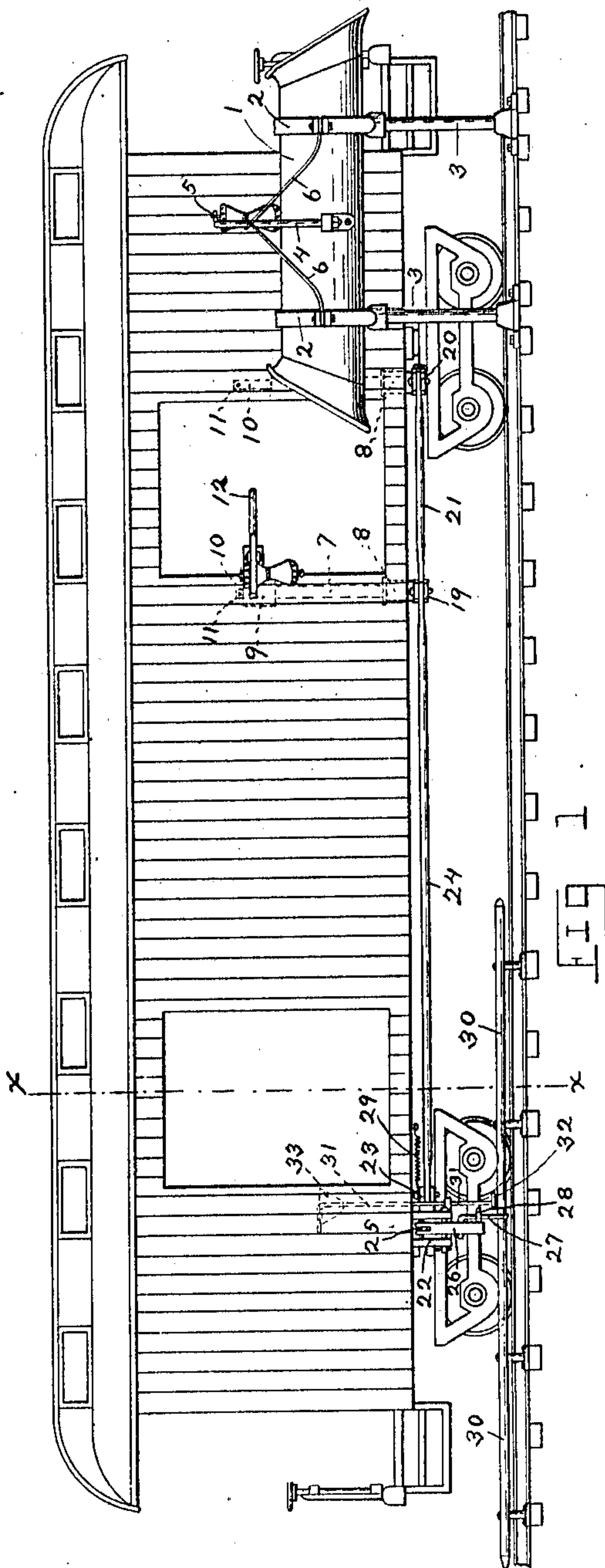


J. E. BOYLE.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
APPLICATION FILED JAN. 26, 1910.

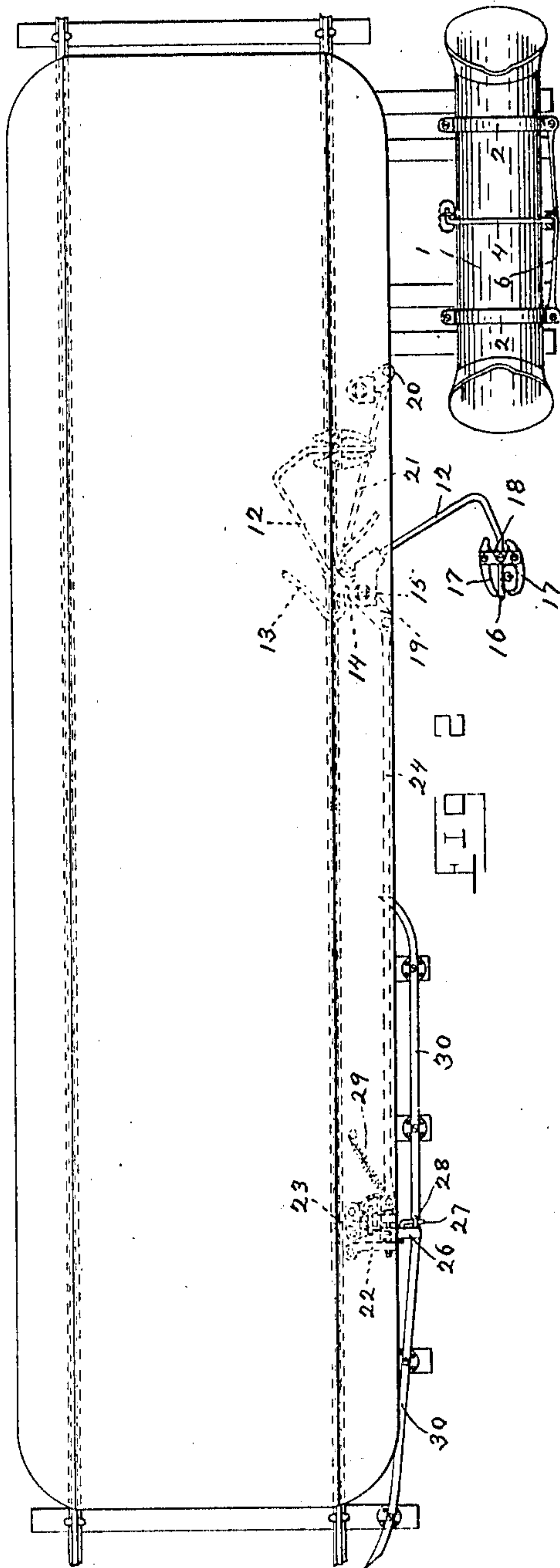
970,606.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
M. L. Lefevre
B. P. Talton



