

COAL AGE

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Keep the Issues Straight!

THE ANTHRACITE STRIKE has now entered the stage where rumor and speculation become the raw materials out of which most of the daily stories must be manufactured. The further we get away from the events preceding the suspension the easier it will be for the public to lose sight of the fundamental issues involved. In so doing, the public risks inviting a settlement that will be as injurious to its own interests as it will be to the anthracite industry. It seems wise, therefore, to dare the perils of reiteration to restate these issues with such frequency that they cannot be obscured by rumor, perversion, forgetfulness or misunderstanding.

These issues are readily understandable. They can be grasped without painful study of overwhelming statistics or the assistance of mathematical experts, budgetary specialists or trade economists. The man in the street is not even called upon to sit in judgment on the complexities of the anthracite wage structure. He is not called upon to say whether present rates of pay are adequate. But he can hardly fail to catch the significance of the action of the union in abruptly terminating negotiations before the operators could be heard upon the adequacy of those rates. The operators listened patiently for the better part of a month to the union's presentation of its demands. The union, without finishing its own case, denied the operators the right to reply. Why?

The present suspension was ordered in defiance of policies recognized and advocated by union leaders for twenty years. At the outset of the negotiations the operators asked the miners to join with them in an agreement to continue production after Sept. 1 regardless of the progress reached by that time. The union declined. The operators suggested arbitration of points upon which no agreement could be reached by the negotiators. The union declined. These offers were repeated at various times during the course of the negotiations and were as repeatedly rejected by Mr. Lewis and his associates. The record makes it convincingly clear that responsibility for the present suspension rests solely upon the United Mine Workers.

The union expresses a bitter distaste for the arbitration it once sought the high heavens to force upon reluctant producers. If the principle of arbitration was so eternally right and in the public interest in 1902, why has it become so tainted with sin in the past three years? The answer, of course, is that it has not. But, even if it were, even if Mr. Lewis were justified in his damnation of arbitration, that would be no excuse for the suspension. The operators' proposal to continue production was not conditioned upon the acceptance of their offer of arbitration.

The man in the street may not be competent to pass upon the adequacy of the wages paid the anthracite

miners. That, after all, is of little direct interest to him. His direct interest is in an uninterrupted coal supply at a reasonable price. Strikes are the greatest menace to that steady flow of fuel. The man in the street, however, is competent, if he has his facts straight, to fix responsibility for any interruption to his coal supply. There is no confusion of facts to blur his judgment on that question.

Passing the Buck

IN TIMES PAST the anthracite operators were assailed because they would not arbitrate their case with the miners. They come now asking for arbitration and only a few listen to them. These few say the mine owners are merely "passing the buck" and that they are asking the public to do what they should do themselves. Arbitration is declared wrong because the anthracite operators request it.

What would happen if operators advocated nationalization or national control of mines? We are of the opinion that it would disgust the public. The general opinion would be that the operators were "passing the buck" and that they should be men enough to handle their own affairs. Furthermore it would be said that they were hoping to make money out of the transfer on the one hand or to be assured of profits in the event of national control on the other. The public is perfectly consistent. It may have no recognized policy; it may pursue no plan of action continuously; but whatever it says or does, it shows itself to be always and everywhere against the mine operator.

Metallurgic Economies

IN A LATER PART of this issue appears a story on thrift in the use of coal in metal mining, but really, has there not been thrift from the earliest days? Concentrators from the first sent clean ores to the smelter, for the man who sorted the ore before he smelted it saw that only the purer material found its way to the melting and slagging pot. He hunted for native metal, if he could find it, and if he couldn't he tried to get the pure sulphide, carbonate or oxide or what not. Talk about concentration! They had it in early days. Disseminated ores were not worthy of a glance.

Every time a new trick was learned in concentration leaner ore was mined and accepted, and the smelter had more to do. So the coal man found his coal in greater demand than ever. For this reason no one must take these new metallurgical developments too seriously.

When the hot blast was first used in the iron industry and hot metal from the blast furnace was taken to the steel mill, economies were made as momentous or more momentous than any today.

Powdered coal is having its triumphs, ousted, however, in places by oil, for in the copper furnace oil does not form slags as does coal whether used in larger

sizes or in powdered form, particularly the latter. At Anaconda with coal on grates 2.04 tons of copper were lost in slag per 100 tons of copper obtained, with pulverized coal 2.11 tons, but with oil only 1.77 tons. So powdered coal has disadvantages even though it makes a saving of 41 per cent in the coal used as matched with coal on grates comparing the quantity and not the price. The assumption is made—and it is Bardwell and Miller who make it in a paper before the American Institute of Mining and Metallurgical Engineers—that the cost of pulverizing is offset adequately by a reduction in labor at the furnace and by the elimination of the cost of handling and disposing of ashes.

With grate firing at the Anaconda smelter 4 tons of copper are produced per ton of coal used, but when the coal was pulverized each ton produced 6.8 tons of copper. As slack was 20 per cent cheaper than lump the net result, according to the authors, was a reduction in cost of from 40 to 50 per cent per ton of copper.

The tale of economy reaches all along the line. The production of metals has recently been low and the demand for coal to smelt these metals has been even lower; but economy having once been effected we can look for a broader future because leaner and leaner ores and a widening market will make for an increased use of coal. So much has been lost to oil that when the return is made to coal the rebound will restore to the industry a stability that in recent years it has sorely lacked. Bardwell and Miller in closing their paper say that "pulverized coal is a close competitor of oil and any great increase in the price of the latter would lead to the resumption of the use of powdered coal in our furnaces."

How Weak Is Lewis?

IF JOHN LEWIS CALLS A SOFT-COAL STRIKE it will be his flat admission that the Jacksonville wage agreement is impossible. Just now Mr. Lewis is a hard-put though still belligerent labor leader. He has seen important territory escape from union domination. He has seen business measured in huge tonnages slip over to the enemy, the non-union producers, and has had to stand and endure it even though the shift of these tonnages meant heavy and permanent losses of working time by high-wage union labor. He is cornered by economic conditions which he helped to create. He cannot offer to change the wage scale. That would mean political annihilation for him by his own rank and file. So he must effect the change by battle.

A general soft-coal strike probably is the readiest expedient at hand. In spite of the fact that a strike threat is good propaganda, Mr. Lewis is more than likely to call such a strike. He can convince many of his men that the Pittsburgh Coal Co., the Consolidation Coal Co. and other employers in Pennsylvania, Ohio and West Virginia are violating the Jacksonville agreement. He can convince them that they should strike from the State of Washington to Maryland to save their union from extinction. He can argue them into believing that even though non-union productive capacity is great enough to supply the country, the price of non-union coal during a strike would soar and transportation difficulties would arise, thus goading the consumer.

The consumer is John Lewis' target. If the public can be squeezed enough, and United Mine Workers'

propaganda can be put across with its usual effect, general clamor for intervention will be loud. Then somebody will step in and relieve Mr. Lewis of his embarrassment. Enforced arbitration might cut union wages but John Lewis would not be doing the cutting.

The union stands to lose, probably, if it strikes, but it will lose eventually if it doesn't. That is Mr. Lewis' dilemma. He is desperate. Hence he may be expected to call an illogical strike. He will be violating his Jacksonville contract with the operators of Illinois and Indiana if he calls out the men in those states, but a drowning man clutches at any straw.

Our Land of Opportunity

WATCH OUR POLITICIANS fall into rhapsodies over this land of opportunity, a country where a boy who ran barefoot to school and hardly had enough to eat could by force of character and thrift accumulate a fortune while engaged in a service of inestimable value to the public. No man, the orator declares, is barred from the right to accumulate wealth, and our individual freedom shows us the way to success. It is the American way. The road to fortune lies open to every man.

Daniel C. Jackling, mining engineer, for instance, opened up a copper mine at Bingham, Utah. Here is a man who, as president of a company which has taken \$374,294,080 worth of minerals out of the ground, made \$173,975,094 profits for his company and paid \$131,815,787 in dividends out of a capitalization of \$16,244,900. Every pound of product brought him twice what it cost him. On every sale he has averaged almost 100 per cent. The company's profits are over tenfold its investment and nearly elevenfold.

What a land of opportunity! What a marvelous man! But, one considers: What if he had been a coal operator! What a terrible tale would have been told of his exactions from the public! His achievement would have been a crime, and we would have said that he should pool his mine with the high-cost operations and should take no more than a meager profit. Metal-mine experts in the American Institute of Mining & Metallurgical Engineers would have held him up for retribution; other mining engineers on the Coal Commission would have sought to have his company controlled; no right-thinking citizen but would have scorned to put his hand against the palm of such a "coal baron."

And as for the coal miner, the public takes the view that he is not justified in seeking to get as large a wage as he pleases. This we deny, but we do say that when he seeks an undue wage by constraint of trade, Clayton Act or no Clayton Act, when he enforces his action by violence or intimidation, he must consent to have his wage set for him at reasonable levels. If he is willing to let his wage and profit come in the due course of an open market for his labor, then he is entitled to all he can get in this land of opportunity, but if he seeks it by group action, with or without violence or intimidation, he must consent to see his wage fixed by the group action of the citizens of the republic.

Any act that permits the combined action of any class of citizens as against the group interest of the whole people disrupts the commonwealth and makes a farce of government unless the group action of the public is afforded some way of making the demands of that particular class accord with reason and justice.

Modern Concentration Mining Succeeds Where Past Methods Failed in Old Detmold Mine

Abandoned Big Vein Coal in Georges Creek Region Is Reclaimed by Long Panels, Half Advancing and Half Retreating—Continuous Side Track Assists Haulage

By Elkins Read

General Superintendent, Maryland Coal Co.
Lonaconing, Md.

ALTHOUGH Old Detmold mine of the Maryland Coal Co., Lonaconing, Md., is relatively ancient—its opening dating back to 1853—the methods now employed in the recovery of much pillar coal are distinctly modern. This mine long ago was worked over and cut up into pillars which were not recovered because in the early days knowledge of mining was meager and methods primitive. No wonder, then, after a lapse of nearly three-quarters of a century, we find about 70 per cent of the coal still standing.

The mine is in a tract of what remains of the Big Vein in the Georges Creek region of Maryland. In it the old rooms and entries are caved, seemingly contesting our right to that coal which a past generation tried and failed to recover. It is easy to visualize what a large production at low cost could now be obtained, if the coal were solid again, with present-day machines, 4-ton cars and other modern equipment.

But that condition having passed, we are achieving by modern methods, although under more difficult circumstances, that which our predecessors could not do. Today, coal is reclaimed by tunneling and forepoling in long panels extending along the strike of the bed from the main headings to the outcrop. Each panel is about 800 ft. wide and in length is limited only by the distance from the main headings to the outcrop.

A strip 500 ft. wide, on the higher side of each panel is mined out advancing. It is served by one intermediate haulageway and an air course within itself also by three major headings in the remaining width at the lower side of the panel, the barriers of which are recovered in the retreat.

This system provides concentration and continuous working. In general the method is far ahead of what in the near past had been considered good practice and provides decided economies in haulage and ventilation. That is not to say that we have benefited as widely as we should like, for we do not have such reasonable assurance of our mine conditions as is enjoyed by companies operating in solid coal. Neverthe-

less, the system is working well; and by its merits should recommend itself for use generally.

The seam is 12 ft. thick, consisting of a 3-ft. bench of bottom coal separated from a 7-ft. bench of breast coal by a thin coal layer between two thin strata of slate. Above the breast coal is 8 in. of bone surmounted by a 2-ft. bed of good top coal. Over this is a bed of fire-clay shale which is soft and difficult to hold, known locally as "rashings." On top of it is a laminated shale about 15 ft. thick, which separates the Big Vein from the unimportant Redstone seam.

The Redstone seam is capped by red sandstone, 30 to 40 ft. thick. This formation and a 400-ft. cover were ever a menace to the old managements in their efforts to recover pillar coal and have since caused much destruction to the original workings. No attempt was made in the early mining to recover the 3-ft. bench of bottom coal and the top coal was left to hold the roof, so that only 7 ft. of coal was mined

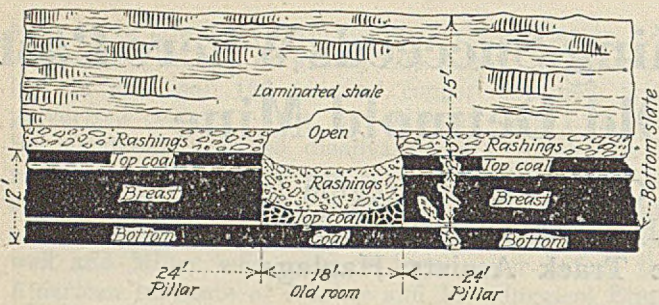
in rooms and entries worked in the original plan.

The Maryland Coal Co. was one of the original companies incorporated to mine coal in the Georges Creek region and still retains mineral rights to over 5,000 acres in Allegany and Garret Counties. This tract, which originally was developed by six mines, contains about 1,500 acres of Big Vein coal. The Old Detmold mine was worked until some time in the eighties. The adjoining Savage mine was opened in 1861 and abandoned also in the eighties. Another, the Kingsland mine, was opened in 1872 and abandoned just prior to 1900. Three other mines were opened and worked at later dates. These are not being re-mined now because they were operated in the years after 1890 when recovery was fairly high. There is insufficient coal left in them to warrant reclamation.

Practically all of these old mines were developed by a main heading and air course driven up the pitch. On each side, at 400-ft. intervals single butt headings were driven. Without the return of an air course the men had little air at any point far inside of the mines. Every fourth or fifth room—18 ft. wide on 42-ft.

NEW METHODS FOR OLD

THE MARKED SUPREMACY of modern methods over the old perhaps is nowhere more clearly displayed than in the Georges Creek region, where for the last 75 years the Big Vein coal seam has been mined in turn by grandfathers, fathers and sons. This contrast is the more vivid because practically one people has mined nearly all the coal taken from the region beginning in 1853. The grandfathers, recovered only about 30 per cent of the merchantable coal by driving rooms only and leaving the pillars. The fathers did better, for they recovered much of the pillar coal while mining the last tracts of Virgin Big Vein coal. The sons have been left that coal which their grandfathers abandoned and under more difficult conditions are recovering most of it by the modern methods described in this article.



Bad Roof Adds to Expense

This bed is a part of the Pittsburgh seam and like this deposit in the Pennsylvania field, has a weak roof. Over the coal in the Georges Creek region there is a soft, flaky shale, known as rashings. The coal bed is divided into three sections by bands of slate. When the mine was originally worked the bottom coal was left intact.

centers—was driven through a 100-ft. barrier pillar to the side heading above. What air did circulate was drawn by a furnace of cut stone or brick.

None of the stained coal at the outcrop was mined in those days. A belt having an average width of 200 ft. of crop coal was left around the entire property. This coal was mined between 1900 and 1910. It was then the belief of the company that all the economically recoverable coal was gone. However, along about this time J. W. Galloway, now president of the company, was made vice-president and general manager and, after going over the property, he realized the possibility of rehabilitating a dying enterprise. It was through his inspiration that reclamation mining was started in the Old Detmold and Savage mines.

During the various changes in management prior to this time the newer maps mysteriously disappeared and all that remained as guides for new operations were three old maps drawn in 1871. This made initial moves difficult.

Our first attempt at reclamation work was made at a point near the lower left-hand corner of the accompanying mine map. After tunneling through the crop workings about 250 ft. we ran into the beginning of a series of room pillars which we later discovered were located off the second left heading of the Old Detmold

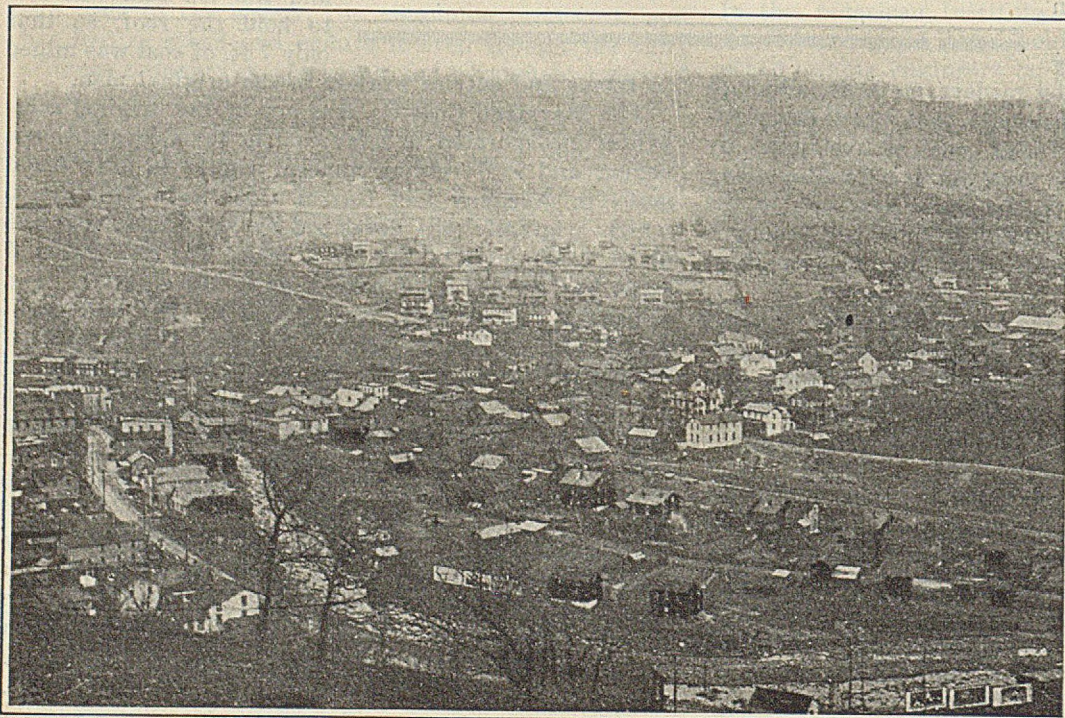
mine. Of course, at that time we were prospecting and knew little of the conditions so that mistakes which we made were excusable. We next made an opening in this same section at X and during the days of the World War these two openings were advanced to the fifth left heading of Old Detmold.

By this time enough had been learned to make us realize that in order to continue in a normal market our methods would have to be changed considerably. It was decided, therefore, to discontinue advance workings and retreat with the pillar line. In 1920 our present mine was opened by a pit mouth on the right side of Old Detmold.

Our experience in No. 12 mine to the left of the Old Detmold main heading showed us that headings and rooms had been driven everywhere, but with the exception of a little gouging, the pillars were still standing. In all the old workings the top coal and rashings, and sometimes layers of the overlying shale, had fallen. To cross these old places various methods have been tried and finally we standardized on a method of tunneling which is described in detail later in this article.

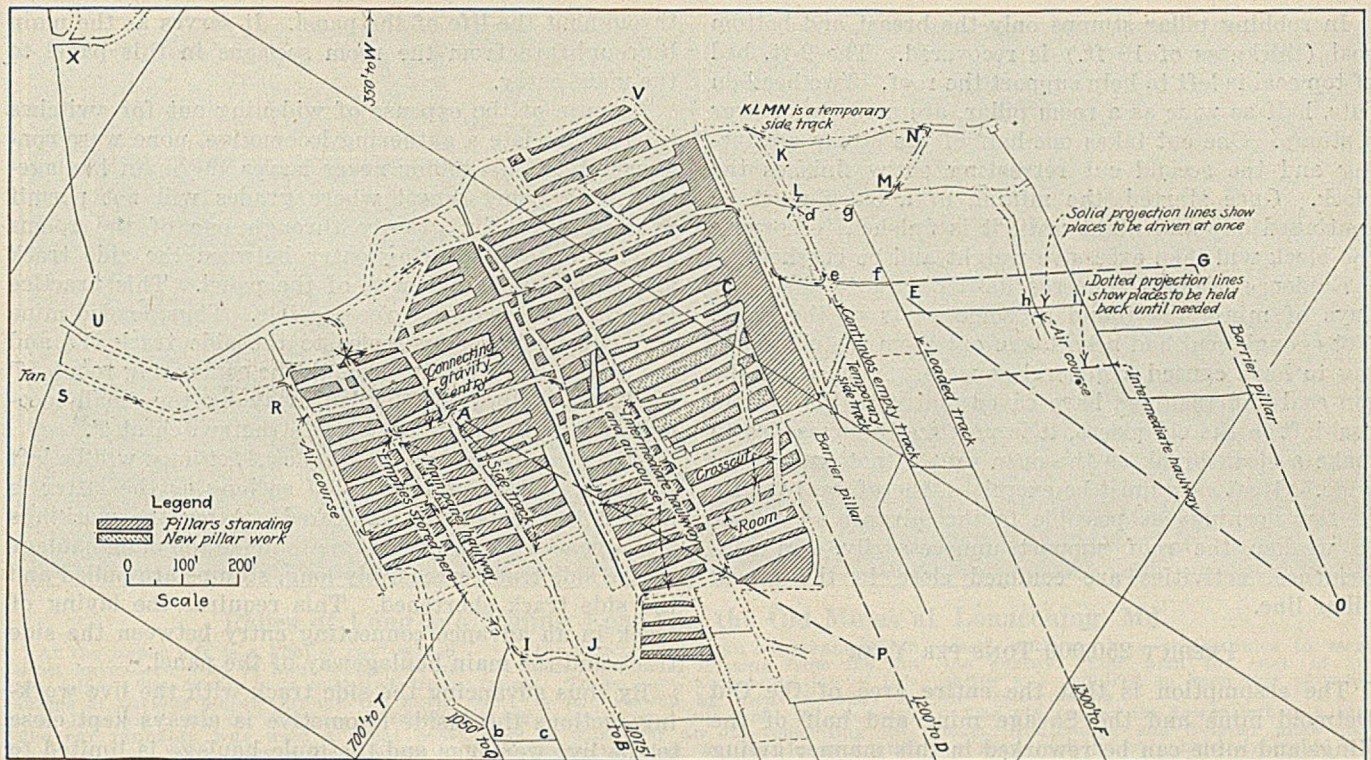
Of necessity this tunneling is expensive and it early became apparent to us that in any successful system, tunneling must be confined to a minimum. It was decided also that the system must have as few working places as possible and that these must be concentrated and worked intensively. The reason for these requirements is that every place in the mine is held up by timber sets lagged on top and sides. Concentrated effort which is now considered an economic necessity in mining is doubly necessary in this work.

To avoid the first obstacle—excessive tunneling—our main headings and air courses are cut from the side of room pillars. These are 10 ft. wide and are kept far enough apart to avoid excessive weight. The first panel marked *RQBDPC* comprises first and second right headings of the Old Detmold mine and extends across the Savage mine to the crop line. This panel has a main air course, a haulageway and a continuous side track and room heading, all of which are driven across the old rooms and pillars paralleling the original right



A Dead Town Revived

Half asleep, but with one eye open, Old Detmold mine watches over Lonaconing, Md., the town which it helped to build 72 years ago. Today, with the increasing endeavor in the reclamation of Big Vein coal under these hills, prosperity is sure to be restored to this town which for many years has realized little from its buried treasure.



Long Panels, Half Advancing and Half Retreating Prove Most Successful

The coal between lines *CPD* and *AJB* is mined to the outcrop, advancing; barriers of the main panel haulageway, or the coal between lines *AJB* and *RQ*, is mined from the outcrop, retreating. These continuous panels are advantageous under almost any conditions because development faces are comparatively only a few feet from the live workings at all times.

headings of the Old Detmold mine. About midway between the room heading and the boundary line is an intermediate heading and an air course, the former being marked "second right" in the first panel.

The coal between *CPD* and *AJB* is being recovered on the advance, the distance between these two lines being 500 ft. The coal between *AJB* and *RQ* is to be recovered in the retreat. The same scheme is planned for all succeeding panels. When the pillar line advances to *AP* the first panel will be under full development and will continue so until this line is advanced to the outcrop. Every place in the mine is working double shift and men are switched about to meet the needs of the moment.

The mine at present is producing 450 to 550 tons in a double shift. It is probable that after the first and second panels are both under full development they together will product 800 to 1,000 tons per day, the latter being the maximum desired by the company. Main headings have been stopped and their advancement will not be resumed until a third panel is required to keep up the maximum output.

In the actual mining of a panel, 10-ft. rooms are cut from the inby side of every third room pillar, extending from the side track *AJ* to the intermediate haulageway, which is a distance of 300 ft.; and from the intermediate haulageway 200 ft. to the barrier line *CP*. Of the 200-ft. rooms, the last is driven up only a step or two in advance of the pillar line. Ordinarily the 300-ft. rooms from the main headings are not driven until required for haulage and ventilation purposes.

