# 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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*Engineering Editor*

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## Crushing and Cleaning

WHEN THE PRACTICE of coal washing was still young, enthusiasts believed that clean coal for the making of metallurgical coke could be best attained by fine crushing, so that no piece of slate or fragment of pyrite could find a life raft of pure coal to carry it over into the washed product. That was a counsel that bordered too closely on perfection. Only too soon did we find that when coal was finely crushed the surface effects became nearly equal to the gravity effects. The coal, light or heavy, showed little disposition to sink, and the washing, accordingly, was likely to be inexact. Then, also, came losses in the water. The pyrite was found also to be often of infinitesimal size and broadly disseminated. So it continued to be the general practice to clean the coal uncrushed.

In this week's issue is an account of means taken in Europe to clean fine coal. The value of crushing will not down, but when coal is crushed, it must be treated in a manner suitable to a fine product and then must be captured and dried by appropriate means. The technique of coal cleaning has improved. In washing, as in other matters, we may do with wisdom what was formerly declared and believed to be folly. New appliances have a way of reconstructing our flow sheets, and ultimately coal for metallurgical uses will be reduced to a powder prior to cleaning, as is the custom already in the Trent process.

## Permanence at Mines

RECENTLY opened mines in old mining regions are manifesting more and more clearly that they are built for permanence. The new main entry to the H. C. Frick Coke Co.'s Colonial Mines with its steel supports and concrete and its conveyor line are constructed to last for many years. Roadways in other mines are being put in condition, with permanency as an aim in construction. No longer does length of haul speedily make the construction of another opening and another mining plant imperative.

At one time the preferred plan was to mine all the coal near the railroad and then make a new start. New plants and new openings readily could be made, and it did not pay to continue to extend an old plant till the haulage cost became comparable with the cost of actual mining. Of recent years it has become impossible to find new locations. It is better to labor under the load of heavy taxes on idle coal lands and under the burden of long haulages and haulageways than to be eliminated from the list of mine operators.

To keep the cost of haulage down, heavier locomotives, longer trips, better tracks and more permanent supports have been introduced. In a few years we shall find mine tracks as heavy and as well bonded as electric railroad tracks. These roads will probably adopt means for making the rails continuous, the even temperature making the welding of the tracks less objectionable than on surface roads.

With welded or thermited tracks no trouble will be experienced with broken bonds, and there will be less wear and tear in the operation of locomotives and cars and less resistance to traction into the bargain. Concreted ribs and walls and even concreted supports around and under the ties will make upkeep negligible. Additional width and height will make ventilation and operation easier and less dangerous. The coming decade will see continued advances toward permanence, the life of mines being extended from ten to fifty years.

Big mines will be the only mines possible, and that fact will be reflected in the roadways and in the tipples. Already at the Faraday mines of the Pocahontas Fuel Co., provision is being made for seven-ton cars. Small cars are not profitable where machines are used in thick beds of coal, nor do they earn dividends on long hauls.

## Education "Looking Up"

ELSEWHERE we show the building that the University of Pittsburgh hopes to erect. It will have 10,750,000 cu.ft. of content and 529,000 sq.ft. of floor space, be fifty-two stories, or 680 ft., high, the base being 260 ft. long and 260 ft. wide. It will provide classrooms, libraries, shops, laboratories and recreation centers for 12,000 students.

We wish the project every success, feeling confident that the building will be admirably suited to its purpose and will be a standing stimulus toward achievement. It will be, at once, a tribute to Pittsburgh and its pride and glory. We are confident that the money will be readily obtained. However, despite what is said in that admirable booklet in which it is described—"The Cathedral of Learning"—we cannot believe that the students will feel impressed by the fact that the roofs of various buttressing buildings and the main structure end so abruptly as they do and so suggest the possibility of further growth.

We admit that until we read that intriguing booklet, the drawing of the building did not thus impress us and that the word we voiced was "stunning" or at best "inspiring." Reading the booklet we learned that the picture in our mind should have been such that it could be appropriately labeled "aspiration"; the towers thus abruptly terminated were planned so as to suggest growth rather than completion. Let be; we never could understand the rhapsodical reveries of architects and sculptors. They visualize what engineers and engineering students cannot see. But Pittsburgh will be proud of this monument of learning whether that city senses its occult artistic meanings or remains grossly insensitive to them. It will, we aver, be proud, and it will have reason to be.

But the mining profession of the Pittsburgh region will find in that booklet no little occasion for shame. The University of Pittsburgh had, in the last academic

year, 8,512 students and only eighty of these are studying mining, twelve less than in 1922-23. In that greatest of coal-producing centers, the biggest educational establishment has less than one per cent of its students engrossed in the acquirement of a knowledge of mining. Of all its many departments only the school of mining and that of law are on a downward trend. To admit the truth, schools of mining of other universities show similar tendencies. What an occasion for regret! What a reason for the public to deride the coal industry which sets such a small store on the opportunities presented to it!

We are told that 41 per cent of the students come from Pittsburgh, 69 per cent from Allegheny County and 94 per cent from Pennsylvania. Thus, nearly all the students come from the state producing the greatest tonnage of coal of any state in the Union, yet less than one per cent are mining students—and the number is declining! What a commentary on the profession!

## Drum Contour Saves Power

WITH THE GENERAL adoption of the electric distribution of power in and about the mines has come a clearer realization of the losses and peak loads which some machines occasion and the advantages which are afforded in power costs by certain refinements in the design of these machines. This is well illustrated in the case of the mine hoist. This machine forms so important a link in the chain of mine equipment that reliability must never be sacrificed for the sake of efficiency yet it is highly advisable to obtain all possible economy so long as it can be had without jeopardizing the over-all dependability of the machine.

With the old steam hoist the type or shape of the drum made little apparent difference. Although the weight and inertia of this element unquestionably influenced the steam consumption yet that fact could not be readily traced, isolated and analyzed. When the electric motor replaced the steam engine, however, inertia losses became apparent immediately and peak loads and the consequent capacity of motor necessary to handle them became stern realities that could be neither condoned nor evaded.

Three types or shapes of hoist drum are now in general use—the cylindrical, the conical and the cylindro-conical. Each of these possesses inertia and winding characteristics of its own. The cylindrical drum, naturally, is of a uniform diameter throughout its entire length. It is provided with two distinct rope grooves, each of which is a helix extending from the end of the drum to its center. The conical drum is likewise fitted with two helical grooves, each extending from drum end to drum center or from the point of minimum to the point of maximum diameter. Both of these two types of drum may be fitted with a brakeway at its middle.

The cylindro-conical drum differs from the other two in that both hoisting ropes may be wound alternately into the same groove, one rope being wound in as the other is paid out. For a given length of hoist this double service performed by the central cylindrical portion of the drum appreciably decreases the drum length, correspondingly lessening its weight and consequently its inertia. No central brakeway is possible with this drum; this must be placed at one end.

How great may be the savings incident to the adoption of this shape of drum may readily be appreciated. Without going into the mathematical calculations by which the results are derived it may be stated that, at a certain mine with a given length of hoist and duty cycle, a machine fitted with a cylindrical drum would require a 500-hp. motor. If equipped with a conical drum a 486-hp. motor would suffice, but if this same machine is fitted with a cylindro-conical drum a motor of only 410 hp. will be required. Thus the cylindro-conical drum makes possible a saving of 18 per cent over the cylindrical shape and a 15½ per cent saving over the conical drum.

Savings such as these are not confined to the first cost of the motor installed, for they apply to its current consumption also. And the great beauty of this saving is the fact that it is accomplished without detracting one jot or tittle from the hoist's reliability.

## Gravimetric Tests for Coal

BITUMINOUS coal has always been sold either on reputation or on proximate chemical analysis and calorimetric test. Whether this is the preferable way may be questioned. It is accurate but slow and requires the services of chemists. A gravimetric test is quicker and can be made by men having less training for the work. In every washer, tests are made gravimetrically, the percentage of ash for coal of any given specific gravity having been already determined.

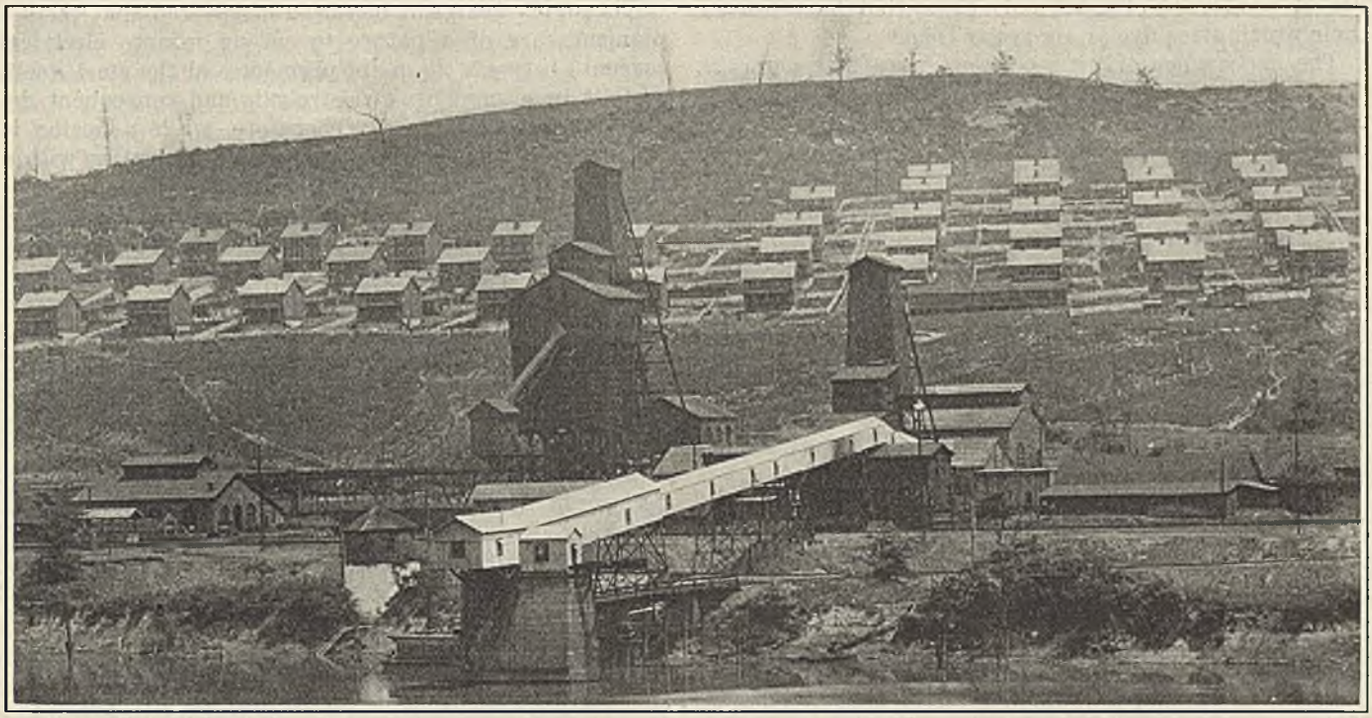
Of course, all coals having equal specific gravity have not equal ash content. The quantity of ash in coal of any given density depends on the specific gravity of the coal and of the ash. All ash is not equally heavy. Besides the weight of the coal as it occurs and is mined is often augmented by what is neither ash nor coal, namely pyrite. But pyrite, though it has some heat value is undesirable, so the gravimetric test would be of value, as it would penalize coal with excessive sulphur and, therefore, with excessive iron and a low fusing point for the ash.

It will be said that the real quality of the clean coal depends on the quantity of volatile matter and that the gravimetric test will not evidence that. True, but if the mine from which the coal comes is known, and it frequently is, then the percentage of volatile matter is also ascertainable from recorded data for the region, so that an analysis for volatile constituent is not needed.

What would be necessary would be for some authority like the U. S. Bureau of Mines to determine for each coal from any district what the percentage of ash would be for coal of a certain specific gravity when normally free of pyrite. The purchaser would specify what percentage of the product might exceed a certain specific gravity. He would test the coal accordingly and enter his claims for all excess of material above the quantity specified.

There are difficulties of course, pyrite is one, uncertainty as to the origin of the coal is another and the lack of appropriate data is a third. A fourth is the natural tendency to demand an accurate test rather than one that is easy to make and one that almost any one can perform.

Where a company has its own mines at which coal is produced for its own operations, the gravimetric test would seem even more desirable than when used on the coal from commercial mines, which might manage to disguise the source of the mineral.



# New Ideas Make Painting at Mines More Effective

## Days of "Good Old White Lead and Linseed" Are Going for Other Pigments and Oils Serve Best—Caulking at Sheet Laps Is Important—Steel Stacks Need Special Treatment

By Frank L. Adams
Frank L. Adams Co., Pittsburgh, Pa.

PAINTING WOOD AND STEEL structures at a coal mine no longer should be a matter of guesswork. The art of preserving and protecting by paint has advanced too far for that. Not many years ago the majority of the better contractors were "good old lead and linseed oilers." The more modern artisan, however, seriously considers and often employs on many of his jobs the newer pigments and oils. To him every hour of a workman's time means something in the profit and loss columns. Such pigments as zinc oxide, titanium oxide, powdered aluminum and zinc dust are replacing satisfactorily lead in paints for exterior surfaces of wood at a saving in labor and material.

White lead, good as it has proven to be in the past, does not possess the enduring properties of these newer pigments under the ultra violet rays of sunlight and in the presence of the acid gases in the atmosphere. It is my belief that zinc oxide and the vegetable paint oils make a more stable compound and therefore a more lasting waterproof film. Experience has shown that a given quantity of any of the paints made of zinc oxide in combination with lead or titanium oxide covers a larger area and is easier to apply.

The size of zinc oxide particles is much finer than that of lead. Just as it is desirable to vary the sizes of concrete aggregate, so has it been found beneficial to vary the sizes of the ingredients in the aggregate or pigment content of a paint. Paint mixtures of this character fill all voids and the film is stronger and more dense.

Powdered aluminum and zinc dust are among the straight metallic pigments possessing unusual hiding, weather-resisting, and sizing or sealing properties. Aluminum and magnesium silicates may be classed as inert pigments, the use of which either alone or as extenders in combination with other pigments in late years has been increased.

The time-honored custom of using linseed oil as the paint vehicle is well justified. As a single vehicle for paint mixing there probably is none to equal linseel oil. Nevertheless, it has its disadvantages. For many years research chemists have endeavored to remedy its failings. Linseed oil tends to produce a film of some degree of porosity, it is partially soluble in water and of all the vegetable oils it is most susceptible to the actinic rays of sunlight.

The acid gases from coke plants and burning gob piles render this oil still more soluble in water and more likely to be washed off by rains. Chemists have discovered that by incorporating Tung oil (China wood oil), Soya bean and Parilla oils, the defective properties of linseed oil are improved. A number of the reinforced oils have been standardized by reason of their superior properties under almost every conceivable condition. Other fixed oils are making their appearance from time to time. I, therefore, recommend the

NOTE—The headpiece shows the mine plant and town of the Hecla Coal & Coke Co., at Isabella, Pa. Here is a splendid example of good maintenance. Conditions at this plant are about as severe on paints as are those at any mine, for on the downstream end of the property is located a large battery of coke ovens belching gasses and dust. What has been accomplished here can be done elsewhere.

use of reinforced oils, but only those that have proven their worth after five or six years' trial.

The appearance of nitro-cellulose varnishes portrays a more recent development which bears watching. Although it is now in the experimental stages, it may ultimately influence industrial painting methods.

Thus far I have dealt principally with the maintenance of wooden structures in mining towns. This comprises the biggest maintenance problem of mine owners. However, the upkeep of steel structures of tipples, trestles, head frames, mine fans and stacks is of importance also, especially in view of the rapid deterioration of steel subjected to the corrosive influences prevailing in and about mine properties. Just as steel is different from wood, so also are the maintenance methods for each different. The same kind of paints cannot be utilized for both.

### PREPARATION OF STEEL SURFACES

The cleaning of wood surfaces is important, but the preparation of steel surfaces is doubly so. When steel is exposed to the moisture, gases and oxygen of the atmosphere, it deteriorates very rapidly. It rusts—that is to say, it decomposes back into the original ore or iron oxide from which it was made originally. Numerous alloys are being employed to reduce this tendency to rust, but the surface of even these metals should be protected.

Rust on steel absorbs moisture which propagates further the oxidizing action. For this reason and for others also, all rust should be removed from the surfaces of steel before a primer coat is applied. Otherwise the pockets of rust under the paint will grow in size. Finally these will drop off carrying the protective covering with them and leaving bare and rusty spots on the surface.

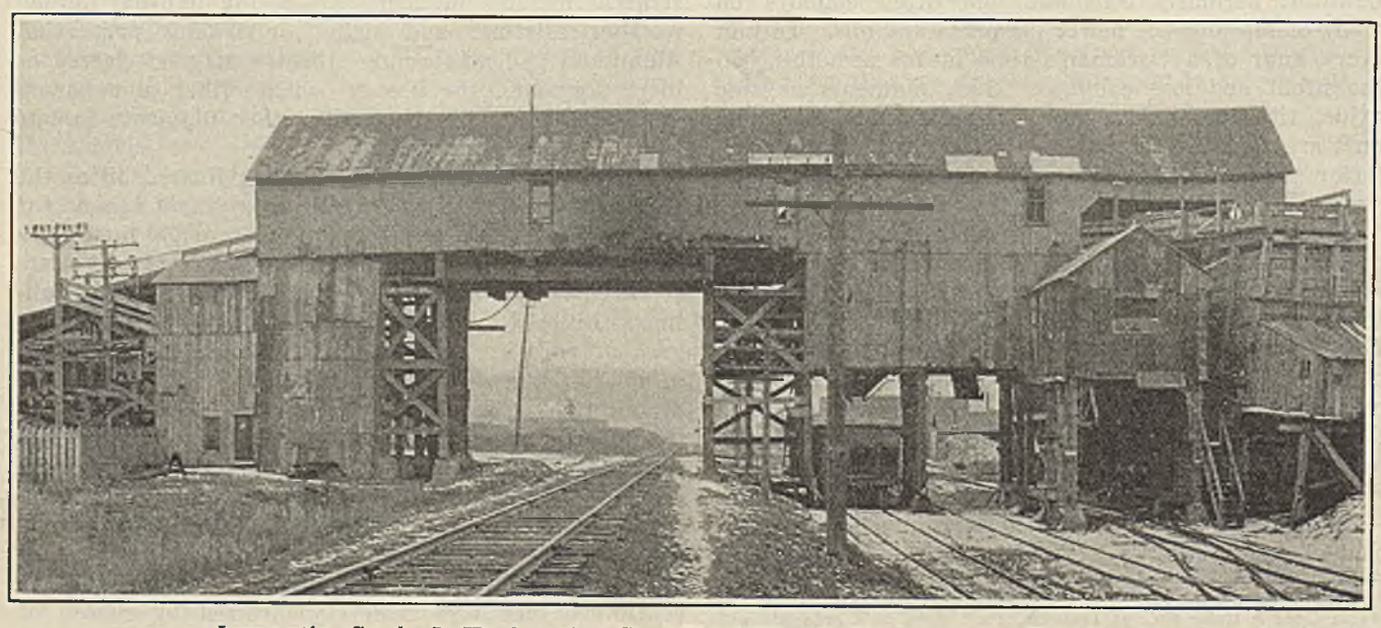
Before paint is applied, all rust should be hammered, chipped, scraped or wire brushed. The primer coat of paint on steel must adhere tenaciously to the surface; it must cover the surfaces with a protecting coat of oils and pigments, and most important of all, it must inhibit any further rust from forming on the surface to which it is applied.

Through research it has been discovered that certain pigments are of a nature to set up minute electrical currents between the paint pigment and the steel itself, so that in a small way electrolysis and consequent decomposition takes place. Therefore, while adhesion is important, in my opinion, inhibitive properties within the paint itself are more important.

By the utilization of certain pigments either alone or in combination, even in small quantities, the action of rusting under the paint film is counteracted. Such pigments as lead and zinc chromate, magnetic oxide or iron, and, to a slightly less etent, zinc oxide, have pronounced inhibitive properties which make their presence in primary paints for bare steel desirable. They are of neutral polarity and check electrolytic action. Red lead is an excellent pigment for priming steel but refined red oxide is also acceptable and extensively used because of its lower cost. A few of the inert pigment materials, such as aluminum silicate, are coming into prominence. The straight metallic pigments, such as aluminum powder and zinc dust, are also in the preferred class.

Because of their density, freedom from moisture, and ability to adhere to bare metal, reinforced linseed oils are a necessary part of a good primer paint for metal. The oil of the first coat should dry within 24 hours so that a succeeding coat may be applied promptly. It should be of a degree of fluidity to cover 450 to 550 sq.ft. per gallon. If the primer is thin enough to cover more than 600 sq.ft., too scant a film is provided to warrant the labor of application. This practice can be carried beyond the point of economy and protection. The more the painter stretches the covering power of a gallon of paint the thinner will be the film.

The second coat is the "hide" of the paint shell. It provides the actual protection against abrasion and the resistance to moisture and acid gases, and it adds to the appearance of the job. On account of the presence of coal dust and sometimes smoke around the plant, tipples of steel construction, and in fact all steel work about the mines, should be covered with black paint. Refined carbon (lamp black), powdered charcoal and



**Locomotive Smoke Is Hard on Any Steel Tipple That Is Unprotected as This One Is**

The siding directly above the railroad tracks, especially over the mainline, has been eaten away by the acids from engine exhaust. Proper priming of these sheets when they were put on, and an occasional good coat of plastic asphalt paint would have afforded complete protection from acid attacks. The owners of a good many tipples think their property is properly painted when they have applied nothing but ordinary paints. These are better than nothing but not good enough for adequate protection.

graphite are excellent pigments for paints for this purpose. Bitumen paints, such as refined pitches and the best of the asphalts, likewise are acceptable. These afford a thick hide of weather- and acid-resisting materials which, when reinforced with asbestos fiber, provide a tough and lasting film.

In second coat work, each gallon of carbon or graphite paints should cover about 450 sq.ft. of surface; the asphalt paints, 200 to 250 sq.ft. As a general rule, the latter cost less per gallon and no more per square foot of area painted. Bitumen paints can be utilized to great advantage on surfaces exposed to vicious attacks of smoke and coal dust. Examples of places where these paints should be used are shown in two of the accompanying illustrations.

The cost being only slightly higher than that of ordinary linseed oil, the use of reinforced linseed oil in paints for second coat work on steel at the mines is not prohibitive and is essential for best results. By "second coat" I allude to painting in corrective maintenance in which at least two coats are required. In preventive maintenance only one coat of paint is necessary (applied over old paint which is still in fairly good condition), so that the second coal in corrective maintenance is the first and only coat in the former. In either case the same kind of paint should be used.

Galvanized steel sheets require the same treatment as other steel, except in the case of first painting. This calls for special practices. The new sheets are extremely smooth and are likely to be oily or greasy, making it difficult for the primer coat to stick to the surface.

To correct this condition, it has been common practice, until recently, to erect galvanized sheets unpainted, and to allow the exposed surfaces to weather for several months, roughening the galvanized coating. It was the accepted practice to prime and second-coat with regular steel paint after the surfaces had been thus exposed for several months. Adherence to this old practice is to be discouraged.

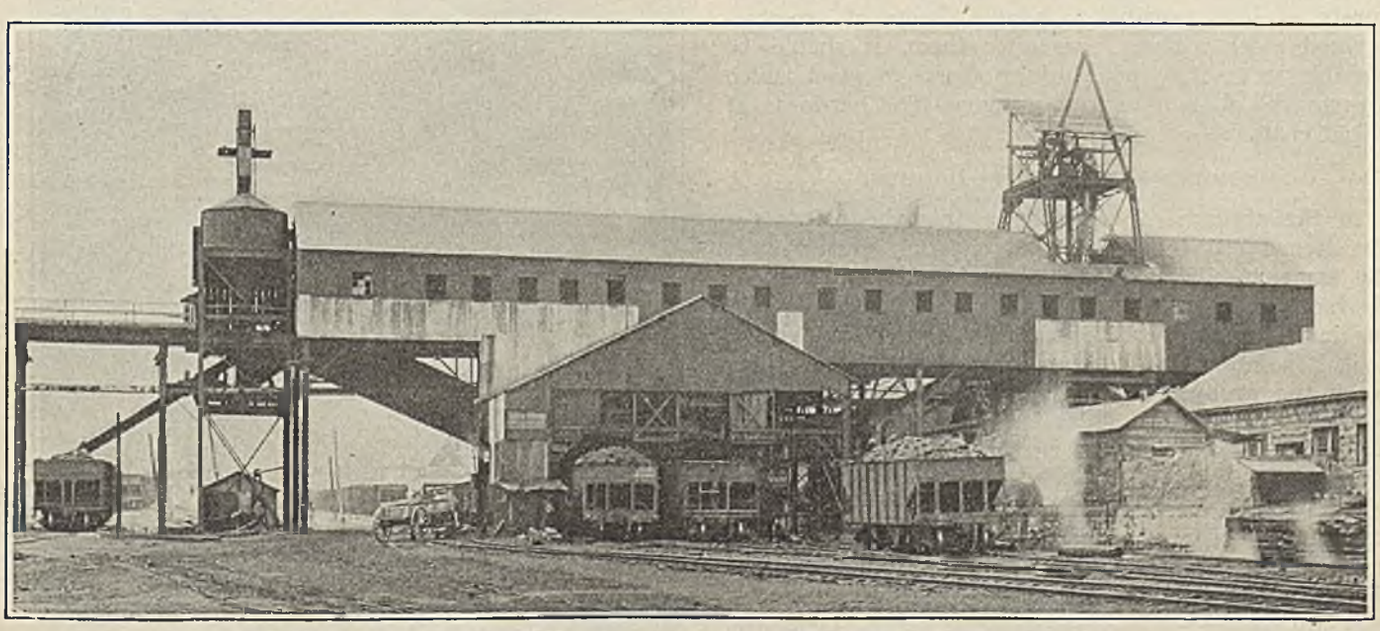
In place of the old practice a new method has been found more practicable. The sheets should be primed on both sides before they are erected, the workmen first brushing or spraying on a solution of copper sulphate or washing the sheets with a rag or a ball of waste saturated with naphtha or benzine. These cut grease from the surface preparatory to the application of the paint coat.

Special primer paints are made for galvanized sheets. They contain oils and pigments affording a hard-drying film which anchors tightly to the galvanizing. It is generally cheaper to paint such sheets on the ground rather than after erection on the structures. The primer may be brushed or sprayed on. After it has dried hard (in about 36 hours), the third or finishing coat should be applied on one side of the sheet only. The sheets should then be erected with the two-coat sides facing in. This practice eliminates the difficulty of applying the first and second coats from scaffolds on the inside of the building, which is a costly procedure.

### Insulate Overlapping Sheets

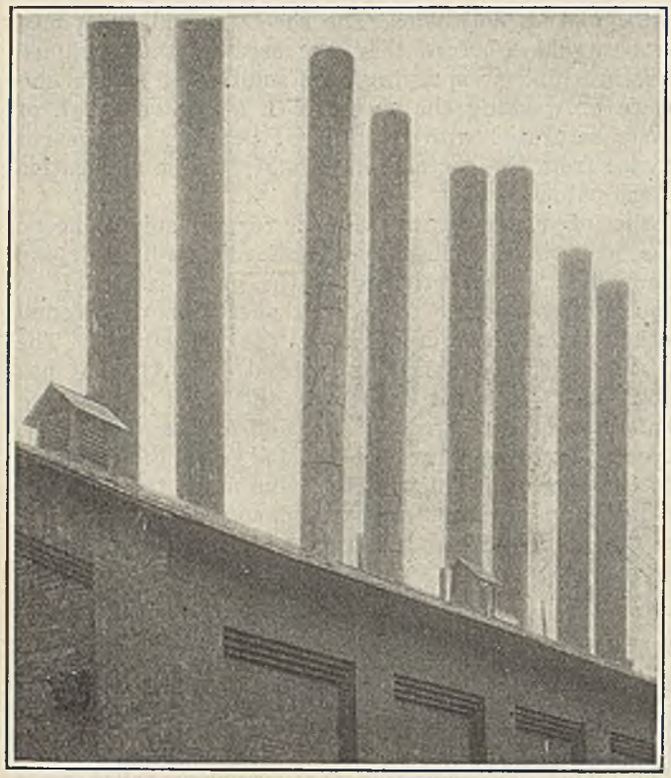
Most important of all, when sheets are laid the overlapping areas bordering the edges at the top, bottom and sides should be given a generous application of insulating material, such as liquid asphalt and asbestos fiber. This roof cement, as it is commonly called, seals the laps, fills the air space between overlaps and provides a water- and even air-tight joint. The gases, dust or moisture from the building cannot seep out through the overlaps and moisture cannot be driven in.

The merit of this procedure is obvious. About 90 per cent of all corrugated steel sheeting fails in the overlapped areas. I have even seen huge areas of roofing rot at the laps for the want of cementing material, although, apparently, after erection, the exposed surface had been thoroughly painted inside and out. Out of this roof it was possible to knock many sections of good sheeting as one would push a picture through its frame. Those areas of the sheets which were painted were well preserved. The failure was in the laps where no protection was provided.



**A Good Deal of the Cost of Maintenance Is Due to Neglect by the Property Owner**

Here we have a case of repair work that resulted from wear such as has been inflicted on the unprotected tipple shown on the opposite page. The application of the right kind of paint at the right time would have saved the cost of this job. An intelligent priming and painting of these sheets before they were nailed up would make their eventual failure and consequent replacement an expense of the more distant future. Rust costs money and consequently should be prevented wherever possible.



**Stacks Should Be Painted Regularly**

A hole in a smoke stack is likely to lower the efficiency of a power plant that relies on natural draft. At best it is a difficult matter to keep the stacks intact. Ordinary oil paints are rapidly burned off unlined stacks in which high temperatures prevail. Deterioration may be checked by the application of coal-tar pitch paints.

By painting before erection, a paint film is placed over the entire area of both sides of the sheet. In addition, the roof cement is equivalent to several coats of paint, protecting and at the same time sealing the joints from destructive agents.

After the roof or siding has been erected, there remains to be covered with the primer the outside surfaces of the structure. It is well to leave this work until last so that the rivet heads and any scratches made in the primer during handling may be covered. But surely, if it is possible to handle sheets of asbestos-covered steel without damaging them, it should be possible to erect without injury sheets of steel which are covered with a primer of almost the hardness of baked enamel.

### PROTECT FROM GROUND MOISTURE

In the absence of corrosive agents the paints for the second coat on corrugated sheeting should meet the same specifications as those for structural steel. Surfaces which are swept by heavy clouds of smoke, for instance, should be dressed with the more plastic asphalt paints. On all column bases and sheets which reach the ground, the application of an extra heavy coat of asphalt plastic paint is advised to protect these parts from the activity of rust due to moisture in the ground.

