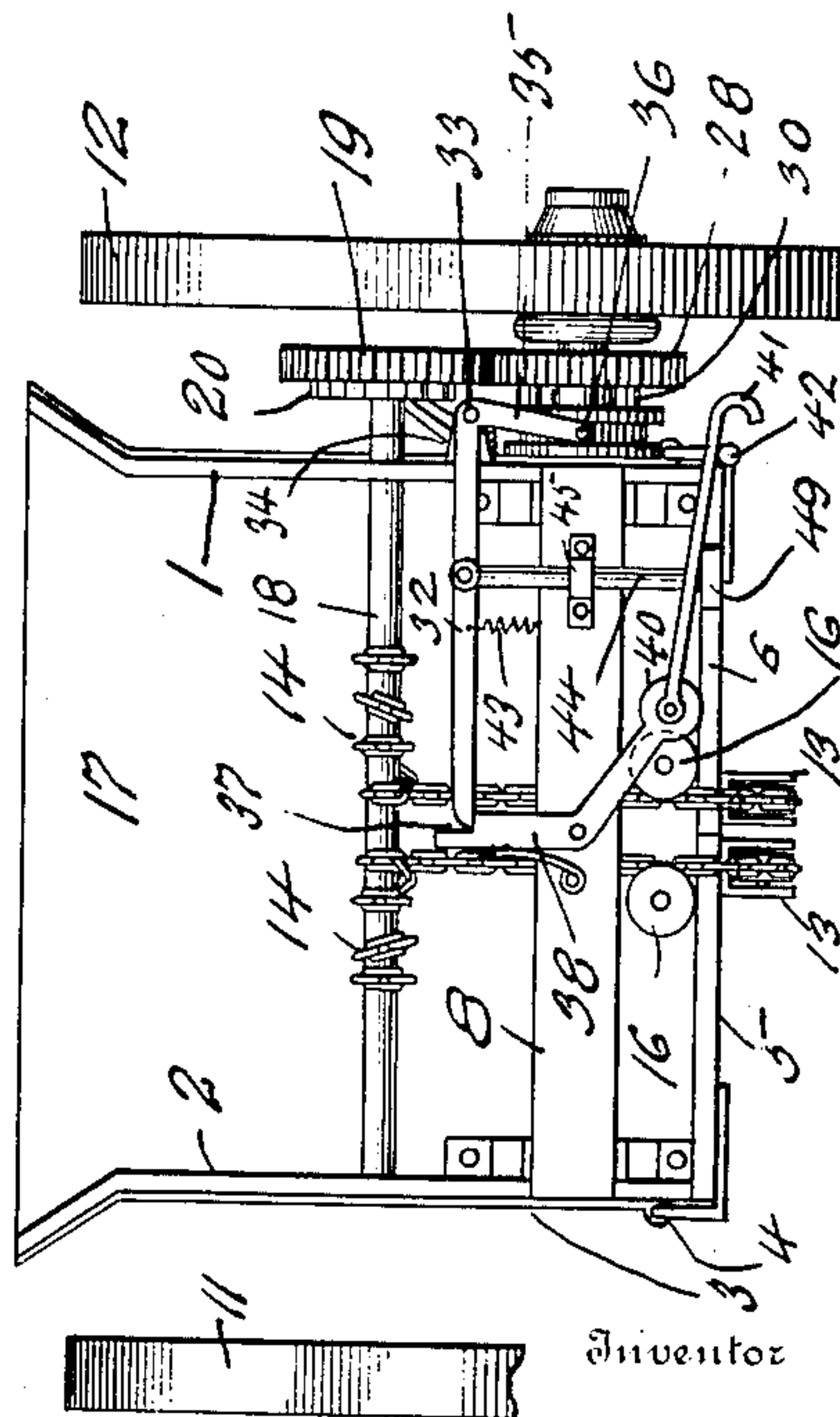
