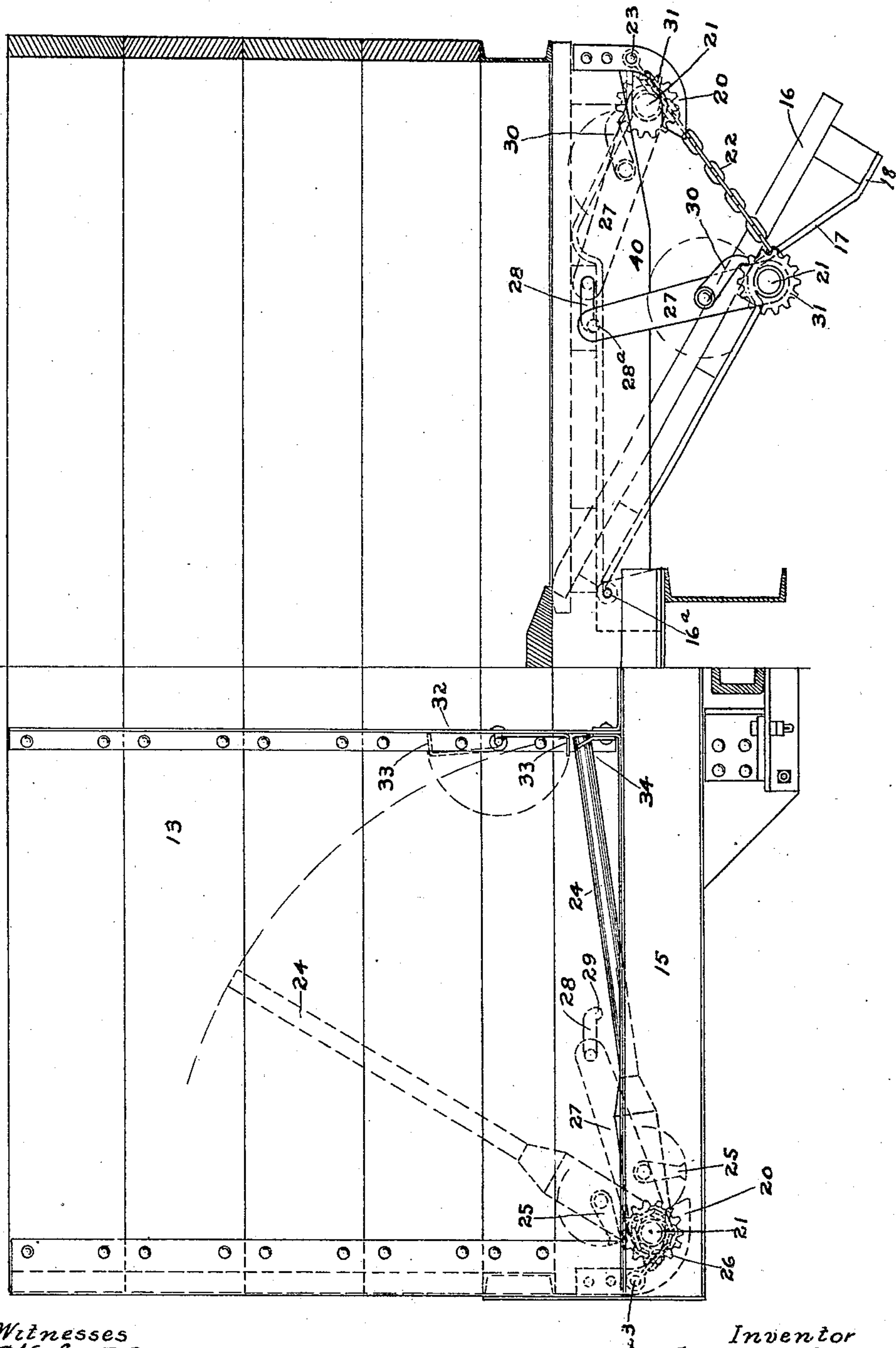


F. SEABERG.  
DUMPING DOOR OPERATING MECHANISM.  
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Witnesses  
W. E. Morry  
S. Hunter Michaels

Inventor  
Frederick Seaberg  
By  
Sheridan and Wilkinson  
Attorneys



# UNITED STATES PATENT OFFICE

FREDERICK SEABERG, OF CHICAGO, ILLINOIS.

