

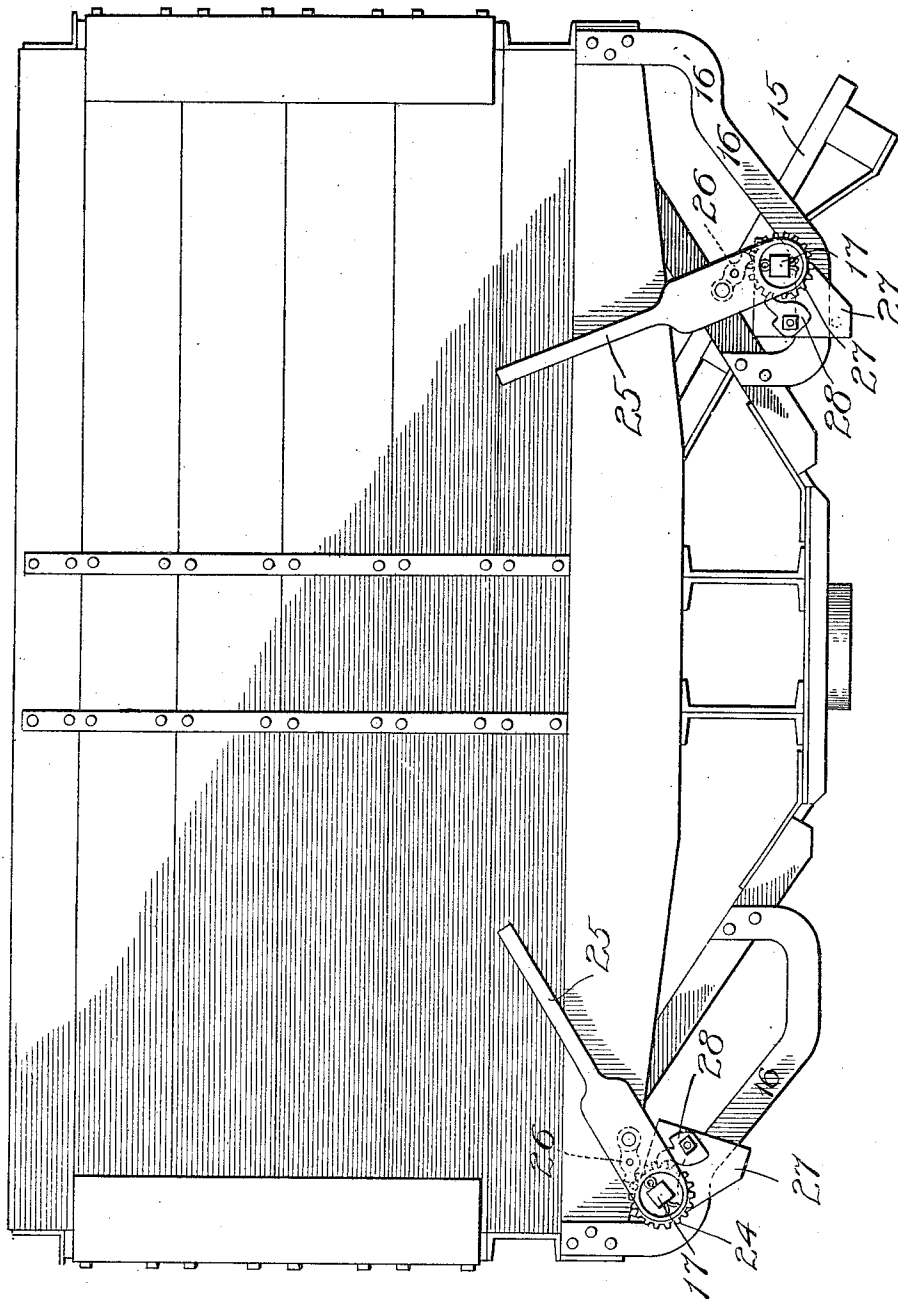
S. OTIS.  
DUMP CAR DOOR.  
APPLICATION FILED JUNE 18, 1908.

949,494.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

John Ender  
Chas. H. Bull.

Inventor:

Spencer Otis.