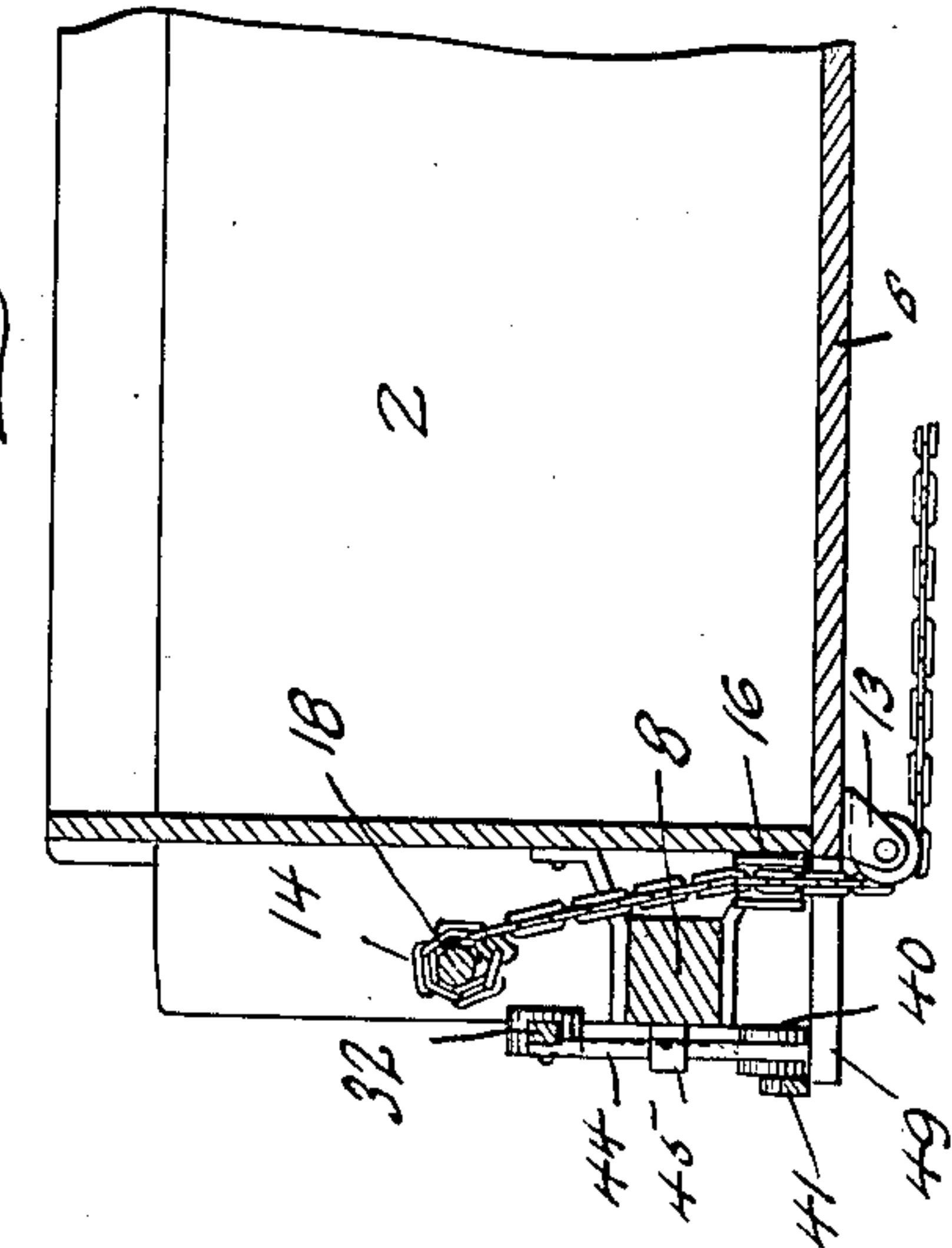