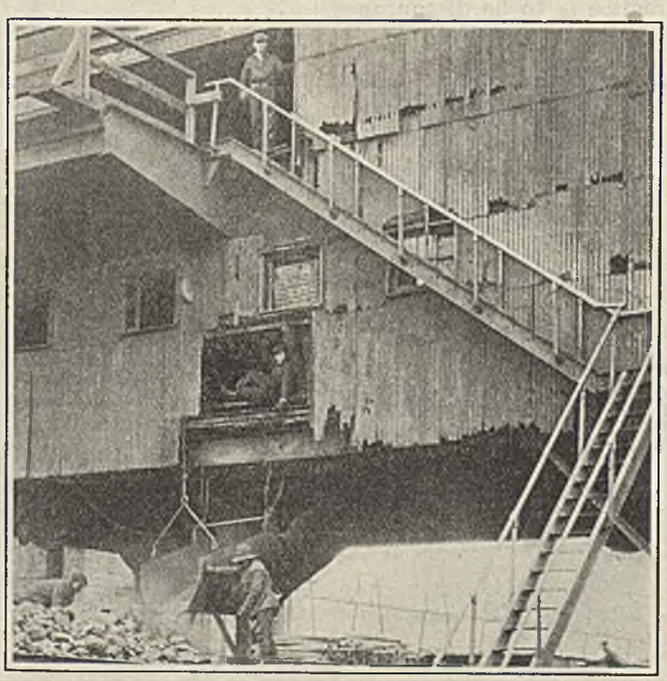
Steel stacks would require the same maintenance as any other steel fabrication were it not for the presence in them of heat which must be combatted with the other elements so destructive to paint oils. Steel stacks fall into two classes—lined and unlined. Lined stacks are, in themselves, protected against heat, and, therefore, the general rules for painting can be applied to them. But with respect to unlined stacks, where the heat reaches temperatures of 700 to 800 deg. F., the problem is different. The high heat rapidly burns up paint oils.

Because of the more or less hazardous nature of stack painting, there has been a lack of strict inspection of the work done, and, to a large extent, the important matter of cleaning and scraping the surfaces has been neglected. On lined stacks, inspection and preparation are deserving of the same strict attention that should be given any other class of steel painting. Steel surfaces of stacks may be primed with regulation steel primers and finished with carbon, graphite, asphalt or pitch plastic paints. Aluminum powder is proving to be a satisfactory pigment for both primer and second coat paints for stacks. This of course applies only to lined stacks in which the heat rarely reaches a temperature higher than 250 to 300 deg.

For painting unlined stacks in which the heat is great, the coal tar pitches are the cheapest and at the same time about the best material to use both for priming and for second-coating. Almost any paint material will burn off rapidly at a temperature above 600 deg., claims to the contrary notwithstanding. Furthermore, where this high heat is reached, there is generally a wide fluctuation in temperature. The stack may attain a temperature of 450 deg. and later rise to 700 deg. Such variations are destructive to the paint as a result of the expansion and contraction of the metal upon which it is placed.

A few general directions for stack painting are these: Clean the surfaces well by hammering, scraping and wire brushing. Then give the stack two good coats of the better coal-tar pitch paints. Apply the paint while the stack is fairly hot. It then spreads more easily, covers better, and dries on by baking hard. If applied on the surface of a cold stack, the paint is liable to crack and peel when the stack is brought up to its higher temperatures.

Most coal companies are glad to contract stack painting because it is hazardous and trying to the workmen who justly demand high wages.



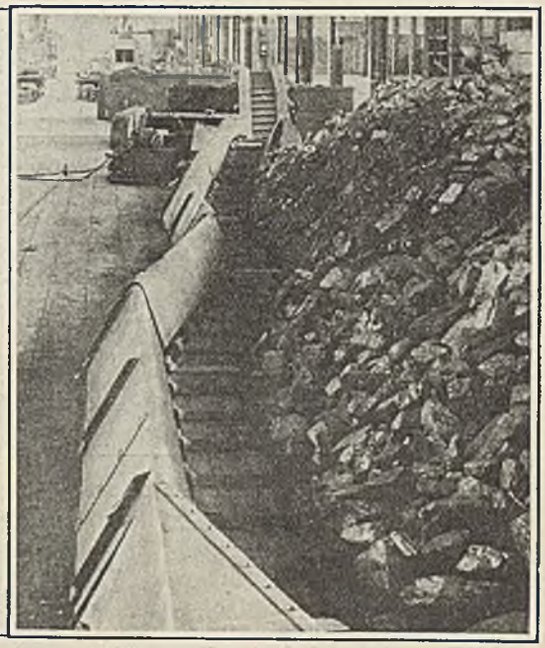
**Rust Is Working on This Tipple**

As the illustration shows, corrugated steel sheets will first fail in the overlapped areas, unless sheet is cemented upon sheet. Rust spreads rapidly and, therefore, should be kept from every square inch of the surface by recognized maintenance methods.

# Flexible Conveyor Loader Well Adapted To Long-Face Mining

## Sectional Conveyor Gathers Coal from Face — Height and Width Small—Safety Devices Guard Mechanism—Adapted to Many Mining Systems

By N. D. Levin
Columbus, Ohio



DURING THE PAST YEAR or two many coal operators have considered the adoption of various semi-longwall, block or panel systems of mine layout, all of which afford long working faces. Some of these plans give places 75 ft. in length, others 100 ft., while in still others 150 ft. faces are made available.

In order to facilitate the operation of faces of such length a conveyor loader has been designed and built. This device, as the name indicates, is a combination of a loading machine and a conveyor. It picks up coal from the mine floor and conveys it along the face to a second conveyor which delivers it either to mine cars or to still another conveyor.

A general view of this machine is shown in the headpiece accompanying this article. It is of segmented construction with a universal joint between adjacent sections. These joints allow movement of the various sections with respect to each other in both a horizontal and a vertical plane. As a result, the conveyor will readily adapt itself to rolls in the bottom, while at the same time any segment or section of the machine may be pushed ahead of or held back behind those next to it. The entire conveyor may be moved forward or any portion of it advanced at will.

Coal is undercut and shot down in the usual way, after which this conveyor is pushed into the loose material, the flights picking it up and scraping it away. One decided advantage of this machine is the fact that it is extremely low—the flights travel practically upon the mine floor. In some beds the coal breaks in big chunks or blocks. Larger pieces can be rolled into or onto this conveyor than can be lifted into many another type.

The ratchet jacks that force the machine forward are shown in Fig. 1. These jacks extend between the mine bottom and the roof, and anchor the ratcheting device securely to the floor. They may be employed for either forcing the machine forward or pulling it back if necessary, the change in the direction of movement being accomplished by merely throwing a dog.

The flights that dig and transport the coal are hinged to the links of the conveyor chain which moves over sprockets carried on vertical shafts. On the return run of the chain the flights are turned up on end so as to

In the headpiece the conveyor loader is being worked into a pile of coal on the shop floor. Each section is joined to adjacent sections by means of a universal joint, permitting a change of direction in two planes—both horizontally and vertically. Note the snake-like appearance of this machine.

NOTE—The conveyor loader mentioned in this article is No. 44-B made by the Jeffrey Mfg. Co., Columbus, Ohio.

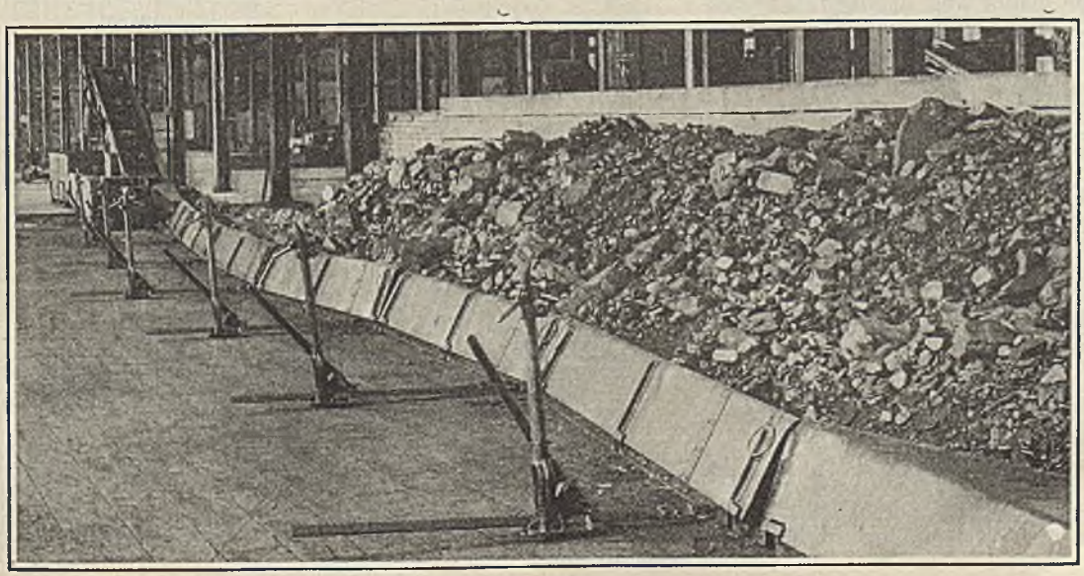


FIG. 1

**Trying Out**

The machine is here set up on the shop floor. The jacks used for forcing the machine forward are in place but, of course, can get no top purchase. Within the mine the entire machine may be moved forward bodily by means of these jacks or each section can be pushed ahead independently. The machine is thus extremely flexible.

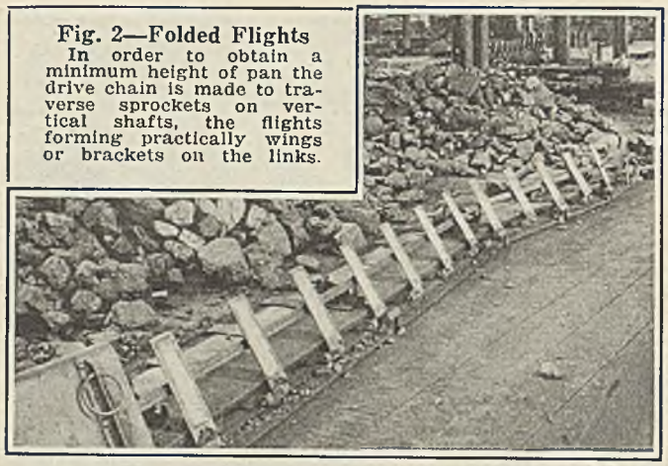


**Fig. 2—Folded Flights**
In order to obtain a minimum height of pan the drive chain is made to traverse sprockets on vertical shafts, the flights forming practically wings or brackets on the links.

make the machine as narrow as possible. This is shown in Fig. 2. The cover plates placed over these flights serve as a guide for the coal while it is being moved along the face on the conveyor. These covers may be removed without the aid of tools, and a section of the conveyor can be taken out, or added, in a short time.

The width of this conveyor is 28 in. and its height along the face is 17 in. As a result, this machine can be used in restricted space in low coal. Thus, in most mines, this machine can remain between the last row of posts and the face yet still leave room for the passage

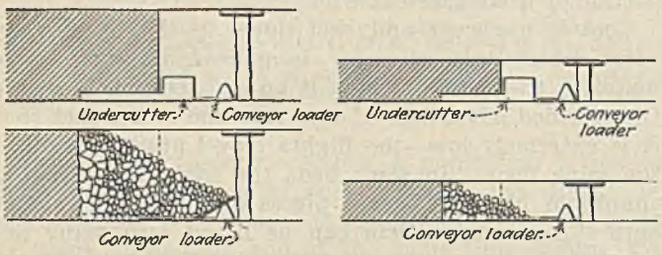



**Fig. 3—Face Cross-Sections Before and After Shooting**
A thick bed is shown at the left and a thinner one at the right. Ordinarily no posts will be needed between the conveyor and the face, and ample room will be available for both conveyor and cutting machine between the coal face and the first row of posts. If necessary, the conveyor flights can be folded back and the rear end of the undercutter allowed to slide along on the conveyor pan.

of a longwall machine. If roof conditions are such that the distance between the last row of posts and the face must be still further decreased, the flights nearest the face can be up-ended and the rear of the mining machine slid along the pan of the conveyor.

In Fig. 3 the conveyor loader and a longwall undercutter are shown between the face and the posts. The conditions encountered in low coal are shown on the

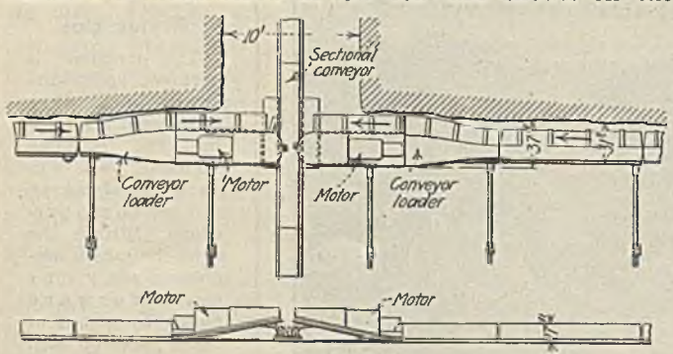



**Fig. 4—Two Loaders Discharge to One Conveyor**
In many mining layouts it is highly advantageous to bring the coal from both sides to a single central conveyor which loads it onto mine cars. The mechanism of the conveyor loader is such as readily to permit this procedure. The two faces may either be kept opposite each other or slightly staggered, as convenience may dictate.

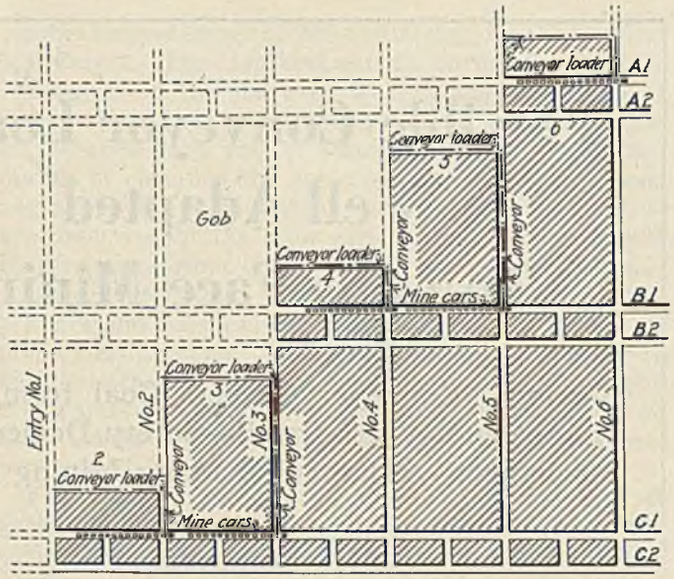



**Fig. 5—Each Face Served by a Separate Machine**
This is perhaps the simplest layout possible. Each conveyor loader discharges to a separate sectional conveyor delivering to its own car-loading point. This layout, however, has its obvious weaknesses as well as its advantages.

right and those prevailing in higher measures on the left. In the latter case the space between the posts and face will be well filled when the coal is shot down and if it is desired to shoot the entire face at once, it may be necessary to cover at least a portion of the conveyor with boards as shown in the lower left-hand corner. When loading is started these boards are removed one at a time, beginning at the delivery end of the machine.

Two loaders discharging from opposite sides into a common conveyor are shown in Fig. 4. The position of the jacks is indicated in this illustration. The driving end or head of the conveyor loader is made narrow, and the direction of chain travel is reversible so that the device may be used either right or left hand. It is driven by a 50 hp. "permissible" motor, through a train of simple rugged gears. Suitable protective devices are provided so that the serious breakdown of the machine is a remote cantingency.

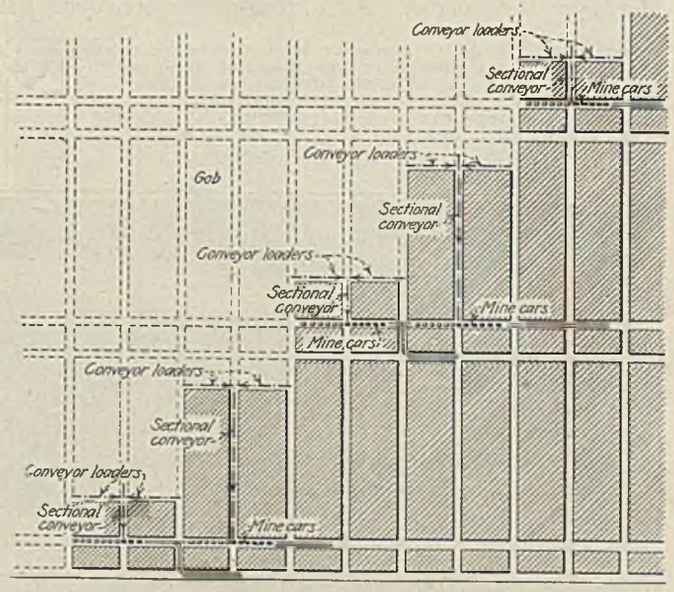



**Fig. 6—Two Loaders to Each Face**
In this layout two loaders working right- and left-hand bring the coal to a central conveyor which delivers it to trips of mine cars on a transverse heading. This arrangement is somewhat simpler from the car-handling standpoint than that shown in Fig. 5. The length of each step or face also is twice that of the preceding figure.

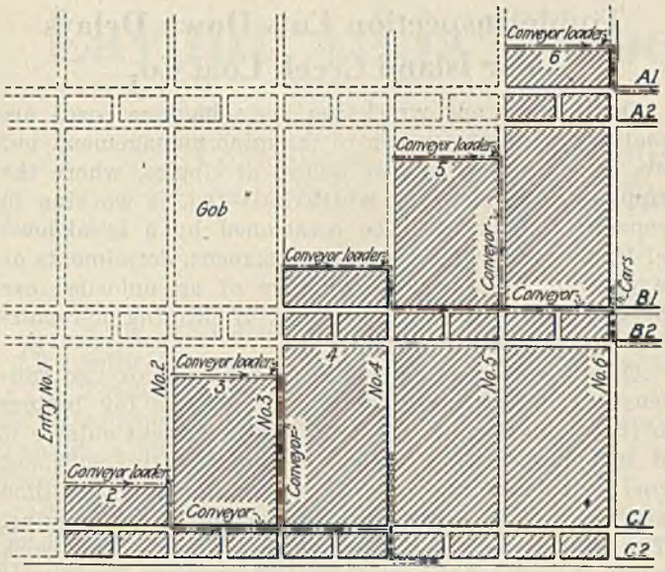



**Fig. 7—Secondary Conveyors Deliver to Cars**

This arrangement reduces the number of loading points and lessens the liability of interference between trips. By this means coal from two or more faces is loaded on car at one point.

In operation the coal face is first undercut throughout its entire length with either a long- or shortwall machine, after which it is shot in the usual manner. The conveyor loader is then started and pushed forward, picking up the coal as it comes in contact with it. Men should be stationed along this machine to force it forward and to pull down any coal that may hang. The number of such men that will be needed will depend entirely upon the conditions encountered.

In low coal it may be entirely possible to cut, shoot and load out a 100-ft. face twice during each shift. In other mines where thicker coal is worked or where it may not be practicable to shoot during working hours, the face may be undercut and shot on the night shift and the coal loaded out during the regular day shift.

This machine may be applied in various ways. A few of the many types of mining to which it is well adapted are shown herewith. Fig. 5 shows a stepped long-face plan with a loading machine on each face, discharging to its own sectional conveyor. The same general layout is followed in Fig. 6 except that two loaders are used on each face, both of which discharge to a conveyor in an entry that divides the face. This conveyor delivers the coal to cars handled in trips on the nearest transverse entry.

Fig. 7 shows much the same plan of mining as that set forth in Fig. 5. In this case, however, the sectional conveyors serving the loaders discharge to conveyors on the entry, which, in turn, deliver to cars. The same general plan is shown in Fig. 8, except that two conveyor loaders deliver coal to a common sectional conveyor as in Fig. 6.

A layout with double entries in both directions is illustrated in Fig. 9. Each face is served by a conveyor loader discharging into a sectional conveyor. A similar scheme is set forth in Fig. 10, except that two loaders are employed on each face and the blocks of coal mined by them are much longer. When working on such long blocks, say, 1,000 ft. or more in length, the conveyor that takes the coal from the loaders extends along the entry as far as the first breakthrough or shoofly only. With this arrangement, cars are brought into one entry and are loaded as they are drawn past the end of the

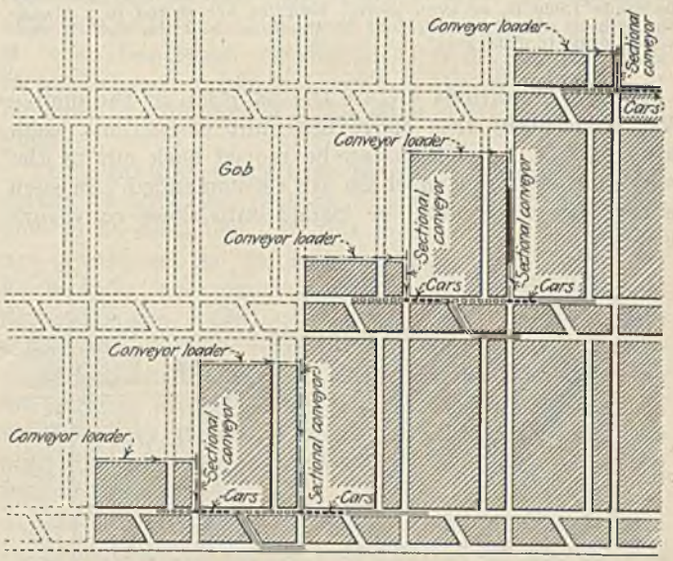



**Fig. 9—A Double-Entry Layout**

The layout here shown is practically the same as that of Figs. 5 and 7 except that the mine is developed with double entries both ways. Under certain conditions this type of development will be preferred to the driving of long "dead ends."

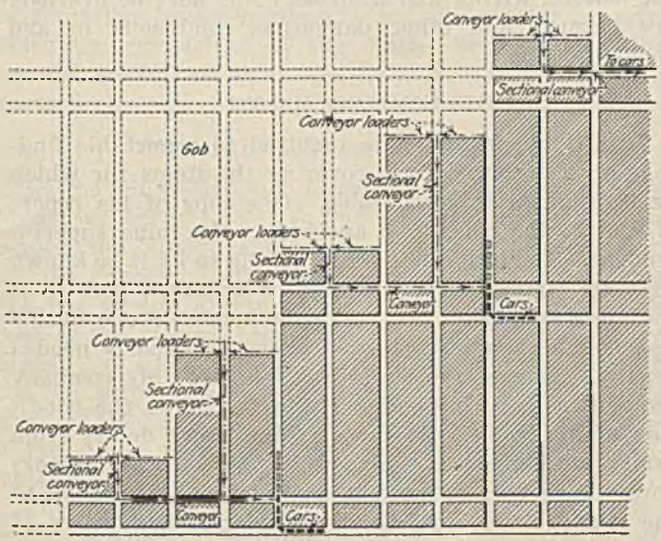



**Fig. 8—Modification of Fig. 7**

The scheme here depicted is the same as that shown in Fig. 7 except that two loaders feed to the first conveyors. The length of each face is thus doubled as compared with the previous plan.

conveyor in the parallel passage. When the block of coal has been shortened until the conveyor loader gets near the breakthrough, the conveyor is lengthened until its discharge end reaches the next breakthrough. By this means the sectional conveyor need never be over 300 ft. long.

Fig. 11 shows a V-system of mining in which the conveyor loader can be used. It is much more difficult to handle this machine on a face of this kind than on one extending at right angles to the entry. The reason for this is obvious. The machine cannot be pushed straight toward the face but must be moved along it as well. This is much more difficult than a simple transverse movement of the machine.

The use of conveyor loaders on a double V-system of mining with faces at 45 deg. from each other is not recommended. In such a case the angle of each face and conveyor loader with the entry to which they are tributary is only 22½ deg. Consequently, the longitudinal movement of the conveyor loader will far exceed its transverse movement.

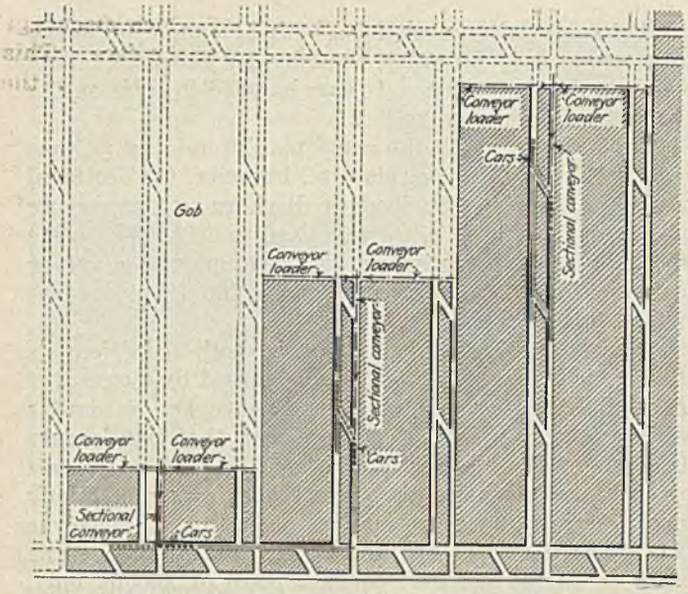



**Fig. 10—Long Blocks and Double Loaders**

This layout varies little from some of those already shown except for the length of the blocks, which in this case may be made 1,000 ft. or even more. Empties are stored in a breakthrough or shoofly convenient to the face, and the coal is conveyed only to this point.

If local conditions dictate the adoption of the double V-system, light face conveyors built in sections, each about 25 ft. long, that can be moved back out of the way of the cutting machine are recommended. In such a case the coal would be loaded onto these conveyors by hand.

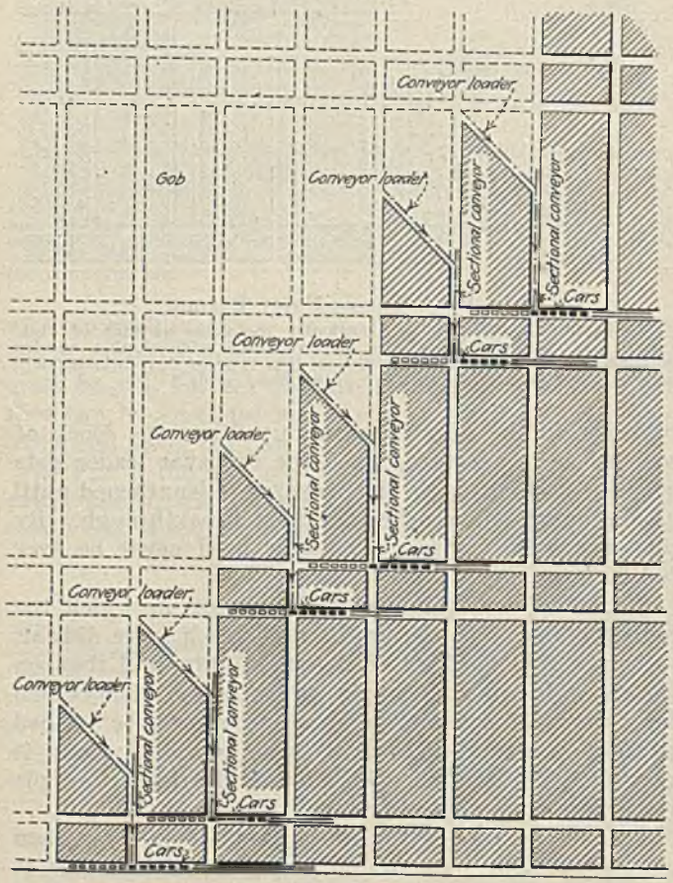



**Fig. 11—V-Mining with a Conveyor Loader**

Although the conveyor loader can be used on an angle as here shown it is more difficult to handle in this position than where its advance is at right angles to its length. It is easier to move a machine sidewise than endwise, yet movement in both directions is necessary on a slant face as here shown.

# Tipple Inspection Cuts Down Delays For Island Creek Coal Co.

Derailments and wrecks on main haulage roads are matters of great concern to the mine management, but even more important are delays at tipples, where the tipple, or the shaft by which it is fed, is working to capacity. These may be occasioned by a breakdown of tipple equipment, a change in screens, derailments or wrecks in the yard, the passage of an unloaded car beyond the tipple, or the necessity of cleaning or repairing railroad cars.

Often, when a mine trip is derailed one or two full-length trips of loaded cars stand on the big bottom if it is a shaft mine, or on the storage tracks outside if it is approached by a drift. Consequently, sufficient coal is at hand to keep the tipple running for some time after a haulage delay occurs in the interior of a mine. Thus the tipple, and the hoist also, if there is one, work when the mine does not.

## No Excuse for Tipple Troubles

Haulage equipment is inspected and repaired less easily than that at the tipple, for mine tracks are miles long, mine cars are many, and the maintenance of such equipment is a difficult matter. The tipple machinery, on the other hand, is all under one roof where it is constantly in view of a number of men to whom the beginning of trouble should be discernible. Occasional mine traffic failures are to be expected and are, therefore, excusable. Tipple breakdowns rarely can be justified and generally result from a lack of close inspection and from the immediate correction of any faulty functioning that the eye of the inspector or the tipplemen may discover.

With this in mind the Island Creek Coal Co. employs a mechanically and electrically inclined inspector who devotes all his time to checking the condition and performance of the company's tipples. He inspects each tipple as often during a year as the time required for the completion of a round of all the mines permits. His inspection is thorough, covering every vital part of the equipment, its degree of wear, and the lubrication and general performance of each machine as a unit. His attention also is directed to the electrical features, the motors, wiring and controls. Nor does he overlook fire hazards and other dangerous conditions in and about the tipple.

## Submits Complete Report

This tipple inspector is required to report his findings on a prepared form covering the items for which he is held partly accountable. One copy of his report is sent to the office, and another to the mine superintendent. The latter, not being willing to let it be known that his tipple is not functioning properly, sees to it that between visits of the tipple inspector one of his responsible men inspects and promptly reports needed repairs. One of the superintendents of this company requires a daily inspection and a report on the condition of his tipple. By these means tipple delays from faulty mechanism are nipped in the bud, and breakdowns have been reduced to a minimum. This plan of the Island Creek Coal Co. is abundantly suggestive of economy. For the many other delays at tipples already enumerated the cure is obvious and needs no further discussion here.

# Layout Adds 47 per Cent to Domestic

## No Costly Splitting of Pillars—Though Bed Pitches 70 per Cent Coal Slides Easily Down Suitable Grades and Is Consequently Protected from Breakage—Tonnage Doubled and Cost Halved

By J. S. Miller
District Superintendent, Lehigh Coal & Navigation Co., Lansford, Pa.

A NEW METHOD of mining a steeply pitching anthracite seam in the Orchard bed, at No. 1 Tunnel of the Lehigh Coal and Navigation Co. in the Nesquehoning district, has resulted in increased tonnage, a higher percentage of prepared sizes and a lower cost per ton.

This bed has a thickness of about 15 ft. on the level of the gangway. This is sufficiently thick to permit the driving of the roadway the full width in the coal. Above the gangway, the bed becomes thinner and near the surface is about 8 ft. thick. The coal is of good, hard quality and carries a fairly good roof. The pitch of the bed is between 65 and 70 deg.

Usually the breast-and-pillar method has been used for the mining of the steeply pitching beds in this section. This method produced good results in the mining of the breast, but the pillar was recovered with difficulty, part of the coal in general being lost and the work being unduly expensive. To recover these pillars after the breasts were driven, three methods were commonly employed; they were known as the pillar-breast method, the pillar-skipping method, and the pillar-chute method.

The first of the three consisted in putting a battery in one corner of the pillar (Fig. 1), coupling the manways *A* and *B* of the two adjacent breasts with airways at distances between centers two or three times as great as the width of the pillar being cut and working the pillar as a breast. This method was used by the more skilled miners of the earlier days but has practically been abandoned.

A slight variation of this method is still used to some extent. In this case, the pillar is left wider than is usual and of sufficient width for the full-width breast to be driven in it. A small pillar is left on each side of the pillar breast between it and the regular breasts. With the completion of the "pillar breast," the ribs are drilled full of holes, the holes are loaded and the shots fired.

