

No. 836,880.

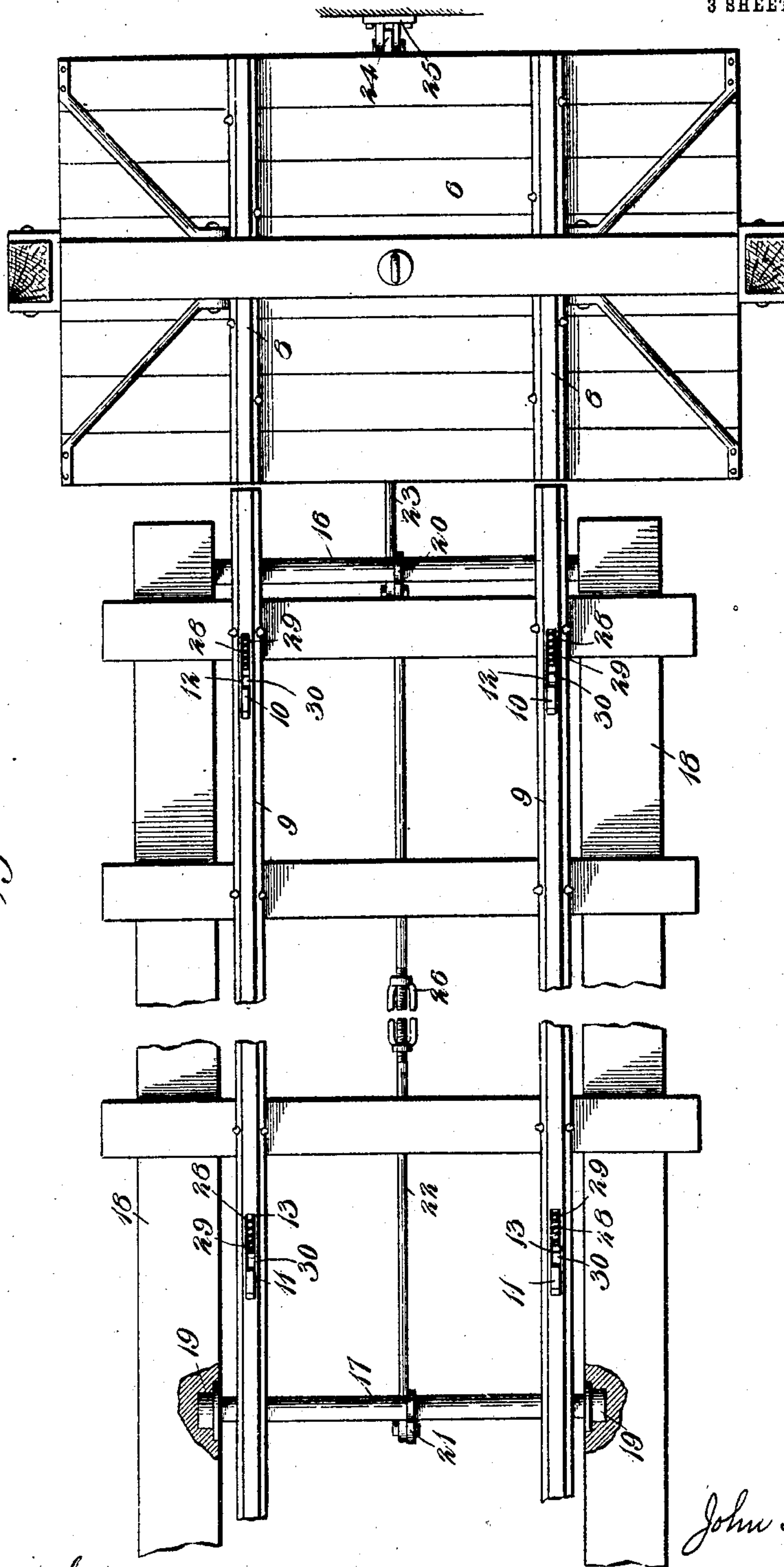
PATENTED NOV. 27, 1906.

J. HAMILTON.
MINE CAR STOP.

APPLICATION FILED MAR. 2, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 2.

WITNESSES:

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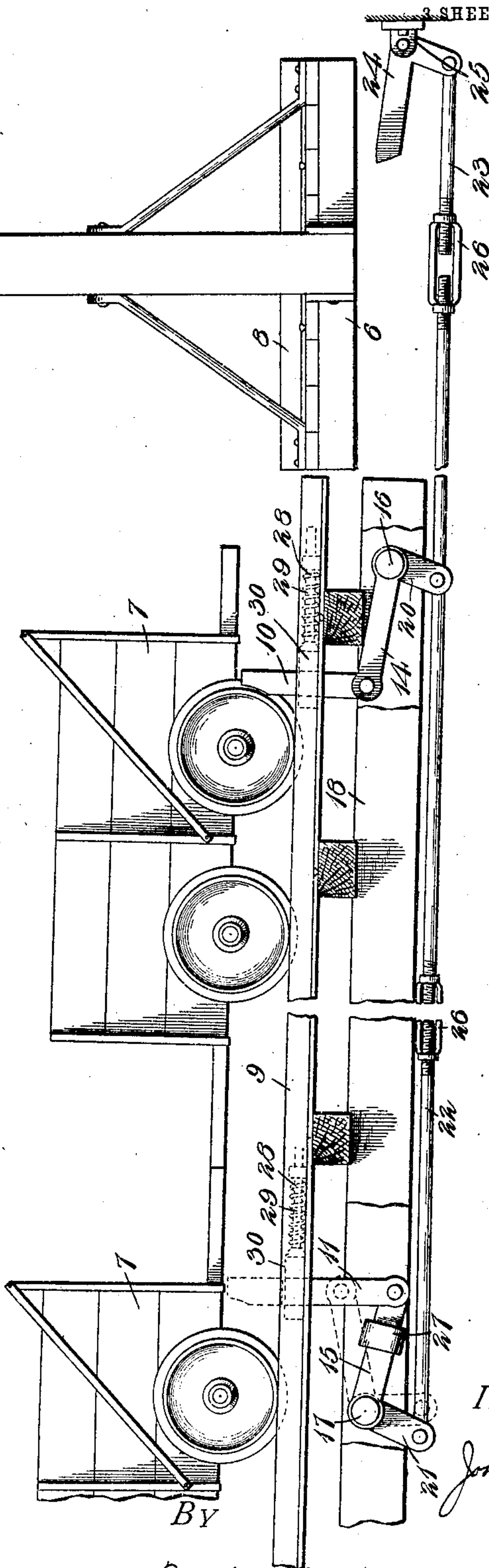
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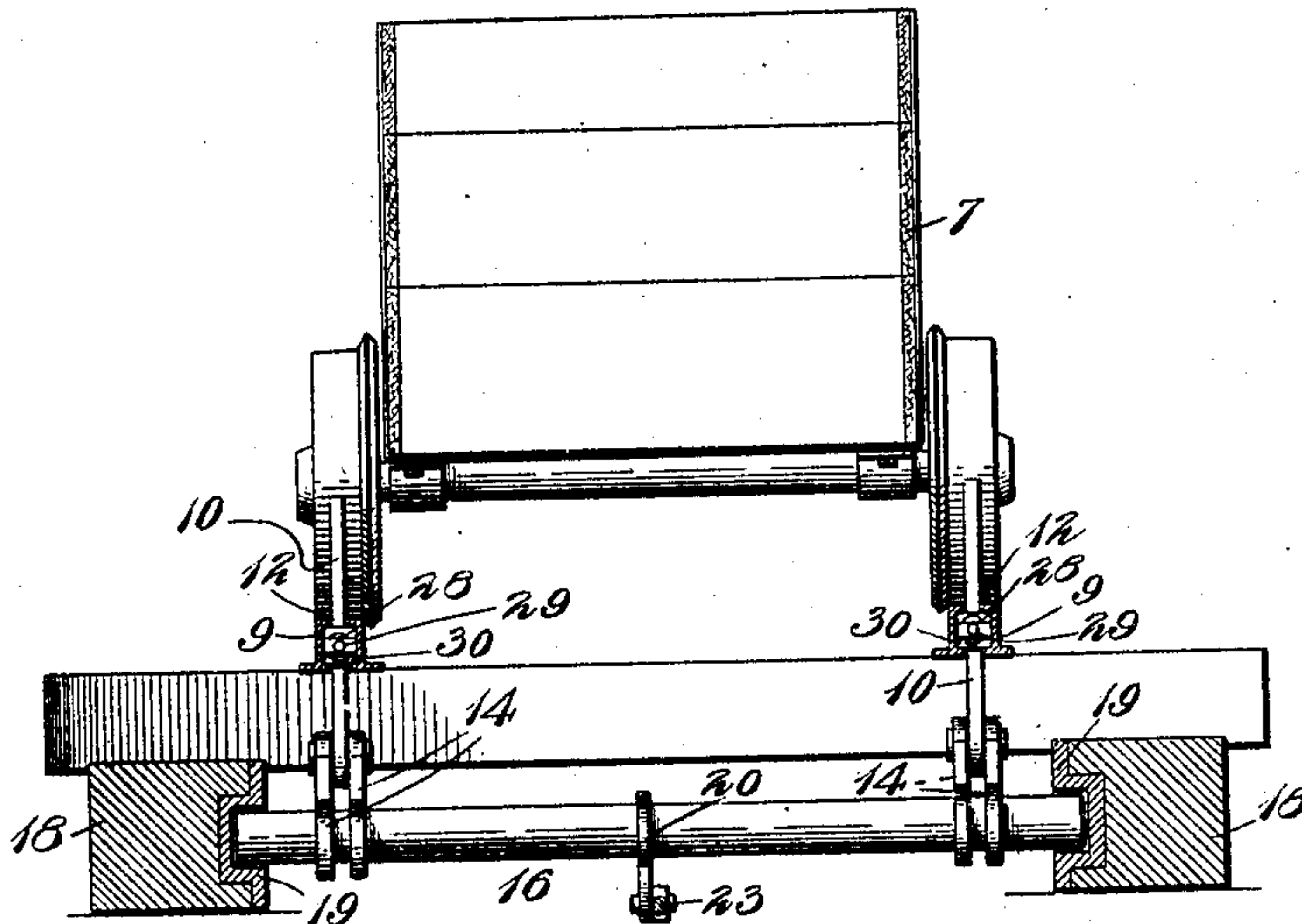
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3 SHEETS—SHEET 3

Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN HAMILTON, OF BYESVILLE, OHIO.

