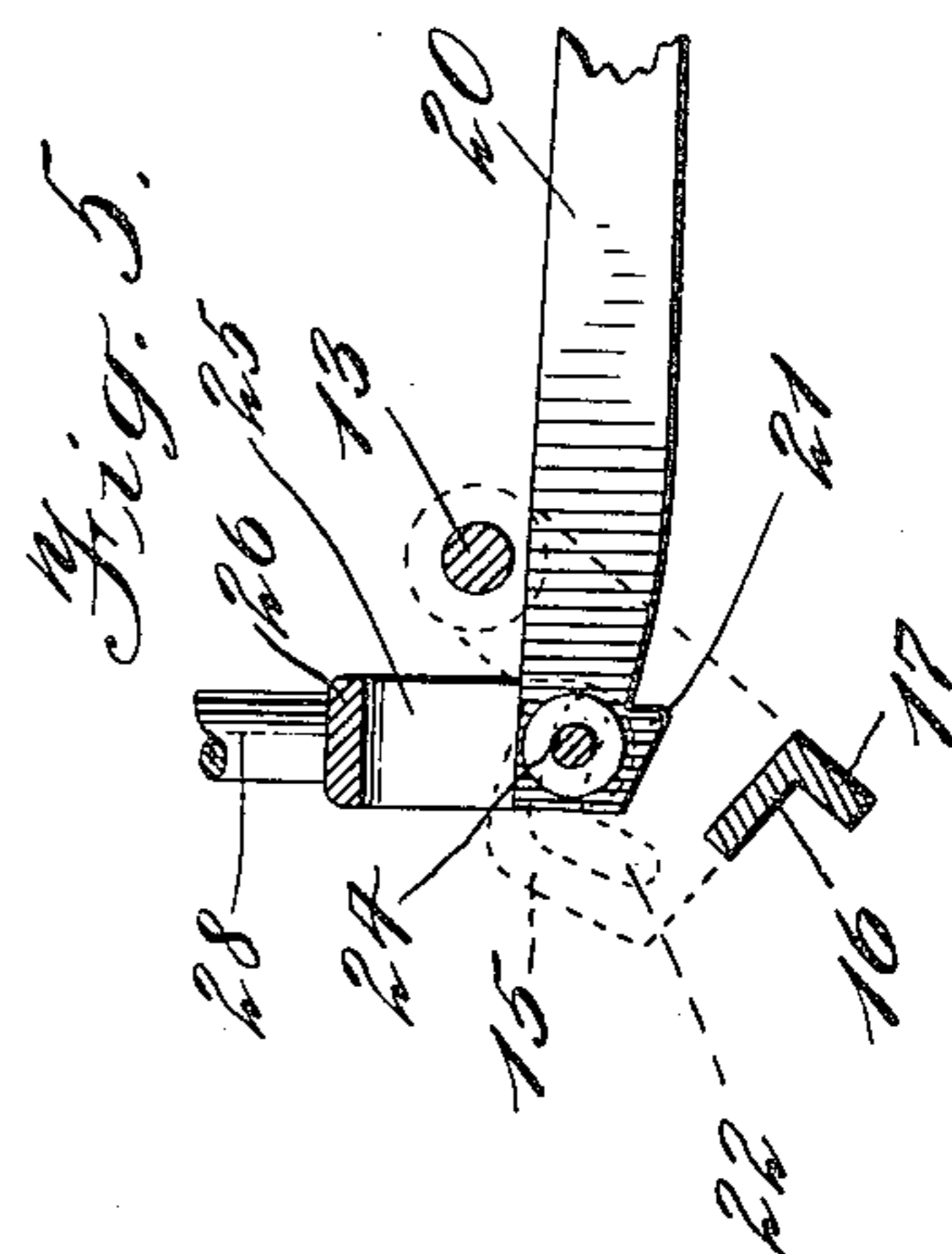