### Middle Breast Drawn Empty

In the pillar-skipping method (Fig. 2), the middle breast of three is not driven through and is drawn empty, the outside and inside breasts being kept full. At the corners of the two pillars standing, batteries are put in and a skip of the two pillars started; the coal in the two pillars is blasted over into the empty breast. A small pillar is kept along the manways of the two skips between the skip manways and the manways of the two full breasts. When the skips are completed, these two small pillars are drilled with holes, which are loaded and fired as in the previous case.

The pillar-chute method (Fig. 3) is that most commonly employed. A chute is driven up the center of the pillar for its entire length. The pillar is then drawn downward by means of this chute. Two miners cut this pillar, starting at its top and retreating as the pillar is cut. The chute is used for traveling by the men as well as for running down the coal. This method is expensive, as the labor cost of driving the chute plus the price paid for the cutting of the pillar is approximately double that paid for the driving of a breast of the same width as the pillar.

In addition, the expense of maintaining this chute is great, because on this heavy pitch the chute is broken considerably by the coal running down it. Another objection to this method—and to an anthracite operator it is an important one for it is often the deciding factor between profit and loss—is the great breakage incurred in running the coal down a chute on this heavy pitch.

These three methods have been briefly outlined principally to give the reasons for adopting the method now to be described. In this method (Fig. 4) chutes are opened on the gangway on about 130-ft. centers. Each chute, when opened off the gangway, is connected first with the preceding one by a slant chute, which serves to establish ventilation. When this is accomplished, the main chute is driven across the pitch on an angle of 35 to 45 deg. and, while being driven, is ventilated by means of a small electric fan and air pipe through which air is conducted to the working face of the chute.

This chute is driven through to the surface by two gangs of miners working double shift. By driving this chute at an angle to the pitch, the vertical lift is cut about in half, which aids materially in working the

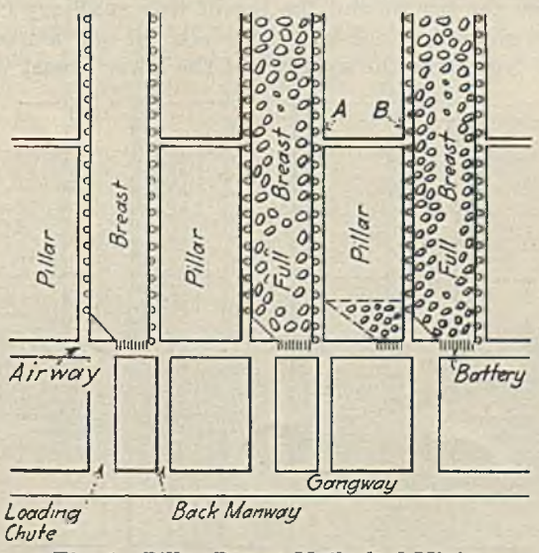



**Fig. 1—Pillar-Breast Method of Mining**

After the breasts are completed they are allowed to stand full. Then a breast is driven up the full width of the pillar with a battery in one corner. When driving up the original breasts air gangways are driven between the manways at distances between centers equal to three times the widths of the pillars being cut.

NOTE—Article presented at the winter meeting of the American Institute of Mining and Metallurgical Engineers, New York City and entitled "Mining Steeply Pitching Anthracite Seam."

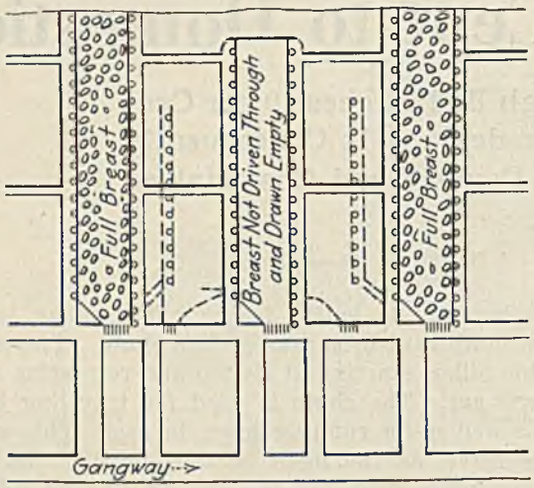



**Fig. 2—Pillar-Skipping Plan of Mining**

The middle breast is not driven the full distance and all the loose coal is drawn out of it. A battery is put in the corner of each pillar and a wide skip is carried up alongside the manways of the empty breast. These two skip breasts are kept empty like the middle breast, but, aiding in the support of the three, are two full breasts on either side.

beds. These slant chutes are about 300 ft. in length, and because they are driven at an angle to the pitch instead of directly up it, as in the pillar-chute method, they are maintained at comparatively little cost.

The first work done off this slant chute is to open a breast, the upper manway of which will be about 25 to 30 ft. from the surface. The manway of the chute under the breast is coupled and kept open to continue as an outlet for ventilation and to serve later as a means of running the coal in the stump between the manway of the upper breast and the surface when this stump is cut in the robbing of the chute. The length of this breast will be about 50 ft.

### Driving First Auxiliary Chute

While the breast is being driven, the first auxiliary chute is driven at a point about 20 ft. below the manway of the lower breast and at about the same angle up the pitch but in the opposite direction from that of the main slant chute. This is extended about 25 ft. so that a pillar of from 25 to 30 ft. is obtained between the breast and the top of this auxiliary chute. In this chute, a check battery is erected and a crosscut driven from it to the manway of the lower breast which

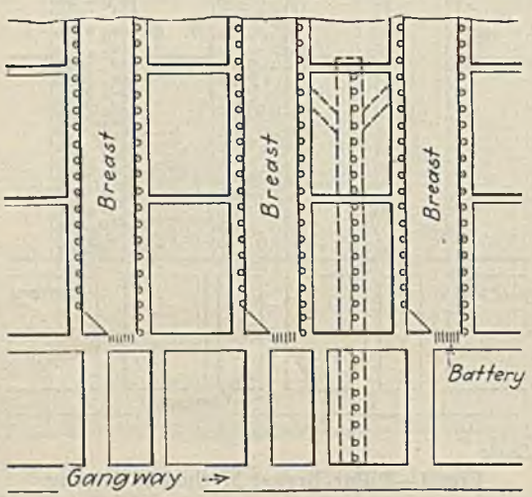



**Fig. 3—Chutes Split Pillars in Second Mining**

A chute is drawn up the center of the pillar, and side chutes are driven off every 20 to 30 ft. The pillar is cut, and the coal is run down the pillar chute.

establishes ventilation for the driving of No. 1 skip. When the breast is completed, skip No. 1 is started from the top of No. 1 auxiliary chute and cut over to the breast. This manway and skip are continued through to the surface.

While No. 1 skip is being driven, No. 2 auxiliary chute is also being driven and a battery put in this chute. A crosscut is driven from the battery to the manway of No. 1 skip. If No. 1 skip is not completed when No. 2 auxiliary chute is ready for No. 2 skip to be started from its top, No. 3 auxiliary chute is started below No. 2 auxiliary chute and made ready in a manner similar to Nos. 1 and 2. With the completion of No. 1 skip, No. 2 skip is started and carried through to the surface. In this manner, opening work for successive skips is always prepared in advance. Each skip increases in length and will reach a maximum at about the fourth skip, which runs into the main chute previously driven.

After several skips have been driven, the next main chute inside is probably driven and an air chute driven from it to the main slant chute being robbed. When the skips have passed the point where this connection

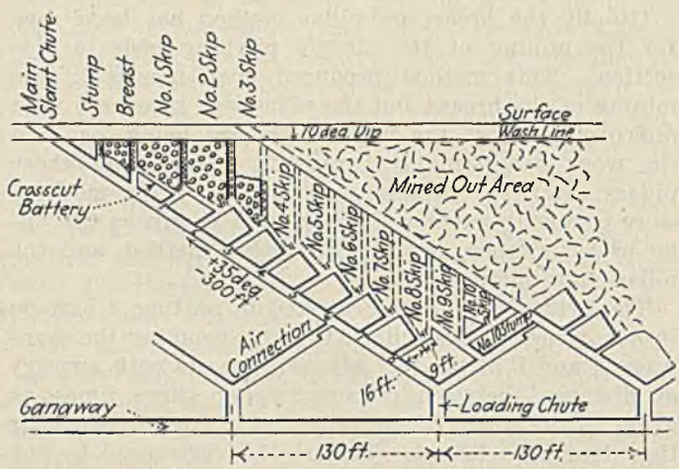



**Fig. 4—Method of Mining Orchard Bed**

In this method the larger chutes are driven at an inclination to the pitch which gives them an angle of 35 deg. to the horizontal. Auxiliary chutes of each skip are at a similar angle, but the skips themselves are run straight up the pitch. Because the skips are maintained full, degradation is kept to a minimum and three-fourths of the coal is of the size desired.

has been made, one of the two gangs of miners engaged in the cutting back of this chute cuts the stump at the top of the chute between the breast and the surface.

The coal from the stump is run down the manway of the main chute, which was coupled together under the breast. After this stump is cut and the coal run out of it, the stumps remaining between the main slant chute and the work done above it are in turn cut and loaded. The stumping is continued down to the connecting air chute driven from the next inside main chute. When the coal is thus drawn mining can be commenced in the next main slant chute inby. From this connecting air chute to the loading chute, a distance of about 80 ft., the stumps are left standing to provide for the ventilation of the inside chute and to act as a protection to the gangway.

From seven to eight skips are taken on each main chute and usually two skips and a stump are taken on the air-connection chute between the main slants. Four or five skips can be left full of coal to serve as a reserve from which to draw while the men are driving another chute inside and getting ready to cut in; the

driving and robbing of a chute usually requires from 11 to 12 months.

This method allows a complete extraction of the vertical pillar between these main slant chutes without any of the objectionable features of the pillar-breast method, the pillar-skip method, or the more expensive pillar-chute method. Four or five of these chutes are kept in continual operation, which furnishes work for four times this number of miners and permits concentration of working places.

Since the adoption of this method, the output has been increased from 40 to 90 cars per day, and the cost per car has been cut approximately in half. A test of the coal in cars loaded by this method of mining showed a percentage of prepared sizes of 75.6 per cent, whereas when the coal was tested from cars loaded by the pillar-chute method only 51.3 per cent of prepared sizes were obtained. The extraction by this method is 68 per cent with 32 per cent remaining in the pillars and stumps.

The air current in this section is derived entirely from natural ventilation. To arrange this has been a simple problem, as the bed is practically free from gas and as each chute is driven through to the surface; consequently, the air either goes up or down the chute, depending on the outside temperature.

To ventilate a working of this type when the lift is not being worked through to the surface or to an open gangway above and where the ventilation is furnished by a main ventilating air fan, it would probably be necessary to change this method somewhat. Under these conditions, more connecting air chutes would probably have to be driven between the main slant chutes. These could be arranged, however, in such a manner as to serve as auxiliary chutes for use in driving the skips.

## Oil-Coal Combination Effects Little Economy in Cement Industry

The possibility of replacing high-grade coal by a combination of low-grade coal and fuel oil was investigated recently in a series of tests carried on in the interest of the portland cement manufacturers, who use enough coal in making cement to give the industry fourth rank among manufacturing consumers of coal. The tests were conducted by the Conservation Bureau of the Portland Cement Association and showed that in most cases there is no financial economy in mixing oil with low-grade coal to replace high-grade coal.

In cement making, rock products are burned in a long cylindrical kiln, which revolves slowly while powdered coal or other fuel blown in at one end burns as a flaming torch inside the kiln, generating temperatures as high as 3,000 deg. F. To get such heat a high grade of coal is needed, and the cement makers use enormous quantities yearly.

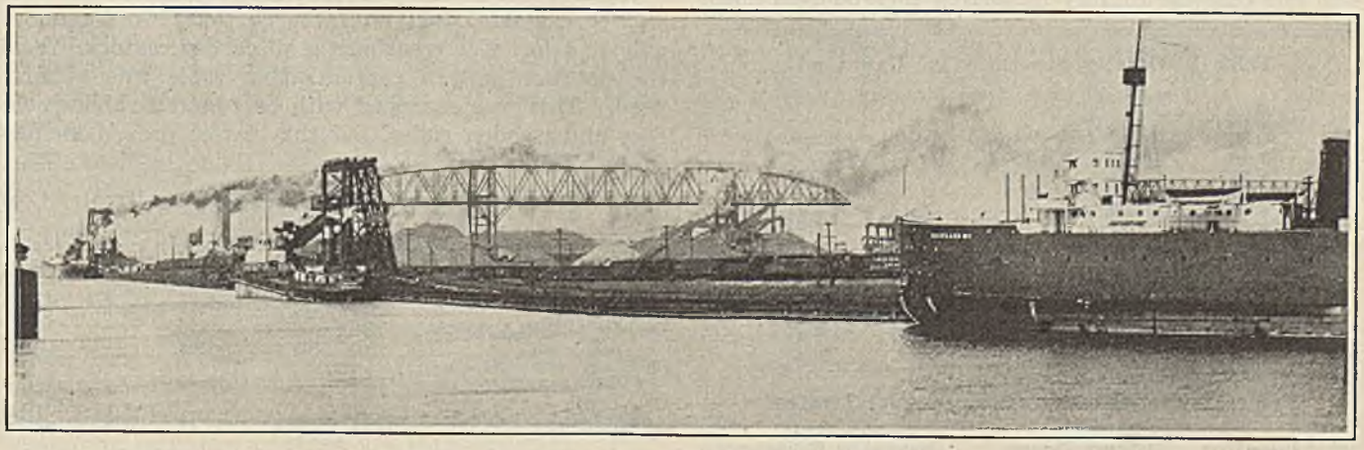
The tests were made to determine the possibility of using poorer coal, thus reducing costs, especially for manufacturers who must get good coal from a distance while poorer coal is obtainable nearby. In the tests, varying percentages of fuel oil were used with the poorer coal to bolster up its lower flame temperature, and thus get the same efficiency as from the higher grade coal, at a lower cost.

The coal ordinarily used by cement manufacturers is a gas slack containing an average of 55 per cent fixed carbon and 38 per cent volatile matter. The lower grades of coal embraced by the tests averaged about 46 per cent fixed carbon and 31 per cent volatile matter, showing a high content of ash and moisture.

Eight tests were made, blowing varying quantities of oil into the kiln under air pressure through a separate nozzle from that used for the coal.

The tests showed that just as good results could be obtained with the mixture of oil and coal, but the lower cost of the poorer coal was practically offset by the cost of the oil. The heating efficiency of the mixture was no greater than that of the high-grade coal used alone. Hence there is no appreciable advantage in using the combination of coal and oil under ordinary circumstances. However, it may be used to advantage where poor coal is more readily available or considerably cheaper.

In 1924, estimates show that the cement manufacturers used 7,500,000 tons of high-grade coal in pulverized form for burning in the kilns in which the raw materials are chemically transformed into cement clinker. In addition, about 3,500,000 tons were needed for other purposes, chiefly for generating power to run cement plant machinery, making a total of 11,000,000 tons. The cement industry is by far the largest consumer of powdered coal in the country.



**Ashtabula Harbor Is a Busy Strip of Water During "the Lake Season"**

Here the New York Central dumps a large share of the coal it hauls from producing fields to lower Lake ports for transshipment by water 800 miles to docks on the upper Lakes. The docks at the ports along the American side of Lake Erie work 24 hours a day during the eight months constituting the average Lake season, loading approximately 25,000,000 tons of coal.

# Studies of Froth Flotation and Rheolaveur Coal Cleaning Systems in Great Britain

## Larger Impurities Removed by Hand Picking — Both Froth and Rheolaveur Give Excellent Separation— Drum Filters Used for Dewatering Cleaned Product

By C. H. S. Tupholme
London, England

DURING THE RECENT past I have made a study of the results obtained at various British collieries using both the froth process and the Rheolaveur in their treatment of fine coal. Both of these methods of coal improvement are favorably regarded by coal-mining engineers.

Before going into details as to the results obtained, a few general observations on coal cleaning in British collieries might well be made. Table I sets forth the gravity-separtion analysis of a raw coal from a bed in the north of England. This sample was ground to all pass through a 10-mesh, and all pass over a 20-mesh screen.

Impurities are usually present in British coals in such quantity as to make their removal essential, the larger pieces being picked out by hand before the coal is sent to the washer. Such impurities may either form a part of the coal itself, may occur in the coal bed in veins, or they may be entirely separate from the coal. Thus, in the north, a carbonaceous shale, occurs in bands from 4 to 6 in. in thickness. This material possesses a fairly high calorific value.

### CONDITIONS AT MINES DIFFER

The fineness to which the mined coal is broken before being cleaned depends, of course, on the quantity of impurity present, the greater the impurity the smaller is the coal broken. It may safely be said that no two coals are alike and that the degree to which reduction of the run-of-mine should be carried is determined by the conditions found in each colliery, sometimes in each mine. As a general rule if the raw coal is smaller than 2-in. pieces, hydraulic classification is adopted. The separating principle here employed is the rate at which the various particles will fall in a liquid mixture.

In one case the colliery is seeking to produce a clean coal for the manufacture of blast-furnace coke. The raw material available averages 1¾-in. lumps. This is crushed, the product being divided into two parts—from ⅛-in. to ⅞-in., and that below ⅛-in. This material is treated in a froth flotation washery, the main principles of which have been given in a previous issue of *Coal Age*. It is, therefore, unnecessary to repeat them here.

The unit installed at this colliery is constructed chiefly of wood, though it is permissible to employ other materials, such as sheet iron or even concrete. The machine is a combination of a number of sets, or units, each consisting of an agitation cell and a frothing box. These are placed side by side in a row, so that all the sets have a common wall and the vertical agitators are aligned. Agitation box No. 1 is connected by a slot to froth box No. 1. This in trun is connected by a pipe to agitation cell No. 2, this pipe joining the bottom of the froth box with the bottom of the agitation cell at its center. The pulped coal passes from mixing cell to frothing box, and from thence to the next mixing cell, and so on until all the coal has been removed from the froth. The number of these sets depends upon the character of the coal and the degree to which it is desired to carry the cleaning; on an average four or five sets are common in Britain.

In the particular installation studied, two mixing boxes are installed as well as eight agitation cells and a like number of froth boxes. The unit is constructed of wood, the agitation cells being equipped with renewable linings that can be replaced when worn by the action of the pump. The size of the machine is 37x15x 10 ft. Refined cresylic acid is used for aerating, and petroleum gas oil is employed for drying the froth.

### COAL CRUSHED TO ¼ IN.

At first the coal was crushed to ⅞-in., but the cost was so excessive that later the particles were reduced only to ¼-in. For treating the discarded material from the flotation unit a concentrating table was at first used. This was equipped with corrugated rubber surface and wooden riffles, but this device proved ineffec-

**Table I—Gravity Separation of Raw Coal**

(Pass 10-mesh screen, rest on 20-mesh)

| Floating in Liquid of Sp. Gr. | Sinking in Liquid of Sp. Gr. | Weight, Per Cent | Ash, Per Cent | Sulphur, Per Cent |
|---|---|---|---|---|
| 1.25 | .... | 5.2 | 1.15 | 1.02 |
| 1.30 | 1.25 | 54.0 | 1.91 | 1.09 |
| 1.35 | 1.30 | 10.7 | 6.14 | 1.71 |
| 1.40 | 1.35 | 5.0 | 9.83 | 1.85 |
| 1.45 | 1.40 | 2.5 | 14.12 | 1.93 |
| 1.50 | 1.45 | 1.4 | 19.08 | 1.99 |
| 1.55 | 1.50 | 0.9 | 24.79 | 2.05 |
| 1.60 | 1.55 | 0.6 | 28.84 | 2.01 |
| 1.80 | 1.60 | 1.4 | 40.23 | 2.60 |
| 2.40 | 1.80 | 4.7 | 64.71 | 2.86 |
| 2.90 | 2.40 | 9.8 | 78.28 | 2.02 |
| .... | 2.90 | 3.8 | 71.52 | 20.55 |

**Table II—Dry-Screening Size of Coal Treated**

| Passes Over | Passes Through | Per Cent Total Material by Weight |
|---|---|---|
| 20 mesh | 10 mesh | 13.1 |
| 60 mesh | 20 mesh | 40.9 |
| 100 mesh | 60 mesh | 14.3 |
| 200 mesh | 100 mesh | 16.2 |
| ..... | 200 mesh | 15.5 |

**Table III—Character and Quantity of Raw and Treated Coal**

| | Ash Per Cent | Floating in Liquid of 1.6 Sp.Gr. Weight Per Cent | Floating in Liquid of 1.6 Sp.Gr. Ash Per Cent | Sinking in Liquid of 1.6 Sp.Gr. Weight Per Cent | Sinking in Liquid of 1.6 Sp.Gr. Ash Per Cent |
|---|---|---|---|---|---|
| (a) Raw coal | 21.58 | 75.4 | 4.77 | 24.6 | 73.10 |
| (b) Filter cake | 5.30 | 97.0 | 3.90 | 3.0 | 50.70 |
| (c) Coking coal from concentrator table | 5.00 | 100.0 | 5.00 | .... | ..... |
| (d) Firing coal (middlings) from concentrator table | 14.66 | 90.5 | 10.72 | 9.5 | 51.52 |
| (e) Discard from 20-mesh screen | 75.80 | .... | ..... | 100.0 | 75.80 |
| (f) Discard from table | 72.78 | 3.5 | 22.64 | 96.5 | 74.61 |

*Summary*

Products per 100 tons of dry raw coal

70.4 tons of coking coal (b+c) @ 5.25 per cent ash
7.0 tons of firing coal @14.66 per cent ash
22.6 tons of discards (e+f) @75.50 per cent ash

**Table IV—Samples from Froth Boxes Taken Simultaneously**

| Box No. | Average Ash | Average Sulphur | Dry Screening (+) = Over (—) = Through Screen +1/10 In. | + 10 | + 20 | + 60 | + 100 | — 100 | Ash Through 10 and Over 20 Mesh | Separation in Liquid of 1.6 Sp. Gr. Floats Weight | Floats Ash | Floats Sulphur | Sinks Weight | Sinks Ash | Sinks Sulphur |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.02 | 1.27 | .... | .... | 3.0 | 33.7 | 18.7 | 44.6 | 1.90 | 98.6 | 2.33 | 1.05 | 1.4 | 51.2 | 9.27 |
| 2 | 3.16 | 1.35 | .... | .... | 3.9 | 37.6 | 17.0 | 41.5 | 2.06 | 98.5 | 2.38 | 1.20 | 1.5 | 54.5 | 11.30 |
| 3 | 3.26 | 1.30 | .... | .... | 12.2 | 48.0 | 13.9 | 25.9 | 2.26 | 98.2 | 2.33 | 1.11 | 1.8 | 54.3 | 11.67 |
| 4 | 3.73 | 1.37 | .... | 0.7 | 20.7 | 46.0 | 10.6 | 22.0 | 2.25 | 97.9 | 2.64 | 1.15 | 2.1 | 55.1 | 11.40 |
| 5 | 4.73 | 1.59 | .... | 3.1 | 42.4 | 35.5 | 5.2 | 13.8 | 2.92 | 97.0 | 3.19 | 1.25 | 3.0 | 54.7 | 12.72 |
| 6 | 6.02 | 1.78 | 1.4 | 7.5 | 51.7 | 27.0 | 3.1 | 9.3 | 3.21 | 95.4 | 3.52 | 1.31 | 4.6 | 57.8 | 11.54 |
| 7 | 7.15 | 2.12 | 1.7 | 11.9 | 55.4 | 20.9 | 3.2 | 6.9 | 3.66 | 94.4 | 4.00 | 1.25 | 5.6 | 60.2 | 16.75 |

10 mesh = 0.0754 in.; 20 mesh = 0.0332 in.; 60 mesh = 0.0114 in.; 100 mesh = 0.0065 in.; 200 mesh = 0.0023 in.

**Table V—Cost of Treating Coal, per Ton**

| | Pence | Cents |
|---|---|---|
| Labor—Three men and one boy, with a sub-foreman who works in conjunction with the laboratory | 2.58 | 5.23 |
| Reagents—0.77 lb. cresylic acid 1.77d. 0.37 lb. gas oil 0.23d | 2.00 | 4.05 |
| Repairs, renewals and supplies | 0.71 | 1.43 |
| | 5.29 | 10.71 |

| | Hp.-Hr. |
|---|---|
| Power—Froth flotation unit for 25 tons per hr | 45 |
| Drying, 13 tons of washed coal per hr | 45 |
| Screens, concentrating tables, etc., 10 tons per hr | 4 |
| | 94 |

(A royalty is payable on the tonnage treated, and the water required for operating the whole plant amounts to about 200 gal. per min.)

tive and has been replaced by a vibrating screen. This machine handles on an average about 20 tons per hour containing up to 5 per cent of moisture. At first some difficulty was experienced from breakage of the screen wires, but since the ¼-in. crushing has been substituted for the ⅛-in., this difficulty has disappeared. In fact this machine will handle coal containing as much as 10 per cent of moisture with comparative ease.

The average dry-screening size of the coal in the froth is as shown in Table II.

For dewatering the product, a centrifugal drier proved almost useless, and the standard equipment now employed for this purpose is a drum filter using a 36-mesh cloth. About 30 tons of froth consisting as nearly as possible of equal parts of coal and moisture, are dried per hour. The moisture content of the product leaving the drier rarely exceeds about 16 per cent.

In this installation the feed to the mixing box of the froth flotation unit is 25 tons per hour. The coal is brought from the crushing plant to a storage bunker by a mechanical conveyor and is fed evenly to the box by a revolving table, the feed being continuous and regulated by the valve on the bunker and the automatic cut-off on the table. The input of water, amounting to about 3½-tons per ton of coal treated, is controlled by a V-notch. The reagents are introduced when and where they are required. The froth is removed automatically by scrapers and fed by gravity to the drum filter.

The oversize material, or that over 20-mesh, is treated on a concentrating table, after which it is bunkered with the froth-washed coal.

The washed coal produces a blast-furnace coke of high quality, the fixed carbon on a dry basis exceeding 90 per cent while the ash content rarely is more than 7 per cent. The coke is hard and the breeze content low, the quantity below 1-in. in size running about 2 per cent of the whole. It might be mentioned here that the frothed coal is coked in Koppers ovens at 1,050 deg. C. (1,868 deg. F.), about 34 hr. being necessary to carbonize coal with an 18-per cent moisture content. The benzol yield is not high, but the quantities of tar and ammonium sulphate obtained are satisfactory.

The entire cleaning process at this colliery is controlled by the laboratory, and samples are taken of all the products every half hour. The results obtained in

**Table VI—Results Obtained from Froth Flotation Plant at a British Colliery**

| Coal | | Before Froth Flotation—Ash per cent | Volatile per cent | Sulphur per cent | After Froth Flotation—Ash per cent | Volatile per cent | Sulphur per cent | Recovery per cent |
|---|---|---|---|---|---|---|---|---|
| Slack | 1 | 19.36 | 27.80 | 2.47 | 5.52 | 32.44 | 2.38 | 76.2 |
| | 2 | 8.08 | 31.74 | 2.35 | 3.80 | 32.26 | 2.05 | 89.2 |
| | 3 | 9.72 | 30.66 | 2.13 | 6.36 | 31.42 | .... | 85.2 |
| | 4 | 3.04 | 33.50 | 2.17 | 2.64 | 34.04 | 1.98 | 95.3 |
| | 5 | 20.44 | 26.04 | 2.97 | 4.24 | 34.28 | 2.21 | .... |
| | 6 | 20.50 | ..... | 2.81 | 4.40 | ..... | 1.93 | 70.0 |
| | 7 | 21.24 | 25.40 | 2.32 | 7.58 | 28.96 | 1.93 | 60.4 |
| Coal | 1 | 7.64 | 30.86 | 2.69 | 3.70 | 32.16 | 2.34 | 89.5 |
| | 2 | 8.20 | 30.36 | 3.02 | 4.14 | 31.60 | 2.20 | 91.7 |
| | 3 | 3.50 | 27.96 | 0.78 | 2.18 | 28.16 | 0.73 | 92.6 |
| | 4 | 7.78 | 28.78 | 2.48 | 2.64 | 31.74 | 1.39 | 85.5 |
| | 5 | 5.26 | 32.08 | 2.64 | 2.40 | 34.12 | 2.05 | 93.2 |
| | 6 | 8.68 | 30.50 | 3.24 | 3.26 | 32.18 | 2.14 | 84.3 |
| Slurry | 1 | 21.12 | 27.24 | 2.84 | 6.96 | 30.08 | 2.44 | 67.0 |
| | 2 | 23.24 | ..... | .... | 7.08 | ..... | .... | 70.8 |
| | 3 | 17.52 | ..... | 2.51 | 9.96 | ..... | 2.29 | .... |
| | 4 | 9.96 | ..... | 2.29 | 5.40 | ..... | 2.14 | 72.4 |

an average month from this washery are as shown in Table III.

Analyses of the products from each froth box are given in Table IV, the samples being taken simultaneously.

The operating costs per ton of coal treated by this flotation machinery are given in Table V.

At another colliery using the froth-flotation method the results are as given in Table VI, which is far more illuminating than any amount of descriptive matter. All the samples with the exception of slack No. 7 were ground to pass a 10-mesh screen. This sample contained 68 per cent below and 32 per cent above, a 16-mesh sieve. Slack No. 4 was first separated in chloroform, having a specific gravity of 1.48. The average moisture content of the washed coal is 55.9 per cent. Table VII, shows the sulphur content of two samples

**Table VII—Sulphur Content Before and After Washing**

| Sample | Before Washing—Sulphur in the form of: Sulphides | Sulphates | Organic | After Washing—Sulphur in the form of: Sulphides | Sulphates | Organic |
|---|---|---|---|---|---|---|
| Slack No. 2. | 1.225 | 0.046 | 1.079 | 1.140 | 0.036 | 0.875 |
| Slack No. 4. | 0.800 | 0.044 | 1.326 | 0.800 | 0.042 | 1.136 |

Sizing tests of the mixed slack sent to the washer gave the following results: Above ½ in., 15.6 per cent; below ½ in. and above ¼ in., 28.6 per cent; below ¼ in. and above ⅛ in., 16.9 per cent; below ⅛ in. 38.9 per cent.

**Table VIII—Test on Fine Washed Coal**

| Size of Coal | Per Cent | Analysis | Per Cent |
|---|---|---|---|
| ⅛ in. and finer | 33 | Ash (dry basis) | 6.88 |
| ⅛ to ¼ in. | 55 | Volatile matter | 32.36 |
| ¼ to ½ in. | 11.5 | Float in chloroform | 95.08 |
| ½ to ¾ in. | 0.5 | Sink in chloroform | 4.92 |
| Above ¾ in. | Nil. | Ash in floatings | 4.08 |
| | | Ash in sinkings | 43.66 |

**Table IX—Test on Fine Dirt**

| Size | Per Cent | Analysis | Per Cent |
|---|---|---|---|
| ⅛ in. and finer | 58 | Ash (dry basis) | 22.96 |
| ⅛ to ¼ in. | 36.75 | Float in chloroform | 61.74 |
| ¼ to ½ in. | 4.75 | Sink in chloroform | 38.26 |
| ½ to ¾ in. | 0.5 | Ash in floatings | 5.56 |
| Above ¾ in. | Nil. | Ash in sinkings | 44.66 |

**Table X—Test of Mixture from Resizing Screen and Fine Rewash to Fines Plant**

| Size | Per Cent | Analysis | Per Cent |
|---|---|---|---|
| ⅛ in. and finer | 55 | Ash (dry basis) | 17.68 |
| ⅛ to ¼ in. | 40 | Float in chloroform | 87.38 |
| ¼ to ½ in. | 4 | Sink in chloroform | 28.62 |
| ½ to ¾ in. | 1 | Ash in floatings | 3.66 |
| Above ¾ in. | nil. | Ash in sinkings | 49.66 |

(Quality somewhat variable depending on amount and composition of rewash.)

