515,000 |
| April 25 (a)..... | 6,944,000 | 8,029,000 |
| May 2 (b)..... | 7,063,000 | 7,964,000 |
| Daily average..... | 1,177,000 | 1,327,000 |
| Cal. yr. to date (c)... | 170,798,000 | 164,475,000 |
| Daily av. to date..... | 1,604,000 | 1,540,000 |

ANTHRACITE

| | | |
|-------------------------|------------|------------|
| April 18..... | 1,623,000 | 1,567,000 |
| April 25..... | 1,205,000 | 1,937,000 |
| May 2..... | 1,616,000 | 1,984,000 |
| Cal. yr. to date (c)... | 30,769,000 | 29,752,000 |

COKE

| | | |
|-------------------------|-----------|-----------|
| April 25..... | 224,000 | 189,000 |
| May 2 (b)..... | 205,000 | 170,000 |
| Cal. yr. to date (c)... | 4,810,000 | 4,151,000 |

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

Midwest Overplays Improvement

There is a general feeling among coal operators in the Chicago district that the worst is over and that from now on we may reasonably look for a slow but steady improvement. Continued cold weather has given the mines some relief on domestic sizes. Some ran their properties more than the situation justified, however, with the result that all the producing districts in Illinois and Indiana are cluttered with lump and egg "no bills."

The demand for prepared smokeless coals is quite active and some operators are taking business on Pocahontas and New River lump coals now only on the basis of price current at time of shipment. Good smokeless egg coal is bringing \$2.75@3; nut, \$2.25@2.75. Very little activity is in evidence on eastern Kentucky block coals. What little has moved was sold at a minimum of \$2.15 to the wholesale trade, ranging to \$2.50 to the domestic trade, except on the fancy grades, which always command a premium. The movement of anthracite coal is only fair.

Steam business continues lackadaisical. The railroads are buying casually and in small quantities on the open market and have not shown any disposition to close contracts. Screenings are a little more plentiful than during the last couple of weeks, although prices are being held fairly well. High grade Saline County 2-in. screenings and Franklin County screenings can be freely sold at around

\$2.25, good Fourth Vein screenings from the Linton field at around \$2@2.15, and Indiana Fifth Vein screenings from \$1.50 up.

Illinois and Indiana mine owners were delighted to get word that the Interstate Commerce Commission has suspended the L. & N. tariff which was to have become effective May 3 calling for a 15c. reduction on eastern Kentucky coal to points in Iowa. Western producers feel confident they will be able to prevail upon the commission to cancel these proposed rates permanently.

There is so little doing in the Carterville field that it is hardly worth mentioning. Screenings are nearly all cleaned up. A little nut is moving and occasionally a car of lump or egg, but the trade is almost at a standstill. There is a little railroad tonnage from the deep shaft mines and the strip mines seem to be doing well, nearly all working full time and shipping some railroad coal and some steam and domestic, and at one or two places mine run is being crushed into screenings. Some mines are getting one day a week and others are getting as much as three on railroad coal. Conditions are unusually bad among the miners and there is much unrest and dissatisfaction and considerable talk about readjustment of the wage scale.

In the Duquoin field conditions are unusually bad. Two days a week is good working time. There has been no change in prices. In the Mt. Olive district there is practically no domestic moving and steam contracts are being

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

| Low-Volatile, Eastern | | Market Quoted | May 12 1924 | Apr. 27 1925 | May 4 1925 | May 11 1925† |
|--------------------------------|-------------------|---------------|-------------|--------------|-------------|--------------|
| Smokeless lump..... | Columbus..... | \$3.40 | \$2.60 | \$2.85 | \$2.75@3.00 | |
| Smokeless mine run..... | Columbus..... | 2.25 | 1.85 | 1.85 | 1.75@2.00 | |
| Smokeless screenings..... | Columbus..... | 1.85 | 1.40 | 1.40 | 1.40@1.50 | |
| Smokeless lump..... | Chicago..... | 3.10 | 2.85 | 2.85 | 2.75@3.00 | |
| Smokeless mine run..... | Chicago..... | 2.00 | 1.95 | 1.95 | 1.75@2.00 | |
| Smokeless lump..... | Cincinnati..... | 3.50 | 2.75 | 2.85 | 3.00 | |
| Smokeless mine run..... | Cincinnati..... | 1.85 | 2.00 | 2.00 | 2.00 | |
| Smokeless screenings..... | Cincinnati..... | 1.75 | 1.50 | 1.50 | 1.50 | |
| *Smokeless mine run..... | Boston..... | 4.40 | 4.15 | 4.15 | 4.15@4.35 | |
| Clearfield mine run..... | Boston..... | 1.95 | 1.95 | 1.95 | 1.75@2.20 | |
| Cambria mine run..... | Boston..... | 2.35 | 2.15 | 2.15 | 2.00@2.35 | |
| Somerset mine run..... | Boston..... | 2.10 | 2.05 | 2.05 | 1.90@2.25 | |
| Pool 1 (Navy Standard)..... | New York..... | 2.85 | 2.55 | 2.55 | 2.35@2.75 | |
| Pool 1 (Navy Standard)..... | Philadelphia..... | 3.00 | 2.60 | 2.60 | 2.45@2.75 | |
| Pool 1 (Navy Standard)..... | Baltimore..... | | 1.95 | 1.95 | 1.90@2.05 | |
| Pool 9 (Super. Low Vol.)..... | New York..... | 2.20 | 2.00 | 1.95 | 1.85@2.05 | |
| Pool 9 (Super. Low Vol.)..... | Philadelphia..... | 2.20 | 2.00 | 1.95 | 1.85@2.20 | |
| Pool 9 (Super. Low Vol.)..... | Baltimore..... | 1.80 | 1.85 | 1.85 | 1.75@1.95 | |
| Pool 10 (H.Gr. Low Vol.)..... | New York..... | 1.90 | 1.85 | 1.85 | 1.75@2.00 | |
| Pool 10 (H.Gr. Low Vol.)..... | Philadelphia..... | 1.85 | 1.65 | 1.70 | 1.60@1.85 | |
| Pool 10 (H.Gr. Low Vol.)..... | Baltimore..... | 1.65 | 1.70 | 1.70 | 1.65@1.75 | |
| Pool 11 (Low Vol.)..... | New York..... | 1.60 | 1.50 | 1.50 | 1.40@1.60 | |
| Pool 11 (Low Vol.)..... | Philadelphia..... | 1.50 | 1.55 | 1.55 | 1.50@1.60 | |
| Pool 11 (Low Vol.)..... | Baltimore..... | 1.55 | 1.45 | 1.45 | 1.40@1.55 | |
| High-Volatile, Eastern | | Market Quoted | May 12 1924 | Apr. 27 1925 | May 4 1925 | May 11 1925† |
| Pool 54-64 (Gas and St.)..... | New York..... | 1.50 | 1.45 | 1.45 | 1.40@1.60 | |
| Pool 54-64 (Gas and St.)..... | Philadelphia..... | 1.55 | 1.45 | 1.45 | 1.35@1.55 | |
| Pool 54-64 (Gas and St.)..... | Baltimore..... | 1.45 | 1.50 | 1.50 | 1.45@1.55 | |
| Pittsburgh sc'd gas..... | Pittsburgh..... | 2.40 | 2.40 | 2.40 | 2.30@2.50 | |
| Pittsburgh gas mine run..... | Pittsburgh..... | 2.10 | 2.00 | 2.15 | 2.10@2.25 | |
| Pittsburgh mine run (St.)..... | Pittsburgh..... | 1.85 | 1.80 | 1.80 | 1.90@2.00 | |
| Pittsburgh slack (Gas)..... | Pittsburgh..... | 1.35 | 1.65 | 1.50 | 1.40@1.60 | |
| Kanawha lump..... | Columbus..... | | 2.10 | 2.10 | 2.00@2.25 | |
| Kanawha mine run..... | Columbus..... | | 1.40 | 1.40 | 1.35@1.50 | |
| Kanawha screenings..... | Columbus..... | | 1.15 | 1.20 | 1.15@1.30 | |
| W. Va. lump..... | Cincinnati..... | 2.15 | 1.85 | 2.00 | 1.85@2.25 | |
| W. Va. gas mine run..... | Cincinnati..... | 1.40 | 1.40 | 1.45 | 1.40@1.50 | |
| W. Va. steam mine run..... | Cincinnati..... | 1.40 | 1.30 | 1.30 | 1.25@1.40 | |
| W. Va. screenings..... | Cincinnati..... | 1.05 | 1.25 | 1.15 | 1.10@1.25 | |
| Hocking lump..... | Columbus..... | 2.45 | 2.25 | 2.25 | 2.15@2.35 | |
| Hocking mine run..... | Columbus..... | 1.60 | 1.40 | 1.40 | 1.35@1.50 | |
| Hocking screenings..... | Columbus..... | 1.35 | 1.20 | 1.25 | 1.25@1.40 | |
| Pitts. No. 8 lump..... | Cleveland..... | 2.40 | 2.15 | 2.25 | 1.90@2.60 | |
| Pitts. No. 8 mine run..... | Cleveland..... | 1.90 | 1.80 | 1.90 | 1.85@1.95 | |
| Pitts. No. 8 screenings..... | Cleveland..... | 1.50 | 1.50 | 1.50 | 1.40@1.60 | |
| Midwest | | Market Quoted | May 12 1924 | Apr. 27 1925 | May 4 1925 | May 11 1925† |
| Franklin, Ill. lump..... | Chicago..... | \$2.75 | \$2.60 | \$2.60 | \$2.50@2.75 | |
| Franklin, Ill. mine run..... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@2.50 | |
| Franklin, Ill. screenings..... | Chicago..... | 2.15 | 2.10 | 2.10 | 2.00@2.25 | |
| Central, Ill. lump..... | Chicago..... | 2.60 | 2.35 | 2.35 | 2.25@2.50 | |
| Central, Ill. mine run..... | Chicago..... | 2.10 | 2.10 | 2.10 | 2.00@2.25 | |
| Central, Ill. screenings..... | Chicago..... | 1.90 | 1.90 | 1.85 | 1.75@2.00 | |
| Ind. 4th Vein lump..... | Chicago..... | 2.85 | 2.60 | 2.60 | 2.50@2.75 | |
| Ind. 4th Vein mine run..... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@2.50 | |
| Ind. 4th Vein screenings..... | Chicago..... | 1.95 | 1.90 | 1.95 | 1.85@2.15 | |
| Ind. 5th Vein lump..... | Chicago..... | 2.35 | 2.25 | 2.25 | 2.15@2.40 | |
| Ind. 5th Vein mine run..... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@2.10 | |
| Ind. 5th Vein screenings..... | Chicago..... | 1.80 | 1.55 | 1.55 | 1.50@1.75 | |
| Mt. Olive lump..... | St. Louis..... | 2.85 | 2.50 | 2.50 | 2.50 | |
| Mt. Olive mine run..... | St. Louis..... | 2.50 | 2.25 | 2.25 | 2.25 | |
| Mt. Olive screenings..... | St. Louis..... | 2.00 | 1.75 | 1.75 | 1.75 | |
| Standard lump..... | St. Louis..... | 2.15 | 2.25 | 2.25 | 2.25 | |
| Standard mine run..... | St. Louis..... | 1.95 | 1.80 | 1.80 | 1.75@1.90 | |
| Standard screenings..... | St. Louis..... | 1.80 | 1.70 | 1.70 | 1.65@1.75 | |
| West Ky. block..... | Louisville..... | 2.35 | 1.85 | 1.80 | 1.60@1.85 | |
| West Ky. mine run..... | Louisville..... | 1.65 | 1.35 | 1.35 | 1.25@1.50 | |
| West Ky. screenings..... | Louisville..... | 1.60 | 1.20 | 1.20 | 1.10@1.30 | |
| West Ky. block..... | Chicago..... | 2.25 | 1.85 | 2.00 | 1.90@2.15 | |
| West Ky. mine run..... | Chicago..... | 1.60 | 1.30 | 1.30 | 1.15@1.50 | |
| South and Southwest | | Market Quoted | May 12 1924 | Apr. 27 1925 | May 4 1925 | May 11 1925† |
| Big Seam lump..... | Birmingham..... | 2.80 | 2.25 | 2.40 | 2.40 | |
| Big Seam mine run..... | Birmingham..... | 2.00 | 1.75 | 1.75 | 1.50@2.00 | |
| Big Seam (washed)..... | Birmingham..... | 2.20 | 1.85 | 1.85 | 1.75@2.00 | |
| S. E. Ky. block..... | Chicago..... | 2.25 | 2.10 | 2.25 | 2.15@2.40 | |
| S. E. Ky. mine run..... | Chicago..... | 1.60 | 1.65 | 1.65 | 1.50@1.85 | |
| S. E. Ky. block..... | Louisville..... | 2.15 | 2.10 | 2.10 | 2.00@2.40 | |
| S. E. Ky. mine run..... | Louisville..... | 1.50 | 1.30 | 1.30 | 1.15@1.50 | |
| S. E. Ky. screenings..... | Louisville..... | 1.10 | 1.10 | 1.20 | 1.10@1.30 | |
| S. E. Ky. block..... | Cincinnati..... | 2.35 | 2.10 | 2.20 | 2.15@2.25 | |
| S. E. Ky. mine run..... | Cincinnati..... | 1.35 | 1.35 | 1.35 | 1.25@1.50 | |
| S. E. Ky. screenings..... | Cincinnati..... | 1.05 | 1.30 | 1.15 | 1.10@1.25 | |
| Kansas lump..... | Kansas City..... | 4.50 | 4.25 | 4.50 | 4.00@4.50 | |
| Kansas mine run..... | Kansas City..... | 3.50 | 3.00 | 3.00 | 2.75@3.00 | |
| Kansas screenings..... | Kansas City..... | 2.50 | 2.75 | 2.60 | 2.50@2.75 | |