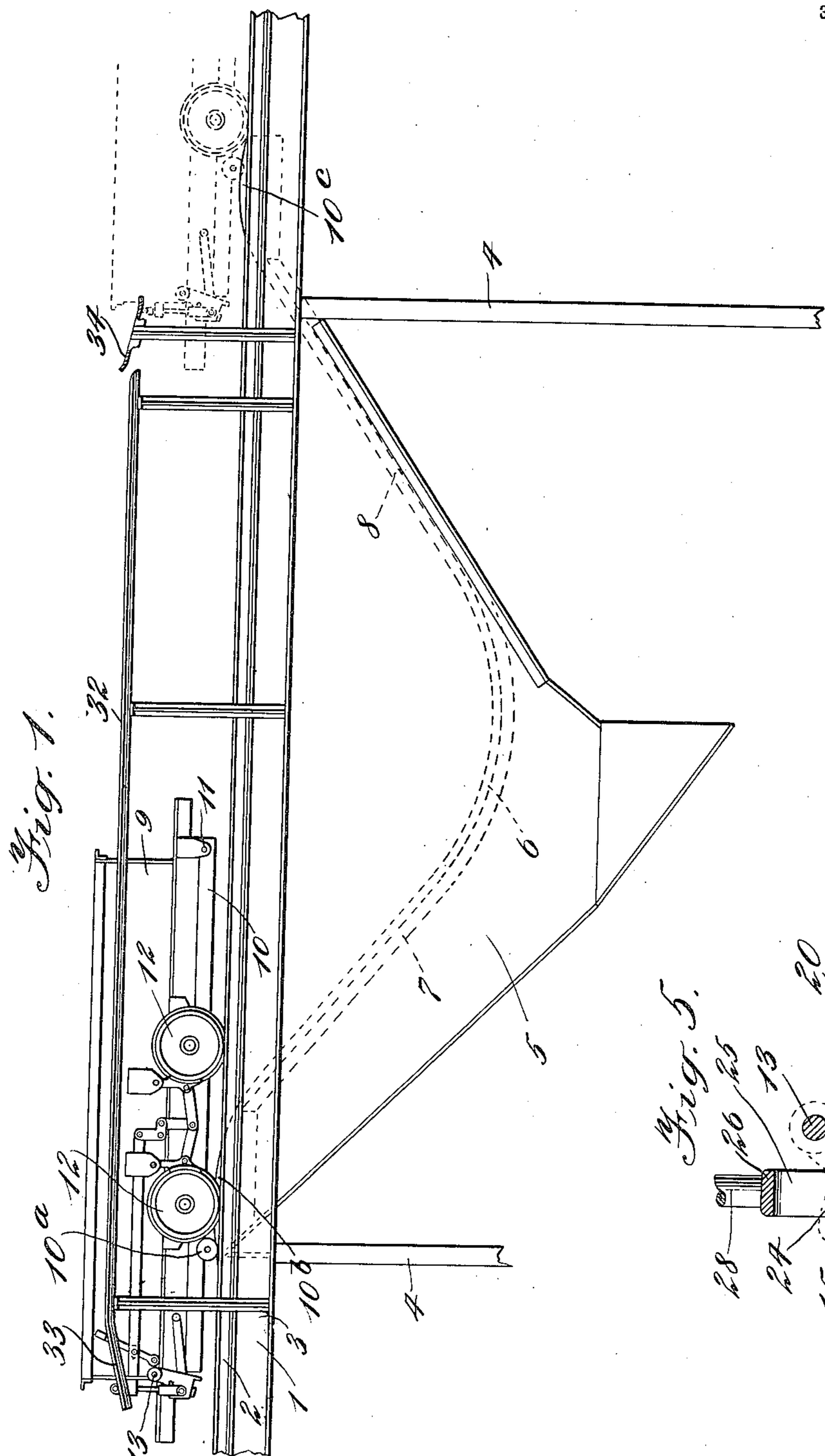


