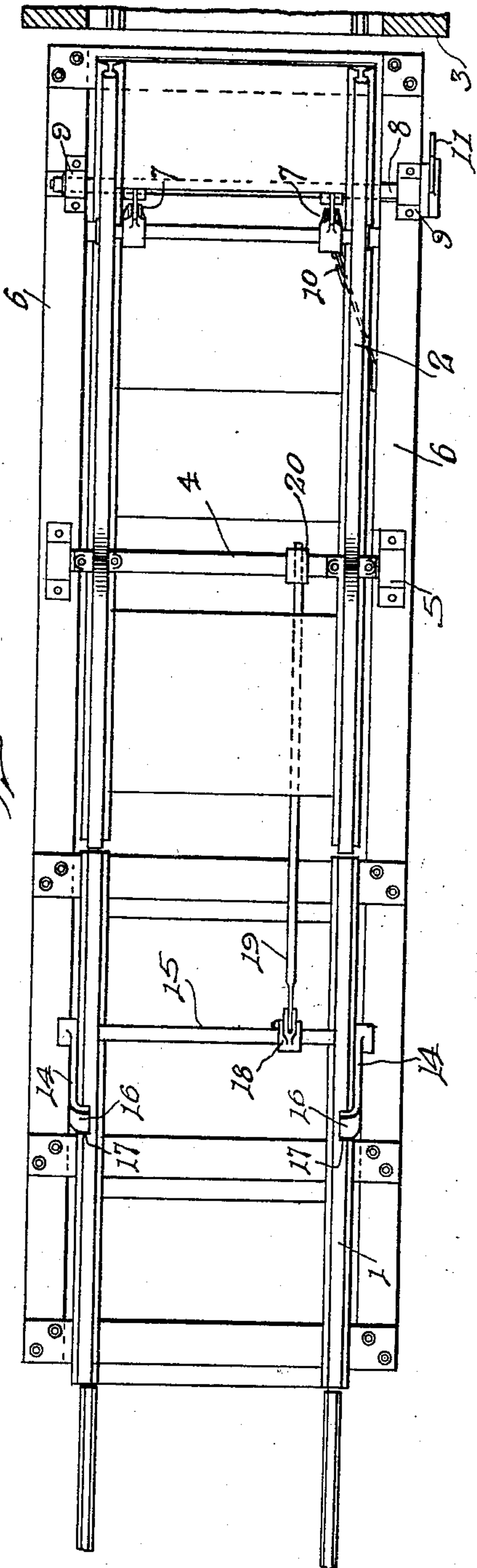


G. HOLMES.
CAGER AND SUMP GUARD.
APPLICATION FILED FEB. 11, 1909.

931,203.

Patented Aug. 17, 1909.

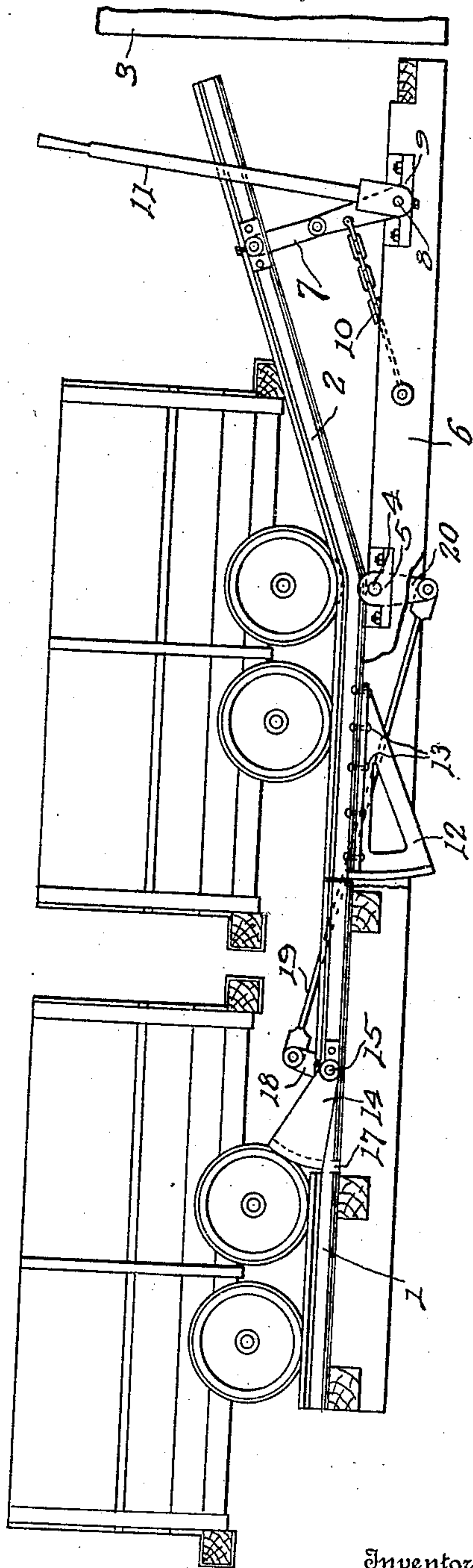
Fig. 1.