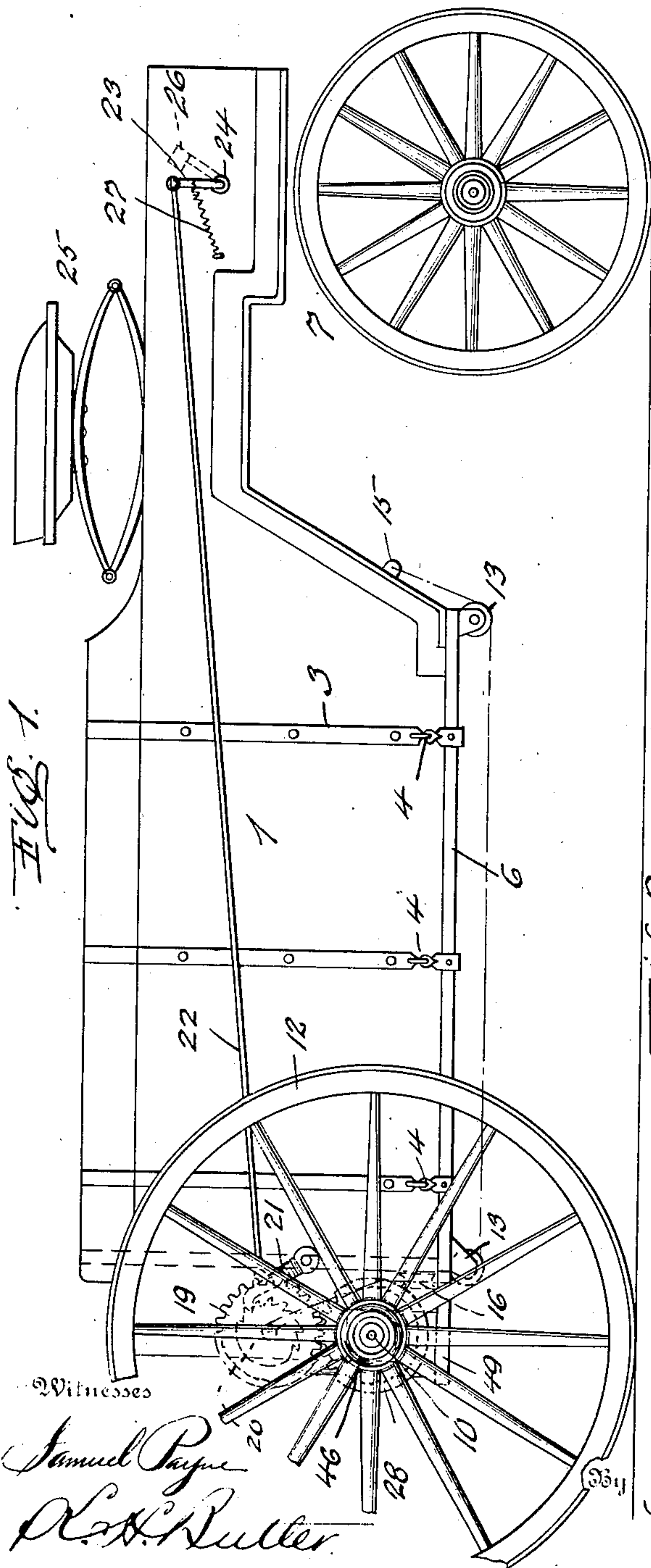