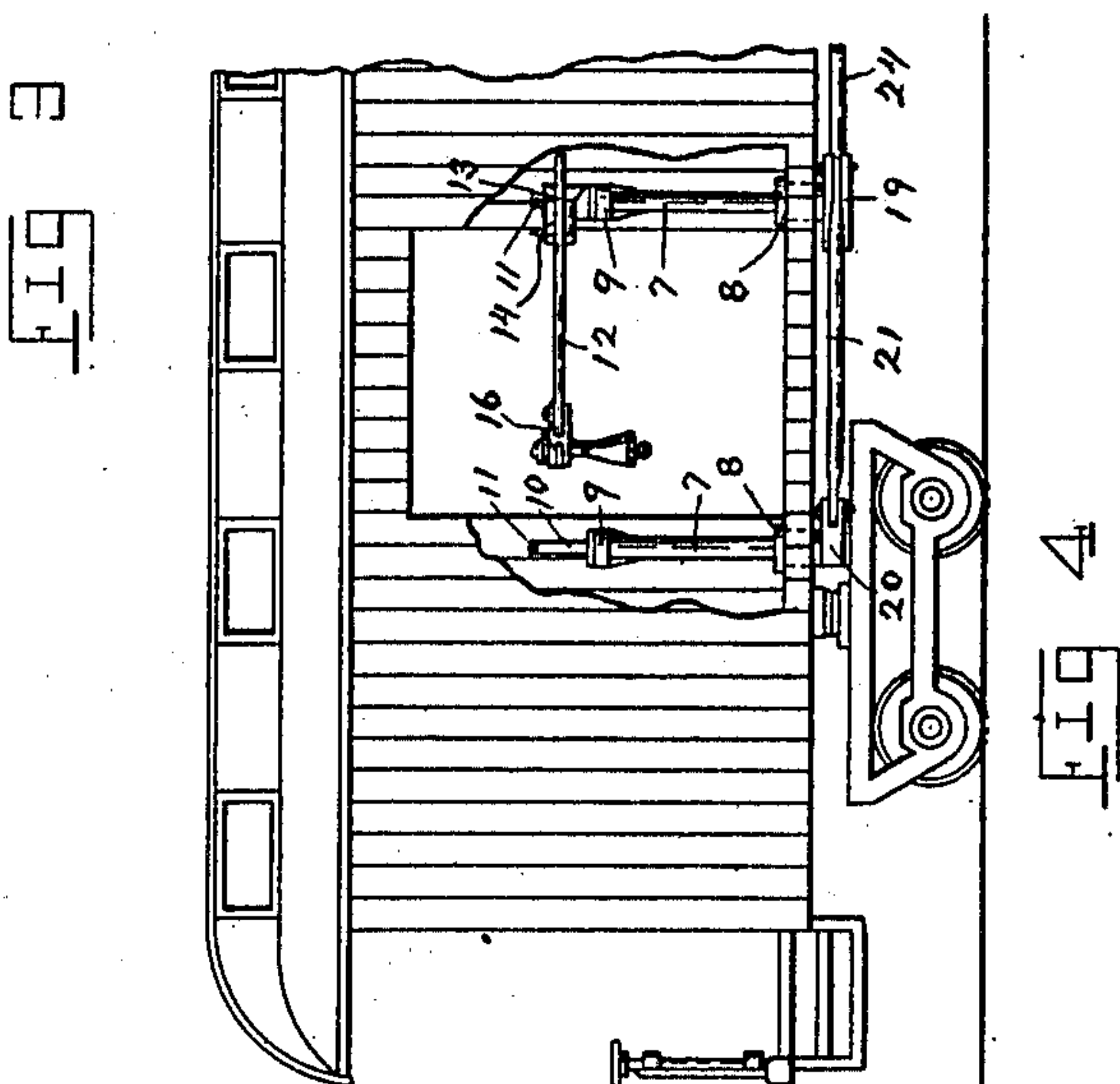
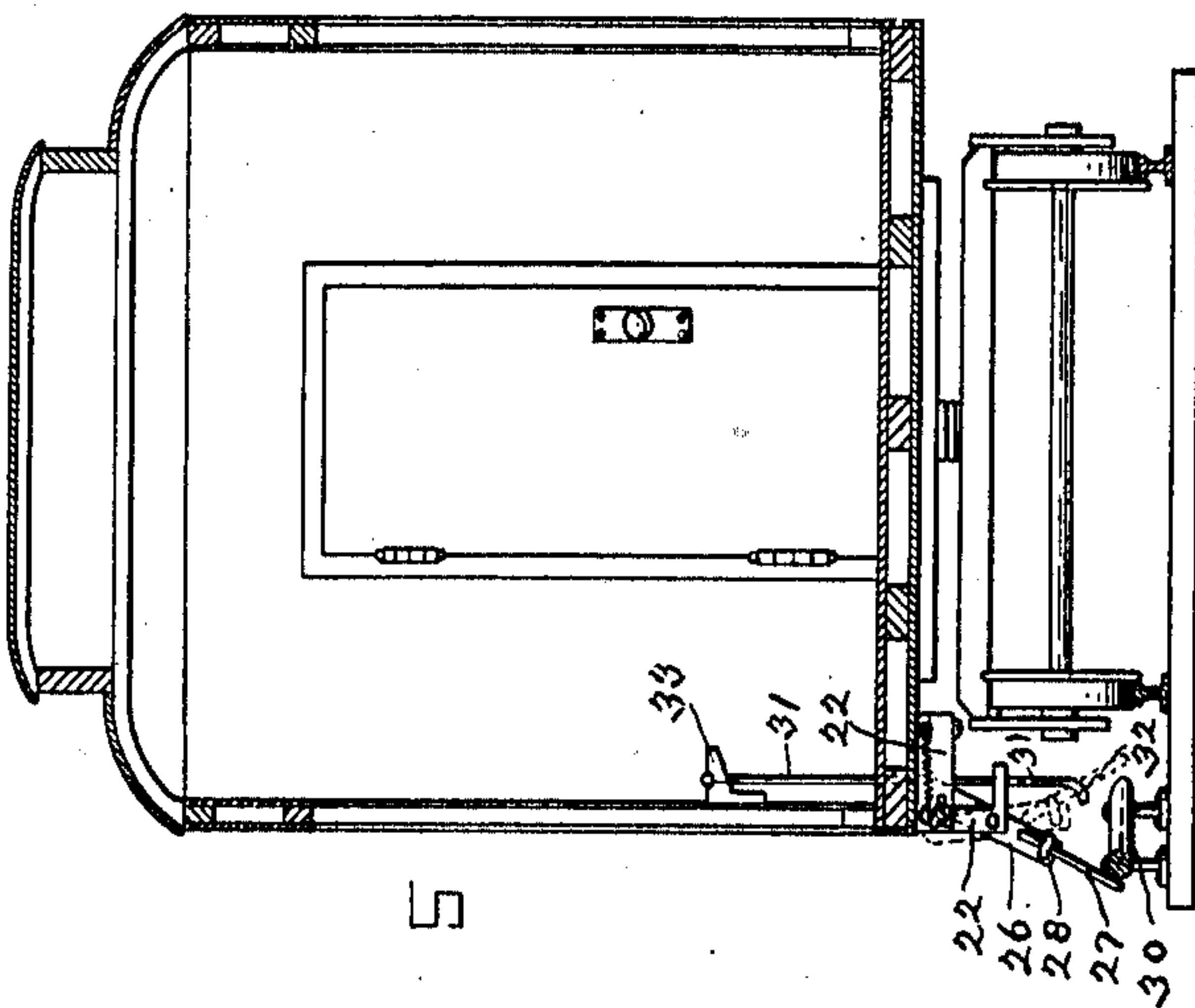
