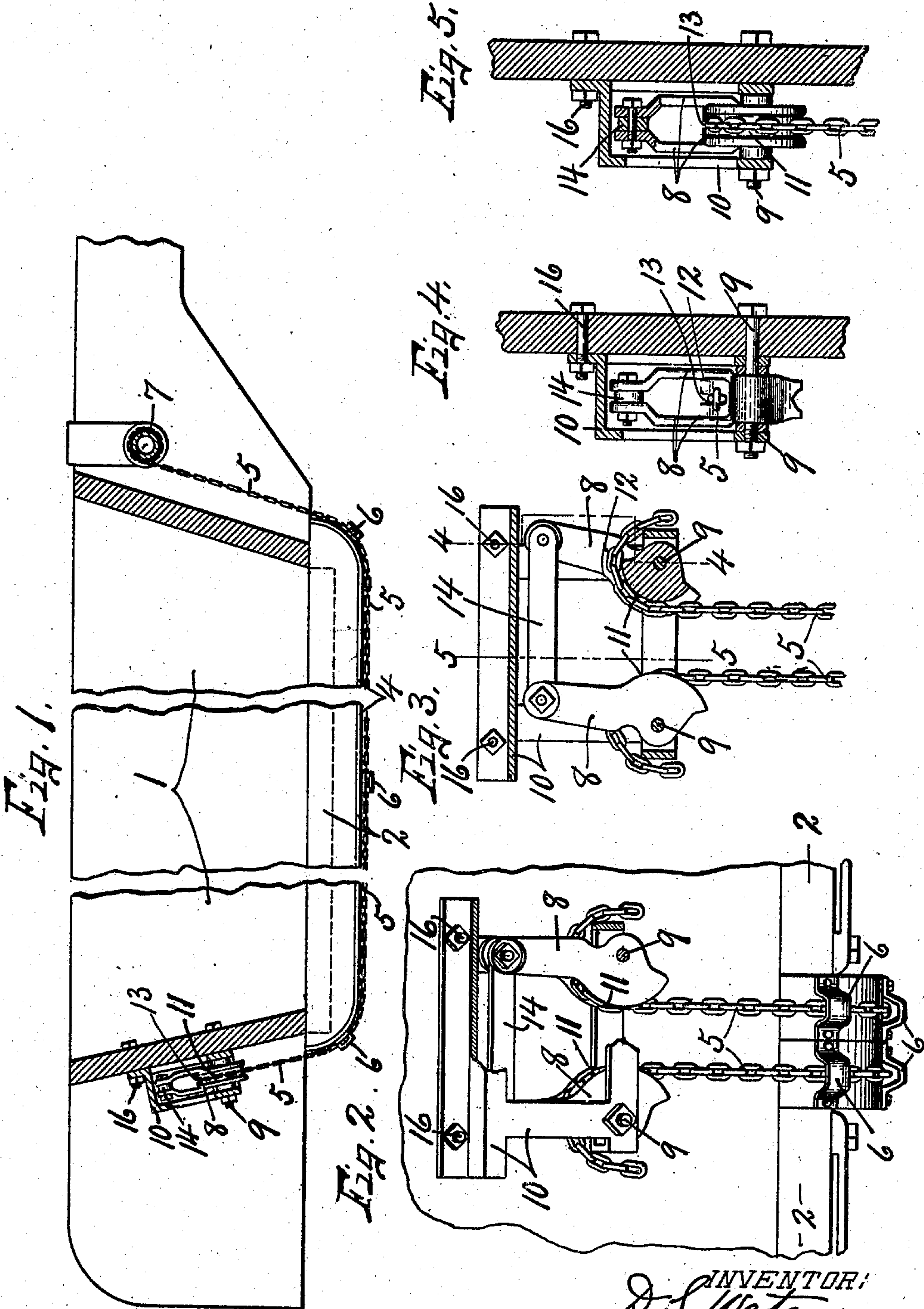


No. 848,077.