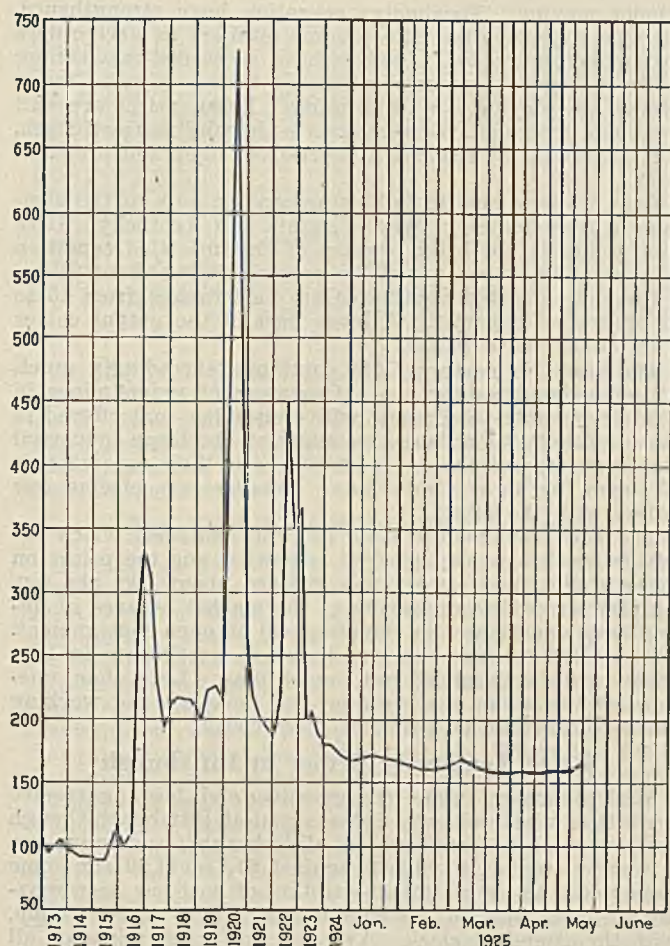
*Gross tons, f.o.b. vessel, Hampton Roads. †Advances over previous week shown in heavy type; declines in italics.

‡The term block is used instead of mine run in order to conform to local practice, but the same coal is being quoted as heretofore.

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

| | | Market Quoted | Freight Rates | May 12, 1924 | | May 4, 1925 | | May 11, 1925† | |
|----------------------|-------------------|---------------|---------------|--------------|-------------|-------------|-------------|---------------|-------------|
| | | | | Independent | Company | Independent | Company | Independent | Company |
| Broken..... | New York..... | \$2.34 | | \$8.50@8.60 | \$8.00@8.75 | | \$8.05@8.60 | | \$8.05@8.60 |
| Broken..... | Philadelphia..... | 2.39 | | | 8.60@8.75 | | 8.60 | | 8.60 |
| Egg..... | New York..... | 2.34 | | 8.75@9.25 | 8.35@8.75 | \$8.50@8.75 | 8.35@8.60 | \$8.50@8.85 | 8.35@8.60 |
| Egg..... | Philadelphia..... | 2.39 | | 8.35@9.50 | 8.70@8.75 | 8.60@9.20 | 8.40@8.60 | 8.60@9.30 | 8.40@8.60 |
| Egg..... | Chicago..... | 5.06 | | 7.68@7.77 | 7.73@7.81 | 7.86@8.50 | 7.44@8.18 | 7.86@8.50 | 7.44@8.18 |
| Stove..... | New York..... | 2.34 | | 9.00@9.50 | 8.35@9.00 | 8.75@9.00 | 8.85@9.10 | 8.75@9.25 | 8.85@9.10 |
| Stove..... | Philadelphia..... | 2.39 | | 8.70@9.60 | 8.75@8.95 | 9.20@9.55 | 8.85@9.00 | 9.20@9.75 | 8.85@9.00 |
| Stove..... | Chicago..... | 5.06 | | 8.03@8.17 | 7.94@8.14 | 8.22@8.70 | 7.92@8.10 | 8.22@8.70 | 7.92@8.10 |
| Chestnut..... | New York..... | 2.34 | | 8.75@9.25 | 8.35@8.85 | 8.50@8.75 | 8.50@8.75 | 8.50@8.75 | 8.35@8.60 |
| Chestnut..... | Philadelphia..... | 2.39 | | 8.75@8.85 | 8.70@9.60 | 8.60@9.45 | 8.50@8.60 | 8.60@9.45 | 8.50@8.60 |
| Chestnut..... | Chicago..... | 5.06 | | 7.90@8.03 | 7.81@7.99 | 8.14@8.35 | 7.69@8.00 | 8.14@8.35 | 7.69@8.00 |
| Pea..... | New York..... | 2.22 | | 5.50@6.00 | 5.50@6.00 | 5.00@5.25 | 5.00@5.60 | 5.00@5.50 | 5.00@5.60 |
| Pea..... | Philadelphia..... | 2.14 | | 5.75@6.25 | 5.75@6.00 | 5.40@5.75 | 5.35@5.40 | 5.40@5.75 | 5.00@5.40 |
| Pea..... | Chicago..... | 4.79 | | 5.36 | 5.36@5.91 | 4.91@5.36 | 4.69@5.00 | 4.91@5.36 | 4.69@5.00 |
| Buckwheat No. 1..... | New York..... | 2.22 | | 2.35@3.00 | 3.00@3.15 | 2.00@2.50 | 2.50 | 2.00@2.60 | 2.50 |
| Buckwheat No. 1..... | Philadelphia..... | 2.14 | | 2.50@3.00 | 3.00 | 2.25@2.75 | 2.50 | 2.25@2.75 | 2.50 |
| Rice..... | New York..... | 2.22 | | 1.90@2.25 | 2.00@2.25 | 1.75@2.10 | 2.00 | 1.75@2.10 | 2.00 |
| Rice..... | Philadelphia..... | 2.14 | | 2.00@2.25 | 2.25 | 1.90@2.00 | 2.00 | 1.90@2.00 | 2.00 |
| Barley..... | New York..... | 2.22 | | 1.50@1.75 | 1.50 | 1.40@1.50 | 1.50 | 1.40@1.60 | 1.50 |
| Barley..... | Philadelphia..... | 2.14 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Birdseye..... | New York..... | 2.22 | | | 1.60 | 1.40@1.60 | 1.60 | 1.40@1.60 | 1.60 |

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



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

| Index | 1925 | | 1924 | |
|-------------------------|--------|--------|----------|--------|
| | May 11 | May 4 | April 27 | May 12 |
| Weighted averaged price | \$2.01 | \$1.96 | \$1.96 | \$2.05 |

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

taken care of with crushed mine-run. There is no domestic business and a little railroad tonnage is moving. In the Standard district things are at low ebb. A few mines are trying to work and are selling coal for the most part below cost. Some of them are crushing mine-run and selling screenings, and a little railroad coal helps the situation. Two days a week is good working time in this field.

A little cool weather at St. Louis has caused a little tonnage of the cheaper grades to move in small tonnages and in a few instances storage orders have been placed that involve a light tonnage of anthracite, coke and smokeless. Generally speaking, however, everything is dead. Dealers have fairly good stocks on hand and storage buying is not expected to get under way until June. Country domestic is unusually slow. Nothing but a little nut is moving into the small places. Local wagonload steam is easing up, earload is good considering and country steam is quiet. Prices are unchanged.

Better Industrial Demand in Kentucky

A good deal of coal has been moved from eastern Kentucky to lower lake ports over the past few weeks, but demand has eased off somewhat as a result of congestion of supplies waiting for vessels.

There has been fair demand from utility, byproduct and gas plants and movement to brick, cement, lime and other plants producing building supplies has improved. Railroads are taking a good deal of fuel, some open market and some contract.

Retailer demand at Louisville is quite dull, although there has been better consumption over the past ten days than

is normally the case at this season of the year, due to chilly weather. Movement North and East as well as to the Northwest continues slow. Western Kentucky is moving some nut coal to the South.

Lake movement is principally on egg and 2- or 4-in. lump coal; not much mine run reported as moving. This should result in large supplies of screenings before long, which would have a tendency to force the market lower in short order except for the fact that industrial consumption is strong.

There is very little mine run demand from any source at the present time, but better demand for nut, egg and 2-in. lump coal, the block sizes not being strong.

Activity in Northwest Dwindles

Business at Duluth is anything but good and dock men are bending all of their energies to prevent coal on the docks from piling up. There was approximately 2,200,000 tons on the docks, of which about one-half was free coal, when navigation opened, and between that time and May 1 171,372 tons of hard coal and 550,014 tons of soft coal was received.

Last month shipments from the docks were only 9,210 cars, compared with 16,388 in March and 15,683 in April of last year. Some shipments are now being made to the iron ranges on spot orders, but this is not helping much. Most of the coal that went out last month was for railroads.

