

939,414.

J. HEBERLING.
DUMPING WAGON.
APPLICATION FILED NOV. 2, 1906.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

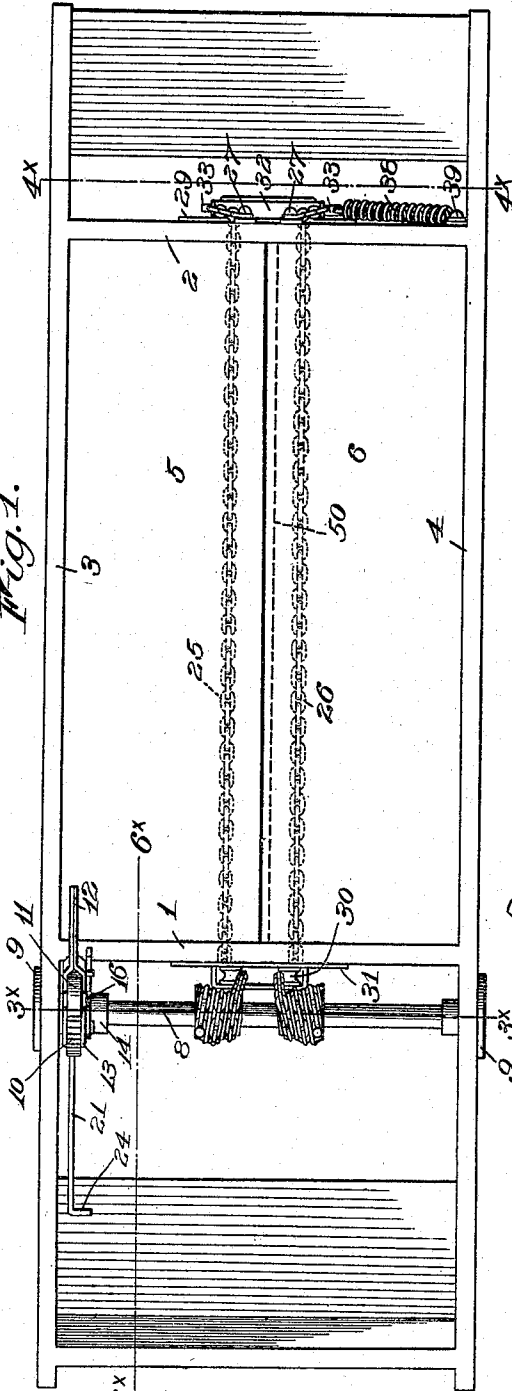
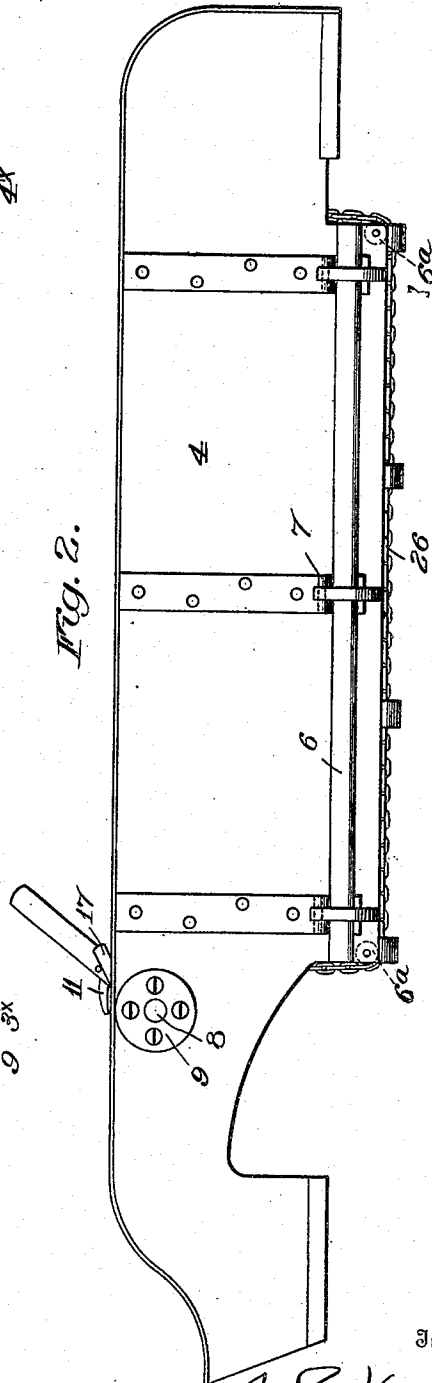


Fig. 2.