**Table XI—Test of Mixed Slacks to Washer**

| Size | Per Cent | Floating Per Cent | Sinking Per Cent | Ash in Floatings Per Cent | Ash in Sinkings Per Cent |
|---|---|---|---|---|---|
| ¼ in. and finer | 23.3 | 55.18 | 44.82 | 3.58 | 57.7 |
| ¼ to ½ in. | 18.4 | 61.96 | 38.04 | 3.42 | 67.8 |
| ½ to ¼ in. | 15 | 80.53 | 19.47 | 3.52 | 63.7 |
| ¼ to ½ in. | 24.5 | 72.25 | 27.75 | 4.14 | 69.71 |
| Above ½ in. | 18.8 | 88.91 | 11.09 | 5.62 | 81.28 |

| Clean Coal Floating in Chloroform | Per Cent |
|---|---|
| ¼ in. and finer... 23.3 × .5518 = | 12.86 |
| ¼ to ½ in. 18.4 × .6169 = | 11.40 |
| ½ to ¼ in. 15 × .8063 = | 12.08 |
| ¼ to ½ in. 24.5 × .7225 = | 17.7 |
| Above ½ in. 18.8 × .8891 = | 16.72 |
| Total | 70.76 |
| Average sinking content | 29.24 |

| Analysis Unwashed Slack | Per Cent |
|---|---|
| Moisture | 4.37 |
| Ash (dry basis) | 19.6 |
| Volatile matter | 26.68 |
| Sulphur | 2.688 |

**Table XII—Test of Large Washing Coal**

| Size | Per Cent | Analysis | Per Cent |
|---|---|---|---|
| ¼ in. and finer | 1.2 | Ash (dry basis) | 5.64 |
| ¼ to ½ in. | 3.4 | Volatile matter | 33.64 |
| ½ to ¼ in. | 6.4 | Sulphur | 19.88 |
| ¼ to ½ in. | 41.8 | Float in chloroform | 95.46 |
| Above ½ in. | 47.2 | Sink in chloroform | 4.54 |
| | | Ash in floatings | 3.9 |
| | | Ash in sinkings | 51.96 |

**Table XIII—Test of Large Dirt**

| Size | Per Cent | Analysis | Per Cent |
|---|---|---|---|
| ¼ in. and finer | 7.6 | Ash (dry basis) | 68.2 |
| ¼ to ½ in. | 26.8 | Float in chloroform | 3.28 |
| ½ to ¼ in. | 13.4 | Sink in chloroform | 96.72 |
| ½ to ¼ in. | 34 | Ash in floatings | 8.48 |
| Above ½ in. | 18.2 | Ash in sinkings | 73.02 |

of this coal before and after washing by froth flotation.

One-thousand and forty-four tons of mixed slack gave 38 tons of slurry (sludge) with a moisture content of 33 per cent, or about 26.4 tons of dry coal. Samples of this material cleaned by the froth flotation process indicated a yield of 17 tons of dry coal, containing 7 per cent of ash. On carbonization in a coke oven an excellent coke was yielded.

At another colliery, after extensive investigation, it was decided to instal the Rheolaveur system of coal cleaning. The results obtained from this device are here summarized in Tables VIII to XIII inclusive.

It has been found that the Rheolaveur method of coal cleaning, as employed at this colliery, has entirely overcome the difficulty formerly experienced from slurry. All of the slurry now recovered is sent to the washed-coal bin.

## Zinc Roofs Are Long-Lived

For over a 100 years sheet zinc has been used for roofing in increasing quantities in Europe on account of its long life and relative cheapness. Until recently, it has not been manufactured in sufficient quantity in this country to be available for roofing purposes, but now that it is available, its use is rapidly increasing. The outstanding characteristics which make sheet zinc desirable as a roofing material are; first, that it does not rust and therefore needs no protective coating; and second, that, considered from the standpoint of service, it is the most economical roofing on the market today.

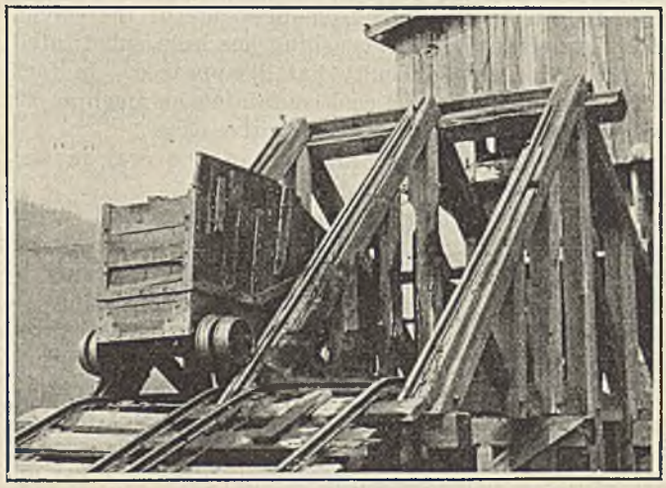
On exposure to the air, zinc becomes covered with a hard, adherent coating of a basic carbonate which completely protects the metal underneath. Ordinary usage and exposure do not injure this coating. There are many zinc roofs in Europe that have been exposed for over 100 years and are still in good condition. There is a house at Jamesport, Long Island, which was built about 1865 and covered with a zinc roof. During the fifty years in which this roof has been exposed to the salt air and sand laden winds of Long Island, there has not been one cent spent for repairs.

A zinc roof will give excellent protection against fire and if the roof is properly grounded, against lightning. If, for any reason, the building should be torn down, the metal may be sold for about 40 per cent of its current metal value. Corrugated zinc sheets are similar in appearance to the familiar galvanized corrugated steel sheets, and may be applied over steel or wood purlins or over a full boarded surface, in which case a light gage may be used.

Charles E. Van Barneveld, of the Bureau of Mines, makes the following statement in a recent government report on "Zinc Used for Roofing": "For surfaces for which corrugated zinc sheets are adapted, there is no satisfactory substitute. Zinc sheets are an investment. For use over a 15-year period they will show an actual saving over any competitive material."

## This Is an Old Method of Dumping That's Hard to Improve Upon

The advent of electric drive has been the cause of such rapid changes in mine equipment that the expression, "an old method," conveys to many the idea that the way being described is no longer good practice. But some old methods continue to be the best from the standpoints of simplicity, reliability and economy. An example is a double-wheel method of dumping a skip at the top of an incline.



**Extra Wheels on Rear Axle Engage Dump Rails**

The skip has no front end-gate, and dumps its load of refuse when it is tipped forward. The drawbar, which in this case is a bail, is necessarily fasted near the rear end of the skip. The hoist is located high enough above the dump so that no rope sheaves are required.

The accompanying photograph of this method was taken recently at the top of the slate disposal incline of the Elkhorn Coal Corporation at Wayland, Ky. The incline is sufficiently steep so that no end gate is required in the upper end of the skip, this construction making it possible to effect the dumping by tipping the skip forward to an angle of about 45 deg.

The tipping is accomplished by the outside pair of rear wheels engaging and running up a short track which is inclined at an angle of 60 deg. with the horizontal. The gage of this track is 14 in. wider than that on which the front wheels remain. The bail or drawbar is attached well toward the rear of the skip so as to allow the front end to stay on the lower track as the hoist pulls the rear end up the dumping rails. This is the sort of an arrangement which "can't help but work." The one pictured has been in use for 11 years, and during that time has given no trouble.

# News Of the Industry

## Commerce Commission Has 3-Day Hearing Of Oral Arguments on Lake Coal Rates

Oral arguments for and against the examiners' report in the Lake cargo coal rate case and in connection with the opposition's petition to reopen the case for new testimony were presented before the Interstate Commerce Commission April 27, 28 and 29. There is no indication when the commission will announce its decision in any of the issues involved.

The case involves the whole structure of railroad freight rates on bituminous coal destined for Lake Erie ports. Complaint was filed two years ago by Pennsylvania and Ohio operators, asking that the differential between points in these districts and points in Virginia, West Virginia and eastern Kentucky be widened, on the ground that their geographical location justified a greater differential in rates. The maximum differential now is 25c. The petitioners in this case contended that horizontal increases in freight rates since the differentials were established had served to destroy the balance of the differentials, which were not changed when the rates were raised, and thus adversely affected short-haul rates.

There were two possible avenues of widening the differentials: by reducing the rates from Ohio and Pennsylvania shipping points or by increasing the rates from Virginia, West Virginia and eastern Kentucky points. The examiners recommended to the commission both methods, with a result which would create a maximum differential of 88c., instead of the present maximum of 25c.

At the hearing of oral arguments, beginning April 27, representatives of Ohio and Pennsylvania operators urged adoption of the examiners' report and recommendations. Representatives of twelve associations of producers in Virginia, West Virginia and eastern Kentucky argued in opposition, while consuming interests of Michigan, Minnesota and South Dakota also were represented in opposition.

Attorneys for the coal operators in opposition argued, among other points, that to materially increase the differentials would destroy their business. Not only would mines in the Southern territory be forced to close, they argued, but whole communities would be destroyed and great hardship would result because there are no other industries in those sections to which labor from the mines can turn, whereas in Pennsylvania and in Ohio there are diversified industries and if the mines close labor can turn to other employment.

The petition filed by the opposition asking that the case be reopened also was argued at considerable length, it being contended that the commission should have testimony regarding present conditions in the bituminous-coal industry and that the evidence now before the commission in this case is based upon conditions which prevailed in 1923 and in prior years. The Hoch-Smith resolution, instructing the commission to make a study of the whole freight-rate structure, was brought forward, it being contended that this specifically requires the commission to observe present-day conditions.

Attorneys for the opposing consuming interests declared that they do not wish to have their choice confined to one market and that this would be the result of widening the differentials. While they admitted that a reduction in rates from Ohio and Pennsylvania, as recommended, might be reflected in lower prices of coal to the consumer, they expressed the fear this result would be temporary and that eventually the consumers would be at the mercy of these two fields alone.

### Miners at Jermyn Colliery Vote to Take Wage Cut

Employees of the Jermyn Colliery, an independent anthracite operation at Old Forge, Pa., voted April 30 to accept a 10 per cent wage reduction in order to make possible the resumption of operations at the mine. The colliery has been idle several months. About 800 men are employed when operations are under way.

When a check-up was made the next day it was definitely learned that when the vote was taken a majority of the mine workers were not present at the session. The president of the local also was absent.

By the terms of the agreement voted upon the men were to return to work May 6. It is understood that the district union officials will send organizers to the next meeting of the local to block the move. The action of the mine workers in accepting the wage reduction will be a strong factor in the argument of the anthracite operators for a general wage reduction at the coming conferences between them and the union officials previous to the formulation of a new contract to take the place of the present agreement which expires on Aug. 31, 1925.

A statement by Enoch Williams, secretary-treasurer of the district union, said the action of the men in accepting a wage cut was not authorized by the district officials and was done without their knowledge. He stated that he did not believe the men would return to work under conditions otherwise than set forth in the present agreement between the operators and union.

### *Union Executive Board Meeting May 12*

An official call for a meeting of the international executive committee of the United Mine Workers, to be held May 12 at the international headquarters, Indianapolis, Ind., has been sent out by Ellis Searles, editor of the *United Mine Workers' Journal*, for John L. Lewis, international president. It is expected that the session will last more than a week and that matters pending since the last committee meeting will be discussed.

### Pittsburgh Coal Co. Now Has Only Six Mines Open

Five more of the Pittsburgh Coal Co. mines in the Pittsburgh district have been closed in the past week, leaving the company with only six of its union mines in operation. The latest mines to stop work are Crescent, at California; Eureka, at Smithton; Yough Slope, near West Newton; Arnold No. 2, at Fayette City, and Mansfield mine, at Carnegie. These five mines had 1,822 men on their payrolls when they were closed.

In a letter to the employees, T. M. Dodson, vice-president in charge of operations, says that these mines are shut down because they cannot be operated under the present union wage scale due to competition of lower cost coal from non-union fields, and that the Pittsburgh Coal Co. is not willing to continue to operate at a loss.

Mansfield mine is an important institution in Carnegie. The closing of this mine, within the city limits of this thriving community, will cut off a payroll averaging $60,000 per month and throw 400 men out of work. The Mansfield mine has been noted for its steady operation, through dull times and good. Car shortage, strikes and holidays alone have caused loss of work at this mine for many years. Fifteen years ago, in 1910, the production was 503,556 tons, and that figure was almost equalled last year, when 452,206 tons was mined.

## Federal Trade Commission To Limit Publicity

A pronounced change in its policy regarding publicity was announced April 30 by the Federal Trade Commission, which announced that after issuance of a complaint no statement shall be made for publication until after final adjudication of the case.

It also was decided that where a case is settled by stipulation before a complaint is issued, no announcement for publication will be made.

Where a complaint is issued and the reply of the respondent has been filed, or where the respondent fails to answer, the papers shall be open to public inspection.

Commissioner Huston Thompson opposed the new rule. "I am against it," he said, "because it will permit star-chamber proceedings to be carried on and because it will deprive a minority of the right to express its views publicly."

It has been a rule of the commission to issue a statement on the filing of a complaint, stating the charges laid against a respondent. This procedure, a majority of the commission held, "has resulted in many cases in great damage," since the publicity given to dismissal of complaints charging unfair business practices does not always repair the injustice.

Concerning the withholding of publicity regarding cases settled by stipulation, the majority declared it had not always been the custom to issue such statements and that it would consider the public interest to have been as well conserved by an agreement to "cease and desist" as by a formal order. The complainant has never been considered a party to the case, it was added.

## Dodson to Address Meeting Of U. S. Commerce Chamber

The new headquarters building of the Chamber of Commerce of the United States will be formally dedicated at the thirteenth annual meeting of the chamber, in Washington, May 20-22. International as well as domestic questions will be discussed, consideration being given to commercial treaties, including that with Turkey and suggested revision of others. The European situation and the future of the Dawes plan also will be taken up. Other subjects that will come in for attention are competition in foreign trade, the American merchant marine and the relation of Congress to American business.

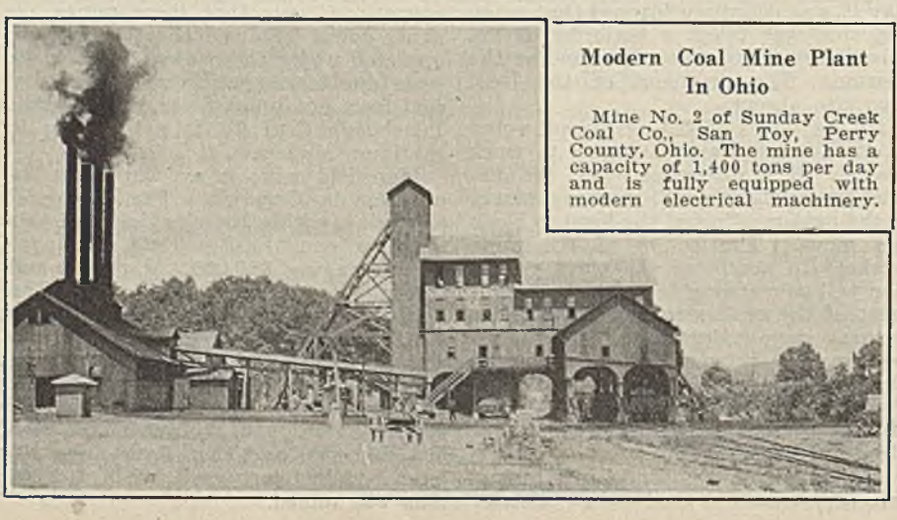
Discussion will take place largely in group sessions divided as follows: Natural resources production, transportation and communication, finance, insurance, manufacture, distribution, foreign trade and civic development. Among the questions proposed for consideration is one by the National Coal Association for a declaration opposing the establishment of any system of compulsory periodical reports to the government on ordinary business transactions, on the ground that according to the Fourth Amendment to the Constitution the private business affairs of citizens are not subject to governmental inquisition except for specific cause duly set forth.

Truman M. Dodson, vice-president of the Pittsburgh Coal Co., has accepted an invitation to deliver an address on "The Coal Situation."

### *This Mine Must Be Quiet*

Most people who live in the anthracite region do not mind a little thing like blasting under their houses within easy earshot. They pay no attention whatever to shocks that rattle the tea cups out of the china closets, and are only mildly disturbed when the earth opens and engulfs their back yards. But John Jordan is different. He wishes these mining operations under his house in Scranton would let him sleep at home in peace. So Judge E. C. Newcomb has issued a preliminary injunction restraining Robert Barron and the Glen Alden Coal Co., co-defendants in Jordan's damage suit, from conducting "their mining operation so as to either violently shake the plaintiff's dwelling by the use of explosives or cause to be emitted volumes of sulphurous and gaseous smoke."

Governor Fuller of Massachusetts on April 29 signed the bill extending the life of the Commission on the Necessaries of Life for another two years. Eugene C. Hultman is chairman.



**Modern Coal Mine Plant In Ohio**

Mine No. 2 of Sunday Creek Coal Co., San Toy, Perry County, Ohio. The mine has a capacity of 1,400 tons per day and is fully equipped with modern electrical machinery.

## Inspectors' Institute Meets At Peoria, May 19-20

The annual convention of the Mine Inspectors' Institute of America, to be held at the Jefferson Hotel, Peoria, Ill., May 19 and 20, will afford coal mining men the opportunity to learn more about mine-inspection service and how to better protect the lives of their employees and mining properties. The program for the meeting, as announced by G. Bruce Butterfield, secretary, includes papers and discussions on safety subjects by James Sherwood, state mine inspector, Kansas, and a former president of the institute; R. M. Lambie, chief mine inspector, West Virginia; John E. Jones, safety engineer, Old Ben Coal Corp.; J. J. Rutledge, treasurer of the inspectors' institute, and other officers of the institute, as well as several state mine inspectors.

This meeting, according to the constitution of the institute, is open to "all men commissioned by the state, province or county to act as mine inspectors, all persons commissioned by the federal government as Director of the Bureau of Mines, chiefs of divisions or sections of said bureau for the purpose of coal-mine investigation inspection and all persons engaged in safety work in or around mines or engaged in teaching safety pertaining to mining. The annual dues of each member shall be $5, which will becomes due and must be paid to the sercetary of the institute on or before the date of the annual meeting."

Following is the program:

MORNING SESSION, MAY 19

1. Registration.
2. Business Session.

AFTERNOON SESSION

1. Balance of Business Session.
   a. Report of committee on standardization—Safety code for explosives.
   b. Discussion of report of mining congress.
   c. Committee on standardization of mine ventilation.
   d. Selection of next convention city.
2. Tamping with Rock Dust and Cushioning of Shots—J. J. Rutledge, treasurer of the Mine Inspectors' Institute of America, and chief of the Department of Mines of Maryland.
3. Experience with prosecutions for violation of State Mining Laws—F. W. Cunningham, state mine inspector, Pennsylvania.

MORNING SESSION, MAY 20

1. Examination of Auxiliary Equipment Such as Hoisting and Ventilating Apparatuses by State Inspectors at the Time of the Regular Mine Inspection—Thomas English, state mine inspector, Illinois.
2. Should All Coal Mines Be Examined by Certified Fire Boss Each Morning Before Other Employees Enter?—E. J. Hoey, second vice-president, Mine Inspectors' Institute of America and state mine inspector, Illinois.
3. How Can Accidents from General Causes, Such as Falls, Haulage, etc., Be Reduced?—James Sherwood, former president of the Mine Inspectors' Institute of America and mine inspector, Kansas.
4. Proposed New Safety Service in West Virginia—R. M. Lambie, chief mine inspector, West Virginia.

AFTERNOON SESSION

1. Rock Dusting—John E. Jones, safety engineer, Old Ben Coal Corp., West Frankfort, Ill.
2. Are Separate Traveling Ways a Safety Factor?—Frank Hillman, first vice-president, Mine Inspectors' Institute of America and safety inspector, Woodward Iron Co., Mulga, Ala.
3. Derailment of Mine Cars and Their Prevention—H. H. Hasler, engineer of mines, Pennsylvania Coal & Coke Co.
4. Should Issuing of Second Class Mine Foreman Certificates Be Discontinued?—F. Rosbottom, state mine inspector, Illinois.

# Balance of Power in Coal Triangle Swings to Consumer

## Dodges Responsibility of Helping Operator and Mine Worker in Crisis—Large Users Contribute to Aggravate Conditions—Fall of Union Would be Misfortune

By Paul Wooton
Washington Correspondent of *Coal Age*

Consumers of coal lose sight of their interest in the production of the commodity at such times as these. If they were to take as much interest now as they do when prices get above normal they probably would find some way to assist in relieving this crisis.

There is a three-cornered relationship between the operator, the mine worker and the consumer not unlike the eternal triangle of the drama. As long as the power each is able to exert is fairly evenly balanced the economic machine runs smoothly. An ideal condition would be to have the three forces evenly balanced, so that no one would get a disproportionate advantage.

Since the beginning of the troublous times, in 1916, this balance of power has been shifting from one group to the other. Before the war the consumer long had been the strong member of the trio. Late in 1916 the advantage suddenly shifted to the operator. He came in for a period of unexpected profits. Later the balance of power shifted again, conditions bringing the mine worker into a position to exert it. The time of that shift was in the summer of 1920, when the daymen's strike in the Central Competitive Field won an extra $1.50 from the operators—a concession that was regretted almost as soon as it was made.

The center of power wavered in 1921, but was restored to labor by the strike of 1922. For a year or more all of the advantage has been with the consumer.

When the balance of power lay with the operator or the mine worker the consumer was not slow to criticize. He demanded that the government take steps in his behalf. He wanted the operator to forego the full exercise of his economic advantage. It is just as equitable to propose now that the consumer forego the full exercise of his economic advantage, but were any proposal made that the government take action that would put coal prices at a level that would be fair to the producer a nationwide protest would result.

Most consumers, particularly the large ones, are taking full advantage of the present situation and in many ways are contributing to make conditions worse. They lose sight of the fact that an equal and opposite reaction is sure to come. No one of the trio profits by these violent shifts. High prices and high wages proved in the end the undoing of the operator and mine worker by bringing about overdevelopment. The present excessively low prices yet will prove to have been bad for the consumer.

Were the present trend to continue it ultimately would ruin the union operators and destroy the United Mine Workers. This is not likely to happen, but even if it did it would not be in the interest of the consumer. The elimination of the United Mine Workers simply would invite the formation of a more radical union. Coal mining has been among the first industries to be organized in all countries. The consensus is that it cannot be permanently disorganized, certainly not until trade unions in all other industries have gone the way of powdered wigs and top hats.

Neither would it be in the interest of the consumer to ruin the union operator. When his ruin would have been accomplished, prices of non-union coal would rise and, worse still, the reverberations of the accompanying bankruptcies would do violence to the whole fabric of business. Peace in the coal industry and the elimination of abrupt peaks and troughs from its price curve are matters in which the consumer is as deeply interested as are the mine operator and the mine worker.

Those entrusted with the guardianship of the public's welfare believe we are over a volcano. They are convinced the operators and the Mine Workers are cudgeling their brains in an effort to relieve the danger. It is difficult for them to co-operate at a time like this, but the consumer, representing a more numerous group and having the advantage of not being a party to the wage agreement, should be striving earnestly to find the way out. Federal officials would be much relieved if consumers could be aroused from their lethargy while there still is opportunity to do something constructive. They will wake up quickly enough if an explosion comes, but then it will be too late.

## Colorado Coal Officials Told To Cut Own Pay

The Colorado Industrial Commission injected a new note into labor arbitration methods as it urged officials of five Routt County coal mining companies to reduce their own salaries in proportion to the wage reductions for miners authorized in a commission order Monday.

The unusual step came after a hearing held by the commission recently on the application of the five operators to place their employees on the 1917 wage scale. The companies affected by the order are the Colorado-Utah Fuel Co., the Victor American Fuel Co., the Fraker Fuel Co., the Moffat Coal Co. and the McNeill Coal Co., all operating mines in Routt County.

After declaring the wage reduction for miners justified in the face of present conditions, the order continues: "The commission feels that in all fairness to the lower paid employees, the higher salaried employees of the companies should voluntarily insist on a proportionate decrease in their own salaries."

The commission further urges that preference be given the older employees by the operators, and that all of these possible be kept at work at a living wage.

The action of the commission, following other recent awards authorizing wage reductions for coal miners, is taken in order that the mines may be kept open and the men find steady employment even at a reduced wage. Virtually every operator in the state has notified the commission of a similar reduction to the 1917 scale, in many cases the miners themselves asking for the decrease in order that the mines may be kept open.

Operators declare the step necessary to meet competition from the Kentucky and West Virginia fields, which, under the wage scales there and the freight rates allowed them, are able to ship into the Colorado coal market and undersell the Western operators. The mild winter just ended also has affected conditions, less coal being used.

Last week the commission issued orders authorizing similar reductions in the Walsenburg-Trinidad district, affecting a number of companies, including, among the larger ones, the Colorado Fuel & Iron Co., the National Fuel Co., and the Victor American Fuel Co. Such a reduction was also authorized Monday for the Chandler mine, in Fremont County.

## *Open-Shop Movement Spreads in Alberta*

The "open shop" has been established in the majority of the steam coal mines in the Crows Nest Pass district of Alberta, the miners having broken away from the union. The miners at Hillcrest Colliery by a vote of 183 to 91 favored acceptance of a direct agreement with their employers on the same terms as are now in effect at other mines in the district.

Employees of the Corbin Coal & Coke Co. have withdrawn from the United Mine Workers and have formed the Corbin Miners' Association. The new association has entered into an agreement with the Corbin company for a wage agreement that is practically the same as that in force at the Crows Nest Pass Coal Co.'s mines. It is expected that steam coal mines will now have steady work throughout the summer.

Twenty-two miners employed in the Bulkley mine, at Crested Butte served notice on the State Industrial Commission, April 28, that unless a condition existing at the mine was remedied they would strike within thirty days, the "condition" being the statement that they were doing by man power what is customarily done by animal power in coal mines. The commission announced that they would at once investigate the complaint. The mine is operated by the Crested Butte Coal Co.

## Coal-Mine Accidents Take 181 Lives in March; Rate Is Below 10-Year Average

Production of coal in the United States in March, 1925, amounting to 44,684,000 tons, was accompanied by fatal accidents to 181 mine employees, according to information furnished by state inspectors to the U. S. Bureau of Mines. The number of fatalities per million tons of coal produced was 4.05, as compared with 3.99 in the preceding month and 7.19 for March last year.

The March rate for bituminous mines was 3.80 per million tons of coal produced, as compared with 3.57 in the previous month, 7.54 for March a year ago and 3.85 average for March during the ten years 1915-1924. For anthracite mines the fatality rate in March was 5.38 per million tons as compared with 6.27 in the preceding month, 5.42 for March last year and a ten-year average of 6.05 for the same month.

Reports covering the first three months of 1925 show 589 accidental deaths at coal mines, which, based on a production of 150,161,000 tons of coal, indicates a fatality rate of 3.92 per million tons. For the first quarter of 1924 the rate was 4.78 per million tons. The fatality rate for bituminous mines alone was 3.50 per million tons during the first three months of 1925, as compared with 4.65 for the same period last year. For anthracite mines alone the fatality rate for the first quarter of 1925 was 6.43 as compared with 5.54 for the corresponding quarter last year.

Comparing the causes of accidents during the first quarters of 1925 and 1924, the reports show changes in the death rates per million tons during the present year as follows: A reduction from 1.804 to 1.738 in falls of roof or coal, and from 1.731 to 0.753 in gas and dust explosions; an increase in the rate for underground haulage from 0.559 to 0.673 deaths per million tons, from 0.170 to 0.213 for explosives, and from 0.073 to 0.139 for electricity.

### *Collins' Body Brought Out By Coal Miner*

W. H. Hunt, western Kentucky miner and formerly a state mining inspector, on April 23 brought to the surface the body of Floyd Collins, the cave explorer caught by a rock fall on Jan. 30, near Cave City, Ky., and who was found dead after two weeks of effort to reach him. The original party which reached the body decided to fill up the shaft when it was found that it would be difficult to release the body and that the tunnel from the bottom of the shaft was very dangerous.

Hunt was employed under a $2,500 contract to bring out the body. He cleared out the old shaft, retimbered it, dug 20 ft. deeper, and at seventy odd feet sent in a fresh tunnel, and brought out the body. Hunt did his job in fifteen days, aided by six experienced coal miners.

## Rate Confusion Disturbs St. Louis Region

Illinois coal mines within 20 miles of the great St. Louis market have lost a rate battle. They had gained a rate into St. Louis 21c. under the rate applicable from the rest of the Belleville field, but on April 25 the Illinois Supreme Court took their rate advantage away from them, returning the whole Belleville region to a 91c. basis. This decision was made on an appeal which the railroads took from a decision of the Illinois Commerce Commission.

The commission had listened to a complaint of coal producers of the 20-mile mines in March, 1923, and had ordered the new 70c. rate to apply not only to the zone covered in the complaint but had extended it 10 miles. The Circuit Court of St. Clair County in November, 1924, struck off the additional territory and set aside that portion of the commission's decision that applied to territory outside the original complaint. Now the State Supreme Court reverses both the commission and the lower court, holding that some of the rate comparisons upon which the rate changes were ordered were incompetent, and remands the case to the commission.

It is not possible to prophesy what will happen next in the case, but for the time being, at least, a rate that had been in effect since last fall is raised from 70 to 91c. This rate, of course, gave mines within the 20-mile zone an advantage not only on shipments to St. Louis but on large tonnages going beyond.