Witnesses

G. Howard Walmsley.
Edward L. Reed

Fig. 2.



Inventor

Grant Holmes,

By

H. A. Goulwin,

Attorney

UNITED STATES PATENT OFFICE.

GRANT HOLMES, OF DANVILLE, ILLINOIS, ASSIGNOR TO ROBERT HOLMES & BROTHERS, OF DANVILLE, ILLINOIS, A CORPORATION OF ILLINOIS.

CAGER AND SUMP-GUARD.

No. 931,203.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed February 11, 1909. Serial No. 477,288.

To all whom it may concern:

Be it known that I, GRANT HOLMES, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Cagers and Sump-Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to cagers and sump guards, and is designed more particularly for use in connection with car handling mechanism such as is employed in coal mines and similar places.

The object of the invention is to provide a movable stop to prevent the following car from bumping into the car standing upon the cager; to so arrange this stop that the movement of the same will be automatically controlled by the movement of the cager; to provide means for supporting the cager normally in its closed position; and to provide a single operating means for actuating the cager, sump guard and movable stop.

With these objects in view my invention consists in certain novel features and in certain combinations and arrangements of parts hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a cager and a portion of a track embodying my invention; and Fig. 2 is a side elevation of the same.

In these drawings I have illustrated one embodiment of my invention and have shown the same in combination with a main track 1 and a cager 2 arranged between the main track and the shaft 3 within which the cager operates. This cager may be of any suitable construction but I have, in the present instance, shown the same as consisting of a rail section which is pivotally supported and has those portions lying on the opposite sides of its pivotal center extending at an angle one to the other, whereby, when that portion of the rail section lying on one side of its pivotal center is in a substantially horizontal position, that portion of the rail section lying on the other side of the pivotal center will extend upwardly at an inclination to the horizontal portion of the rail section. This rail section preferably comprises two rails forming continuations of the main track, which rails are rigidly secured to a shaft 4 which is journaled in bearings 5 mounted on a sill or

supporting base 6. The main track 1 and the sill or supporting base 6 for the cager preferably slope downwardly toward the shaft 3, thus causing the cars to move automatically toward the shaft.

In order to maintain the cager in its closed position, *i. e.*, with its rear end, or the end next to the shaft, elevated to prevent the passage of the car from the cager, I have provided an operating means therefor comprising toggle links 7 connected at one end to that portion of the cager lying between the pivotal center thereof and the shaft and rigidly connected at the other end to a shaft 8 mounted in suitable bearings 9 carried by the sill or supporting base 6. There are preferably two pairs of these toggle links, one connected to each of the rails of the cager. A suitable stop is provided to prevent the toggle links from moving past their central point in one direction. This stop is here shown as consisting of a chain 10 connected at one end to one of the links 7 and at the other end to the sill 6. An operating handle 11 is rigidly secured to the shaft 8 at one side of the cager and serves to rotate the shaft 8, whereby the toggle links 7 are broken or moved into alinement and the cager moved about its pivotal center in one direction or the other. When the cager is in its closed position the toggle links will be arranged in alinement one with the other and will form a rigid support for the rear end of the cager, thus positively retaining the same in its closed position regardless of whether or not a car may have passed on the forward end thereof. Suitable means are provided for preventing the following car from passing off the rear end of the main track before the forward portion of the cager has been moved into its horizontal position. To this end a sump guard, preferably comprising a segmental plate 12, is secured to the forward portion of each rail of the cager and has its curved face arranged in alinement with the rails of the main track. This segmental plate is preferably secured to the lower flange of the rails by means of bolts or rivets 13. Thus, when the cager is moved about its pivotal center to discharge the car therefrom the sump guard 12 will be moved into a position in alinement with the ends of the rails of the main track and will engage the wheels of the following car and prevent the same passing from the main track until

the cager has been moved into a position to receive the same.

It is also desirable to provide means for preventing the following car from bumping 5 into the car standing upon the cager and to this end I have provided a movable stop which is supported near, that is, in operative relation to, the main track at some distance from the end thereof and is adapted to be 10 moved into position to engage the wheel or some other part of the car and prevent its further movement. In the present instance I have shown this stop as comprising a plate or arm 14 rigidly secured at one end to a 15 shaft 15 which is preferably journaled in bearings formed in the rails of the main track 1. There are preferably two of these stops or plates 14, one arranged on each side of the track and adapted to engage the 20 adjacent wheel of the car truck. The forward ends of the plates or arms 14 are bent inwardly to form flanges 16 which extend into recesses 17 formed in the adjacent sides of the rails of the main track. These re- 25 cesses not only permit the stops to extend squarely into the path of the wheels of the car, but also form guides for the stops, and the forward or flanged ends of the stops are curved to facilitate their movement in the 30 slots 17. These stops may be operated in any suitable manner, but it is desirable that they should be operated in unison with the cager, and, to this end, I have rigidly secured to the shaft 15 a crank arm 18 which 35 is connected by a rod 19 to a similar crank arm 20 which is rigidly secured to the shaft 4 upon which the cager is supported. The crank arms 18 and 20 extend in opposite directions, and, consequently, when the cager 40 is moved about its pivotal center in a direction to move the rear portion of the cager into a substantially horizontal position and thus discharge the car therefrom, the stops 14 will be moved into their lowermost or 45 inoperative positions and the car permitted to move forward until it engages the sump guard 12 which has been elevated by the movement of the cager. When the front wheels of the car are in engagement with 50 the sump guard 12 the rear wheels will have passed beyond the forward ends of the stops 14. Consequently, when the cager is returned to its closed position, with the forward end thereof in alinement with the main 55 track, the car is free to move onto the cager and the stops 14 are free to move upward into a position to engage the wheels of the following car. It will be obvious that this stop may be mounted either in the main 60 track or in an extension of that track. In the present instance I have shown the rear end of the main track as provided with special rails within which the shaft 15 carrying the stops is journaled, these rails forming a 65 part or continuation of the main track.

