O. H. BAKER.

CAR TRANSFERRING DEVICE.

APPLICATION FILED JAN. 18, 1910.

955,039.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

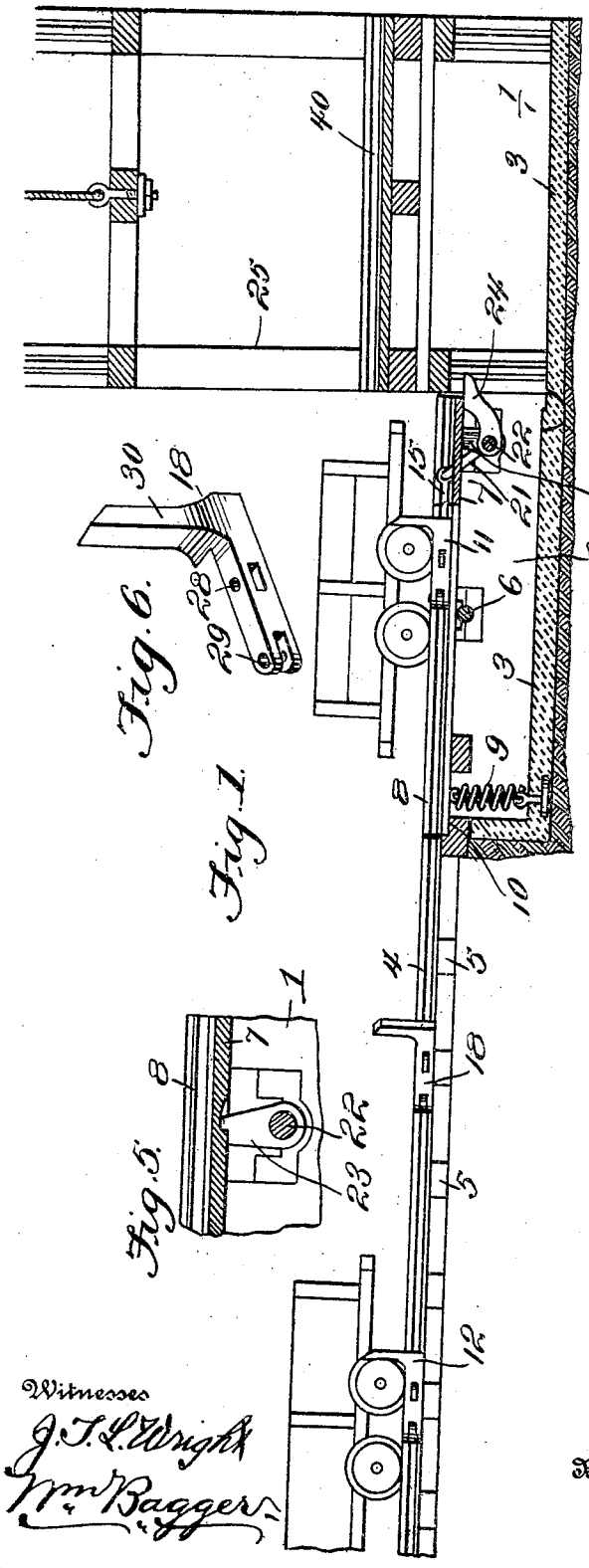


Fig. 1.

Fig. 6.

Fig. 5.