898,871.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.



*H. Everts*  
Attorneys

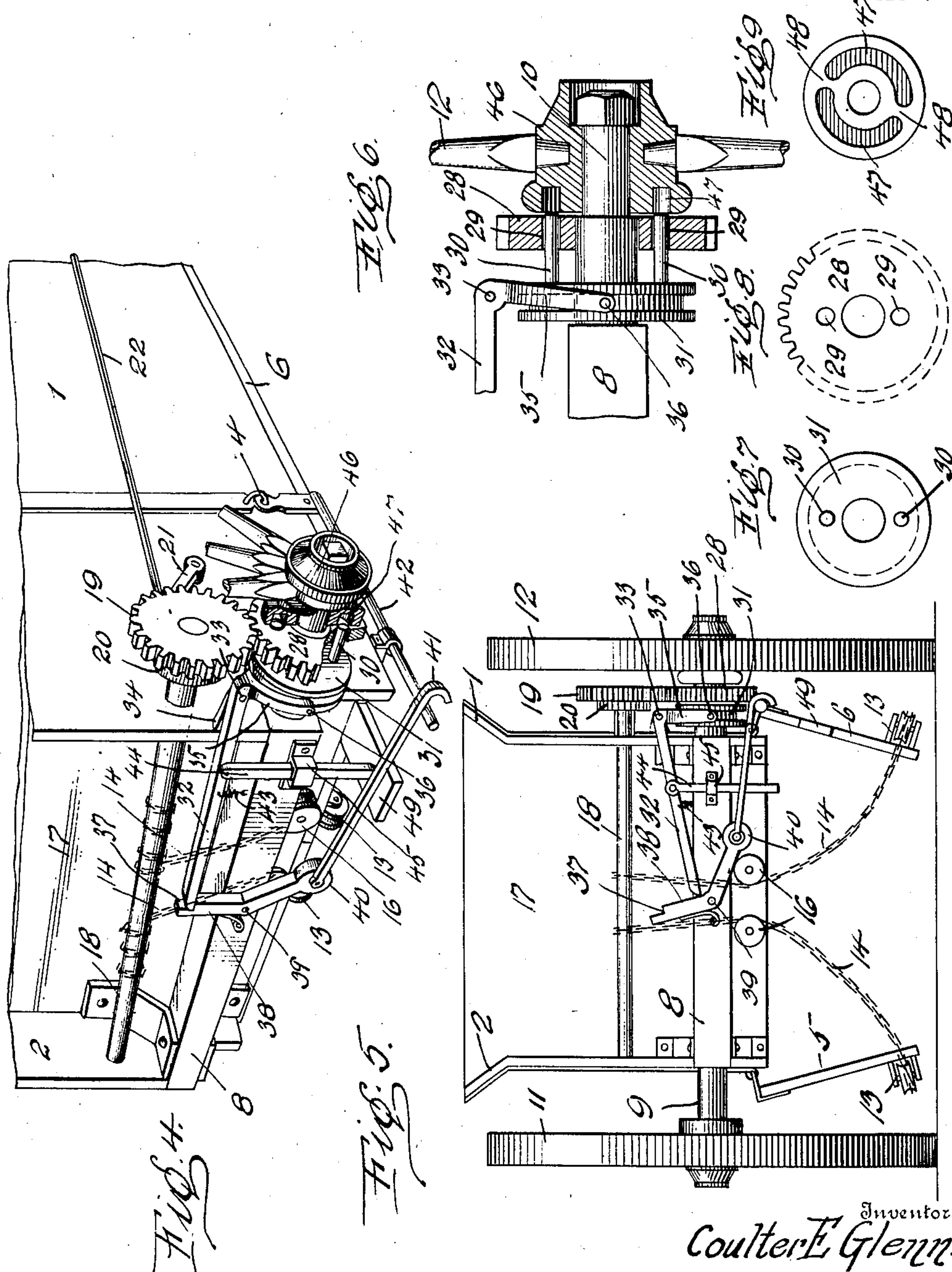
DUMP WAGON.

APPLICATION FILED DEC. 26, 1907.

898,871.

Patented Sept. 15, 1908.

2 SHEETS—~~S~~HEET 2.



Witnesses

Witnesses  
 Samuel Payne  
 A. H. Butler

 $\mathfrak{B}_4$ 

A. H. Everett

Attorneys



# UNITED STATES PATENT OFFICE.

COULTER E. GLENN, OF EVANS CITY, PENNSYLVANIA.

## DUMP-WAGON.

No. 898,871.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed December 26, 1907. Serial No. 408,079.

*To all whom it may concern:*

Be it known that I, COULTER E. GLENN, a citizen of the United States of America, residing at Evans City, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Dump-Wagons, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to dump wagons, and more particularly to a novel mechanism for opening and closing the drop doors or gates of a wagon.

15 The primary object of this invention is to provide a novel mechanism for automatically closing the drop doors or gates of a dump wagon, said mechanism being actuated by the movement of the wagon.

20 Another object of this invention is to dispense with the ordinary ratchet lever heretofore manually operated for raising the drop doors or gates of a wagon. To this end, I have devised a mechanism embodying a clutch, gear wheels and levers, these elements 25 being disposed at the rear end of the dump wagon. The clutch is actuated by the dropping of one of the doors or gates to fix one of the gear wheels with relation to one of the revoluble supporting wheels of the wagon, 30 whereby the drop doors or gates can be automatically closed during the movement of the wagon, and the gear wheel being released with relation to the supporting wheel of a wagon by the clutch being moved when one 35 of the drop doors or gates has reached a closed position.

