R. A. WILDER.

Colliery Plant.

No. 167,719. Patented Sept. 14, 1875.

Fig: 1.

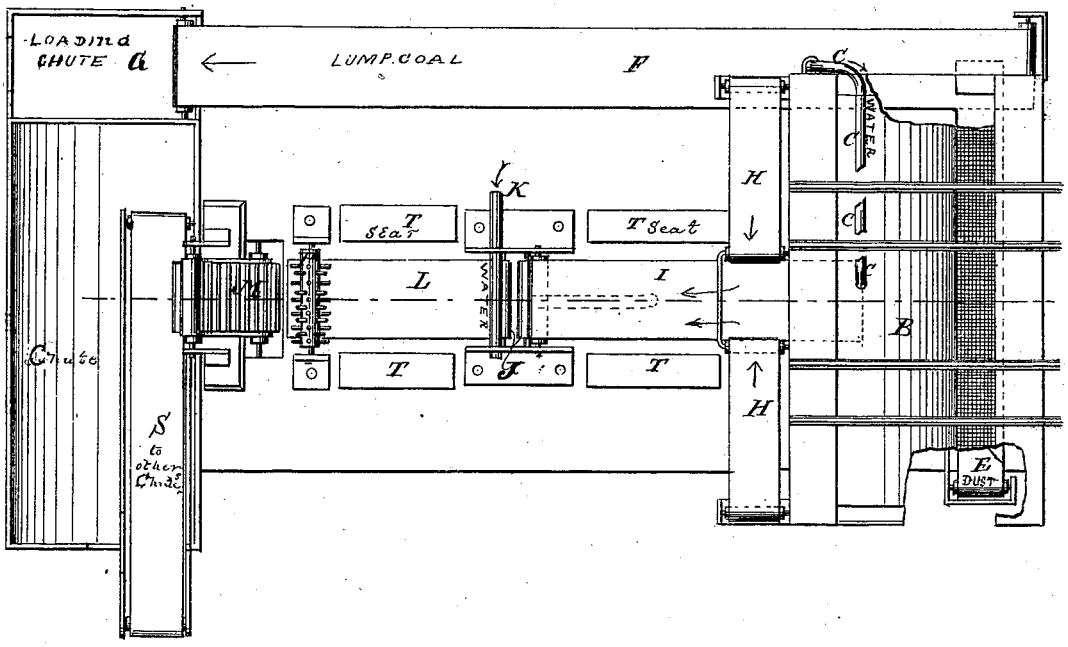
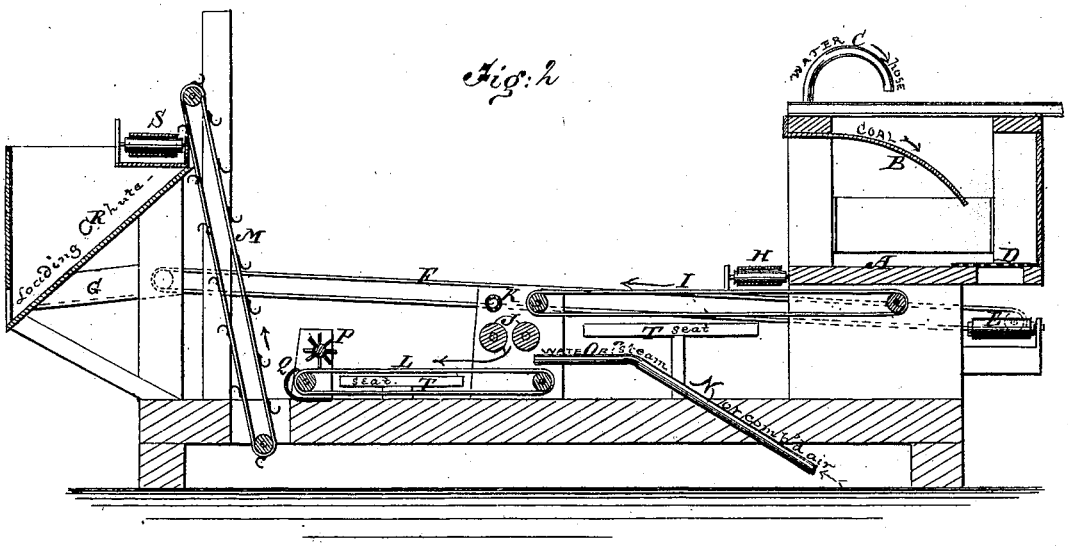


Fig: 2.



Witnesses:

Chas. Nida.

A. Seigneret

Inventor:

R. A. Wilder

Per Munn & Co

Attorneys.

UNITED STATES PATENT OFFICE.

RUFUS A. WILDER, OF CRESSONA, PENNSYLVANIA.

IMPROVEMENT IN COLLIERY-PLANTS.

Specification forming part of Letters Patent No. **167,719**, dated September 14, 1875; application filed August 12, 1875.

To all whom it may concern:

Be it known that I, RUFUS A. WILDER, of Cressona, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in Colliery-Plant, of which the following is a specification:

The object of this invention is to furnish a more economical mode of constructing and operating a colliery-plant than has been heretofore used, by dispensing with all the ordinary high buildings and trestle-work connecting the mines with the loading-chutes and breaking machinery and screens.