By Shridan & Wilkinson  
Attys.

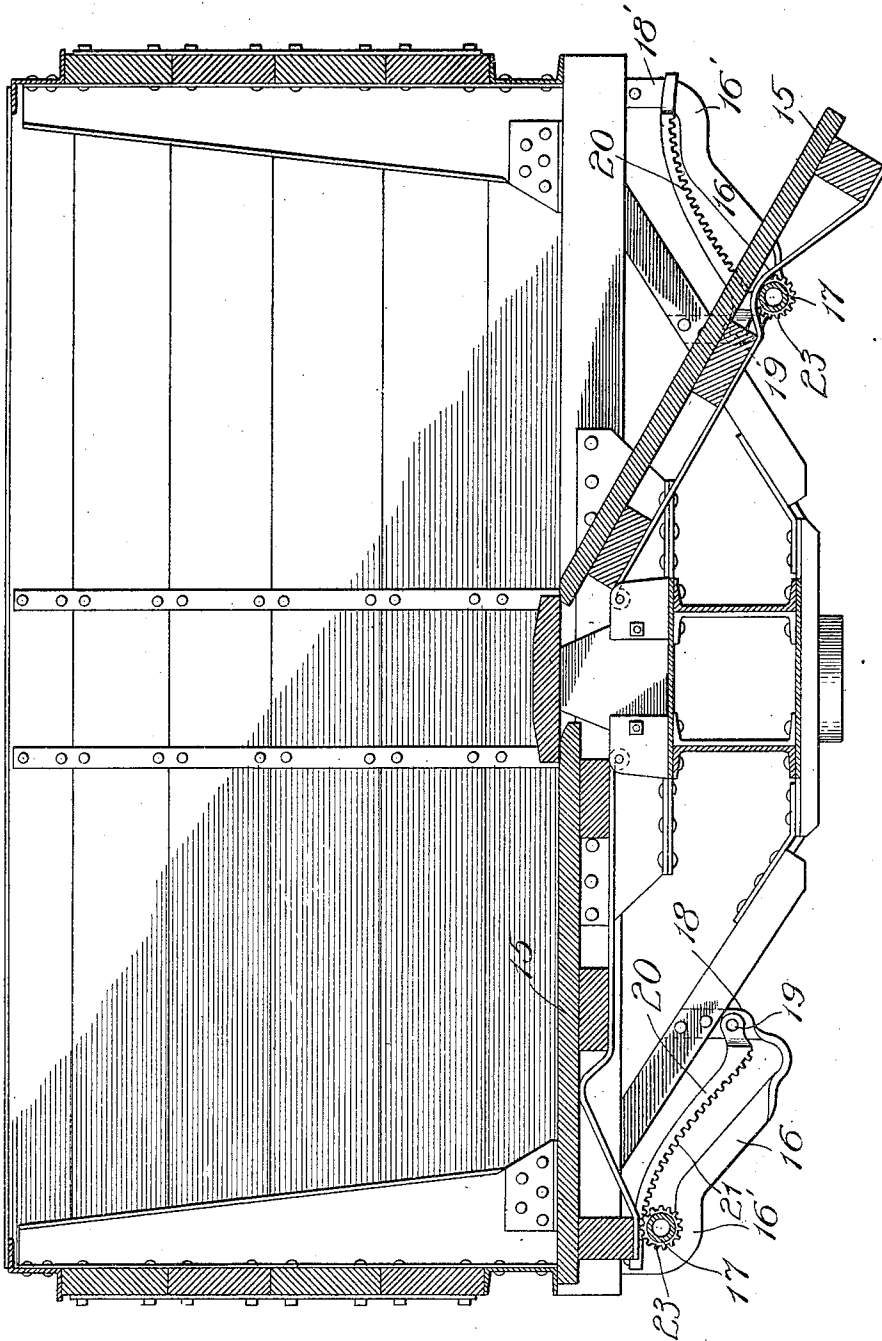
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

John Enders  
Chas. H. Bull.