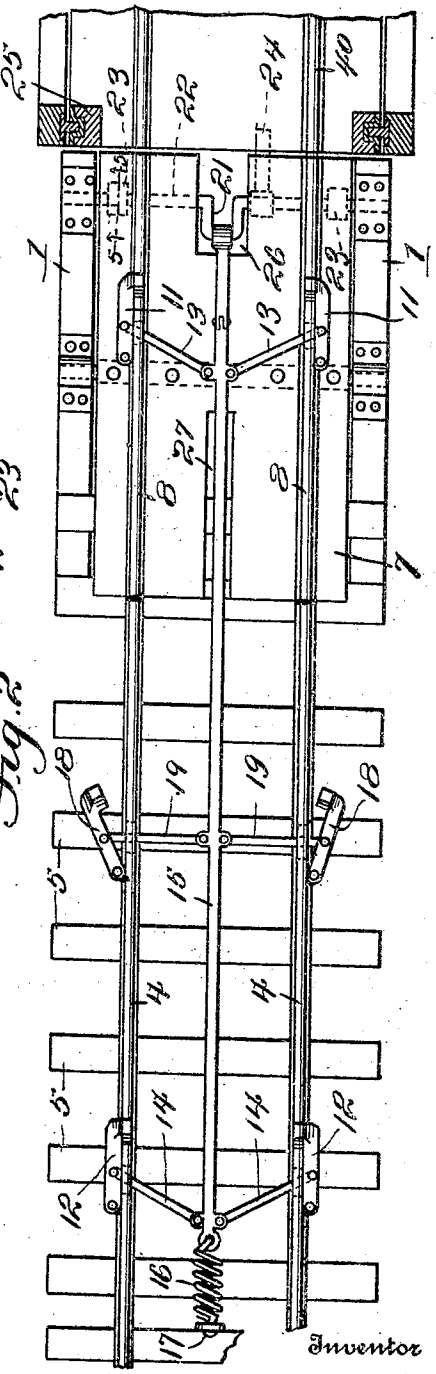


Fig. 2.

Witnesses

J. T. L. Wright

Wm. Bagger

Inventor

Otis H. Baker;

By Victor J. Evans,

Attorney.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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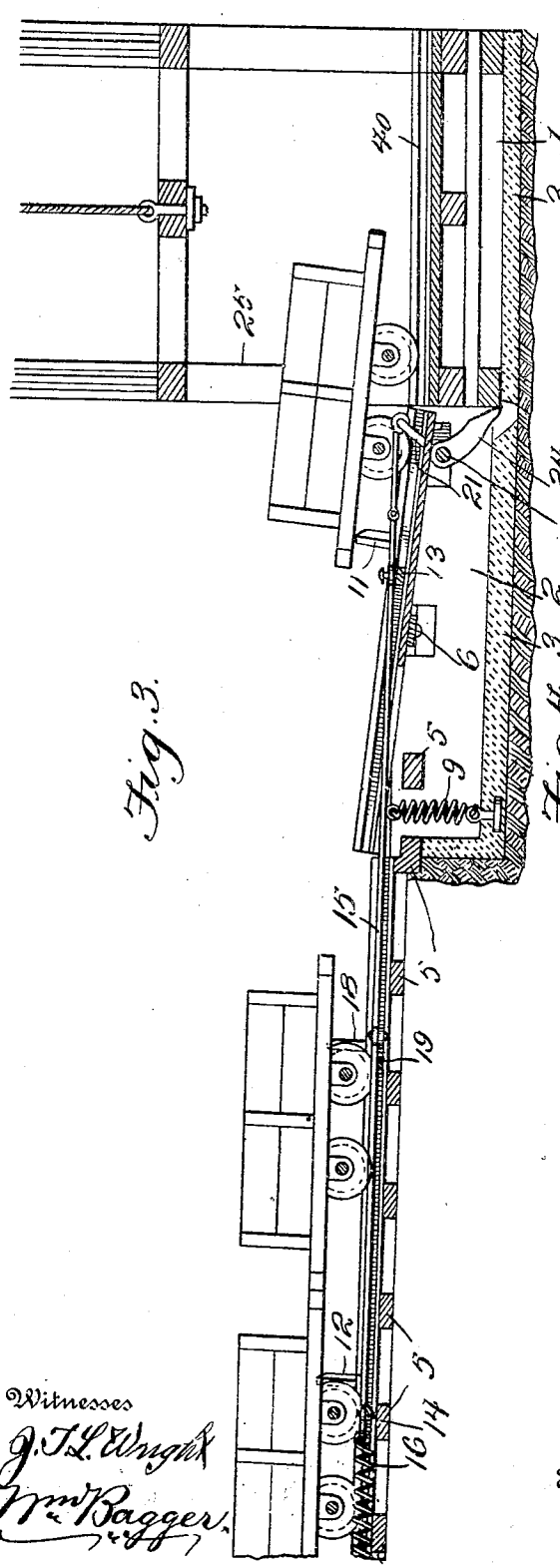


Fig. 3.