The invention consists in the construction and arrangement of parts hereinafter more fully described, and specifically pointed out in the claims.

Figure 1 is a plan view of my improved colliery-plant, with some parts broken out, and Fig. 2 is a longitudinal sectional elevation.

Similar letters of reference indicate corresponding parts.

A is the assorting-platform, on which the coal is delivered from the mine on the chute B. C is a pipe for discharging water under pressure on the chute, to wash off the dirt. The part D of this platform, on which the coal falls, is a screen to let the water escape, also the fine dust and dirt. E is the conveyer, at the rear of the platform, for receiving the fine dust, impure coal, &c., to conduct it to wagons to be driven away. F is the side conveyer for receiving the lump-coal from the assorters and carrying it directly to the loading-chutes G. H H and I are the conveyers for receiving from the assorters that which is to be broken, and conducting it to the breakers J. K is a slotted water-pipe for discharging a thin stream of water on the breakers, to prevent the dust from rising. L is the conveyer for receiving the coal from the breakers and delivering it to the elevator M. N is a pipe for delivering a forcible stream of water on conveyer L, to be discharged from pipe O in the same direction in which the conveyer moves, or in the opposite direction. Q is a separating-plate under the breaker. P is a revolving rake, operating above the separating-plate. R are chutes at the head of the elevator, to receive the coal for loading. S is a movable conveyer at the head of the elevator; and T represents the seats along the conveyers for the attendants.

The method of operating my improvement is as follows, viz: The coal is brought from the mines in the usual way, and dumped into the chutes above the platform. When it is covered with dirt from the mines it can be washed, by means of the attached hose, with water under pressure. The fine parts unfit for use, as well as the water, run off below the platform. In this state, the men employed on the platform to assort the coal can easily distinguish the pure from the impure, and cast the latter upon the conveyer, to the rear of the platform, which carries it to the dirt-wagons or elevators for that purpose, while the former is separated, if desired, and the lump and such sizes as it is not desired to break are thrown upon the side conveyer, which takes it directly to the loading-chutes, while the rest is thrown upon the conveyers in front of the platform and moved to the breakers, of which only one is shown in this example.

Over the breaker is a slotted pipe, which throws a thin stream of water, if desired, into the breaker, to lay the dust produced by breaking the coal. As the coal falls from the breaker upon the next conveyer, which delivers it to the elevator, it may be struck by a forcible stream of water, steam, or compressed air from the pipe under the breaker, to assist in spreading the coal over the surface of the conveyer, and partially separate it from the slate, which, being mostly in flat pieces, will not roll forward with the coal, but remain quiet on the surface of the conveyer and be readily removed by pickers. Along each side of the conveyer boys or men are seated, to pick out impurities, if any are found at this point, and, as all the coal and contents of the conveyer pass before each one on its way to the elevators, there is hardly a chance for any slate or other impurity to escape notice. Besides, at the end of the conveyer there is a thin opening under a separating-plate, to take out small, thin pieces of slate not observed by the pickers, while the revolving rakes assist in moving the coal over this plate to the buckets of the elevator, which take the coal to the head of the chutes, where it may be screened and separated, if desired.

The movable conveyer at the head of the elevator is used to convey and separate the coal, as conveyed from the main chutes to any number of chutes or platforms placed parallel to the tracks of the railroad, on either side, for purposes of storing, and to temporary structures for shipping purposes, in case of the destruction of the main structure by fire. The movement of coal by means of these conveyers is not attended with the waste that results from other modes of handling, now in use, by long chutes and shoveling.

The whole operation, after the coal is assorted on the first platform, can be made nearly automatic, and it is probable that the combination of the pressure-pipe beneath the breaker, with a properly-regulated movement of the conveyer in either direction, and the separating-plate, will result in cleaning the coal so as to entirely dispense with the pickers along the side seats of the conveyers.

The principal machinery, being arranged upon the ground on solid foundations, away from the principal wood-work, cannot be destroyed nor thrown out of line or working order, so that it will operate with great economy and permanency.

It is evident that the movement of the machinery can be given by gearing, belts, shafts, or ropes, of any suitable arrangement, and I do not, therefore, introduce either in my plan.

The arrangement and number of the conveyers can be greatly modified, if desired, without really changing the general character of my improvement, and I desire to be understood that I do not limit myself to any particular arrangement.

A revolving raker is formed by inserting teeth, at suitable distances apart, in a small cylinder, or the teeth and cylinder may be cast together.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The assorting-platform, in combination with chutes, screens, and conveyers.

2. In combination with an assorting-platform, the conveyer to take the coal directly to the loading chutes or pockets.

3. The pressure-pipe under the breaker, in combination with the conveyer, whether moving with or against the current from the pipe.

4. The seats or benches and conveyer, placed parallel to each other, allowing the latter to carry the mixed coal and slate in front of the former, as described, so that the coal and slate will pass before all the pickers.

5. The revolving raker P, in combination with the conveyer L and slate-separator Q.

6. The combination of the conveyer at the top of the chutes, with the breaker J, conveyer L, elevator M, and storing pockets or platforms, substantially as set forth.

R. A. WILDER.

Witnesses:
D. H. ALBRIGHT,
W. W. GRAY.