## DUMPING-DOOR-OPERATING MECHANISM.

No. 908,505.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FREDERICK SEABERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dumping-Door-Operating Mechanism, of which the following is a specification.

The object of my invention is to provide a new and improved mechanism for controlling and operating the dumping doors of dump cars.

A particular object of my invention is to provide mechanism to be used in connection with a reciprocating or creeping shaft by which to hold the shaft in any intermediate position and especially to hold it locked when it is in a position corresponding to a closure of the dumping doors.

These objects and various others will be made apparent in the following specification and claims taken in connection with the accompanying drawings, in which—the figure is an end elevation of a dump car embodying my improvement, the left side showing the moving parts in a position corresponding to closure of the door and the right side being in section and showing the door open.

The particular embodiment of my invention, which I have illustrated in the drawings, is adapted to be used with a gondola car having a flat bottom comprising dumping floor sections. The car body is represented by the reference number 13. An opening is cut through the end sill 15, through which access may be had for the purpose of operating the doors, as will appear from the subsequent description.

One of the dumping floor sections is shown at the right in open position as indicated by the reference numeral 16. It is hinged longitudinally near the center of the car at 16<sup>a</sup>. On its under side an inclined track 17 is attached, formed of a strap or sheet of iron. At its outer extremity this track has the short portion 18 parallel with the surface of the door 16. In the cross member 40 of the car framework a slot 28 is provided having a side notch 29 at its inner end. The depending link or arm 27 has a pin 28<sup>a</sup> at its upper end which engages the slot 28. The arm 27 has rotatable engagement with a longitudinal shaft 21 which extends beneath the track 17 on the under side of the door. A stub track 20 is supported by the outer end of the cross member of the car framework and serves to

support the shaft 21 when the door is closed. A chain 22 is attached by one end to the longitudinal shaft 21 and after being wrapped more or less about the said shaft its other end is attached at the point 23 near the outer end of the stub track 20. A lever 24 is mounted on the end of the shaft 21 so as to rotate freely thereon. This lever carries a pawl 25 which is adapted to engage a ratchet wheel 26, the latter being fixed on the shaft 21.

On the flange 32 of the end stake on the end wall of the car near the middle thereof, is a movable hook 33. Opposed to this hook 33 is a fixed hook 34 that is adapted to receive the end of the lever 24 which may be locked therein by the movable hook 33. The crank or creeper 27 has pivoted thereto a dog 30, which is adapted to engage a ratchet wheel 31, the latter being fixed on the shaft 21.

Assuming that the door is closed, the various moving parts will have the positions indicated at the left of the figure. The pawl 30 will prevent the longitudinal shaft 21 from moving off of the stub track 20. Immediately above the shaft 21 at this time is the level portion 18 of the track 17, which is affixed to the under side of the door 16. Thus it will be seen that the door through its attached track 18 is supported by the shaft 21, which in turn is supported by the level stub track 20. When it is desired to open the dumping door 16 the dog 30 is released. Then by means of the lever arm 24 the shaft 21 is rotated counter-clockwise as viewed in right of the figure. This movement unwinds the chain 22 from the shaft 21 and permits the shaft by rolling in contact with the track 20 and sliding on the track 18 to move toward the center of the car until it passes out from between said opposed tracks 18 and 20. Thereafter the weight of the door 16 and whatever load may be above it will cause the door to open, the track 17 pushing the shaft 21 off the track 20 and finally the moving parts will assume the positions indicated in full lines at the right of the figure. During this movement the pin 28<sup>a</sup> in the crank or creeper 27 will slide in the fixed slot 28. Whenever it is desired to close the doors 16 from the position shown at the right of the figure the pawls 25 and the dog 30 are reversed. Then a clock wise movement of the lever 24 winds the shaft 21 into the chain 22, thus advancing the said shaft toward the stub track 20. While the