## Coal-Mine Fatalities During March, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | Shaft | | | | Surface | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.) | Falls of face or pillar coal. | Mine cars and locomotives. | Explosions of gas or coal-dust. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.) | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes. | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 2 | | 1 | | | 1 | 2 | | | | | 6 | .. | | | | | | | | | | | | 6 | 3 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | | | 1 | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Colorado | 2 | 1 | 1 | | | | 1 | 1 | | | | 6 | | | | | | 1 | | | | | | 1 | 7 | 2 |
| Illinois | 3 | | | | .. | | .. | | | | | 3 | | | 1 | 1 | | | | | | | 3 | 3 | 7 | 16 |
| Indiana | 3 | | 1 | 5 | .. | | | | | | | 9 | | | | | | | | | | | | | 9 | 2 |
| Iowa | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Kansas | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Kentucky | 1 | | 2 | | 1 | | 1 | | | | | 5 | | | | | | | | | | | | | 5 | 12 |
| Maryland | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Michigan | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Missouri | | | | | | | 1 | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Montana | | | 1 | | | | | | | | | | | | | | | | | | | | | | 0 | 2 |
| New Mexico | 1 | | | | 1 | | | | | | | 2 | | | | | | | | | | | | | 2 | 2 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 2 |
| Ohio | 3 | | 2 | | | | | | 1 | | | 6 | | | | | | | | | | | 1 | 1 | 7 | 5 |
| Oklahoma | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Pennsylvania (bituminous) | 15 | 3 | 5 | | 1 | | | | | | | 24 | | | | | | | | | | | | | 24 | 29 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | | 1 | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Texas | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Utah | 1 | | 1 | | | | | | | | 1 | 3 | | | | | | | | | | | | | 3 | 176 |
| Virginia | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 12 |
| Washington | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| West Virginia | 15 | 2 | 7 | 33 | | | 1 | | | | | 58 | | | | 1 | 1 | 1 | | | | | | 1 | 60 | 51 |
| Wyoming | 1 | | 1 | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 3 |
| Total (bituminous) | 54 | 7 | 22 | 39 | 3 | 1 | 6 | 1 | 1 | | 1 | 135 | .. | | 2 | | 2 | 2 | .. | | | | 4 | 6 | 143 | 311 |
| Pennsylvania (anthracite) | 17 | 4 | 4 | 1 | 2 | 1 | | | | | 4 | 33 | 1 | | | | 1 | | 1 | | | 1 | 2 | 4 | 38 | 44 |
| Total, March, 1925 | 71 | 11 | 26 | 40 | 5 | 2 | 6 | 1 | 1 | | 5 | 168 | 1 | | 2 | | 3 | 2 | 1 | | | 1 | 6 | 10 | 181 | |
| Total, March, 1924 | 87 | 4 | 34 | 203 | 12 | 1 | 3 | | 1 | | 2 | 347 | 2 | | 1 | | 3 | 2 | 1 | | | | 2 | 5 | | 355 |

# Union Pickets Active in West Virginia; Bittner Charges Fraud in Injunction

Picketing at the larger non-union coal mines of the Fairmont field is getting stronger. The United Mine Workers was more active last week than at any time since April 1, when the strike began. Special attention seems to be paid to Parker Run mine of the Fairmont & Cleveland Coal Co., near Rivesville, the largest mine in northern West Virginia; Dakota, one of the plants of the Bethlehem Mines Corporation, and Chesapeake mine of the Fairmont-Chicago Coal Co.

It is reported that the increased activity in the field is due to additional assessments coming into the region from the international organization. Complaints among the miners, it is reported, are not as numerous as they were several weeks ago, and according to some observers the strike is spreading in spots, although production is running about as heavy as ever.

For some weeks the non-union coal operators have claimed that the union has been very rapidly losing ground in the fields, and railroad figures on coal loadings seem to prove this. However, in the Clarksburg section of the field, where the strike has reached its worst stages, the gaps have not been entirely filled.

A series of mass meetings was held in the coal fields last week, and a number of these were outdoors, although the weather was cold and inclement.

The arrest of Van A. Bittner, chief international representative of the organization in northern West Virginia, for having violated the Hitchman Coal & Coke Co. injunction in the Panhandle, seems to have had a peculiar effect on the union miners, whose morale probably has stiffened some, although this is denied by the coal operators. Mr. Bittner with International President John L. Lewis and other officials was to appear before Judge W. E. Baker in Wheeling on Tuesday, May 5, when the court was to pass on a number of points of law and decide whether or not the injunction was violated.

Counsel for Bittner contended that the coal operators had practiced fraud in connection with the injunction, which the West Virginia & Pittsburgh Coal Co. sought to prove was violated. The original injunction, according to Attorney Thomas C. Townsend, issued by Judge Dayton, had prevented attempts at organization by peaceful or other means, but when it was carried to the Court of Appeals for the Fourth Federal District, which sits at Richmond, Va., that court modified the original injunction.

The charges under which the union officials, it is alleged, are now on trial were based on the original injunction. Howard & Howard, counsel for the coal company, filed a demurrer to the plea of the defendant, Van A. Bittner, the first of the group of officials to be tried. Judge Baker took time to consider the points of law involved in "peaceful persuasion" mentioned in the injunction and ordered the defendant and sixteen others charged with violating the injunction, including International President Lewis, into federal court at Wheeling May 5.

The union miners ushered a new week in by holding mass meetings in northern West Virginia. One was held in the Fairmont Theater, in Fairmont, when Van A. Bittner addressed the miners, and a second was held in Wheeling, where the union staged memorial services for the miners who were killed in the Benwood disaster more than a year ago.

The non-union mines in the twelve and a half counties of northern West Virginia were producing 905 cars of coal a day during the first four days of last week, while the union output dropped to 157 cars. The peak of the daily open shop tonnage was 945 cars, on Tuesday, April 28, and the lowest was Monday, April 27, at 867 cars. Union tonnage was at its peak Monday, April 27, at 211 cars, while its low mark was Wednesday, April 29, at 127 cars.

On the average there were 129 non-union mines at work daily in the Fairmont region during the first five days of last week. The peak was Wednesday, April 29, at 131. Only five union mines are working daily in the region, two of these on the Monogah Division of the B. & O. and three along the Monongahela Ry. The J. A. Paisley interests are working the three mines on the Monongahela and the Simpson Creek Collieries Co. the two mines at Simpson.

There seems to be no indication that any union mine will be opened soon. The Consolidation Coal Co. had its last pay day April 30, when all of the miners were paid to date.

A petition for a blanket injunction to cover twenty mines in the northern panhandle region has been filed in the Federal District Court at Wheeling by operators of non-union properties, asking protection against union activities by the United Mine Workers.

Announcement has been made by Ernest H. Gilbert, of the Gilbert-Davis Coal Co., that the company, whose three tipples were burned in Scotts Run Monday night, April 27, entailing a loss of $200,000, will erect one of the largest tipples in northern West Virginia at mine No. 2 on the Guston Run spur of the Monongahela Ry. Coal from the three mines will be dumped over the same tipple.

## Delaware & Hudson Leases B. R. & P.; Move Made for Fifth Big Eastern System

W. T. Noonan, president of the Buffalo, Rochester & Pittsburgh R.R., announced May 1 that the road will be leased to the Delaware & Hudson, providing the consent of stockholders can be obtained. The board of directors has already approved the lease.

The Delaware & Hudson proposes to lease the road for 999 years at a rental sufficient to provide 6 per cent net annual dividends on the present preferred and common stocks.

The Buffalo, Rochester & Pittsburgh operates 561 miles of road and branches from Pittsburgh through the bituminous coal regions of western Pennsylvania to Buffalo and Rochester. Soft coal accounts for over three-fourths of the company's tonnage.

The move is part of a plan of L. F. Loree, president of the Delaware & Hudson, to form a fifth great Eastern system, to compete with the New York Central, Baltimore & Ohio, Pennsylvania and Nickel Plate.

Mr. Loree, it is understood, acted very quickly in the matter, as he was bidding against the New York Central, to which the coal road had been allocated by the four system plan. The terms he offered are considered by railroad men as unusually favorable to the stockholders of the B., R. & P., particularly those holding only common stock, who have not received a 6 per cent dividend since 1917.

Financial interests had believed that in the consolidation of Eastern railroads into three or four groups, the Buffalo, Rochester & Pittsburgh would be merged with the New York Central or the Pennsylvania. In fact, it was reported that the Pennsylvania would make a determined effort to get control to obtain an entrance into Buffalo in case the Lehigh Valley should finally be awarded to the New York Central in any general consolidation scheme.

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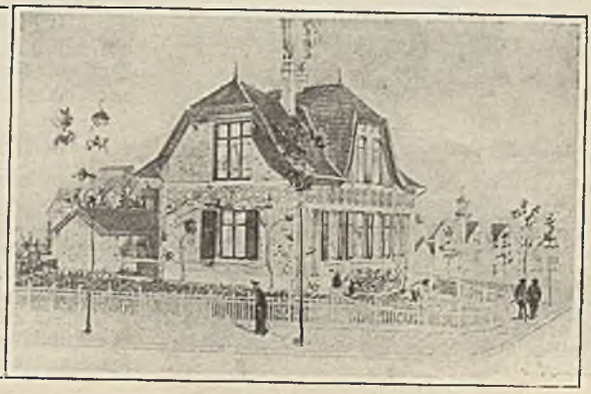
The Pennsylvania Mining Co. has failed in its final effort to collect triple damages from the United Mine Workers for damages done to the Coronado mine in Arkansas during a strike years ago. The company has been denied at Washington a rehearing of its petition to bring up to the Supreme Court for review the recent decision of the eighth circuit court of appeals, which was adverse to the company's contentions.

### A La France

This is the type of house in which the French miner lives. He enjoys, it must be conceded, both style and comfort. He is a good gardener and beautifies his lawn. When are American miners going to live á la France?



## Kansas Miners Vote to Help Unemployed Men

United Mine Workers of district 14 (Kansas) have voted a special assessment of 4 per cent of gross earnings for the benefit of unemployed members, President Matt Walters announced May 1. He said the proposal carried by a vote of four to one. A similar proposal was defeated by a large majority a few months ago. Meanwhile the percentage of employment has materially decreased. Less than half the normal membership of the district is now employed and many of these men work only one or two days a week. The mines of the Western Coal & Mining Co. are the only large shafts working practically continuously. Under these circumstances it is problematical whether the assessment will provide relief funds adequate to meet the demand.

President Walters issued a statement declaring the district's opposition to co-operative mining. "Only one mine of any size—Sheridan No. 12—is operating on that basis," he said. "Where it is determined that men at co-operative mines are not receiving the Jacksonville scale of wages they will be called out on strike."

The number of "dinky" mines being run co-operatively is legion and there are a number of fairly good sized shafts working on that plan. The unionists view with particular suspicion shafts said to be leased to co-operative groups by larger companies.

Marching tactics, which were adopted by the miners the middle of April, have been abandoned.

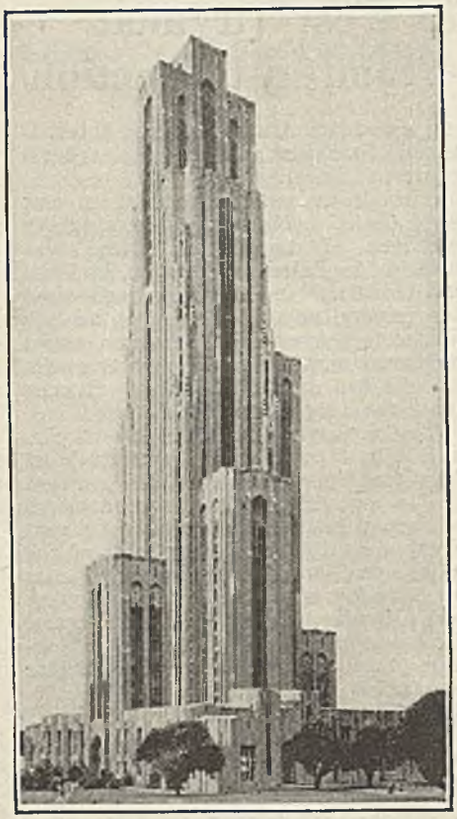
District union officials report the operators of two small mines signing contracts. The Doubleday Coal Co., operating a good sized deep mine, and companies running two steam shovels without a unon contract, upon whom the union largely centered its efforts, have not signed. The shovels are running but the Doubleday shaft continues idle. A report that the Doubleday Coal Co. has purchased No. 14 mine of the Sheridan Coal Co. is fairly well authenticated, though not positively confirmed for publication. This mine, which has been idle since the Jacksonville agreement went into effect, has a normal capacity of 400 tons a day and can be enlarged. The property includes a considerable acreage of coal land. The Doubleday company does not intend to work this mine until it has exhausted its present mine at Gross.

## New York Anthracite Prices For May, 1925

(Per Gross Ton, f.o.b. Mine)

| | Broken | Egg | Stove | Chestnut | Pea |
|---|---|---|---|---|---|
| Lehigh Valley Coal Sales Co. | $8.25 | $8.40 | $8.85 | $8.60 | $5.00 |
| Lehigh Coal & Nav. Co. | 8.60 | 8.60 | 9.00 | 8.50 | 5.35 |
| Phila. & Reading C. & I. Co. | 8.60 | 8.55 | 8.95 | 8.55 | 5.40 |
| Lehigh & Wilkes-Barre Coal Co. | 8.05 | 8.35 | 8.85 | 8.35 | 5.00 |
| Hudson Coal Co. | 8.35 | 8.35 | 8.85 | 8.35 | 5.60 |
| D., L. & W. Coal Co. | 8.25 | 8.35 | 8.85 | 8.35 | 5.25 |
| M. A. Hanna & Co. | 8.50 | 8.60 | 9.10 | 8.60 | 5.35 |

Steam Sizes: No. 1 buckwheat, $2.50; rice, $2; barley, $1.50.



University of Pittsburgh Plans A Cathedral of Learning

Why not a fifty-two story skyscraper for higher education? muses the University of Pittsburgh. Why not something that will appeal to the imagination of the students and be a glory to the city? It will cost, at 90c. a cubic foot, only $10,000,000 and be no more expensive to maintain than a number of small buildings.

## Navy Opens Bids May 20

Bids will be opened May 20, 1925, by the Bureau of Supplies and Accounts of the Navy Department at Washington for 20,000 tons of steam coal to be delivered during the year beginning July 1, at New York and Brooklyn, 6,000 tons at Philadelphia, 150,000 tons at Hampton Roads and 3,500 tons at Charleston, S. C., and also for mine run coal in the following amounts: Charlestown Navy Yard, Boston, Mass., 27,000 tons; New York Navy Yard, 50,000 tons; Philadelphia Navy Yard, 20,000 tons; Naval Air Station, Lakehurst, N. J., 14,000 tons; U. S. Naval Academy, Annapolis, Md., 24,000 tons; Washington, D. C., Navy Yard, 50,000 tons; naval powder factory, Indian Head, Md., 23,000 tons; Hampton Roads naval base, 25,000 tons; Norfolk Navy Yard, 22,000 tons; Charleston, S. C., Navy Yard, 10,000 tons; Naval Training Station, Great Lakes, Ill., 1,500 tons, and other smaller tonnages elsewhere.

An opinion of the Attorney General is to be sought, it is understood, as to the legality of the proposed transfer of the Bureau of Mines to the Department of Commerce. The two secretaries concerned are said to favor the transfer. The President has given his consent if such a transfer can be made legally.

## Central Penna. Coal Now 70 per Cent Non-Union

A meeting of the executive committee of the Association of Bituminous Coal Operators of Central Pennsylvania was held in Altoona on April 28. Following the meeting, B. M. Clark, president of the association, reiterated the belief of the operators "that the depression in central Pennsylvania cannot be overcome until a modification of the Jacksonville wage agreement has been accomplished. The present wages are the highest ever paid in the industry.

"The non-unionized coal fields competitive with this district and about one-half of the mines within the district have reduced their wages from 20 per cent to 25 per cent. The mines working on the reduced rates are able to take care of the needs of the country, with the result that the unionized mines have lost and are still losing much of their business.

"This movement has progressed until to-day over 70 per cent of the coal being mined in the central Pennsylvania district is being mined in non-union mines."

## Retailers Meet Next Week

Final touches have been put upon the program of the eighth annual convention of the National Retail Coal Merchants' Association, which opens at the Hotel Traymore, Atlantic City, N. J., next Monday morning. The formal procedings will begin with a luncheon presided over by President Samuel B. Crowell.

Samuel D. Warriner, chairman, Anthracite Conference Committee, and Eliot Farley, president, Delaware, Lackawanna & Western Coal Co., will address the delegates on Tuesday. Reports from the governmental relations, educational and fuel economy, transportation and public information committees also will be presented. In the evening the annual association banquet will take place, with Senator Selden P. Spencer, of Missouri, the principal speaker.

David Knickerbocker Boyd, past president, National Association of Architects; C. A. Connell, combustion engineer, Anthracite Economies Show Co.; Harry L. Gandy, secretary, National Coal Association, and Noah H. Swayne, past president, American Wholesale Coal Association, will speak at the Wednesday session. Oil, coke and gas competition with coal will be the subject of an open discussion at the same session. W. R. Feuquay, St. Joseph, Mo., and W. W. Griffith, Washington, D. C., will lead the discussion on oil competition; Homer D. Jones, Chicago, will lead the talk on coke, and J. Harry West, Baltimore, Md., on gas competition.

The chief event of the fourth day's meeting will be a round-table discussion on advertising, side lines, chain yards, truck equipment and upkeep, coal-handling equipment, pocket construction and coal transportation problems. H. W. Swalley, of Philadelphia, and M. E. Robinson, Jr., Chicago, will open the discussion on advertising. Committee reports and the installation of officers will end the convention.

# Defines Economic and Legal Status Of Trade Association Activities

In a report entitled "Trade Associations, Their Economic Activities and Legal Status," the National Industrial Conference Board, 247 Park Avenue, New York City, makes a comprehensive survey of the development and present position of public policy in the control of private business organization and practices as embodied in the Sherman act and its supplementary legislation, generally referred to as the anti-trust laws, and in court and commission decisions and decrees based thereon.

In discussing the legal position of trade associations the report says:

"Under the settled law, there is a certain range of association activities which are definitely forbidden because, in general they tend to the suppression of competition. These activities center about the establishment of common production and price policies. There is another range of associated action for trade purposes in which lawfulness is dependent upon the manner, circumstances and results of the joint efforts.

"So long as activities within this field are confined to the provision of knowledge or information, emerging from the experience of the trade, and its utilization for the orderly development of commercial and industrial processes, they tend only to regulate competitive conditions and are not usually condemned. Finally, there is a certain range of association activities which give rise to few, if any, questions of legitimacy from the point of view of public policy. They are of a nature so unconnected with competitive relations or competitive business conduct that issues of anti-trust law are not involved.

### Activities Under Ban of Law

"There have appeared at least four types of trade association activities which have come under the absolute ban of the law. These activities are concerned primarily with (1) unification in selling, (2) exclusion from the market, (3) curtailment of production, and (4) price manipulation. In all these cases the concert of action has been deemed to suppress competitive conditions."

There are certain trade association activities that fall within a twilight zone, a region of associated action in which the law accords approval or enforces condemnation according to the intent and character of the restraint and the actual or probable consequences of the joint action in the special circumstances of each particular case. The following activities are cited by the board, "as being representative, if not exhaustive, of this category of trade association function: (1) Operation of exchange, (2) collection and dissemination of trade statistics, (3) interchange of patent rights, (4) interchange of credit information, (5) negotiation of purchases, (6) standardization of products, (7) development of business standards.

"These activities, it is apparent, aim for the most part to utilize the trade association as a clearing house of knowledge and information and experience, for the common benefit of the industry as a whole, and to mitigate the flagrant maladjustments which have emerged from unrestrained competitive rivalry. Not all of these activities are universally or even commonly pursued among trade associations, but all of them have engaged the attention of the Department of Justice and the courts in recent years."

In the collection and dissemination of trade statistics the board states: "It is not too much to say that the permanence of the association movement and in some measure the character of future industrial organization are bound up in the adequate solution of this problem. The ultimate and essential basis for the existence of trade associations is to be found in the opportunity they afford their numbers, who severally exercise independent control of industrial enterprises, to approach their undertakings and responsibilities, not as isolated tasks and obligations, but in their relationship to the whole network of activities by which society is provided with the particular product or service.

"The collection and dissemination of trade information in some measure and through some channel appears to be indispensable to the smooth ordering of manufacturing and marketing activity."

The legal validity of co-operative standardization activities of trade associations which have been undertaken at the instance of governmental departments and have been pushed forward by their co-operation, would seem to be unquestioned. "But," says the board, "any activity which regulates competition between the association members is capable of being abused."

Finally the board points out the place of trade associations in the industrial structure.

"It appears that there is a distinct place for trade associations and their activities within the framework of the law, as there clearly is in the industrial structure. Broadly speaking, where trade associations undertake to perform functions which infringe upon the area of legal prohibition, they are following a path which leads to no desirable economic end; while, on the other hand, if they enter upon economically defensible activities, there is little danger of their being subject to legal attack. While it is the policy of the law to maintain competition, it appears that this policy has been and may continue to be adhered to without prejudice to the privilege of association in trade bodies for essentially sound and constructive purposes."

## More Coal Bids Sought

Bids are wanted May 15 by the U. S. Engineer, New Orleans, for 25,000 tons of bituminous coal. The Mississippi River Commission, 4th district, New Orleans, will open bids May 15 for 25,000 tons of bituminous coal. Sealed bids are wanted, May 20, by the Army Quartermaster, 405 Bay Building, Seattle, Wash., for furnishing coal for Alaskan posts.

## Co-operative Mining In Indiana Prohibited By Union After May 9

Co-operative mining ventures in District 11, United Mine Workers, which embraces practically all Indiana mines, must be terminated on or before Saturday, May 9, under orders sent to all local unions of the district April 30 by District President Tyler Lawton. Lawton's action followed a conference with John Lewis, international president, at Indianapolis, last week.

Co-operative mining ventures in this district have been the subject of heated controversy in union ranks for some time.

Western Indiana mines were among the first hit by the depression in the coal trade and many were forced to shut down. A co-operative basis was the only one on which many operators would agree to reopen, and as a consequence a number of the smaller mines, particularly in the Bicknell field, resumed work under such agreements.

Union officials contended that these agreements violated the Jacksonville wage scale and the Terre Haute agreement, but many of the rank and file saw in them their only hope of continuing to earn a livelihood.

Lewis' order, contained in a letter to Lawton follows in part:

"By reason of these facts I am requesting your office to officially notify each local union in question that the charter of said local union will be revoked by this office on Monday, May 11, 1925, unless prior to that date the members of the local union cease work and the mine is shut down. The action in revoking the charter will forfeit the membership of all individuals affected. I request that you notify this office not later than noon Saturday, May 9, of the identity and location of such local unions as have not complied with this order."

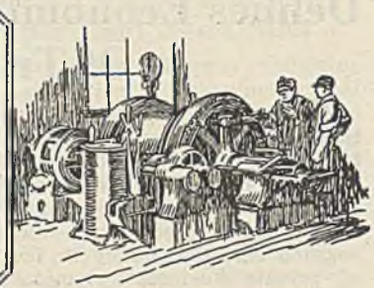
Lawton, in sending out copies of this letter, has urged all local unions of the district to comply with Lewis' orders.

## Coal Men Study Proposal to Lease Virginian Ry.

Proposed lease of the Virginian Ry. to the Norfolk & Western for 999 years has provoked much discussion among coal men and a diversity of opinion has been expressed on the possible results of the merger. It is admitted that the ultimate result would be to throw control of both roads into the hands of the Pennsylvania R.R., which now owns 30 per cent or more of the Norfolk & Western stock. Coal men do not believe that the coal business at Hampton Roads would suffer.

It is the purpose of the Norfolk & Western to use the Virginian for coal-carrying purposes in view of the latter's admittedly better grade to tidewater. The Norfolk & Western had under contemplation the construction of a new pier at Hampton Roads but in view of the impending lease probably will not make that development, but will use the Virginian's new pier erected recently but never put into operation.

# Practical Pointers For Electrical And Mechanical Men



## Rebuilding Locomotive Transforms It Into One of Different Type

It sometimes becomes advantageous to transform a piece of mine equipment into some other type possessing characteristics that differ more or less radically from those of the original. It is unusual, however, to convert a combination trolley and storage battery locomotive into a cable reel machine. The accompanying illustrations show how this was done at the Walbolt mine of the Dudley Coal Co., at David, Ky.

This locomotive, which is of 42-in. track gage is low in height. In order to obtain more room in the cab for the control equipment and driver, the controller-end truck was reversed, that is, turned end for end, thus putting the motor between the axles in space once occupied by one of the battery compartments. The cable reel is installed in the upper portion of the space formerly taken up by the other battery compartment. It is interesting to note also (see Fig. 2) how the reel-end headlight has been installed. Inasmuch as the cable, to a greater or lesser extent, plays over this entire end of the machine, ordinary mountings would be unsuitable. Accordingly, this headlight was placed below the reel and behind the end plate of the machine. It is thus effectively protected from injury.

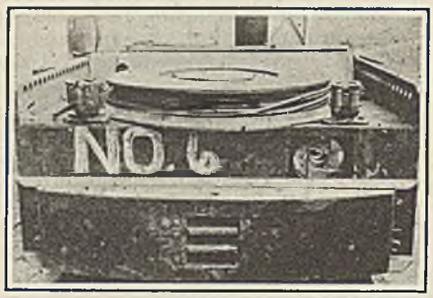



**Fig. 2—Reel End of Locomotive**

Where could the headlight be placed? This problem was solved by putting the light behind the end plate through which a window was cut. It thus sheds its rays unabated, but is entirely out of the way.

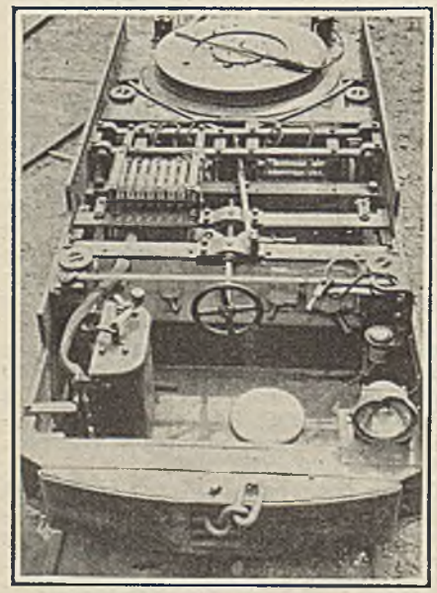


**Fig. 1—Driver's End of Remodeled Machine**

In order to get more room in the cab, the truck on this end of the machine was turned end for end, thus placing the motor in space previously occupied by a part of the storage battery.

Rebuilding this locomotive in the manner just described represents a change to equipment that is somewhat of an innovation. Transforming hoists from steam to electric operation is fairly common. Substituting electric for steam drive on reciprocating mine pumps is an analogous alteration, which, while fairly common, is less frequent. It is the exception rather than the rule, however, when an electric locomotive is rebuilt and transformed into a machine whose characteristics vary widely from those of the original mechanism. In this respect such a transformation is a change that is at least unique.

### Overturning Device Serves Several Repair Tracks

In repairing mine cars it is often desirable to turn them on their sides or even completely bottom up. This is an operation that ordinarily requires much time and effort, particularly if the cars are heavy. As a result some means other than "main strength and awkwardness" must be available if this work is to be performed with reasonable dispatch.

In the shops of the No. 4 colliery of the Kingston Coal Co., Kingston, Pa., the arrangement shown in the accompanying sketch has been employed for a long time. In this shop the car repair tracks are parallel to and located midway between the roof trusses. To the end roof truss is fastened an eye bolt or dead eye, to which a flexible cable is attached. This passes alternately through a traveling block and a swinging block attached to the stringer or cord of a roof truss until all the repair tracks are spanned. From the last swinging block this cable is led to the drum of a hand winch.

To each traveling block, through which the cable passes, a chain is attached. The length of this chain is approximately equal to the height of a car box. To its lower end a hook, that can be slipped over either a car sill or the top of the car side, is attached.

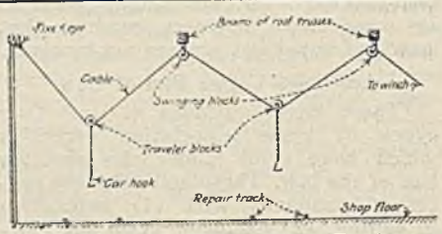



**Diagram of Overturning Device**

One winch can be made to serve several tracks and a car be overturned or righted upon any one of them. The car hooks are so shaped as to be attached readily to a car body or sill without the aid of rope, chain or other fastening.

When it is desired to overturn a car upon any repair track the cable is slackened until a hook can be pulled down and slipped under its bottom. Winding the cable onto the winch then lifts this side of the car and turns it upon its opposite side. A second hold with the hook will turn the car completely bottom up. A reverse operation will right the car upon the track.

It will be readily apparent that a car upon any of the tracks spanned by the lifting cable may be served without interfering with work upon

any other track, tension in the cable merely lifting all of the idle traveler blocks. By this arrangement one winch may be made to serve several repair tracks practically as well as it could serve one. When the device is not in use the idle hooks may be attached to posts or building columns where they are out of the way and do not interfere with the work of car repairs.

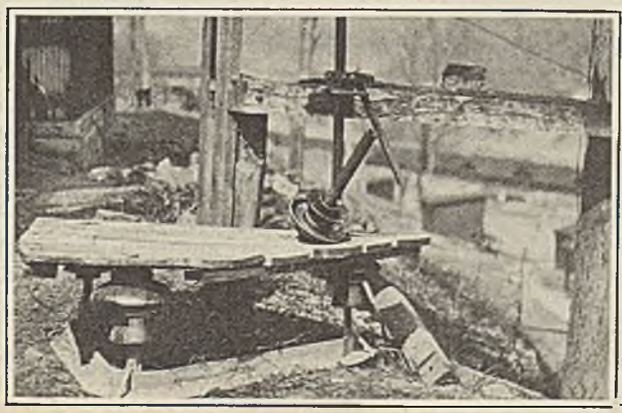
## Safety Platform Provided at Outdoor Switch

Switch towers at mine substations have been the scenes of many fatal accidents. As might be judged from the number of these fatalities, it is not an easy matter to make a high-voltage outdoor switching station absolutely safe, especially where others than trained operators are liable to handle the switches. A serious attempt to attain complete safety is shown by the photograph of the base of a 40,000-volt switching tower of the Elkhorn Coal Corporation at Wayland, Ky.

A platform is provided which has as its base a wishbone crossarm to which is fastened three high-voltage pin insulators. Lying on top of this platform is another insulator into which is cemented a short length of pipe. When the operator is to throw the switch he stands on the insulated platform, and slips the short pipe over the switch handle. He is careful not to touch the metal, instead he holds to the petticoat of the insulator. Normally the demountable handle is kept out of the weather in a nearby building.

In most of the cases of accident on average switching towers the train of events is about as follows: Line trouble develops which perhaps causes "visible fireworks," followed by the blowing of a fuse, thus shutting down the mine. A man, perhaps not an electrician, hurries to the transformer substation to switch the load to the other line, or open the switch preparatory to climbing the tower and replacing a fuse. It so happens that if the seat of the trouble is at that particular tower, an insulator is cracked, or in some other way a line is grounded to the structure. The man is fatally shocked as he stands on the damp or wet ground and grasps the metal handle.

In most instances the tower structure, if of steel, is grounded, or the metal handle, at least, is thus protected. Yet the ground connection often is broken, or is of such high resistance as to allow the switch operator to receive a fatal shock. Such fatalities have happened on coal company lines, but ordinarily they occur on lines of 33,000 volts or more. This class of line, as a rule, is owned by a power company. Due to the natural limitations in many mining sections to quick travel, it is almost imperative that the power company allow the coal mining customer access to the transformer substation, in order to avoid long delays in replacing fuses, operating switches and the like. This explains why many of the men injured at power company substations are mining company employees.



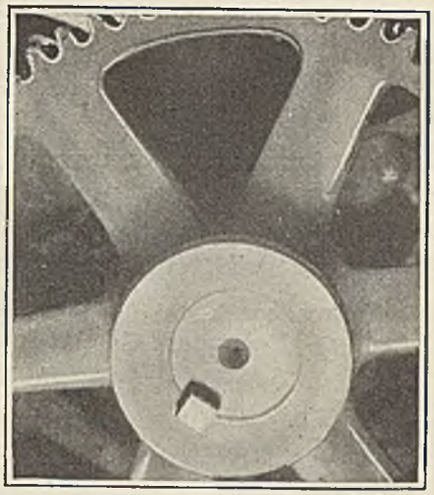
**Safe Switching Platform**

The outdoor switch to which this insulated handle is connected controls a 40,000-volt line. Throwing switches of this or higher potentials when there is trouble on the line has caused many fatal accidents. With the safety arrangement shown, the operator is insulated in both directions.

## Off-Center Gear Makes Conveyor Run Smoothly

A gear bored off center, as shown in the accompanying illustration, is certainly an unusual sight. However, it has its place and usefulness at the coal mines.