40 The arrangement and details of the mechanism will be presently described, and then specifically pointed out in the appended claims.

Referring to the drawing forming a part of this specification, Figure 1 is a side elevation of a portion of a dump wagon constructed in accordance with my invention, Fig. 2 is a 45 rear end view of the same, illustrating the drop doors or gates in a closed position, Fig. 3 is a longitudinal sectional view of a portion of the dump wagon, Fig. 4 is a perspective view of the rear end of the wagon, partly 50 broken away, Fig. 5 is a view of the rear end of the wagon illustrating the drop doors or gates in an open position, Fig. 6 is an elevation, partly in section, of a clutch forming part of the mechanism, Fig. 7 is an elevation of 55 one of the clutch members, Fig. 8 is an ele-

vation of the gear wheel forming a part of the clutch, and Fig. 9 is an elevation of the hub of one of the supporting wheels of the wagon.

In the accompanying drawings, I have illus- 60 trated a dump wagon as having a body constructed of side walls 1 and 2, said side walls being provided with straps 3, to the lower ends of which are hinged, as at 4, drop doors or gates 5 and 6, these drop doors or gates 65 when closed forming the bottom of the dump wagon.

The forward ends of the side walls 1 and 2 are supported by a truck 7 of a conventional form, while the rear ends of the side 70 walls are supported upon a bolster or axle 8, this axle having spindles 9 and 10, upon which the rear supporting wheels 11 and 12 of the wagon are journaled.

75 The confronting edges of the drop doors or gates 5 and 6, at the forward and rear ends of said doors or gates, are provided with sheaves 13, and movably mounted upon said sheaves are chains or cables 14, said chains or cables having their forward ends fixed to 80 the body of the dump wagon, as at 15, while the rear ends of said chains pass over sheaves 16 revolubly carried by the end walls 17 of the dump wagon. The rear ends of said chains or cables are attached to a 85 shaft or drum 18, revolubly mounted in the side walls 1 and 2 of the dump wagon. The shaft or drum 18 protrudes beyond the side wall 1 and is provided with a gear wheel 19 and a ratchet wheel 20, the latter being en- 90 gaged by a pawl 21 pivotally mounted upon the side wall 1. The pawl 21 is moved through the medium of a connecting rod 22 extending forwardly without the side wall 1 and connecting with a crank 23, carried by 95 a shaft 24, journaled in the side wall 1. This shaft 24 is located adjacent to the driver's seat 25 of the wagon, and upon the inner side of the wall 1 is provided with a tread crank 26. The pawl 21 is normally held in 100 engagement with the ratchet wheel 20 by a spring 27 attached to the crank 23 and the side wall 1 of the wagon.

105 The gear wheel 19 meshes with a gear wheel 28 revolubly mounted upon the spindle 10 of the bolster or axle 8. This gear wheel is provided with two diametrically opposed openings 29, and extending into said openings are diametrically opposed pins 30, carried by a circumferentially grooved 110



clutch member 31, said member being slidably and revolubly mounted upon the spindle 10. The clutch member 31 is moved through the medium of a bell crank lever 32, fulcrumed as at 33 upon a bracket 34, carried by the side wall 1 of the wagon. The lever 32 carries a stirrup 35 provided with pins 36 engaging in the grooves of the clutch member 31. The opposite end of the clutch member is adapted to engage in a notch 37 provided therefor in the end of a weighted bell crank lever 38, pivotally mounted as at 39 upon the bolsters or axles 8. The weighted end 40 of said lever carries a hook 41, this hook normally resting upon an extension 42 carried by the hinged edge of the drop door or gate 6.

The bell crank lever 32 is normally held in engagement with the notched end of the pivoted lever 38 by a spring 43, said spring being attached to the lever 32 and to the axle or bolster 8. The lever 32 is provided with a pivoted depending arm 44; said arm being guided by a bracket 45, carried by a bolster or axle 8.