The pillars between these rooms are recovered by driving crosscuts on 40-ft. centers in the retreat. These crosscuts, of course, penetrate only what remains of the pillar from which the room is cut and two old

rooms. Thus, every third room is entirely missed by the crosscut and by tunneling through only two old rooms two solid blocks of coal measuring 24x30 ft. are reached and recovered, together with a 14x30-ft. block in the pillar from which the room is cut.

In that part of the crosscuts included in old rooms, the top and bottom coal is recovered; but no attempt is made to recover these two benches in the old rooms between crosscuts on account of the excessive cost of dead work incidental to the handling of rock.

It would be less expensive to drive along every other pillar, but experience in No. 12 mine has proved to us that this practice cannot be followed because the support of the roof is too much weakened. We have also learned that when crosscuts are on centers wider than 40 ft. the stumps will be squeezed before they can be recovered.

Following the driving of a room to its limits by two men on each shift, the first crosscut is driven 40 ft. below the barrier line. Then a second crosscut is started at a 40-ft. interval below the first by two men. At this time an additional man is added to the first crew which has turned its attention to the recovery of the stumps above the first crosscut, making five men working in each section between two adjacent rooms.

Under full development a panel is composed of six such room sections which are worked simultaneously by five men in each. In addition, five headings are under development about half the time. These are driven only fast enough to keep them ahead of the pillar line. Thus altogether no more than 40 men will be employed per shift in the panel. The average daily output per miner, including those in tunnel places, is a little better than 6 tons. Coal is loaded on a tonnage basis and tunneling is paid for by the yard, the lump sums for each include remuneration for setting timbers.

In robbing pillar stumps only the breast and bottom coal (thickness of 10 ft.) is recovered. The 2-ft. bed of top coal is left to help support the roof. Two head-on cuts, half as wide as a room pillar, are made to recover a stump. One cut takes one-half of the stump advancing and the second cut retreating outby finishes the block. Once started, the mining of a block must be continued day and night until it is finished; otherwise the block will take excessive weight and be crushed.

Evidence of local squeezes dating back to the early days of mining is found in some parts of the mine. Not enough coal had been taken out from the old working to have caused a general squeeze. Now, since the top coal and rashings have caved and with the bottom coal left in the old places, it is practically impossible to make a clean break as the open area is not sufficiently wide. Great care must be exercised, therefore, to make as few openings as possible in the advance so as not to weaken the roof support unnecessarily. In consequence, activities are confined close to the actual pillar line.

PREDICT 250,000 TONS PER YEAR

The assumption is that the entire area of the Old Detmold mine and the Savage mine and half of the Kingsland mine can be reworked in this manner giving to the property a life of about 20 years at a mining rate of 250,000 tons per year. After the main headings of Old Detmold are driven beyond the inby boundary of No. 12 mine, panels will be laid out to the left as well as to the right of these headings. The areas marked *WXUV* and *RSQ* are reserved to maintain the output while the main headings are being drawn.

The mine mouth is located about 3,000 ft. from the tippie. Coal is gathered by mules and hauled from the side tracks to the outside by a small locomotive and thence is delivered to the tippie by a 10-ton main haulage locomotive. Although the mine operates two shifts each day, neither the locomotives nor the tippie is run more than 8 hr. The coal from the night shift is held on storage tracks in the mine. Because of the large expense of maintaining entries no runaround is provided for the small locomotive. It pushes the empties into the mine and pulls out the loads.

The sidetrack on the First Right room heading is maintained from *A* to *J*. The First Right haulageway will be extended from the main heading and maintained

throughout the life of the panel. It serves as the main thoroughfare from the room sections in this panel to the main entry.

Because of the expense of widening out for switches to accommodate a gathering locomotive, none were constructed, so this motor never leaves the main haulageway of a panel except where grades will not permit running loads by gravity through one of the rooms serving as a connecting entry between the side track and the main haulageway of the panel. This practice is being followed wherever possible. Thus, loaded mine cars are gathered by mules to the side track *AJ* and are dropped by gravity through the connecting room *AT* to *T* where they are hauled away by the small locomotive which does not negotiate the switch at *T*.

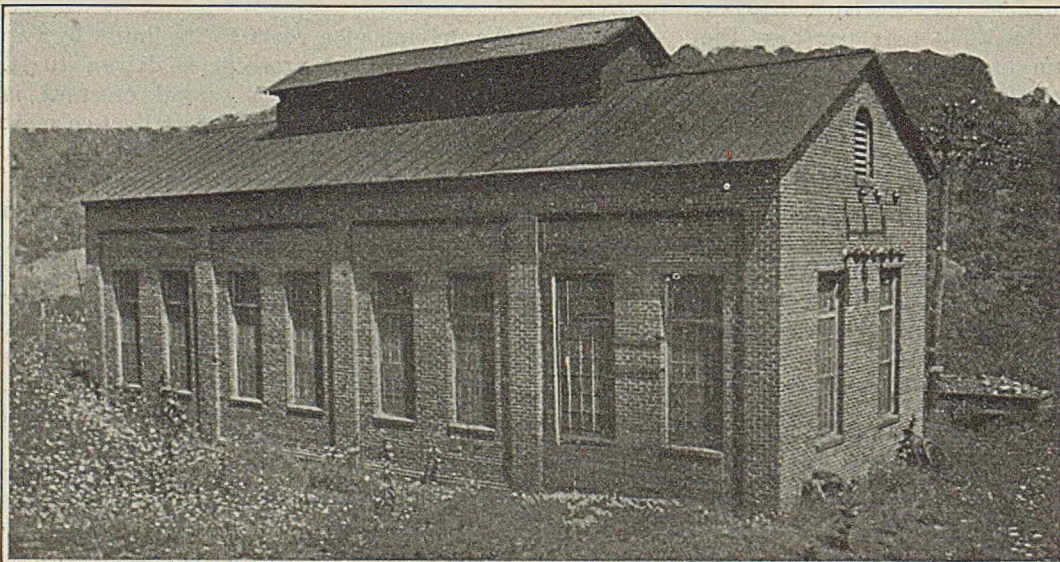
When the pillar line *AP* reaches *A*, stumps will be left to maintain the side track *AJ* so long as the latter is needed in the position indicated. After the workings are advanced so far from *A* as to make the mule haulage on the side track excessively long, stumps are pulled and the side track shortened. This requires the laying of track in an advance connecting entry between the side track and the main haulageway of the panel.

By thus advancing the side track with the live workings the inside locomotive is always kept close to the live workings and the mule haulage is limited to the distance between the heading *AJB* and the barrier line *CPD*, making a maximum haul of 700 ft. All the coal from the room workings is placed on the main side track while *abc* is a temporary side track for the development of the three major headings of the panel.

WILL AVOID EXCESSIVE TRACK WORK

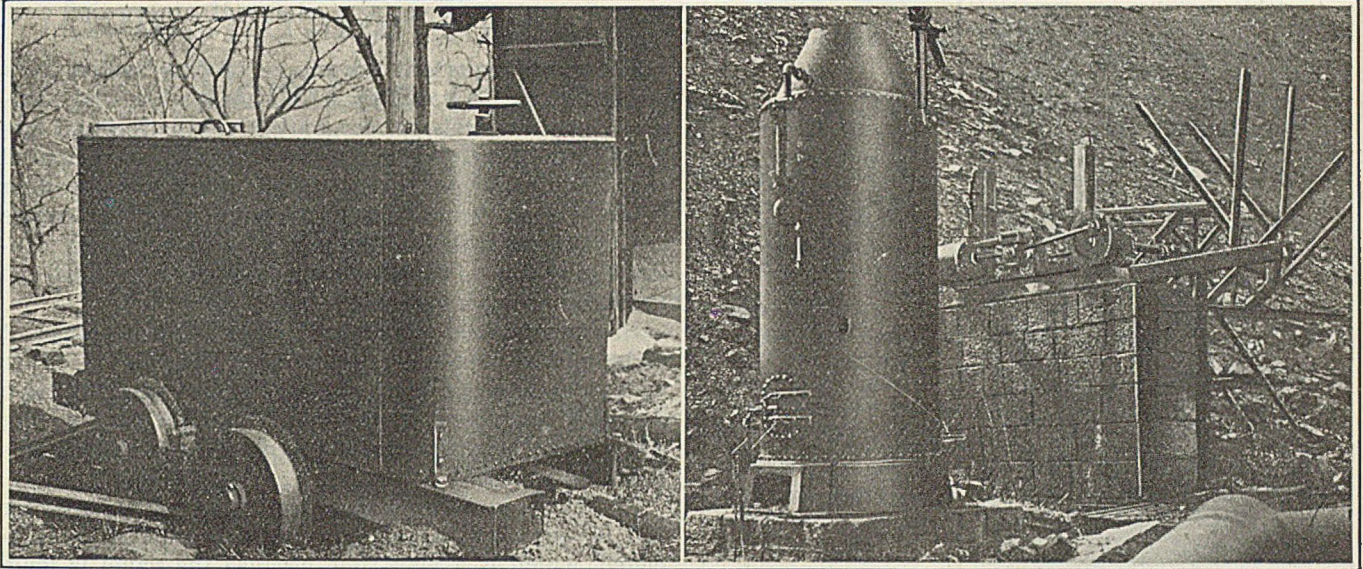
In the second panel the Fourth Right heading and its air course will be intersected by No. 1 room from the Third Right heading and the coal obtained from development work in this panel will be taken directly to the side track *defg* by one mule. A glance at the map shows that the rooms already driven from entry to entry are abreast. This practice has been discontinued. In the future, rooms between headings will be staggered as shown by the projection lines. This will be done to avoid excessive track work.

When the panel reaches capacity output, two mules on each shift will gather all the coal. The inside locomotive will handle the coal coming from two shifts and, after switching out the refuse cars, will build up



Main Substation

Through this plant go all the lines serving Maryland Coal Co. properties in the Georges Creek region. This company is operating the Old Detmold mine which it has reopened after many years in order to recover coal abandoned by two generations of miners.

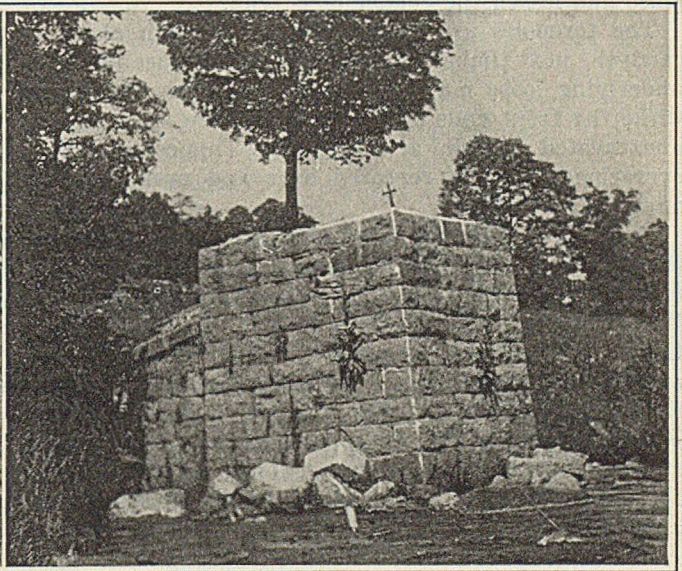
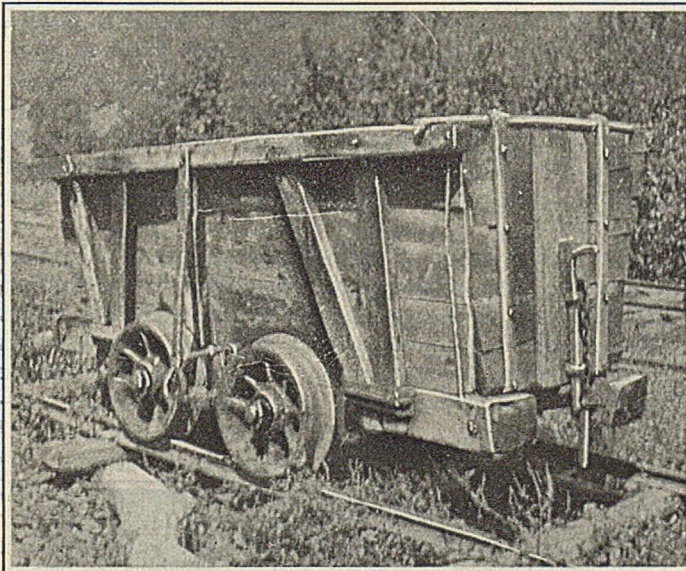


Relics of Long-ago Mining Found in the Old Mines at Lonaconing, Md.

At the upper left is a "bailer car" which must have been used to haul water out of the mine. The water was bucketed from sumps at various places through the workings into this car for haulage outdoors. The car probably was used a great deal because deep false flanges were worn in the wheel tires.

At the upper right is an old steam-driven fan with the blades missing from the fan frame. To be sure, an installation of this sort is not viewed by men of today as being economical. But what an improvement it was over an old ventilating furnace such as that at the lower right! The fan outfit was a plant complete in

itself, with no long steam lines to waste the energy. One man for each of two shifts was required to keep this slow-motion fan running. The old car at the lower left is a stalwart, iron-bound, end dumper more than 40 years old, which, obviously, could discharge its load on a sloping dump track.



a trip on the main side track on the outside of the mine for the big tram locomotive. The latter, besides making a 3,000-ft. haul with all coal to the tippie, handles timbers and supplies.

METHOD OF TIMBERING

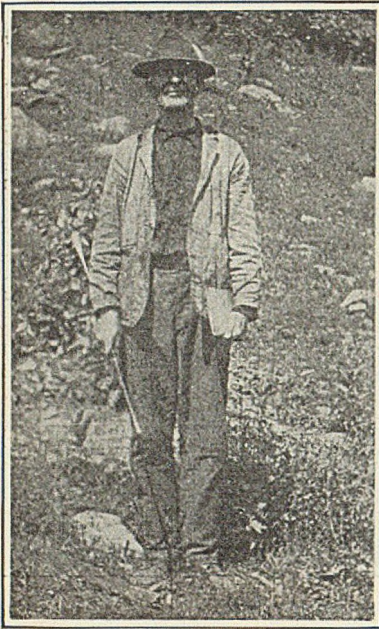
The roof in working places and live entries throughout the mine is supported by timber sets on 3-ft. centers, which are covered by flat lagging boards overhead and on each side, skin to skin, where the roof is weak or fallen as in tunneling. In driving through solid coal the lagging pieces, which are sector sections split from round timbers, are placed 1 ft. apart. The legs and cross bars are round, of 6-in. diameter or larger at the smaller end. Across the mouth of a place turned off from an entry a stringer or "king bar" is slung. This stringer supports one end of the heading cross bars and on the short-radius switches is 12 ft. long. Generally, over wide switches, it is necessary to place two stringers parallel to the heading and a third diagonally

across the heading. These are 8 in. or more in diameter at the smaller end.

A system of modified forepoled and lagging is used in tunneling through falls in this mine. The forepoles are of round timbers, about 3 in. in diameter at the smaller end and 5 to 6 ft. long. These are placed 2 to 2½ ft. apart, resting on the regular timber sets which are on 3-ft. centers and covered skin to skin with lagging boards. The latter are 1 in. thick, 3 ft. long, and of varying width.

By means of iron bars, two holes 4 to 5 ft. deep are pocketed in the fallen material on one side of the tunnel and in line with the top of the timber sets. In these are placed two forepoles. The loose rock above these is carefully removed to enable placing one lagging board after another over the forepoles. After the first two forepoles are thus lagged, a third and then a fourth forepole is put in place, sometimes a fifth is required.

Although the material through which a tunnel passes is only comparatively loose, great care is exercised to



An Old Timer

This is W. A. McIndoe, outside superintendent at the Old Detmold mine. Mr. McIndoe has been with the Maryland Coal Co. for 52 years. He started to work when he was 12, mining with his father and has filled various positions with the company in and around the mines.

avoid starting a run. The men have been doing this work a long time and have become proficient. The forepoles and the advancing excavation above them are blocked up where necessary to hold the forepoles in place and lessen the chance of a "run."

The forepoles are lagged just far enough ahead to catch the next timber set, which is set in place after the underlying loose material is sufficiently excavated and while the front ends of the forepoles are supported by unexcavated material at that point. This completes the operation which is repeated over and over again in advancing a tunnel.

Upon leaving a pillar area and entering a fallen area the timber sets are lowered from a height of about 9 ft. to 6 ft. under the bars. In crosscutting through falls this height is further lowered to 5 ft. In the headings, the tunnels in the clear are 8 and 9 ft. wide at the top and bottom, respectively. In the crosscuts in the clear they are 7 ft. wide at the top and 8 ft. wide at the bottom. Incidentally, the timbering is not nearly so substantially done in the crosscuts as in the headings for the former are required to remain open for only a short time.

Under some conditions in this mine, timbers sometimes break immediately, and ordinarily their life never exceeds two years. Producing at the rate of 500 tons per double-shift day, this mine requires a railroad car of props for every two days.

TEMPORARY VENTILATION SYSTEM

At present, ventilation is accomplished by a temporarily installed disk fan. One main overcast is provided at the junction of the First Right haulageway and the main intake. The air travels along the First Right air course and is conducted by temporary brattices and curtains to the working faces of the panel and back again across the overcast to the return outlet. The air circuits are indicated by arrows on the map. Another overcast will be installed to take care of the second panel. Falls are more or less open so that difficulty is experienced in controlling the air, for which reason it has not yet been determined whether to install one large fan or to use booster fans for each panel. The falls, incidentally, have some advantage in that they permit the driving of places far beyond the last

new crosscut, as a certain volume of air sweeps over the falls.

The most important advantage of this system is a concentration of workings. This means low-cost haulage, better supervision, economical ventilation and less track and materials for a given tonnage as compared with that required by the usual short room-heading layout. Aside from these economies, after the panels are developed, the tonnage can be kept relatively constant from day to day by continuous operation until the property line is reached.

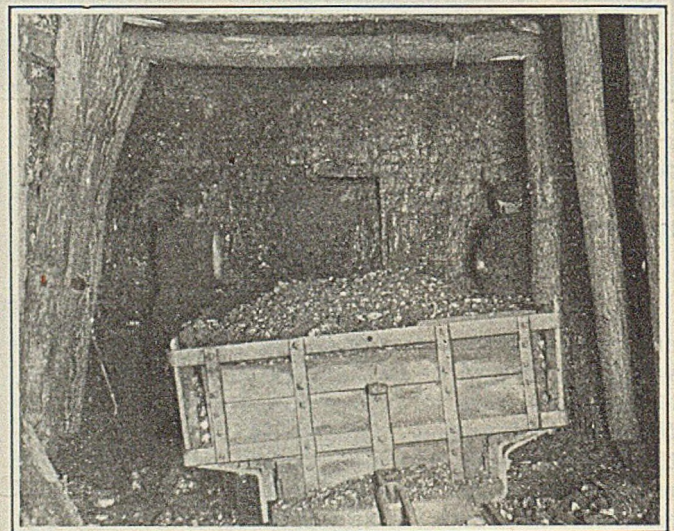
In the old panel layout with short room headings at right angles to the mains, a room heading is either under development or in the last stages of completion during a large part of the time. Thus the time during which these headings are at a high state of efficiency is relatively short.

Under the present system, once the panel is under full development it remains efficient until it is completed, which is a long time because the panel is long. And in the retreat, enough barrier coal remains to provide a complete mule-haulage section throughout its recovery.

CAN BE MODIFIED TO SUIT CONDITIONS

This system can be modified to suit almost any conditions, even those encountered in the Middle West where no pillars are pulled. To me it seems to hold a great advantage over the methods which are now commonly used in that section. Instead of driving at right angles from the mains to a barrier line, the butt headings could be driven parallel to the mains and cut off on the rear, at the same time advancing one set of heading faces continuously until the boundary line is reached.

The system of long room headings bears the same relation to that of short room headings that a limited express train does to an accommodation train. When you get the one under way it rolls along under full steam, whereas the other has to stop at every tank station, contributing much to inefficiencies by interrupted operation.



Mining In a Forest of Timbers

Even in solid pillar coal in Old Detmold, places must be heavily timbered. The weight of a thick cover bearing down on the pillars for over half a century is only partly responsible for this precaution. In the early days when the Big Vein was in the virgin state the miners, even then, found the roof troublesome—so much so that they recovered little of the pillar coal. This 10-ft.-wide crosscut is blocking off a three-cornered pillar.

Concentrator Practice in Utah Saves Coal Used Per Ton but Enlarges Total Demand

American Institute of Mining Engineers Meeting
At Salt Lake Learns of Large Progress Made at
Concentrators and Savings in Coal at Smelters

By R. Dawson Hall

Engineering Editor, *Coal Age*
New York City

COAL-MINING MEN had an excellent opportunity to see, at the annual meeting of the American Institute of Mining & Metallurgical Engineers, held at Salt Lake City, Utah, Aug. 31-Sept. 3, how greatly new developments in smelting and concentrating are restricting the employment of fuels and may yet cause a further retrenchment in their use. But this is only per ton of product, for cheap minerals bring increase of market.

The economies practiced and foreshadowed are of many kinds, and some may be readily overlooked, for where the saving is made, there may be no fuel in use. Thus in a concentrator, the separation of ores from gangue and of metals from each other may be made so complete as to leave the smelter, which makes the semi-finished product, relatively little to do, and the concentrator, not using heat, may be electrically operated, the current being obtained from water power.

A remarkable agent, xanthate, commonly known among concentrator men as "Z," when introduced into the frothing or flotation cells in company with a frothing agent such as wood creosote or pine oil, makes possible a closer separation of the minerals being treated than can be had when xanthate is omitted. Further selective action is possible if the pyrite (iron sulphide) is rendered unfloatable by the addition of a little cyanide, the iron pyrite then, not accompanying the copper pyrite, but falling down with the gangue. The cyanide apparently does not dull the iron pyrite. It has what metallurgists term a "deadening effect," an expression that does not explain clearly the manner in which the cyanide acts.

Of course, much depends on the perfection of these methods. Should the product arrive at the smelter wholly free of iron pyrite the work of the smelter man would be greatly lightened. Only that part of the sulphur in the copper pyrite would then have to be volatilized or burned, and no iron would have to be removed. True, this is only an aim and not such an end as can be wholly attained, but in the measure in which the object sought is approached, so much the less has the smelter to do and so much the less coke, powdered coal or oil has to be used.

In smelters also fluxes must be used in quantity. These absorb an immense amount of heat and when the fluxed material is run to waste much heat is lost. With less impurity in the ore, less flux is needed, and a further saving is made in heat. So from these causes we may look for metallurgical economies similar to those effected in the power house and on the railroad. These will severely harass the operator, especially in the Rocky Mountain States where the metal industry is an important consumer of coal.

These savings, of course, reach a limit as savings have a way of doing. By selective flotation lead and zinc are already in some instances being purified from each other and from the gangue almost to that ultimate point, the lead product becoming 60 per cent pure lead instead of 30 per cent as in the past and being rid of zinc, that *bête noir* of the lead smelter man.

Sixty per cent sounds a low per centage of concentration to the average coal man, but it must be remembered that lead and zinc are in chemical combination each with another element, sulphur, and cannot be freed of that impurity in a concentrator, the action of which is merely physical. Only the smelter or leaching plant can break up chemical compounds.

Interesting but perhaps less menacing to the present opportunities of the Rocky Mountain coal producer is the leaching method of the Ohio Copper Co., of Bingham Canyon, Utah. The system of operation of this company, fortunately perhaps for the coal industry, cannot be applied generally or perhaps frequently. This company does not even mine its ore but just drives a tunnel through it and then extends branches from the tunnel and pours water on the surface of the ground above these subterranean operations.

FLOWING WATER CONVEYS ORE

This water dissolves the water-soluble portions of the ore. Thus partially saturated the water flows into the tunnel bearing its precious mineral burden and is brought by the tunnel, with minimum impurity, to the launders where it is treated with iron scrap. The copper content in the end product is 89.39 per cent.

As may be readily understood, not all the copper in the ground is water-soluble. Of the meager 6 lb. of copper in every ton (the Ohio Copper Co.'s deposit is probably of a lower grade than any other being worked elsewhere) possibly 2.7 lb. may be leached out after many years of alternate oxidation and leaching, but the result is that the Ohio Copper Co. produces the cheapest copper in the United States and when the product is received at the smelter but little needs to be done to it as compared with what must be done with the product from other plants; so again less fuel is needed.