PATENTED MAR. 26, 1907.

D. S. WATSON.
DUMP WAGON.

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WITNESSES:

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DUMP-WAGON.

No. 848,077.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DAVID S. WATSON, of Canastota, in the county of Madison, in the State of New York, have invented new and useful Improvements in Dump-Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in dump-wagons, in which the box is provided with downwardly and outwardly swinging doors controlled by cables passing under the meeting edges of the doors and having their forward ends wound upon a suitable drum at the front end of the box and their rear ends attached to separate but coacting equalizing elements mounted upon the rear end of the box.

The special purpose of my present invention is to provide a separate oscillatory attaching member for the rear end of the chain or cable for each door, so that each cable may be adjusted separately upon its attaching element by which it is held.

Another object is to connect these separate equalizing elements for simultaneous action, so that if one door should close before the other the element to which its cable is attached will be forcibly rocked in one direction to let out such chain and at the same time will operate the other element to take up the slack of its chain, so that the winding on the drum will tension both cables equally, and thereby bring both doors to the closed position. In other words, my purpose is to adjustably attach the rear end of each cable for each door to a separate rocking member, so that the doors may be adjusted to close approximately at the same time, such adjustment also serving as a means for limiting the degree of opening of the doors to prevent their striking against the wheels as the load is dumped, the purpose of the connection between the oscillatory elements being to transmit motion from one to the other to automatically take up any slight inequality in the movement of the doors when drawn to their closed position by the rotation of the winding-drum.

Other objects and uses relating to the specific structure of the oscillatory elements and also to the manner of guiding the cables along the under side of the doors will be brought out in the following description.

In the drawings, Figure 1 is a longitudinal sectional view, partly broken away, of a portion of a dump-wagon embodying the features of my invention. Fig. 2 is an elevation of the central portion of the rear end of the dump-box and my improved equalizing mechanism mounted thereon, a portion of the supporting-frame for said mechanism being shown in section. Fig. 3 is a rear elevation, partly in section, of the detached equalizing mechanism and its supporting-frame, showing the oscillatory members in a different position from that seen in Fig. 2. Figs. 4 and 5 are sectional views taken, respectively, on lines 4-4 and 5-5, Fig. 3.

In demonstrating the practicability of my invention I have shown a portion of a dump-box 1 as provided with laterally-swinging doors 2, meeting near the transverse center of the box and provided at their meeting edges with lengthwise-reinforcing bars, which are of somewhat greater vertical depth than the remaining portions of the doors to afford greater strength where the strain is most severe. The front and rear ends of these reinforcing-bars are curved upwardly and, together with the lower faces, are further reinforced by metal straps or shoes 4, which form suitable wearing-surfaces for the chains or cables, as 5, presently described. I preferably use two of these cables 5, each extending along and under the wearing-strap 4 on the meeting edge of one of the doors, and is guided in its lengthwise movement in suitable loops 6, which are secured to the strap 4 to hold the cables against lateral displacement, said loops being of sufficient size to allow the cables to render freely through them longitudinal.

The front ends of the cables 5 are attached to a revolving winding-drum 7, which may be actuated by any suitable mechanism, not necessary to herein illustrate or describe, as the various means for rotating such drums are well known, it being sufficient to state that this drum is usually located in front of the front end of the box some distance above the front ends of the doors, so as to produce an upward draft when closing said doors. The rear ends of the cables 5 extend upwardly from the rear ends of the doors in parallel lines and are separately and adjustably attached to opposite rock-arms or oscillatory members 8. These rock-arms are journaled

upon suitable bolts 9 within a supporting-frame 10 and are provided on their adjacent edges with grooved bearing-faces 11, which in this instance are curved toward each other concentric with their axes and are spaced apart a distance substantially equal to the distance between the chains where they pass under the meeting edges of the doors when the latter are in their closed position, so that when the doors are closed the pull operating to hold them in the closed position is directly upward in parallel lines and close to the meeting edges of said doors.