The hub 46 of the wheel 12 has its inner face provided with two segment-shaped slots 47, these slots receiving the pins 30 of the clutch member 31, when said clutch member is moved towards said hub.

Operation. I will assume that the drop doors or gates 5 and 6 are in a closed position, as illustrated in Figs. 1 to 4 inclusive, and that it is desired to dump the contents of the wagon. The driver simply presses the tread crank 26 and moves the pawl 21 out of engagement with the ratchet wheel 20. The weight of the material in the wagon causes the drop doors 5 and 6 to drop, releasing the contents within the wagon. When the door 6 descends, the extension 42 of said door engages the hook 41, moves the lever 38, releases the lever 32 and the spring 43 of said lever moves the clutch member 31 towards the gear wheel 28. When the lever 32 is in this position, the lower end of the arm 44 extends below the end wall 17 of the wagon, and the pins 30 of the clutch member 31 extend through the openings 29 of the gear wheel 28 into the groove 47 of the hub 46. As the wagon is in motion and the contents thereof have been deposited, the webs 48 between the grooves 47 will impinge the pins 30 and cause the gear wheel 28 and the clutch member 31 to rotate in unison with the wheel 12. The rotary movement of the gear wheel 28 immediately imparts a similar movement to the gear wheel 19, ratchet wheel 20 and shaft or drum 18; the pawl 21 receding over the teeth of the ratchet wheel 20. As the chains or cables 14 are attached to the shaft or drum 18, these chains or cables will be wound upon the shaft or drum to close the drop doors or gates 5 and 6. As the drop

door or gate 6 is elevated, an extension 49 of said door impinges the end of the depending arm 44, raising said arm, and through the medium of the lever 32 withdrawing the pins 30 of the clutch member 31 from the grooves 47 of the hub 46. The weighted lever 38 assumes its normal position by gravity and locks the lever 32 in its elevated position. The dump wagon is now in condition to receive a load and be automatically dumped again.

It is apparent from the novel construction of the dump wagon, particularly the mechanism carried thereby, that the closing of the drop doors or gates is automatically accomplished, without the attention of the driver of the wagon. This feature of my invention not only saves considerable labor, but expedites the time heretofore required to dump material from a wagon and place the wagon in condition to receive another load.

I do not care to confine myself to the specific arrangement of the mechanism at the rear end of the wagon, as this mechanism will be arranged to be used in connection with various types of dump wagons. I also reserve the right to make such structural changes in my invention as are permissible by the appended claims.

Having now described my invention what I claim as new, is:—

1. A dump wagon comprising side walls, an end wall, drop doors hinged to said side walls, trucks supporting said side walls, a shaft journaled in said side walls, a gear wheel carried by said shaft, a ratchet wheel carried by said shaft, a pawl normally engaging said ratchet wheel, chains loosely connected to said doors and attached to said shaft, a gear wheel loosely carried by one of said trucks and meshing with the first mentioned gear wheel, a clutch member carried by one of said trucks, pins carried by said clutch member, and extending into the last mentioned gear wheel, a grooved hub forming part of said truck and adapted to receive the pins of said clutch member, a spring pressed lever carried by one of said side walls for holding the pins of said clutch member in engagement with said hub, a weighted lever for normally holding said spring pressed lever in an elevated position with the pins of said clutch member out of engagement with said hub, extensions carried by one of said doors, a hook carried by said weighted lever and resting upon one of said extensions, a depending arm carried by said spring pressed lever and adapted to be impinged by the other of said extensions, and means carried by one of said side walls for moving said pawl out of engagement with said ratchet wheel.

2. A dump wagon comprising a body having hinged drop doors, a front truck, a rear



truck, a shaft journaled in said body adjacent to said rear truck, chains connected to said body and to said shaft and passing along the confronting edges of said doors, a gear wheel mounted upon said shaft, a gear wheel carried by said rear truck and meshing with the first mentioned gear wheel, a movable clutch member for engaging the gear wheel of said truck and one of the wheels thereof, a lever for moving said clutch member, a weighted lever for normally holding said clutch lever in an elevated position, extensions carried by one of said doors, a hook carried by said weighted lever and engaging one of said extensions, a depending arm carried by said clutch lever and adapted to be impinged by the other of said extensions, and means carried by said body for normally holding said shaft stationary.