A conveyor line having a long-pitch chain must run over sprockets with teeth set far apart. Such a sprocket necessarily takes the form of a polygon rather than a true circle. The action of the sprocket in pulling the conveyor chain, therefore, is not uniform. When the chain rides on or near the end of a tooth, it is driven by a point having a long radius. As the sprocket rotates farther, the chain is wrapped over a point nearer the center of the sprocket. The action is somewhat like a hoisting rope being wound on a square drum. Naturally, the speed of the conveyor continually varies between slow- and high-speed limits.



**Eccentrically Bored Gears Produce Uniform Speed**

A varying speed reduction, so correlated with the sprocket of a conveyor line as to produce uniform lineal velocity, is obtained by two gears mounted eccentrically as shown.

To correct the stresses and strains thus set up in the conveyor, and to maintain a uniform lineal speed, the first gear reduction from the conveyor head shaft is made numerically equal to the number of teeth in the head sprocket. Between this first countershaft and the second countershaft there is introduced a pair of gears having the same number of teeth but with the bore for the shaft drilled enough off center to vary the angular velocity. The speed variations thus obtained are so related to the sprocket that the conveyor runs smoothly and uniformly.

## Removing Locomotive Tires

It is sometimes difficult to understand why some people insist on following old laborious, time-consuming methods in removing worn locomotive tires. When a tire of this kind requires removal from the wheel center this work can be quickly and easily accomplished with the oxy-acetylene torch. For this purpose the flame is directed across the tire, melting away the metal and forming a well-defined plane of weakness.

Usually a tire will break apart before it is cut in two by the flame. If it does not thus spring apart a few sharp blows with a sledge will accomplish the desired fracture. The intense heat of the torch, when carefully applied, does no harm whatever to the wheel center.

## Viewpoints of Our Readers

# Ratios Which Slight and Serious Accidents Bear to Fatalities

### Permanent Total Disabilities Are Grouped with Fatal and Permanent Partial Accidents with Those That Are Designated Serious

Your editorial, "Presaging Accidents," in the March 12 number of *Coal Age*, states in clear and convincing manner that every minor injury to an employee in a coal mine may be accepted as a danger signal—a semaphore warning of the possibility of a serious or fatal accident. You quote figures showing the ratio of fatal to serious and to minor accidents, based on the experience of a coal company in West Virginia.

As you know, a number of typical coal mines have, during the past two years, been furnishing the Bureau of Mines with a separate report on every accident disabling an employee beyond the day or shift on which the accident occurred. You will, therefore, doubtless be interested in noting the ratio between fatal, serious, and minor accidents based on the experience of the companies reporting to the Bureau.

#### Obtain Ratio By Analysis

A recent analysis of reports covering 4,748 accidents at coal mines showed that of the total number, 87 were fatal, 3 resulted in permanent total disability, 38 caused permanent partial disability, 1,592 caused temporary disability lasting more than 14 days and were, therefore, classified by the Bureau as "serious," and 3,028 caused temporary disability for 1 to 14 days and were classified as "slight." Grouping the permanent total disabilities with the fatalities, and the permanent partial disabilities with the "serious" accidents, the ratio of fatalities to serious injuries and to slight injuries was 1:18:34. A further analysis of the reports was made to show the principal locations or places where the accidents occurred, as in Table I.

A similar compilation covering 3,917 accidents at metal mines appears in Table II.

The Bureau's reports from all metal-mining companies in the United States during the five years 1919-1923 show a total of 144,149 accidents. The companies' annual returns do not show the location in the mines where the accidents occurred; they do, however, indicate the causes of the accidents, which, in a general way, are indicative of the places or locations. An analysis of the 144,149 accidents is given in Table III.

**Table I—Classification of Accidents by Location and Severity for Coal Mines**

| | Killed | Serious | Slight | Ratio |
|---|---|---|---|---|
| At or near working face | 47 (2) | 946 (15 | 1,838 | 1:20:39 |
| Elsewhere underground | 34 (1) | 515 (16) | 894 | 1:15:26 |
| Total underground | 81 (3) | 1,461 (31) | 2,732 | 1:18:34 |
| Surface | 9 | 169 (7) | 296 | 1:19:33 |
| Grand total | 90 (3) | 1,630 (38) | 3,028 | 1:18:34 |

The figures in parentheses show the number of permanent totals included with the fatals, and the number of permanent partials included with the serious injuries.

**Table II—Classification of Accidents by Location and Severity for Metal Mines**

| | Killed | Serious | Slight | Ratio |
|---|---|---|---|---|
| At or near working face | 22 | 484 (10) | 1,724 | 1:22:78 |
| Elsewhere underground | 24 | 330 (10) | 927 | 1:14:39 |
| Total underground | 46 | 814 (20) | 2,651 | 1:18:58 |
| Surface | 6 | 122 (4) | 278 | 1:20:46 |
| Grand total | 52 | 936 (24) | 2,929 | 1:18:56 |

#### More Injuries per Fatality

All of these figures indicate a larger number of injuries per fatality than was shown by the experience of the West Virginia company referred to in your editorial. This may have been due to differences in the classes of accidents included under the headings "serious" and "slight." In the Bureau's statistics, all accidents are taken into consideration, except those causing disability for only a fraction of a day or shift.

The above figures are submitted in the belief that they may be of interest to you, and, perhaps, to some of your readers, particularly those engaged directly in accident-prevention work. Similar data for metal mining calculated on a percentage basis from which the ratio may be readily computed, are available in the Bureau's Technical paper No. 354 covering accidents at metal mines in 1922. The figures were continued in Bulletin No. 248, which also contained data showing the ratio of fatal to non-fatal injuries.

**Table III—Classification of Accidents by Cause and Severity at Metal Mines**

| | Killed | Serious | Slight | Ratio |
|---|---|---|---|---|
| Fall of roof or wall | 589 (13) | 6,769 (235) | 17,597 | 1:11:30 |
| Loading ore | 21 (1) | 3,941 (101) | 13,239 | 1:188 :630 |
| Explosives | 184 (17) | 700 (98) | 1,006 | 1:4:5 |
| Haulage underground | 131 (17) | 4,735 (155) | 9,711 | 1:36:74 |
| All other underground | 339 (10) | 12,332 (393) | 37,515 | 1:36:111 |
| All underground (except shaft) | 1,264 (44) | 28,477 (982) | 79,068 | 1:23:63 |
| Shaft | 271 (3) | 1,239 (73) | 2,499 | 1:5:9 |
| Total underground and shaft | 1,535 (44) | 29,716 (1,055) | 81,567 | 1:19:53 |
| Surface | 192 (5) | 5,157 (262) | 16,674 | 1:27:87 |
| Open pit | 162 (6) | 2,211 (167) | 6,935 | 1:14:43 |
| Grand total | 1,889 (55) | 37,084 (1,484) | 105,176 | 1:20:56 |

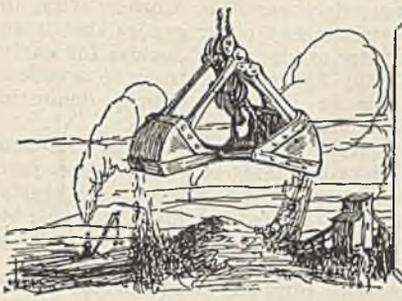
D. A. LYON,
Acting Director.
U. S. Bureau of Mines,
Washington, D. C.

## Oil Burner Flavors Food

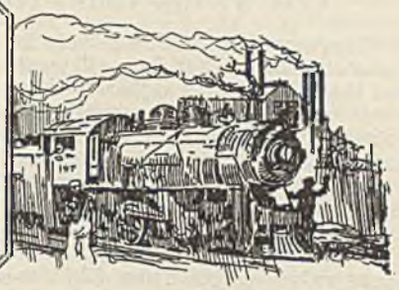
There is certainly more truth than fiction in your editorial, "Fuel that Appeals to the Senses," in the issue of April 2, when it states that the owners of an oil burner believe that they can taste oil in their food. Not so long ago, in fact, during the housekeeping days of our immediate forbears, the oil cook stove was much used. All who remember these stoves tell the same story. Even the most careful cook could scarcely cook a meal which did not "smack" of oil. Those who have used them, tell me that the smell and taste of that obtrusive fluid seemed to permeate everything.

Most of us who go camping have had the kerosene lantern flavor our "grub." No matter how much you may isolate the two, when your meals are served, the flavor of oil will be found to have penetrated every dish. One thing is certain. I sympathize with the man who can "taste his oil burner." I believe there is a lot more to his complaint than can be ascribed to his imagination.

H. B. BLAUVELT,
Comfort Coal-Lumber Co.
Hackensack, N. J.



# Production And the Market



## Bituminous Coal Market Rallies Slightly; Hard Coal Trade Stronger

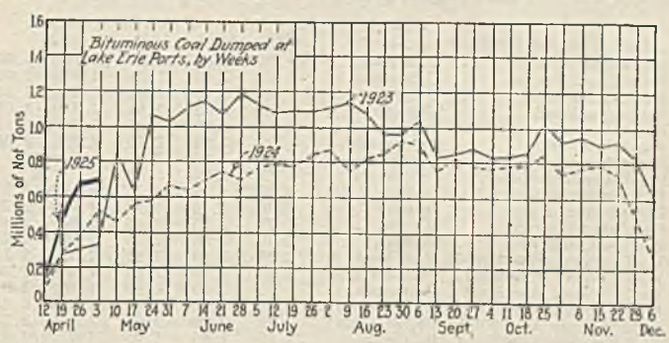
Save for a slight flurry caused by a touch of unseasonably cold weather in some sections of the Middle West and the usual end of the month buying when price advances are scheduled, there was little change in the bituminous coal market during the last week. Steam coals continue to drag in Midwest markets, only screenings showing any firmness. This strength, however, still is due to scarcity rather than any growth in demand. Business is rather quiet at Kentucky mines, though contracting is improving in eastern Kentucky, which is getting a good share of lake trade. Strip mines have been getting out big tonnages, however.

Early shipments to the Northwest docks have been brisk and stocks are heavy, but business is not very good. No signs of a pick-up are in sight in Utah, Colorado and the Southwest. A slightly better feeling is in evidence in Ohio markets since the lake season got under way, though Ohio operations are getting only a small share of the business. Nevertheless there was an increase in output in the eastern Ohio field. Deadly dullness has settled over the Pittsburgh trade. Five more mines of the Pittsburgh Coal Co. have been closed and the district is now estimated to be operating at 20 per cent. New England faces the problem of forcing coal on reluctant buyers. Eastern markets are practically unchanged, but some hardy souls are hopeful that an improvement is not far off.

### Anthracite Market Gains Strength

The hard-coal market is gaining in strength. There is a healthy demand for stove, egg is moving well and pea has improved. Chestnut is somewhat easier, but there is by no means an oversupply. The steam sizes are in fair shape. On May 1 the old line companies increased prices for domestic sizes from 5c. to 35c. per ton and some of the larger independents followed suit. Independent coals are moving in good volume and prices in general are being maintained. Some of the idle operations are expected to resume soon.

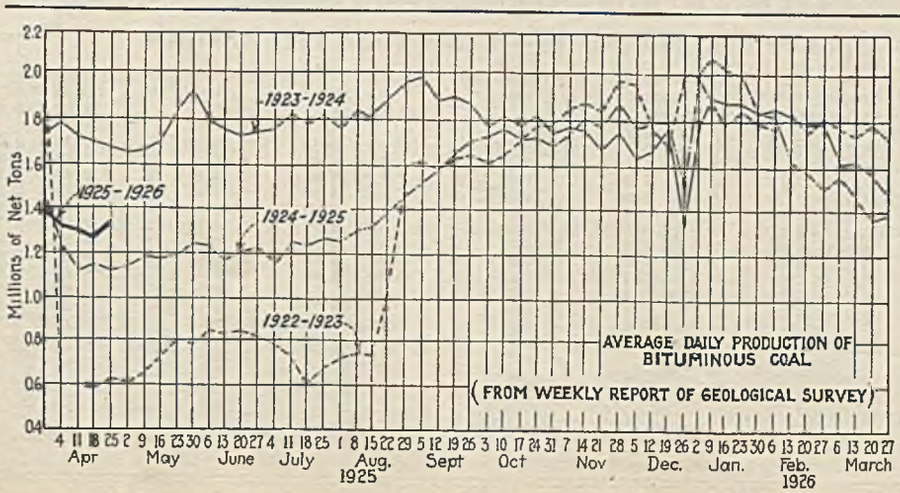
The output of bituminous coal turned upward in the week ended April 25, when, according to the Geological Survey, 8,016,000 net tons was produced, as compared




with 7,515,000 tons in the preceding week. Anthracite production in the week ended April 25 was 1,937,000 net tons, compared with 1,567,000 tons in the previous week.

*Coal Age* Index of spot prices of bituminous coal showed no change during the week, standing on May 4 at 162, the corresponding price for which is $1.96.

Dumpings at Lake Erie ports continued to gain during the week ended May 3. According to the Ore & Coal Exchange, cargo dumpings were 642,577 net tons; steamship fuel, 41,831 tons—a total of 684,408 tons, as compared with 657,604 tons in the preceding week. Hampton Roads dumpings for all accounts in the week ended April 30 totaled 355,739 net tons, compared with 288,694 tons in the previous week.




### Estimates of Production

(Net Tons)

**BITUMINOUS**

| | 1924 | 1925 |
|---|---|---|
| April 11 | 6,983,000 | 7,843,000 |
| April 18 (a) | 7,142,000 | 7,515,000 |
| April 25 (b) | 6,944,000 | 8,016,000 |
| Daily average | 1,157,000 | 1,336,000 |
| Cal. yr. to date (c) | 163,735,000 | 156,498,000 |
| Daily av. to date | 1,629,000 | 1,553,000 |

**ANTHRACITE**

| | | |
|---|---|---|
| April 11 | 1,856,000 | 1,723,000 |
| April 18 | 1,623,000 | 1,567,000 |
| April 25 | 1,205,000 | 1,937,000 |
| Cal. yr. to date (c) | 29,153,000 | 27,768,000 |

**COKE**

| | | |
|---|---|---|
| April 18 | 256,000 | 201,000 |
| April 25 (b) | 224,000 | 192,000 |
| Cal. yr. to date (c) | 4,604,000 | 3,983,000 |

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

## Cold Weather Causes Flutter in Midwest

Unseasonably cold weather last week brought a few scattered orders for domestic coal into the Chicago market, so that the week was better than the two previous weeks. Steam coals are still somewhat of a drag on the market. Producers having mine-run contracts are substituting lump and egg on their orders so that they can get prepared coals out of the way and perhaps squeeze in an extra day of running time.

Effective May 1 some operators issued circulars advancing f.o.b. mine prices. Most West Virginia smokeless shippers raised prices from $2.75 to $3, anthracite producers raised prices all the way from 10c. to 25c. a ton, while down in eastern Kentucky in the Hazard field a circular went out quoting a 15c. advance straight through. This brings the price on No. 6 and No. 7 seam block coal up to $2.15, while the No. 4 operators advanced from $2.10 up to $2.25 and $2.50.

Screenings from Saline and Franklin counties are holding firm at $2@$2.25 on the open market. Central Illinois coals are about in the same position as last week, with plenty offered at an average figure of $1.75@$1.85. In Indiana, Fourth Vein screenings are quite scarce but Fifth Vein screenings can be had all the way from $1.50 up. Buyers are holding off on contracts.

As usual in the last week of the month, especially when price increases are expected, there was fair activity in anthracite as well as on one or two other grades that were to be advanced. Only a few orders were booked for early shipment on the basis of May figures. Contrary to a rather general expectation, prices on Franklin County domestic coal did not advance this month.

A touch of cool, wet weather moved a little nut coal and some egg from the Carterville field, but they were just scattered cars. Lump is unmovable. Screenings are pretty well cleaned up and there is no indication that there will be any amount of work for a couple of months anyway. Strip mines, however, are continuing to do well; they are shipping the steam tonnage that formerly went to the shaft mines as well as some railroad coal, although some of the shaft mines are shipping a little tonnage of railroad coal. There is no change in prices. Mines are getting from one to three days a week, depending upon railroad tonnage.

In the Duquoin field conditions are unusually bad. The best time any mine gets is two days a week. Most of them are idle. Steam sizes move freely but nut, egg and lump move slowly, and most of the mines are shipping their coal to be crushed for screenings. In the Mt. Olive field things are practically at a standstill, except for coal that is being crushed into screenings and a little railroad tonnage. Steam contracts are being taken care of with crushed coal. In the Standard field utter demoralization exists. A few mines are working two and three days a week and those that have

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

| Low-Volatile, Eastern | Market Quoted | May 5, 1924 | Apr. 20, 1925 | Apr. 27, 1925 | May 4, 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.40 | $2.60 | $2.60 | **$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 | 1.35@ 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@ 2.15 |
| Smokeless lump | Cincinnati | 3.35 | 2.60 | 2.75 | **2.75@ 3.00** |
| Smokeless mine run | Cincinnati | 2.05 | 2.00 | 2.00 | 2.00 |
| Smokeless screenings | Cincinnati | 1.75 | 1.50 | 1.50 | 1.50 |
| *Smokeless mine run | Boston | 4.40 | 4.30 | 4.15 | 4.00@ 4.35 |
| Clearfield mine run | Boston | 2.00 | 1.90 | 1.95 | 1.75@ 2.20 |
| Cambria mine run | Boston | 2.55 | 2.25 | 2.15 | 2.00@ 2.35 |
| Somerset mine run | Boston | 2.30 | 2.00 | 2.05 | 1.90@ 2.25 |
| Pool 1 (Navy Standard) | New York | 2.85 | 2.60 | 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 | ..... | 2.00 | 1.95 | 1.90@ 2.05 |
| Pool 9 (Super. Low Vol.) | New York | 2.20 | 2.05 | 2.00 | *1.85@ 2.05* |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.20 | 2.00 | 2.00 | 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 | 1.80 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.85 | 1.65 | 1.65 | **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 | 1.55 | 1.50 | 1.50 | **1.45@ 1.60** |
| Pool 11 (Low Vol.) | Philadelphia | 1.50 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.45 | 1.45 | 1.40@ 1.55 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.45 | 1.45 | 1.35@ 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 | 1.65 | 1.50 | 1.45@ 1.55 |
| Pittsburgh se'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.00 | 2.00 | **2.10@ 2.25** |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.35 | 1.65 | 1.65 | *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 | ..... | 1.10 | 1.15 | **1.10@ 1.30** |
| W. Va. lump | Cincinnati | 2.00 | 1.85 | 1.85 | **1.75@ 2.25** |
| W. Va. gas mine run | Cincinnati | 1.35 | 1.35 | 1.40 | **1.40@ 1.50** |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.25 | 1.30 | 1.25@ 1.40 |
| W. Va. screenings | Cincinnati | .90 | 1.20 | 1.25 | *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 | 1.30 | 1.15 | 1.20 | **1.20@ 1.30** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.30 | 2.15 | **1.90@ 2.60** |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.75 | 1.80 | **1.85@ 2.00** |
| Pitts. No. 8 screening | Cleveland | 1.55 | 1.35 | 1.50 | **1.45@ 1.60** |

| Midwest | Market Quoted | May 5, 1924 | Apr. 20, 1925 | Apr. 27, 1925 | May 4, 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 | 1.90 | *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 | 2.25 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.95 | 2.05 | 1.90 | **1.85@ 2.10** |
| 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 | 1.70 | 1.55 | 1.40@ 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 | 1.85 | *1.75@ 1.85* |
| West Ky. mine run | Louisville | 1.60 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.65 | 1.30 | 1.20 | 1.10@ 1.30 |
| West Ky. block‡ | Chicago | 2.25 | 1.85 | 1.85 | **1.90@ 2.15** |
| West Ky. mine run | Chicago | 1.60 | 1.30 | 1.30 | 1.15@ 1.50 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 2.80 | 2.25 | 2.25 | **2.40** |
| Big Seam mine run | Birmingham | 2.00 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.25 | 2.10 | 2.10 | **2.15@ 2.40** |
| S. E. Ky. mine run | Chicago | 1.60 | 1.55 | 1.65 | 1.50@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| S. E. Ky. mine run | Louisville | 1.50 | 1.30 | 1.30 | 1.15@ 1.50 |
| S. E. Ky. screenings | Louisville | 1.05 | 1.10 | 1.10 | **1.10@ 1.30** |
| S. E. Ky. block‡ | Cincinnati | 2.05 | 2.10 | 2.10 | **2.15@ 2.25** |
| S. E. Ky. mine run | Cincinnati | 1.35 | 1.40 | 1.35 | 1.25@ 1.50 |
| S. E. Ky. screenings | Cincinnati | .85 | 1.30 | 1.30 | *1.10@ 1.25* |
| Kansas lump | Kansas City | 4.50 | 4.25 | 4.25 | **4.50** |
| Kansas mine run | Kansas City | 3.25 | 3.00 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.50 | 2.75 | 2.75 | *2.50@ 2.75* |

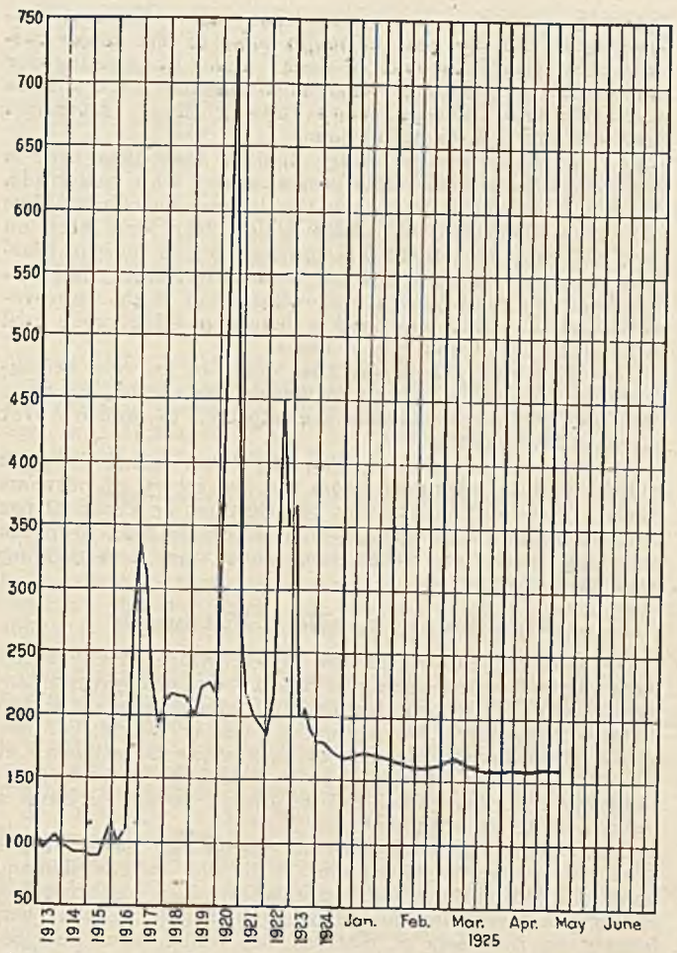
*Gross tons, f.o.b. vessel, Hampton Roads. † Advances over previous week shown in heavy type; declines in *italics*.

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

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

| | Market Quoted | Freight Rates | May 5, 1924 Independent | May 5, 1924 Company | April 27, 1925 Independent | April 27, 1925 Company | May 4, 1925† Independent | May 4, 1925† Company |
|---|---|---|---|---|---|---|---|---|
| Broken | New York | $2.34 | $8.20@$8.50 | $8.00@$8.75 | ..... | $8.00@$8.50 | ..... | **$8.05@$8.60** |
| Broken | Philadelphia | 2.39 | ..... | 8.60@ 8.75 | ..... | 9.15 | ..... | *8.60* |
| Egg | New York | 2.34 | 8.75@ 9.00 | 8.35@ 8.75 | $8.50@$8.75 | 8.25@ 8.50 | $8.50@$8.75 | **8.35@ 8.60** |
| Egg | Philadelphia | 2.39 | 8.35@ 9.50 | 8.70@ 8.75 | 8.50@ 9.20 | 8.30@ 8.50 | **8.60@ 9.20** | **8.40@ 8.60** |
| Egg | Chicago* | 5 06 | 7.68@ 7.77 | 7.73@ 7.81 | 7.76@ 8.40 | 7.42@ 8.08 | **7.86@ 8.50** | **7.44@ 8.18** |
| Stove | New York | 2 34 | 8.75@ 9.25 | 8.35@ 9.00 | 8.75@ 9.00 | 8.50@ 8.90 | 8.75@ 9.00 | **8.85@ 9.10** |
| Stove | Philadelphia | 2 39 | 8.70@ 9.60 | 8.75@ 8.95 | 9.10@ 9.55 | 8.75@ 8.90 | **9.20@ 9.55** | **8.85@ 9.00** |
| Stove | Chicago* | 5 06 | 8.03@ 8.17 | 7.94@ 8.14 | 8.12@ 8.60 | 7.82@ 8.00 | **8.22@ 8.70** | **7.92@ 8.10** |
| Chestnut | New York | 2 34 | 8.65@ 9.00 | 8.35@ 8.85 | 8.50@ 8.75 | 8.25@ 8.50 | 8.50@ 8.75 | **8.35@ 8.60** |
| Chestnut | Philadelphia | 2 39 | 8.75@ 8.85 | 8.70@ 9.60 | 8.50@ 9.35 | 8.40@ 8.50 | **8.60@ 9.45** | **8.50@ 8.60** |
| Chestnut | Chicago* | 5 06 | 7.90@ 8.03 | 7.81@ 7.99 | 7.94@ 8.25 | 7.59@ 8.00 | **8.14@ 8.35** | **7.69@ 8.00** |
| Pea | New York | 2 22 | 4.75@ 5.50 | 5.50@ 6.00 | 4.50@ 5.25 | 5.00@ 5.50 | **5.00@ 5.25** | **5.00@ 5.60** |
| Pea | Philadelphia | 2 14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.00@ 5.75 | 5.25@ 5.30 | **5.40@ 5.75** | **5.35@ 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 | 2.25@ 3.00 | 3.00@ 3.15 | 2.00@ 2.50 | 2.50@ 3.00 | 2.00@ 2.50 | *2.50* |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.00@ 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 | 1.75@ 2.00 | 2.00 | **1.90@ 2.00** | 2.00 |
| Barley | New York | 2 22 | 1.40@ 1.75 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Barley | Philadelphia | 2 14 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Birdseye | New York | 2.22 | 1.40@ 1.65 | 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**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | May 4 | April 27 | April 20 | May 5 |
| Index | 162 | 162 | 161 | 169 |
| Weighted averaged price | $1.96 | $1.96 | $1.95 | $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; 1912-1918," published by the Geological Survey and the War Industries Board.

been working for the last couple of months have unbilled coal on hand and are unable to move it at any price. Railroad tonnage is light in this field and nothing points to an improvement. Prices are unchanged.

At St. Louis some raw weather caused a little movement of the cheaper grades of coal in small quantities, but dealers' yards are pretty well loaded up. Retail conditions are at a standstill except that a little high grade is being put in for storage by people who are leaving the city for the summer months. Some dealers are putting in a little anthracite and smokeless and others are storing a little coke, but they are not delivering any of this stuff. Country domestic is dead and the only thing moving is a car of domestic nut coal occasionally and a little anthracite chestnut scattered in the inland cities. Local wagonload steam is slowing up. Carload is good on screenings but country steam is at a standstill. Retail prices are unchanged.

## Kentucky Sees Hopeful Signs

Business continues quiet at Kentucky mines. In western Kentucky nut sizes are advancing in price somewhat, due to the fact that the season of heavy consumption of small stove coal in the South is at hand. Some producers quote good quality screened nut around $2 a ton to the trade, although some can still be had at $1.50. Block is weaker, $1.75@$1.85 covering the higher quotations. Lump is $1.50@$1.75; egg, $1.50@$1.75; nut, 1.50@$2; mine run, $1.25@$1.50, and screenings, around $1.10@$1.50.

In eastern Kentucky screenings are scarcer and it is said that more quotations are around $1.25, but some stock can be had at $1.10. Eastern Kentucky operators are talking $2.25@$2.50 block coal for May, but many mines would be glad to run on $2 coal if they could get the business. Present quotations show block at $2@$2.25, with some coal probably at $1.75; lump, $1.75@$2, and egg at the same level. Nut is $1.50@$1.65; mine run, $1.15@$1.50.

Scattered reports from some of the larger mines in the Elkhorn and Hazard fields indicate fair activity and more contract business, including some good bookings on lake coal. In western Kentucky things are fairly quiet, except with some of the strip mines, which have been getting out big tonnages. Western Kentucky anticipates a good deal of business on nut coal moving South in the next few weeks. Railroad consumption is quite fair.

## Mediocre Market in Northwest

Receipts by lake at Duluth last week were as large as in any week during the past three or four years. Fifty-seven cargoes were unloaded at the docks, fourteen of which were anthracite. Fifteen cargoes are en route from lower lake ports, of which two are hard coal. This coal was loaded at lower lake ports during the winter to relieve dock congestion, and it is thought that a sharp falling off in receipts will result as soon as all of this winter loaded coal get here.

Shipments from the docks are light and the April total will fall way below the 17,000 odd cars of March. Stocks are heavy and the market is not particularly good. Some shipments are being made to the iron ranges for stripping operations, but it looks as if no one will mine much ore yet.

Prices are unchanged, but are fairly firm throughout the list. Anthracite goes up 10c. a ton May 1. Some of the larger consumers are filling their bins, and there is some demand for pea coal.

Railroads are taking some coal from the docks. It is thought that the railroads will buy much coal this summer, as they anticipate a heavy year.

The anthracite situation is peculiar. Despite the fact that four out of every five orders now being placed for next year's coal are for Pocahontas, dock men expect a normal consumption—about 1,200,000 tons—next winter. But a huge business will be done in Pocahontas and other smokeless coals next winter.

Recent flarebacks of weather in the Twin Cities caused a slight flurry in fractional retail orders from people insistent upon immediate delivery but who generally object to the higher rate on small orders. Spring buying as a rule, however, continues at a minimum.

Steam buyers persist in holding off as long as possible. They have had the whiphand for many months, and seem to be convinced that there will be a long continuance of this condition.

All-rail shippers have little to work on for the present in this market, for in addition to the backwardness of buyers, there is the recent change of rates and some suggestions of further changes being possible.

Prices remain as they have been. Southern Illinois lump is $2.75; central Illinois, $2.25; Indiana, $2.50; western Kentucky, $1.75; Hocking, $5.25 at the dock; Youghiogheny, $5.75; smokeless, $8. Effective May 1, the price of regular sizes of hard coal was advanced 10c. a ton.

Deliveries of coal at the docks have been small so far since the opening of navigation. There was no urgent need of new coal, and only moderate amounts have been moved.

At Milwaukee the coal trade continues quiet in the face of advancing spring. Interest now seems centered upon the inflow of fresh stock from the lower lakes. During April Milwaukee received 282,679 tons of coal by cargo—133,408 tons of anthracite and 149,271 tons of bituminous coal. Retail dealers have applied the May spur to prompt consumers to fill bins for next winter—an advance of 10c. a ton in the price of all sizes of anthracite.

## Dullness Unbroken in West

Some operators of the Southwest have announced summer storage prices on Arkansas and Oklahoma coal. Others say at the present cost of production it is impossible to shade recent quotations. As a result, Arkansas semi-anthracite lump is quoted at $4.50@$5.50 a ton for May, with the promise of a 50c. rise in the lower price for June; mine run is $2.75@$3.25, and screenings $1.75@$2. The May quotation on McAlester (Okla.) lump is $5.50; nut, $4; screenings, $2.25. With little production, Henryetta (Okla.) lump is being quoted at $3.75; nut, $3.50; mine run, $3.25 and screenings $2.

