W. W. BROWER.

ELEVATING AND LOADING MECHANISM.

APPLICATION FILED AUG. 31, 1908.

936,517.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.

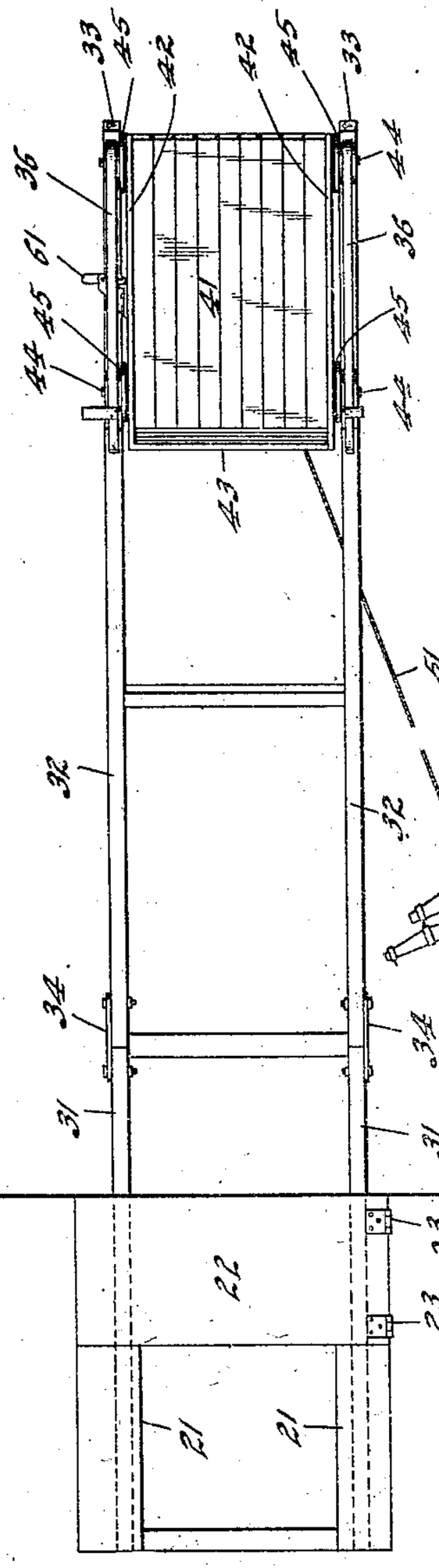

Fig. 1.

