

United States Patent Office.

WILLIAM B. FRUE, OF HOUGHTON, MICHIGAN.

Letters Patent No. 101,115, dated March 22, 1870.

IMPROVEMENT IN CAR, TRACK, AND OPERATING-APPARATUS FOR MINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM B. FRUE, of Houghton, in the county of Houghton and State of Michigan, have invented a new and improved Car-operating Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in apparatus for operating cars upon short tracks from the receiving to the dumping-place, such as required in mines, shipping-places, and the like.

The invention consists in combining and arranging, in connection with a short railroad track, certain instrumentalities, which will be more particularly described hereinafter, and specified in the claim.

Figure 1 represents a longitudinal sectional elevation of my improved apparatus, taken on the line $x x$ of fig. 2, and

Figure 2 represents a transverse section, taken on the line $y y$ of fig. 1.

Similar letters of reference indicate corresponding parts.

A represents an elevated track, and B the cars thereon, to which a cord or chain, C, is attached, and passes over pulleys D, at each end of the track, to the grooved pulley E on the shaft F. The cord passes around this pulley and derives motion therefrom, winding on in one direction and off in the other, when the shaft turns one way, and *vice versa* when the shaft turns the other way.

On this shaft are placed two fast pulleys G H, and two loose pulleys I K, and below it is the driving-drum L.

Two belts, M N, are used, the one crossed and the other not, each belt having an independent belt-shifter;

OP. The one belt drives the shaft F one way and the other the other way.

When the crossed belt M is working on the fixed pulley G for driving it one way, the other belt, N, is working on the loose pulley I, and for driving the shaft F the other way; the two belts are respectively shifted. The shifting is effected simultaneously by turning the lever of one shifter in one way and the lever of the other shifter in the other.

Stops a are placed upon each end of track to stop the car and overcome the friction of pulley E upon the belt, (in case of carelessness of the operator,) when the said pulley will slip within the belt until the latter is shifted to the loose pulley. The rope or belt is fastened to an eye on the axle d .

The running gear to which the car-body is attached consists of four wheels, two connecting-bars, and two axles, $d e$. The car is attached, at or near its middle, to the axle d , which faces toward the dumping-end of the track.

When at the right or loading-end, the car lies horizontally upon the two axles, but when it is forced against the stop at the left end, the impact will cause it to vibrate with the axle in a vertical plane, and automatically dump the load.

Having thus described my invention,

What I desire to protect by Letters Patent is—

The combination of a short track, A, having a stop, a , and vertical sheave D at each end, with a driving-pulley, E, and endless belt C, the two relatively arranged and co-operating, as set forth, to move the car B and dump the same, at the time and in the manner described.

WM. B. FRUE.

Witnesses:

WM. R. NOBLE,
SUMNER LEWIS.