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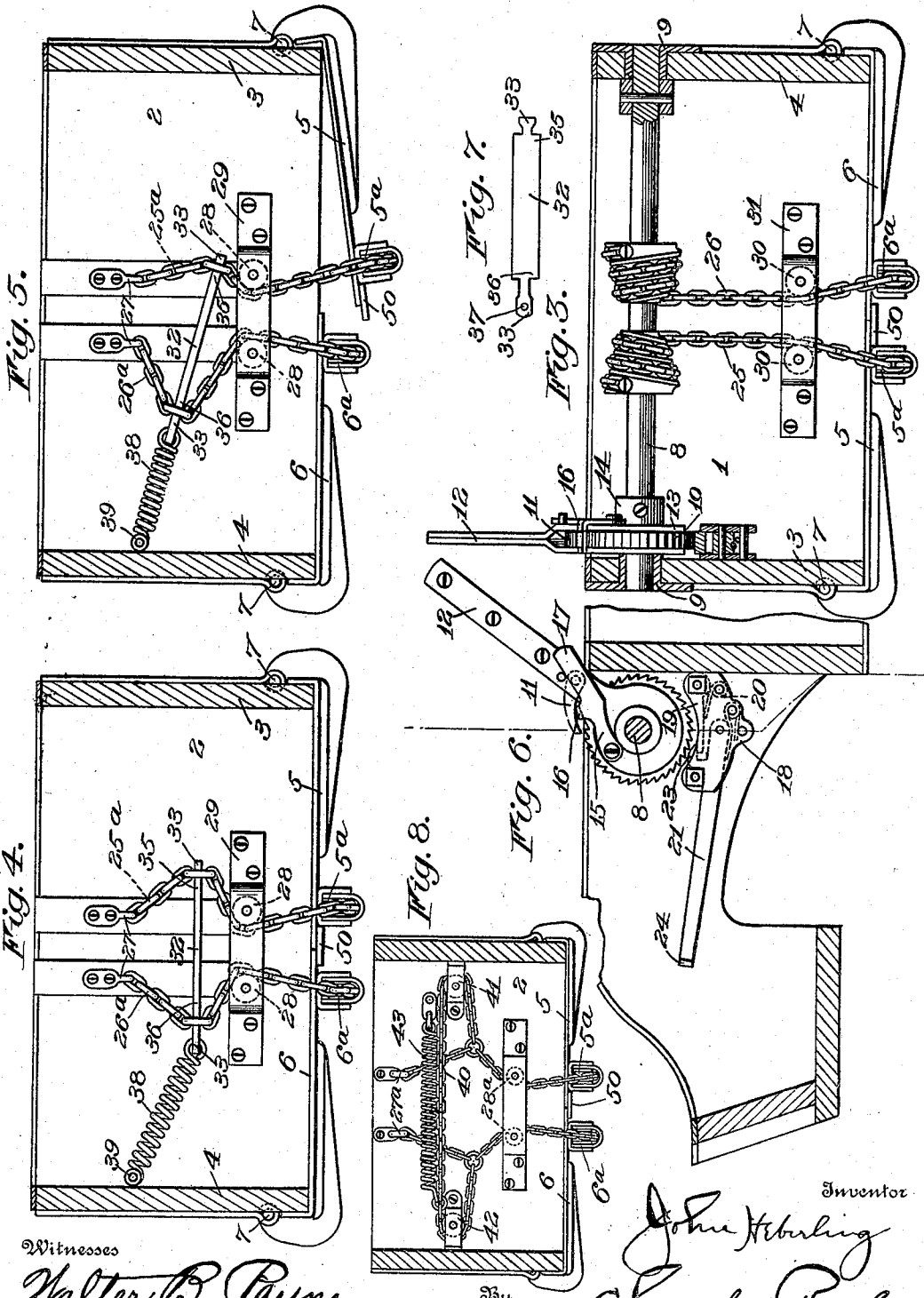
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UNITED STATES PATENT OFFICE.

JOHN HEBERLING, OF ROCHESTER, NEW YORK.