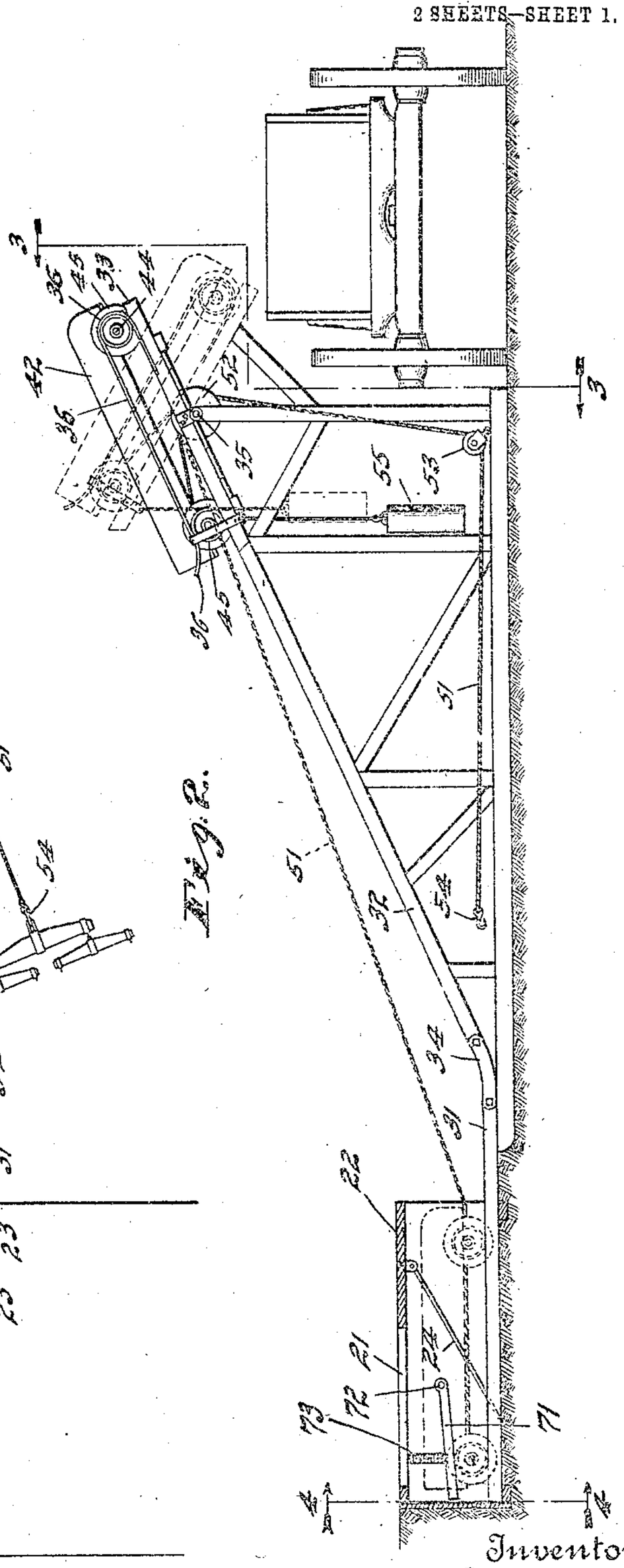

Fig. 2.

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Fig. 3.