3. A dump wagon comprising a body, a rear truck, drop doors carried by said body, a shaft journaled in said body, chains connected to said body and said shaft and passing along the confronting edges of said doors, a clutch member movably mounted upon said truck for engaging one of the wheels thereof, means retained by said clutch member for imparting a rotary movement to said shaft, a lever for moving said clutch, a weighted lever for maintaining said clutch lever in an elevated position, means carried by one of said doors for moving said weighted lever and releasing said clutch lever, means carried by one of said doors for elevating said clutch lever, and means carried by said body for normally holding said shaft stationary.

4. A dump wagon comprising a body, drop doors carried thereby, a rear truck, a shaft journaled in said body, chains connecting with said shaft for closing said doors, a movable clutch member carried by said rear truck and adapted to engage a wheel thereof, means engaged by said clutch member for imparting a rotary movement to said shaft in unison with the wheel of said truck, means carried by said body and actuated by the dropping of one of said doors for moving said clutch member into engagement with the first mentioned means, means carried by said body and actuated by the closing of one of said doors for moving said clutch member out of engagement with the first mentioned means, and means carried by said body for controlling the operation of said shaft.

5. A dump wagon comprising a body, drop doors carried thereby, wheels supporting the rear end of said body, a shaft journaled in said body, chains connecting with said shaft for closing said doors, a movable clutch member carried by said body and adapted to engage one of said wheels, means engaged by said clutch member and operable in unison with said wheel for imparting a rotary movement to said shaft, means carried by said

body and actuated by the dropping of one of said doors for moving said clutch member and actuating said shaft, means carried by said body and actuated by the closing of one of said doors for moving said clutch member and causing a cessation in the operation of said shaft, and means carried by said body for controlling the operation of said shaft.

6. A dump wagon comprising a body, drop doors carried thereby, wheels supporting the rear end of said body, a shaft journaled in said body, chains connecting with said shaft for closing said doors, a movable clutch member carried by said body for engaging one of said wheels, means engaged by said clutch member for imparting a rotary movement to said shaft in unison with the movement of said wheel, means carried by said body and actuated by the dropping of one of said doors to move said clutch member for imparting a rotary movement to said shaft, and means carried by said body for controlling the operation of said shaft.

7. A dump wagon comprising a body, drop doors carried thereby, wheels supporting the rear end of said body, a shaft journaled in said body, chains connecting with said shaft for closing said doors, a movable clutch member carried by said body to engage one of said wheels, means operable with said clutch member and wheel for imparting a rotary movement to said shaft, means actuated by the closing of one of said doors for moving said clutch member and causing a cessation in the operation of said shaft.

8. A mechanism for automatically closing the drop doors of dump wagons, comprising in combination with a wagon wheel, a shaft, door closing chains attached to said shaft, a clutch member for engaging said wheel, means held by said clutch member and said wheel for imparting a rotary movement to said shaft, means actuated by the opening of a drop door for moving said clutch member to engage the first mentioned means, means actuated by the closing of a drop door for moving said clutch member out of engagement with the first mentioned means, and means for controlling the operation of said shaft.

9. A mechanism for automatically closing the drop doors of dump wagons, comprising in combination with a wheel, a shaft, door closing chains attached to said shaft, means actuated by said wheel for imparting a rotary movement to said shaft, means actuated by the dropping of one of said doors for placing the first mentioned means in operation, and means actuated by the closing of one of said doors for causing a cessation in the operation of the first mentioned means.

10. A mechanism for automatically closing the drop doors of a dump wagon, comprising, in combination with a wheel, a shaft for closing said doors, means for engaging



said wheel and imparting a rotary movement to said shaft, means actuated by the dropping of one of said doors for placing the first mentioned means in operation, and means  
5 actuated by the closing of one of said doors for causing a cessation in the operation of the first mentioned means.

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

COULTER E. GLENN.

Witnesses

MAX H. SROLOVITZ,  
C. V. BROOKS.