Inventor:

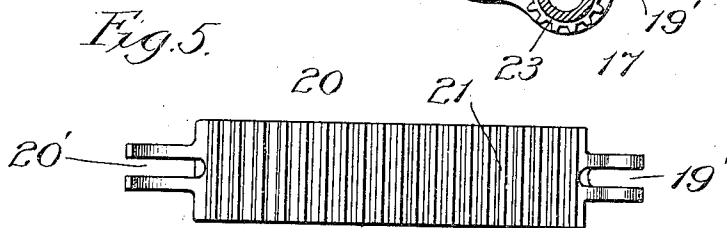
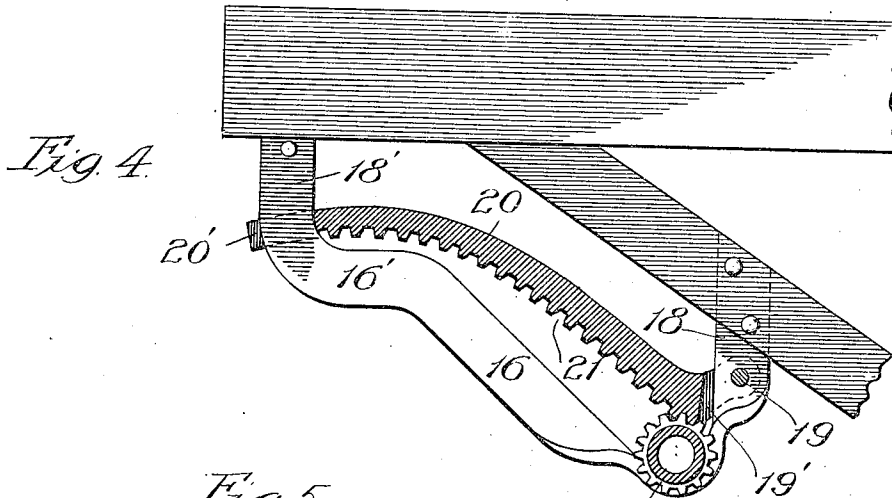
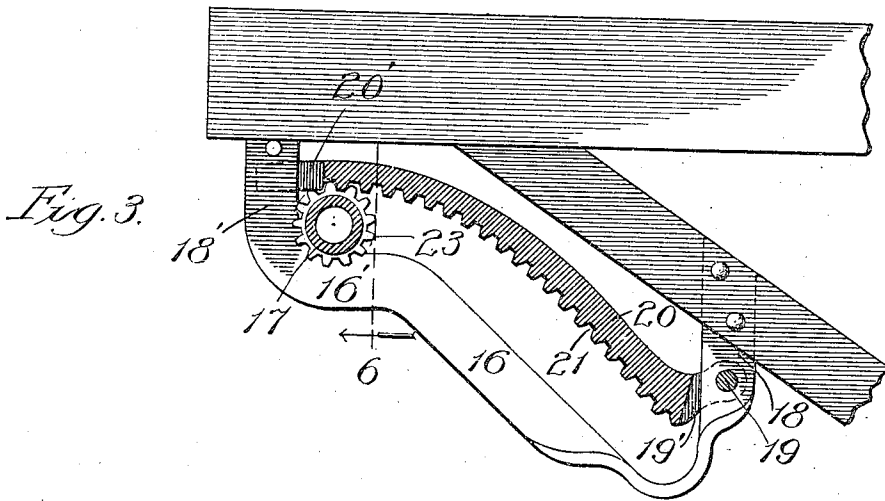
Spencer Otis.

By Sheridan & Wilkinson  
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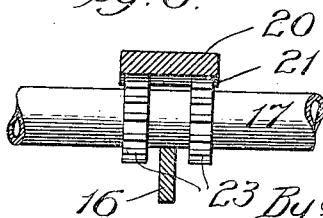
949,494.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 3.



Witnesses:  
John Enders  
Chas. H. Buell.



Inventor:  
Spencer Otis.

By Sheridan & Dickinson  
Attys. #

# UNITED STATES PATENT OFFICE.

SPENCER OTIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL DUMP CAR COMPANY,  
A CORPORATION OF MAINE.

## DUMP-CAR DOOR.

949,494.

Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed June 18, 1908. Serial No. 439,134.

*To all whom it may concern:*

Be it known that I, SPENCER OTIS, 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 Dump-Car Doors, of which the following is a specification.