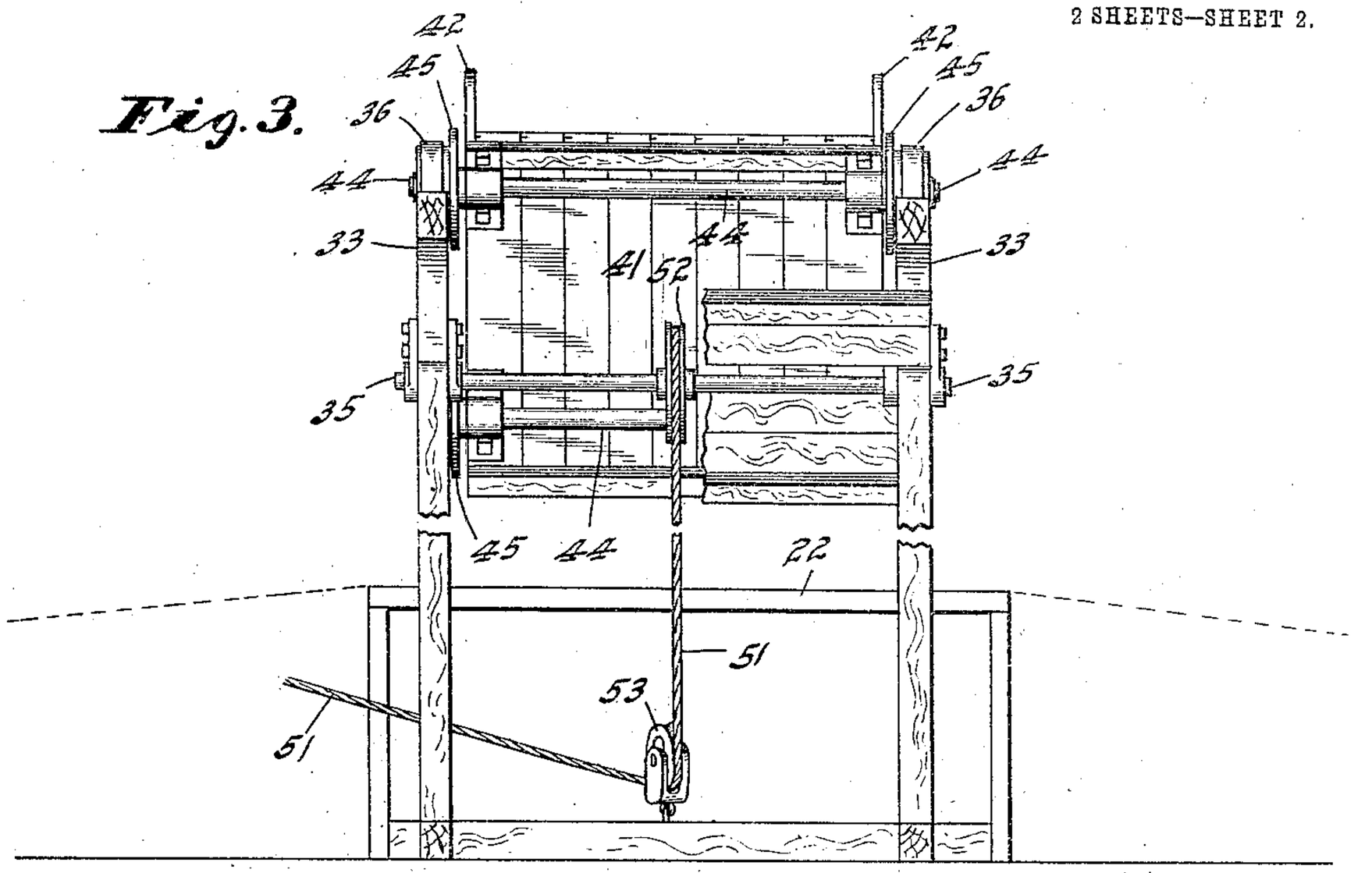



Fig. 4.

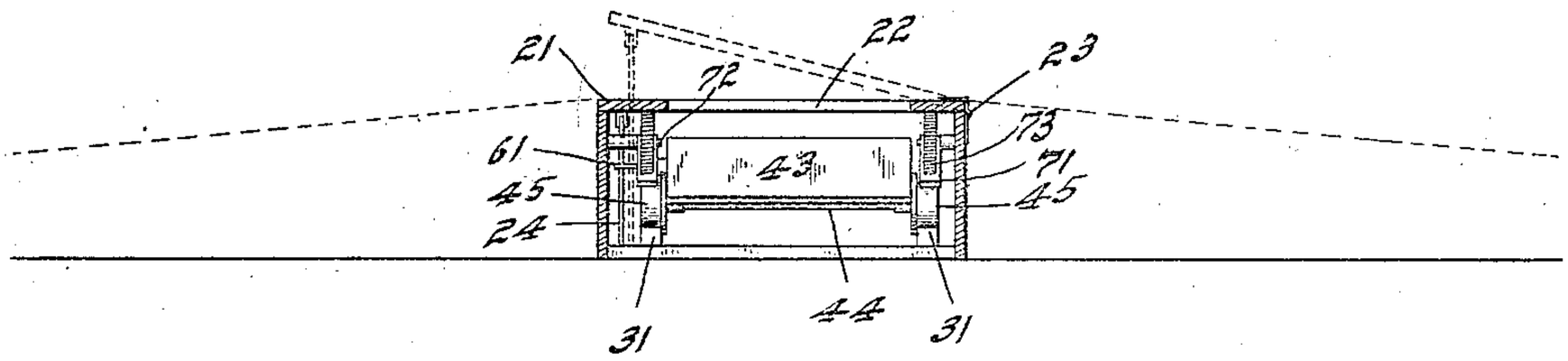
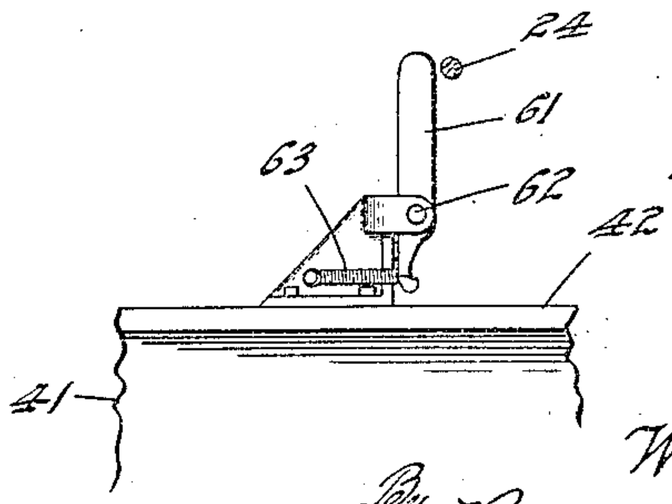



Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## ELEVATING AND LOADING MECHANISM.

936,517. Specification of Letters Patent. Patented Oct. 12, 1909.

Application filed August 31, 1908. Serial No. 451,093.

*To all whom it may concern:*

Be it known that I, WILLIAM W. BROWER, a citizen of the United States, residing at Harmattan, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in Elevating and Loading Mechanism, of which the following is a specification.

The object of this invention is to provide a means whereby material of various kinds may be easily elevated to a position from which it may be discharged into a vehicle or receptacle into which it is to be loaded for transportation. Said invention will first be fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a top or plan view of an apparatus of the kind in question embodying my said invention; Fig. 2 a side elevation thereof; Fig. 3 an end elevation of the upper end as seen when looking in the direction indicated by the arrows from the dotted line 3 3 in Fig. 2; Fig. 4 a transverse vertical sectional view at the point indicated by the dotted line 4 4 in Fig. 2 and Fig. 5 a detail plan view of a fragment of the car with the trip by means of which the support for the movable portion of the platform is operated.

A platform 21 is arranged to receive the material to be loaded, and this has a space below it sufficiently large to receive the elevating car. This space or chamber may be partially or wholly in an excavation or pit, or the surrounding surface may be brought up to its level by grading, as is most convenient. Dotted lines in Figs. 3 and 4 illustrate the top of the grade where such grading is done. In any event it is my design to have the top of this platform approximately level with the surrounding grade, so that vehicles containing the material to be loaded may pass onto said platform in a suitable position to have their contents dumped into the car beneath through the opening in the platform provided for that purpose. A portion of said platform 22 may be mounted on hinges 23 and thus adapted to be raised, and to be held in raised position temporarily by means of a prop or support 24 for purpose as will presently be described.

Extending from below the platform to a suitable elevation is a track composed essentially of a horizontal portion 31 and inclined portions 32 and 33, the portions 31 and 32 being connected by suitable connecting devices 34. The upper track portion 33 is pivotally mounted at 35, and is adapted to be swung on said pivotal mountings to facilitate the discharge of the contents of the elevating car into the receptacle to be loaded, as is indicated by dotted lines in Fig. 2. Connected to said rail parts 33 are guard rails 36, beneath which the wheels of the elevating car will run when said car reaches the limit of its ascent, and by means of which said car will be held onto said track portion securely during the dumping operation.

The elevating car is composed of a body having a bottom 41, side walls 42 and rear end walls 43, which body is mounted on ordinary axles 44 carrying wheels 45. Said car body is preferably left open at the front end, or dumping end, (being the end opposite that having end wall 43) in order that the dumping of its load may be more conveniently performed. If, however, the contents are such as would be likely to spill out during the elevating operation, a removable end wall may be provided at this point, as will be readily understood.

The car is operated by a rope or cable 51 which is connected thereto at a point at or near its rear end, underneath the body, and it passes thence over a sheave or pulley 52, and thence down and under a suitable guide sheave or pulley 53, and thence off to one side, where it should be provided with an attaching device 54 (such as a hook or eye) whereby it can be attached to the propelling means. It is most convenient to use a team of animals as such propelling means, and the hook 54 is usually therefore connected to a doubletree. The operation is, the car being beneath the platform, that said car is first loaded through the opening in said platform. The power is then applied to the rope or cable 51, and the car is first drawn along the track 31—32—33 until it reaches the upper end. Further pull on the cable will cause the track section 33 to tip on its pivot into the position indicated by dotted lines in Fig. 2, when the load of the car will be discharged into a receptacle which has been placed to receive it. Relieving the force on the rope or cable will permit the car and track-section to return to their for-

mer positions, a weight 55 being provided to insure the prompt performance of this movement.

