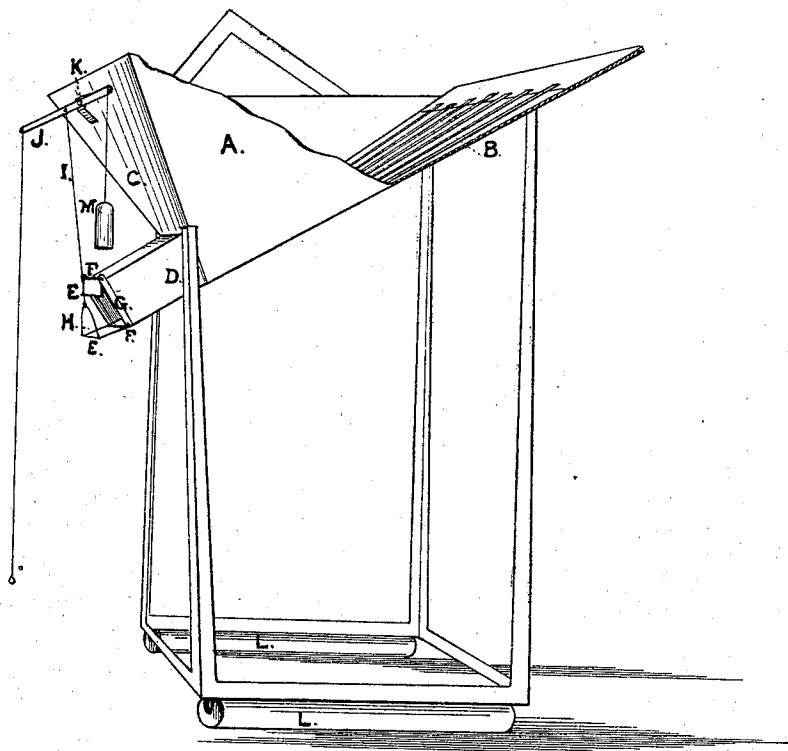


J. FLANAGAN.
Coal-Screens and Chutes.

No. 147,758.

Patented Feb. 24, 1874.



Witnesses:

J. J. Lister
Edward B. Osborn

Inventor:

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att'y.

UNITED STATES PATENT OFFICE.

JAMES FLANAGAN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN COAL SCREENS AND CHUTES.

Specification forming part of Letters Patent No. 147,758, dated February 24, 1874; application filed August 2, 1873.

To all whom it may concern:

Be it known that I, JAMES FLANAGAN, of the city and county of San Francisco, State of California, have invented an Improvement in Coal Screens and Chutes combined; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters marked thereon.

My invention relates to an improved construction of a coal screen and chute combined, to be employed at coal-mines to transfer the coal to bunkers or cars, and screen it as it is taken from the mine, and also to screen and dump it into carts as it is taken from the ship at the wharf, whereby the necessity of employing independent chutes and screens is avoided. This invention consists of a rectilinear frame, suitably braced, upon which a hopper with screen-bars is placed. The lower end of the hopper is provided with a mouth-piece, to which is affixed horizontal folding doors, which open outwardly by pressure of the coal against them, when a pivoted lever, weighted at one end, is raised. Rollers are attached to the bottom of the frame for convenience in transferring from place to place.

The figure represented by the drawing is in perspective, with part of the hopper broken away to show the grate-bars.

A represents the hopper, provided with inclined rods or bars B, which constitute the screen. The pitch of the grate or screen bars is placed at a much less angle than that of the front side of the hopper, which is almost vertical, so that the coal, if it has not become thoroughly screened when it is first dumped upon the grate, will have the tendency to fall back again from the front part of the hopper C onto the screen as the discharge is taking place through the mouth or chute below. Thus it will be seen that a much more thorough

screening is had than by a hopper with the front end constructed at a greater pitch or angle of inclination. The mouth or lower end of the chute D is provided with horizontal folding doors E E, hinged strongly to the chute by bending the edges the entire length of the metal doors, through which pins or rods F pass, and on which the doors swing, held by side straps G. The upper part of the lower door shuts against the lower part of the upper door. A bail, H, is attached to the lower door, which connects it, by a chain or rod, I, to a weighted lever, J, pivoted to the front of the hopper at K. The rollers L L are intended to facilitate the removal of the machine from place to place.

The operation is as follows: The coal is dumped onto the grate or screen, and is carried by its gravity into the chute, when, by drawing down the weighted lever, the bail which keeps the doors in position is lowered, and the coal is discharged into carts or other vehicles of transportation. In order to stop the discharge, the end of the lever is released, and the weight M carries it up, hauling the chain taut and drawing the lower door up against the upper door, by which means they are kept closed.

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

The hopper A, provided with grate or screen bars B, in combination with the chute D, having doors E E, operated by a weighted lever, J, substantially as and for the purposes specified and shown.

In witness whereof I have hereunto set my hand and seal.

JAMES FLANAGAN. [L. S.]

Witnesses:

C. W. M. SMITH,
I. S. LUTZ.