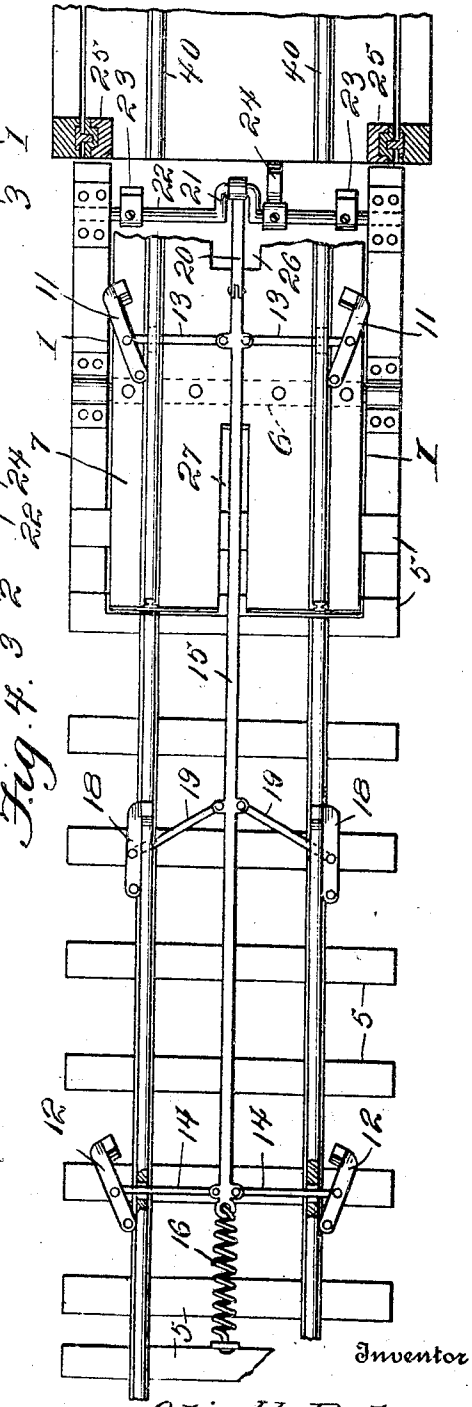


Fig. 4.

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Wm. Bagger.

Inventor

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By Victor J. Evans,

Attorney

ANDREW B. GRAHAM CO. PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OTIS H. BAKER, OF COLUMBUS, OHIO.

CAR-TRANSFERRING DEVICE.

955,039. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed January 18, 1910. Serial No. 538,659.

To all whom it may concern:

Be it known that I, OTIS H. BAKER, a citizen of the United States of America, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Car-Transferring Devices, of which the following is a specification.

This invention relates to devices for transferring loaded mining cars from the track to the cage of an elevator, whereby such car is to be lifted to the surface, and it has for its objects to provide a device of simple and improved construction whereby such transfer may be made quickly and safely.

Further objects of the invention are to simplify and improve the general construction and operation of a device of the character outlined above.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawings,—Figure 1 is a sectional elevation illustrating the invention, showing a mining car positioned upon a tilting platform which is sustained in position by means adapted to be tripped by a descending mining cage. Fig. 2 is a top plan view. Fig. 3 is a sectional elevation, showing a car in the act of being transferred from the tilting platform to the cage. Fig. 4 is a top plan view, showing the parts constituting the invention arranged as in Fig. 3. Fig. 5 is a sectional detail view taken on the plane indicated by the line 5—5 in Fig. 2. Fig. 6 is a perspective detail view of one of the bumpers.

Corresponding parts in the several figures are denoted by like characters of reference.

