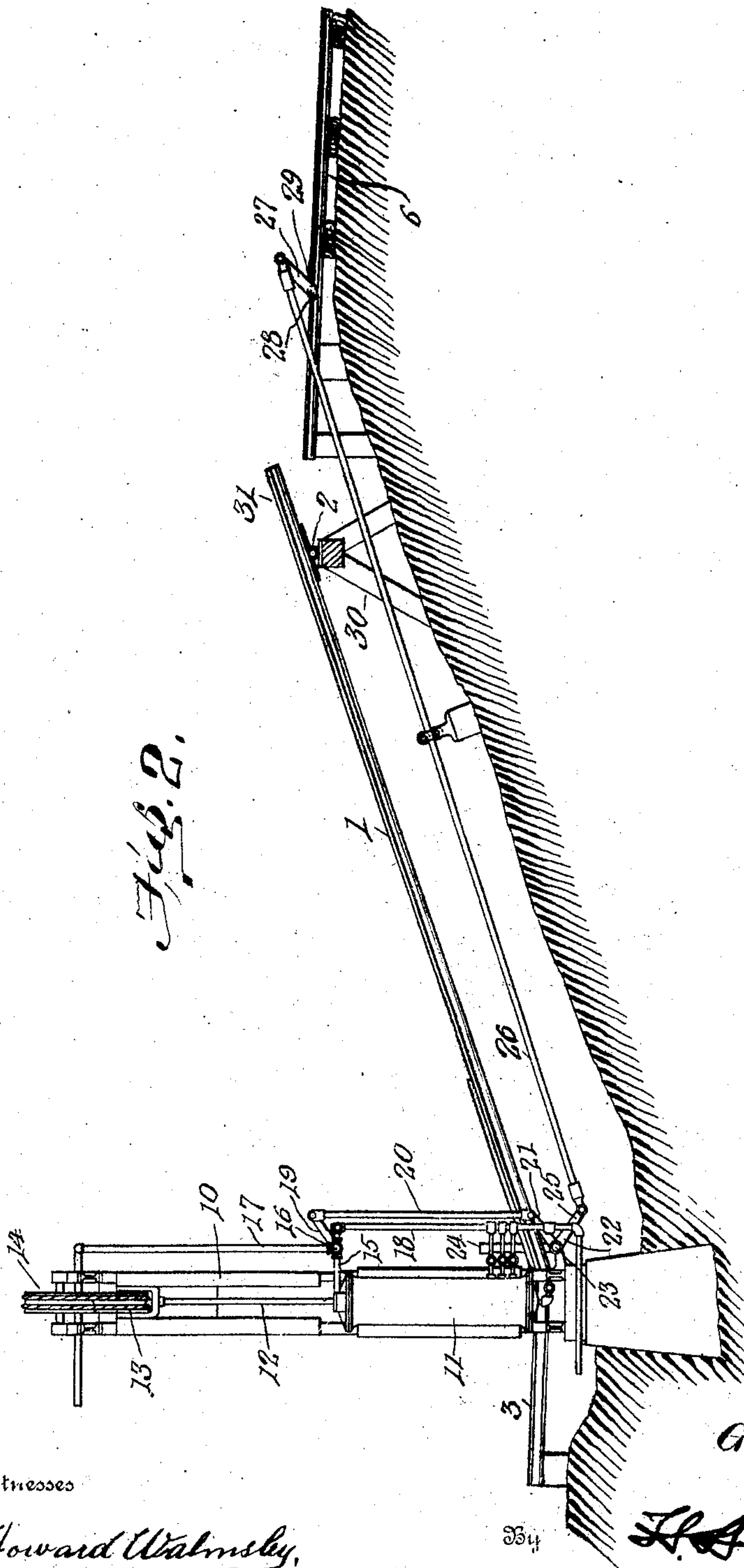


No. 850,646.

PATENTED APR. 16, 1907.

G. HOLMES.
AUTOMATIC CAR LIFT.
APPLICATION FILED SEPT. 26, 1906.

2 SHEETS—SHEET 2.



Witnesses

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AUTOMATIC CAR-LIFT.

No. 850,646.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed September 26, 1906. Serial No. 336,246.

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 Automatic Car-Lifts, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to automatic car-lifts, being a mechanism particularly devised for the purpose of automatically handling cars at the bottom of a mine-shaft, although capable of use in other connections, and is an improvement upon the patent granted to me November 21, 1905, No. 804,950.

The invention has for its object to provide means operated by the lift mechanism for preventing the backward movement of the cars after they have been delivered by said lift mechanism. To this end my invention consists in the construction to be hereinafter described and more fully pointed out in the claim.

