

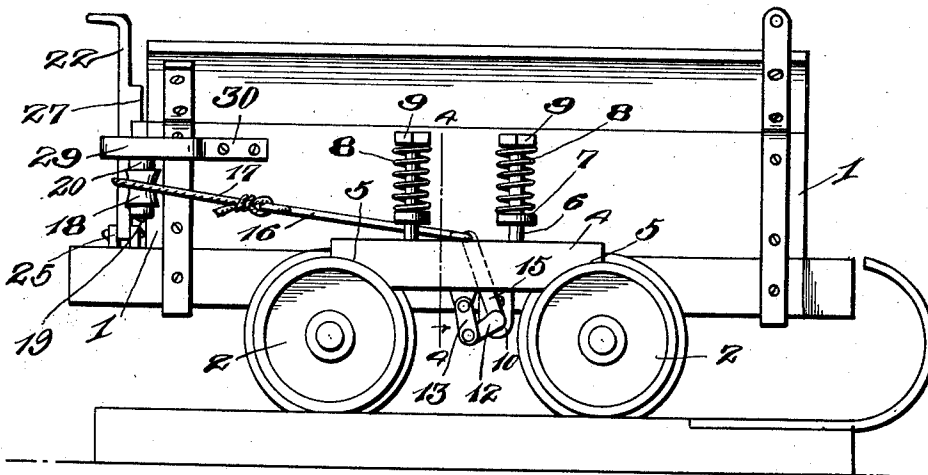
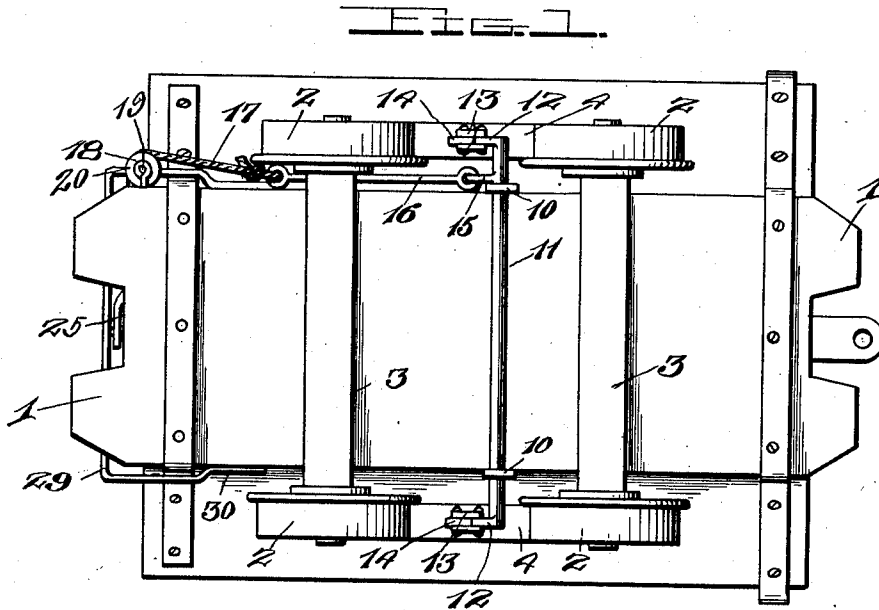
D. W. ANDERSON, W. M. BOYCE & F. W. HOLLOPETER.
MINE CAR BRAKE.

APPLICATION FILED JAN. 20, 1912.

1,043,498.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 3.

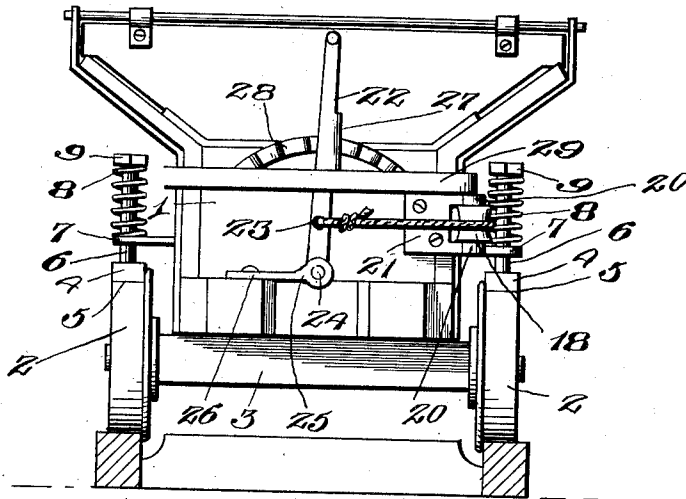


FIG. 4.