Other recent savings in the use of fuel for metallurgical purposes are the use of hot metal without unnecessary cooling and delay wherever that metal has to be retreated. This waste of heat has been avoided, for many years, at iron plants where steel is manufactured, and the copper plants are now taking heed to the ways of the iron-and-steel industry.

Coal loses its fight in other ways. The smelters are often a long way from the concentrators and the ore has to be hauled from the latter to the former. The

concentrators need an area for tailings and an opportunity for the use of gravity in passing the rock from process to process, and the smelter needs to be where farm lands will not be destroyed or homes rendered uninhabitable by sulphurous gases. The separation of these two classes of structures causes coal to be used for transportation and there is a distinct saving in railroad fuel when the concentration of the mineral is carried further at the concentrator than has hitherto been the practice.

When the Institute party returned from a trip to the Magna concentrator of the Utah Copper Co. the visitors saw by the side of the road the badly wrecked steam-power plant of that company. For some time the Utah Copper Co. has been purchasing its power from the Utah Light & Power Co., which obtains its electrical current from water sources.

Here is another instance where coal has found a powerful competitor. In passing it may be said that the action of the Utah Copper Co. has been followed by the Carbon County coal producers.

No one knows, of course, what the final effect of the savings in the metallurgical use of fuels will be. Economies are necessary if the mines of the United States are to compete with those of far richer foreign districts

such as the Katanga copper district in South Africa and the Chile Copper Co. district in South America. These savings may preserve an industry which if removed would use no fuel from the United States at all, certainly not Utah or Rocky Mountain coal and possibly not any from the United States. Katanga is well taken care of by South African coal deposits.

Just how far flotation may be used to lighten the labors of the smelter man and deprive the coal man of market is not clear. So many "gangues" can be floated, at least in a small measure, that it would be bold to say how far the principle may or may not be extended. Thus, 45 per cent of a certain quartz can be caused to float with the use of suitable agents, but other material with which it may happen to be mixed may be equally willing to float. In consequence no separation by these means may be possible.

Without avowing anything, it might be added, what a boon it would be to the iron industry if the quartz could be separated from iron oxides by flotation and the large quantities of "paint rock" and other siliceous ores made available. The coal industry of the East would lose in the coal used for the transportation and smelting of siliceous material, though it might gain in the increase of ore treated.

Institute Hears Argument Over Utah Mine Safety Code

A HEATED ARGUMENT over the Utah mine safety code and the reading of two coal mining papers comprised all there was of further interest to coal men in the sessions of the Institute at the Salt Lake City meeting. No trips were arranged to coal mines and no great number of coal men attended. Those interested in coal had had their opportunity at the Rocky Mountain Coal Mining Institute meeting in Price, Utah, the preceding week.

However, enough coal men were present at Salt Lake City to make a lively discussion when it was charged that the Utah operators had framed the state mining code while they were in a condition of hysteria following the Castlegate disaster of March 18, 1924. The man who made that charge was an engineer privately employed to make a study of Utah conditions last year after a carbide company had protested to state officials that the new rule against carbide lamps was unnecessarily rigid.

At the A. I. M. M. E. first session in Salt Lake City, Aug. 31, J. C. Dick, chairman of the Utah section and Governor George H. Dern, of the State of Utah, welcomed the visitors. The governor himself is a mining engineer. The papers all related to the mineral industry. At 12 noon the members visited the Mormon Tabernacle in the temple grounds and heard the world-famous organ and in the afternoon drove to Saltair, where many bathed in the salty waters of the great lake. In the evening two technical sessions were held in the Hotel Utah in one of which A. C. Watts delivered his interesting and important paper on "Electric Shotfiring Experiments in Coal Mines," printed in *Coal Age*, Sept. 3, and Daniel Harrington, an illuminating address on "Safety Methods in Utah Coal Mines." At the other session, C. T. Keighy addressed the members on the "New Byproduct Coke Plant of the Columbia Steel Co."

At the conclusion of Mr. Harrington's paper there occurred the hot discussion of which E. K. Judd was

storm center. Mr. Judd declared that the state of Utah had an unusually dangerous condition because the coal was highly explosive and the air was abnormally dry (He said the maximum and minimum saturation percentages at 6 p.m. in Salt Lake City for 36 years, computed by months varied from 27 to 76 per cent and that the percentages are still less in Carbon County). The coal also is extremely thick making the detection and removal of methane from points near the roof quite difficult. However, he believed that the record was misleading. Utah did not have such an undue fatality rate in coal mining. It was true that the disasters at Winter Quarters and Castlegate were distressing in the extreme and seemed to justify the most drastic measures but between the dates of these two catastrophies were twenty-three years without a single disaster.

In those years there were 304 fatalities, 193 being due to falls, 72 to cars or locomotives, 10 to explosives, 8 to machinery, 6 to electricity and only 5 to gas or dust. As the production of Utah is thirteenth on the list, any large accident like that at Castlegate has percentage results out of proportion to those which such a disaster would cause in West Virginia, Illinois or Pennsylvania. In a state of "hysteria," said Mr. Judd, "the operators of Utah had consented to drastic regulations which they would not have considered at all if the pressure of public opinion and the explosion at Castlegate had not overpowered their judgment."

The disasters at Rains, Utah, and at Frontier and Sublet in Wyoming had all three taken place in mines worked by electric lamps. Mr. Judd believed that Daniel Harrington, former district engineer for the U. S. Bureau of Mines, had done wisely in recommending that men be sent in after the shots have been fired to see whether brattices need repairing and to repair them where they have been displaced. It appeared to him that this would relieve the firebosses giving them more time for their inspection for gas.

Mr. Judd said that the disaster at Winter Quarters was the result of an explosion of a magazine in the mine. Some men were killed by the direct force of the explosion; some by after damp. Some dust entered into and aggravated the force of the explosion. He questioned Mr. Harrington's statement that two-thirds of the mines were gaseous, his record showing that nine were gaseous, five were doubtful and 15 were not gaseous. He had noted that judging from reports made by foremen in the last month more air was being used in non-gaseous than in gaseous mines. In the former the quantity might be 1,000 cu.ft., whereas in the gaseous mines the air supplied ran from 300 to 500 cu.ft. per minute.

Otto Herres, vice-president, U. S. Fuel Co., took much exception to Mr. Judd's remarks, especially as regards "hysteria" in the adoption of Utah's concordat. He said that most of these so-called drastic regulations were being enforced by many of the coal companies before the rules regarding them were formulated by the Commission and that they were placed in operation with the consent of the operators. In fact the operators in adjoining states had somewhat generally adopted the rules for the regulation of their own mines. As for Mr. Judd's statement regarding the inability of fire-bosses in some mines to provide for the removal and ascertain the presence of gas, Mr. Herres said that this shortcoming would be removed in a short while.

Benedict Shubart indignantly denied there had been anything approaching hysteria. He pointed out that the Rocky Mountain Coal Mining Institute formulated a code before the concordat was signed and that its provisions, made without pressure and of its own cool

judgment, paralleled those of the code. A. C. Watts and Mr. Harrington also rose in indignant protest. Harrington declared that gaseous mines were not using less air than non-gaseous mines.

In the other meetings coal men were forgotten except perhaps when, on the evening of Tuesday, E. S. Bardsell and Roy S. Miller, of the Anaconda Copper Mining Co., Great Falls, Mont., read a paper on "The Use of Pulverized Coal in Copper-Refining Furnaces."

On Tuesday everyone went to the Magna concentrator and the Bingham mine of the Utah Copper Co., visiting on their return the Garfield smelter of the American Smelting & Refining Co.

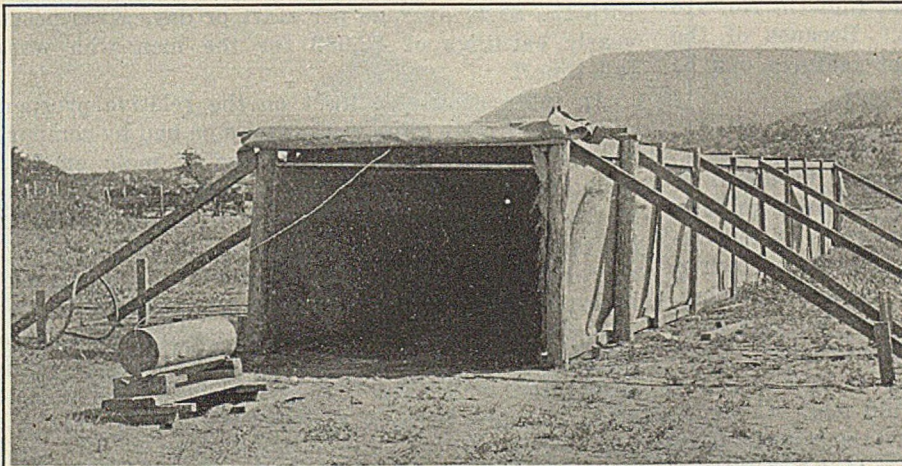
On Wednesday some went to the Murray and Midvale Smelters and others traveled nearly 50 miles in automobiles to Tronton, near Provo, where the Columbia Steel Co. is making iron from a large deposit it located in the southern part of the state using coal from Rains, and from Columbia, Utah.

Thursday some of the visitors were entertained at Park City. Others were welcomed at Tintic. Others again visited Tooele and the International smelter. That evening the visitors gathered at the Hotel Utah to see the moving pictures of the operation of ball and rod mills as modified by the presence of water and ore and by the introduction of lifters.

On Saturday after a day of rest many of the members took trains for trips in Yellowstone Park and in Zion National Park, respectively.

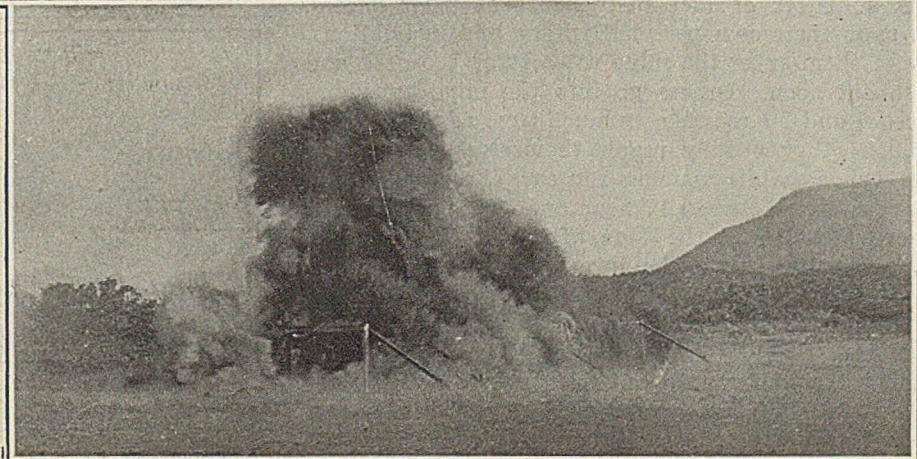
At Wednesday's banquet the speakers were J. V. W. Reynders, Governor Dern and Senator Charles S. Thomas. W. Mont Ferry was toastmaster. A dance in the roof garden of the Hotel Utah followed.

Stunts Like This Help Impress Southwestern Miners on the Dangers of Coal Dust



This test was made at Dawson, N. M., June 7. A gallery, as shown at the left, was constructed of timber and burlap. Inside, cross-boards bearing loads of coal dust were suspended on hinges and nails. A wire to trip the boards connected them to a cannon, mounted outside the end of the gallery.

Upon firing, the recoil of the cannon jerked the wire and thus dumped the dust into suspension to meet the flash of the black-powder charge. A tremendous burst of flame and smoke resulted, as shown in the illustration on the right. Needless to say, it reduced the gallery to nothing.



Anthracite Miners' Pay Is High For Time They Work

U. S. Department of Labor Finds Contract Men Could Earn \$8,000 a Year if They Labored Long but Averaged Only 6 Hr. 18 Minutes at Face

IN THE POPULAR MIND much misconception exists concerning the working conditions, hours of labor and wages received by those who actually dig the country's coal. It has long been a mental habit, indulged in by most individuals composing that vast impersonal body known as "The Public," to pity the poor downtrodden coal miner and commiserate his miserable condition, which, according to public fancy, borders upon, if it does not even constitute, industrial slavery of the most abject type. Repeated investigations by disinterested and impartial bodies have failed to dispel this false conception. One of the latest documents to set forth the true status of the mine worker is a report on "Hours and Earnings in Anthracite Mining, 1922 and 1924," printed in the July issue of the *Monthly Labor Review*, issued by the Bureau of Labor Statistics, Department of Labor, Washington, D. C. This is of unusually timely interest because of the present arbitrary stand taken by the miners' union in the anthracite region in its uncompromising demands for higher wages.

The report in question is somewhat exhaustive and voluminous, filling approximately 20 pages and containing many valuable tables. It covers a study of 56 collieries employing 44,500 wage earners during a full half month or pay period, either the last half of October or the first half of November, 1924. The figures applying to the year 1922 were taken from Bulletin No. 316 of the Bureau of Labor Statistics. Because of the length of this report only its salient features can be cited here.

CONTRACT MINERS WORK IRREGULARLY

Most anthracite, as well as soft coal, is produced on piece work. Contract miners and contract miner's laborers constitute by far the largest class of anthracite mine workers. Of the 44,500 employees covered by this 1924 study, 11,778 were contract miners. Throughout the region day or "company" workers have fairly definite and well established hours of labor. They begin their day at 7 a. m., work either 4½ or 5 hr., take ½ hr. for lunch and quit work at 3:30 p. m. Contract or piece workers are supposed to follow the same routine but as a matter of fact their hours of labor depend much upon their own personal whims and inclinations. Many of them enter the mine as early as 6 o'clock and leave about noon. Others go into the mine anywhere between 6 and 7 a. m., take as much time as they choose for lunch (they usually regale themselves during odd times such as while waiting for cars), and leave the colliery anytime between 12 noon and 3:30 p. m. Few, if any, ever remain at the face after this latter hour. Indisposition, sickness, the lure of the wily trout or some other good and sufficient cause is liable to keep them from their work at least a few whole days during each month.

During the half month of 1924 covered by this report, contract miners worked 10.8 days, spent 6 hr. 18 minutes at the face each day on the average and

earned an average of \$9.07 per day. The average half month's pay of these men was \$98.07 which would indicate a probable yearly earning capacity of \$2,353.68. Over 77 per cent of these contract miners earned more than \$1 per hour for all time spent at the face including the lunch hour.

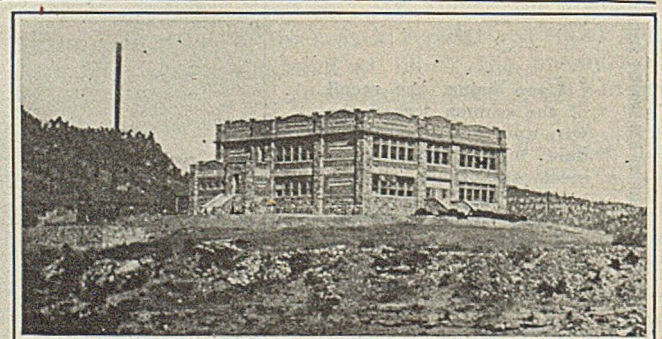
During the half month covered, 211 of these contract miners averaged over \$3 per hour for all time spent at the face including that taken for lunch. This would indicate possible earnings in a full day in the mines somewhat exceeding \$28. The weighted average time worked by the anthracite mines during 1924, as shown by this report was 286.7 days. If these 211 men had chosen to work at the rate that they held during the investigation, a full day every day of the year that the collieries operated their earnings would have been \$8,027.60 each—and in only ten states of the Union do the salaries of the governors amount to \$8,000 per year or more.

Figures covering the earnings of contract miner's laborers are scarcely less interesting. During the semi-monthly period in question these men to the number of 6,794 averaged \$6.47 per day and \$65.39 for the half month. This would indicate annual earnings of \$1,569.36.

AVERAGE YEARLY EARNING OF \$2,224

To quote from the report: "The average earnings per start of the 23,715 employees (miners and miners' laborers) in these occupations, as a group, during the half-month pay period covered in 1924 were \$7.77. On the basis of the 286.7 average days of operation, this gives a possible or theoretical average yearly earning of \$2,224 for the employees in these occupations. The Geological Survey reports 268 as the weighted average days of operation in anthracite mining in 1923, which, with the \$7.77 average per start or day, gives possible yearly earnings of \$2,082 for the men who worked full time."

An interesting side light on the relative prosperity of the anthracite mine worker may be had by comparing the figures just given with those of male employees in the factories, including water, light and power plants in the State of New York as reported for April, 1925, by the New York State Department of Labor. The average weekly wages of all men thus employed is reported as being \$30.81. And since there are 52 weeks in a year the apparent average annual income of New York factory hands is \$1,602.12. The average anthracite coal miner is thus \$622 or nearly 39 per cent better off financially than is the average factory or power plant worker in the state of New York.



A Public School Building in New Mexico

This modern stone structure is located in Dawson, N. M., where the Stag Canon group of mines is operated by the Phelps Dodge Corporation.

Slope Conveyor Requires Less Power than Shaft Hoist

Youngstown Sheet & Tube Co. Mine Shows Consumption of 0.31 Kw.-hr. per Ton at Shaft and 0.23 Kw.-hr. at Slope Under Identical Conditions

By J. H. Edwards

Associate Editor of *Coal Age*,
Huntington, W. Va.

WHEN the seam of coal to be mined lies 200 ft. or less below the surface, the use of a slope conveyor will likely prove a better proposition than a hoist. Although the item of power required per ton of coal hoisted or conveyed, is but a minor factor in the selection of equipment for a given case, it is well for the electrical man to have a general idea of what can be expected.

An excellent opportunity for obtaining a comparison of power requirements of the two methods was that afforded at the Dehue, W. Va., operation of the Youngstown Sheet & Tube Co. Here the coal lies approximately 90 ft. below the surface and for several years was mined from two openings located not over three quarters of a mile apart. One of these openings, a shaft (Fig. 1), is equipped with a modern hoist driven by a 250-hp. wound-rotor induction motor. The other opening, a slope of approximately 28 deg. (Fig. 2), is equipped with a 48-in. apron conveyor driven by a 75-hp. induction motor, also of the wound-rotor type. Each opening is served by a modern steel tippie and the rated capacity of the equipments is approximately the same, namely, about 2,000 tons per day.

The 250-hp. and 75-hp. motors are each equipped with watt-hour meters for recording the energy consumed.

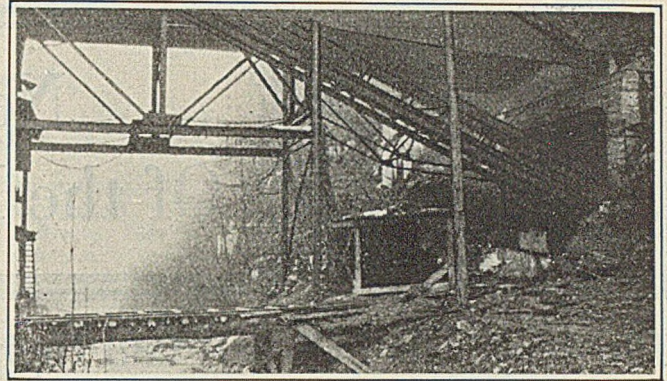


Fig. 2—The Slope Conveyor at Dehue

Here the average for twenty months was 0.23 kw.-hr. per ton of coal handled. A 75-hp. motor drives a 48-in. apron conveyor which enters the mine at an angle of about 28 deg. The vertical depth is about the same as that at the shaft. The conveyor has the added advantage of imposing a much lower demand on the power system.

During twenty months of continuous operation with tonnages ranging from 10,000 to 25,000 per month from each opening, the average power requirements were as follows:

- 250-hp. motor; kw.-hr. per ton of coal hoisted.....0.31
- 75-hp. motor; kw.-hr. per ton of coal conveyed.....0.23

In addition to the lower energy consumption per ton of coal, the conveyor has two distinct advantages over the hoist. The peak power demand is less than a third as great, and no operating engineer is required. Judging from the present trend of installations, a belt conveyor would show a still greater advantage over the hoist. This trend has received a great deal of careful thought from many mining men.

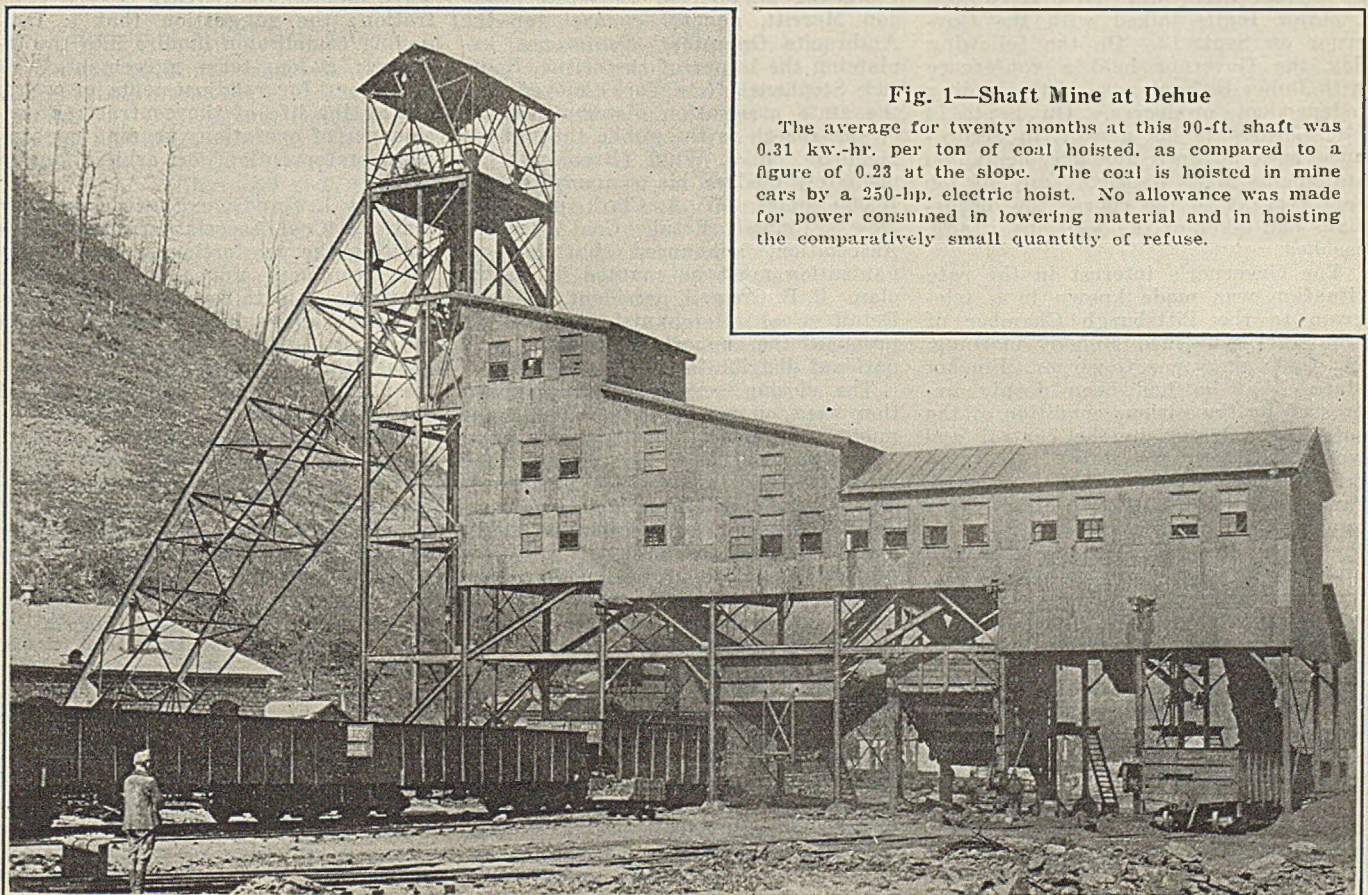


Fig. 1—Shaft Mine at Dehue

The average for twenty months at this 90-ft. shaft was 0.31 kw.-hr. per ton of coal hoisted, as compared to a figure of 0.23 at the slope. The coal is hoisted in mine cars by a 250-hp. electric hoist. No allowance was made for power consumed in lowering material and in hoisting the comparatively small quantity of refuse.