Twenty-nine ships arrived with coal last week, of which three cargoes were anthracite. Seventeen are reported on the way, of which the same number are hard coal. This compares with 57 cargoes the week before.

Prices are unchanged for both hard and soft coal, with both fairly firm and no reductions looked for. The usual 10c. advance on hard coal May 1 made prices as follows: Egg, \$12.80; stove, \$13.20; nut, \$13.05; pea, \$10.20; buckwheat, \$7. Buckwheat did not advance.

Specifications for the requirements of the mining companies are out and the indication is that, as last year, the docks will quote list, dividing the order among them. The specifications call chiefly for Youghiogheny mine-run and screenings with some call for splint screenings.

Aside from buying of small quantities to tide over a cold spell there has been little life to the general coal market at the Twin Cities. Buying for steam use is characterized by holding off for lower prices and waiting for distress coal as much as possible. While there has not been much distress coal, an occasional lot has encouraged the bargain hunters. Industrial buying is generally on conservative lines.

Unsettled freight rates keeps things in a turmoil, preventing any settled policy upon grades which may be affected if some of the threatened changes are made effective. The general feeling is that the dock trade is likely to show a greater volume of business this season than for several years and there are frequent hints that the all-rail trade is still to be reckoned with.

Quotations are the same as last week.

The coal trade in Milwaukee is uneventful, with normal demand from the industries and light demand for domestic fuel. Activities at the docks are centered upon the accommodation of colliers from the lower lakes, which thus far have discharged a comparatively large tonnage. Cargo receipts up to May 7 totaled 153,208 tons of anthracite and 245,903 tons of bituminous coal—399,111 tons in all. In 1924 the receipts by cargo up to the same date totaled only 68,576 tons of anthracite and 129,999 tons of bituminous coal—198,575 tons in all. During April the car ferries brought in 10,188 tons of anthracite and 11,488 tons of bituminous coal, a total of 21,676 tons. All-rail receipts during April were 7,410 tons of anthracite and 38,095 tons of bituminous coal, a total of 45,505 tons.

Southwest Has Transitory Pick-Up

Operators report a recent very slight and transitory improvement in market conditions in the Southwest, partly the result of cool weather, which caused a light flurry in domestic grades, and partly the result of increased industrial activity. The improvement was not sufficient to affect the rate of production. Little shaft coal is being mined in Kansas, and most shovel coal is being crushed. Henryetta still is closed down, while storage prices on Arkansas coal have had little or no effect on the market. Kansas shaft screenings are fairly firm at \$2.75, while crushed mine run

generally is quoted at \$2.60, with some being sold as low as \$2.50.

In Colorado the coal market is very dull and consumers are backward in purchasing storage coal even at prevailing low prices. Operators average about two days a week. More than half of the mines are shut down due to the light demand for domestic and steam coal. There has been no change in prices since May 1. Walsenburg-Canon City domestic lump is \$4.50; nut, \$4.25; Crested Butte high-grade Nos. 1 and 2 anthracite (furnace size), \$6.50; Nos. 3 and 5 (base burner size), \$6.75. The mines are having no trouble in securing all the labor they want at the 1917 scale.

Utah operators and dealers are passing through a very quiet period. The mines are working scarcely two days a week, and even at that 200 to 250 cars are piled up on the tracks at present. This is about 50 less than a few weeks ago, operators having decided to keep them down on account of the difficulty in handling cars when the tracks are crowded with "no bills." Industries taking coal are few. The mines and smelters are taking some right along, but not so much as they were. Cement plants are buying a little, but the sugar companies have not entered the market yet. Weather conditions are such that little coal is needed for heating purposes. Prices continue firm. The operators are just about convinced that it does not pay to make storage rates, and it is thought none will be made this summer, for the first time in years.

Cincinnati More Cheerful

While no great changes were evident in the general situation at Cincinnati during the past week, the gains in the market held and orders were better than for weeks past. Operators' representatives and direct selling agencies are more cheerful as some of them are booked three to four months ahead. This is eliminating much dickering and price shaving.

Very little block coal is to be had under \$2 these days and with Hazard-Harlan operators asking \$2.15 and some other southeastern Kentucky producers asking even \$2.25, West Virginians who are sold up on the large sizes refuse to touch spot orders under \$2.25. Egg prices on bituminous have held under the stiffening influences of the past couple of weeks. Two-inch, too, is in a better position, though lake buyers are doing all in their power to hold it to the lower levels. Mine run is a bit stronger if anything. The only sign of weakness is in slack, which has eased a trifle.

In smokeless lump is firm at \$3 and not much egg is to be had under that price. Mine-run still is firm and by-product takers are holding the screenings market steady despite an increase in prepared sizings.

Retail business has not brightened in spite of a concentrated advertising campaign by some of the locals. The river stage is good with tows and tugs working up to capacity.

Steam demand at Columbus shows slight improvement in many ways. Contracting is not very brisk but some agreements for steam tonnage have been entered into and others are pending. As the amount of distress coal has been greatly reduced because of the discontinuance of consigning coal, steam users are looking more and more for settled agreements. Prices on contracts range from 20 to 35c. lower than a year ago on the same grades and sizes. Railroad fuel is moving in normal channels and the tonnage is about the same as usual. Utilities also are taking a good quantity while coal for school and municipal purposes is being sold to a certain extent. The tone of the trade is slightly better than was the case several weeks ago and a steady improvement is looked for.

Domestic trade is dull and featureless with only a small

amount moving. Pocahontas operators have strengthened their prices, which has caused some retailers to place orders for smokeless grades. Dealers have succeeded in cleaning up to a large extent and outside of taking in some fancy grades are playing a waiting game. Retail prices are still weak and irregular. Screenings are showing more strength, due largely to the reduced production of lump and prepared sizes.

Lake trade is now in full swing but the bulk of the business is from mines in West Virginia and Kentucky. Lake contracting is not brisk because of the unsettled condition of rates and also because of the general feeling about prices.

Production in the Southern Ohio field ranges from 15 to 18 per cent of capacity. A large part of the output comes from co-operative mines.

The trade in eastern Ohio continues exceedingly quiet, with few inquiries for coal. Operators of union mines in Ohio are unable to compete with non-union coal offered in these markets. Furthermore, many of the large industrial plants are operating only part time and their consumption of steam fuel is at a minimum. Retailers are placing few orders with the mines.

The keen demand for slack and nut-and-slack which existed a week ago has subsided somewhat and the prices on these grades have accordingly receded about 10c. per ton. No distress coal is appearing in the market because of unprofitable experiences in shipping coal on open consignment. Ohio operators have not yet begun to participate in lake trade, due to unsettled rate conditions. Less than one-third of the mines are working, and these are not working much better than 30 per cent of capacity.

Price Tendency Firmer at Pittsburgh

With operators more conservative and less aggressive there is now scarcely any distress coal at Pittsburgh though there used to be considerable. Pittsburgh steam mine-run is now quoted at \$1.90@2 against \$1.75@1.90 for some time past. Little of this description of coal has been moving of late, most of the steam coal going as 3-in. lump, with the attendant slack. Average receipts of mines on all grades are not discernibly better than a month or two ago. The Pittsburgh Coal Co. has closed four more union mines, leaving only two in operation.

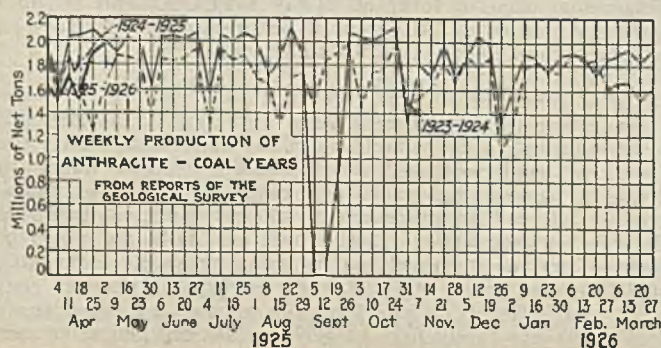
The Buffalo market is dull and unchanged. There is something of a scarcity of slack, for shipment to the lakes is still rather light and the making of three-quarter for that trade will be moderate till the rail rates from the mines are fixed up. Buffalo looked for a reduction on the coal that comes this way, and not getting it the amount is not expected to be heavy. Still the water movement of coal continues pretty heavy, in spite of the fact that the railroads have absorbed so much of it.

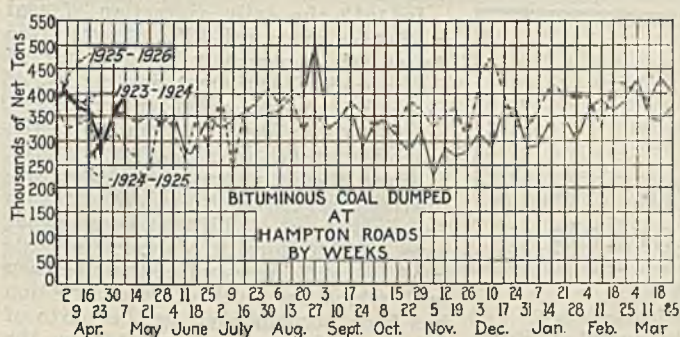
Competition Keen in New England

Competitive selling continues the only feature of the steam coal market in New England. The current situation simmers down to a season of price-trimming on as extended a scale as we have known in years, and it will take patient and resolute measures on the part of producers to restore anything like a proper balance between output and net returns. In this connection, the present developments in union districts of central Pennsylvania are being observed here with great interest. Coal is being offered here that flows from what are normally union mines and at prices that disclose wage arrangements at less than the Jacksonville scale, but it remains to be seen whether such coal will prove to be any factor in the spring market.

Quotations on smokeless coals continue to be anything but horizontal. The Western and line trades apparently have been a disappointment, for there are insistent efforts to increase the volume via the Virginia terminals. Quotation at \$4.20 is still heard for No. 1 Navy standard Pocahontas and New River, per gross ton, f.o.b. vessel at Hampton Roads, with a few conservative shippers holding for \$4.25@4.35. Slack and nut and slack also are freely offered at prices well below those quoted, but buying at this end is no more general than a month ago. In none of the industries here is there any snap, and for the present there will be few consumers disposed to buy coal for consumption next winter, even at today's bargain prices.

On cars at Boston and Providence there is little change from a week ago. Prices continue at the \$5.25@5.40 level, with "offers" frequently heard from.





All-rail from central Pennsylvania and at the Philadelphia and New York piers there is little tonnage changing hands. It is a discouraging outlook for operations in those districts, but a few operators here and there show some determination to correct what the trade must regard as an impossible situation.

New York Sees Reassuring Auguries

Hopefulness was a little more manifest in the bituminous market at New York at the end of the week, but the optimism was not based on any increased business but upon indications. There is no better movement of spot coals, but contract coals are more willingly taken.

Some contract renewals were reported and others are in a fair way to be closed. Prices are said to be in close proximity to current spot quotations, which it is generally thought are about as low as they will go. There is a feeling that business will be better toward the end of the month.

Tidewater coal moves steadily with practically no accumulations. Cars on the piers average about 1,300 a day.

At Philadelphia reduced production is the story one hears on every side, and the consumer displays little interest in purchases. All the concerns desiring contracts seem to have closed them, though many of them continue to buy a fair proportion of their needs on the market. Some concerns with their own mines have been closing down and trying to take care of their trade with purchased coal.

Railroad fuel buyers have been a little more active recently, particularly in the high-volatile fields, and some fair sized business has been closed.