DUMPING-WAGON.

939,414.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN HEBERLING, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Dumping-Wagons; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of the specification, and to the reference-numerals marked thereon.

My present invention relates to dumping wagons and particularly to that type in which the box or receptacle is closed by hinged bottom sections or doors, and it has for its object to provide an improved means for operating the latter, whereby one door may be closed in advance of the other and each door held tightly in engagement with the box throughout its length when in the closed position.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a top plan view of a wagon box illustrating devices constructed in accordance with my invention applied thereto. Fig. 2 is a side elevation of the wagon box. Fig. 3 is a front elevation partly in section, taken on the line 3* 3* of Fig. 1, showing the doors in closed position. Fig. 4 is a similar view of the rear end of the box, taken on the line 4* 4* of Fig. 1. Fig. 5 is a view similar to Fig. 4 illustrating the operation of closing one door in advance of the other. Fig. 6 is a detail view of the winding mechanism taken on the line 6* 6* of Fig. 1, and Fig. 7 is a detail view of the equalizing device. Fig. 8 is a view of a modification.

Similar reference numerals in the several figures indicate similar parts.

In illustrating the devices embodying my invention, I have shown them applied to a wagon box comprising forward and rear ends 1 and 2, supported between side pieces 3 and 4, and having longitudinally extending bottom sections or doors 5 and 6 which are pivoted to the sides of the wagon box, as indicated at 7. One of the doors, in the present instance the door 5, is provided with a tongue or batten 50 employed to close the joint formed between the meeting edges of

the doors when in the closed position. At one end of the box, preferably the forward end, is journaled a winding shaft 8 supported in bearings 9 and carrying a ratchet wheel 10 with which coöperates a pawl 11 mounted on an operating handle 12, the lower end of which is bifurcated, the side pieces 13 being journaled upon the hub 14 of the ratchet wheel. Pivoted to one of the side pieces 13 of the operating handle is a releasing member 15 provided with a finger 16, projecting laterally beneath the pawl 11, which is adapted to raise it into an inoperative position by the engagement of the extension 17 on the member with the top 1 of the box, when the operating handle 12 is moved into the position shown in Fig. 6. Attached to one of the sides of the box, beneath the ratchet wheel, is a housing 18 within which is pivoted a latch piece 19 having a tooth or projection which is normally held in engagement with the ratchet wheel by a spring 20. Also pivoted in a housing is a lever 21 provided with a hook 23 extending over the end of the latch 19 which is adapted to disengage the latter to unlock the ratchet wheel when said lever is moved downwardly by pressure of the operator's foot upon the lateral extension 24 at the outer end of the lever.

The means for operating the doors comprise flexible connections, such as cables or chains 25 and 26, attached at one end to the winding shaft 8, and pass longitudinally beneath the doors 5 and 6 respectively, where they are guided and may be retained by pulleys or sheaves 5^a 6^a. The other ends or extremities 25^a—26^a of the door-operating connections extend beyond the ends of the doors and are anchored to the wagon box, or other suitable support located in proximity thereto, at points above the doors, as indicated at 27 in Fig. 5, so that said ends of the connections depend at the end of the box opposite to that on which the winding mechanism is located. These anchored extremities are guided between pulleys 28 journaled in a strap 29 and the corresponding portions at the end of the box, beneath the winding mechanism, are guided by similar pulleys 30 supported in a strap 31, said pulleys being arranged in vertical alinement above those on the doors, whereby the connections will be retained in their normal position when the doors are opened.

In order to compensate for the difference

in the length of the door-operating connections, which occur from unequal stretching or wear of the connections or from wear of the sheaves or pulleys over which they pass, and also to provide means for closing one door in advance of the other, I arrange between said connections a movable equalizing member which is automatically adjusted by the tension on the two door-operating connections, which is normally adjusted relatively to the doors and yieldingly held in position to temporarily take up a portion of the length of one of said connections and allow it to be drawn out to its full length after its door has been closed.