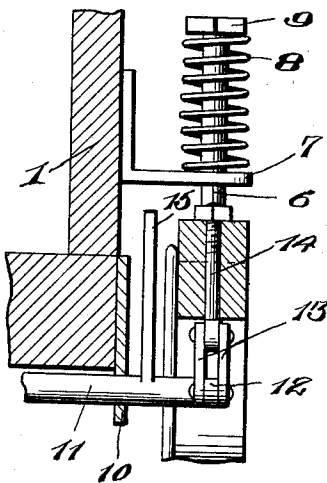
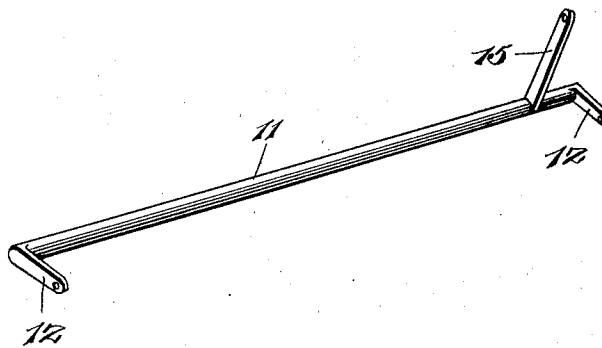


FIG. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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MINE-CAR BRAKE.

1,043,498.

Specification of Letters Patent.

Patented Nov. 5, 1912.

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To all whom it may concern:

Be it known that we, DAVID W. ANDERSON and WILLIAM M. BOYCE, citizens of the United States, residing at Clearfield, in the county of Clearfield and State of Pennsylvania, and FREDERICK W. HOLLOPETER, a citizen of the United States, residing at Glenhope, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Mine-Car Brakes, of which the following is a specification, reference being had to the accompanying drawings.

This invention comprehends certain new and useful improvements in mine cars, and relates particularly to an improved brake mechanism therefor.

The invention has for its primary object, a simple, durable and efficient construction of brake mechanism whereby the operator at one end of the car can easily control the same, the braking effect being produced at both sides of the car alike, and the car being capable of being quickly brought to a standstill whenever required and locked with the brakes in engagement with the peripheries of the wheels.

The invention also has for its object a simple mechanism of this character which may be easily installed on mine cars of any ordinary or conventional type, the parts being strong and not liable to get out of order. And the invention aims to generally improve this class of devices and to render them more useful and commercially desirable.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists of certain constructions, arrangements and proportion of the parts that we shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a bottom plan view of a mine car equipped with the improvements of our invention; Fig. 2 is a side elevation thereof, illustrating the car on the track at the end of the dump; Fig. 3 is an end elevation of the car; Fig. 4 is an enlarged transverse sectional view of a portion of the car, the section being taken substantially on the line 4—4 of Fig. 2; and Fig. 5 is a detail per-

spective view of the brake operating crank shaft hereinafter more specifically referred to.

Corresponding and like parts are referred to in the following description and designated in the accompanying drawings, by like reference characters.

Referring to the drawings, 1 designates a mine car which may be of any ordinary or conventional type, except as hereinafter specified, and 2 designates the track or traveling wheels on which the car is supported, said wheels being mounted upon axles 3.

Upon opposite sides of the car 1 are longitudinally extending brake beams 4. These are located substantially midway between the front and rear wheels 2, as illustrated in Fig. 2, and the lower sides of the brake beams 4 are recessed at their ends as indicated at 5, so as to constitute brake shoes that are designed for frictional engagement with the peripheries of the wheels 2.

It is to be understood, however, that separate brake shoes may be provided if desired, secured to the brake beams 4 in any approved manner.

Vertically disposed rods 6, one pair for each brake beam, in the present instance, are secured to the respective brake beams 4 and project upward therefrom in a substantially vertical direction, said rods passing through apertures that are formed in the laterally extending horizontally projecting portions of angular brackets 7 that are secured to the sides of the car. Coiled expansion springs 8 encircle the respective rods 6 and bear at one end upon the laterally projecting ends of the brackets 7, the other ends of the springs bearing upon nuts 9 that are screwed on the other ends of the rods 6, whereby the tension of the springs may be regulated.

As is manifest, the springs exert their tension upon the rods 6 to move the same upwardly so as to hold the brake beams 4 in their inoperative positions.