The object of my invention is to provide a new and improved operating mechanism for dump car doors.

Another object is to provide such a mechanism that shall be arranged to prevent interference from dirt and debris falling down on it from above.

These objects and various others will be made apparent in the following specification and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is an end view of a dump car embodying my improvement. Fig. 2 is a cross section of such a car. Figs. 3 and 4 are elevations of a detail showing certain essential elements of my invention at two different operating positions. Fig. 5 is a bottom view of the member designated 20, and Fig. 6 is a cross section of Fig. 3 on the line 6—6.

In the particular embodiment of my invention which I have chosen to illustrate and describe in this specification, a gondola car is provided with dumping floor sections 15. Between successive floor sections beneath the car floor are the depending inclined tracks 16, each having a level portion 16' at its upper and outer end. Each track 16 hangs from the car framework by vertical end portions 18 and 18'. The longitudinal shaft 17 rests on the track 16 and the doors 15 in turn are supported by the shaft 17.

Directly above each inclined track 16 lies a member 20 having forked ends 19' and 20'. The character of this member will be best understood from Figs. 3, 4 and 5. The fork 19' pivotally engages the depending portion 18 of the inclined track, while the fork 20' at the other end engages the other depending portion 18' of the vertical track, the last described engagement serving to guide the rotary movement of the member 20 about the pivot 19. Gear teeth 21 are cut in the under surface of the member 20 so as to form a rack. Engaging this rack 21 at its sides are the two gear pinions 23 fixed on the shaft 17 on either side of the track 16. It

will at once be seen that rotation of the shaft 17 will cause it to slide along the track 16 by reason of the co-action between the gear pinions 23 on the shaft 17 and the rack 21 on the member 20. Such reciprocation of shaft 17 will obviously actuate the doors 15 to open or close them.

The mechanism for producing rotation and consequent reciprocation of shaft 17 may be of the character shown in Fig. 1, in which 24 is a ratchet wheel fixed on the end of the shaft 17. 25 is a crank or lever loosely engaging the shaft at one end and carrying a pawl 26 which is adapted to engage the said ratchet wheel 24. The shaft 17 also has loosely sleeved thereon a carriage or plate 27 which has a sliding engagement with the inclined track 16 and also carries a dog 28 adapted to lock into the ratchet wheel 24. It will readily be seen that the lever 25 may be used to rotate the shaft 17 and that the latter can be locked against rotation in any desired position by means of the dog 28.

It will be seen that I have invented a door operating mechanism which, in addition to simplicity of structure and operation, is adapted to shield the mechanism from becoming clogged up with dirt falling down from above. The rack teeth 21, the gear teeth 23 and the track 16 are all overhung by the pivoted member 20.

I claim:

1. In a dump car, a reciprocatory door operating shaft, a supporting track therefor, said track depending by terminal vertical portions from the framework of the car, a member longitudinally overhanging said track, said member being pivoted at one end to the vertical portion of the track at that end, and means of engagement between the shaft and the member.

2. In a dump car, a reciprocatory door operating shaft, a supporting track therefor, said track depending by terminal vertical portions from the framework of the car, a member longitudinally overhanging said track, said member having forked ends engaging the respective vertical portions of the track, and means for the shaft to engage the member.

3. In a dump car, a reciprocatory door operating shaft, a supporting track therefor, a member pivoted at one end and trans-

versely overhanging the shaft and means of engagement between the shaft and the said member.

4. In a dump car, a reciprocatory door  
5 operating shaft, a supporting track therefor,  
a member pivoted at one end and longitudi-  
nally overhanging said track, and means of  
engagement between the shaft and the said  
member.
- 10 5. In a dump car, a reciprocatory door  
operating shaft, an inclined supporting

track therefor, a gear wheel on said shaft,  
a rack above and engaging said gear wheel,  
said rack having a limited vertical move-  
ment, but being fixed against movement in 15  
the direction of reciprocation of said shaft.

In testimony whereof, I have subscribed  
my name.

SPENCER OTIS.

Witnesses:

EDYTHE M. ANDERSON,  
LILLIAN A. KIBBY.