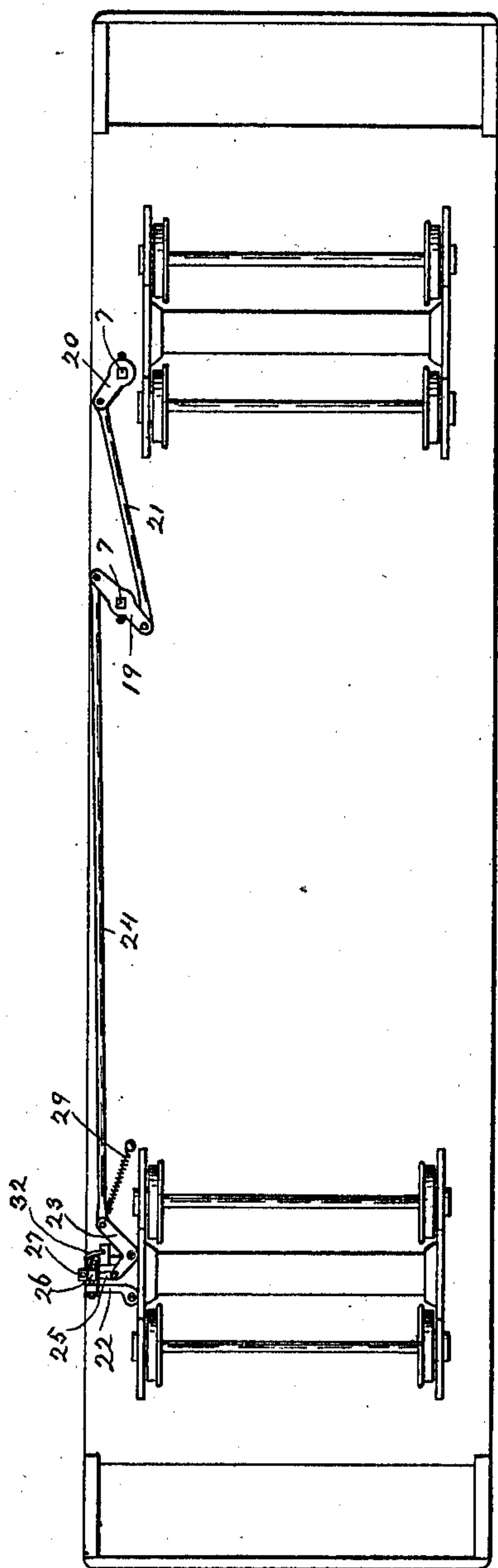
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WITNESSES:

M. L. Lefevre.

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UNITED STATES PATENT OFFICE.

JAMES E. BOYLE, OF LANCASTER, PENNSYLVANIA.

MAIL-BAG CATCHING AND DELIVERING APPARATUS.

970,606.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed January 26, 1910. Serial No. 540,158.

To all whom it may concern:

Be it known that I, JAMES E. BOYLE, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Mail-Bag Catching and Delivering Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to a mail pouch delivering and catching apparatus for automatically delivering and catching mail bags or sacks from moving trains, and is an improvement over the apparatus described and claimed in United States Letters Patent No. 904,676, granted to me on Nov. 24, 1908.

The object attained in my present invention which is disclosed and claimed in this application, is the construction and combination of suitable mechanism whereby the operation of the apparatus is rendered automatic, so that after the mail clerk has placed the mail bag, which it is desired to deliver to the station, within the bag-holding jaws of the car-fork and set the trip lever; when the proper place has been reached by the train, the fork will be automatically swung outward from the car and the bag which is carried thereby will be delivered to the mouth of the receptacle which is mounted by the side of the track, the extending fork will then pass over the receptacle and catch the bag which has been placed upon the crane, and will then fly back within the car.

Another object of the invention is to provide an apparatus of this class that may be operated upon a single track road when the train is going in either direction.

Still another object being to provide means whereby the apparatus may be set to be inoperative when it is desired to skip certain stations. Also as the car-fork is mounted within the car, if for any reason the bag is not retained in the catching hook, it will be carried within the car by the swinging-in action of the fork and cannot rebound from the fork and fall upon the ground, and also when the apparatus is not in use the door of the car may be closed and the fork will be inside the car instead of outside, which is now the case.

With these and other objects in view, my invention consists in certain construction and combination of parts as will hereinafter be fully described and claimed in the

annexed specification and illustrated in the accompanying drawings, which form a part of this application, and in which like figures of reference refer to corresponding parts in all of the views.

Referring to the drawings:—Figure 1, is a side elevation of a mail car, showing my device applied thereto, and with the car fork in its most extended position with a bag to be delivered, and also showing a mail bag hung upon the crane in position to be caught by the passage of the car fork. Fig. 2, is a top plan view of the same, and also indicates in dotted lines, the position of the car-fork when in its normal position within the car. Fig. 3, is a bottom plan view of the car, showing the arrangement of the operating rods and cranks. Fig. 4, is a partial elevation, looking within the car and showing the car-fork and posts. Fig. 5, is a sectional view of the car, taken on the line X—X of Fig. 1, and showing the position and arrangement of the trip-arm.

Referring to the drawings, the receptacle 1, is substantially the same as described in the above referred to Letters Patent No. 904,676, and contains the same shock absorbing means, but the receptacle 1, is mounted within the two clamps 2, which are secured upon the tops of the supports 3, which are mounted upon the road bed.

The bag crane comprises a rod 4, which is secured at its lower end to the side of the receptacle 1, midway its ends; while the upper end of said rod 4, extends at right angles over the top of the receptacle 1, at a height therefrom of a little more than one-half the length of a mail bag; the outer end of said rod 4, is provided with a bag-holding hook 5; and said rod 4, is braced by the stay rods 6.

The mechanism of the car, comprises a pair of vertical shafts or rods 7, which are rotatably mounted in the bearings 8, which are secured in the car floor and the bearings 9, which are attached to the inside of the car. The shafts 7, are formed with a shoulder where they enter the bearings 8, which allows the ends to extend below said bearings, and the upper ends of said shafts 7, which extend beyond the bearings 9, are squared at 10, for the reception of the car-fork, which is detachably secured thereon by a pin placed in the transverse hole 11, near the top of said squared end 10; said car-fork being reversible and adapted to be

mounted upon either of said shafts 7, as may be required according to the direction in which the train is running, and it may here be noted that I have illustrated the device as applied to a shuttle car, that is, a car that runs on a single track road, and it will be readily understood that when the apparatus is applied to cars operated on a double track road, that the apparatus is duplicated on the opposite side of the car and a receptacle is provided for each track.

The car-fork comprises the usual bag-catching arm 12, which terminates at its inner end in the bag retaining hook 13; while adjacent thereto, is secured the socket member 14, which is formed with the squared hole 15, for the purpose of engaging the squared end 10 of the shaft 7, and the outer end of the arm 12, is elongated and projects rearwardly in the form of a hook 16, and upon which are mounted a pair of gripping arms 17, which are actuated by the spring 18, and which are for the purpose of holding the bag or bags which are to be delivered to the receptacle.