The object in bringing the cables close together in the manner described near the meeting edges of the doors is to draw said meeting edges together as distinguished from diverging the latter ends of the cables upwardly, which would tend to draw the meeting edges of the doors apart during the operation of closing same.

The adjacent grooved convex bearing-faces of the rocking members 8 terminate in abrupt hook-shaped extremities 12, facing outwardly or in opposite directions and having slots 13, adapted to receive one of the links of the chain 5 edgewise, but is narrower than the width of said link, so that the outer faces of the hooks 12 form abutments to prevent the chains from sliding in their bearings 11 as the doors are closed, said hooks and slots also serving to permit the chains to be taken up individually link by link to adjust the doors so as to close as nearly simultaneously as possible.

It is clear from the foregoing description, taken in connection with the drawings, that by drawing the chains upwardly over the bearings 11 at the inside of the fulcrums 9 on the rock-arms 8 they may be brought close together nearly over the meeting edges of the doors without interfering with each other, which is of great importance in holding the meeting edges of the doors together to prevent leakage of the load therefrom. In order that these rocking members may serve as equalizers to automatically take up any inequality in the closing of the doors, their upper ends are connected by a link 14, which causes both rocking members to act simultaneously, so that if one door should close before the other during the winding of the cable upon the drum 7 both rocking members would be caused to rock in the same direction, the cable, which is attached to the door first closing, serving to rock its member 8 inwardly, thereby rocking the other member 8 outwardly and causing its shoulder 8 to draw upwardly on the chain to which it is attached to close the lagging door. It is of course understood that the front ends of the cables 5 are rigidly attached to the drum and wind uniformly thereon, and by connecting the rear ends of said chains separately to the

rocking elements 8 and connecting said elements to each other by a rigid bar 14 the rear ends of the chains may be not only adjusted separately to limit the opening movement of the doors and to cause them to close nearly simultaneously, but should one chain stretch or wear more than the other to permit one door to close earlier than the other the door first closing will operate, through the chain 5 connected thereto, to rock both of the elements 8 upon the bearing, thereby causing the opposite member 8 to draw upwardly on its chain to close the lagging door. The bolts 9, which form the bearings for the rocking arm 8, also serve to clamp the lower end of the frame 10 to the rear end of the box, the upper ends of said frame being additionally secured to the rear end of the box by bolts 16.

What I claim is—

1. In a dump-wagon, a dump-box having laterally-swinging bottom doors meeting near the transverse center of the box, a drum at the front end of the box above the front ends of the doors, a pair of rocking members at the rear end of the box and connected for simultaneous action, supports for said rocking members and separate cables having their front ends attached to the drum and their intermediate portions passed downwardly and under the meeting edges of the bottom doors, and their rear ends each adjustably attached to one of the rocking members.

2. In a dump-wagon, a box having laterally-swinging bottom doors, a rotary drum at one end of the box, rocking members at the rear end of the box and connected for simultaneous action, separate chains passed lengthwise under the doors and having their front ends attached to the drum and their rear ends detachably and adjustably connected to the rocking members.

3. In a dump-wagon, a dump-box having laterally-swinging bottom doors, a rotary drum at one end of the box, a pair of rock-arms at the rear end of the box, a rigid bar pivotally connected to said rock-arms to transmit motion from one to the other, said rock-arms having their adjacent faces curved and grooved, the curved faces terminating in hook-shaped extremities above the fulcrums of the rock-arms, separate chains each extending along the under side of one of the doors and having one end attached to the drum and its other end detachably and adjustably engaged with said hook-shaped extremities.

In witness whereof I have hereunto set my hand this 14th day of July, 1906.

DAVID S. WATSON.

Witnesses:

A. A. KEESLER,
GEO. S. CRONKITE.