In order to move the brake beams downwardly against the tension of the springs 8, the following instrumentalities are provided: Bearings 10 are secured to the opposite sides of the car 1 at the bottom thereof, said bearings in the present instance, being in the form of metallic plates apertured as shown, and in said bearings a transversely extending shaft 11 is fulcrumed, said shaft

being provided at its ends with cranks 12 that are connected by spaced links 13 to the lower ends of vertical rods 14 that are held for vertical adjustment in the respective brake beams 4 midway of the ends of the latter. The crank shaft 11 is provided intermediate of its ends with an actuating arm 15 which projects perpendicularly therefrom and which is designed to extend up between one brake beam 4 and the projecting side of the car 1, the actuating arm 15 being pivotally connected at one end to a link rod 16 which extends laterally therefrom alongside the car body. The rear end of the link rod 16 is joined in any desired way to a cable 17 which extends around a pulley 18 carried by a vertical spindle 19 that is journaled in ears 20 formed on one end of a plate 21 secured to the rear end of the car as illustrated in Fig. 3. The cable 17 is secured to a hand lever 22, being passed through an eye 23 formed in said hand lever and then tied. The lever 22 is fulcrumed at its lower end to swing in a plane transverse of the car, as at 24, the said lever, in the present embodiment of the invention being pivoted in the forked end 25 of a bar 26 which is secured at the rear of the car. The actuating lever 22 is formed intermediate of its ends with a detent 27 which is designed to engage with any one of a plural number of teeth 28 that are formed on a quadrant secured to the end of the car. 29 designates a guide loop for the lever 22, said guide loop extending across the end of the car and having angularly disposed ends 30 which are fastened to the sides of the car, the guide loop thereby serving not only to guide the hand lever 22 but as a reinforcing member for the car body.

From the foregoing description in connection with the accompanying drawings, the purpose of the improved mine car brake will be apparent. In the practical use of the mechanism, the brake beams 4 will be normally held in their proper inoperative positions by the springs 8 and when it is desired to apply the brakes, it is only necessary for the operator to grasp the handle 22 and move it in a direction to draw upon the cable 17. This will, as is manifest, rock the shaft 11 about its longitudinal axis and cause the cranks 12 to draw downwardly upon the rods 14, which will result in moving the brake beams downwardly so that their recessed ends or brake shoes will move into proper frictional engagement with the peripheries of the wheels 2.

While the accompanying drawings disclose what we believe to be the preferred embodiment of our invention, it is to be understood that the invention is not limited thereto, but that various changes may be made in the construction, arrangement and proportion of the parts, without departing from

the scope of the invention as defined in the appended claims.

Having thus described our invention, we claim:

1. The combination with a car provided on opposite sides with front and rear traveling wheels, of longitudinally disposed brake beams mounted between the front and rear wheels on opposite sides of the car, angular brackets secured to the sides of the car, vertically disposed rods secured at their lower ends to said beams, and projecting upwardly therefrom through said brackets, the rods being provided at their upper ends with adjustment nuts, coil springs encircling said rods and bearing against said rods and brackets, other rods secured to said brake beams and extending downwardly therefrom, a transversely extending crank shaft carried by the car and provided with cranks, links operatively connecting said cranks with the second named rods, the crank shaft being also formed with an upwardly projecting actuating arm, a link rod connected to said arm, an actuating lever mounted for lateral movement at one end of the car, means for holding said lever in different adjusted positions and an operative connection between said lever and said brake rod.

2. The combination with a car provided with front and rear pairs of traveling wheels, longitudinally extending brake beams mounted on opposite sides of the car above and between said wheels, brackets secured to the opposite sides of the car above the wheels and beams, rods secured to said beams and extending freely through said brackets, expansion springs encircling said rods and having a tendency to draw the rods upwardly whereby to move the brake beams to their upper inoperative position, a crank shaft journaled underneath the car, operative connections between the cranks of said shaft and the brake beams, the shaft being provided with an actuating arm, a link rod connected to said arm, an actuating lever, means for holding said lever in different adjusted positions, and a cable connection between said lever and said link rod.

3. In a car of the character described provided with a body and front and rear pairs of traveling wheels, brake beams extending longitudinally along opposite sides of the body and adapted to engage said wheels, yielding means for suspending said brake beams in relatively free position, a crank shaft journaled underneath the car body, operative connections between the crank shaft and the brake beams, the shaft being provided with an actuating arm, a laterally movable actuating lever journaled at the rear of the car, means for holding said lever in different adjusted positions, a pulley at one corner of the body and a cable extending around said pulley and connected at one

end to the lever, the other end of the cable being operatively connected to the actuating arm of the shaft.

4. In a car of the character described provided with a body and front and rear pairs of traveling wheels, brake beams extending longitudinally along opposite sides of the body and adapted to engage said wheels, yielding means for suspending said brake beams in relatively free position, a crank shaft journaled underneath the car body, operative connections between the crank shaft and the brake beams, the shaft being provided with an actuating arm, a laterally movable actuating lever journaled at the rear of the car, means for holding said lever in different adjusted positions, a pulley at one corner of the body, a cable extending

around said pulley and connected at one end to the lever, the other end of the cable being operatively connected to the actuating arm of the shaft, and a guide loop extending over said lever, the guide loop being provided with angularly disposed ends extending along the sides of the car body and secured thereto. 20 25

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

DAVID W. ANDERSON.
WILLIAM M. BOYCE.
FREDERICK W. HOLLOPETER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
