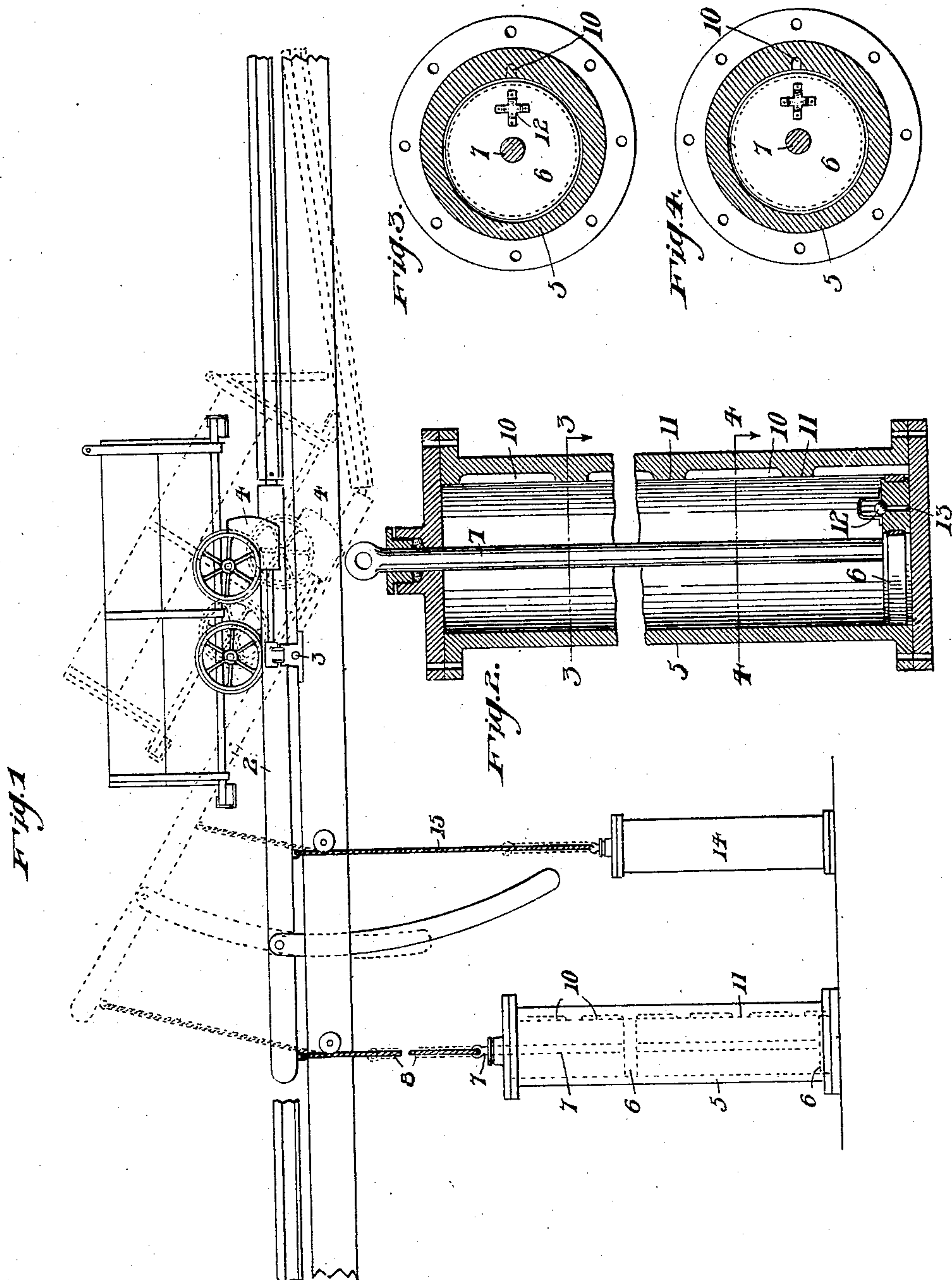


No. 863,314.

PATENTED AUG. 13, 1907.

J. S. PATES.
COAL TIPPLE.

APPLICATION FILED MAR. 15, 1907.



witnesses:
J. R. Hoffman,
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UNITED STATES PATENT OFFICE.

JAMES S. PATES, OF MONONGAHELA, PENNSYLVANIA.

COAL-TIPPLE.

No. 863,314.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed March 15, 1907. Serial No. 362,549.

To all whom it may concern:

Be it known that I, JAMES S. PATES, a resident of Monongahela, in the county of Washington and State of Pennsylvania, have invented certain new and useful

Improvements in Coal-Tipples, of which the following is a specification.