Pinchot Calls in Lewis and Inglis But Says It Is "Not Intervention"; Starts New Protest on Lake Rates

Governor Pinchot of Pennsylvania has taken the center of the stage in the anthracite situation. At the same time he has pledged the backing of the state to bituminous operators in the western and central districts in a rate fight against non-union competition in the lake and seaboard markets.

The Governor, whose intervention in 1923 added millions to the householders' annual fuel bill, stepped into the anthracite picture on Sept. 11 with the announcement that he had invited Major W. W. Inglis, representing the operators, and John L. Lewis, president of the United Mine Workers, to meet him on different days at his country home in Milford, Pa., to go over the situation created by the hard-coal strike. The invitations, he insisted, did not constitute an overture to intervention because he respected "the right of the President of the United States to say the first word" on that subject.

Major Inglis talked with the Governor on Sept. 12. On the following day the Governor held a conference with James B. Neale, one of the leading independent producers. On Sept. 14 Mr. Lewis was his guest. In accordance with advance announcements, no statements were issued by any of the conferees as to the course the discussions had taken or the decisions, if any, reached.

The Governor's interest in the rate situation was made known in a telegram to the Pittsburgh Chamber of Commerce published Monday morning. In that message Governor Pinchot stated that he had been deeply impressed by the serious condition of the soft-coal industry in the central and western parts of the state. "No small part of the damage," he asserted, "arises from unfair freight differentials against Pennsylvania coals." Rates to the Great Lakes and to the seaboard and interior New York and New England points, he declared, unduly favor competitors in West Virginia and Kentucky. He stated that it was his intention to proceed with an investigation into the seaboard situation "to the end that the readjustment of those rates may be taken up actively with all the backing the state government may be able to supply."

He specifically requested that the chamber take steps to ask the Interstate Commerce Commission to reopen the Lake Cargo cases, recently decided adversely to the contentions of Penn-

sylvania and northern Ohio, and intimated that if the cases were reopened the State of Pennsylvania would intervene in support of the plaintiffs. George R. Wallace, president of the chamber, announced that action on the Governor's request would be taken within the next few days.

Retailers Back Operators In Stand for Arbitration Of Anthracite Troubles

Coal retailers of the country are lining up behind the anthracite operators in the fight to compel the United Mine Workers to accept arbitration. Concrete evidence of this stand was given at the 15th annual convention of the New York State Coal Merchants' Association at Richfield Springs, Sept. 10-12. Following an address by Walter Gordon Merritt, general counsel for the Anthracite Operators' Conference, explaining the issues of the strike, Roderick Stephens (New York) moved that the state association distribute copies of the speech to the public through its members. R. J. Wulff (Brooklyn) immediately pledged his company to take 10,000 copies. W. A. Clark, president, New England Retail Coal Dealers' Association, announced that his organization must be counted in on the plan. S. B. Crowell, president, National Retail Coal Merchants' Association, promised the support of his group in a national distribution.

The closing session of the convention went on record urging press and public to support "the anthracite operators' position that the miners shall return to work and that all grievances and demands shall be referred to a suitably chosen board of arbitration whose decisions shall be accepted by both parties to the dispute." Another resolution called upon whoever should be named to settle the strike to recognize the importance of lower prices and to work for the removal of "every unfair restriction upon output and every other restriction that prevents the attainment of a minimum production cost." A third resolution exhorted every retailer to look upon the present emergency as an opportunity for service, to adopt such policies as will best conserve supplies and promote equitable distribution and to avoid "price increases, except to the extent that such increases are neces-

L. & N. Is Buying Heavily

Bids for passenger and freight cars, the cost of which will be approximately \$3,600,000, have been asked for by the Louisville & Nashville R.R., it was announced at the office of the president Sept. 11. These inquiries are in addition to bids requested for thirty-two locomotives, costing about \$1,600,000, announced recently. This is one of the largest inquiries made by railroads this year. The L. & N. is reported to have placed an order for 70,000 tons of steel rails to cost about \$3,000,000.

sary to equalize unusual expenses."

Mr. Merritt's address pointed out that the United Mine Workers, an outstanding advocate of arbitration in 1902, now held the doubtful "honor of being the banner bearer of industrial combat against peaceful arbitrament." Such a position he denounced as anti-social. The operators, he explained, have from time to time during the past three and one-half years offered arbitration; the suggestion that a fact-finding commission inquire into the industry; a long-term agreement, with provisions for readjustments of wages during the life of the contract; a continuance of operations pending negotiations, intervention, or arbitration, as the case may be."

Harry L. Gandy, executive secretary, National Coal Association, brought the meeting the comforting assurance that the bituminous mines of the country would be able to take care of any deficiencies in production caused by the anthracite strike. The two danger areas, the Northeast and the Northwest, were unusually well supplied with fuel at this time, said Mr. Gandy.

Mr. Stephens, in an address on "Self-Government in Business," opposed the Borah bill now being backed by the Brooklyn Chamber of Commerce and stated that the retailers hoped to have an early conference with the Brooklyn organization. Mr. Clark urged that the retailers insist upon fair distribution of anthracite and also stressed the need for a general industrial house-cleaning. Eliot Farley, president, Delaware, Lackawanna & Western Coal Co., spoke briefly on genuine co-operation and complained that the industry had never sold its product to the public.

The retiring officers were re-elected. They are: Charles B. Staats, president; James M. Gaffers, treasurer; Frank A. Eldredge, recording secretary. George W. F. Woodside is executive secretary.

Illinois Team Wins Chief Honors At International First-Aid Meet; 1,500 from U. S. and Mexico Attend

Highest honors in the annual International First-Aid and Mine-Rescue Meet at Springfield, Ill., last week were won by the Belleville (Ill.) team of the Southern Coal, Coke & Mining Co., led by Capt. D. L. Stuart. This team topped the other 65 contending teams from nineteen states and Mexico with a combined first aid and rescue score of 92.4, thus winning the congressional bronze medallion and the National Safety Council silver cup. The meet ran for three days beginning Sept. 10 and was attended by nearly 1,500 men from the mines of the continent.

The other principal winning teams and their scores were:

First-aid—Won by American Rolling Mill Co. team from Zanesville, Ohio, 99.04, Capt. Curt Magler (a congressional medal and first-aid trophies); second, Ferguson Coal Co. team, from Clinton, Ind., 98.90, Capt. Timothy Golden; third, Anaconda Copper Mining Co. team, from Great Falls, Mont., 98.76, Capt. Leon J. Deranleau.

Mine rescue—Second, Superior Coal Co. team from Gillespie, Ill., 87, Capt. James Struthers; third, Union Pacific Coal Co. team from Cumberland, Wyo., 86.5, Capt. Lyman Fearn.

William B. Wilson, former U. S. Secretary of Labor, and A. L. Assig, of Agujita, Coahuila, Mexico, who represents his country as an official of the Companie de Combustibles, the largest coal company in Mexico, were present. Mr. Wilson represented John L. Lewis, president of the United Mine Workers. Dr. Ralph Kaysen, of Milwaukee, a director of the Red Cross, officially represented the national organization.

Bureau of Mines Men Attend

Bureau of Mines men who attended the meeting were: Dr. T. T. Read, Washington; F. C. Gregory, Duluth; E. H. Denny, Denver; Dr. A. R. Sayres, Washington; B. O. Pickard, Berkeley, Cal.; A. U. Miller and C. A. Herbert, Vincennes, Ind.; W. J. Feeney, Pittsburgh. Mine inspectors of fifteen states, representing the Governors of those states, also attended.

The first-aid tests were completed Friday afternoon. Fifty-five teams working in two relays participated. A corps of Sangamon County physicians acted as judges.

Rescue of a dummy from the gallery built for the meet was the most spectacular of the features on Saturday. The teams entered the gallery fully equipped for rescue work. Encountering imitation cave-ins, hanging roofs and "poison gas," each team located the "body" and carried it to safety. Judges watched each move, scoring the contestants on every phase of the rescue.

In an address to members of the teams and delegates, Mr. Wilson said: "The men in these teams are not only contesting with each other in these contests; they are demonstrating first-aid tactics in such fashion that anyone of the lay public watching the work will be able to apply in some measure in case of an accident the lessons he learns here."

Mr. Wilson led about four hundred

of the fifteen hundred men attending the meet in a demonstration of tribute to Abraham Lincoln Friday morning when they made a pilgrimage to Lincoln's tomb at Oak Ridge cemetery. At the conclusion of Mr. Wilson's address a wreath was placed on the sarcophagus in the name of the fifteen hundred men assembled at the meet.

The banquet Saturday night was held in the Knights of Columbus club house. The winners of the trophies were announced and the awards given to the winning teams. No information as to the high scorers was given out before the banquet, the officials in charge thereby insuring the attendance of all the teams.

Troops May Be Called Out In Oklahoma

With the exception of picketing at the Rock Island Mine No. 12, near Hartshorne, Okla., by from 300 to 400 union miners and sympathizers each morning, the situation in the McAlester coal fields is reported as quiet. Governor Martin E. Trapp, of Oklahoma, is investigating the rumors of intimidation of non-union men by union miners on strike to decide on the application made Sept. 8 by Sheriff Will Anderson for state troops to enforce martial law in the city of Hartshorne and Dow township. McAlester and other city chambers of commerce and business men generally are urging the use of troops.

The sheriff's action came as the result of the dynamiting of the fan house on the Rock Island Mine No. 12 at about 8:30 p. m., Sunday. The explosion came on the eve of the Labor Day celebration of union miners at Krebs, four miles east of McAlester. A hard downpour of rain shortly after noon on Monday drove many of the spectators to shelter and about 1,000 persons listened to Arch Helms, president of the Missouri union miners, accuse the operators of violating their wage scale agreements. Joseph Paggani, of Indianapolis, spoke in Italian and urged peaceful methods in efforts to win the strike, or "lockout," as union officials call it. Union meetings are held almost nightly in the region.

Miners are still at work at several of the mines in the district, of which the most important is the Rock Island Mine No. 12. For the last several mornings the non-union men on going to work have had to pass through about 200 or more union picketers and sympathizers, who so far have been reported as peaceful.

These picketers pretend to be sincere in their prayers for the men going to work and for the guards, paid by the operators to watch over their property. Out of this picketing and the prayers, however, have come rumors of intimidations, when union miners have formed committees to visit the men still working and try to get them to join the lockout.

Railroads Protest Cut In Rate on Soft Coal To New England States

Formal protest was filed Sept. 9 by the railroads against the order issued last month by the Interstate Commerce Commission to prepare a new schedule reducing rates on West Virginia low volatile coal for movement to the Atlantic seaboard and New England States. The roads were ordered to establish the lower rates by Oct. 15.

The commission intended to make it possible to move into Eastern territory at low rates types of bituminous coal used in more or less degree as substitutes for anthracite.

The Pennsylvania, Baltimore & Ohio, New Haven, Boston & Maine and Reading railroads joined in protesting the order on the ground that the decreases would reduce revenues. They declared also there was no reason for making reductions to any point south of New England, and that under the order they would be required in many cases to charge a lesser rate for a long haul than they now charge for a short haul.

Another point raised by the roads was that the rates to Baltimore from West Virginia, under the order, would be \$3.45 per ton, whereas the figure should be \$3.70. The objections were set forth in a brief to the commission.

The Pittsburgh Coal Producers Association and the Pittsburgh Chamber of Commerce have joined in protesting the order of the Commerce Commission. While the Pittsburgh association is not directly interested in the case, the protest, which was in the form of a telegram to the commission, is based on the belief that the new rates will cut off shipments of bituminous coal from this district to Eastern points.

Immediately after the commission's order was issued, operators in the central Pennsylvania field set to work to get a reduction on rates from that field to the East. The producers have conferred with railroad officials during the past two weeks on this question, the traffic manager of the Hillman companies being represented at these meetings.

The railroads assert that the new rates will reduce their revenues.

The Central Pennsylvania Coal Producers' Association filed a protest with the commission Sept. 14 and asked that the rates be made effective only as an emergency provision in case of possible fuel shortage in the Middle Atlantic and New England States.

At the end of the fiscal year the Bureau of Mines had 830 employees of whom 307 held technical positions. The technical staff was distributed as follows: Washington, 44; Pittsburgh, 99; field, 164. The technical staff in Washington was constituted as follows: Engineers, 19; chemists, 12; miscellaneous, 13. In Pittsburgh the engineers numbered 43, the chemists 35 and those with miscellaneous specialties 21. The division in the field force was: engineers, 83; chemists, 27, and miscellaneous, 54. These figures do not include the technical men connected with the Bureau in a consulting capacity.

Pittsburgh Coal Co. To Open Second Mine At 1917 Wage Scale

The Pittsburgh Coal Co., according to information from an authoritative source, will reopen another mine in the Pittsburgh (Pa.) district soon, possibly within a week, on the 1917 scale. This will make the second mine of the company to be operated on the lower wage rate, and it was declared that sufficient former employees of the company, have expressed a willingness to work in the new mine to start it up practically full at once.

Opening is being delayed due to the non-arrival of some supplies and negotiations for full protection by the authorities.

A report which gained circulation in the East late last week said the company planned to reopen the Warden mine, near McKeesport, but this is not true. The new mine to be opened will be located in the same district as Banning No. 2, Whitsett Junction, which has now been running for several weeks on the 1917 scale.

On the last full day of last week the company had 222 men working in Banning No. 2 and produced 679 tons of coal, which was the highest output of any day so far.

The company was host last week to a party of newspaper men on a trip to the mine, where it was conclusively demonstrated that the reports of the number of men at work, which the officials of the United Mine Workers are consistently denying, are true. The party remained overnight and thus had the opportunity of seeing the force at work twice.

Production of coal in Alaska declined in 1924 to 99,663 tons valued at \$559,980. Output in 1923 had totaled 119,826 tons worth \$755,469. All other mining operations in the territory showed declines in 1924 except in the case of gold, which rose from 289,539 fine ounces in 1923 to 304,072 fine ounces. The total value of Alaskan mining products in 1924 was \$17,457,333 as compared with the 1923 total of \$20,330,643.



Keystone View Co.

Sir Herbert Louis Samuel

Chosen to head British Coal Commission which is to investigate the industry thoroughly, following the recent strike which had to be settled by government subsidy. As the subsidy is daily costing England much money, the new commission has been invested with power to make a thorough inquiry and consider all proposals for the reconstruction of the industry, which include nationalization.

B., R. & P. Lease Ratified by D. & H. Stockholders

Stockholders of the Delaware & Hudson Co. at a special meeting Sept. 8 approved the recommendation of the board of managers for the leasing of the Buffalo, Rochester & Pittsburgh Ry. for 999 years. The managers approved the lease on June 24 and the directors of the B., R. & P. approved it May 1. In the balloting by Delaware & Hudson stockholders 77.4 per cent of the stock was represented. There were no objectors.

The lease provides for payment by the Delaware & Hudson Co. of an annual rental sufficient to pay 6 per cent dividends on the \$6,000,000 outstanding preferred and \$10,500,000 outstanding common stock of the Buffalo, Rochester & Pittsburgh. In a letter to the stockholders, President Loree expressed the conviction that the "terms of the lease are advantageous."

Death Rate in Coke Making Lowest in History

Accidents to persons engaged in the manufacture of coke in the United States in 1924 resulted in 24 deaths and 1,645 injuries, according to statistics compiled by W. W. Adams, of the Bureau of Mines, Department of Commerce. The figures show a lower death rate and a lower injury rate for the coke industry than in any other year on record. Reports from operating companies show that 20,451 men were employed in the industry in 1924, and that they performed a volume of work equivalent to 6,204,448 man-shifts, an average of 303 workdays per man. The death rate was 1.16 per thousand men employed (full-time or 300-day workers), and the injury rate was 79.54. Injuries considered in this calculation are those causing disability beyond the remainder of the day or shift on which the accident occurred.

As compared with 1923, the number of employees in the coke industry in 1924 represented a decrease of 14 per cent; the number of man-shifts, a reduction of 19 per cent; the average workdays per man, a decline of 6 per cent. The number of deaths was 21 less than in 1923 while the non-fatal injuries were 948 fewer in number than in the previous year. Both the beehive and byproduct branches of the coking industry shared in the lowering of the accident rates in 1924. The beehive death rate per thousand 300-day workers was 0.75 and the byproduct rate 1.26.

Pennsylvania employed 6,819 men at coke ovens during 1924, which is more than were employed in any other state; Ohio was second, with 2,099 men. Other states employing more than 1,000 men each were: Indiana, 1,901; Alabama, 1,527; Illinois, 1,248, and Michigan, 1,109.

C. P. White, Chief of the Coal Division of the Department of Commerce, who sat with Secretary Hoover's Advisory Committee on the reorganization of the Bureau of Mines, at Salt Lake City, Utah, will inspect the field stations of the Bureau of Mines at Berkeley, Calif.; Seattle, Wash.; Minneapolis, Minn.; Columbus, Ohio, and Pittsburgh, Pa.

Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of August

(In Net Tons)

Ports	Railroads	1925			1924			1923		
		Cargo	Fuel	Total	Cargo	Fuel	Total	Cargo	Fuel	Total
Toledo.....	Hocking Valley.....	5,213,981	150,063	5,364,044	4,056,708	119,464	4,176,172	2,992,191	90,429	3,082,620
	Big Four.....	967,622	5,787	973,409	1,375	46	1,421			
	N. Y. C.-Ohio Central Lines.....	596,616	44,782	641,398	38,159	1,412	39,571	1,008,393	31,639	1,040,032
Sandusky.....	Baltimore & Ohio.....	2,016,591	61,807	2,078,398	1,110,205	34,710	1,144,915	1,799,619	53,101	1,852,720
	Pennsylvania.....	3,390,500	101,427	3,491,927	2,051,571	63,376	2,114,947	1,943,616	38,689	1,982,305
Huron.....	Wheeling & Lake Erie.....	435,947	19,976	455,923	463,986	23,395	487,381	929,100	34,780	963,880
	Baltimore & Ohio.....	1612,703	85,722	1,698,425	1,116,887	88,422	1,205,309	2,055,327	116,176	2,171,503
Lorain.....	Pennsylvania.....	197,721	107,295	305,016	941,049	109,060	1,050,109	1,155,136	120,378	1,275,514
	Erie.....	18,138	1,252	19,390	205,839	7,454	213,293	54,678	24,861	566,739
Fairport.....	Baltimore & Ohio.....	409,545	69,166	469,711	332,410	58,593	391,003	489,935	43,940	533,875
	New York Central.....	233,408	58,425	291,833	615,271	71,283	686,554	2,256,891	158,990	2,415,881
Ashtabula.....	Pennsylvania.....	452,375	54,966	507,341	700,496	51,796	752,292	1,333,344	58,592	1,391,936
	Bessemer & Lake Erie.....	751,334	143,991	895,325	1,034,305	137,462	1,171,767	1,781,915	139,319	1,921,234
Conneaut.....	Pennsylvania.....	143,291	35,747	179,038	374,051	50,843	424,894	395,920	53,604	449,524
Total.....		15,439,172	931,206	16,370,378	13,042,882	817,316	13,860,198	18,644,065	983,698	19,627,763
Storage Loading.....		†33,017	1,048	34,065	*182,060	4,940	187,000			

* Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.

† Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.

‡ Includes 42,005 tons cargo; 2,798 tons fuel dumped at Huron account fire at Lorain, June 12, 1925. Also includes 3,631 tons fuel dumped over ore docks at Lorain.

Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

Bittner Calls Out Non-Union Men In West Virginia Strike Region; More Attempts at Tipple Burning

Fairmont, W. Va., Sept. 15.—A strike call to the non-union coal miners of the Fairmont field, effective Friday, Sept. 25, was issued today by Van A. Bittner, chief international representative of the United Mine Workers in charge of northern West Virginia.

The strike is to go into effect the day before the arrival of John L. Lewis, international president; Philip Murray, international vice-president, and Thomas Kennedy, international secretary and treasurer, who will participate in one of the largest gatherings of union coal miners held here recently, union officials assert. In addition to a parade, for which the miners obtained a permit yesterday, Mr. Lewis and the other international officials will address a large assemblage of coal miners at the old fair grounds, in Maple Avenue, on the outskirts of Fairmont, in the afternoon of Sept. 26.

This will be Mr. Lewis' first visit to the region since Feb. 4, when he conferred with the coal operators of northern West Virginia, signatories to the Baltimore agreement, who wanted a wage adjustment in the scale commencing April 1. The international president refused to consider this request.

A circular letter to officers and members of local unions issued by Bittner Sept. 11 announces another membership drive in the strike zone. The letter reads as follows:

"As a part of our campaign of organization in northern West Virginia, it is absolutely necessary that non-union production be completely eliminated. It is impossible at this time to disclose all the plans and policies of the United Mine Workers of America in their fight for American standards in northern West Virginia.

"Local unions are instructed to immediately proceed to accept membership of the present non-union miners and initiate these men for the sum of \$1. You will be told in the very near future just when the charter of our organization will again be closed and applicants not allowed to be initiated in this field.

"Call special meetings of your local unions, select your organization committees and clear the deck for action."

Alleged Tipple Burners Caught

After state deputy fire marshals were at work on the case for some time, Harry Craig, 32 years; Glenn Pife, 26 years, and Joseph Secreta, 15 years, were arrested Sept. 11, in Harrison County, charged with burning down the tipple at mine No. 55 of the Consolidation Coal Co., at Meadowbrook, on Aug. 29, causing a loss of \$40,000.

An unsuccessful effort was made to burn the tipple of the Eureka mine of the Bertha Consumers Coal Co. at Madsville, near Morgantown, early Friday morning, Sept. 11. The fire, which is reported to have started by igniting gasoline-soaked rags, was discovered by a Monongahela Ry. crew connected with

the Madsville yards. "Big Bertha," as it is dubbed by the miners, produces 50 cars of coal a day and is regarded as the largest single tipple mine in the Morgantown section.

Information was received in Fairmont late last week that the West Virginia Supreme Court had refused to act immediately upon the writ of error granted to Van A. Bittner, chief international representative of the United Mine Workers, who was sentenced to six months in jail and fined \$500 for contempt of court. The case will come up in the next regular term and probably will not be reached before Jan. 1, if then. Former Judge Emmet M. Shwalter, general counsel of the Continental Coal Co., the complaining concern, tried to get the court to pass on the writ forthwith.

Shooting Affrays Reported

A. J. Phillips, a mine guard employed by the Jamison Coal & Coke Co. at No. 8 mine, near Farmington, was shot in the face from ambush early last week, but escaped serious injury. Bullets shot from a gun with a silencer, were found in the mine fan, company officials report. A mine guard employed by the New England Fuel & Transportation Co. shot and killed C. H. Harris, who conducts a pressing establishment at Grant Town, last week, when he attempted to stab a non-union miner with a butcher knife. All of the parties are negroes.

In the first four days of last week the non-union mines produced 5,063 cars of coal, a decrease of 784 cars compared to the corresponding period of the previous week. The output, considering the fact that only 200 cars of coal were loaded Monday, is considered remarkable. Union tonnage in the first four days—really three work days—was 825 cars, compared to 1,067 cars the previous week. On the average 183 non-union mines were at work during that time and 13 union mines. Non-union production on the Monogah Division, B. & O., on Sept. 10 set a new record at 915 cars, and mines on the Wyatt-Bingamon & Helen's Run of the Western Maryland set a new pace at 68 cars.

Little new has developed in the Panhandle strike, except that on Sept. 11 announcement was made by the Richland Coal Co., of Wheeling, that within the next two weeks it will reopen four mines in the Panhandle section closed since early in June, when receivers were appointed. A. E. Bryant and the Dollar Savings & Trust Co. are the receivers, and Mr. Bryant is authority for the statement that the mines will resume operation on a non-union basis.

The activity of the Ku Klux Klan in the labor struggle in northern West Virginia was bitterly attacked by James L. Studdard and other international representatives of the United Mine Workers at Labor Day meetings in the strike zone. When the Klan arranged a big demonstration in Fairmont on Labor Day the labor

Temple Iron Co. Dissolves

Final action to dissolve the Temple Iron Co. was taken at a special meeting of stockholders of the company at Reading, Pa., Sept. 2. The company has been inactive since 1914, when it was obliged to dispose of its anthracite mine holdings on the order of the U. S. Supreme Court, which ruled that it constituted a monopoly. The Temple Iron Co. for years was known as the hard coal trust and one of its presidents, the late George F. Baer, was the bitter foe of union labor.