Conditions at the water front are just ordinary, with only an occasional cargo clearing. There has been something of an increase in the clearances of merchant ships lately and this has given a slight impetus to the bunker trade.

The general price situation remains soft, except possibly in gas coals, where, on account of the strike in the Fairmont region, there is an inclination to more firmness.

While operators admit there is a curtailment of production as a result of the West Virginia strike, Baltimore is getting more than enough coal from there and from regions not touched by the strike to take care of present demands. That this is true is shown by the fact that the competition in soft-coal lines is confined to selling and not to buying. The fact that prices remain remarkably low also proves that the strike has not really hit the market as a whole, although it affects certain operators. The first eight days of May showed a complete lapse of export movement as far as coal is concerned.

All Lines Quiet at Birmingham

There is little activity in any line of the coal market at Birmingham at present. Spot inquiry is weak and bookings comparatively few and consumers in the open market are buying coal only as needed. Contracting is restricted almost entirely to renewals by industrials, railroads and utilities. The Illinois Central R.R. during the week contracted for its fuel supply for the next twelve months in this field. Cement plants and cotton mills continue consistent users and are consuming a large tonnage. Railroads are taking about the minimum allotments provided in contracts. No change in the bunker market, conditions as to consumption in this direction showing no improvement over the past month.

Domestic coal is moving very slowly. There is no spot demand and deliveries on contracts are at a minimum. Many of the large yards still have a great deal of coal carried over from last year and consumers are showing little interest in taking it off the dealers' hands.

Hard Coals Move Briskly at New York

Demand for egg, stove and chestnut sizes of anthracite and the tendency to contract for No. 1 buckwheat coal featured the New York market last week. All sizes were in good shape, stove being in particularly heavy demand and short with most producers, especially the smaller. Egg coal is moving in surprising volume, due in part to the willingness of stove-coal consumers to take the larger size rather than wait for their favorite coal.

Chestnut coal, which is not in good favor with New York City consumers, is in heavy call along the line. There is a good movement of pea coal and the surplus is not large.

Most of the larger operators are booked ahead for several weeks, but none have difficulty in disposing of whatever tonnage they have in domestic coals. Several large contracts for No. 1 buckwheat and for rice were reported as having been closed. It was said that full company circular of \$2.50 and \$2 respectively were the prevailing prices. The better grades of all three sizes of independent coals are being quoted at about 10c. above company prices.

At Philadelphia there was a slight falling off in activity in the trade, both retail and wholesale, last week, though the weather has remained unseasonably cool. The expiration of the miners' wage agreement in September has helped the market some.

Stove is in strong demand, and some shippers are able to get slight premiums on this account. Egg also is picking up very much, and there is very little free tonnage of this size offering. Among the producers who have changed all of their screens there is considerable surplus of nut, while some of the company shippers who are producing very little new size are just about able to fill their orders. Pea remains in good demand.

The steam sizes are in a pretty fair position and a sizable tonnage is now being stored by purchasers so as to have something on hand by Sept. 1. While some buckwheat and rice is still offered off circular, the quantity has decreased. Barley is in good demand.

While some Baltimore dealers continue to report some wholesale rate advances, on particular sizes at least, the local retail price of hard coal here remains unchanged and undoubtedly will hold as at present till June 1. That there will be some advance then seems to be pretty sure. The demand for fuel continues rather slack, and while dealers are making every effort to have customers buy early the response is only fair.

The anthracite trade at Buffalo has run down pretty fast since the first of the month, as it usually does when the sliding-scale price is in force. It is not likely that it will come up again this season, unless the present cool weather keeps up through the month or labor troubles appear. The idea that there will be a strike next fall seems to become more general as time goes on, but the average consumer refuses to be frightened. Lake shipments for the week were 60,000 tons, of which 30,700 tons cleared for Duluth and Superior, 20,100 tons for Milwaukee, 6,500 tons for Sheboygan and 2,700 tons for Racine.

Connellsville Coke Market Stagnant

The Connellsville coke market remains stagnant as to transactions. Little spot furnace coke is being sold, spot foundry coke is unusually dull, and there has been no contracting and no inquiry for contract coke, either furnace or foundry.

Prices are not quotably changed. Spot furnace is \$3@ \$3.25, with some, though not a great deal, available at \$3, and non-metallurgical users sometimes paying up to \$3.25 for choice brands in single carloads. Spot foundry remains at \$4@ \$4.50, with sales at \$4.50 quite light, and with a little coke available at slightly under \$4, perhaps technically standard, but not of generally acceptable quality.

Car Loadings, Surpluses and Shortages

| | Cars Loaded | |
|--------------------------------|--------------|-----------|
| | All Cars | Coal Cars |
| Week ended April 25, 1925..... | 959,225 | 147,330 |
| Previous week..... | 922,778 | 134,172 |
| Week ended April 25, 1924..... | 878,387 | 117,572 |
| | Surplus Cars | |
| | All Cars | Coal Cars |
| April 30, 1925..... | 337,181 | 160,913 |
| April 22, 1925..... | 344,198 | 173,455 |
| April 30, 1924..... | 329,489 | 193,061 |
| Car Shortage | | |

Foreign Market And Export News

Better Tone in British Coal Market; Output Advances Sharply

Stocks of coal have been slightly reduced in Wales owing to the better demand over Easter and the holidays. Some of the collieries have been working more regularly and no more pits have closed down. A feature is the chartering of tonnage to load for South American and Mediterranean ports, though no heavy contracts for those parts have been disclosed. The Portuguese Railways have contracted for 31,000 tons of large and small steams for delivery before the end of June. Beyond this there is little to report, though the general tone of the entire market has undoubtedly strengthened. The collieries are averse to considering existing quotations for distant deliveries, owing to the possibilities of wage troubles.

The North of England market is slightly firmer due to depreciated stocks. Prices remain about the same and there are no contracts worth reporting, the best being 7,000 tons of Wear gas coals for Bordeaux at 23s. 3d. c.i.f.

Coal output by British collieries in the week ended April 25, a cable to *Coal Age* states, totaled 5,268,000 tons, compared with 3,273,000 tons in the preceding (Easter) week.

Belgian Market Unchanged; Foreign Competition Keen

The situation in the Belgian coal market has not changed. The hope is therefore lively that rates will fix themselves at their present levels. Foreign coals are in sharp competition—from the French, the Dutch and even the German side, though in the last case the licenses to import have been much more restricted. To this must be added the competition between the home basins, Borinage and Limburg in particular.

There is no improvement in patent fuels. The demand for coke is insignificant and prices are unsteady. Rates are unchanged as yet, but a decrease is expected some time.

Ninety-three per cent of the 51,000 miners in the Belgian coal fields voted May 9 to strike if the operators reject

the men's proposal to accept a 5 per cent reduction in wages provided a second 5 per cent reduction, planned for June, is abandoned.

Hampton Roads Market Firm With Coal Scarce

No improvement in coal activity was noted at Hampton Roads last week, though the market held firm because of scarcity of coal. No strength was imparted to the market by demand for cargoes.

The bulk of the meager supply at the piers was for special orders. Practically no speculative coal was being shipped from the mines, many of which were running on less than three days a week. Several cargoes for Canada during the week constituted one feature of the trade. Bunker business was fair, and foreign business holding its own.

No Sign of Improvement in French Coal Market

Inactivity reigns on the French coal market and there is no promise of improvement in the near future. In spite of alluring April prices, the lowest for the whole year, demand for home fuels has not been overactive. Screened bituminous and flaming coals have suffered most. Sugar refineries have begun to take on supplies for the coming season and will continue until June and July.

Freight is easier at 22@23 fr. Bethune-Paris.

Deliveries of indemnity fuels from the Ruhr to France between April 1 and 11 totaled 176,700 tons, consisting of 58,700 tons of coal, 109,800 tons of coke and 8,200 tons of lignite briquets.

During the first three weeks of April the O.R.C.A. received from the Ruhr 217,187 tons of coke, an average of 10,300 tons per day.

Coal output by French mines totaled 3,809,406 tons during February, which comprised 24 working days, making an average daily output of 158,725 tons. This, according to advices received by the Bankers Trust Co., is just a little under the post-war record production figure attained in January.

In 1913 the daily extraction of coal in France averaged 136,147 tons; this figure fell enormously as a result of the war and consequent destruction of the mines in the northern provinces, but in 1922 it began to creep up again, reaching 121,064 tons in January, 1923.

Since then the average daily production progressed to 144,680 tons in the beginning of 1924 and somewhat over 160,000 tons in January of this year. A striking proof of the efficiency with which the work of reconstruction has been accomplished in the parts of France which were devastated by the war can be seen in the fact that the coal mines in the departments of the Nord and the Pas-de-Calais now yield on an average 1,338 tons more a day than they did before the war.

Export Clearances, Week Ended May 9, 1925

| FROM HAMPTON ROADS | | Tons |
|---|--|-------|
| For Cuba: | | |
| Nor. Str. Lovstakken, for Cienfuegos | | 2,527 |
| For Canada: | | |
| Br. Str. Vera T. Kathleen, for | | 4,423 |
| Montreal | | 5,127 |
| Br. Str. Eskbridge, for Montreal | | 5,300 |
| Nor. Str. Rygja, for Montreal | | 4,523 |
| For Mexico: | | |
| Amer. Str. Lewis K. Thurlow | | 2,006 |
| For Miquelon: | | |
| Nor. Str. Facto, for St. Pierre | | 3,880 |
| For Brazil: | | |
| Nor. Str. Onega, for Para | | 6,885 |
| For Italy: | | |
| Ital. Str. Valdirosa, for Porto Ferrajo | | 7,561 |
| For Nova Scotia: | | |
| Amer. Str. Suffolk, for Sydney | | 2,119 |
| For Peru: | | |
| Nor. Str. Augvald, for Callao | | |

| FROM PHILADELPHIA | | Tons |
|---------------------------------|--|------|
| For Cuba: | | |
| Br. Str. River Taff, for Havana | | |
| Nor. Str. Certo, for Havana | | |

| Hampton Roads Pier Situation | | | |
|------------------------------|--|----------|---------|
| N. & W. Piers, Lamberts Pt. | | April 30 | May 7 |
| Cars on hand | | 1,283 | 1,423 |
| Tons on hand | | 87,546 | 88,779 |
| Tons dumped for week | | 118,869 | 116,229 |
| Tonnage waiting | | 10,000 | 12,000 |
| Virginian Piers, Sewalls Pt. | | | |
| Cars on hand | | 624 | 644 |
| Tons on hand | | 44,200 | 45,600 |
| Tons dumped for week | | 92,287 | 74,768 |
| Tonnage waiting | | 2,887 | 19,750 |
| C. & O. Piers, Newport News: | | | |
| Cars on hand | | 2,233 | 2,602 |
| Tons on hand | | 110,045 | 123,435 |
| Tons dumped for week | | 106,468 | 158,002 |
| Tonnage waiting | | 12,920 | 35,665 |