W. D. ORD.
 LOCKING DEVICE FOR DUMPING RECEPTACLES.
 APPLICATION FILED AUG. 27, 1910.

990,381.

Patented Apr. 25, 1911.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 2.

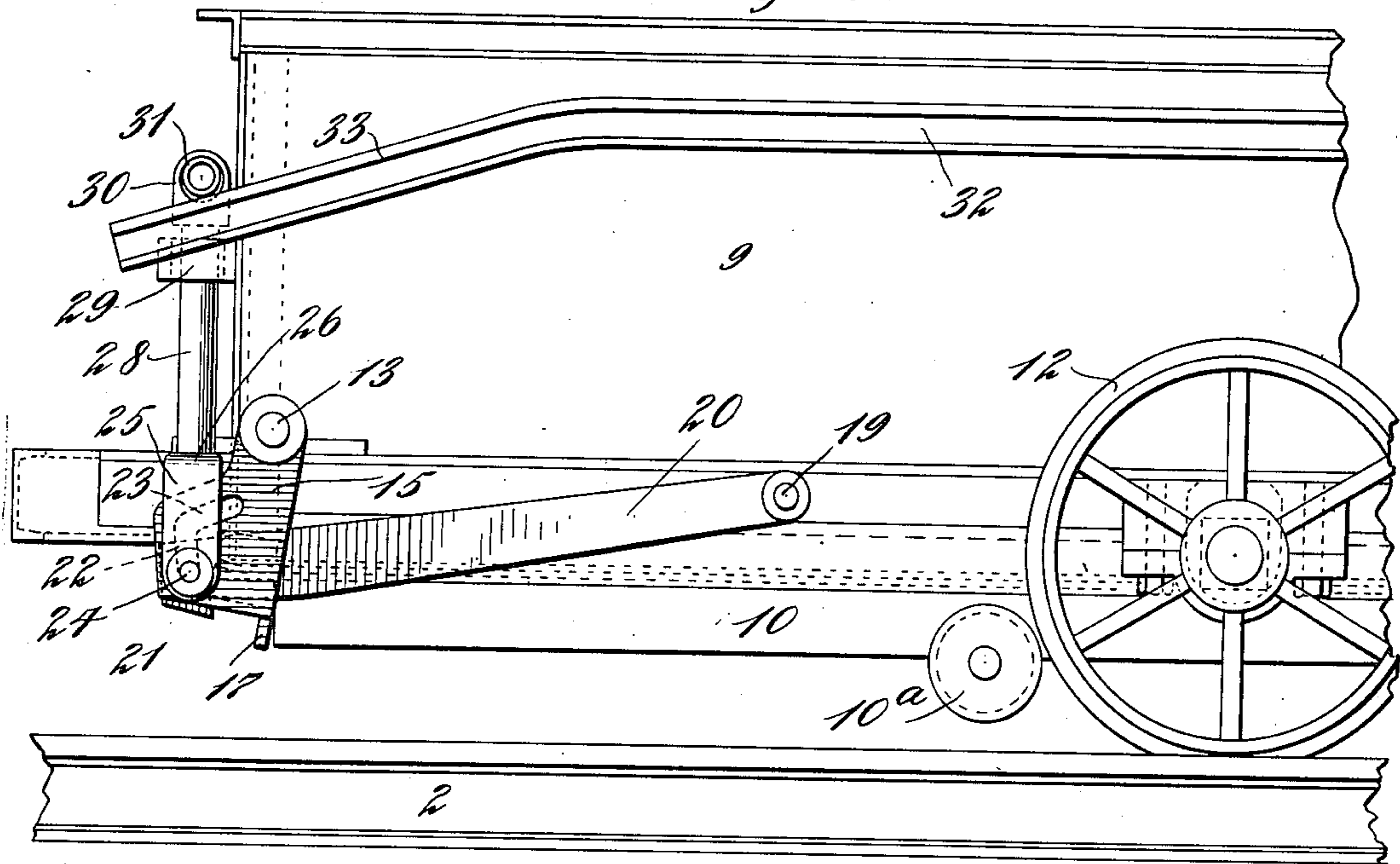
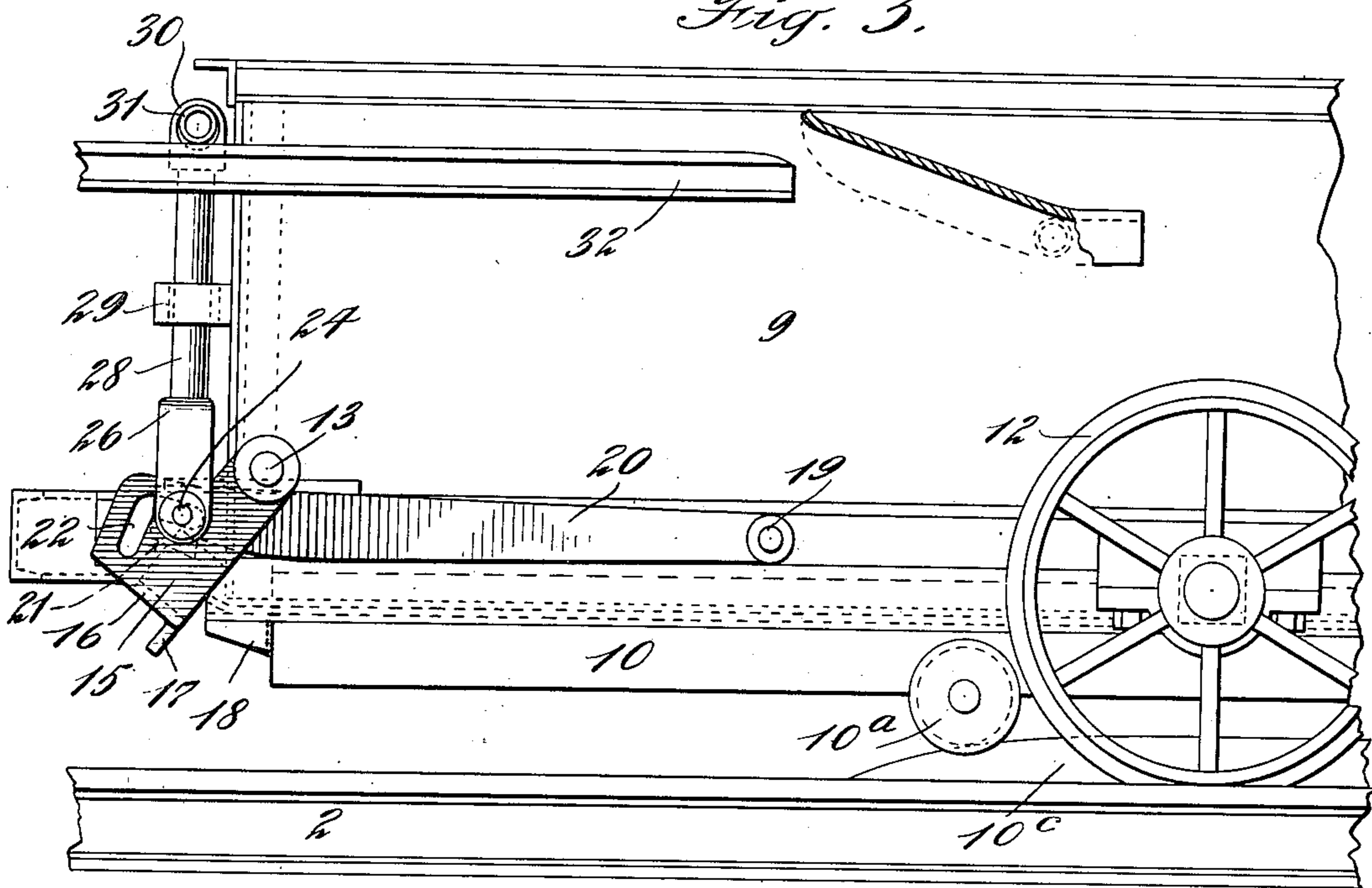