Distribution has already been made of most of its assets. In the last few years the company has functioned in name only, maintaining its charter rights by annual meetings and election of officers. The last president of the company was E. T. Stotesbury, of Philadelphia.

representatives charged that the organization sought to usurp a day dedicated to labor. The imperial wizard failed to arrive, however, and the affair was not of the magnitude promised.

International organizers seem to think that there is a close alliance between the Klan and non-union coal operators. On several occasions while miners' mass meetings were being held, international men say, bombs were exploded on nearby hillsides to disturb the gatherings, only to be followed later by "fiery crosses."

Employees of the Sitnck Coal Mining Co. at Lumberport a non-union operation, held an outing Labor Day and obtained a minister to deliver an address, instead of labor agitators.

M. F. Burns Left \$3,475,570

Michael F. Burns, who was the head of Burns Brothers, New York coal merchants, until his death on April 23, 1924, left an estate appraised at \$3,475,570 gross and \$3,062,114 net. The appraisal showed that he owned only 30 shares of preferred stock of Burns Brothers, valued at \$4,850, and 800 shares of common stock in the Burns Holding Co., appraised at \$102,110. The bulk of his estate consisted of securities valued at \$2,102,996.

Mr. Burns owned real estate valued at \$262,949; had mortgages and accounts valued at \$536,476, and \$102,946 in cash. His personal effects were worth only \$5,092. He had an interest of \$250,000 as a special partner in the cotton commission firm of Curran & Barry, 320 Broadway. Another taxable item was a contract with Burns Brothers, by which he was to receive \$50,000 yearly from 1925 to 1928.

The will left the estate in equal shares to the daughters, Belle Schwarzmann, Elsie Cavanagh and Lillian Barry, and the son, Francis L. Burns, who got \$767,528 each. The report also showed that in May, 1922, Mr. Burns gave \$29,918 in cash and 200 shares of stock in the American Telephone & Telegraph Co. to each of his children, the total gift aggregating \$217,194.

Oddie Bill May Be Buffer Against Radical Action On Coal by Congress

By Paul Wooton

Washington Correspondent of *Coal Age*

Inquiry of members of Congress now in Washington and at the offices of others still absent from the Capital fails to disclose anyone with a definite purpose to push coal legislation. That there will be committee consideration of various coal bills is conceded generally. Some are of the opinion that some measures will reach the floor, but doubt is expressed as to the ability of Congress to agree on anything in the way of regulatory legislation.

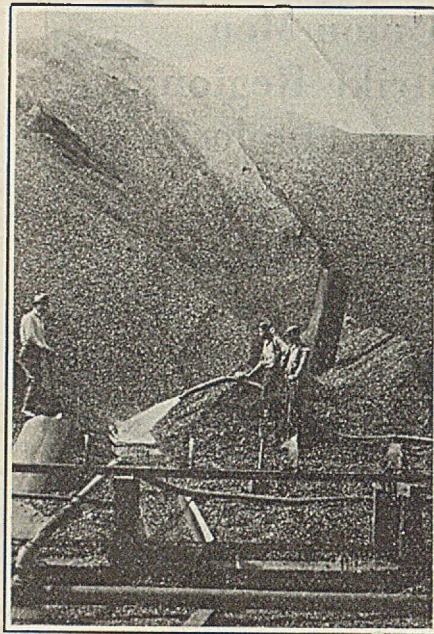
Whether or not Senator Oddie calls up his bill providing for compulsory returns of basic facts will depend on the amount of demand from within and from without Congress. It never has been his idea to foist the bill on Congress. He has assembled some of the recommendations of various authorities on coal and has put these ideas in legislative form. He rather is of the opinion that some of those who have had harsh things to say about his bill will be anxious to see it brought forward before the Congress is very old, so as to offset radical proposals.

Coal Commission Report Delayed

Some members of Congress are displaying no little impatience because the report of the Coal Commission is not yet available. Interest is evinced in that phase of the report which deals with a differential profits tax. It is recognized by the legislators who think the anthracite industry should be regulated that one of the great difficulties they face is to devise a method whereby a part of the profits of the low-cost producers may be applied in such a way as to make possible a reduction in the price of coal or, in the case of those anxious to help the United Mine Workers, to apply on an increased wage. The Coal Commission's plan contemplates the return of excess profits to the whole public.

In Great Britain a somewhat similar proposal took the form of the suggested wages pool. The low-cost mines would contribute to the fund from which the high-cost mines would draw. This plan has been resisted vigorously by the British industry, but it persisted throughout the discussion in the United Kingdom this summer and now a related idea has cropped up here in connection with the transportation situation.

Former Commissioner Potter of the Interstate Commerce Commission and one of the receivers of the Chicago, Milwaukee & St. Paul R.R., has suggested that freight rates be advanced and that all the profit from that increase go to the weaker railroads. His reasoning is that the stronger roads after having had a reasonable return should contribute their excess earnings to the betterment of transportation generally. He points out that a whole



P. & A. Photos.

Storage Pile That Will Help to Weather Hard Coal Strike

Reserve stock at mine near Scranton, Pa., pictured on eve of the strike. The coal is being flushed through a trough into a scraper conveyor to be taken to the loading point or to the colliery to be washed and sized.

tier of states in the Northwest is dependent upon the C., M. & St. P. and that such a common carrier must be maintained.

This proposal has aroused unusual interest in Washington as it is recognized as simply a restatement of the principle involved in the recapture clause of the Transportation Act, the constitutionality of which already has been upheld by the Supreme Court of the United States. Furthermore, it presents the same principle involved in the Pullman surcharge, which was so decisively upheld at the last session of Congress. While Mr. Potter's suggestion amounts to a tax on the public, it is pointed out that the public, in one way or another, has to pay to keep the weak roads going and by this method they can do it without paying larger profits to the strong roads. It is agreed that the last has not been heard of the Potter proposal.

The application of some such principle to coal is expected to occur to some of the national legislators. Moreover, any number of them were in the British Isles during the heat of the coal discussion there and are familiar with the wages pool idea. That bills attempting to apply a modification of the idea to the situation here will be introduced is fully expected.

The Virginian Ry. will receive bids until Sept. 23 for its estimated requirements of high volatile mine-run locomotive fuel coal for the year beginning Oct. 1, 1925. Approximately 600,000 tons will be required, delivered at the rate of about 50,000 tons per month. Bids must be submitted to D. C. King, purchasing agent, Terminal Building, Norfolk, Va.

Brotherhood Sells Its Rail Line to C. & O. Ry.

With the approval Sept. 8 by the Interstate Commerce Commission of the purchase of the line of the Coal River & Eastern Ry. by the Chesapeake & Ohio Ry. that purchase, which has been pending for several months, has been completed. The Coal River & Eastern was a subsidiary of the Coal River Collieries Co., owned by the Brotherhood of Locomotive Engineers, and is 12 miles long, having been built from Seth to Prenter for the purpose of reaching the Coal River branch of the C. & O.

In order to obtain a division of rates, the Coal River & Eastern in 1924 petitioned for authority to operate its line as a common carrier, a petition which was opposed by the C. & O., that road contending that the Coal River & Eastern was only a spur. The petition did lead, however, to negotiations for the purchase of the short line, and in May it became known that an offer of \$370,000 had been made by the C. & O.

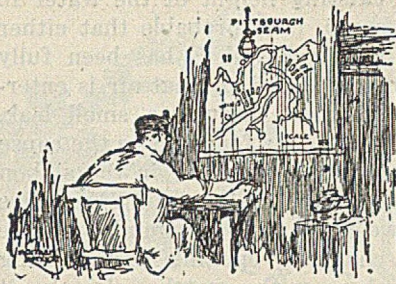
The Coal River Collieries Co. is preparing to embark upon a program of expansion, following the sale of the road, and expects to increase the output of the company to a million tons annually. The output of the mine at Prenter, now in operation, will be increased from 1,000 to 5,000 tons daily and other improvements made.

Railroads Save on Fuel Bill

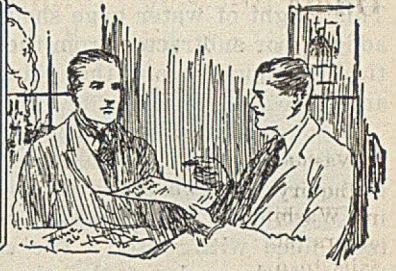
Class I railroads saved about \$22,500,000 on their fuel bill during the first half of this year compared with the first half of last year, according to figures issued by the Interstate Commerce Commission. The total cost of coal and fuel oil for the first half of last year was \$185,572,620 against a cost of \$163,120,525 for the first half of this year. This saving of \$22,452,095 resulted partly from a decrease in the price of coal and partly from economies effected by the railroad managements, as the average cost per gallon of fuel oil advanced.

Notwithstanding this saving, the railroads increased the average number of cars per freight train from 40.7 in the first six months of 1924 to 42.9 in the first six months of this year and the net tons per train from 694 to 727. In spite of the heavier and longer trains, the freight traffic of the country moved 0.4 of a mile faster this year than last.

The railroads covered in the report consumed 47,406,574 net tons of coal at an average cost of \$2.78 per ton in the first half of 1925, compared with 49,721,957 tons at an average cost of \$3.18 a ton in the corresponding period of 1924. In June 7,126,738 net tons of coal was consumed, as against 6,916,210 tons in June, 1924. The average cost per ton in June was \$2.70, compared with \$3.02 in the same month a year ago, the respective totals being \$24,376,103 and \$25,314,756.



Problems In Underground Management



Improved Low-Head Siphon Has Many Virtues

**Operates with Least Possible Head, Draws Water
Over High Humps and Always Remains Primed
Even Though Sump Goes Quite Dry**

By **J. Alfred Scollon**
Barnesboro, Pa.

The improved siphon shown in the accompanying illustration is really nothing more than the ordinary device of this kind supplemented by a short inverted siphon at each end. It is designed to operate with the least effective pressure head, to efficiently draw water over higher summits than will a common siphon, and to remain primed, or full when the water in the sump has been lowered to the same elevation as the discharge level, or even when the sump for any reason may be completely drained.

As the effective pressure head decreases (see accompanying drawing) the velocity in the siphon likewise will decrease until the water level of the sump reaches the same elevation as the discharge level, when the flow naturally will cease. Since the water level at the suction end *A*, and at the discharge end *D* are then the same, the hydrostatic pressure will be equal at both extremities. With the atmospheric pressure on the ends the same, the two legs of the siphon will exactly balance, regardless of the length of either. With the up-turned portions *AB* and *DE* filled with water, air cannot enter the line from either end on account of its being so much lighter than the water in the pipe. The water is held in

the line as long as it is thus balanced. When the water in the sump again rises above the discharge level, the total pressure at *A* will be greater than that at *D*, and the siphon will resume its operation.

The limit of vertical height *S* to the summit of the siphon is equal to the height of water column that the atmospheric pressure will balance. This limit will vary with altitude and atmospheric conditions, and may be found by multiplying the barometer height by the specific gravity of mercury (13.58 at 60° F.). Thus, if the barometer reading is 28 in. this limit will be:

$$S = 13.58 \times 28 = 380.24 \text{ in.} = 31.69 \text{ ft.}$$

This improved siphon is installed and put into operation in practically the same manner as the ordinary device of this kind, and the same formula applies.

Practical considerations determine the highest permissible water level in the sump. The vertical distance, *H*, from this level to the discharge elevation may be measured and the length of the required siphon line may likewise be determined. Then if the rate of maximum influx of water to the sump is known or can be estimated, the size of pipe may be calculated. This pipe must have

sufficient capacity to carry the maximum amount of water entering the sump when the height, *H*, of the water in the sump above the discharge level is as high as possible. Assuming that the curvature in the turned-up ends of the pipe is uniform, and that the radius of curvature is not less than about twelve times the diameter of the pipe, the extra friction due to these curves may be considered negligible.

The following formula is used:

$$D = \sqrt[3]{\frac{G^2 KL}{8H}}$$

When

D = Diameter of the pipe in inches,

G = Number of gallons per minute flowing into the sump,

L = Total length of the siphon line in feet,

K = Coefficient of friction (usually taken as 0.01),

and

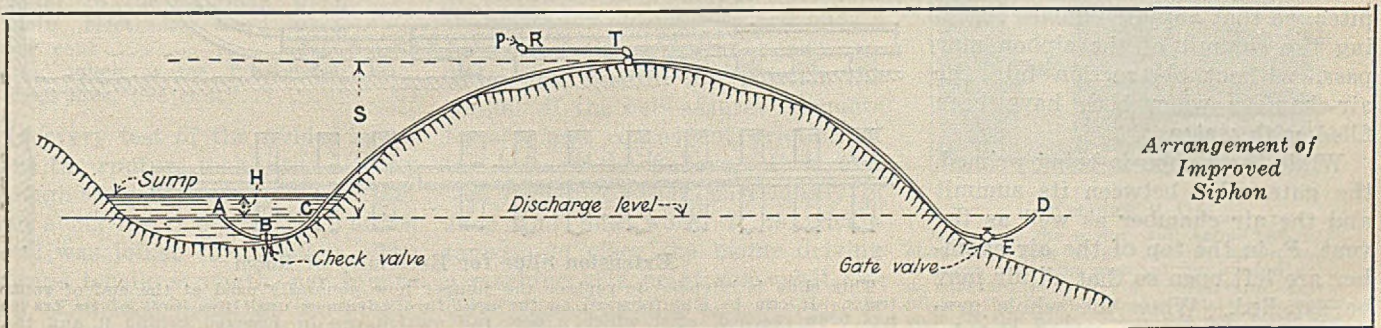
H = Highest permissible effective head in feet.

From the same formula we find

that $G = 2.83 D^3 \sqrt{\frac{DH}{KL}}$,

and $H = \frac{G^2 KL}{8D^6}$

When installing a siphon of this kind it is well to make each of the distances from the low points *B* and *E* to the discharge level, at least six times the diameter of the pipe. If the siphon is to be used in a mine where the ventilating pressure is different at its two ends, the effective pressure head, *H*, will be increased or decreased by the height of water gage which this difference



in ventilating pressure will produce. This height of water gage should be added to or subtracted from the vertical distances from the points *B* and *E* to the discharge level.

In place of having the ends of the line turned up as shown, they may be turned downward and submerged in a barrel or other suitable receptacle filled with water. The elevations of the ends of the pipe will then correspond to the low points *B* and *E* and the overflow points of the barrels will correspond in elevation to the discharge level of the siphon as here shown. If it is definitely known that the water in the sump will never go below the level of the discharge line, the short section *AB* on the suction end may be omitted.

After the proper elevations, size of pipe, etc., have been determined the next most important consideration is so to construct the line that it will be absolutely air-tight when under pressure. Usually a check valve is placed in the line at the low point *B* on the suction end and a gate valve at the corresponding point of the discharge end. These should be closed only when the line is being primed or filled. The siphon may be primed by means of a force pump connected to either end, or by pouring in water at the summit.

In order to bleed out all the air (which may result from the formation of small bubbles in the line while it is being primed), an air chamber connected to a tee at the summit of the siphon should be used. This may take the form of an air-tight tank, or a piece of pipe, preferably of larger diameter than the siphon line, as shown by *TR*. This tank has an opening on top, *P*, that may be tightly closed by a metal plug. A valve should be placed between the summit of the siphon and the air chamber. The upper internal surface of the short piece connecting the siphon line and the air chamber, as well as that of the chamber itself, must have a continuous upward pitch, so that any air-bubbles reaching the summit of the siphon may pass, without obstruction into the air-chamber when both have been filled with water.

While the siphon is being primed, the gate valve between its summit and the air chamber as well as the vent, *P*, in the top of the air chamber are left open so that all air may be expelled. When the whole system has been filled to the top of the

air chamber, and practically all air in the line has been expelled at *P*, the valve between the siphon summit and the air chamber should be tightly closed. It may be reopened when the vent at *P* has been closed.

Before opening the gate valve at *E* the short turned-up section of pipe *ED* should be filled with water. The siphon is put into operation by opening this valve.

If it is later found that the flow has stopped when the water level in the sump is above the discharge level, or if the velocity at the discharge has fallen below normal for

the existing height of the water in the sump, it is probable that either the gate valve at *E* has been fully or partly closed, or that air is entering the line through a small leak. If the latter is found to be the cause of the trouble, the air in the siphon may be expelled by closing the valve between the siphon summit and the air chamber, opening and refilling chamber with water, closing it tightly, and then opening the valve between it and the siphon summit. Unless the leak is found and repaired, it will be necessary to repeat this operation later.

Device for Extension of Face Tracks Has Back-Stop Horns

BY C. P. TURLEY
Stirrat, W. Va.

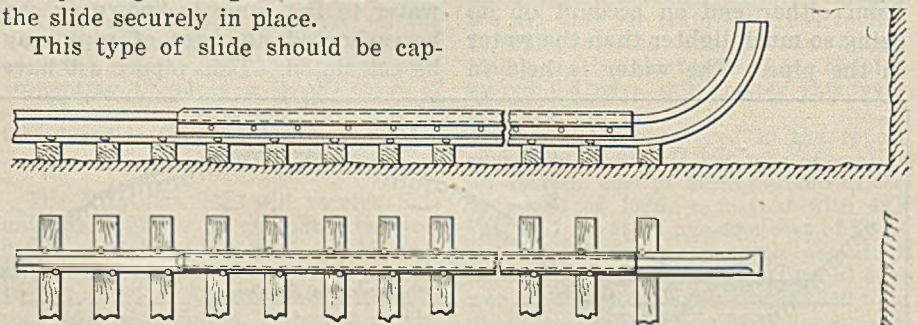
It has long been recognized by mining men that the method usually employed for extending track at the working face is inefficient, troublesome and expensive, yet little progress has been made toward overcoming these difficulties. Surely at a time like the present, when every effort is being made to decrease the cost of production, this item of expense should not be overlooked.

In seeking a remedy for the difficulties encountered in extending track, my attention has been called to a device that appears to possess many advantages over means and methods now in use. This contrivance is shown in the accompanying illustration. It consists of a steel slide, U-shaped in cross-section, with a short piece of curved rail bolted to its extremity. The slide is so made as to conform to the shape of an ordinary T-rail and readily slips back and forth upon the size of rail for which it is designed. Holes are so placed in this slide as to conform to the drilling of the rail fitted. A bolt inserted in one of these holes and passing through the rail holds the slide securely in place.

This type of slide should be cap-

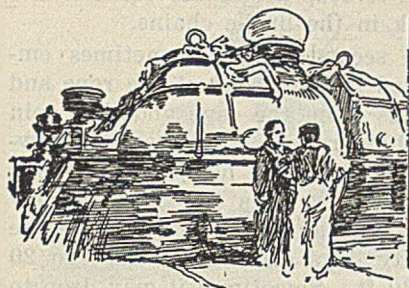
able of being extended 15 ft. Such a slide when thus used in conjunction with a 15-ft. section of rail will permit the employment of 30-ft. rail lengths. Before such a length of rail is put in place, however, the slide should be slipped over its end. As the face advances the slide may be moved forward until it is fully extended when a 15-ft. rail length may be added. Other lengths of rails and slides may, of course, be used.

If shortwall machines are to be used at the face the bolts holding the slide to the rail may be withdrawn, and the slide pushed back until the machine has passed, after which it may be slid forward again and fastened in place. The horn at the extremity of the slide is designed to prevent cars from running off the end. This effectively forestalls loss of time from this cause. Where the grades will permit, the motorman can "kick" empties to the face. Also in picking up loads he need not exercise extreme care in approaching or coupling onto them. Even if the loaded car is bumped by the locomotive it will not be derailed.

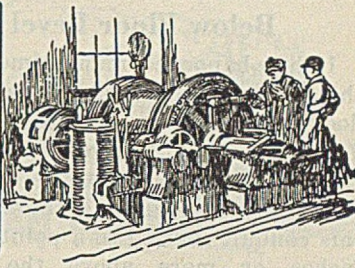


Extension Slide for Extremity of Room

This slide is intended to replace the jumper now generally used at the end of room track. It can be slid forward as the coal face advances until the limit of its travel has been reached, after which a new rail section can be inserted behind it and the process repeated. A single bolt will hold this slide in any desired position.



Practical Pointers For Electrical And Mechanical Men



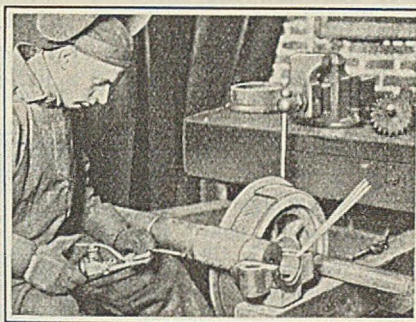
Electric Welds Should Be Reinforced, Results of Many Tests Show

It was about 1908 that autogenous welding by means of an electric arc and a metallic electrode made its first commercial appearance. From then until 1914 the process made but slow gain, steam railway companies being the principal users. It was not until 1919 that coal mining companies began to install electric welders in their repair shops. Now an electric welding machine is considered as one of the first essentials of a well equipped repair shop.

In order to make intelligent applications of electric welding it is necessary to have an understanding of what strength can be expected from welds made by an experienced operator. The following figures are a summary of the results of tests on a series of welds made by an operator who up to that time had had about ten years' experience and was considered the best among a number of operators. The welds were made on sections of boiler plate $\frac{3}{8}$ in. thick and 3 in. wide. The ends to be butt welded were ground on an emery wheel to the correct bevel, and ordinary mild-steel electrodes of $\frac{3}{32}$ -in. diameter were used. The specimens were pulled and broken in a testing machine.

Tensile strength of original plate, lb. per square inch.	56,000
Efficiency of joints welded on both sides, per cent.	90
Efficiency of joints welded on one side, per cent.	83
Ratio of strength (per square inch of section) of welded metal to the original, when plain electrodes were used, per cent.	63
Same, when using flux-coated electrodes, per cent.	71

In every test of the welded specimens the rupture took place directly through the center of the weld rather than along the line where the added metal was joined to the plate. The average tensile strength, per square inch of welded metal at the break, was 38,200 lb.



Welding in a Mine Shop

Filling the tread of a steel tire and building up a worn axle are the jobs which happened to be caught in the photograph from which this illustration was made. It will be noted that the second layer of metal is being applied to the tire and that the bead is put on crosswise. The operator's face shield is raised while he changes electrodes.

The ratio of strength of the added metal to the original, 67 per cent (an average of the above figures for plain and flux-coated electrodes), indicates that if the specimens had been reinforced at the weld to approximately 150 per cent of the original size, the strength of the welded specimen would have been equal to the original. From this is deduced the rough rule that an electric weld on ordinary low-carbon rolled steel should, if possible, be reinforced so that the weld will have an area about $1\frac{1}{2}$ times larger than was the area of the break.

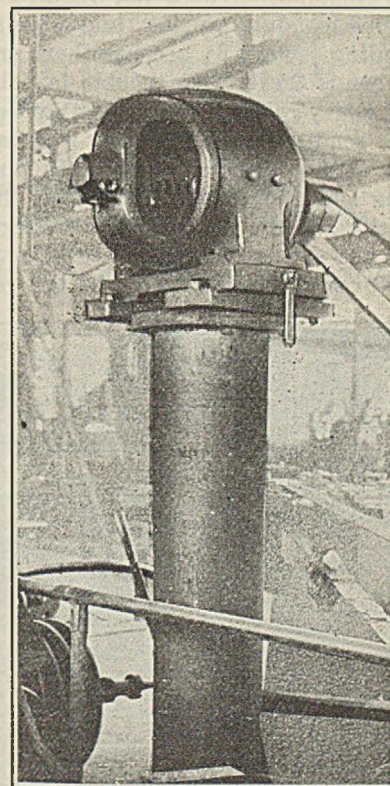
Cast-Iron Pipe Makes High Motor Stand

It is a well recognized principle of mechanics that in order to attain its maximum efficiency, a belt should be run horizontally or nearly so. This is because in this position the weight of the belt assures adequate tension and consequent friction on the pulleys. It is also well recognized that, particularly in shop and mill work, it is advantageous to place the motor driving a machine at a point somewhat elevated above the shop or mill floor. It is, however, not always convenient

to find a suitable foundation at such an elevated point.

The accompanying illustration shows an elevated motor stand employed in the No. 4 shop of the Kingston Coal Co., Kingston, Pa. This stand consists essentially of an old length of cast-iron pipe, the lower end of which is imbedded in a suitable concrete foundation, set level with the shop floor. The flange on the upper end of the pipe furnishes a suitable bearing for the oak beams upon which the motor itself rests and to which it is bolted, the beams being fastened to the flange.