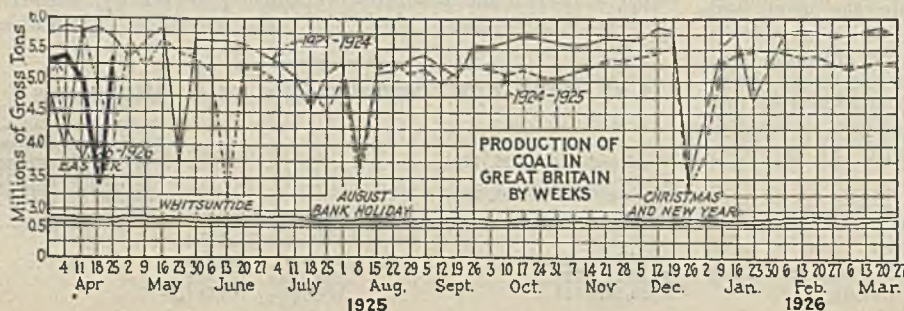
| Pier and Bunker Prices, Gross Tons | | | |
|------------------------------------|--|-------------|-------------|
| PIERS | | May 2 | May 9† |
| Pool 9, New York | | \$4.70@4.85 | \$4.70@4.85 |
| Pool 10, New York | | 4.50@4.65 | 4.50@4.65 |
| Pool 11, New York | | 4.25@4.50 | 4.25@4.50 |
| Pool 9, Philadelphia | | 4.65@4.90 | 4.65@4.90 |
| Pool 10, Philadelphia | | 4.35@4.55 | 4.35@4.55 |
| Pool 11, Philadelphia | | 4.25@4.30 | 4.25@4.30 |
| Pool 1, Hamp. Roads | | 4.35 | 4.35 |
| Pool 2, Hamp. Roads | | 4.20 | 4.20 |
| Pools 5-6-7, Hamp. Rds. | | 4.10 | 4.10 |

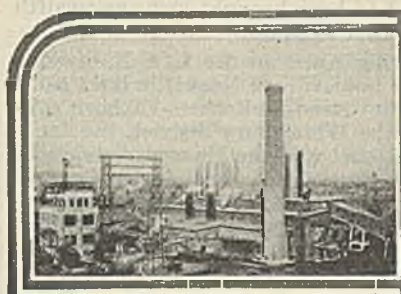
| BUNKERS | | | |
|-------------------------|--|-------------|-------------|
| Pool 9, New York | | \$4.95@5.10 | \$4.95@5.10 |
| Pool 10, New York | | 4.75@4.90 | 4.75@4.90 |
| Pool 11, New York | | 4.50@4.75 | 4.50@4.75 |
| Pool 9, Philadelphia | | 4.80@5.05 | 4.80@5.05 |
| Pool 10, Philadelphia |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

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

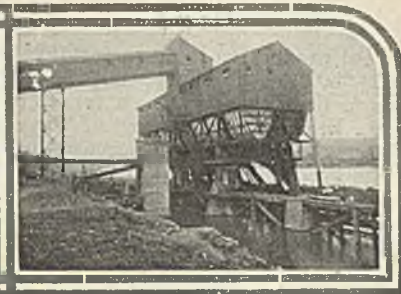
| Quotations by Cable to Coal Age | | | |
|---------------------------------|--|-----------------|-----------------|
| Cardiff: | | May 2 | May 9† |
| Admiralty, large | | 26s. 6d. @ 27s. | 26s. @ 26s. 6d. |
| Steam smalls | | 15s. 6d. @ 19s. | 15s. 6d. @ 16s. |
| Newcastle: | | | |
| Best steams | | 17s. 3d. | 19s. |
| Best gas | | 19s. @ 19s. 6d. | 19s. @ 19s. 6d. |
| Best bunkers | | 18s. @ 18s. 6d. | 18s. |

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





News Items From Field and Trade



ALABAMA

The Yolande Coal & Coke Co., of Birmingham, announces that it will spend \$300,000 on development work to begin at once on coal lands at Connellsville, in the lower part of Jefferson County. A large shaft is to be opened and the Blue Creek coking coal will be mined.

COLORADO

Coal producers on Fort Lewis school lands will be required to pay a royalty of only 10c. a ton to the school district under the terms of a bill signed April 27 by Gov. Clarence J. Morley. The measure, House bill No. 506, introduced by Representative Tobey, provided for a reduction from the customary 15c. royalty to permit successful mining on the Fort Lewis coal lands. In this district, experts declared, mining was financially unsuccessful under the higher royalty.

Harry Kelley sold his coal mine property at Cortes, about the middle of April to Alexander Dyet and Frank Conway.

The suit of the Victor-American Fuel Co. against the Huerfano Agency Co. and eleven subsidiary companies for \$500,000, for alleged infringement of copyright, was set for trial in June by U. S. District Judge J. Foster Symes, April 29, after he had overruled a demurrer on the part of the defendants, in which they sought to have the action dismissed. The Victor-American company alleges the defendants have imitated copyright labels on coal produced in the Victor-American mines, seeks to have the practice stopped, and asks damages for alleged injury done so far by the defendants.

Copies of the topographic map of the Pilot Knob coal and oil district in Routt County, which were made by federal surveying parties last summer, were received in Denver Saturday by Charles W. Henderson, mineral geographer of the U. S. Geological Survey. The maps will be a great aid to coal and oil prospectors and will eliminate approximately 70 per cent of the geological cost of locating oil domes and coal deposits, Mr. Henderson said. The maps cover the district from California Peak on the north to the Yampa River on the south, and from Elk Head Creek on the west to Hahn's Peak on the East. Albert Pike and W. T. Chenault, surveyors of the Geological Survey at Washington, D. C., did the field work for the maps.

There has been filed with the county clerk and recorder a special warranty deed from the Interstate Coal Co. to the Bear River Coal Co., transferring 480 acres of land in Township 6, Range

87. The consideration is given as \$32,019.21.

Clarence Kurtz and Clyde Biggs of the Biggs & Kurtz firm, in company with Charles Rump, head of the Redlands project, recently completed a deal for the purchase of the entire properties of the Book Cliff Company, including the mine in the Book Cliff mountains to the north of Canon City, the railroad terminal properties on West Main Street, and the other properties owned by the company, including all of the railroad equipment. The deal was completed by Charles E. Cherrington, who spent some time in Denver recently in connection with the transfer.

IDAHO

H. F. Samuels, progressive candidate for Governor in the last campaign, who has been devoting his time to reorganizing the Brown Bear coal mine in Teton County, announces that as soon as the tunnel which is being driven to cut the beds at a more convenient approach is completed the property will be ready for large-scale production. This tunnel is being driven 200 ft. per month and will have a total length of 2,800 ft. It will carry the coal from the veins to the tippie, where it will be loaded into the cars, eliminating a wagon haul of a mile and a half. The old company had \$2,400,000 of securities issued, while the new one will have but a trifle over \$600,000.

ILLINOIS

Seventy-nine mines in districts 5 and 9 of Illinois during the week ending April 25, operated but 10.95 per cent of time. Fifty-five of the mines were idle the entire week. The 24 mines which worked operated but an average of 46.5 per cent of the time.

The Consolidated Coal Co. of St. Louis, on April 30 closed its No. 7 Mine at Herrin. This let out 700 employees. The mine is down indefinitely on account of slack business.

Fred Hummell and Sons, Willisville, have opened a new coal mine on the Henry Kocher farm west of Schuline, a few miles from Sparta. They have a 4½ ft. vein of coal and have erected a 35-ft. tippie. The boilers and other machinery are now being installed.

C. M. Moderwell & Co., Chicago, announce that they recently merged with the Twin States Fuel Co., of Huntington, W. Va. Walter A. Cunningham of that concern has been elected a director of Moderwell & Co. and Roy H. Cunningham has been elected vice-president in charge of the Huntington branch office. The company maintains branches at Minneapolis and Detroit as well. The Twin States Fuel Co. had consider-

able holdings in the Logan County, Cabin Creek, Thacker, Elkhorn and Pocahontas districts.

Receivers for the Chicago & Alton R.R. hold a gloomy attitude on the outlook for business on that road during the current year. The pamphlet report for the year ended Dec. 31, 1924, shows a net loss for the Alton of \$1,035,242 after taxes, rental of leased lines, bond interest and other fixed charges, compared with a surplus after charges of \$1,117,144 in the preceding year. The depression in the coal industry is believed to have been responsible for a large part of the road's financial difficulties.

The Groveland Coal Mining Co. of Chicago, has merged under the name of Groveland-LaMarsh Mining Co., the mining properties of the Crescent Coal Co., located in the LaMarsh district, Peoria County, with the properties of the Groveland Coal Mining Co., located in Tazewell County. The combined properties have a daily capacity of approximately 7,000 tons. The entire tonnage of the combined properties will be handled by the Groveland Coal Mining Co., whose general offices are located in Chicago.

INDIANA

Suit asking appointment of an ancillary receivership has been filed in federal court, at Indianapolis by Fred O. Valentine and Alfred H. Moore, co-receivers for the Mohio Coal & Mining Co. The complaint alleges that the co-receivers had claims against Alfred E. and Meta Malsbary, of Lafayette, amounting to \$4,000, and should be given authority to prosecute the claims on behalf of the Mohio company. The co-receivers asked that either they be given authority to serve as ancillary receivers in Indiana or that the court name some representative to press the claims against the Malsbarys.

Judgment of \$3,400 against the State of Indiana has been awarded to the Ayrshire Coal Co. by the Marion county court of claims, Indianapolis. The Ayrshire company brought suit for \$15,000 against the state, alleging that on May 1, 1923, the company entered into an agreement to supply all the coal for Indiana University, at Bloomington, and for the Indiana Reformatory, then at Jeffersonville. The complaint set out that the state did not abide by this agreement and bought coal from other companies instead of the plaintiff. The company made preparations and mined a large quantity of coal for this purpose, the complaint said, which it was forced to sell at a loss because of the alleged failure of the state to take all coal contracted for.

IOWA

Coal production in Iowa for 1924 was 5,554,950 tons compared with 6,120,332 tons in 1923, according to a report made by L. E. Stamm, secretary of the state mine commission. The increased use of Eastern coal by Iowans is given as the reason for the decreased output. The total number of miners employed in 1924 was 12,553, compared with 13,129 in 1923. In 1922 the records show that 13,790 miners were employed.

KANSAS

Twelve miners employed by the Western Coal & Mining Co. in south-eastern Kansas, completed courses in mine gases at the Kansas State Teachers College, at Pittsburgh, May 1. The class was conducted by J. J. Delaney, under the direction of Prof. J. A. Yates, head of the extension division of the college.

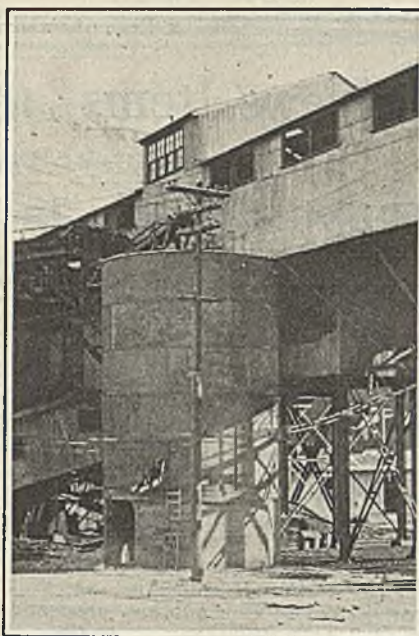
Following several alleged attempts by union miners to intimidate miners working in the Doubleday Coal Co.'s non-union mine near Gross, Matt L. Walters, president of District 14, United Mine Workers, was arrested May 8. Following the action of the U. S. Supreme Court last month in declaring invalid the Kansas Industrial Court law, demonstrations were held by union miners, who visited non-union mines in the southeastern Kansas field, in a proselyting campaign. The march was led by Walters and by Alex Howat, erstwhile president of the district, expelled from the union for calling an outlaw strike. Several of the mines were unionized. The Doubleday mine was not. Immediately after the April celebration Attorney General Charles B. Griffith, of Kansas, visited the field, and guaranteed the safety of miners who desired to work outside the union, and warned against any interference with them. Harry W. Warren, of Fort Scott, was appointed a special Assistant Attorney General to assist in protecting them.