At the end of the railway or tram-way, which is laid in the usual manner in the mine level adjacent to the elevator shaft 1 is constructed a pit 2, the walls and bottom of which are suitably reinforced with masonry, concrete or in any other suitable manner, as shown at 3, said pit communicating with the bottom of the elevator shaft into which the reinforcement extends. The track includes the rails 4, 4 and the ties, 5, 5. Tiltably mounted upon a shaft 6, which extends transversely across the pit 2, is a platform 7 having rails 8 which constitute an extension of the track formed by the rails 4; the rear end of the platform 7, that is to say, the end distant from the elevator shaft 1 is connected by a tension spring 9 with the bottom of the pit 2, and said rear end of the platform is adapted to be supported upon a shoulder 10 formed by the rear wall of the pit. When the platform is thus supported, the rear ends of the rails 8 will be in registry with the forward ends of the track rails 4, as will be seen in Fig. 1 of the drawings. Bumpers or stop members 11 are pivotally connected with the rails 8 upon the tilting platform 7, said bumpers having upturned ends adapted to lie in the path of the wheels of rolling stock moving on the rails; similar bumpers 12 are pivotally connected with the rails 4 at a suitable distance from the pit 2. The bumpers 11 and 12 are connected by links 13 and 14 with a slide 15 positioned between the track rails and the platform rails and arranged in parallel relation to said rails, said slide being connected by a tension spring 16 with a suitably disposed bracket 17, whereby the slide is moved in a rearward direction, thus exerting draft upon the links 14, whereby the bumpers 11 and 12 will be held closely adjacent to the respective rails, thus occupying obstructing positions with respect to rolling stock.

Bumpers 18, similar to the bumpers 11 and 12, are pivotally connected with the rails 4 intermediate the bumpers 12 and the pit 2, said bumpers 18 being connected with the slide 15 by links 19 which are so disposed that when the bumpers 11 and 12 hug the rails and occupy obstructing positions, the bumpers 18 shall be spread apart to a non-obstructing position, as clearly shown in Fig. 2 of the drawings. It will be readily seen that when the slide 15 is moved in a forward direction against the tension of the spring 16, the bumpers 11 and 12 will be moved or spread to non-obstructing positions, while the bumpers 18 through the draft exercised upon the links 19 will be caused to hug the rails and occupy the ob-

structing position clearly illustrated in Fig. 4.

The forward end of the slide 15 is connected by a link 20 with a crank 21 upon a rock shaft 22 which is supported for oscillation in suitable bearings adjacent to the front end of the pit, as shown. The rock shaft 22 is provided with cams 23 adapted to support the forward end of the tilting platform to maintain the latter in a level position. Said rock shaft is also provided with a trip arm 24 adapted to extend in the path of a cage 25 which is mounted for vertical movement in the elevator shaft 1. The crank 21 and the cams 23 are relatively so positioned that when the cams are in supporting position with reference to the tilting platform, the slide 15 will be retracted partly by the action of the crank 21 and partly by the spring 16 to the position shown in Fig. 2, where the bumpers 11 and 12 are in obstructing and the intermediate bumpers 18 in non-obstructing position; when, on the other hand, the rock shaft is oscillated to move the cams 22 to permit the platform to tilt, the slide 15 by the action of the crank 21 will be moved forward against the tension of the spring 16, and the relative positions of the bumpers will be reversed, as best seen in Fig. 4. The platform 7 is provided with a slot or recess 26 at its forward end to accommodate the crank 21; and a longitudinal slot or recess 27 is formed at the rear end of the platform to accommodate the slide 15 and to prevent the latter from obstructing the tilting movement of the platform.

The bumpers 11, 12 and 18 are all of like construction, except that they are made right and left hand for engagement with the right and left hand rails, respectively. A specimen of one of the bumpers 18 has been shown in Fig. 8 of the drawings, by reference to which it will be seen that said bumper consists of an arm 28 having at one end an aperture 29 for the passage of a pin or fastening member, whereby it may be pivotally supported adjacent to a rail, said arm having at its opposite end a forwardly extending curved bracket 30 adapted to overlie the head of the rail adjacent to which the bumper is mounted and extending sufficiently about the rail head to form a secure obstruction to the passage of rolling stock.