No storage prices have been announced for Kansas, and operators declare that at present cost of production none is likely. There has been a 25c. break in the price of screenings and crushed mine run by some operators as the number of crushers working in the district has increased, but some still are asking $2.75. Shovel coal is quoted at $4 top for lump.

April was one of the worst months in the history of the coal business in Colorado and no encouragement is held out for May. Mines are averaging two days a week and many have closed down. Even the 25 per cent wage cut and $1 reduction in the price of coal has had no effect on the trade. This is due to warm weather and anticipation of a rate reduction to Missouri River territory.

Utah operators find business slow. Only a few industries are buying coal and the domestic market has entered upon its dullest period of the year. The demand for larger sizes of coal is about nil. There is some contracting, but not much. Retailers are clamoring for lower prices, but operators show no disposition to heed them, and it looks as if there may not be a summer storage rate this year. There is not an operator in the state who would refuse to grant a storage rate if consumers would take advantage of it and get coal in during the hot weather, but the tendency to put it off till the last few days before the rate expires seems to be too strong with most people. There has not been any very settled price for slack of late, but the tendency is firmer at $1.25 a ton at the mine.

## Slight Gain at Cincinnati

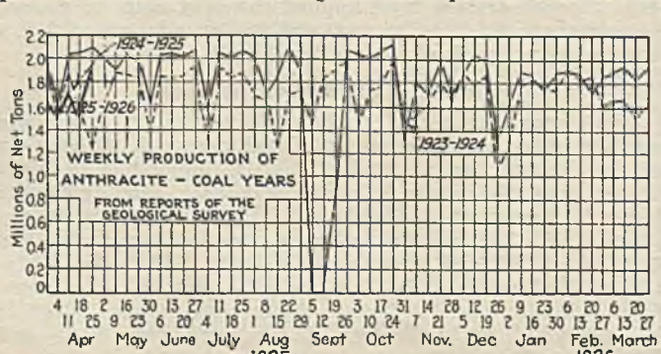
Out of the seesaw of business in Cincinnati last week the trade gained a slight advantage. Bid blanks were received from the Pere Marquette R.R. for its fuel supply, but the Big Four rejected all figures submitted and intends to buy "spot" for the time being. May 1 saw the prices on two prepared sizes advance, southeastern Kentucky operators and sales concerns making the price on the block $2.15 in accordance with the announced move made some weeks ago. The smokeless circular from most of the producers in the standard Pocahontas area also shows an advance with both lump and egg quoted at $3. There are some quotations of egg at $2.75.

Generally speaking there has been more solidarity shown in the market in the past week than for some time past. Bituminous run of mine has recovered from the haziness that beset it for a while and little can now be had at spot under $1.25. The better grades of gas and byproduct have stiffened up to $1.50 with only questionable stuff selling around the low of $1.40. Slack remains firm and the advance in egg is maintained. Only block and 4-in. are in the doldrums, lake buyers seizing this as an advantage through which they hope to beat the prices down.

Demand for smokeless lump has been as good as could be expected under the 25c. advance. Some nut going inland at $2.25 has not been taken as well as had been expected and this has been sold at mine-run prices. Slack and mine-run, however, have shown no signs of weakness.

With the lake trade opening in good shape there is a slightly better feeling among operators and distributors in Columbus and the southern Ohio field. While trade has not expanded materially, still producers see signs of improvement soon. This includes not only the lake trade but also steam business, which has been slow during the past few months. No great change in price is expected, however, and quotations are expected to be irregular for some time.

Steam business is still quiet as contracting is not heavy, consumers as a rule buying on the market, often at bargain prices. Some are contracting for short periods. Prices are generally somewhat lower than last year. Railroal contracting is held up also, although some of the larger carriers asked for bids several weeks ago. Contracting for school coal is attracting some attention and there will be a considerable tonnage bought during May. Municipal contracts are also to be up soon.




For the first time in many months there has been a note of optimism discernible in the eastern Ohio coal trade. At this time many feel that the larger consumers have just about consumed all stocks which may have been on hand and will henceforth find it necessary to increase current purchases to meet current needs. It is felt that general business conditions are showing some slight improvement and that this will have a favorable effect upon coal demand by the larger steam users.

Operators and jobbers say that inquiries are now becoming more noticeable, that the railroads also are buying some fuel, and at least conditions are expected to improve over the past few months.

Production in the eastern Ohio No. 8 field during the week ended April 25 rebounded from the low record of previous weeks. The total output was 207,000 tons, or about 29 per cent of potential capacity. This is 14,000 tons over the preceding week but 35,000 tons under the corresponding week of last year.

## Operations Dwindle at Pittsburgh

The only substantial change in operations in the Pittsburgh district is the closing of five more mines by the Pittsburgh Coal Co. In bringing the high union wage scale to a definite issue the Pittsburgh Coal Co. is playing a lone hand. Operation in the district as a whole is estimated at 20 per cent. The industrial outlook is believed to be considerably less favorable, but sentiment seems to have a great deal to do with that.

Coal prices in general show no substantial change. Slack is off 10 to 15c. on steam and 15 to 20c. on gas, demand being limited while supplies are better than was expected. As to gas mine-run, quoted lately $1.95@$2.10, that was largely on the basis of distress lots, which have now become uncommon with the closing of so many mines. Producers of good Youghiogheny gas coal have held right along to $2.10@$2.25 and the bulk of the business is now with them, sales being more commonly at $2.10 and $2.15, $2.25 being obtained only occasionally. Steam slack is quotable at $1.35@$1.50 and gas slack at $1.40@$1.60. No other changes.

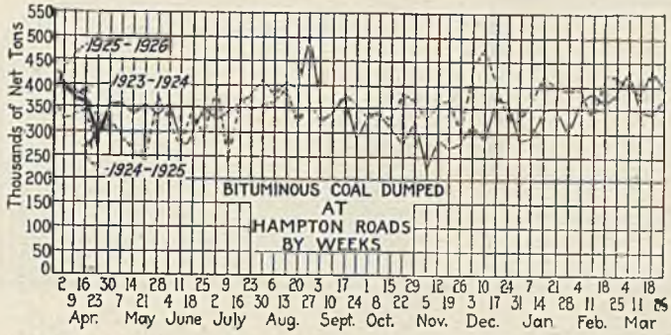
That the coal business is getting in a bad way is the opinion of a portion of the trade at Buffalo, but others feel that increasing shutdowns of mines, with the resultant curtailment of production, will be beneficial. Many wonder how long the Pennsylvania operator can mine coal at a loss. The wholesaler is doing a little better than the operator, but as a rule he professes to be making a bare living.

## New England Faces Reluctant Trade

In New England the market apparently has settled into a season of forcing coal on reluctant buyers. The utmost pressure is brought to bear in order to move tonnage both at Hampton Roads and at rehandling wharves at this end. From each discharging port there is keen competition for what spring orders are likely to materialize. In other seasons practically all the factors relied upon distribution by railroad, but now the use of the motor truck for a radius of twenty to thirty miles from tidewater wharves introduces a new competitive element, besides making further inroads on terminal business of the railroads. It is anything but a satisfactory situation, but until demand catches up with current output improvement is unlikely.

Spot quotations are uneven. They depend upon individual situations as to accumulations at the piers and anxiety to sell. Grade also enters mildly into price consideration, but at this writing it is hardly the factor it usually is. Even the cream of No. 1 Navy standard smokeless, we understand, can be bought down to $4.20 per gross ton f.o.b. vessel at Norfolk or Newport News, while coals of much less efficiency have been sold at $4 and better. A good deal of nut and slack is being offered here now at prices 20c. less than mine run, and purchasers in considerable number are inclined to take it at the difference in cost.

On cars Boston, Providence, New Haven, Portland and other discharging ports the trade is only a replica of the picture at Hampton Roads. Every known device is used to




place coal that is constantly arriving on consignment, and "tail ends" are heard from in practically every direction. The range of the market at Mystic Wharf, Boston, the past week was $5.25@$5.40 and there are no signs of more remunerative figures during May.

### Improvement Expected at New York

No improvement can be noted in the bituminous coal market at New York, but there is much optimism that better conditions are about due and that buying will soon improve. Reserve stocks are believed to be as low as they should go and the continued cut in production is expected to compel heavier buying shortly.

Not much interest is shown at this time in market conditions. Buyers are not in the spot coal market except when extreme bargains are in sight.

Contract coals are moving in fair volume. It is said that some additional contracts have been closed at figures bordering near the present maximum spot market quotations.

The tidewater market continues to hold its own, due at least in part to decreased shipments to the piers.

Demand in the Philadelphia market continues on a low scale. Consumers are buying only moderately and seem to be a long way from the point where they will consider putting in storage supplies for the next winter.

The price situation is quite soft, and there is more non-union coal on the market now in proportion to the higher priced fuel than there was a few weeks ago. There is no question that the concerns who have been operating union but are now closed down, are going to make a strong effort to get under way on the same basis as their competitors.

In gas coal little three-quarter coal is being turned out, and slack, which is in demand, brings almost the price of mine-run. The strike in the Fairmont field, if it can be called that, is not hurting shipments to this market.

The Baltimore market continues dull and generally listless. Despite much talk of industrial development, purchasing agents for industries continue to buy in very limited quantities, and the situation as a whole is highly unsatisfactory to the coal trade. The keenest sort of competition is in evidence, both in spot selling and on contracts. Price quotations are over a fairly wide range according to the necessities of the particular sale, although all are below the standard usually considered profitable for both producers and jobbers. Excellent steam coals are still being offered as low as $1.70@$1.75 for spot fuel and $1.75@$1.85 on contract on 60 to 90 day delivery. The export situation is only fairly active, even as compared with the local domestic selling, and is much below the experience of some other years at this season.

Coal buying is slow at Birmingham and very little interest is being shown by consumers in providing fuel far in advance of actual use. Those who have made it a practice for months past to depend on the open market are still adhering to this policy with few exceptions, as almost all contracts made are renewals. Inquiry is weak and bookings are light both as to number and tonnage involved.

Domestic coal is still exceedingly sluggish, there being practically no spot demand, and movement against contracts is slow and unsatisfactory. The bunker market is rather quiet at present. Some export coal is moving to Cuban points, though the tonnage is not large.

Quotations on steam coal are unchanged. Domestic grades, taking on the customary monthly advance, will range as follows for May: Big Seam lump, $2.40; Carbon Hill lump, $2.65; Cahaba lump, $3.45@$4.20; Black Creek lump, $3.70; Corona lump, $2.90; Montevallo seam, $3.95@$4.70 per ton mines.

### Hard Coal Demand Growing at New York

The New York market for hard coal continues to gain strength. Egg and stove are in strong demand, and pea coal, contrary to usual conditions here, is moving well. Chestnut is a trifle easier but is far from being in oversupply.

On May 1 the line companies added from 5c. to 35c. per ton to their April prices for domestic sizes of anthracite and similar increases were announced by some of the larger independent operators. At the same time one of the companies cut its price for No. 1 buckwheat 50c. per ton, making the price $2.50 instead of $3. Some of the retailers also announced increases of 10c. per ton in delivery prices.

Independent coals are moving in good shape and prices in some instances are a trifle higher than last week, although the range shows no change. It is now expected that some of the individual mines that have been idle will soon resume operations.

Steam coals, especially No. 1 buckwheat, are in fair condition.

The Philadelphia market has held all of its improvement, and if anything has added a bit to it, with a week of chilly, rainy days helped out by spring filling trade. More consideration is being given also to the possibility of a strike on Sept. 1.

As anticipated, prices have been increased for May, company producers having added a straight 10c. through all the sizes, while some of the independents took the opportunity to add a little more to stove, the size in most urgent demand. There was some surprise that pea was raised, but this size has been somewhat tight all month. Steam coals are quiet, with buckwheat the weakest of all.

Trade in anthracite has been pretty good of late at Buffalo. Consumers responded to the bottom price, and the retailers have all been pretty busy. Business is expected to drop off now till fall. There is much difference of opinion as to the fall supply of anthracite, considering the possibility of a strike.

The independent anthracite trade is pretty quiet. Buffalo does not buy this coal very much, for it can get enough coal at schedule prices, but where any scarcity exists the consumer is willing to pay the 50 to 75c. premium that is asked. The movement of small sizes continues very slow.

Lake shipments for the week were only 38,500 tons, of which 24,500 tons cleared for Duluth and Superior, 7,300 tons for Sheboygan and 6,700 tons for Milwaukee. Rates are 50c. to Milwaukee and 40c. to Duluth-Superior.

In Baltimore April retail prices will be continued throughout May. Wholesale rates have advanced 15 to 20c. above the prices quoted around April 1, but most retailers will absorb the increase during May with the idea of stimulating sales. Demand has not been heavy, and the trade is particularly anxious to get rid of a fair proportion of its business in the early summer months in order to prevent a congestion when supplies may be difficult to obtain from the mines.

### Connellsville Coke Market Inactive

With steel mill operations decreasing steadily and with merchant furnaces making scarcely any sales, there has been practically no activity in the Connellsville coke market. Various small-lot purchases of furnace coke are being made for non-metallurgical use, the tonnage being almost insignificant. Buying of spot foundry coke continues light.

Prices for spot are not well defined in the circumstances, but may be repeated at $3@$3.25 for furnace and $4@$4.50 for foundry, but foundry is somewhat weaker. Some coke, perhaps standard, but not particularly desirable, might be picked up at under $4.

Demand for byproduct coal in the market is practically absent, there being no inquiry for either spot or contract. Shipments against contracts have been curtailed somewhat by some byproduct ovens.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended April 18, 1925 | 922,778 | 134,172 |
| Previous week | 917,284 | 138,065 |
| Week ended April 19, 1924 | 876,916 | 124,750 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| April 22, 1925 | 344,198 | 173,455 | ..... | ..... |
| April 15, 1925 | 343,048 | 177,916 | ..... | ..... |
| April 22, 1924 | 321,832 | 189,600 | ..... | ..... |

# Foreign Market And Export News

## British Coal Trade Below Normal; Holidays Limit Output

There is little to report on the Welsh coal market. Operators are unfavorably placed as regards contracts and business booked for early May is very much below normal. Last week pits closed down involving the discharge of 4,000 men, and this week two more groups of collieries have closed, notice being given to 3,500 more miners. The total number of miners idle in Wales is now around 42,000. Prices have changed little and Wales is still losing business owing to the fact that cheaper coal is obtainable elsewhere.

Inquiries circulating in Newcastle hold out no hope of improved conditions soon. The brightest spot is that the reopening of the Baltic may mean increased business with the Scandinavian countries. The Westeras Railways of Sweden have contracted for 10,000 tons of best Durham steams to be shipped during the next three months at 22s. 2d. per ton c.i.f. A Glasgow firm has obtained a contract for 10,000 tons of screened navigation coal to Jugoslavia for naval purposes, shipment April-May.

The Italian State Railways are closing their coal offices at Cardiff. The French State Railways have already closed their offices.

American representatives of the Italian State Railways declare that hydroelectric development in Italy has steadily cut down coal requirements to a point where it is no longer necessary to maintain separate offices.

In order to organize the Rhonnda district in Wales, where non-unionism is prevalent, the coal miners passed a resolution early last week favoring a strike on Saturday if in the meantime all the mine workers in the area had not joined the Miners Federation. The resolution was put through at a meeting largely attended by radicals. The strike order, however, did not become effective, for the great majority of the men declined to cease work.

Production by British collieries in the week ended April 18, a cable to *Coal Age* states, totaled 3,273,000 tons, according to official returns. This compares with an output of 4,494,000 tons in the preceding week, the falling off being due to the Easter holidays.

### Supplies Low, Demand Weak At Hampton Roads

Business at Hampton Roads continued dull last week with the market fairly strong because of lack of supplies rather than any unusual demand. Practically no surplus coal was at the piers, the accumulation being confined largely to special orders and contracts.

Mines continued running on part time. Foreign business was at a minimum while bunker and coastwise movement were barely holding their own. Shippers see no immediate relief from the dullness. Retail dealers were making concessions to move surplus supplies before the summer set in. No business of any importance was reported.

### French Market Quiet, but Product Moves Easily

Trade in the French coal market lacks animation, but the North and Pas-de-Calais output moves easily without any excessive stocking. Moreover, Cardiff arrivals are nearly normal again. Contracts for household fuel have taken a turn for the better in the last few days.

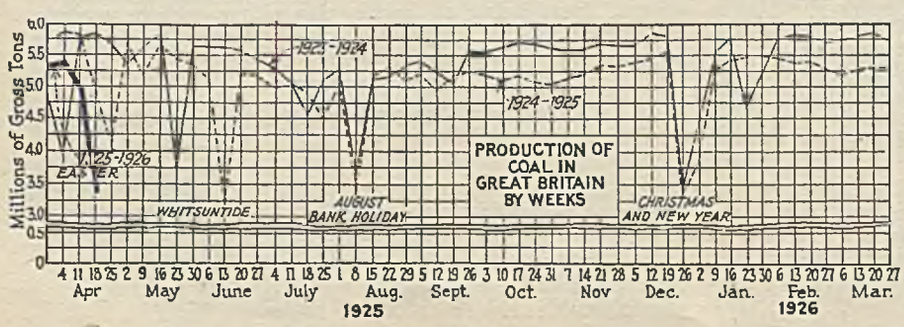
Deliveries of indemnity fuels during March to France from the Ruhr included 295,200 tons of coal, 357,600 tons of coke and 28,300 tons of lignite briquets. From April 1 to April 4 receipts were 20,900 tons of coal, 39,900 tons of coke and 4,200 tons of lignite briquets.

During the first fifteen days of April the O. R. C. A. received 137,057 tons of coke, an average of about 9,000 tons daily. The lightness of deliveries is understood to be due to holidays.

### U. S. Fuel Imports in March

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 13,794 | 11,467 |
| Bituminous | 53,905 | 37,664 |
| From | | |
| Un. Kingdom | 7,485 | 1,499 |
| Canada | 40,859 | 36,085 |
| Japan | 5,560 | ..... |
| Other countries | 1 | 80 |




### Destination of Fuel Exports from United States in March

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 309,243 | 200,953 |
| Bituminous | 1,135,284 | 918,746 |
| Exported to: | | |
| France | 34,084 | 19,037 |
| Italy | 43,702 | 65,084 |
| Canada | 812,175 | 662,455 |
| Panama | 31,344 | 31,388 |
| Mexico | 9,831 | 6,453 |
| Br. W. Indies | 12,335 | 19,239 |
| Cuba | 28,960 | 47,020 |
| Other W. Indies | 32,925 | 20,083 |
| Argentina | 53,650 | 6,740 |
| Brazil | 43,113 | 17,332 |
| Chile | 7,067 | ..... |
| Egypt | 2,980 | 6,726 |
| Fr. Africa | ..... | 14,947 |
| Other countries | 23,118 | 2,242 |
| Coke | 52,729 | 65,980 |

### Export Clearances, Week Ended May 2, 1925

| | Tons |
|---|---|
| FROM HAMPTON ROADS | |
| For Brazil: | |
| Br. Str. Onega, for Para | 3,880 |
| Amer. Str. Chincha, for Rio de Janeiro | 8,222 |
| Br. Str. Hindustan, for Rio de Janeiro | 6,768 |
| Br. Str. Albany, for Rio de Janeiro | 5,135 |
| For Nova Scotia: | |
| Br. Str. Clackamas, for Halifax | 2,916 |
| Amer. Schr. Dorothy, for Yarmouth | 1,142 |
| For Newfoundland: | |
| Br. Schr. Favonian, for Rosarue | 659 |
| For Argentina: | |
| Ital. Str. Andreino, for Buenos Aires | 6,125 |
| For Cuba: | |
| Amer. Str. Muncove, for Havana | 2,986 |
| For Norway: | |
| Nor. Str. Norwell, for Forsberg | 1,403 |
| FROM PHILADELPHIA | |
| For Porto Rico: | |
| Am. Str. Sioux, for San Juan | —— |
| For Newfoundland: | |
| Am. Schr. Augusta W. Snow, for St. Johns | —— |
| FROM BALTIMORE | |
| For Algeria: | |
| Ital. Str. San Pietro, for Algiers | 7,250 |
| For Italy: | |
| Ital. Str. Giovanni, for Naples | 10,442 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | April 23 | April 30 |
|---|---|---|
| Cars on hand | 1,488 | 1,283 |
| Tons on hand | 10,008 | 87,546 |
| Tons dumped for week | 85,208 | 118,869 |
| Tonnage waiting | 5,000 | 10,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 985 | 624 |
| Tons on hand | 70,050 | 44,200 |
| Tons dumped for week | 55,525 | 92,287 |
| Tonnage waiting | 3,500 | 2,887 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 1,599 | 2,233 |
| Tons on hand | 78,615 | 110,045 |
| Tons dumped for week | 117,030 | 106,468 |
| Tonnage waiting | 5,050 | 12,920 |

### Pier and Bunker Prices, Gross Tons

| PIERS | April 25 | May 2† |
|---|---|---|
| Pool 9, New York | $4.70@$4.85 | $4.70@$4.85 |
| Pool 10, New York | 4.50@ 4.65 | 4.50@ 4.65 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.30@ 4.55 | **4.35@ 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@ 5.10 | *4.80@ 5.05* |
| Pool 10, Philadelphia | 4.60@ 4.75 | **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 |

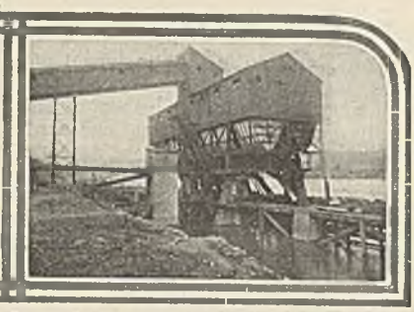
### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | April 25 | May 2† |
|---|---|---|
| Admiralty, large | 26s.@26s.6d. | **26s.6d.@27s.** |
| Steam smalls | 15s.6d. | **15s.6d.@19s.** |
| Newcastle: | | |
| Best steams | 17s.6d.@20s. | *17s.3d.* |
| Best gas | 19s.@19s.6d. | *19s.@19s.7d.* |
| Best bunkers | 18s.@18s.6d. | 18s.@18s.6d. |

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

# News Items From Field and Trade



## ARKANSAS

Taking advantage of the lull in the market, coal mines in the Paris fields are doing considerable development work, preparatory for future demand. The New Union and Paris Purity companies are preparing to experiment with some new equipment, including compressed-air systems and electrically driven machinery.

## COLORADO

A. E. Carlton, well known Colorado Springs capitalist, has leased 120 acres of coal land six miles southwest of Fort Lupton and is making preparations for immediate development of the property.

The State Industrial Commission has handed down a decision on the Mount Harris and the Victor-American mines in Routt County, that the wage scale should not be reduced below the 1917 scale, which is 20 per cent lower than the present wage scale.

Considerable comment has been made upon the recent decision of the U. S. Supreme Court holding Kansas law for compulsory arbitration unconstitutional. The operation of the Colorado Industrial Board, it is admitted, will not be affected by the decision on the Kansas Industrial Court.

The North Park Coal Co. notified the State Industrial Commission of a 5c. per hour reduction in wages of employees at its two mines at Coalmont. This is approximately 10 per cent less than the reductions adopted by other operators in the state.

## ILLINOIS

Fire caused $10,000 damage on April 19 to the plant of the Spring Creek coal mine, located a mile northwest of Springfield. While the tipple superstructure is of steel, the wood framework of the shaft covering and coal dust caused such a fire that the steel work may be warped. Three hundred and fifty miners are added to the unemployed as a result of the fire.

The Consolidated Coal Co., at its Mt. Olive mine broke all its previous records April 20, when a total output of 5,050 tons was brought to the surface.

The new town of Nason, which was laid out a year or so ago by the Nason Coal Co., is now an honest-to-goodness town with its own incorporation papers and its first duly elected Mayor. Like Israel of old, which begged for a king in order to be like other people, the Nasonites recently incorporated themselves into a city with a population of 1,500 and thereby began their troubles as a municipality. The first election was a warm one, with four candidates running, yet there were no election disturbances. The town is built on the site of the new Nason mine No. 10 of the Illinois Coal Corporation, designed to become the largest colliery in the world. The first meeting of the new city fathers decided upon many improvements, one being cement sidewalks over the entire town to cost $60,000. The town also has a new state bank.

The Utilities Coal Corporation, Springfield, has moved from the Ferguson Building to 314-322 East Capitol Ave.

A new tipple for the West Frankfort mine of the Independent Coal Co., to replace one left a tangled wreck by the recent tornado in southern Illinois, is being built in the Decatur plant of the Mississippi Valley Structural Steel Co. The tipple is a duplicate of one built a few years ago for the Riverton mine of the Peabody Coal Co.

The Ellisville Coal Mining Co., of Galesburg, has formally moved to dissolve. The mine was transferred back to the Spoon River Colliery Co., which is at the present time operating and will continue to operate the mine.

The Universal Coal & Coke Co., 924 South Kilbourn Avenue, Chicago, has been incorporated with capital of $20,000 to manage and control coal mines, sand pits and stone quarries. The incorporators are Russell J. Burns, John P. Drennan, Bart J. Burns, Ella M. Drennan and Austin A. McNichols.

The Bobby Dick mine, at Herrin, which had been temporarily closed for repairs, is now at work. One of the improvements is a new loading yard track, which is now connected. The track above the tipple also has been raised to grade for efficiency in coal handling.

M. H. Detweiler, formerly general superintendent of the Kathleen Mine at Dowell, owned by the Union Colliery Co., St. Louis, has been appointed superintendent of one of the mines of the Bell & Zoller Coal Co. at Zeigler. He took charge May 1st.

The Sincerity Coal Co. will begin work early in May, mining Fifth Vein coal near Herrin. The company has purchased 817 acres of coal lands in that county.

The Saline County Coal Corporation has removed its Chicago offices from the Peoples Gas Building to the new Bell Building, near the Michigan Avenue Boulevard Bridge, where it now occupies the entire seventeenth floor. This company is the largest producer and distributor of coal in Saline County.

The Abbott-Irwin Coal Co. has been appointed the exclusive Chicago and Northwest distributors of the Moss Hill and Victoria coals, produced by the Hart Coal Corporation of Morton's Gap, in western Kentucky. The Hart Coal Corporation operates six large collieries and produces one million tons of coal annually.

The new Freeman mine, at Freeman, is again in full operation after some minor repairs.

Of the 44,242,533 tons of coal shipped over the railroads in Illinois during 1924, the Illinois Central handled 10,425,595 tons, the Burlington handled 8,268,962 tons. The Big Four moved 4,646,029 tons and the Chicago and Eastern Illinois handled 3,782,857 tons. The Burlington moves the greatest part of southern Illinois coal. In Franklin County, the Burlington moved 5,042,135 tons compared with the Illinois Central's 2,405,214 tons, and in Williamson County the Burlington moved 2,115,445 tons and the I. C. 1,737,971 tons.

## INDIANA

The Dixie Vein Coal Co., of Indianapolis, has increased its capital stock from $100,000 to $150,000, all of the increase being common stock.

Mike Mosk, a miner at Shirkie Mine No. 1, near Terre Haute, charged with violating the mining laws, pleaded guilty before Justice of the Peace Thomas Smith, April 23, and was fined $1 and costs. Mosk pleaded guilty to "shooting on the solid." Will A. Church, prosecuting attorney of Vigo County, has indicated that he will dismiss the cases of the other fifty miners and bosses against whom charges of violating the state mining laws were filed in justice of peace courts in Terre Haute, and will file them in Circuit Court and ask for the maximum penalty of $200 and costs and sixty days' imprisonment. He said that it was not a case of trying to persecute the miners but as a warning that the state laws must be obeyed.

Comet Coal Co., Evansville, has increased its capital stock from $30,000 to $100,000, the new stock being common.

## IOWA

The Dallas Coal Co., with mines near High Bridge, has been placed in the hands of a receiver. John Gibson was named receiver at Des Moines, April 16. The stock of the company is owned largely by the Carlson Brothers.

The Sioux City Board of Education has awarded the contract for 6,000 tons of Franklin County (Ill.) coal to the L. G. Everest Co. of Sioux City for $6.18 a ton.

## KANSAS

The Kansas Public Service Commission on April 21 announced the appointment of George Gruber to succeed William O'Hara as statistical clerk for the state mine inspection department, effective May 1. At the same time it announced the reappointment of Robert Morrison as superintendent of the central mine rescue station and of Miss Elizabeth Kotzman as stenographer in the inspection department.

The Sheridan Coal Co. has leased its mine No. 16, three miles north of Croweburg, Crawford County, to Fred Trost, Lowell Bliss and a dozen other miners. The mine had been idle several weeks, following surrender of a lease on it by the Morgan-Spur Coal Co.

The Pittsburg Chamber of Commerce as part of its campaign to promote the use of Kansas coal sent a sample of the fuel and a letter setting forth its merits to the Governor of each state. The Governor of Delaware was the first to acknowledge receipt of the coal and letter. The Chamber has obtained general use of the slogan "Use Kansas Coal" on the stationery of Pittsburg business men.

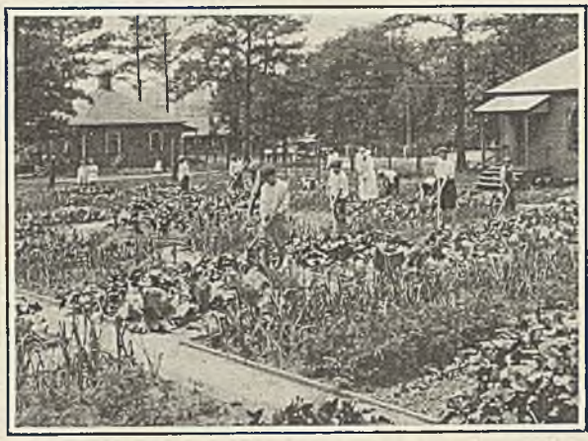
A survey of the coal mines at the Kansas state penitentiary at Lansing, was ordered April 27 by the state board of administration as a result of complaints by owners of land adjoining the penitentiary's 2,000 acres that the mines were encroaching on private property. The survey also will estimate the amount of coal remaining underground on the state land.

Matt Walters, president, and Harry W. Burr, secretary-treasurer of District 14 (Kansas), United Mine Workers, went to Indianapolis, April 27, to seek aid from the international for idle miners in the Kansas field, and to discuss with international officials the proposal to levy an assessment within the district for such aid. Only mines with contracts are active in the Kansas field now, with the prospect of more mines being closed down as the summer advances. Non-union mines recently were visited by union delegations which invited the miners to join the union and to cease work until operators should sign union contracts. Walters announced before leaving Pittsburgh for Indianapolis that the Standard Coal Co., operating Sheridan No. 12, and the Roberts Brothers Coal Co., operating Clemens No. 19, two of the mines visited had agreed to the union's demands.

## KENTUCKY

The Louisville Gas & Electric Co., of Louisville, which uses about 180,000 tons of coal annually in its power plant, in addition to coal and coke used in its gas plant, has decided to close its mines at Echols for a year, and buy its supplies.

It is reported from eastern Kentucky that the Nagola Elkhorn Coal Co., Whittaker, recently purchased by A. F. Parsons and others of Huntington, W. Va., original developer of the property, has resumed full time operations and that the mine at Parsons, owned by the same company, also has resumed.