Fig. 3.



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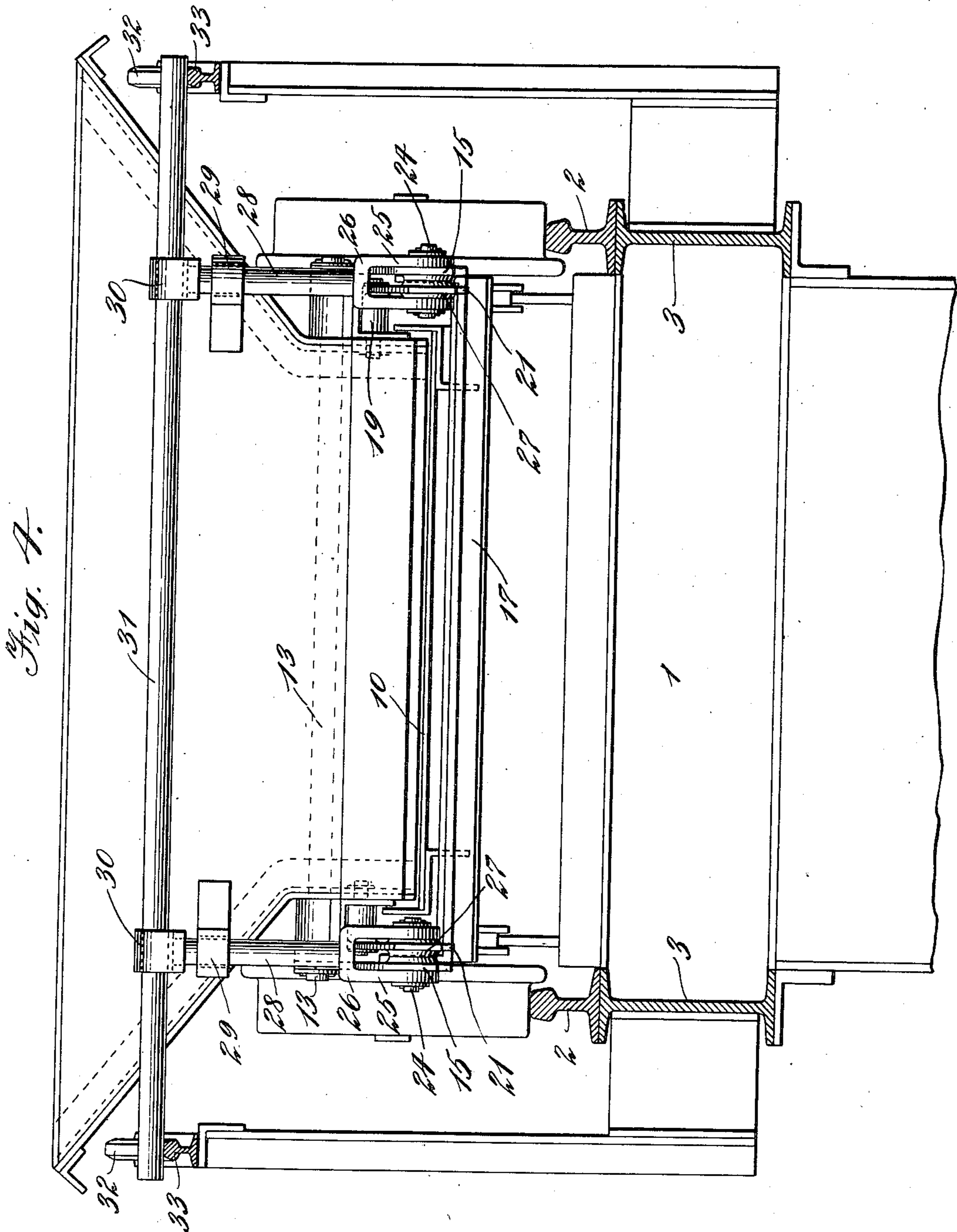
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIAM D. ORD, OF LANDGRAFF, WEST VIRGINIA.

LOCKING DEVICE FOR DUMPING-RECEPTACLES.

990,381.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed August 27, 1910. Serial No. 579,214.

To all whom it may concern:

Be it known that I, WILLIAM D. ORD, a citizen of the United States, residing in Landgraff, in the county of McDowell and State of West Virginia, have invented certain new and useful Improvements in Locking Devices for Dumping-Receptacles, of which the following is a specification.