When a loaded car is positioned upon the platform 7 while the latter is in the level position shown in Fig. 1, such car will be obstructed by the bumpers 11 and a second car approaching at the same time will be arrested or intercepted by the bumpers 12. When the elevator cage descends it will trip the rock shaft 22 by engagement with the trip arm 24, thus causing the platform to be tilted by the weight of the car with the preponderance of its weight in advance of the axis of the shaft 6, a suitable distance in advance of which the bumpers 11 are located, and the car will travel by gravity on to the mining cage, the floor of which is equipped with suitable rails 40. At the same time the bumpers 12 will be moved to a non-obstructing position, and a car previously intercepted by said bumpers will be permitted to move along the track until intercepted by the bumpers 18, which in the meantime have beeen moved to obstructing position, as shown in Fig. 4. When the first car has been transferred from the tilting platform to the mining cage, the platform will be restored to level position by the action of the spring 9, and the slide 15 will be retracted by the spring 16, thus moving the bumpers 18 to non-obstructing position and permitting a car to pass on to the platform, where it will be intercepted by the bumpers 11, while a car falling behind will be intercepted by the bumpers 12. The entire operation, it will be seen, is automatic and is governed by the descent of the mining cage which trips the rock shaft 22 by contact with the trip arm 24.

In the foregoing specification my invention has been shown and described with reference to its use and application in mines for the purpose of transferring mining cars to the cage or car of an elevator, whereby such cars are lifted to the surface of the ground. It is desired to be particularly understood, however, that the use of the invention is by no means limited to this particular application, but that the principles of the invention may be carried into practice wherever it shall be found that they may be advantageously applied.

Having thus described the invention, what is claimed as new, is:—

1. In a device of the character described, an elevator shaft, a pit constructed adjacent to the bottom of the shaft, a shaft extending transversely across the pit, a platform tiltably supported by said shaft, a supporting shoulder for the rear end of the platform, a retracting spring for the rear end of the platform, a rock shaft having cams supporting the front end of the platform, a trip arm extending from the rock shaft in the path of a cage traveling in the elevator shaft, and rails upon the cage and the tilting platform, the latter communicating with a track leading in the direction of the elevator shaft.

2. In a device of the character described, an elevator shaft and a cage traveling therein, a pit constructed adjacent to and having a foundation extending into the bottom of the elevator shaft, a shaft extending transversely across the pit, a platform supported tiltingly upon said shaft, a supporting shoulder for the rear end of the platform, a retracting spring connected with the rear end of the platform, a rock shaft supported ad-

jacent to the front end of the platform, platform supporting cams upon said rock shaft, a crank upon the rock shaft operating through a slot in the platform, a slide connected with the crank, track rails leading to the pit and upon the tilting platform, bumpers connected with said track rails, links connecting said bumpers with the slide, a retracting spring for the latter, and a trip arm extending from the rock shaft in the path of the cage traveling in the elevator shaft.

3. In a device of the character described, a platform supported tiltably adjacent to the elevator shaft and having longitudinal slots at its front and rear ends, track rails upon said platform, bumpers supported pivotally adjacent to the track rails, rails leading in the direction of the tilting platform, two sets of bumpers supported pivotally adjacent to said rails, a rock shaft supported adjacent to the front end of the platform and having platform supporting cams, a crank, a spring retracted slide connected with said crank, links connecting the slide with the several sets of bumpers, and means for actuating the rock shaft to operate the slide and to permit the platform to tilt.

4. In a device of the character described, a tiltably supported platform, rails upon said platform, bumpers supported pivotally adjacent to said track rails relatively near and distant from the platform, and means for simultaneously removing the distant bumpers and those upon the platform to obstructing position and the near bumpers to non-obstructing position, or vice versa, said means including a spring-retracted slide, links connecting the slide with the respective bumpers, and a rock shaft having platform-supporting cams, a crank connected with the slide and a trip arm.

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

OTIS H. BAKER.

Witnesses:
J. W. SHEFFIELD,
F. F. BAUCHMOYER.