lever 24 is being returned to take a fresh stroke, its pawl 25 moving idly over the ratchet wheel 26 at this time, the shaft 21 is held against backward rotation by the dog 30 on the creeper 27 and the creeper in turn is held against rotation by its pin 28<sup>a</sup> in engagement with the fixed slot 28. Finally when the shaft 21 has completely closed the door and lies on the stub track, the creeper 27 will have moved in between the tracks 18 and 20, and the pawl 30 will serve to securely lock the door in closed position. When the shaft 21 is on the point of just entering or leaving the stub track 20, the pin 28<sup>a</sup> will rest in the notch 29. Whenever the shaft is in any lower position than the one just mentioned the pin 28<sup>a</sup> will remain in the notch 29. Only when the shaft 21 is upon the stub track 20 will the pull of the chain 22 be direct enough to draw the pin 28<sup>a</sup> out of the notch 29 and along the slot 28.

It will be observed that I have provided means for shifting the longitudinal shaft 21 by direct rotation thereof and that I have provided means adapted to hold the shaft against backward rotation at any stage. This last named means is the dog 30 which is mounted upon the creeper 27. The latter has a rotatable engagement with the shaft 21, but is prevented from rotation by also engaging a fixed part of the car:

I claim:

1. In a dump car, a door supporting shaft, a chain having one end attached near the side of the car and the other end attached to the shaft, a handle on the shaft by which to rotate it and thus wind the shaft along the chain toward the side of the car, and a stop near the center of the car, the parts being arranged to make the handle act as a strut to hold the shaft in closing position.

2. In a dump car, a door supporting shaft, a shaft supporting member rotatably engaging the shaft at one end and engaging the car framework at its other end, a chain having one end attached to the shaft and the other end attached to the side of the car, and means to rotate the shaft and thus wind it along the chain toward the side of the car.

3. In a dump car, a door supporting shaft, a shaft supporting member rotatably engaging the shaft at one end and engaging the car framework at its other end, a chain having one end attached to the shaft and the other end attached to the side of the car, means to rotate the shaft and thus wind it along the chain toward the side of the car, a ratchet wheel on the shaft and a coacting pawl on the supporting member.

4. In a dump car, a door supporting shaft, a shaft supporting member rotatably engaging the shaft at one end and engaging the

car framework at its other end, a chain having one end attached to the shaft and the other end attached to the side of the car, means to rotate the shaft and thus wind it along the chain toward the side of the car, and means to receive and support the shaft at the end of its movement toward the side of the car.

5. In a dump car, a door supporting shaft, a shaft supporting member rotatably engaging the shaft at one end and engaging the car framework by a pin and slot connection at its other end, a chain having one end attached to the shaft and the other end attached to the side of the car, means to rotate the shaft and thus wind it along the chain toward the side of the car, and a stub track to receive and support the shaft at the end of its movement toward the side of the car, the said pin and slot connection being adapted to permit the shaft to be drawn on said track.

6. In a dump car, a door supporting shaft, a member on the car framework having a slot with a side notch at one end of the slot, a supporting member connected to the shaft and engaging said slot, and a stub track to support the shaft in a position corresponding to closure of the door, said slot being disposed so that when the shaft is on said track the supporting member will be drawn along the slot away from the notched end thereof.

7. In a dump car, a rotary door operating shaft, a lever adapted to rotate the shaft, and means to lock the end of the lever and thus prevent the shaft from rotating.

8. In a dump car, a rotary reciprocatory door operating and supporting shaft a lever adapted to rotate the shaft, and means to lock the end of the lever and thus prevent the shaft from rotating.

9. In a dump car, an underframe comprising cross-members, swinging arms depending from said members, a shaft supported by said arms, dumping floor sections resting on said shaft, and a chain for shifting said shaft.

10. In a dump car, an underframe comprising cross-members, swinging arms depending from said members, a shaft supported by said arms, dumping floor sections resting on said shaft, a chain having one end attached to the shaft and the other end attached to the car framework, and means to rotate the shaft.

In testimony whereof, I, have subscribed my name.

FREDERICK SEABERG

Witnesses:

ANNIE C. COURTENAY,  
LILLIAN A. KIBBY.