The operation of the device will be obvious from the foregoing description and it will be apparent that I have provided in combination with the cager a stop which serves to prevent the following car from bumping 70 into the car standing upon the cager and thereby eliminates the possibility of the coupling mechanism or bumpers of the car overlapping and interfering with the operation of the cager; that this stop is opera- 75 tively connected to the cager in such a manner that the movement of the cager will automatically move the stop into or out of its operative position; that the operation of the handle 11 will serve to simultaneously 80 actuate the cager, sump guard and the stops; and that the toggle links 7, forming part of the actuating mechanism for the cager, also serve as a positive lock to retain the cager in its closed position in the absence of a car 85 therefrom.

I wish it to be understood that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled 90 in the art.

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

1. The combination, with a main track, 95 and a tilting cager, of a stop movably supported in operative relation to said main track, and means for simultaneously tilting said cager and actuating said stop.
2. The combination, with a main track, 100 and a cager, of a stop movably supported in operative relation to said main track, and means controlled by the movement of said cager for moving said stop into and out of its operative position. 105
3. The combination, with a main track, and a cager, of a stop movably supported in operative relation to said main track and at a point removed from the adjacent end of said cager, and means controlled by the 110 movement of said cager for moving said stop into and out of its operative position.
4. The combination, with a main track, and a cager, of a stop comprising a plate 115 pivotally mounted at one side of one of the rails of said main track and adapted to be moved into and out of position above said rail, and means controlled by the movement of said cager for actuating said stop.
5. The combination, with a main track, 120 and a cager, of a shaft extending transversely to said main track, stops rigidly secured to said shaft, means for actuating said shaft to move the free ends of said stops into and out of the path of a car on said main 125 track.
6. The combination, with a main track, and a cager, of a shaft extending transversely to said main track, a stop rigidly 130 secured to said shaft, and means controlled

by the movement of said cager for actuating said shaft to move said stop into and out of the path of a car on said main track.

7. The combination, with a main track, and a cager, one of the rails of said track having a recess on one side thereof, of a shaft extending transversely to said main track, a plate rigidly secured at one end to said shaft, a flange extending at an angle to the opposite end of said plate and adapted to enter the recess in said rail, and means for operatively connecting said shaft to said cager, whereby the movement of said cager, will actuate said shaft to move said plate into the path of a car on said main track.

8. The combination, with a main track, and a cager, of a shaft journaled in the rails of said main track, stops rigidly secured to said shaft, and means controlled by the movement of said cager to actuate the said shaft to move said stop into and out of the path of a car on said track.

9. The combination, with a main track, a cager, a support for said cager, bearings carried by said support, a shaft journaled in said bearings and rigidly secured to said cager, and a crank arm carried by said shaft, of a shaft extending transversely to said main track, a stop carried thereby, a crank arm rigidly secured to the last-mentioned shaft, and a rod connecting the last-mentioned crank arm to the first-mentioned crank arm, whereby the movement of said cager about its pivotal center will move said stop into and out of the path of a car on said track.

10. The combination, with a main track, a cager, a sump guard operatively connected to said cager, a movable stop supported near said main track, and means for operatively

connecting said stop to said cager, of operating means for actuating said cager, said sump guard and said stop.

11. The combination, with a main track, and a cager, of a stop movably supported near said main track and operatively connected to said cager, of means for locking said cager in its closed position and said stop in its operative position.

12. A cager comprising a rail section pivotally supported at a point between its ends and having those portions thereof lying on opposite sides of said pivotal center inclined one to the other, toggle links connected at one end to said cager and at the other end to a fixed support, and means for actuating said toggle links.

13. The combination, with a main track, a cager, a sump guard carried by said cager, toggle links extending between said cager and a fixed support, and means for actuating said toggle links, of a shaft extending transversely to said main track, a stop carried by said shaft, and means for operatively connecting said shaft to said cager, whereby the movement of said cager will automatically move said stop into the path of a car on said main track.

14. The combination, with a track, a shaft extending transversely thereto, a stop rigidly secured to said shaft and adapted to be moved into or out of position above said track when said shaft is rotated, and means for actuating said shaft.

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

GRANT HOLMES.

Witnesses:

FRANK LINDLEY,

GERTRUDE C. KOCH.