KENTUCKY

Reid Patterson, of Pineville, announced April 28 that he had just sold the Mocking Bird Coal Co., mining Hazard seam coal.

The Kentucky Educational Association, composed of the teachers and educators of the state, at the conclusion of the state convention in Louisville April 25, adopted a number of resolutions. Simeon E. Leland, chairman of the Committee on Educational Finances, submitted a report in which he held that a tonnage tax on coal would not work out satisfactorily. He advocated an ad valorem tax by the capitalization of net returns from mining properties. He held that such a method assures the state that mines are taxed equally with other property, and guarantees mines against discriminatory taxation. His argument was for a state income tax.

On May 4 E. A. Taylor, of Greenville, was appointed receiver for the Phoenix Coal & Mining Co., of Tarma, near Drakesboro, in western Kentucky, on action brought by James B. Torbert, of



Out in New Mexico

This is the junior nut storage tank at a Phelps Dodge Corp. mine at Dawson. This storage serves the wagon trade of the town.

Pineville, formerly president and owner of the Phoenix Coal Co., which Torbert sold to the Phoenix Coal & Mining Co. about four years ago, receiving \$100,000 in cash and notes for the balance. Some weeks ago Torbert filed suit, alleging that balances were due and unpaid. It is indicated that the property will be sold to meet the mortgage claim held by Torbert. Shortly after the sale of this property to the Lackey interests, the death of A. C. Lackey, along with a long period of slow sales, labor troubles, etc., made it impossible to operate profitably, and caused the failure of the Dixie Fuel Co., an allied selling organization. The Phoenix Coal & Mining Co. was the only mine in the field that signed the Jacksonville agreement last year. After a few months of operation at a loss the plant was closed down and has been idle since. Since selling the western Kentucky property Torbert has organized a new coal concern, which is operating in southeastern Kentucky, in the Pineville territory.

Two men were killed and three severely injured by an explosion May 3, 200 ft. underground in Mine No. 5 of the Norton Coal Co., near Nortonville. The dead are: Finch Southard, bottom cager, and Jack Rodgers, top man. A crew of seven men compose the Sunday night shift. When the miners, led by Southard, came to the 200-ft. level in the shaft, a pocket of gas that had formed during the day exploded when it came in contact with head lamps worn by the men.

It is reported from eastern Kentucky that two coal mines in Pike County were sold under the hammer last week, bringing \$7,500 each, for plants and equipment costing from ten to twenty times that much. The mine of the Winston-Elkhorn Coal Co., near Marrowbone, including tippie, leases, machinery, town and general equipment, is reported to have cost over \$150,000. The plant of the Kewanee Coal Co., at Kewanee, was also sold and was re-

ported to have brought just one-twelfth of its cost to equip.

During April on the L. & E. division of the Louisville & Nashville R.R., serving the Neon-McRoberts-Elkhorn district, the Whitesburg district, the Jackson district and the Hazard district, 38 mines were closed until further notice. These were divided as follows: Neon-McRoberts-Elkhorn district, 6; Whitesburg district, 10; Jackson district, 13; Hazard district, 9. Preliminary reports for May show that a total of 58 mines in this field will be closed indefinitely.

MARYLAND

The Baltimore Coal Exchange has elected J. F. Palmer, of Cumberland, Md., secretary, succeeding the late Julius Hellweg. Mr. Palmer has been serving as secretary of the North Potomac district organization of soft coal operators.

MISSOURI

William R. Prather, for six years manager and a stockholder of the Blackfoot Coal Co., at Columbia, bought the interests of his fellow stockholders May 2, and will operate the company's mine, three miles north of Columbia. The price was \$3,200. Those who disposed of their holdings to Mr. Prather were S. M. Stephenson, J. S. Rollins, Ed. Keene and Ray Warner.

NEBRASKA

The Swift Lumber & Fuel Co., of Lincoln, has succeeded the National Coal Mining Co.

OHIO

The Pittsburgh Coal Co. has announced its intention of closing all its mines employing union workers, being unable to compete with mines having non-union help, whose scale is 20 to 25 per cent lower. In the Hocking Valley, Ohio's richest coal field, only 14 railroad mines out of 388 are in operation. In eastern Ohio only 32 out of 107 railroad mines are loading coal and those are operating only a few days a week.

One of the last steps toward closing out the affairs of the Southern Ohio Coal Exchange, Columbus, was taken May 7 when W. W. Metcalf was named receiver for the exchange upon an action brought by the Capital Motor Co., owner of the building in which the exchange was housed. The petitioner claims unpaid rent to the amount of \$2,607 in the form of a judgment obtained in court. There are other creditors and steps probably will be taken to clean up affairs and to form another organization of southern Ohio operators. W. D. McKinney, who has been acting as secretary, is still on the job.

The Crown Mine, at Rose Farm, has contracted for its output for the coming season for commercial purposes and has resumed operations.

OKLAHOMA

The Trojan Coal Co., of Muskogee, is reported about to make improvements to its mines at Warner, and will build 25 miners' houses.

PENNSYLVANIA

Employees of the Jermyn colliery, an independent operation at Old Forge, who recently voted in favor of accepting a 10 per cent reduction in wages, after listening to an address by Rinaldo Cappellini, president of District 1, voted unanimously to reconsider their proposal and to stand by the present working agreement until its expiration on Aug. 31.

The business trend in the Connells-ville coke region is still downward. The H. C. Frick Coke Co. has closed down a few more plants away from the river last week. The Monessen Coal & Coke Co., subsidiary of the Pittsburgh Steel Co., reduced to half time, as did also the Baton Coal & Coke Co.

The Reading R.R. transported 1,523,979 gross tons of revenue coal in March last compared with 1,659,743 tons in the corresponding month of last year.

The Kramer and Eriton mines of the Erie Railroad interests are operating again after a suspension of two weeks, having been leased to the Northwestern Mining Exchange Co., which is paying the 1917 scale. When the shutdown took place the Erie interests declared that the union scale could not be paid and that the road would use West Virginia coal. Steady work, full force, is promised.

The Heisley Coal Co., operating large mines at Nant-y-Glo, Cambria County, is preparing to operate its mines under the 1917 scale. Nant-y-Glo is a strong union center but officials of the Heisley company announce that more than one hundred miners have applied for jobs in the mines under the 1917 scale. A number of special police are on duty as a safety measure.

The Wolf Coal Co., of which Joseph Sarricks, of Freeland, its vice-president, has entered into an agreement with the Lehigh Valley Coal Co. to reopen the old Woodside mine, on the outskirts of Freeland. This mine was flooded many years ago. Pumps are to be installed in the near future to drain the workings. When mining begins the product will be taken to the Drifton breaker for preparation.

The total production of bituminous coal in Pennsylvania last year was 128,751,028 tons and the total production of coke, 9,551,175 tons. Of the total, 110,707,310 tons of coal was sent to market, 2,498,666 tons was used at the mines and 2,458,888 tons was sold to local trade and used by employees. During the year 13,086,164 tons was used in the manufacture of coke.

Following an address delivered to 400 men employed in the No. 4 shaft of the Ewen colliery of the Pennsylvania Coal Co., at Pittston, by District President Rinaldo Cappellini, on April 25, the working force voted unanimously to put forth their best efforts to increase the tonnage and co-operate with officials of the company in an effort to place the workings on a paying basis. The No. 4 shaft had been idle for nearly two weeks and had worked not more than four weeks since last November. Finding that they could not get the shaft on a paying basis the officials of the company closed it down. The shutting down of the shaft also affected hundreds of employees working in and about the breaker.

The Pennsylvania Coal & Coke Corporation and subsidiaries report for 1924 a deficit of \$425,234 after all charges, compared with a surplus of \$741,704 in 1923. Net sales for the year were \$5,959,582. Earnings in 1923 were \$4.29 a share on \$8,630,300 capital stock (par \$50). Surplus at the end of the year was \$1,560,871, against \$2,041,461 the preceding year.

Joseph Wisakunis, a coal miner employed by the Lehigh & Wilkes-Barre Coal Co., was recently fined \$10 and costs by Judge McLean for carrying matches into a gaseous section of the No. 5 mine.

The Pennsylvania Coal & Coke Corporation and subsidiaries report for the first 1925 quarter a deficit of \$158,684, against a surplus of \$1,002 for the same period last year. March deficit was \$30,910.

There were 68,761,275 gross tons of anthracite produced and shipped to market in Pennsylvania in 1924, 6,828,277 tons used at the collieries for steam and heat and 2,336,742 tons sold to

local trade and used by employees. The total gross tonnage was 77,926,294, or 87,277,449 net tons. Output last year was 5,000,000 tons less than in 1923, when 92,663,854 net tons was mined, despite the strike. The records of the State Department of Mines show there were 162,503 employees engaged in the coal industry in 1924.

UTAH

The Salt Lake City Commission has awarded a split contract for the year's supply of coal. The Martin and Citizens companies were awarded contracts for 7,500 tons of lump at \$5; the Citizens will furnish 3,100 tons of screened slack at \$3.10; 2,550 nut coal will be furnished by the Martin company at \$4.25; and 3,240 tons of mine slack by the Marsh Coal Co. at \$2.70 per ton.

The men who left the mines of the Independent Coal & Coke Co. a few weeks ago are still out. They are willing to go back to work if the other mines announce a similar cut—20 per cent with a similar reduction on all board and lodgings and cottage accommodation provided by the company—but none of the other operators has shown a disposition to follow so far. Just what the outcome will be no one will venture an opinion. The situation at present might be summed up in the statement that things are just sliding, owing to market conditions, as far as the Independent is concerned, and the other companies are exercising great caution.

VIRGINIA

The Raleigh Smokeless Fuel Co. has closed its office in Richmond. Manager Moore is in Norfolk and has not decided on a new location.

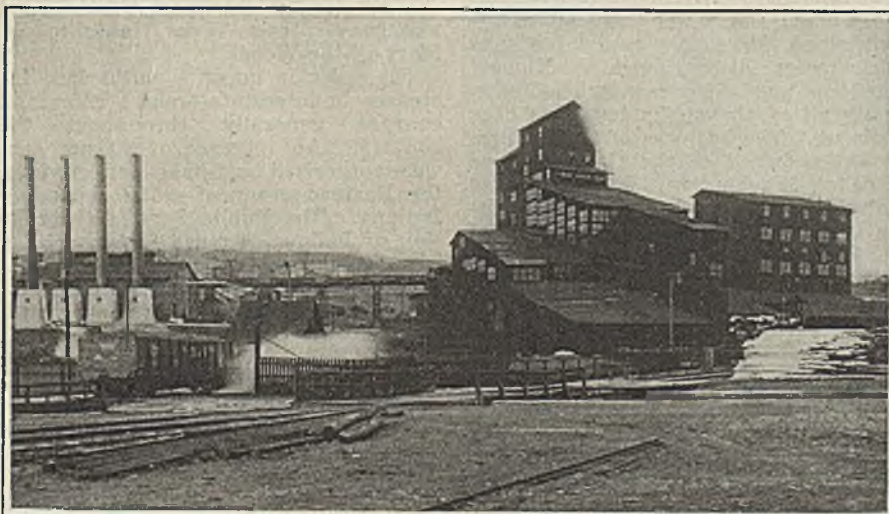
The Clinchfield Coal Corporation reports for the first quarter of 1925 net income of \$158,450 after charges, equal to 86c. a share on \$14,547,600 common stock after preferred dividends, compared with \$206,091, or \$1.19 for the corresponding period of 1924.

