

respective adherents into their own treasury. This is warranty that there is more controversy in store.

Whether he does right or does wrong the poor capitalist must bear the brunt of it. Previous to the adoption by the committee, considering the British Mines Act, of the clause referring to baths at pit heads the Durham miners, by an overwhelming majority, decided that their adoption should not be compulsory. The committee finally took that view, and now the rejection of the compulsory clause is laid to the door of the operators.

There's no pleasing of some folks. The complaint of the Springhill people was that the ex. General Manager had far too much dignity; now the complaint is that the functionary who supposedly succeeded him has not quite enough. Possibly he may attain to the happy medium some day and make glad the hearts of the wailing ones.

THE JEFFREY SINGLE ROLL COAL CRUSHER.

The knowledge of the higher efficiency obtained by using stoker coal in a finely divided state has led to a demand for as small sizes as may be consistent with practical firing. The two or three inch lump formerly considered satisfactory has been reduced to one inch and smaller depending upon type of stoker.

Conditions in the coal trade are changing rapidly. The demand for screenings is growing to such an extent that, in many sections it is already greater than for lump or run mine and exceeds the output of the mine screens.

To meet this demand and to dispose of the surplus lump, many operators are finding it necessary and highly profitable to install crushers for reducing lump to the sizes called for. The Jeffrey Single Roll Crusher is capable of giving any product required, from the largest to the smallest size, in a single operation, and by a single process of adjustment.

The Jeffrey Single Roll Crusher will reduce large lumps and run-of-mine coal to stoker size in a single operation.

It will receive coal in any volume direct from a track hopper, grab bucket or mine car without the use of any mechanical device for regulating the feed.

It can be started up under full load and cannot be flooded or choked down.

It is easily adjusted and has large range for size and capacity.

It consumes but little power.

Costs little to install.

Occupies small space in proportion to its capacity. It is ruggedly built, simple in construction and will work well under adverse conditions.

All joints are machined.

All parts are easily accessible.

It is provided with an efficient safety device which protects against shock and accidents.

The construction of this crusher is very rapid, and it will stand the most severe service. Our designs may almost be called brutal for the care the crushers receive and the use to which they are put call more for brute strength and endurance than for any over refinement of parts, and yet these machines are well proportioned.

The design is extremely simple consisting of a heavy cast iron frame in which are mounted a crushing roll and breaker plate. The breaker plate is hinged at its upper edge and is held in position by a pair of

adjusting rods at the lower edge by means of which the clear opening between the breaker plate shoe and the surface of the roll can be varied to give any product required.

The concave breaker plate acting in conjunction with the roll makes a form of maw with a very small angle of repose; hence the machine will readily grip a very large lump and reduce it to such a size as to pass through the opening between the roll and plate. A countershaft is mounted directly on the machine and drives the roll through such a heavy pair of gears that sufficient torque is obtained to start the roll under all conditions of load. The machine cannot become overloaded or clogged up under any volume of coal. By making all reductions simultaneously, it accomplishes in a single operation results which usually require two operations in two separate machines.

Toothed segments are bolted to the convex surface of the drum so as to completely cover it. The frame and hopper are so arranged that by moving the light steel guard plates access may be had to the bolts and the segments removed and replaced by new ones without disturbing either the roll or the hopper. This will be found very convenient when crusher is installed in connection with a large hopper or complicated chute. The long hooked teeth not only act as feeders but they positively grip the large pieces and break them up to a size to readily enter the maw of the machine.

Narrow gaps in the shoe of the breaker plate enable the long teeth to pass without dragging oversize pieces with them. This arrangement makes it possible to handle large pieces and reduce them to the requisite fineness.

By making the smaller teeth on the segment of the peculiar shape shown, the proper reduction is made with a minimum amount of slack. The toothed segments are usually of a very hard iron, each segment being in a single piece. This forms a very durable and satisfactory roll surface. For exceptionally severe work, the long teeth are made of cast steel and inserted into the body of the segment or the segments are made entirely of manganese steel.

The driving pulley is not keyed to the shaft but is mounted on a separate hub which it drives through a set of wood pins inserted in holes in the arms of the pulley. When undue strain comes on the machine from any cause, these wood pins shear off and the roll stops while the pulley keeps on revolving, thus forming a very efficient safety device. After the cause of the trouble is removed, new wood pins put the machine in operative condition.

A pair of heavy springs are placed on the tension rods. These springs do not move under ordinary working conditions but when an undue pressure comes on the breaker plate, act as cushion giving way slightly, taking up the inertia of the parts and allowing time for the pins to shear without breaking more important elements in the machine.

The frame is of the box type section very stiff and rigid. All joints are machined and all parts made to jig so that repairs can readily be furnished. Bearings are liberal and lined with the best grade of babbitt metal. Lubrication is obtained through compression grease cups.

The Jeffrey Single Roll Crusher is especially adapted for electric motor drive. A belt from the motor pulley to the band wheel on the crusher being usually all that is required. When space is very limited the pulleys and belts are replaced by a pair of gears, having the same safety device.

The Jeffrey Company will shortly issue a bulletin giving full details of this excellent machine.