Referring to the accompanying drawings, Figure 1 is a plan view showing my lift mechanism in position in the mine, and Fig. 2 is a side elevation of the same.

In the figures, 1 indicates a rail-section pivoted near one end, as shown at 2, and having its ends 3 opposite said pivotal connection bent at such an angle to the main portion thereof that when the rail-section 1 is in its lowermost position the portions 3 will be in a substantially horizontal position. The cage-frame located at the bottom of the shaft is indicated at 4 and is connected with the portion 3 of the track-section by the tracks 5. At the opposite end of the rail-section and connecting with the upper end of the same is a track-section 6, slightly inclined toward the section 1 and provided at its rear end with a bumper 7. This section is provided with switches 8, leading to side tracks 9, which extend to a point beyond the cage-frame 4.

At a point intermediate the ends of the track-section 1, preferably near the lower end thereof, I provide a hoisting mechanism which consists of a frame 10, substantially in the form of a parallelogram, through which the track-section 1 extends and through which it is free to move vertically. At one side of this frame is provided a fluid-pressure cylinder 11, having a piston-rod 12 connected

at its upper end to the cables 13, which extend around pulleys 14 and connect at the opposite end with the track-section 1. At the upper end of the cylinder 11 is provided a pipe connection 15, having a valve 16 adapted to connect the same with either the fluid-supply pipe 17 or the exhaust 18. This valve has an operating-arm 19, which is pivotally connected by a rod 20 with one arm 21 of a bell-crank lever 22, which is mounted on a rock-shaft 23. This rock-shaft is provided with an arm 24, which extends upwardly near the track-section 1 and is adapted to be engaged by the car as it passes along said track. The other arm 25 of the bell-crank lever 22 is connected by a rod 26 with the arm 27, which in turn is connected to the rock-shaft 28, extending across the track-section 6 at a point beyond the upper end of the track-section 1 and provided with an arm 29, located in the path of the car traveling over said track and adapted to be engaged thereby.

The track-section 1 is pivoted at 2 to a suitable support 30, the pivotal point being located at such a distance from the rear end of the track-section 1 that when the front end of the same is in its lowermost position the rear end 31 of the same will be elevated such a distance above the track-section 6 as to come into contact with the body of the car moving along said track and act as a bumper to prevent the rearward movement of the same.

The operation of my device will be obvious from the foregoing description. With the parts in the position shown in the drawings the empty car is pushed from the cage resting in the frame 4 onto the track 5, which is slightly inclined toward the track-section 1, and passes by gravity down said track 5 onto the horizontal portion 3 of the track-section 1 and moves forward such a distance that the body thereof engages the lever 24 and moves the same forward, thereby operating through its coacting mechanism the valve 16 and admitting pressure fluid to the cylinder 11, thereby moving the piston and piston-rod 12 downward, and consequently raising the forward end of the track-section 1. When the track-section 1 has reached its uppermost position, it is inclined slightly toward the rear and the car, which has been elevated with the same, moves by gravity down said

incline and onto the track 6 at the rear thereof, engaging the lever 29 and operating through its coacting mechanism the valve 16 to cut off the supply of motor fluid and
5 connect the cylinder 11 with the exhaust-pipe, allowing the fluid to escape, and thereby permitting the track-section 1 to return to its lower position by its own weight. The car moves rearwardly along the track 6 until
10 it comes in contact with the bumper 7 or its impulse is exhausted, when it returns down the incline of the track 6 and is switched off onto one of the side tracks 9 and carried along the same to the mine-track in the rear of the
15 cage-frame 4. As the track-section 1 returns to its lowermost position the rear end 31 of the same is elevated above the level of the track 6 and in case of a failure of the operation of the switch 8 or for any other reason
20 the car returns down the track 6 instead of taking the side track 9 the body thereof is engaged by the end 31 of the track-section 1, which acts as a bumper and stops the movement of the same, thereby preventing the
25 same from running down the steep incline of the track-section 1 and colliding with the cars at the base thereof.

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

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

In a device of the character described, the combination, with a track having a section pivotally supported at a point intermediate the ends thereof, of means for raising and
40 lowering that end of said track-section farthest removed from said pivotal support to incline the same in opposite directions, thus causing that portion of said track-section in the rear of said pivotal support to be elevated
45 above the track when said track-section is inclined in one direction and to be in alignment with said track when said track-section is inclined in the opposite direction.

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

GRANT HOLMES.

Witnesses:

FANNIE HUDSON,
W. F. COUTANT.