WEST VIRGINIA

The West Virginia State Department of Mines is arranging to have films snapped of miners while at work in order that correct methods of timbering, use of explosives and other subjects, will be shown. Scenes were snapped of the Barrackville mine disaster in order to teach safety work following catastrophes. Several duplicates will be made, which will enable the department to place one at West Virginia University, Morgantown, for the students in the mining course and others to be shown in the mining towns.

The Bethlehem Mines Corporation is Cleaning up Mine No. 41 at Barrackville, where an explosion in March killed 33 men, and hopes to have the mine ready again for operation about June 10.

A new compensation law, which provides for greater benefits to workers, has been passed by the State Legislature. This session of the law-making body was marked by a record attention to the demands of labor. The bill to



Gaylord Colliery, Kingston Coal Co.

This plant, which is located at Plymouth, Pa., has been in operation forty-four years. It is a slope mine, employs about 250 men and had an output of 85,000 tons of hard coal last year.

abolish the private mine and guard system failed by a close vote in the Senate, however. Other measures passed include a law requiring rock dusting and other protective measures in coal mines that will go far toward safeguarding the lives and limbs of workers. All proposals to outlaw strikes were defeated.

An issue of \$1,250,000 Pond Creek Pocahontas Co. ten-year 7 per cent convertible gold debenture bonds was placed on sale May 8 by Hayden, Stone & Co., New York. The company owns in fee 2,500 acres of virgin coal lands in the heart of the Pocahontas field, estimated to contain over 25,000,000 tons of recoverable coal, which property, upon completion during 1925 of development work and equipment, should have an annual output of at least 750,000 tons. It also owns the entire Capital Stock of By-Products Pocahontas Co., which controls by favorable lease 600 acres of coal lands in the same field estimated to contain over 5,000,000 tons of recoverable coal. This property produced 173,000 tons of coal in 1924. Additional equipment is being installed which should increase its output to at least 250,000 tons per annum. The management and sales organization are identical with those of Island Creek Coal Co. Debentures are convertible into common capital stock of the company on the basis of 6 shares of such stock for each \$100 debenture.

The following companies were organized in West Virginia in March: Good Will Coal Co., of Morgantown, capital \$5,000; Herman Coal Co., of Philippi, \$5,000; Bennett Coal Mining Co., of Wheeling, \$10,000; Johnston Mining Co., of Wellsburg, \$25,000; Boyd Mining Co., (non-resident), of Potomac Manor, with chief works in Maryland, \$50,000, organized by J. G. Boyd, of Potomac Manor.

The tax bill suggested by Governor Howard M. Gore increases the rate of the gross sales tax to be paid by the coal industry from $\frac{1}{16}$ of 1 per cent computed on the value of the coal produced and sold to $\frac{1}{8}$ of 1 per cent.

The officers of the newly formed Talbot Chambers Coal Co. are: T. W. Chambers, president; G. B. St. George, vice-president; Philip Hofer, treasurer, and I. W. Sharp, secretary. The company has purchased and is operating the Bunker mine, on Scotts Run. The company's office is at 149 Broadway, New York City.

Fire on May 5 destroyed three double houses of the West Virginia & Pittsburgh Coal Co. a half mile north of Wellsburg. The occupants, it is said, were non-union miners. Thirty persons avoided being burned by escaping in their night clothes. One miner had \$300 in paper currency destroyed by the fire, the money being secreted under a carpet. Brooke County authorities, who place the loss at \$35,000, believe that the fire was of incendiary origin.

R. M. Lambie, chief of the West Virginia Department of Mines, expects to reopen on May 25 the inquest in connection with the Barrackville mine disaster, which happened on March 17. Reconstruction of the mine where 34 men lost their lives is now under way,

with the probability that it will be completed by May 25. The Bethlehem Mines Corporation plan to resume operations at the mine about June 10. One additional body was found in the ruins by the crew working in the mine.

WISCONSIN

The Reeves Coal & Dock Co. dock property at Superior, Duluth-Superior harbor, was offered at auction for the fourth time May 6. As has been the case in the three former sales, no bids were received. The property will be offered again June 5.

James Patton, superintendent of the Ford coal dock at Superior, has received orders to prepare for shipments. Two boats, the Benson Ford and the Henry Ford II, will be put in the service and it is thought that they will haul coal all season. Last year 250,000 tons was brought up from Ford's Kentucky mines, and of this 75,000 tons remains on dock. Ford will still pursue the policy of selling in single carload lots to any consumer.

WYOMING

Hugh McLeod, of Acme, was appointed chief coal mine inspector for the state by Governor Ross on April 28. Michael Finnan, of Gebo, and John L. Dykes, of Rock Springs, were appointed assistant coal mine inspectors for a period of two years. The three men passed the highest in the examinations held for the positions, under the supervision of the state coal mine examining board. Nine men took the examinations.

WASHINGTON, D. C.

On May 1 the government began conducting its public land business with 45 instead of 84 local land offices located in the various states and Alaska. Abolition of 39 local land offices became effective on that date as a result of executive orders issued by the President and recommendations of the Interior Secretary and the Commissioner of the General Land Office. Of the 48 states in the Union, only 20 now have local land offices, exclusive of the Territory of Alaska, where three offices are maintained. The last remaining land offices were discontinued in Kansas, Michigan and Wisconsin, where practically all of the public land has been taken up. The business of these offices was transferred to the General Land Office at Washington. It is expected that a few additional offices will be discontinued after the reorganization of the General Land Office and the readjustment of the public land business has been completed.

CANADA

On April 30 an action was begun by the Attorney General of Canada against the Canadian Coal Sales Co., of Winnipeg, claiming \$160,628 to have been overpaid by the Government on contracts for the supply of coal to the Tuxedo military barracks at Winnipeg since 1920. This action is the outcome of the report of the commissioner ap-

pointed to investigate the charges of fraud brought against the company and several military officers.

The British Columbia Chamber of Mines, a Vancouver institution, is considerably exercised by a report from George Wilkinson, chief provincial inspector of mines, to the effect that during the first 11 months of last year 40,727 tons of coal was imported into British Columbia, as against an average importation of 12,105 tons for the corresponding period during the last five years. Moreover, Mr. Wilkinson states that the coal comes in duty free under the classification of lignite, though it is derived from a deposit at Bellingham, Wash., which the State Geological Department has classified as bituminous coal. The Chamber is agitating for a duty to be put on this coal.

Legislation providing assistance for the coking of bituminous coal has not yet been brought down at Ottawa and among the arresting influences, it is stated, are rumors of an attempted merger of the gas companies in the larger cities of Canada for the production of a quality of coke eligible for the proposed assistance. Strong representations have been made that the assistance to the proposed industry should be a subsidy based on the amount invested in plants rather than on a tonnage basis of the output, but this is little favored, nor are the prospects of it improved by rumors of a merger. The eventual assistance in all probability will be in the form of a bounty per ton.

Traffic News

I. C. C. Refuses to Modify Indiana Coal Rates

The Interstate Commerce Commission has declined to modify its order of Aug. 26, 1920, with respect to rates on coal from the Clinton, Linton, Brazil, Princeton and Boonville districts in Indiana to Crawfordsville, Sheridan, Logansport, Monticello, Anderson and Ft. Wayne—Docket No. 11894. At the same time the commission did modify the order with respect to rates and charges for the transportation of sand and gravel from Terre Haute to St. Mary-of-the-Woods.

The order in question authorized increases in interstate freight rates and charges generally throughout the country. An increase of 40 per cent was authorized and made effective in the Eastern group of states, including Indiana. The Public Service Commission of Indiana declined to authorize a like percentage of increase in the Indiana intrastate rates, but did authorize an increase of 33 $\frac{1}{3}$ per cent in coal rates and a 10 per cent increase in the rates on sand and gravel. Subsequently the federal commission found that the rates in Indiana, except the rates on coal for distances of thirty miles and less, were "unduly prejudicial to persons and localities engaged in interstate commerce, and unjustly discriminatory against interstate commerce." The commission ordered that the Indiana rates be increased to the same extent as the interstate rates.

Recent Patents

Lamp Holder for Miners Caps; 1,527,460. Joseph Barta, Martins Ferry, Ohio. Feb. 24, 1925. Filed July 25, 1924; serial No. 728,222.

Apparatus for Pushing Coal Tubs; 1,527,922. Albert B. Rose, Rotherham, England. Feb. 24, 1925. Filed Sept. 16, 1924; serial No. 738,107.

Coming Meetings

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

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

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

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

National Association of Purchasing Agents. Tenth annual convention, Milwaukee, Wis., May 26-28. Secretary, W. L. Chandler, Woolworth Building, New York City.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

New Equipment

Extra Heavy for Hard Work

It is generally recognized that mining and quarrying operations impose severe duty on power shovels. The hard digging there encountered and the necessity for reliable and continuous operation make the first cost of a machine intended for this service of secondary importance when compared with its upkeep and dependability. Realizing this the Bucyrus Co., of South Milwaukee, Wis., has designed a new shovel of 4 cu.yd. capacity and of full revolving type shown in the accompanying illustration. This machine, it is claimed, combines the ruggedness, strength, power and speed of the railroad shovel with the mobility and full-circle swing of the revolving type.

This shovel will be known as the 120-B model. It is caterpillar mounted and may be driven either by steam or electricity. It has the strength, sturdiness and digging power heretofore procurable only in the railroad type of machine. Thus the boom is about the same length as that of a 115-ton railroad machine, yet the shafts are so proportioned as to afford from 30 to 50 per cent greater strength than has been hitherto incorporated in shovels of conservative design.

Certain details of this machine represent more or less radical departures from accepted practice. The base and revolving frame are integral steel castings devoid of all structural shapes, rivets or bolts. Greater solidity is thus obtained than is afforded by the heavy front-end construction of the ordinary railroad shovel. Again, this is the largest shovel that has yet been mounted on caterpillars.

The steam-driven machine embodies still further refinements. These include superheating equipment, a fire-brick arch in the furnace, 10 per cent larger grate area and 15 per cent more heating surface than are to be found

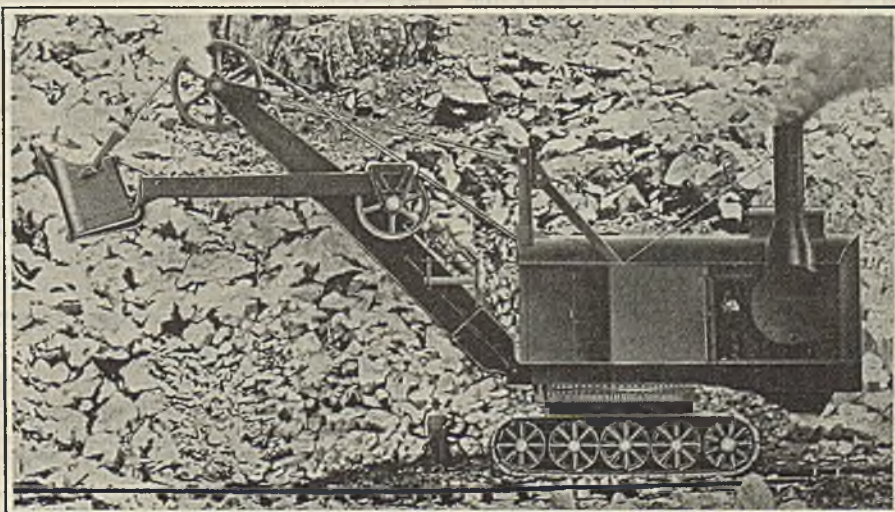
in the most powerful railroad shovels of comparable size. By these means the water and coal consumptions of this machine are reduced over those of the ordinary type by from 20 to 30 per cent.