MINE-CAR STOP.

No. 836,880.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed March 2, 1906. Serial No. 303,804.

To all whom it may concern:

Be it known that I, JOHN HAMILTON, a citizen of the United States, residing at Byesville, in the county of Guernsey and State of Ohio, have invented new and useful Improvements in Mine-Car Stops, of which the following is a specification.

This invention is an automatic car-stop and caging apparatus for use in mines, and has for its object to provide means for stopping cars at the shaft and for automatically loading the same one by one onto the cage by which they are carried to the mouth of the shaft.

The invention includes stops for the first and second cars, operated alternately by means of a bell-crank tripper arranged to be struck by the cage when it reaches the bottom of the shaft and to then raise and lower the respective stops, so that the first car is allowed to roll down onto the cage and the second car is stopped, after which the cage rises and shifts the stops to allow the second car to move to the end of the track and become the first car for the succeeding operation. The loading can thus proceed automatically, the approach to the shaft being downgrade, so that the cars of a train will follow along after each other.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view illustrating the cage and the mine-track leading thereto. Fig. 2 is a side elevation. Fig. 3 is an end elevation, partly in section.

Referring specifically to the drawings, the mine-cage is indicated at 6, and the cars at 7. The former is provided with rails 8, which match with ends of the rails 9 of the mine-track, so that cars may run from one to the other. The track 9 inclines downward toward the shaft sufficient to cause the cars to move by gravity and follow each other down the track. The stops 10 and 11 for the first and second cars, respectively, comprise stout posts or bars which work up and down through slots 12 and 13, respectively, in the rails. These stops are connected at their lower ends under the track to arms 14 and 15, which project, respectively, from rock-shafts 16 and 17, which extend across between the side timbers 18 of the track, in which the ends of the shafts are mounted in bearings 19, set in the timbers. The shafts 16 and 17 have, respectively, arms 20 and 21, which are connected by a rod 22 and also to a rod 23,

connected to the lower arm of a bell-crank tripper 24, the upper arm of which projects in position to be struck by the cage when it reaches the bottom of the shaft. The tripper is pivoted upon a bracket 25, secured to the wall of the shaft. The rods are provided with turnbuckles 26 for adjustment.

The crank-arms upon the shafts 16 and 17 are oppositely arranged, so that one set of stops is thrown up when the other is pulled down. The arms 15 carry counterweights 27, which act to restore the parts to normal position—that is, with the tripper 24 and stops 10 up and the stops 11 down. In order to cushion the shock against the stops, they are supported behind by springs 28, coiled around rods 29, which project from guide-blocks 30, in which the stops work, and which are slidable in recesses in the rails 9. The rails may conveniently be made of hollow stock for this purpose. The slots 12 and 13, through which the stops extend, are made of sufficient length to allow the stops to swing back under the impact of the cars to the extent permitted by the springs 28, which yield to cushion the shock.

In operation when the cage reaches the bottom of the shaft it strikes the tripper 24, which pulls the rod 23 and turns the shafts 16 and 17. The stops 10 are drawn down and the stops 11 are pushed up. This releases the first car and allows it to roll down onto the cage. At the same time the stops 11 stop the second car and the rest of the train, and the parts are so held until the car goes up. Then the stops 11 descend in consequence of the counterweights, and the stops 10 ascend, which permits the second car to roll forward to first position against the stops 10, followed by the other cars of the train. So a whole train may be automatically loaded without any manual assistance.

I claim—

1. The combination with a cage in a shaft and a track leading thereto, of fore and rear car-stops connected together and movable oppositely up and down through the track, to stop and release the first and successive cars respectively, a tripper in the shaft arranged to be struck by the cage, and operative connections located under the track and extending between the tripper and the stops, to raise and lower the latter.

2. A car-stop comprising, in combination, a track having a slotted rail, a stop movable up and down in the slot, to operative or inop-

erative position, and means under the track to operate the stop.

3. A car-stop comprising, in combination, a track having a slotted hollow rail, a stop
5 movable up and down and also to and fro in the slot, a spring within the rail behind the stop, and means to raise and lower the stop.

4. The combination with a cage in a shaft, and a track leading thereto, of rock-shafts
10 extending across the track under the rails and having oppositely-set crank-arms respectively, fore and rear stops movable up and down in the track and connected re-

spectively to the crank-arms, a cage-operated tripper in the shaft, and connections between the tripper and the shafts, adapted to
15 turn the latter when the cage strikes the tripper.

In testimony whereof I have signed my name to this specification in the presence of
20 two subscribing witnesses.

JOHN HAMILTON.

Witnesses:

JAS. G. B. MORRIS,
A. J. TRUE.