My invention relates broadly to new and useful improvements in locking devices for locking the closures of dumping receptacles such, for instance, as dump cars, dump buckets, etc., and more particularly it is adapted for use in connection with receptacles having drop bottoms.

One object of the invention is to provide a locking device which will hold the drop bottom of a receptacle in closed position, which device will be extremely simple and durable in construction and efficient in operation.

Another object is to provide a locking device which will include means for holding the same in locking position so that it can not be released by an accident or inadvertence during the movement of the receptacle in transferring a load.

The invention consists in the construction and arrangement of parts to be fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings to be taken as a part of this specification and wherein:

Figure 1 is a view in side elevation of a load transferring and depositing apparatus in connection with which is employed a load receptacle having my locking device applied thereto. Fig. 2 is an enlarged view in side elevation of a receptacle with my invention applied thereto, the locking device being shown in position to lock the closure of the receptacle in closed position. Fig. 3 is an enlarged view in side elevation of a receptacle having my invention applied thereto, the locking device being shown in position to release the closure of the receptacle to permit dumping of the load. Fig. 4 is a view in rear elevation of a receptacle having my invention applied thereto and shown in position to lock the closure of the receptacle closed. Fig. 5 is a detail view partly in section, showing the relative position of the parts of the locking device when

the same is in position to release the closure of the receptacle.

Before entering into a detail description of my invention I would state that the same, as at present contemplated, is devised for use in connection with a load transferring and depositing apparatus described in my application for a patent Serial Number 579,213, filed of even date herewith, and while I show and will hereinafter describe the invention in connection with such an apparatus, I desire it understood that the invention is not to be limited to such an apparatus, as it is applicable, as heretofore stated, to any type of load receptacle having a closure to permit dumping of a load carried by the receptacle.

Referring to the drawings by characters of reference: 1 designates a track way consisting of spaced rails 2, supported respectively upon longitudinal girders 3, the latter being supported on columns 4, said track way supporting a receiver in the form of a pocket 5 within which are arranged, on opposite sides thereof, supporting and guide tracks 6, having a part 7 inclined downwardly in the direction taken by the receptacle traveling on the track and a portion 8 connected with said downwardly inclined portion and inclined upwardly in the direction of travel of the receptacle. All of the features just briefly described are included in the subject matter of my other application above referred to and need not be described in further detail herein.

Mounted to travel on the trackway 1 is a receptacle which may be in the form of a car 9, provided with a drop bottom 10 pivoted as at 11 at one end of the car, preferably the forward end, such drop bottom serving as the closure for substantially the entire bottom of the car. The car may be provided with any form of running wheels 12, adapted to run upon the rails 2 of the track way 1. From the pivotal point 11 the drop bottom extends rearwardly the entire length of the car and at the rear portion of the car is provided means for engaging the drop bottom to hold the same in closed position. I will now proceed to describe this locking means or device in detail.

Extending horizontally through the end of the car body and projecting at its ends outside said car body, is a shaft 13 upon the ends of which are pivotally mounted depending plates 15, said plates being con-

connected at their lower end portions by a horizontally extending angle iron 16, having a depending flange 17, said end plates and angle iron constituting a pivoted latch adapted to swing down so that the angle iron will come beneath the lower rear end of the drop bottom 10, the latter being provided at its rear end portion with an upwardly and rearwardly inclined face 18 to provide for the easy passage of said angle iron to and from locking position.

I will now describe the means for holding the pivoted holding latch in position to support the drop bottom.

Mounted on the car body at the lower edge of each side thereof is a stud bolt 19, and upon each of these bolts, is pivotally mounted a retaining member, preferably in the form of a detent 20, which is adapted to cooperate with the holding latch to hold the latter in position to secure the drop bottom in closed position. These detents extend rearwardly to a point past the ends of the shaft 13, and the end portions of said detents are hooked as at 21, the hooks being so located that when the holding latch is in locking position said detents may drop down over the angle iron 16 to hold the latch. The form of latch retaining means just described, is one which will efficiently attain the objects desired but I do not desire to be limited to the exact detail described as this means may take other forms without departing from the spirit and scope of the invention.