This shovel has been developed to meet the growing demand for a quick-acting, full-revolving machine of large dipper capacity with greater strength, power and mobility than has hitherto been available, yet possessing clearances such as will enable it to operate in restricted spaces and narrow cuts. It is not intended for use where wide digging and dumping ranges are necessary. For this kind of work a long-reach stripping shovel should be employed.

Makes Welds Automatically

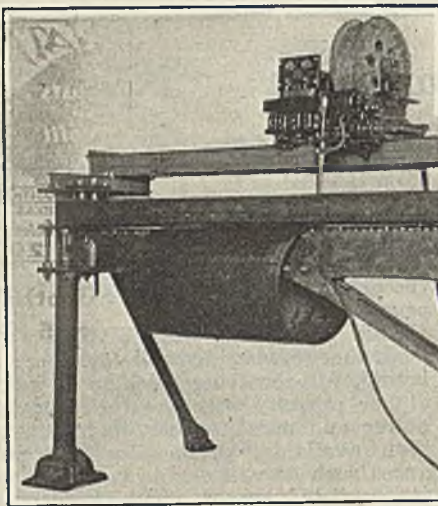
An automatic arc welding machine with which one operator and a helper ought to be able to do the work of four hand welders is now offered by the General Electric Co., after years of development and trial. The new outfit—a complete line is manufactured—is expected to find its principal application in the construction of such standard products as tanks, boilers, cans, axle housings, and pipe, and also for repairing undercut shafts or axles and building up sharp flanges on car wheels. It is also recommended for repairing worn locomotive guide rods, axles and shafts. Its field of greatest usefulness will be in the manufacture of storage vessels where the static load is not greater than 10 lb. per square inch and where the thickness of the metal to be welded is not less than No. 16 gage.

Estimates based on actual production, show that this automatic electric outfit not only increases speed of production but has other advantages as well. An overhead expense lower than that of gas welding can be calculated, excluding the item of labor. The use of push-



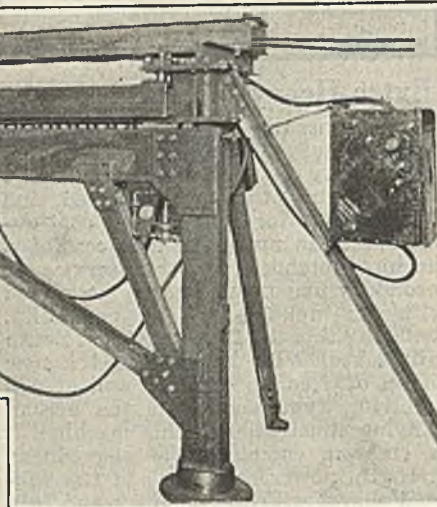
For Use Where the Digging Is Hard

This shows one of the new shovels actuated by steam. The electric machine is similar in every respect except for the motive power employed. Generous proportioning of parts and a liberal use of steel castings adapt this machine to the heaviest kind of service, such as tearing through tough over burden or digging strip coal from the solid.



Speedy Automatic Welder

A travel carriage, pneumatic clamps and a swinging arm make it easy to do good work quickly with this outfit.



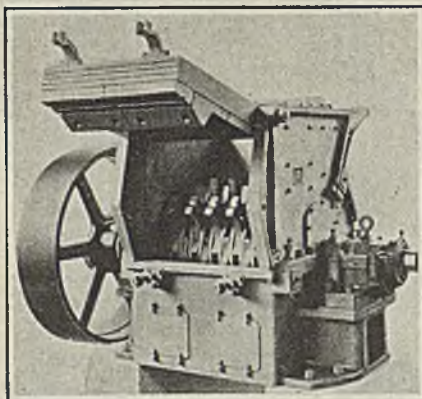
button control provides simplicity and ease in operation. Uniformity of finished product and space saving by the reduction of the number of workers and quantity of stock on hand are also pointed out.

A complete outfit consists of an automatic welding head and control panel, travel carriage and clamping device. Where it is desired, in order to meet special circumstances in any plant, the travel carriage and other component parts of the equipment may be assembled by the purchaser with his own device for holding the work.

Fixed-Hammer Coal Crusher Makes Few Fines

A need has long been felt for a crusher which in a single operation would reduce run-of-mine or lump coal to $\frac{3}{4}$ in. and smaller without the production of an excessive amount of fines. Such a product is desirable for use in certain types of stokers, or as a preliminary process in the grinding of coal for consumption as pulverized fuel, or in the preparation of inferior coals where quick clean combustion is desired. The machine shown in the accompanying illustration was designed with this end in view.

This is a rigid-hammer machine recently placed on the market by the Jeffrey Mfg. Co., of Columbus, Ohio. Under test a 42 x 36-in. crusher of



Crusher With Breaker Plate Raised

The fixed hammers readily may be seen. Each of these hammers has six wearing edges or corners which may successively be brought into operation. The life of a hammer is thus roughly three times that of one of the swinging-bar type.

this kind, when treating 100 tons of coal per hour, consumed only $\frac{1}{2}$ hp. per ton at this capacity. The product made was of such size that 99 per cent passed through a $\frac{3}{4}$ -in. screen, 67 per cent passed a $\frac{3}{8}$ -in. screen and only 11 per cent went through a 20-mesh screen.

Adjustments that can be made on this crusher consist in alterations in the position of the breaker plate, changes in the spacing of screen bars and regulation of the crusher speed. These make it possible, within obvious limits, to produce any desired size of crushed product. The design is heavy throughout and all wearing parts are readily renewable. The rotor consists of a heavy shaft carrying a series of steel disks. Between adjacent disks the crushing teeth are rigidly held by means of through rods. The heavy manganese-steel teeth each have six wearing corners that may be brought into service successively by simply turning a fresh corner to the work.

The lined breaker plate forming one side of the upper frame or hopper is hinged at its upper edge permitting ready access to the rotor. An adjusting screw regulates the space between this plate and the rotor teeth. The screen frame is made with a drop bottom controlled through weighted levers. This arrangement permits the release of overloads as well as the removal of tramp iron and other foreign material. The machine is driven through a flywheel type of belt pulley fastened to the shaft by means of a shearing pin, thus protecting the working parts from damage should dangerous obstructions find their way into the machine.

Trade Literature

Republic Pyrometers. Republic Flow Meters Co., Chicago, Ill. Pp. 56; $8\frac{1}{2} \times 11$ in.; illustrated. This catalog should prove interesting to those interested in the general problem of heat measurement.

Do You Know How Poole Gears Are Made? Poole Engineering & Machine Co., Baltimore, Md. Four-page folder describing and illustrating the Poole method of making machine molded gears.

Industrial Fans and Blowers. Jeffrey Mfg. Co., Columbus, Ohio. Catalog No. 370. Pp. 48; $7\frac{1}{2} \times 10\frac{1}{2}$ in.; illustrated; tables.

Obituary

John W. Peale, who for more than thirty-five years was in charge of the anthracite department of Peale, Peacock & Kerr, 1 Broadway, New York City, died May 7 at his temporary residence in the Hotel New Weston, Madison Avenue and Forty-ninth Street, soon after his return from Port Sewell, Fla., where he had spent the winter with his family. Mr. Peale, who was 64 years old, had been prominently identified with the development of the anthracite region. He was a son of the late S. R. Peale of Lock Haven, Pa., and a member of the class of 1885 at Lehigh. He left a wife, Elsie Barrows Peale; a son, William Barrows Peale, and a daughter, Miss Elizabeth Peale. Funeral services were held at Lock Haven, Pa., May 9 at 3 p. m.

James L. McClurg, Buffalo's oldest coal man, died suddenly there on May 2, from apoplexy, aged 81 years. He was born in Churchill, Ohio, and as early as 1865 began the handling there of the well-known Briar Hill Coal, and later at Cleveland, where he was associated with Mark A. Hanna and Evan Norris. Most of his life was spent in the coal business. In late years he was sales agent for the McClurg-Helsdon Coal Co., of Buffalo, of which his son, William F. McClurg, is senior member. Another son, John S. McClurg, of South Beach, Conn., and a daughter, Mrs. Samuel Daugherty of Buffalo, survive.

Association Activities

A number of Illinois coal men were elected to various offices of the St. Louis Coal Club at the recent annual meeting of the organization in the Missouri Athletic Association on April 21. George H. Martin, sales manager of the Moffatt Coal Co., was elected president; P. H. Greenlaw, of the Southern Coal, Coke & Mining Co., was elected vice-president; J. J. Harding, of the Mulberry Hill Coal Co., was elected second vice-president, and A. W. Lomis, of Donk Bros. Coal Co., and F. W. Howell, of Bell & Zoller Coal Co., were elected as two of the five directors.

The Merrimack Valley Retail Coal Dealers' Association held its annual meeting at the Merrimack Valley Country Club, Merrimack, Mass., April 30, with 85 members in attendance. President W. E. Atkinson called the meeting to order. Following luncheon there were addresses by Perry D. Thompson, treasurer of the Thorndike Coal Co., of Lowell, Mass., on "Co-operation"; by Elliot Farley, president of the D. L. & W. Coal Co., on the "New Sizing of Coal"; by Tom L. Lewis, former president of the United Mine Workers, now owner of the *Miners' Review*, on "What Will Happen in the Next Five Months," and by W. A. Clark, president of the New England Coal Dealers Association, on the new sizing of coal and the necessity of uniform mesh screens in the retail yards. The following officers were elected for the coming year: President, Byron H. Sargent, of Merrimack, Mass.; vice-president, Harry B. Musk, of Lawrence, Mass.; secretary-treasurer, Guy L. Bean, of Amesbury, Mass.; executive committee, Messrs. Bodwell, Manchester, N. H.; Taggart, Nashua, N. H.; Horne, Lowell, Mass.; McDonald, Lawrence, Mass.; Brown, Haverhill, Mass.; Boulter, Kittery, Me., and Doughtinett, Franklin, N. H.

New Companies

The G. H. V. Coal Mining Co. was incorporated in Mulberry, Kan., about the middle of April, with a capital stock of \$10,000.

The Jackson, Hunter & Gould Coal Co. of Missouri, was incorporated in Kansas City, Mo., about the middle of April, with a capital stock of \$15,000, and with offices in the Pioneer Trust Bldg., by C. T. Balthy, G. S. Gould and others.

The Black Diamond Coal Co., Clarinda, Iowa, has been incorporated with the following officers: E. D. Mortis, Clarinda, Iowa, president; L. V. Harbour, Centerville, Iowa, vice-president and general manager; Samuel Barron, Clarinda, Iowa, secretary, and Earl Richardson, Gravity, Iowa, treasurer, who with H. E. Davidson, Clarinda, Iowa, constitute the board of directors. The capital stock is \$50,000.