**School Gardens**

Tennessee Coal, Iron & Railroad Co.'s Edgewater White School grounds. Here the children of coal miners are taught to grow vegetables for the home table.

The R. T. Davis Coal Co., Jackson, capital $15,000, has filed amended articles increasing its capital to $40,000.

Fire at Drakesboro, on April 29, wiped out ten buildings, including several buildings owned by the Black Diamond Coal Co. and W. W. Bridges, of the coal company. The telephone exchange in one of these buildings was destroyed, putting the town out of communication for a time.

Sale of the Jim Rich coal mine, near Richland, by the Dozier-Diamond Corporation to Jesse Johnson, of Sesser, Ill., and Lloyd Winchester of Herrin, Ill., has been consummated and the purchasers have taken possession. The mine is located on the Illinois Central line, has a daily capacity of three cars and the output will be handled by the Dozier-Diamond Corporation.

## MISSOURI

Coal dealers in Kansas City appearing before the finance committee of the upper house of the City Council, April 24, obtained postponement of action on a recently proposed ordinance to increase the occupation tax for coal dealers from $25 to $250 a year.

Governor Baker on April 28 appointed Chant Grey, of Novinger, Adair County, a deputy state mine inspector. Dallas Ingersoll, of Huntsville, who had previously been offered the post, declined to accept it.

## NEW YORK

The Buffalo Board of Education gave out the following contracts on April 28: to the Weaver Coal Co. for furnishing 20,000 tons of Diamond Smokeless coal on its bid of $5.69 delivered (price last year to same bidder was $5.74); to E. L. Hedstrom for furnishing 4,000 tons of anthracite on its sliding-scale bid of $12.50 to $13 for egg and $12.90 to $13.40 delivered; to the Yates-Lehigh Coal Co. for furnishing 12,000 to 14,000 tons of bituminous on its bids of $4.40 for slack, $4.70 for mine run and $4.90 for lump delivered.

## OHIO

Fred Dunker, of the Virginia & Kentucky Coal Co., withdrew from the firm on May 1 to become associated with the John Hesser Coal Co. as its vice-president. He was connected with that corporation for fifteen years until three years ago. Jack Humphrey, president of the Humphrey Coal Co., now in liquidation, also has been added to the Hesser sales forces.

A new record for loadings at Sunday Creek Mine No. 255, at Glouster, was set last week when 2,000 tons of coal was run through the hoppers in eight hours. This is the best record in five years. A week previous the mine was loading only 1,200 tons daily.

Union officials announce that Mine No. 267 of the Ohio Collieries Co., at Glouster, will be reopened soon, giving work to many miners. A strike at two of this company's mines recently was settled on condition that Mine No. 267 resume work.

The Man O'War Fuel Co. has opened an office on the sixth floor of the Dixie Terminal Building, Cincinnati, with James C. Layne in charge as general sales manager. The entire output of the May Coal Co., of Alphoretta, Ky., will be marketed with other mines in that vicinity to be added. Mr. Layne was the manager of the coal department of Eaton Rhodes & Co. until it was closed April 1, when the company decided to engage in nothing but the marketing of iron, steel and coke.

The branch office of the Paddock-Walther Coal Co., of New York, which has been maintained in Cincinnati since the split with the Dexter-Carpenter Co., Inc., closed May 1.

Negotiations which have been pending between mining interests at Williamsburg, Ky., and Judge W. F. Hall, of Hazard, for the lease of the Lena Rue, Three Point and the Ellis Knob mines, are said to have fallen through and the judge will continue to operate his properties.

George Merryman, for several years at the head of the Logan Fuel Co.'s sales department, has been appointed sales manager of the Indian Run Coal Co., of Charleston, W. Va.

## OKLAHOMA

The district representative of the United Mine Workers told A. N. Boatman, County Attorney, and Sheriff John Russell, that so far as union miners were concerned, the B. & A. mine management at Okmulgee could open up for work on the 1917 wage scale without any danger of violence. The mine was closed following a strike

and refusal of Sheriff Russell to provide guards. At the same time the union miners who have pay coming for a month from the former lessee brought an injunction in the district court to stop the Acme Coal & Mining Co., of Kansas City, a new lessee, from operating. This action is based on a lien on the property for payment of $8,000 claimed back pay. The action also asks that P. W. Malloy be ousted as superintendent and receiver for the mine.

## PENNSYLVANIA

The South Union Coal Co., Uniontown, on May 1 began running its operation to full capacity, giving employment to 225 men and working a six day a week schedule instead of the four day schedule previously carried on. It is planned to reach a maximum output of 1,900 tons as quickly as possible, thereby fulfilling the requirements of a contract which the Jamison interests recently have closed. Former employees are being given preference in the engagement of help.

Conditions in the coal and coke industry in the Connellsville coke region are still on the downward trend, the H. C. Frick Coke Co. having closed down its Redstone plant.

The Jefferson & Indiana Coal Co., of Indiana, which leased the Lucerne mine from the Rochester & Pittsburg Coal & Iron Co., began operations at the mine on April 27 under the 1917 scale. Officials of the company, John O'Hara, president; J. R. Richards, secretary, and Joseph Mack, treasurer, were present when work was resumed. Fred Vinton is general manager; Thomas Thomas, assistant manager; Thomas Jeffries, superintendent, and A. R. McMillin, assistant superintendent. The same company is successfully operating the Adrian mine of the R. & P. C. & I. Co. in Jefferson County. Sheriff John Malcolm was on the scene when the mine resumed operations, but there was no disorder.

John Brophy, president of District No. 2, United Mine Workers, conferred with the officers and board members of the Central Pennsylvania Coal Producers' Association in Altoona, on April 29 relative to the collection of a special assessment of $1 per month for February and March, in addition to the regular dues of $3.06 per month under the check-off system. The $1 assessment was levied by the international union and the operators refused to collect it because the agreement with the union provides only for the collection of the assessment levied by district No. 2. Operators contend that the assessment is illegal and the executive committee of the association reaffirmed the position previously taken in refusing to collect the extra dollar.

## TEXAS

The Texas & Pacific Coal & Oil Co. reports for the quarter ended March 31 net income of $493,126 after charges, but before depreciation and depletion, against $581,674 in the first quarter of 1924.

## UTAH

The Vigilance Committee of the Logan Chamber of Commerce and the Cache County Utah State Farm Bureau of Logan his issued a warning against coal stock salesmen representing mutual companies in the county. The committee stated that the government says in a recent report that there are too many coal companies already, and that a thousand mines might be closed down with benefit to all. One of the agents had stated that the Ogden Chamber of Commerce endorsed the stock, but this was flatly contradicted by the secretary of that Chamber over long-distance telephone.

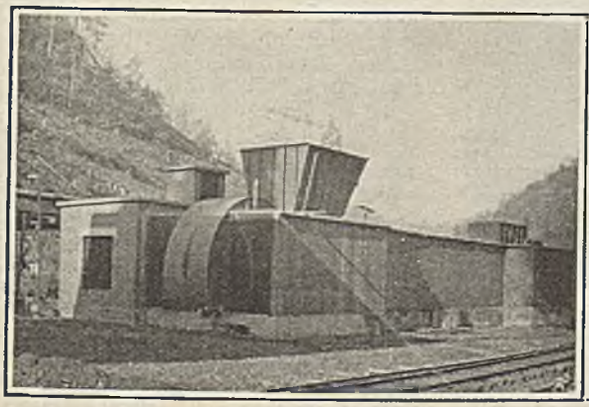
## VIRGINIA

The Houston Coal Co. closed its office at Norfolk, May 1. Clayton M. R. Wigg, Norfolk manager, will travel for the company through the Carolinas and adjacent territory.

Walter D. Mills, assistant sales manager of the Raleigh Smokeless Fuel Co., has resigned that position and will become manager of the new Ocean Casino, at Virginia Beach. His resignation was effective May 4.

## WASHINGTON

The strike at the Kenilworth mine of the Independent Coal & Coke Co. showed some signs of collapsing on April 27. The men walked out on the 15th of the month after the posting of a 20 per cent cut in wages along with a 20 per cent reduction on hotel and boarding and cottage service furnished by the company. It was reported that the men said they would return to work if the other companies posted a similar notice, but not otherwise. So far the coal operators of the state as a whole seem to have taken no steps to bring about a cut in wages at the mines, but it is expected that the next week or two will see a movement in this direction. It would seem that much will depend on the decision regarding a reduction in prices, demanded by the retailers.



**Fan House**

At No. 251 Mine, Consolidation Coal Co., Coalwood, W. Va., a uniflow engine connected to a Jeffrey fan is the regular drive. The emergency fan is driven by a motor.

## WEST VIRGINIA

In the federal court of northern West Virginia, Enrico Iannarelli, Italian consul for the jurisdiction of West Virginia, brought suit against the Wheeling Steel Corporation for $10,000 each in ten suits, at Parkersburg, April 29. The plaintiff's bill avers that by reason of negligence coal gas collected in a mine of the company at Benwood, Marshall County, and as a result of an explosion which occurred, ten subjects of the Italian government were either killed outright or sustained wounds that caused death. The bill avers that under the treaty between the United States and Italian governments the subjects of Italy are guaranteed the same rights in the circumstances relating to this case as citizens of the United States, and that this treaty was violated by the defendant corporation.

West Virginia University, Morgantown, announces a six weeks course, from June 8 to July 18, to prepare employees for positions as fireboss, mine foreman and superintendent. Registration starts June 6 at Room 121, Mechanical Hall. Enrollment in the school by years since its inception has been as follows: 1913, 3; 1914, 3; 1915, 3; 1916, 8; 1917, 4; 1918, 23; 1919, 57; 1920, 68; 1921, 106; 1922, 69; 1923, 90; 1924, 47.

The entrance of the Gordie Bailey-Fahey mine at Wendell was wrecked during the last week of April by the explosion of two sticks of dynamite. No one was injured in the explosion but several days elapsed before the miners were able to use the entry. Within a short time after the explosion at the Gordie Bailey-Fahey mine, three sticks of dynamite were exploded near a powder house of the Maryland Coal Co. of West Virginia. It is believed that the sticks were hurled from a hill top toward the house but exploded before reaching the building. John J. Billy, a union miner who has been sought by state and county authorities since an investigation was set on foot more than a month ago of mine property fires in Wendell and vicinity, has been arrested, charged with being implicated.

What is described as the largest railway coaling and sanding plant in the world has just been completed and placed in operation by the Norfolk & Western at Pritchard, twelve miles south of Kenova, on its main line. The structure is of reinforced concrete, has a capacity of 2,000 tons of coal and is equipped with special apparatus to screen it into various grades for locomotives. Engines can be coaled on six tracks at one time. The coaling structure is 133 ft. high and has a circular bin 55 ft. in diameter and 40 ft. high. The plant, erected by Roberts & Schaefer, of Chicago, is equipped with two track hoppers for unloading coal.

A coroner's jury, after investigating the explosion in the Logan-Eagle mine at McBeth early in April, brought in a verdict to the effect that carelessness on

the part of the men killed had been responsible for the blast. The inquest was held under the direction of R. M. Lambie, chief of the State Department of Mines, and State Mine Inspectors Charles Foster, Zach Evans and J. F. White. Evidence tended to show that the men entered a portion of the mine where the ventilation had been blocked off, causing an accumulation of gas which was ignited by carbide lamps which the men carried.

A gas explosion at the mine of the Talbott Coal Co., near Arnettsville, in Monongalia County on April 23, resulted in slight damage to the mine. As the mine had been closed down for repairs no one was injured. Robert Talbott and others of Fairmont own and operate the property.

All operations of the Consolidation Coal Co. have been suspended in northern West Virginia. The Monongah Mine, known as No. 63, one of the largest in the country, was the last to be closed down, making 650 miners idle. An order closing the little Pennois mine, known as 68, also became effective during the closing week of April. In commenting on the suspension of operations at the Monongah mine, Frank R. Lyon, vice president, stated that the mine could not work under present conditions. Only a handful of union mines are now in operation in northern West Virginia.

The American Coal Co. of Allegany County directors have reconsidered their dividend action last month and reduced the rate from $1 quarterly to 50c.

### WISCONSIN

The Ford dock at Duluth-Superior harbor has announced that less mine run coal and more lump will be brought up this year than last. It is proposed to keep two boats actively in the service all year. The first cargo arrived April 29.

### CANADA

Another attempt by Premier E. H. Armstrong of Nova Scotia to bring about a settlement of the miners' strike has resulted in failure. The Premier announced on April 28 that the British Empire Steel Corporation had rejected his proposal, proposing that there be no reduction in wages for men receiving $4.50 per day or less, those receiving more than $4.50 and less than $5 to be reduced to $4.50 and all receiving over $5 and all contract prices to be subject to a 10 per cent reduction. No answer to the proposal had been received from the United Mine Workers.

The Alberta Coal Commission, which was appointed last fall to look into the whole coal industry in the province, last week announced the following sittings during May: Edmonton, May 5 to 8; Calgary, May 11 to 13; Drumheller, May 14 to 15; Lethbridge, May 18 to 20; Blairmore, May 21 to 23. Since its creation, this commission has been gathering a mass of documentary evidence from coal operators, experts, miners and consumers in all parts of Canada, the United States and parts of Europe. This information will be used, together with maps and charts, as a basis for the taking of oral evidence. The scope of the inquiry covers methods and costs of production, grading and inspection, transportation and marketing, wages and housing conditions provided for miners, profits, and suitability of the different kinds of coal for the uses to which they are put. Attention also will be given to the possibility of extending the market for Alberta coal and to the possibility of minimizing labor disputes.

Miners in the Coal Branch near the foothills are unanimously against any reduction in wages in an effort to increase production, declared Rod Macdonald and William Ryan, of the United Mine Workers, who visited this area on April 22. Most of the mines in this area have been working only very short shifts and have had long spells of idleness since November. The management of these mines declare that if they could reduce the cost of coal they could secure more contracts. Recently an offer was made to the men that they accept a lower schedule of wages, which would increase in proportion to the increase of business. The present contract between the union and the Western Coal Operators' Association does not expire until Sept. 30 of this year.

The steamship Wabana of the Dominion Coal Co.'s fleet, carrying a full cargo of anthracite from Newport News, Va., has arrived at Montreal.

## Traffic

### Demurrage Reparation Case Lost

The fight of the receivers for the defunct Tidewater Coal Exchange, Inc., to have the Interstate Commerce Commission direct a refund of part of the demurrage charges assessed at New York, Philadelphia and Baltimore between May 1, 1920, and Oct. 31, 1921, has been decided against the complainants in the recent decision handed down in Tidewater Coal Exchange, Inc., vs. Baltimore & Ohio R.R. Co. et al., 96 I. C. C. 612. During the period in question charges were assessed, without objection, upon the average plan, but without a signed agreement.

With this failure to sign as an entering wedge, complainants sought to establish that the charges assessed were unreasonable to the extent that they exceeded $2 per day with 10 days' free time, unreasonable and illegal because not assessed as if cars had been unloaded in order of arrival, illegal because cars ultimately dumped into a vessel were not released from demurrage as of the date vessel registered without regard to whether cargo had been identified or the vessel chartered by the shipper, and unreasonable and illegal in that excess credits accumulated during a calendar month were not applied to the cancellation of debits accumulated during same months on cars still under load at the end of that month.

The basic provisions of the tariffs under attack were approved by the commission in a number of earlier cases and that body finds nothing in the complainants' arguments to warrant a revision of its opinion. The contention that the average agreement was not applicable because not formally signed is dismissed as it is without merit in view of the period during which it was accepted without protest. The commission also points out that although 10 day's free time is allowed under the straight demurrage plan on general traffic held for transshipment at New York, that is no criterion by which the reasonableness of the time allowed on coal may be judged.

### To Hold Rate Hearings

The coal and coke committee, Trunk Line Territory, will hold a hearing in room 401, 143 Liberty St., New York City, at 11.30 a.m., May 21, on a carrier's proposal to adjust rates on anthracite from mines on Delaware & Hudson Company, and connections, as shown in D. & H. Co. I. C. C. 13,470, to stations on the Canadian National Railways and Quebec Railway Light & Power Company. In every case the adjustment means an increase.

The Baltimore & Ohio R.R. on April 26 put into effect a new coal tariff from mines east of the Ohio River to Northwestern territory, including points in the Dakotas, Minnesota, Nebraska, Iowa, Missouri and Illinois. These new rates are from 30c. to 75c. a ton lower than the old rates.

The Coal, Coke & Iron Ore Committee, Central Freight Association Territory, announces that a hearing will be given in Room 606, Chamber of Commerce Building, Pittsburgh, Pa., May 14, 1925, at 10 am., Eastern Standard time, on a proposal to change the rate on bituminous coal, carloads, from mines and points in Ohio group No. 4 (Jackson County district) as named in Agent Davis' Tariff ICC No. 44, to Fort Wayne, Ind., and intermediate points via Pennsylvania System (G. R. & I.), and via N. Y. C. & St. L. R.R. (L. E. & W. district) to $2.20 per net ton to bring same into proper relation with rates via other routes and with rates from other districts.

The coal and coke committee, Trunk Line Territory, will hold a hearing in Room 401, 143 Liberty Street, New York, N. Y., at 11 a.m. daylight saving time, Thursday, May 21, on a carrier's proposal to cancel provision providing for acceptance from connections and delivery of bituminous coal at Carroll Street, Buffalo, N. Y., team tracks, switched from connections, by New York Central R.R. at Buffalo, N. Y., on account of inadequate facilities.

The New York Public Service Commission has approved the following new reduced rates of the Pennsylvania R.R., effective June 1, on coke, coke ashes and coke breeze and coke dust, carloads, minimum weight, various (rates per net ton), from Buffalo to Pennsylvania R.R. stations: Angola, $1.26; Arcade, $1.13; Brocton, $1.39; Dunkirk, $1.26; Olean, $1.51; also to Attica on Arcade and Attica $1.51.

## Recent Patents

**Collector and Separator**; 1,526,743. Roy L. Dowdall, Oberlin, Kan. Feb. 17, 1925. Filed March 19, 1924; serial No. 700,362.

**Coal Loader**; 1,526,830. Francis W. Byrne, Connellsville, Pa. Feb. 17, 1924. Filed Sept. 27, 1921; serial No. 503,539.

**Mine Tool**; 1,527,354. Isaac Geabes, Patricksburg, Ind. Feb. 24, 1925. Filed May 20, 1924; serial No. 714,699.

## Coming Meetings

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

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

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

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

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

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

**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.

**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.

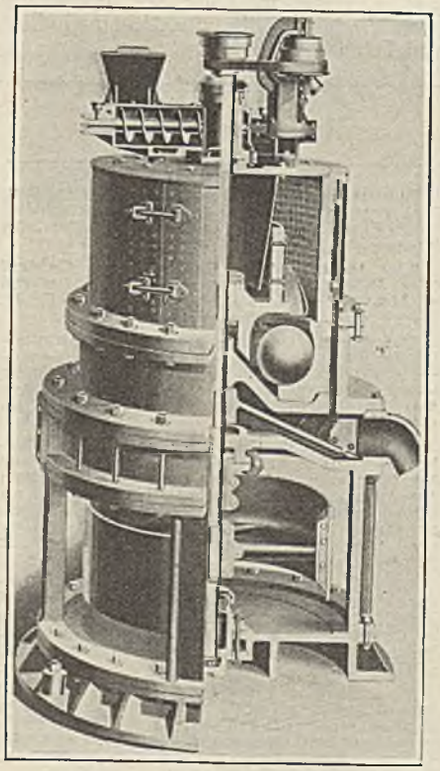
# New Equipment

## Ball Type Pulverizer Mill Grinds Material Fine

A pulverizer made by the Fuller-Lehigh Co., Fullerton, Pa., embodies a substantial frame which supports the driving pulley, pulverizing elements, separating chambers and feeding device.

Grinding is accomplished by centrifugal and gravity pressure exerted by four unattached balls rolling against a stationary horizontal concave-shaped grinding-ring. The balls are propelled by four pushers attached to four equidistant horizontal arms radiating from a yoke which is keyed direct to the main shaft of the mill.

The material to be pulverized is fed to the grinding zone in a continuous and uniform stream by means of an adjustable screw or reciprocating feeder, which is belt driven from the main shaft, or motor driven when attached to the bin. It is reduced to the required fineness in one operation. The pulverized material, as rapidly as it is reduced, is lifted from the pulverizing zone into the separating chamber by a current of air induced by a fan operating immediately above the grinding elements. A discharge fan, housed just below the grinding zone, exhausts the suspended particles and air from the separating chamber through a protecting and a finishing screen into the annular opening surrounding the mill and thence discharges the finished product through a spout conveniently located.



Makes Pulverized Fuel

Centrifugal force presses the balls in the grinder against a highly polished ring. The material to be ground is then pulverized into extremely fine particles.

Inasmuch as the pulverized material is removed as rapidly as produced and the grinding force is applied only to a limited amount of material, it is obvious that the energy expended to operate is always a minimum and varies with the tenacity of the material.

## Twin-Type Graphic Meter

A new graphic meter into which two standard elements can be built, in which either strip or daily charts can be used, which occupies 30 per cent less switchboard space than separate meters and which gives two accurately synchronized records, has been developed by the Esterline-Angus Co., Indianapolis. The case has an over-all width of 15¾ in. Switchboard and wall types are available and portable types can be made. The back can be removed without disturbing electrical connections. Four different types of chart drives can be furnished—clock, clock with governor, impulse-actuated and motor drive.

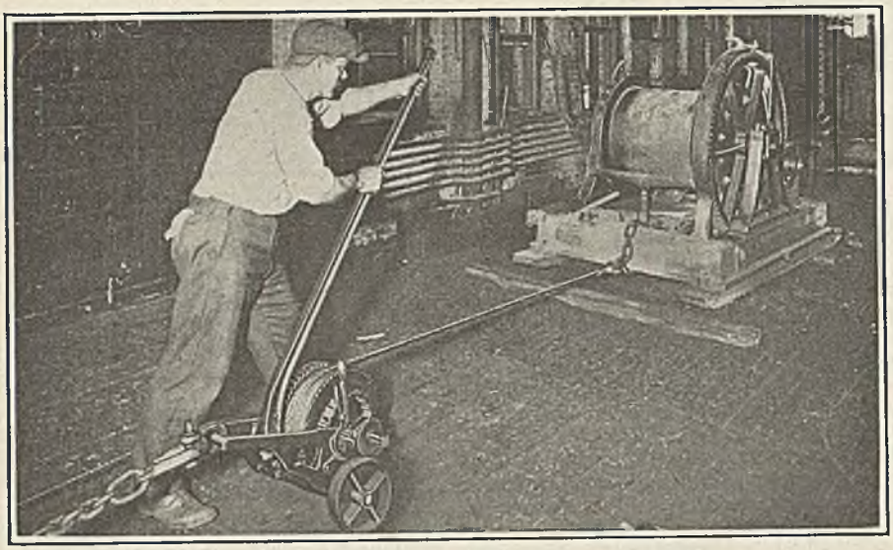
## Small Machine Does Big Work

For exerting heavier pulls than can be obtained by ordinary means the Puller Manufacturing Co., 600 W. 57th St., New York City, has made the pulling jack shown in the accompanying illustration. This device is capable of developing a maximum pull of 12 tons at a rope speed of 5 ft. per min., yet weighs only a little over 200 lb. It can be carried about by two men or can be trundled from place to place on two broad-tired wheels provided for the purpose.

In principle this machine combines the action of both the jack and the winch. A ratchet and pawl mechanism is utilized in winding the cable onto the drum. The arrangement is such that six different speeds may be obtained. Furthermore, either a lever or crank may be employed. These may be doubled, that is, two levers or two cranks may be used. A brake is provided affording control of light loads in lowering.

Being powerful, light and portable, this machine finds many applications at the mine. Among these might be mentioned: Spotting or rerailing railroad cars under the tipple or in the yards; moving, lifting and setting heavy machinery of all kinds, such as boilers, engines, pumps, turbines, compressors, motors, generators, converters, transformers, heavy switching devices, machine tools and the like; the operation of gin poles and derricks in construction and repair work; the placing or replacing of buntons and other shaft or slope timbers, raising and lowering loading booms, moving portable slate and rock dumps and a myriad of other uses including the pulling of heavy mine props and other roof supports.

The utility of this machine is not



**Moving a Piece of Heavy Machinery**

The puller is here shown with one man doing work that usually requires two or three. The six rope speeds available on this machine make it possible for the operator to suit the rope pull and speed to the need of the occasion. Thus a heavy pull may be exerted at a low speed or a light pull at a high speed, as the work to be done may require.

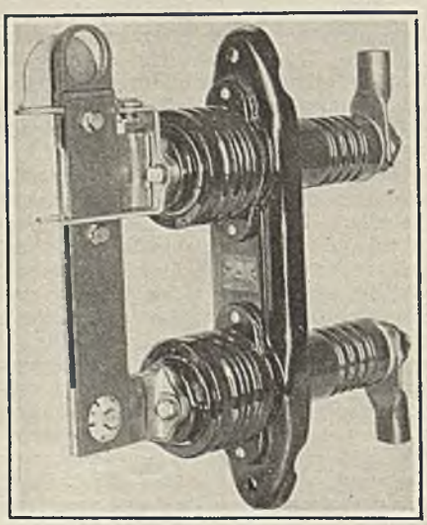
confined to the work of construction and repair; it may be used in demolition also. Thus the walls of old buildings may be pulled over, old frame structures razed, trees pulled down, stumps pulled out, telephone or transmission line poles may be lifted out of the ground and many other similar operations performed. In short, the power and ready portability of this machine adapt it to the performance of many operations which without its aid could be accomplished only with difficulty.

## Strong Disconnecting Switch

In a new line of disconecting switches now being marketed by the General Electric Co. and known as Type IG-17, the cantilever strength of the insulator unit has been greatly increased by a double crimped cap and the addition of a pin cast integral with the lower fitting. The new type also possesses a number of other desirable features. Both hinge and contact clips are cast integral with their blocks; the blade of the switch, being in two sections, possesses much more lateral rigidity than would be the case if the blade were of a single piece. The use of bolts through the two sections of the blade, above and below the clip, provides a convenient means of adjustment or readjustment of contact pressure.

All forms of the switch are furnished with a new type of latch or safety catch. On double-throw switches there is a latch at each end. The action of the latch is positive and combines both locking and opening features.

A new switch hook also is included in the development, incorporating both a special "V" hook for the IG-17 switch and a standard hook for operating other forms of disconnecting switches and latches.



**Safety Latch Avoids Dangers**

Bolts in the two-piece blade make contact adjustments easy. This single-pole unit is arranged for back connections.

## New Companies

**The Highview Mining Co.**, of Prentiss, Ky., capital $40,000, has been incorporated by William Hamilton, Clarence James and Moscow Taylor.

**The Central City Coal Co.**, of Central City, Sebastian County, Okla., is capitalized at $80,000, with $70,000 subscribed. E. D. Packard is president of the company.

**The Merzie Coal Corporation**, Indianapolis, Ind., has been incorporated with a capital stock of $50,000, for mining and selling coal and byproducts. The directors are Earl M. Costin, James W. Costin and Burrell Wright.

**The G. H. V. Coal Mining Co.**, of Mulberry, Kan., capitalization $10,000, has been granted a Kansas charter. **The Ruth Fuel Co.**, an Oklahoma concern with an office in Columbus, Kan., also has been granted a Kansas charter, incorporating the Kansas part of its business for $10,000.

**Priddis Bituminous Coal Co., Ltd.**, has been incorporated to mine and deal in coal with $150,000 capital stock and head office at Calgary, Alta., by Frederick H. Hulton, Francis L. Wallace, Wm. Cummons and others.

**The Borden Fuel Corporation** has been incorporated at Birmingham, Ala. with a capital stock of $25,000. J. N. Skelton is president and treasurer; C. W. Landrum, vice president, and C. R. Atkins, secretary.

**Radiant Coals, Ltd.**, has been incorporated to mine and deal in coal and other minerals with $150,000 capital stock and head office at Calgary, Alta., by Samuel B. Hillocks, John L. Milligan, Edith E. Hillocks and others.

## Obituary

**Adam J. Black**, one of the best known coal operators in the Broad Top district in central Pennsylvania, died in the Roosevelt Hospital in New York City, on April 28, aged 65. Mr. Black was the owner of seven mines at Broad Top City, was extensively engaged in farming, owning seven farms in that vicinity, and was serving a third term as County Commissioner of Huntingdon County, being president of the present board. He is survived by his wife and four sons and two daughters. The body was taken to Broad Top City for interment.

News was received in Louisville, Ky., on April 29, of the death at Bloomington, Ind., of **Homer L. Oliphant**, 58 years old. Mr. Oliphant was a coal operator and member of the Vincennes Bridge Co. It is said that he had suffered heavy financial reverses last year in a coal business established at Council Bluffs, Iowa.

**Joseph H. Bennett**, a pioneer coal operator of southeastern Kansas, died at his home in Weir on April 23 at the age of 65 years. Born in Cornwall, England, he came to America in 1877 and located in Weir ten years later. He became associated with J. R. Crowe in the development of several mines and later organized the J. H. Bennett Coal Mining Co., which operated successfully until its holdings were worked out a few years ago. He served on the Weir Council several terms.

**A. O. Backert**, 49, president of the Penton Publishing Co., of Cleveland, Ohio, died at his Cleveland home, April 24. Mr. Backert was for years on the editorial staff of *Iron Trade Review* and was its editor before he became president of the publishing company. He was prominent in technical publishing circles as well as in the iron and steel industry.

**Lewis A. Riley**, president of the Lehigh & Hudson River R.R. and widely known in the coal industry, died in Philadelphia, April 23, aged 78. He began his career as a civil engineer, was appointed superintendent of the Lehigh Valley Coal Co. in 1875, and later formed the firm of Lewis A. Riley & Co. to engage in coal mining, selling out to the Lehigh Valley Coal Co. in 1896. The same year he became president of the Lehigh Coal & Navigation Co., holding the position until 1907, when he became president of the Lehigh & Hudson River R.R. He also was a director of the Westmoreland Coal Co., the Lehigh Coal & Navigation Co. and the American Gas Co.

## Industrial Notes

**The Linde Air Products Co.**, of New York, countrywide manufacturer and distributor of oxygen for welding and cutting, has recently opened the following new district sales offices: 716 First National Soo Line Bldg., Minneapolis, Minn., C. E. Donegan, district sales manager; 409 Lincoln Life Bldg., Birmingham, Ala., W. A. K. Kopp, district sales manager; 508 Exchange National Bank Bldg., Tulsa, Okla., G. D. Grubb, district sales manager.

**The Keystone Consolidated Publishing Co.**, of Pittsburgh, Pa., has purchased the business of the Central States Publishing Co., of Columbus, Ohio, including all patents and copyrights issued to the Columbus company for the manufacture of the "Rolup" coal field maps and wall cases introduced by that company. These maps, used by coal buyers and by producing, wholesaling and retailing coal companies, over the country, will hereafter be distributed from the Keystone home office at 800 Penn Avenue, Pittsburgh, Pa.

**A. T. Ward**, representing important central Pennsylvania and West Virginia coal operators, in the New York district, has moved his office from 1 Broadway to 50 Church St., New York City.

**The Marion Machine, Foundry & Supply Co.**, of Marion, Ind., announces that it has purchased from the Swartwout Co., of Cleveland, Ohio, all the machinery, goodwill and patents covering the Swartwout metal buildings. All machinery and equipment for manufacturing these metal buildings will be shipped at once to Marion, Ind., where a new building is in process of erection. It is expected to have the machinery in operation within a few weeks.