A support of this kind answers all the requirements of motor mounting. The cast iron pipe is sufficiently rigid to absorb any vibration that may be present, and also to resist the tension of the belt.



Keeping It Up

Elevating the motor well above the mine shop floor has many obvious advantages. A large cast-iron pipe set flange end up in a substantial concrete foundation accomplishes the desired result—raises the motor well off the floor, keeps the belt tight and affords a firm yet resilient base.

Cable Conduits Terminate Below Floor Level

It has happened many times that the floor of a substation has been flooded, but that no damage has been done to the under-floor wiring because of the fact that it was installed in metallic conduit and the ends of this conduit carried to a point a few inches or more above the floor. Other instances have occurred where the water rose to a level above the tops and filled the conduits, necessitating a tedious job of drying out, or if neglected, resulting in grounded wiring.

For a substation located where there is good opportunity for drainage and where there is only a remote possibility of flooding, the method of under-floor wiring illustrated in the accompanying illustration has proved satisfactory. A shallow pit is provided under the machine, and a narrow trench made in back of the switchboard, and both equipped with tile drains to the outside. The conduits for the wires are carried straight from the pit to the trench, these conduits ending flush with the sides.

Advantages of this type of installation are: (1) low first cost; (2) installation does not require a skilled conduit worker and special bending tools; (3) because there are no bends there is no trouble in pulling heavy cables through; (4) wires are readily accessible for repairs; (5) no trouble is experienced in running additional small wires from the machine to the board as is necessary in case special control or protective features are added; (6) in the re-

mote case of flooding, the conduits will drain themselves.

Mention of the last advantage brings up the point that it is well to lay the conduit with a slight pitch toward one end so there will be no chance for water to stand.

Lever Latch Makes Cage Testing Safer

Many and varied are the arrangements made for testing the condition of safety dogs on cages, but they all resolve themselves into three schemes, the third of which, described in this article, is safest. One plan is to jack the cage over the mouth of the shaft allowing a little

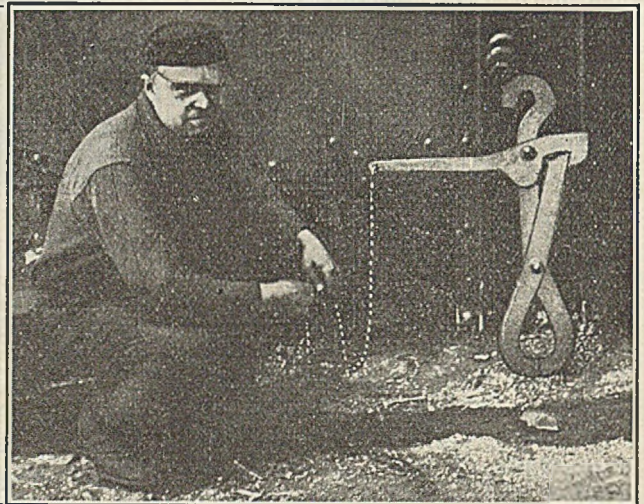
cage to drop a distance equal to the slack in the bridle chains.

A second scheme sometimes employed is to disconnect the rope and chains from the cage and then join the hoist rope clevis to the cage drawbar by a loop of hemp rope. When the hemp rope is cut the cage may drop only an inch or two before the safety dogs catch or it may go 20 or 30 ft. Sometimes it may drop to the bottom, due to the failure of the dogs or to the rotten condition of the guides.

Neither of these two schemes can be executed easily and both—particularly the second—expose the testing men to danger. Several men have lost their lives while

"Life Tongs"

This device, built by John Fark (in the picture), Ford Collieries Co. blacksmith, releases a cage for a test of the safety dogs. The top hook engages the hoist rope clevis and the jaws hold the drawbar clevis. A pull of the chain drops the cage. No man need endanger his life to do it, as is necessary by some other testing methods.

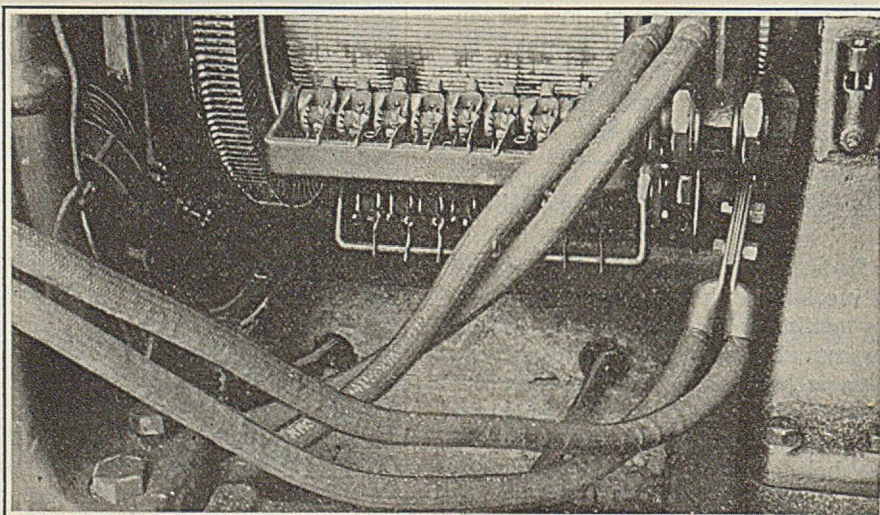


slack in the bridle chains which is taken up by a loop of hemp rope strung between the hoist rope clevis and the cage. The blocks are then removed from under the cage and the hemp rope is cut causing the

standing on the cage to cut the hemp rope in cases where the cage has dropped to the bottom of the shaft.

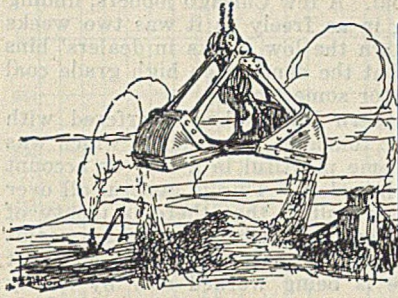
A third method, and by far the best, involves the use of a mechanical release which can be controlled from a distance. John Fark, blacksmith at the Benjamin mine of the Ford Collieries Co., Curtisville, Pa., devised a mechanism which makes the job of testing cage safety dogs safe. He and his device appear in the accompanying illustration.

His mechanism works on the scissor principle as in a pair of ice tongs. The lower jaws come together when in a closed position and are held so by a lever latch. A chain at one end of this lever opens the latch on the other end. At the upper end of one arm of the pair of tongs is a hook which, during a test, engages the hoist rope clevis while the points of the tongs encircle the drawbar clevis. In this position the tongs are the only support between the rope and cage. By a mere pull on the release chain the cage drops away from the rope.

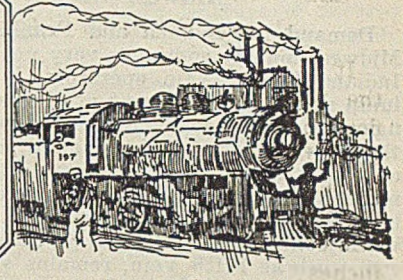


Conduits End Flush with the Walls of the Pit

In this particular installation of a 300-kw. converter at a West Virginia coal mine, fiber conduit is used. The other ends of the conduits terminate in the same way in a shallow trench back of the switchboard. This is an inexpensive but satisfactory method of installation.



Production And the Market



Public Remains Calm as Strike Continues; Soft-Coal Trade Active

The third week of the hard-coal "suspension" finds definite steps toward a settlement no nearer than a week ago. Governor Pinchot of Pennsylvania, it is true, has had conferences with Major Inglis and John L. Lewis, but the results, if any, have not been made public, the Governor stating that his action was not an attempt at mediation but in order to keep posted on the situation. Never, perhaps, has a shutdown been marked by less evidence of panic or even nervousness on the part of the public than the present. Anthracite consumers, for one thing, have a larger proportion of their winter's needs on hand than usual at this time, and, basing their opinion on past experiences, are confident that an agreement will be brought about—through government intervention if necessary—before the danger point is reached.

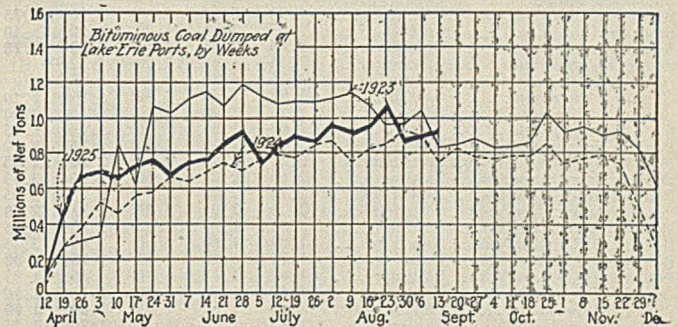
The market, of course, is not lacking in vagaries, wholesale prices for domestic sizes varying according to buyer and seller. Quotations were reported ranging from \$11 for stock chestnut and \$12.50 for fresh mined chestnut to \$14 for stove and egg. Coal in bottoms is reported quoted at \$15 to \$16.25 alongside. Practically all sizes but pea and No. 1 buckwheat are out of the market, old line companies taking care of regular customers as best they can.

Soft-Coal Market More Active

Increasing activity marks the bituminous coal trade, working time at most mines showing an advance and many operations that had been closed for some time being able to resume. The demand is strongest for high grade coals, smokeless continuing to be the outstanding market feature. It is worthy of note, however, that such union fields as southern Illinois, Indiana and Ohio

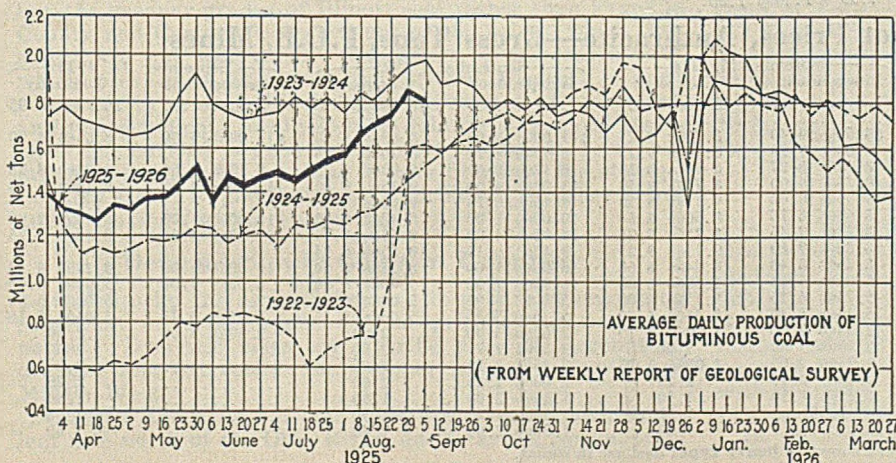
are beginning to feel the benefit of the improvement in demand. In many instances operators are selling their product subject to price prevailing at the time of shipment, no definite figures being quoted.

Production of bituminous coal during the week ended Sept. 5 is estimated by the Geological Survey at 10,808,000 net tons, compared with 11,202,000 tons in the preceding week, as shown by revised figures. There was some production of anthracite on Aug. 31, the day before the strike went into effect, but reports are insufficient to permit an accurate estimate of the output.



Coal Age Index of spot prices of bituminous coal receded slightly last week, standing on Sept. 12 at 178, the corresponding price being a fraction less than \$2.16.

Dumpings at Lake Erie ports during the week ended Sept. 13, according to the Ore & Coal Exchange, were: Cargo, 887,705 net tons; steamship fuel, 45,331 tons—a total of 933,036 net tons, compared with 931,257 tons in the preceding week. Hampton Roads dumpings during the week ended Sept. 10 totaled 382,935 net tons, compared with 421,390 tons in the previous week.



Estimates of Production (Net Tons)			
BITUMINOUS			
	1924	1925	
Aug. 22 (a)	8,582,000	10,522,000	
Aug. 29 (a)	9,006,000	11,202,000	
Sept 5 (b)	8,208,000	10,808,000	
Daily average	1,560,000	1,801,000	
Cal. yr. to date	(c) 308,578,000	328,301,000	
Daily av. to date	1,475,000	1,561,000	
ANTHRACITE			
Aug. 22	1,711,000	2,209,000	
Aug. 29	1,837,000	2,319,000	
Sept. 5	1,451,000	(d)	
COKE			
Aug. 29 (a)	110,000	165,000	
Sept. 5 (b)	112,000	159,000	
Cal. yr. to date	(c) 7,015,000	6,567,000	

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

Midwest Market Is Active

Demand for Indiana and Franklin County coals in the Midwest market continues very good; southern Illinois and Indiana Fourth Vein operators, in fact, are selling 6-in. lump at the price current at time of shipment, no definite figures being quoted. And all seem to be oversold two or three weeks ahead. The smaller prepared sizes are moved only with some difficulty except when applied on contracts made earlier in the season. A great deal of fine coal also is to be had at lower prices than have been quoted previously this year. Business on the lower grades of Indiana coal, such as Fifth Vein, remains very poor. There was a little spurt this last week, however, when the miners declared a general strike at all mines located on the C. & E. I., due to an increase in fares to the mines.

Eastern coal is still in strong demand and prices have been keeping pace. But little eastern Kentucky and West Virginia coal is offered. Certain states, such as Minnesota and Iowa, have been slow in placing orders, but the general opinion is that with cooler weather the demand will increase. The anthracite strike has not aroused the public or dealers.

Pocahontas holds strictly at the \$5 basis, with mine-run at \$2.55@\$.75. Though sales have been made in some states at these prices, consumers in this part of the country have not taken to the high prices. Midwest dealers look for a suitable substitute in a high-grade eastern Kentucky

or other West Virginia coal. A few Chicago jobbers, finding new business not coming in as freely as it was two weeks ago, fear a reaction, though the low stocks in dealers' bins would seem to presage that the demand on high grade coal will continue to be good for some time.

Warm weather in southern Illinois has interfered with the movement of domestic tonnage. Even lump, which was somewhat scarce, has become plentiful in a way on account of dealers holding up their orders. This is general all over Illinois, however, and the result is that there is plenty of coal to be shipped and orders are easing up. Steam seems to be keeping up pretty well with production from shaft mines. Nearly full time is being worked now by nearly all the mines and railroad tonnage is reported good. Strip mines are working full time and seemingly have a good market, although prices are not what were expected. A shortage of water throughout Williamson and Franklin counties has affected production.

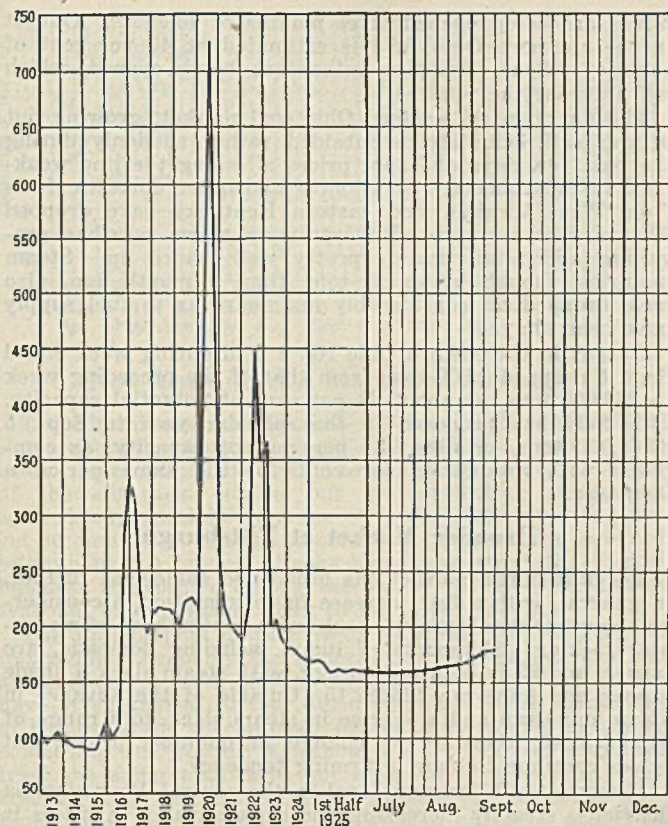
Mines in the Duquoin and Jackson County fields are beginning to work full time, as there is a fairly good demand for all coal. Throughout all of these fields there are several mines that have not resumed operations. The surplus of labor that was evident a month ago is rapidly disappearing. In the Mt. Olive field there is continued activity and a good movement of domestic and railroad tonnage is reported, with steam about equal to the production. Working time is three to four days a week.

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

Table with columns for Low-Volatile, Eastern, High-Volatile, Eastern, Midwest, and South and Southwest. It lists various coal types (e.g., Smokeless lump, Pool 1, Pool 9) and their prices for different dates (Sept. 15, 1924; Aug. 31, 1925; Sept. 5, 1925; Sept. 14, 1925).

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

Table with columns for Market Quoted, Freight Rates, and prices for different dates (September 15, 1924; September 5, 1925; September 14, 1925). It lists various anthracite grades (e.g., Broken, Egg, Stove, Chestnut) and their prices.



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

	1925			1924
	Sept. 14	Sept. 7	Aug. 31	Sept. 15
Index	178	179	174	167
Weighted average price ..	\$2.16	\$2.16	\$2.10	\$2.02

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

In the Standard field there is some increase in working time and in demand for domestic sizes and, strange to say, steam has picked up in the last week. Prices don't mean anything as they are about the cost of production excepting at mines that are oversold, which are asking prices that the quality and preparation of the coal don't justify. Mines in the Standard field are working from three to five days a week and coal is moving fairly well. Prices are unchanged.

In St. Louis warm weather has slowed up domestic buying. Yards are full and the demand, which has been for high grade, is slipping off to middle grade and cheaper coals and a considerable tonnage of western Kentucky coal is beginning to move throughout the territory where Illinois had been firmly entrenched. Dealers are advising their customers to some extent to buy western Kentucky coal and buy the cheaper grades of Illinois coal rather than Franklin County and Carterville on account of the prices, which they assert are not warranted. The effect of this resentment which prevails in St. Louis and eastern Missouri is most noticeable in central Illinois. The movement of smokeless, anthracite and coke locally is quiet. Local wagonload steam is nil but carload is good and a little storage is being put in. Apartments still continue to take Standard for storage. Country steam is quiet but country domestic is rather active and is looking for the cheaper fuels.

Demand Slowly Gains in Kentucky

In Kentucky the demand for coal is good and improving somewhat on steam sizes, but no price changes are reported. Domestic sizes are a trifle slow on account of drought and extremely hot weather over the South and Middle West.

Eastern Kentucky nut and slack are meeting with excellent sale north of the Ohio River, due to active consumption

of industrial plants, utilities, ice and cold storage and general consuming industries. When the weather becomes more normal there should be a rapid increase in demand for prepared sizes. Eastern Kentucky mines have good orders in hand and are reported to be busy. In western Kentucky production is slowly but steadily improving. As a result of the anthracite strike inquiries for prepared sizes are coming from Eastern states.

In western Kentucky improved prices of domestic have been fairly well offset by lower prices of screenings, resulting in average per ton on mine-run basis not being much over \$1.40, while eastern Kentucky, which had been getting \$1 and up for screenings, is showing an average from \$1.60 a ton and up.

Better prices and movement have attracted the attention of wagon and small mines that haven't operated for two years or more, and indications are that these operations will soon be flourishing again and interfering with car supply. Car shortage already is beginning to develop, in fact. Water shortage also is beginning to be felt as the result of a two months drought. One operation in western Kentucky is reported to have been forced to suspend.

Labor has been a trifle scarce in some sections, but, due to dry weather and early harvesting of crops, the part-time farmer-miner labor probably will be back in the mines earlier than usual this season.

Improvement Continues in Northwest

Improvement continues in the Duluth-Superior market. Dealers and industrial consumers have been placing orders for bituminous and anthracite of late and the docks have been shipping out fair tonnages. Dealers and the public are calm despite the anthracite strike feeling assured that plenty of substitutes will be available.

The feature in the bituminous market is another advance of 50c. in the price of Pocahontas lump, egg and stove to \$8.50. Mine-run and screenings are unchanged. Quotations in all other bituminous grades are steady and unchanged. Anthracite prices are as they were save that pea is in better demand for mixing and sells for \$10.50.

Shipments from Duluth and Superior docks during August totaled 20,778 cars against 14,693 cars during July and 18,589 cars during the same period last year. The total for the year to Aug. 31 was 130,685 cars, against 133,493 cars in the same period in 1924. From present indications the movement this month will exceed the August figures.

Forty-one cargoes of coal, including three of anthracite, arrived at the docks last week. This compares with twenty-nine cargoes, including only one of anthracite unloaded in the preceding week. Ten cargoes, all bituminous, were en route.

Anthracite receipts at the head of the Lakes in August were 51,636 tons against 139,292 tons in July. Total hard-coal receipts for the season to Sept. 1 were 728,245 tons, a falling off of 212,000 tons as compared with last year. Bituminous receipts last month were 1,243,653 tons, against 1,362,574 tons during July. That brought the bituminous receipts for the season to Sept. 1 up to 5,477,764 tons, an increase of 1,467,321 tons as compared with the same period last year.

The Milwaukee market is somewhat spasmodic. Dock managers report a slowing of demand as compared with that of last week but retailers say business is brisk, with greater interest in anthracite than for some time past. The price of Pocahontas has been advanced \$1. Egg retails at \$12.25 shoveled and \$13 carried to bins, and nut at \$11.75 and \$12.50, respectively. Coke advanced 60c. a ton Sept. 10. Stove and nut now retail for \$13, and pea at \$10. Receipts by cargo continue steady. Receipts for September, to the 10th, total 125,300 tons—5,300 tons of anthracite and 120,000 tons of bituminous coal.

Demand Steady in Southwest

In the Southwest there is a steady demand for domestic sizes, which is easily supplied from Kansas mines, and those operators whose Arkansas mines are producing report little difficulty in filling orders from that field. Oklahoma deliveries, however, are a little slow, due to labor difficulties in that field, but production is sufficient to prevent any pronounced shortage. The industrial demand has kept pace with domestic, hence coal from all mines is being moved as fast as it is mined.

In the Colorado market last week there was no change

in the demand for domestic coal from the preceding week. If anything, there was a slight recession in orders in the last two days. Operations at Colorado anthracite mines have taken such a substantial jump that they are working to a full capacity. All mines are operating without any interruption through labor or transportation difficulties.

There is more coal business in the Utah market than there was, due largely, no doubt, to the fact that fall weather is nearly a month ahead of normal. Prices are unchanged and the business generally seems to be steadier than it has been for a long time. Labor conditions are excellent, and so far no serious car shortage has been felt.

Ten of the largest operating companies with headquarters in Salt Lake City are urging the public through newspaper "ads" to purchase winter coal now, statements by railroad officials being quoted on the probability of a car shortage on account of the unusually heavy crops.

Activity at Cincinnati Shatters Records

From Cincinnati it is reported that production south of the Ohio River, as measured by the report of the American Railway Association from its car service division, has shattered every record that has stood in the past. J. A. Morris, manager for the Cincinnati district, reports that 16,691 loads of coal were moved last week. Normal used to be 4,000 to 5,000 loads a week and around 9,000 loads was the peak of the war-time movement. The week's movement was 421 cars in excess of the preceding week and of this 3,394 cars were destined for the lakes for transshipment, the latter being 41 cars in excess of the preceding week.

This in itself pretty well tells the story of the quasi-stability of prices. High volatile has advanced very little because of the pressure that has been brought to bear for business. Retailers are firing in their orders and the movement seems without end. Only coals of limited production are skyrocketing. The low volatiles and especially those smokeless types that are counted as standard have reached the \$5 mark and passed it. Most of the direct selling agencies for Pocahontas are pricing their product for immediate delivery at \$5.25 and some brokers are asking \$5.50 for car numbers. Some, too, say that they cannot furnish lump but hold egg at \$5.25, the larger size having been sold up for the month. Stove and nut have advanced to \$3.75 and smokeless screenings are held firm at \$2. Most of the mine-run is at \$2.50 with some of the producers asking \$2.75.