For swinging out the car-fork at the required time and in an automatic manner, I have provided the following mechanism: Below the bottom of the car and upon the lower ends of the vertical shafts 7, are rigidly secured the crank-arms 19, and 20; the crank 19, being double ended and its inner end being connected to the crank 20, by the connecting rod 21, for the purpose of operating both of the shafts 7, at the same time, but in opposite directions. At a suitable place upon the bottom of the car, near the outer edge thereof, and at a point opposite the pivot point of the truck is secured the yoke-bracket 22, upon the inner end of which is mounted a bell-crank 23, which has one arm thereof attached to the crank 19, by the connecting rod 24; while the other arm of said bell-crank 23, is attached by the link 25, to the upper end of a lever 26, which is pivoted within the lower end of the yoke 22, in such a manner that by the swing of said lever 26, the bell-crank 23, is operated, which in turn operates the connecting rods 21, and 24, and the cranks 19, and 20, to swing the car-fork in and out of the car. Near the lower end of the lever 26, is pivoted the end of a trip rod 27, which may freely swing in toward the car without actuating the lever 26, but which is retained from swinging outward without carrying the lever 26, by a stop 28, which is secured to said lever 26, and it may here be noted that the lever 26, is normally held in a vertical position by the action of the spring 29, which is attached to the bell-crank 23. Upon the road bed at a suitable distance from the receptacle, is mounted a trip rail 30, which is curved toward the track at its ends and is parallel to the track for

a portion of its length, said parallel portion is slightly greater than the distance from the mouth of the receptacle 1, to the crane 4. When it is desired to deliver bags from or to receive them on the car, a bag or bags are secured near their upper ends within the gripping arms 17; while the car-fork is in the position indicated in dotted lines in Fig. 2; and a bag or bags are suspended from the crane hook 5. As the car approaches the receptacle 1, the trip rod 27, will strike the outer side of the curved end of the trip rail 30, and be carried outward by the curve of said rail until it reaches the extreme end of the throw, (which is the beginning of the parallel portion of said trip rail 30,) and when in this position the car-fork will have swung out to its fullest extent, and as the rod 27, travels along the parallel portion of the rail 30, the car-fork will pass over the top of the receptacle 1; the bag held in the gripping arm 17, will enter the receptacle and be pulled from said arms 17, and the fork will pass on and catch the bag from the crane 4, in the usual way, and as the rod 27, will leave the rail 30, just after the fork has passed the crane 4, the action of the spring 29, will swing the fork and bag within the car. When the device is operated when the car is going in the opposite direction on the same track, the fork is reversed and placed on the other shaft, and there is a similar trip rail mounted upon the road bed adjacent to the other end of the receptacle, so that the apparatus will be operated in the same way, and it will be noted that the end of the trip rail 30, which is nearest the receptacle, is farther away from the track than the other end of the rail, and in this way the trip arm 27, will pass inside the trip rail which is placed beyond the receptacle and will thus not be engaged by that rail.

For setting the apparatus so that it will not operate, I provide a rod 31, which is mounted in the bracket 22, and extends upward through the car bottom, and which is formed at the lower end with a hook 32, which, when the rod is turned will engage the trip arm 27, and carry it back, so that it cannot be engaged by the rail 30; the upper end of the rod 31, may be held by a catch 33, in either a locked or unlocked position.

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

1. In a mail bag catching and delivering apparatus, in combination with a combined receiving receptacle and bag crane mounted adjacent to the track, of upright shafts mounted within the car and adjacent to the doorway thereof, a combined bag-holding and catching fork, reversible and adapted to be attached upon either of said shafts, cranks secured upon the lower ends of said

shafts below the floor of the car, a rod connecting said cranks, a bell-crank mounted upon said car, a rod connecting said bell-crank with one of the cranks attached to said shafts, a bracket secured upon said car opposite the pivot point of one of the car trucks, a lever pivoted within said bracket, a link connecting the upper end of said lever with said bell-crank, a trip arm secured to said lever, a trip rail mounted upon the road bed and placed in proper relation with the path of said trip arm for engaging and reciprocating the same, means for normally retaining the fork within the car, and means for preventing the action of said trip-arm.

2. In combination, with a bag receiving means mounted upon the road bed in proper relation to the car, of an automatic delivering and catching means mounted upon the car,

comprising an upright shaft mounted within the car and adjacent to the doorway thereof, a combined delivering and catching fork detachably secured upon the upper end thereof, a crank-arm secured upon the lower end of said shaft below the floor of the car, a reciprocating trip lever mounted upon the underside of said car, means for operating said shaft by the movement of said trip lever, and means for operating said trip lever in an automatic manner at a predetermined point in relation to the receptacles.

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

JAMES E. BOYLE.

Witnesses:

WM. J. COULTER,
MABEL L. LEFEVRE.