Means are provided whereby the holding latch cannot be released to permit the drop bottom to drop until after it has been released from the retaining means, and in the present embodiment I have shown this means as consisting preferably of a connection between the detents and the plates 15, which will first permit the detents to be moved out of position to release the latch and then upon further movement, shift the latch from locking position. This connection may take a number of forms but I prefer to form each end plate 15 with an angle slot consisting of an upwardly extending portion 22, and a laterally extending portion 23, and each detent is provided with a pin 24 adapted to project through this slot. The arrangement is such that when the latch is in holding position and the detents are holding the latch that the pins 24 will rest in the bottom of the slots 22. It will then be seen that when the detents are raised to release the latch they will first move upward within the slot 22 and then upon continued movement, ride into the slot 23 which will cause the holding latch to be moved from under the drop bottom. Any suitable means in the broad aspect of the invention, may be employed to effect the operation just described but in connection with the apparatus,

of which this receptacle is to form a part as at present contemplated, automatic means is provided for releasing the latch when the car is over the receiver 5. I will now describe this operating means for the latch.

The pins 24 heretofore referred to, project laterally beyond the sides of the plates 15 and the detents 20 and the projecting ends pass through the ends of arms 25 of yokes 26, the said yokes respectively embracing the detent and end plate 15 at each side of the car. Suitable spacing washers 27 may be mounted on the pins 24 between the plate 15 and the detent, and between the detent and the adjacent arm of the yoke if desired, as shown in Fig. 4. Extending upwardly from each of the yokes is a bar 28 mounted to slide vertically in a guide 29 mounted on the end of the car, said bars being provided at their upper portions with apertured blocks 30, arranged in alinement with each other and through which projects a horizontal bar 31, the ends of said bar extending laterally beyond the ends of the holding latch, as shown in Fig. 4.

Mounted on opposite sides of the track way outside the rails 2 are cam rails 32, said cam rails being substantially co-extensive with the length of the receiver 5, for a purpose to be presently described. At their forward ends these rails 32 are provided with inclined portions 33 so located that as the car passes over the receiver, the projecting ends of the bar 31 will engage and ride up said incline portions whereby the detents will be raised to release the latch, and the latch then lifted to release the drop bottom. During the passage of the car over the receiver, the bar 31 passes up over the horizontal part of the cam track 32 so that the latch and detent are held out of locking position until the rear end of the car has passed over the receiver 5. As the car passes over the receiver and just before the latch is released, the drop bottom is slightly raised by engagement of the running wheel 10^a with a track cam 10^b as described in my other application, and during the progress of the car said running wheel runs down the track portion 7 and up the track portion 8 to permit the load to drop from the car and to then close the drop bottom. When the car or receptacle has passed over the receiver, a track cam 10^c is engaged by the running wheel to slightly lift the drop bottom and the ends of the bar 31 pass under a downwardly inclined cam 34, whereby the yokes are pushed down to first move the holding latch under the rear end of the drop bottom and then throw the detents down to hold said holding latch in position beneath said drop bottom.

What I claim for my invention and wish to secure by Letters Patent is:

1. In a receptacle having a drop bottom,

means for holding the drop bottom in closed position, retaining means for preventing release of the holding means, and means for first releasing the retaining means from the holding means and then releasing the drop bottom from the holding means.

2. In a receptacle having a drop bottom, means for holding the drop bottom in closed position, retaining means for preventing release of the holding means, operating means for releasing the retaining means from the holding means, and a connection between the operating means and the retaining means for releasing the drop bottom after said retaining means is released from the holding means.

3. In a receptacle having a drop bottom, means for holding the drop bottom closed, retaining means for preventing disengagement of the holding means from the drop bottom, and means for operating the retaining means to permit disengagement of the holding means.

4. In a receptacle having a drop bottom, means for holding the drop bottom closed, retaining means for preventing disengagement of the holding means from the drop bottom, means for operating the retaining means to permit disengagement of the holding means, and means whereby the operation of the retaining means acts to disengage the holding means from the drop bottom.