I have shown in the present illustrations one embodiment of my invention, comprising a spacing member or bar 32 which may be conveniently located between the depending extremities or anchored ends 25^a and 26^a of the door-operating connections, between their points of suspension 27 and the guiding pulleys 28, as shown in Figs. 4 and 5. In instances where the door-operating connections comprise chains, such as shown, I provide the member 32 with fingers 33 which are adapted to project through the apertures in one of the links of each connection. These fingers are preferably formed by cutting away portions of the material at each side of the ends of the bar to provide the latter with shoulders 35 and 36, as shown in Fig. 7, which are spaced apart a sufficient distance to separate the portions 25^a and 26^a a distance somewhat greater than they would normally assume. One of the fingers 33 is provided with an aperture 37 into which is passed one end of a spring 38 rigidly attached, as indicated at 39, to a contiguous portion of the wagon box, in a position to draw the bar or member to one side to take up a portion of the connection of the door which it is desired to close in advance of the other, when said connection has been released, as shown in Fig. 5. The elasticity of the spring permits the member 32 to yield sufficiently to pay out the connection after the door has been closed and allow the member to operate as an equalizer in conjunction with the operating connection of the other door.

Other means may be employed for holding the connections separated in lieu of the bar, one of which I have illustrated in Fig. 8. This means comprises a chain, cable or the like, indicated by 40, passing over pulleys 41 and 42 and attached at its ends to the anchored ends or extremities 25^b—26^b of the door-operating connections. When this form of device is employed the pulleys 41 and 42 are located a short distance from the connections and the length of the chain 40 is such that said connections are deflected or drawn out of a straight line, extending from their points of attachment 27^a and the

guides 28^a. The chain 40 being free to move around its supports 41 and 42 maintains the deflected portion of the door-operating connections separated a fixed distance and also permits them to move laterally, so that a spring 43 attached to the chain 40 will perform the same function as the spring 38.

The means comprehended by my invention and employed for effecting an equalization of compensation between two door-operating connections may be advantageously employed upon dumping wagons, as it enables the doors to be closed tightly against the bottom of the box both at their forward and rear ends, in addition to the closing of one door in advance of the other, whereby the space between the meeting edges of the doors may be closed by an overlapping strip, all of which is especially desirable on wagons employed for transporting finely divided or semi-plastic material.

Devices embodying my invention are simple in construction and may be readily applied for operating the doors or bottom sections of the boxes or receptacles of wagons heretofore constructed.

I claim as my invention:

1. In a dumping wagon, the combination with a box, movable bottom doors thereon and flexible connections for operating them having end portions extending beyond the ends of the doors and anchored, of a movable spreader arranged between the anchored end portions of the connections and means for drawing said connections to close the doors.

2. In a dumping wagon, the combination with a box, movable bottom doors thereon and flexible connections extending beneath them and anchored at points beyond the doors, of a movable spreader arranged between said extending ends of the connections and mechanism for winding the other ends of said connections to close the doors.

3. In a dumping wagon, the combination with a box, movable bottom doors thereon, winding mechanism and flexible connections attached thereto extending beneath the doors and anchored at one end of the box beyond the doors, of a movable device spreading said connections between their points of attachment and the doors and means normally tending to move the device relatively to the doors to automatically cause a relative lengthening of one connection and shortening of the other.

4. In a dumping wagon, the combination with a box, movable bottom doors thereon, winding mechanism and flexible connections attached thereto extending beneath the doors and having their ends extending upwardly and anchored at one end of the box, of guides holding portions of said ends in their normal position, a movable member supported by the connections and separating their ends

a distance greater than the distance between the guides.

5 5. In a dumping wagon, the combination with a box, movable bottom doors thereon and a winding shaft located at one end of the box, of door-operating connections at-
10 tached to the shaft at one end and having their other extremities extending upwardly from the doors and anchored to the box, a bar supported at its ends by said connec-
15 tions and spreading the latter between their points of anchorage and the doors.

6. In a dumping wagon, the combination with a box, movable bottom doors thereon
15 and a winding shaft located at one end of the box, of chains connected to the shaft at one end and anchored to the box at their other ends, their intermediate portions ex-
tending downwardly at the ends of the box

and coöperating with the doors, a rigid bar 20 engaging links in the anchored ends of the chains and holding the latter separated a fixed distance, said bar being movable to automatically effect a relative lengthening of
25 one chain and shortening of the other.

7. In a dumping wagon, the combination with a box, movable bottom doors thereon and flexible connections for operating them having end portions extending beyond the
30 ends of the doors and anchored, of means for movably maintaining the portions of the connections between the doors and their points of anchorage separated a fixed dis-
tance.

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Witnesses:

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