In the high-volatile list the sailing has been a little different. There came a lull toward the middle of the month that caused some cautious wholesalers and producers in southeastern Kentucky and in southern West Virginia to go slowly. Hazard block is being sold generally around \$2.75, some Harlan is priced as high as \$3 and some Elkhorn as high as \$3.25. But only the fancy Elkhorns can bring that figure and there is a greater tonnage moving \$2.75@ \$3 than at the asked price. In West Virginia an arbitrary price fixed by one of the larger producers at \$2.50 a ton holds most of the better grades down around \$2.75 with \$3 as an outside price. Egg sizings, generally speaking, are on a \$2.25 basis, though some may go a little higher and some a little lower, not more than 10c. or 15c. either way. Mine-run generally has steadied to a higher level, but slack from both states is more free and easy at \$1.15@ \$1.25.

At retail there has been little change from \$9 a ton for the smokeless prepared \$6.50 for mine-run, \$6@ \$6.50 for bituminous lump and \$4@ \$4.50 for slack.

Because of extreme hot weather there was a noticeable let-up in the demand for domestic grades in the Columbus market last week. Retailers are fairly busy, however, on deliveries on orders booked several weeks ago. The bulk of the demand is for smokeless, splints and Kentucky varieties. Hocking and Pomeroy lump is selling better, however, and a general movement of domestic sizes is expected soon. Retailers have advanced prices to the public. Smokeless now sells at \$8.25@ \$9; splints, \$7@ \$7.50 and even higher, and Ohio-mined lump at \$6.25@ \$6.75.

Steam business has not changed materially during the past week. Contracting is not brisk, although a few sizable contracts have been closed. Screenings are selling fairly well but no advance in prices have been made. There is a sufficient supply of small sizes to take care of the demand, owing to increased production of lump.

Production in Ohio fields is gradually increasing as more

mines are being opened after months of idleness. Output in the southern Ohio field is estimated at 40 per cent of capacity. Some stripping mines are being opened, which will increase the total.

The flurry in the eastern Ohio coal market, growing out of the anthracite strike subsided rather suddenly during the past few days and spot prices all along the line weakened in consequence. Pocahontas and other domestic fuels from West Virginia and eastern Kentucky have dropped 50c. to 75c. per ton, with extremely warm weather prevailing and retail dealers pretty well loaded up. Steam inquiries, though better in tone than a month ago, also have dropped off considerably and fears as to fuel supply have been allayed.

Output in the eastern Ohio No. 8 field during week ended Sept. 5 dropped 1,000 tons from that of the preceding week to 266,000 tons, or about 38 per cent of potential capacity. This field has produced in the calendar year to Sept. 5 8,379,000 tons, or about 35 per cent of capacity, as compared with around 42 per cent for the same period a year ago.

Broader Market at Pittsburgh

The Pittsburgh market has broadened somewhat further, in general, with a fair increase in consumption, a considerable movement in domestic coal and a continuance of moderate stocking. Shipments of lump, including domestic, are larger, and \$2 is obtained on egg, with steam slack a shade higher and mine-run \$2@ \$2.15. Outside of the advance in steam mine-run and a 5c. rise in steam slack, to a range of \$1.35@ \$1.40, there is no change in quotable prices, but prices continue to show a firming tendency.

Demand for bituminous coal in the central Pennsylvania district is steadily increasing and some advance in prices is noted as compared with Sept. 1. Some of the larger buyers who have been depending upon the spot market are now trying to close contracts to cover their needs until April 1, 1926. Contract prices have not been made public but spot prices are as follows: Pools 11 and 18, \$1.75@ \$1.80; pool 10, \$1.85@ \$2; pool 9, \$2.15@ \$2.30; pool 71, \$2.35@ \$2.45; pool 1, \$2.50@ \$2.75. Loadings show a substantial gain over those of August.

It looks as if there would be some stir in soft coal in the Buffalo market before many days, but the local trade refuses to admit that there is any yet. Consumers have good stocks as a rule and refuse so far to take any stock in higher prices. Consumption seems to keep up well and the export trade is good, but not rushing. In smokeless coal and coke there is some advance, but that is mostly in the house consumption trade. Bituminous quotations, with some advances here and there, especially for slack, are \$1.60@ \$1.75 for Fairmount lump, \$1.40@ \$1.50 for mine-run and \$1.25@ \$1.40 for slack; \$2.25@ \$2.50 for Youghiohney gas lump, \$2@ \$2.25 for Pittsburgh and No. 8 steam lump, and \$1.30@ \$1.60 for slack; \$1.75 to \$2 for Allegheny Valley mine run; Cambria County smokeless, \$6 at curb.

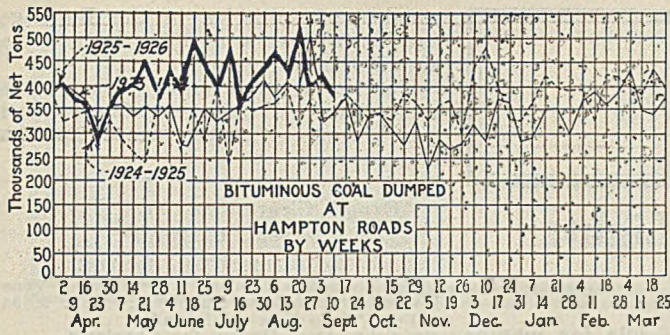
New England Busy with Small-Lot Orders

In New England the market is still holding at high figures. Buying is reasonably active, but for the most part the tonnages are small and but few of the larger consumers are represented. Among purchasing agents there is a feeling that the bidding up of prices is being overdone and that quotations will ease off after a fortnight or so. The trade keeps whistling and points to the volume going west and the high prices obtained in that market.

At Hampton Roads there has been no material increase in the amount of coal dumped; in fact on some days certain of the agencies find themselves short. No. 1 Navy standard Pocahontas and New River are now quoted up to \$5.50 per gross ton f.o.b. vessel, with indications that the shippers will try for a still higher level. More than a few contract customers in this territory are beginning to grumble over slow shipments; in some cases retail dealers are way behind the quotas they were hoping to receive.

On cars Boston and Providence the current level is \$6.25@ \$6.50 and some of the smaller factors have none to sell even at these prices.

Pennsylvania steam coals all-rail are beginning to respond to slightly improved demand. The quality grades especially are being quoted at higher prices. Prepared sizes are very active.



New York Market Maintains Strength

The bituminous coal market at New York continues to show strength, though demand and quotations are at last week's level. Consumers fail to show any anxiety because of the anthracite strike, but are protecting themselves against any possible shortage of coal. Anthracite has not yet become scarce enough to create any demand for screened bituminous but buying of coke has shown strength. Better business is expected during the balance of the year due to seasonal buying rather than to any other factor.

The Philadelphia market seems in a fair way to keep on improving. Probably the general business outlook has had as much to do with this as the anthracite strike. Prices have strengthened further during the last week. Handlers of highest grade special coals have had no trouble in adding something and getting it, although other shippers who have tried the same plan have not altogether succeeded. Contracting is a past issue for the present, as no one is particularly on the lookout for this kind of business, except on particularly large tonnage, which no one would pass by.

Concerns in a position to screen coal have been more active than ever, and it is a long while since so great a variety of sized coal has been offered on this market, but so far there have been practically no sales of sized bituminous coal. The coke people have fared slightly better.

The upward trend of the bituminous market at Baltimore, which was quite marked for the opening week in September, was not continued during the second week. Inquiry was of only a moderate character and prices for the most part were just maintained, and in some cases were shaded a bit. The export situation continues draggy.

Market conditions at Birmingham are better than at any previous time this year taken as a whole, and production is being maintained on a high weekly basis for this season. The output for the week of Aug. 29th., the last official figures available, showed that Alabama mines produced 405,000 net tons, which would be increased to some extent by the small operations which never report to the Alabama Mining Institute.

Steam coal is being bought fairly well in the open market, these bookings taken together with contract shipments affording the mines as now operating sufficient business to move the output very promptly. Demand continues especially strong for high-grade washed coal, of which, at times, there is a temporary scarcity. This is due to some extent to the condition of the domestic market, in which demand is not yet sufficient to readily move domestic fuel produced along with the steam product, necessarily limiting the supply of steam coal to some extent and accentuating the demand for the latter. Bunker trade is still in an inactive state.

Buying of domestic coal still lags, movement against contracts being restricted to an extent which throws more surplus on the spot market than can be readily absorbed, though there is some improvement in booking small orders and a little coal being taken on by contract holders.

Quotations are strongly established, it would seem, against any further reductions through the remainder of the year, with indications of stiffening further on some grades.

Strike Fails to Fluster Hard Coal Trade

Although the anthracite strike has been in progress more than two weeks, comparatively little interest, much less excitement, has been shown by New York house owners, as about 70 per cent of next winter's coal supply is in bins. Retailers for the most part are apportioning supplies among regular customers and deliveries are not promised inside of

two weeks. Retail prices range all the way from about \$14.50 to \$15.90, according to borough.

Quotations for domestic sizes at wholesale vary, depending upon the seller and buyer. There is considerable coal in bottoms, much of it owned by retailers. Very little fresh mined coal is coming forward, unless it is already sold. The old line companies are taking care of regular customers as best they can, but most independents have no coal to sell.

Quotations for coal in bottoms are reported ranging from \$15 to \$16.25 alongside, according to size, but the sales at the latter figure were doubtful. Fresh mined coals were reported as quoted at from \$12.50 for chestnut to \$14 for stove and egg, and \$11 for stock chestnut. Rice and barley are reported as "out of the market" with No. 1 buckwheat quoted at \$2.50@3.

So far as shipments are concerned the Philadelphia market is about done except for pea, buckwheat and rice. All of the larger sizes held by the companies in storage yards have been disposed of, except chestnut, and all of it has been taken up by orders.

Pea is fairly plentiful with company shippers, but it would be no surprise to see it all ordered up within the next two weeks or ten days.

One of the company shippers has increased the price of storage rice coal 25c. a ton allowing buckwheat to stand at the old figures of \$2.50. Barley is out of the market, as storage stocks have been cleaned up. Ordering for the two remaining steam sizes is very heavy, but the amount in storage will last for a couple of months yet. At this time it looks as if the suspension would be a long one.

The hard-coal situation in Baltimore shows but little change except that some of the dealers are beginning to cut heavily into their stocks and few of them are receiving shipments on delayed movement. Some have fairly liberal supplies and a few others may be classed as well stocked. Despite the strike the consuming public shows no disposition to hurry their orders. Although wholesale prices have advanced, the fact that little coal is coming in has led the local dealers to continue the August price schedule.

The anthracite trade at Buffalo is mostly at a standstill and will remain so till the miners go to work again. Next to no coal is coming here, but consumers are not greatly disturbed. Demand is not large, but it would be if a moderate supply of coal was coming in. Dealers say that they will supply all the pea or buckwheat that is demanded, but the consumer is in no hurry to get that. Prices are expected to remain where they are. Lake shipments last week comprised 4,500 tons to Sheboygan and 7,000 tons (pea) to Milwaukee. No more is expected to go till the strike is over.

Light Buying in Connellsville Coke Market

The furnace coke market at Connellsville turned quiet again in the past week. Except for a little buying by blast furnaces at intervals, the market has been made by purchases by Eastern buyers, largely the public service corporations making water gas. While there is much talk of buying by others it has not run into such tonnage as did the purchases last month of water-gas makers, for deliveries over 30 or 60 days. The market is quotable at \$3.50@ \$3.75 on the basis of recent sales, but asking prices are \$3.75@ \$4, and probably no considerable tonnage could be had at under \$4. Accordingly the gas producers will now hold off.

Blast furnaces show practically no interest. Those dependent on purchased coke are, with perhaps one or two exceptions, covered to the end of the year, if they are running, and those not running have no incentive to blow in, as pig-iron demand continues dull.

Spot foundry coke continues in light demand and remains quotable at \$4@ \$4.50, following the recent 25c. advance from a level that had held for nearly four months.

Car Loadings, Surplusages and Shortages

	Cars Loaded		Car Shortage
	All Cars	Coal Cars	
Week ended Aug. 29, 1925	1,124,436	211,683	
Previous week	1,080,107	201,095	
Week ended Aug. 30, 1924	1,020,809	169,110	
	Surplus Cars		
	All Cars	Coal Cars	
Aug. 31, 1925	162,397	40,427	
Aug. 22, 1925	195,327	53,755	
Aug. 31, 1924	231,677	111,254	274

Foreign Market And Export News

Coal Stocks Heavy, Business Light, In British Market

No improvement is discernible in the state of the Welsh steam coal trade, but colliery owners are hopeful that there will be some recovery in business before the end of September. Welsh coal prices are still relatively high as compared with other coals, especially German, but in view of its superior quality it is hoped that Welsh Admiralty will again win the favored position it formerly held and command prices some shillings above those of competing coals.

Though the position is not very favorable so far, this was anticipated because of the large stocks established and the fact that orders had been diverted elsewhere, some time being necessary to bring about normal working conditions. August exports have been little more than half those of August, 1923. Many collieries are engaged only half time. Stocks are enormous and very few pits are able to avoid temporary stoppages.

There is a slight improvement in the Newcastle coal trade. The prevailing low range of prices, and hesitancy on the part of producers to make further concessions have had some influence in stimulating inquiries from abroad. Actual orders are slow to materialize, but foreign buyers are more disposed to sound the market, and so meanwhile steam coal turns for prompt loading has filled orders nearly a week ahead. It is therefore hoped that September will bring in a large trade. Contract business shows more life.

Production by British coal mines during the week ended Aug. 29 totaled 4,085,060 tons, according to a special cable to *Coal Age*. This compares with an output of 4,425,000 tons in the preceding week.

Inquiry and Movement Gaining At Hampton Roads

Demand at Hampton Roads last week showed an increase, but it was not sufficient to cause any great advance in prices. Inquiries were heavier, and movement was on the upgrade.

As a result of recent improvement in prices many mines serving this ter-

ritory that had been idle for months were reported in operation, and some mines that were operating three days a week for many months were on a full-time schedule.

Supplies at tidewater showed a slight increase over the previous week, and movement over the piers was slightly less. Shipments to Canada were decreasing and movement to European ports was scattered.

French Market Shows Seasonal Pick-up in Domestic Demand

In the French coal market the demand for coal from mines of the Nord and Pas-de-Calais is increasing sufficiently this month to avoid stockage.

The usual seasonal revival in demand for home fuels in September has already become manifest. Screened coals are less neglected and orders from Belgium are more important than usual.

With regard to industrial grades the recent volume of orders has, in general, been maintained and in the sugar making industry fuel purchases are about normal.

Paris coal retailers were disagreeably surprised by the increase of "octroi" dues (city toll tax), not so much because of the advance in itself as by the fact that it was applied with scarcely any warning.

There is now a sufficiency of railway trucks, but river craft remain scarce and freight rates are increasing, the tariff from Bethune to Paris now being 25 fr.

Belgian Industrial Coals Weak; Domestic Grades Better

Business in industrial coals has been poor in the Belgian market. British competition seems less active, however, prices of British coal being still too high. On the French side competition is also less marked, but in the face of the very light demand these two factors have had no great effect.

All categories of industrial grades have had a poor and uncertain market, with prices on the downward grade. As to stocks, they are tremendous and a

number of collieries in the Borinage are at a loss where to deposit the smalls that they cannot sell.

The market for home fuels, on the other hand, is quite satisfactory and the anthracite grades are in particular favor.

Export Clearances, Week Ended Sept. 12, 1925

FROM HAMPTON ROADS	
For Canada:	Tons
Ital. Str. Labor, for Quebec	5,894
For Prince Edward Island:	
Br. Schr. Avon Queen, for Charlotte-	
town	1,368
For Cuba:	
Br. Str. Berwindmoor, for Havana ..	8,977
For Egypt:	
Br. Str. City of Glasgow, for Port	
Said	520
For Argentina:	
Br. Str. Maindy Court, for Puerto	
La Plata	5,600
For Italy:	
Ital. Str. Adige, for Porto Ferrajo ..	9,619
For Brazil:	
Br. Str. Antar, for Rio de Janeiro ..	9,105
Br. Str. Alnmoor, for Rio de Janeiro..	8,974
For Porto Rico:	
Amer. Str. Choctaw, for San Juan ..	2,415
For Jamaica:	
Dan. Str. Phonix, for Kingston.....	2,189
For Peru:	
Br. Str. Crosshill, for Callao	3,504

FROM PHILADELPHIA	
For Cuba:	
Ital. S.S. Oceania, for Havana.....	—
For Porto Rico:	
Am. Schr. DeWitt Brown, for	
Yabucoa	—

FROM BALTIMORE	
For France:	
Fr. Str. Wesserling, for Marseilles..	6,586
For Cuba:	
Am. Schr. Bradford E. Jones, for	
Manopla	2,052

Hampton Roads Pier Situation

(Gross Tons)			
		Sept. 3	Sept. 10
N. & W. Piers, Lamberts Pt.:			
Curs on hand		1,181	1,582
Tons on hand		69,586	98,076
Tons dumped for week.....		147,577	126,043
Tonnage waiting		5,000	15,000
Virginian Piers, Sewalls Pt.:			
Curs on hand		514	676
Tons on hand		40,550	52,650
Tons dumped for week.....		102,973	75,584
Tonnage waiting		10,600	927
C. & O. Piers, Newport News.			
Curs on hand		1,969	1,890
Tons on hand		95,315	96,210
Tons dumped for week.....		125,871	140,279
Tonnage waiting		25,530	5,736

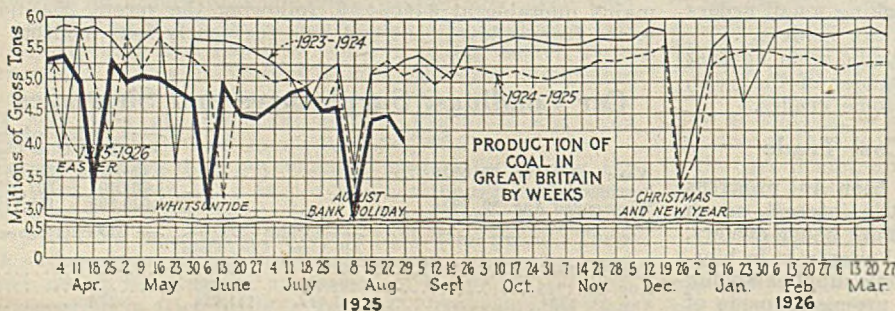
Pier and Bunker Prices, Gross Tons

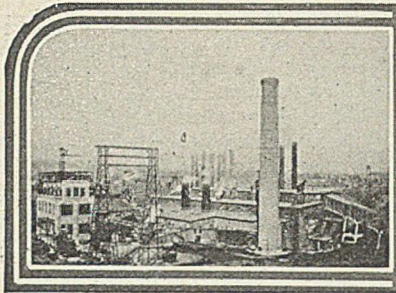
PIERS			
		Sept. 5	Sept. 12*
Pool 1, New York ...	\$5.35@ \$5.60	\$5.35@ \$5.60	\$5.60@ \$5.60
Pool 9, New York ...	4.80@ 5.00	4.80@ 5.00	4.80@ 5.00
Pool 10, New York ...	4.50@ 4.70	4.50@ 4.70	4.50@ 4.70
Pool 11, New York ...	4.30@ 4.55	4.30@ 4.55	4.30@ 4.55
Pool 9, Philadelphia ..	4.80@ 5.00	4.80@ 5.00	4.85@ 5.05
Pool 10, Philadelphia ..	4.50@ 4.70	4.50@ 4.70	4.55@ 4.75
Pool 11, Philadelphia ..	4.30@ 4.55	4.30@ 4.55	4.35@ 4.55
Pool 1, Hamp. Roads ..	5.40	5.40	5.40
Pool 2, Hamp. Roads ..	5.15	5.15	5.20
Pools 5-6-7, Hamp. Rds.	4.50	4.75@ 5.00	5.00
BUNKERS			
Pool 1, New York ...	\$5.60@ \$5.85	\$5.60@ \$5.85	\$5.85@ \$5.85
Pool 9, New York ...	5.05@ 5.25	5.05@ 5.25	5.05@ 5.25
Pool 10, New York ...	4.75@ 4.95	4.75@ 4.95	4.75@ 4.95
Pool 11, New York ...	4.55@ 4.80	4.55@ 4.80	4.55@ 4.80
Pool 9, Philadelphia ..	5.00@ 5.20	5.00@ 5.20	5.05@ 5.25
Pool 10, Philadelphia ..	4.70@ 4.85	4.70@ 4.85	4.75@ 4.85
Pool 11, Philadelphia ..	4.55@ 4.75	4.55@ 4.75	4.60@ 4.75
Pool 1, Hamp. Roads ..	5.50	5.50	5.50
Pool 2, Hamp. Roads ..	5.25	5.25	5.30
Pools 5-6-7, Hamp. Rds.	4.50	4.75@ 5.00	5.00

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

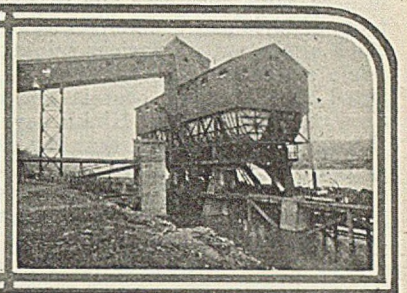
Quotations by Cable to <i>Coal Age</i>			
		Sept. 5	Sept. 12
Cardiff:			
Admiralty, large.....	24s.	24s.	@ 25s.
Steam smalls.....	12s.6d.	11s.6d.	@ 12s.
Newcastle:			
Best steams.....	14s.9d. @ 15s.6d.	15s.	15s.
Best gas.....	17s.	17s.	@ 17s.6d
Best bunkers.....	15s.	15s.	15s.

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





News Items From Field and Trade



ALABAMA

The Alabama By-Products Corporation has completed the electrification of its Wegra Mine and installed electric locomotives and mining machines. Similar improvements are under way at other operations of the corporation.

COLORADO

The International Fuel Co., of Denver, has been sold to Arthur Ponsford, Denver attorney, said to be representing coal operators of Rock Springs, Wyo., for \$71,297. Ponsford's first bid of \$50,000 was raised to the final figure later and approved by the bondholders' representatives. The purchase included 400 acres of coal land in Routt County, the property of the International.

The Red Canon mine, Delta, is running again, in compliance with the new state regulations.

Development work has begun on the Fort Lewis (Colo.) coal lands of the Pacific Steel Co. Preparations are already under way for the erection of a shaft house, and work on the shaft itself will be commenced at once. The shaft will be 4 x 6 ft. and unless water is encountered, it is estimated that the first 100 ft. can be sunk in about 90 days. The work will be done by hand, using a windlass and buckets. R. A. Gifford will have charge of the work for the Pacific Steel Co.

IDAHO

V. Hufford, of the Superior Coal Mining Co., reported recently that his company would be loading coal early this month from its mine twelve and one-half miles west of Driggs. The company has 14 beds ranging from 6 to 15 ft. in thickness.

ILLINOIS

The Forsyth Coal Co., owner and operator of the new strip mine at Ward, twelve miles south of Duquoin, started operations on a large scale the second week in September. The company owns approximately 700 acres of valuable coal land, the vein averaging 8 ft. thick about 17 ft. under the surface. The property is completely electrified, the equipment including one of the largest electric stripping shovels in operation, costing \$125,000, as well as two smaller shovels for loading purposes.

Representatives of the Illinois Steel Co. and the Brereton Coal Mining Co.,

Brereton, have been inspecting the workings of the Jackson Coal Co. at Hallidaysboro with a view of purchase. The latter property recently went into the hands of trustees for its bondholders. The mine has been operated for about eighty-three years. Originally it was owned by the Hallidays, of Cairo, but later became the property of the Jackson Coal Co. The company holds 6,200 acres, of which only one thousand has been mined.

Fire believed to have been of incendiary origin destroyed the tippie of the Consolidated Coal Co.'s Meadow Brook mine Aug. 30. Employees told authorities three men fled from the tippie a short time before the fire broke out. The loss is estimated at \$35,000. The mine has been idle for some time.

Edward H. Hebenstreit, formerly of Nokomis, who was identified with the coal mining industry in central and southern Illinois for several years, has accepted a position as superintendent of the mine of the Nason Coal Co., at Nason.

INDIANA

Fifteen hundred coal miners employed in seven bituminous coal mines in the Clinton section refused to go to the mines Sept. 4 in protest against an increase by the Clinton & Eastern Indiana R.R. in the cost of their transportation from their homes to the mines. Monthly train tickets to the miners, formerly sold for \$1.10, were raised in price to \$2.50. The increase was authorized by the Indiana Public Service Commission.

IOWA

The Sheriff mine, one mile south of Lovilia, which was formerly owned by the Sheriff Mining Co., was sold recently to Rosenbaum & Co., Centerville, who in turn disposed of the mine to a group of men of Lovilia, who have organized a new corporation known as the Lovilia Coal Co. The mine will operate on a larger scale this winter than last year.