5. In a receptacle having a drop bottom, a latch to hold the drop bottom in closed position, a retaining member to hold the latch in holding position, means for operating the retaining means to release the latch, and a connection between the retaining means and latch to cause the latter to release the drop bottom.

6. In a receptacle having a drop bottom, a latch to hold the drop bottom closed, said latch comprising a horizontal member, end plates carrying said member pivoted to the receptacle, retaining means consisting of a pivoted detent to engage said member to hold the latch, and means for operating the detent to release the latch and then operating the latch to release the drop bottom.

7. In a receptacle having a drop bottom, means for holding the drop bottom closed, retaining means for preventing disengagement of the holding means from the drop bottom, and means whereby the retaining means is operable to release the latch.

8. In a receptacle having a drop bottom, a latch to hold the drop bottom in closed position, a retaining member to hold the latch in holding position, and means for operating the parts whereby the retaining member releases the latch and the latch afterward releases the drop bottom.

9. In a receptacle having a drop bottom, a latch to hold the drop bottom in closed position, a retaining member to hold the latch

in holding position, a lost-motion connection between said member and the latch, and means for releasing said member from the latch and moving the latch from holding position.

10. In a receptacle having a drop bottom, a latch to hold the drop bottom in closed position, said latch having an angle slot, a retaining member to hold the latch in holding position, said member being connected to said latch through said slot, and means for operating the retaining member to release the latch and then move the latter out of holding engagement with the drop bottom.

11. In a receptacle having a drop bottom, a latch to hold the drop bottom in closed position, said latch having an angle slot, a retaining member having a hooked end to hold the latch in holding position, and connected to the latch through said slot, and means for operating the retaining member to release the latch and then move the latter out of holding engagement with the drop bottom.

12. In a receptacle having a drop bottom, a latch to hold the drop bottom closed, said latch comprising a horizontal member, end plates carrying said member pivoted to the receptacle, retaining means consisting of pivoted detents to engage the latch to hold the same, yokes connected to the detents, and operating members connecting said yokes.

13. In combination, a trackway, a receptacle to travel thereon and having a drop bottom, a latch to hold the drop bottom closed, retaining means to hold the latch in engagement with the drop bottom, operating means for the retaining means and the latch, and a member associated with the trackway to be engaged by the operating member whereby the latter is moved to operate the retaining member and the latch.

14. In combination, a trackway, a receptacle to travel thereon and having a drop bottom, a latch to hold the drop bottom closed, retaining means to hold the latch in engagement with the drop bottom, operating means for the retaining means and the latch, and a member associated with the trackway having an inclined surface to be engaged by the operating member whereby the latter is moved to operate the retaining member and the latch.

15. In combination, a trackway, a receptacle to travel thereon and having a drop bottom, a latch to hold the drop bottom closed, retaining means to hold the latch in engagement with the drop bottom, operating means for the retaining means and the latch, and a member associated with the trackway having an inclined surface to be engaged by said operating member to release the retaining means and the latch, said member having another surface engaged by the op-

erating means whereby the retaining member and latch are held out of locking position.

16. In combination, a trackway, a receptacle to travel thereon and having a drop bottom, a latch to hold the drop bottom closed, retaining means to hold the latch in engagement with the drop bottom, operating means for the retaining means and the latch, and a member associated with the trackway having an inclined surface to be engaged by said operating member to release the retaining means and the latch, said member having another surface engaged by the operating means whereby the retaining member and latch are held out of locking position, and a second member associated with the trackway to move the latch and retaining member to locking position.

17. In combination, a trackway, a recepta-

cle to travel thereon and having a drop bottom, a latch to hold the drop bottom closed, said latch comprising depending plates connected at their lower end portions by a horizontally-extending angle iron, detents pivoted on the sides of the receptacle and adapted to engage said angle iron, a member having engagement both with said plates and said detents, and means associated with the trackway with which said member engages to first release the detents from the latch and then to release the latch from the drop bottom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM D. ORD.

Witnesses:

LOUIS J. BERNSTEIN,
CHARLES S. JONES.