The object of this invention is to provide automatically-acting means for shaking or jolting the platform of a coal tippie while tilting and dumping a car, so that the coal will be discharged gradually, beginning with the tilting of the platform.

When a car is tilted by an even or uninterrupted movement, the greater part of the coal is not dislodged until the inclination of the car is sufficient to cause it to move therefrom *en-masse*, the result being that the screens are overloaded and much coal passes thereover which should pass through. By interrupting the movement and thus imparting to the car an interrupted upward movement, as herein proposed, the coal passes to the screens in a substantially even stream and is thoroughly screened.

In the accompanying drawings, Figure 1 is a side elevation of part of a tippie structure, with the improved mechanism connected to the tilting platform thereof. Fig. 2 is a vertical sectional view, broken, of the jolt-imparting mechanism. Figs. 3 and 4 are cross-sectional views on lines 3—3 and 4—4, respectively, of Fig. 2.

The tippie structure may be of any preferred design, 2 indicating the tilting platform thereof, and 3 the platform axis.

4 are the car stopping and holding horns, the construction and operation of which are well known in the art.

5 designates a cylinder and 6 the piston therein, having its rod 7 so connected by line 8 to platform as to be drawn outward as the platform tilts. The inner face of the cylinder 5 is formed with a longitudinal series of recesses or ports, here shown in the form of elongated grooves 10, each extending longitudinally of the cylinder and of greater length than the thickness of piston 6. Adjacent grooves are separated by intervening smooth portions 11 of the cylinder bore, the latter forming parts of the normal diameter of the cylinder which the piston closely fits.

In operation, cylinder 5 is filled with a suitable liquid or air, with the piston in the lower portion of the cylinder when the platform starts to tilt. As the piston is drawn upward the only escape of the liquid or air above it is through grooves 10, through which it flows

around the piston to the lower portion of the cylinder. At such times the movement is not retarded, but when the piston registers with the groove-operating portions 11 of the cylinder interior, the ensuing compressing of the liquid or air above the piston causes the latter to halt or move more slowly and impart a cushioned jolt or jerk to the platform and to the car thereon. The successive jerks thus afforded during the raising of the platform result in the coal being discharged from the car in a substantially uniform stream, and a thorough screening results.

An upwardly opening check-valve 12 for port 13 in piston 6 permits the latter to lower to starting position, the air or liquid freely passing this valve into the upper portion of the cylinder. For returning a gravity dumping platform, such as here shown, to horizontal position, a power cylinder 14 may be provided, with its piston connected by line 15 with the platform.

I prefer to employ a liquid, such as a suitable oil, rather than air as the checking medium, as the latter is too elastic, particularly for the first portion of the movement. However, the invention is not limited in this regard, and by the term liquid appearing in the claim I include any and all forms of liquids, gases, and vapors that might be used.

The operation of the jolt or jerk imparting mechanism is entirely automatic, requiring no attention on the part of the operator, and does not interfere in any manner with the operating parts of the tippie structure.

I claim:

1. The combination of car-tilting means, a cylinder, a piston therein connected to the tilting-means, and means for alternately checking and releasing the piston as it moves outward.

2. The combination of car-tilting means, a cylinder, a piston therein connected to the tilting means, and automatically acting means for checking and releasing the piston.

3. The combination of a tilting car support, a cylinder, a piston therein connected to the support and movable therewith when tilting, and means for passing liquid intermittently from in front of the piston as the latter moves outward.

4. The combination of a tilting car support, a cylinder, a piston therein connected to and movable with the support, and means operative intermittently for passing liquid from in front of the piston to the rear thereof during the tilting movement.

5. The combination of a tilting car support, a cylinder having a series of separated recesses in its inner wall extending longitudinally of the cylinder and open only to the latter, and a piston in the cylinder connecte dto and movable with the car support.

6. The combination of a tilting car support, a cylinder,

5 a piston therein connected to the car support, depressions in the inner wall of the cylinder, the depressions extending longitudinally of the cylinder and each of greater length than the thickness of the piston, adjacent depressions being separated by uninterrupted smooth portions of the cylinder wall.

7. The combination of a tilting car support, a cylinder, a piston therein connected to the car support, means for intermittently checking the passage of liquid from in

front of the piston during the tilting of the support, and 10 a check-valve on the piston adapted to open during the return stroke of the piston.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES S. PATES.

Witnesses:

ESTHER H. ROBINSON,
SARAH J. HAYES.