KENTUCKY

Contract was let the first part of September by the Imperial Elkhorn Coal Co., Sergent, for the erection of a clubhouse.

Effective Sept. 1, C. R. Bourland, of Stone, was promoted to the position of chief engineer of the Fordson Coal Co., succeeding S. E. Puckette, who is now

engineer in charge of the undeveloped Peabody acreage of Fordson company in Clay and Leslie counties.

MASSACHUSETTS

More anthracite was moved into New England in August than in any other month since records of such receipts were first compiled, in 1916. Total rail and tidewater receipts are estimated at 1,150,000 net tons, or more than 25 per cent in excess of the 913,500 net tons received in August, 1924. The highest previous mark was 1,110,000 tons in July this year. The figure for June was 921,000; May, 953,000, and April, 756,000 tons.

Leaving Port Talbot, Wales, the day following the settlement of the British coal strike, the British steamer Pacific arrived at Boston, Sept. 8, with over 4,200 tons of Welsh anthracite, which was unloaded at the Metropolitan Coal Co.'s terminal in Chelsea. Captain Beveridge said that there were two other steamers loading when he left, which were destined for North Atlantic ports, and that it was the opinion generally through the Welsh coal trade that a considerable quantity of coal would be exported hither during the strike in this country.

Transportation facilities are available to bring 2,000,000 tons of low-volatile bituminous coal to Massachusetts during the next seven months in the event that suspension of operations in the anthracite region continues, according to C. A. Rice, of the Bureau of Service of the Interstate Commerce Commission. This statement was made in answer to a telegraphic inquiry addressed to Chairman Aitchison of the commission, by Governor Fuller of Massachusetts.

Governor A. T. Fuller of Massachusetts on Sept. 9 named Eugene C. Hultmann, chairman of the Commission on the Necessaries of life, and the other two members of the commission, Charles H. Adams and William A. Kneeland, emergency fuel administrators. The administrators will be vested with war-time powers with regard to the sale and distribution of fuel for the duration of the anthracite strike.

MISSOURI

In conjunction with the "Burn Missouri Coal" drive launched by the State Bureau of Labor recently, Roy B. Hinkle, State Labor Commissioner, held a conference in Kansas City, Sept. 9, to stimulate the Missouri coal industry.

Miners, mine operators and representatives of civic and commercial organizations in the state's various mining districts attended. A recent survey indicated that Missouri coal is not being used very extensively. Hinkle says that this is due to the fact that the people of the state do not know that Missouri has high-grade coal deposits, comparing favorably with those of southern Illinois and other soft-coal states.

Fire which originated from hot cinders taken from the airshaft of the Smarr and Richards coal mine, three miles northeast of Columbia, destroyed all equipment at the mine recently. The damage is estimated at approximately \$1,000.

NEW YORK

W. A. Reed, sales agent of the Philadelphia & Reading Coal & Iron Co. in Buffalo territory, was struck by an automobile on Sept. 4, while crossing a street afoot. He was injured about the head and body, but will be able to return to business in a few days.

J. Lee Hornor, of Clarksburg, coal operator, has established an agency in Buffalo with the Ford-Southward Coal Co.

J. N. Robinson, for some time connected with the Buffalo coal trade, has opened an office under the name of the Niagara Fuel Co., at 762 Bramson Building.

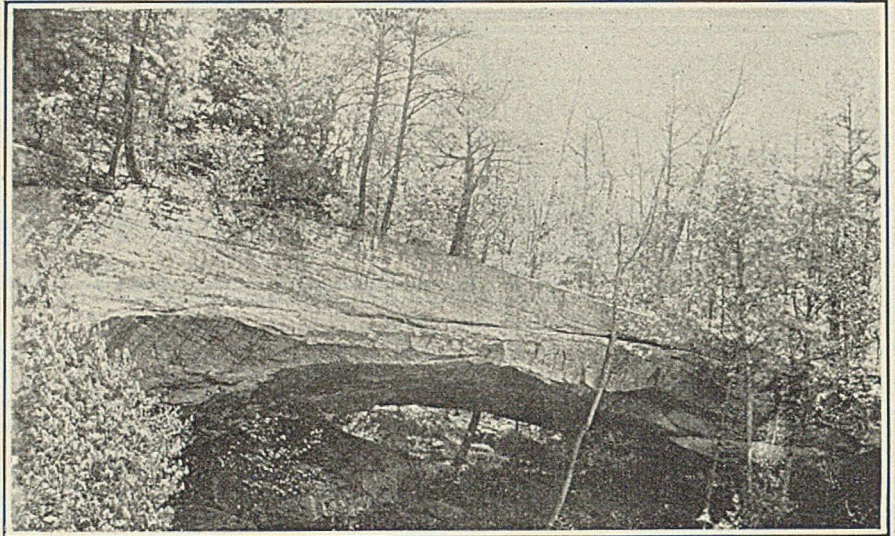
OHIO

The Wayne Coal Co., of Pittsburgh, owning two stripping operations in Perry County, resumed work Sept. 10 at one of the mines after an idleness of about seven months. In all, 100 men were given employment.

The Black Diamond mine of the Maher Collieries Co., at Neffs, resumed operation Sept. 2 after a shutdown extending from April. Two hundred men are employed. The Maher Collieries Co. now has three of its larger mines in operation, the other two being at Stewartsville and Willow Grove.

Clarence Pierce and Lewis Russell, arrested several weeks ago for complicity in the burning of the tippie at the Blackstone mine, Pomeroy, and other depredations, have been released from custody. An investigation failed to show that the two men were connected with the burning. Both were miners employed at the Blackstone mine.

Directors of M. A. Hanna Co. have suspended dividend payments on the company's first preferred stock. A quarterly dividend of 1½ per cent was due to be declared at this time. About three months ago the directors suspended dividends on the second preferred stock. For the three months ended June 30 the company reports operating income of \$259,367, against an operating loss of \$102,687 reported in the March quarter. After allowing for all charges, including reserves for interest, depreciation and federal taxes, a deficit of \$101,880 was reported for the June quarter, against a deficit of



A Natural Bridge in the Coal Country of Southern Kentucky

The arch has a clear span of about 70 ft. and in the narrowest place measures 32 ft. across the top. This bridge is on Rock Creek near Oz, a village on a rural mail route from Yamacraw.

\$413,647 after similar deductions reported in the March quarter. For the first half of 1925 net operating income amounted to \$156,680, against \$378,091 in the first half of 1924. After similar deductions, the deficit for the half-year period aggregated \$515,627, against a deficit of \$458,376 reported in the first six months of 1924.

The Broscalasa mine, at Syracuse, near Pomeroy, has resumed work under the Jacksonville scale with about 30 men. The mine was opened to supply fuel for two salt mines operated by the same company.

A petition in voluntary bankruptcy was filed, Aug. 24, in federal court, by the Buckhorn Collieries Co., Cleveland, through its president, W. G. Walters. Liabilities were placed at \$348,184 and assets at \$327,797. The company operates in Tuscarawas and Guernsey counties.

PENNSYLVANIA

K. M. Coolbaugh, superintendent of the Philadelphia employment office of the State Employment Bureau, has been assigned by Richard H. Lansburgh, Secretary of Labor and Industry, to make an immediate investigation of employment conditions in the anthracite area in industries other than coal as a result of the anthracite miners' strike. "Mr. Coolbaugh is the senior superintendent of the department," said Secretary Lansburgh, "and is especially qualified to advise as to ways in which the employment bureau of the department may be of service to those who are temporarily out of employment in other industries because of the strike in the mining industry."

The Pennsylvania Coal & Coke Co. reports a deficit of \$55,000 for the month of July, against a deficit of \$47,000 in July, 1924. In the first seven months of the year the deficit was \$405,041, after all charges, compared with a deficit of \$188,000 in the same period last year.

TENNESSEE

The Cumberland Coal & Iron Co., 149 Broadway, New York, of which A. M. Wickwire is president, is reported to be planning reopening its coal mines in Dayton, and will carry out an expansion plan.

O. P. Pile, Chief Mine Inspector, and the Board of Mine Foreman Examiners will hold an examination for mine foremen in the Federal Building at Knoxville, Oct. 1 and 2.

VIRGINIA

J. H. Dimling, for many years in charge of the steamship department of the Raleigh Smokeless Fuel Co., at Norfolk, has resigned to become vice-president and treasurer of the Tidewater Coal Inspection Bureau in charge of the steamship and custom house department. He has been succeeded in the coal business by J. M. Miller, who has served in another capacity with the company for several years.

WASHINGTON

Suit for \$37,507 damages for alleged violation of lease charges was filed in Superior Court at Seattle Sept. 3 by the Birdseye Coal Co. against the Klangley Coal & Clay Co. The plaintiff company seeks recovery of the sum in connection with coal lands leased from the defendant in 1924 in section 28, township 22 north, and range 7 east, King County. The Klangley company is charged with breaking its contract with the plaintiff in order to obtain a "higher royalty" and "to cheat and defraud" the lessee. According to the complaint, the Birdseye company, after leasing the land, spent \$12,507 in buildings, roads and equipment preparatory to mining coal for the present season.

WEST VIRGINIA

Coal mines in the 12 counties of northern West Virginia produced 522,500 net tons of coal in the week ended

Sept. 5, compared to 555,550 net tons the previous week. In the same week 190 coal mines out of 364 worked daily on the average. In the 10 weeks preceding Sept. 5 the mines of northern West Virginia produced 4,841,900 net tons, an average of 484,190 tons a week. The peak tonnage was reached in the week ended Aug. 29.

James Elwood Jones, of Switchback, McDowell County, coal operator, was the largest income tax payer in West Virginia in 1924, according to newspaper reports, at \$96,160.33. William McKell, of Glen Jean, another operator, paid \$43,160.33. M. L. Hutchinson, of Fairmont, president of the Hutchinson Coal Co., paid \$20,676.35; Clyde Hutchinson, of Fairmont, vice-president of the Hutchinson Coal Co., paid \$10,835.12; Sprigg D. Camden, of Parkersburg, of the Monongah Co., which represents the Camden heirs in royalties paid by the Consolidation Coal Co. on coal land between Fairmont and Clarksburg, paid \$10,296.96.

The West Virginia Department of Mines failed to observe first-aid day at Wheeling incident to the state fair last week. The Bethlehem Mines Corporation planned to send a team to compete, but learned early in the week that the annual first-aid contests would not be held.

A number of coal companies in northern West Virginia will observe Fire Prevention Week, Oct. 4 to 10. The Consolidation Coal Co., it is reported, will observe the special occasion.

In an effort to kill the shipment of reconsignment coal to Portsmouth scales—which is merely the shipping of coal from the mines before it is ordered in the hope that some customer will come along—the Norfolk & Western Ry. announces that after Sept. 15 coal loads will have only 24 hours at Portsmouth, Ohio, for rebilling, and after that will draw down regular demurrage charges.

The New River Co., which operates 15 mines in West Virginia, now employs a general director of safety. Arch Forbes, formerly superintendent

of the Cranberry No. 1 mine, is filling the new position. Mr. Forbes had considerable experience in first aid and mine rescue work before going with the New River Co. as superintendent of the Cranberry mine.

W. H. Forbes, of the U. S. Bureau of Mines, Huntington, reports that there are now 33 mines of the state on 100 per cent first aid training, and that it is expected that there will be a total of 55 in this class by the end of the fiscal year, June, 1926.

The Eagle mine of the Clark Coal & Coke Co., near Hepzibah, which is working on the American plan, claims a record in that it worked 309 days in one year. The non-union miners loaded 5,007 steel hoppers in the year, mining 280,552 tons of coal.

The Stover Coal Co., at South Nuttallburg, Fayette County, on the main line of the Chesapeake & Ohio Ry., will resume operations at once, having been closed down since the first of last April. Holly Stover, of Chicago, well known merchandiser of West Virginia smokeless coals, is president of the company. The output of the mine will run 500 tons per day and the company will employ about 200 men.

The New Cumberland Coal Co. property of 360 acres in Brooke County was sold on Aug. 26 to the United States Annuity Co., of Pittsburgh, for \$25,000.

Preparations are being made by the Stonega Coal & Coke Co. to open its No. 6 mine, at Eccles, and to employ 125 men at that place. The Eccles mine has been closed for about six months. Other mines in Fayette county are employing more men and operating on a more extensive scale.

J. T. Dunigan, vice-president and general manager of the Coal River Collieries Co., of Huntington, has presented a plan to the Huntington Coal Exchange for a permanent coal exhibition for the demonstration of coal values and also for coal burning equipment. A committee of the exchange has been designated to work out the details.

The Consolidation Coal Co. has decided to close for the time being at least its Mine No. 37, at Berryburg, W. Va., after operating 25 years. The various mine structures are being dismantled and the steel is being shipped to other operations. The long haul to the present tippie made it impracticable to operate the mine under existing high cost of mining and the low price of coal. The company has available for mining in the Berryburg section about 10,000 acres of coal in the Pittsburgh seam. It is understood that the property will be worked from three different openings, one of which will be on the Bear Mountain road, the product moving by way of Flemington, and another in all probability will be on Brushy Fork. At one time 600 men were employed at the mine and it loaded as many as 66 railroad cars a day.

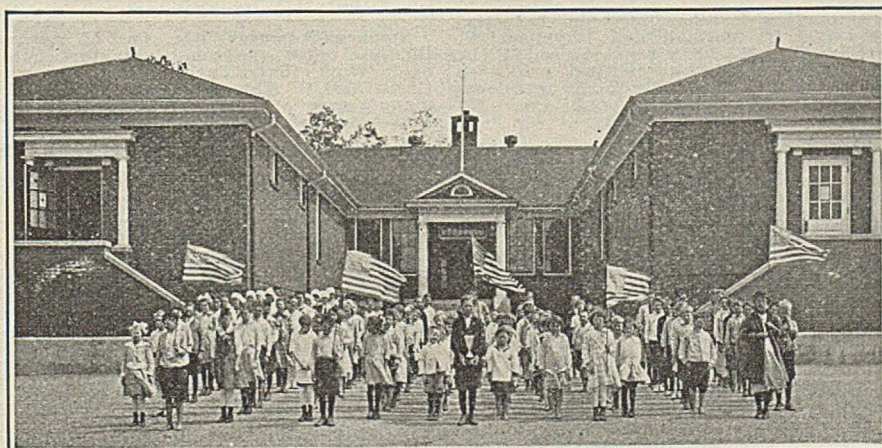
Twenty-five non-union coal miners joined the United Mine Workers at a recent meeting held at Kilarm, according to officials of the union.

Ground will soon be broken for the development of a third mine of the New England Fuel & Transportation Co. near the Arnettville hill in Monongalia County, according to newspaper reports. The project, which, it is reported, will be the third largest producing mine in the country, was planned more than four years ago, but no work was started on it previously. Officials at Grant Town, where Federal No. 1 is located, decline to comment on the project.

The Consolidation Coal Co. resumed operation at mine No. 97, at the Rivesville power plant of the Monongahela West Penn Public Service Co., recently. This was the last mine that the company had worked union and paid the 1924 wage scale, which it signed with the United Mine Workers following the Baltimore conference.

By Oct. 15 the Pond Creek Pocahontas Coal Co., at Bartley, McDowell County, will have completed an extensive improvement and development program. The company recently completed a big modern steel tippie and now has under construction 300 additional homes for miners, all modern and well equipped. The Pond Creek Pocahontas company is a subsidiary of the Island Creek Coal Co.

Judge I. Grant Lazelle, of the Circuit Court of Monongalia County, W. Va., issued a temporary injunction on Aug. 29 restraining the Connellsville By-Product Coal Co. and the Cochran Coal & Coke Co. from mining coal in the Pittsburgh seam under the main headway of the Sewickley seam of the Continental Coal & Coke Co.'s Liberty mine on Scott's Run. The plaintiff company in presenting its case contended that the property and lives of workmen were endangered by the mining of coal beneath the main entrance of its operation. A bill was introduced at the last session of the West Virginia Legislature to protect overlying and underlying seams. The bill, however, was never reported from committee so it is probable that there will be continued litigation where opera-



"The Grand Army of the Republic"

Few sights are more inspiring than a parade of school children. The above could hardly be termed a parade, but is rather a formation. Even at the coal mines—this is the white school at the Edgewater (Ala.) Mine of the Tennessee Coal, Iron & R.R. Co.—the younger generation is given every opportunity to develop mentally. More and more in this country ignorance in an adult is coming to be regarded as something closely akin to a positive crime.

tions are undertaken by different companies in two different seams, one beneath the other.

WYOMING

The Lionkol Co. reopened its mine at Lionkol Aug. 25 with a full crew of 150 men; every house in the Lionkol village, 65 in all, is occupied, and the company will soon reopen the company store at that place. Under present indications, the Lionkol mine will be operated six days a week with a full shift of men. The company is now producing 1,000 tons of coal daily, and expects before long to be up to capacity, which is about 2,000 tons daily. The power plant at Blairtown also was started again. This plant supplies power to both the Blairtown mine and the Lion mine of the Lionkol company. The Blairtown mine is to continue in operation.

CANADA

A deficit of \$88,599 was shown by the Blue Diamond Coal Co., Ltd., Alberta, during the year ended June 30, 1925, according to the latest balance sheet sent to shareholders. This deficit is due to fixed charges, interest paid, accounts receivable written off, and sundry adjustments, and increases the deficit account to \$174,995. The deficit for the past year compares with one in the previous year amounting to \$86,395.

The International Coal & Coke Co., Ltd., Coleman, Alta., plans the installation of an all-steel tippie and dry cleaning plant with a capacity of 350 tons per hour. The contract has been let to the Manitoba Bridge & Iron Works, Ltd. The structure will be fireproof throughout and equipped with the latest modern facilities, including dry cleaning tables for the proper preparation of the coal. The sizing is to be done by Hummer screens and the cleaning tables will be the product of the American Coal Cleaning Corporation, of Welch, W. Va., and similar to the machinery installed in the Blairmore plant by the West Canadian Collieries, Ltd., last year.

Output of coal from Canadian mines in June totaled 732,759 tons, as against 666,756 tons in May, being an increase of 9 per cent, but 32 per cent below the average June production for the last five years. There were slight gains in the provinces of New Brunswick, Alberta and British Columbia. Imports of coal in June from the United States and Britain were 1,470,416 tons, as compared with 1,237,755 tons in May, an increase of 19 per cent, but 9 per cent below the five-year average. Imports of anthracite totaled 407,521 tons, being 19,375 tons below the tonnage imported in May, but about 5 per cent above the 5-year average for the month. Exports of Canadian coal were 43,296 tons, as compared with 37,894 tons in May, an increase of 14 per cent, but a decrease of 68 per cent, as against the five-year average for June. The total number of men employed in the coal mines of Canada during June was 18,611, as compared with a total in May of 14,337. Production per man was

39.4 tons in June as against 46.2 tons per man in May. During June the production per man-day was 3.3 tons as compared with 2.3 tons in May.

A new process for the treatment of bituminous coal, lignites or oil shales for the production of fuel oil and valuable byproducts is under consideration by the federal Department of Mines and the officials of the Canadian National Railways, who are asked for assistance to demonstrate its feasibility. It is claimed that the process, which is controlled by a British company, can be carried on in units of as low capacity as 75 tons a day, which will permit of its being started with a comparatively small investment.

"A study of the anthracite situation in Ontario and Quebec indicates no immediate cause for alarm," stated S. J. Cook, chief of the mining, metallurgical and chemical branch of the Dominion Bureau of Statistics, last week, in commenting on the probable immediate effect in Canada of the tie-up in the United States anthracite field. "In Canada there has been a decided movement toward the further use of Canadian coals for domestic purposes, and the Dominion Fuel Board also has consistently advocated the use of coke as a household fuel. At the last session of Parliament steps were taken to increase the production of coke in Canada by providing financial assistance for companies undertaking to establish coke-making plants."

Publications Received

The Application of Hyperbolic Functions to Electrical Engineering Problems, by A. E. Kennelly, professor of electrical engineering, Harvard University and Massachusetts Institute of Technology. Third edition. Pp. 352; 5 1/2 x 8 1/2 in.; illustrated. Price, \$3.50. In this edition certain parts of the original text have been replaced by new and more recent material, a few corrections effected and five new appendices added. McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City.

Composition of Technical Papers, by H. A. Watt, professor of English, New York University, and P. B. McDonald, assistant professor of English, New York University. Second edition, revised and enlarged. Pp. 429; 5 x 8 in. Price, \$2. McGraw-Hill Book Co., 370 Seventh Ave., New York City.

Accounting for the Petroleum Industry, by David F. Morland and Raymond W. McKee. Pp. 285; 6 x 9 in. Price, \$4. A description of the accounting principles and procedures applicable to the petroleum industry. McGraw-Hill Book Co., 370 Seventh Ave., New York City.

Structure of Parts of Northeastern Williamson and Western Saline Counties (Illinois), by Gilbert H. Cady. Department of Registration and Education, State Geological Survey, Urbana, Ill. Pp. 20; 6 x 9 in.; illustrated. Report of Investigations No. 2.

The Master Gyrotory Screen. H. W. Falker, Ashland, Pa. Pp. 10; 6x9 in.; illustrated. Describes the operation of this screen which, in addition to being used at coal plants, can also be used for handling stone, sand, gravel, ores, etc.

Annual Report of Coal Mines of Alabama, 1924. Pp. 126; 6x9 in.; tables.

Mine Timber, Its Selection, Storage, Treatment and Use, by R. R. Horner and Harry E. Tufft, with a chapter on **Methods of Prolonging Life of Mine Timber**, by George M. Hunt. Bureau of Mines, Washington, D. C. Bulletin 235. Pp. 118; 6x9 in.; illustrated. Describes some of the benefits and economies to be derived by selecting, preparing, storing, preserving and utilizing mine timber and gives specific information on certain preservatives and processes.

Coming Meetings

National Safety Council. Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

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

Electric Power Club. Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

American Welding Society. Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

Canadian Institute of Mining and Metallurgy. Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

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

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

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

Industrial Notes

The Koehler Manufacturing Co., Inc., Marlboro, Mass., has opened a new branch at 2012 L. C. Smith Building, Seattle, Wash. William C. Shaw, mining engineer, has just been made representative of the company for the Northwestern states, including Alberta, Can.

W. C. Davis, president of Foote Bros. Gear & Machine Co., recently was appointed a member of the committee on commercial gear standards of the American Gear Association.

W. McNamee, formerly purchasing agent for the Holt Mfg. Co., of Peoria, Ill., recently joined the sales organization of the Foote Bros. Gear & Machine Co., of Chicago. Mr. McNamee has been appointed district representative for the State of Indiana and all of Illinois except that section lying west and south of Springfield, which is handled from the St. Louis office. Territory within a radius of 35 miles of Chicago in both Indiana and Illinois is handled from the home office.

The plant, property and good will of the **Strom Ball Bearing Mfg. Co.**, Chicago, were acquired Aug. 24 by the **Marlin-Rockwell Corporation**. The business of this company will be conducted exactly as heretofore under the direction of the same personnel and department heads. The same lines of bearings under the Strom trade name will be continued as at present.

Stephens-Adams Mfg. Co., of Aurora, Ill., has taken the sole rights for chains made from "Farrell's 85 Special Purpose Cast Steel." This steel is used in the manufacture of chains for elevators and conveyors and for power transmission.

Recent Patents

Means for Refining Coal Slimes; 1,539,746. Jan Willem Kleinbentink, Hoensbroek, Limburg, Netherlands. May 26, 1925. Filed Nov. 6, 1923; serial No. 673,207.

Spraying Mechanism for Coke Ovens; 1,541,621. Mario Carini, Belle Vernon, Pa., assignor of one-half to Arthur Vannucci, Belle Vernon, Pa. June 9, 1925. Filed April 23, 1924; serial No. 708,480.

Coal Washer and Separator; 1,542,627. Wm. F. Martin, Harrisburg, Pa. June 16, 1925. Filed Jan. 19, 1925; serial No. 3,461.

Dump Car; 1,542,914. Carl V. Shanaberger, Indiana, Pa., assignor to Mine Appliances Co., Pittsburgh, Pa. June 23, 1925. Filed Nov. 25, 1921; serial No. 517,432.

Mine Door; 1,543,005. Frederick A. Guth, Columbus, Ohio. June 23, 1925. Filed March 17, 1922; serial No. 544,600.