As heretofore stated, that portion of the platform 22 which is over that portion of the pit or chamber in which the car is placed to be loaded where said car emerges, is hinged, and capable of being raised. This is so that the loaded car may emerge without having the heaped-up portion of its load scraped off as it begins its ascent. After the car has been loaded, this platform portion is raised, by hand or otherwise, and will be held to its raised position by means of the prop or support 24, as is best shown in Fig. 4, so that the car and its load may freely pass. In order that it may be caused to drop down, ready for use, promptly when the car returns for another load, I have provided a means by which the car will automatically throw the prop back as said car reaches its loading position. This means consists of an arm 61 secured to the side of the car in such position that it will come in contact with said prop, and move it back, as will be readily understood. In order that said arm may not operate when the car is moving in the other direction, and thus be likely to do damage, I have mounted it on a pivot at 62, upon which it will swing when it comes in contact with any obstruction. It is held normally to its extended position by a spring 63.

In order to stop the car at the proper point, I have provided within the pit or chamber into which the car enters a frictional retarding device in the nature of a brake. This consists of a bar 71 pivotally connected at one end, as by pivot 72, to the wall of the pit or chamber, and having a spring or other suitable downwardly-forcing device, as 73, by means of which it is forced downwardly with such pressure as may be desired. As the car enters the pit or chamber and approaches its final position, the wheels of said car will come in contact with the bar 71, and be thereby retarded, and the car (the pressing force being predeterminedly arranged) will stop the car at the proper point.

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

1. The combination, in an elevating and loading mechanism, of a suitable pit or chamber having an opening in its upper wall, a track leading therefrom to a suitable elevation, a car adapted to travel on said track from said pit or chamber to the extremity of said elevation, the upper portion of the track being pivotally mounted at a point midway of the car when the latter is in dumping position and provided with suitable retaining devices for the car, and means for tipping said upper track-section and the car whereby the contents of said car may be discharged, substantially as set forth.

2. The combination, in an elevating and loading mechanism, of a pit or chamber adapted to contain a car and provided with an opening in its upper wall through which the car may be loaded, a track leading from said pit to a suitable elevation, a car adapted to travel on said track from said pit or chamber, said pit or chamber being also provided with a portion capable of being raised arranged over that side of the pit or chamber from which the car emerges, a support for holding said raisable portion in its raised position, and a pivoted arm mounted upon one side of the car whereby said support will be pushed from its upright position as the car enters the pit or chamber and the said raisable platform portion thus permitted to descend to place.

3. The combination, in an elevating and loading mechanism, of an inclined track having a pivoted upper section onto which the carrier car may run, a pivot support for said upper section arranged centrally thereof, guard rails secured to said upper track section beneath which the wheels of the car will pass whereby said car will be held securely in position thereon, means whereby said track section with the car thereon may be tipped on the supporting pivots and the car thereby be discharged of its load, and means for returning said car and track section to initial position, substantially as set forth.

4. The combination, in an elevating and loading mechanism, of an inclined track embodying a tilting portion centrally pivoted, a guard rail secured to said tilting portion, power devices attached to the rear end of the car for propelling said car and tilting the same together with the tilting portion of the track, and means comprising said power devices and a weight suspended directly to the rear end of the tilting track portion for returning the tilting portion of track and car to initial position when the load is discharged, the whole being arranged and operated substantially as shown and described.

In witness whereof, I, have hereunto set my hand and seal at Harmattan, Alberta, Canada, this fourteenth day of August, A. D. one thousand nine hundred and eight.

WILLIAM W. BROWER. [L. S.]

Witnesses:

G. B. SEXSMITH,

C. L. PETERSON.