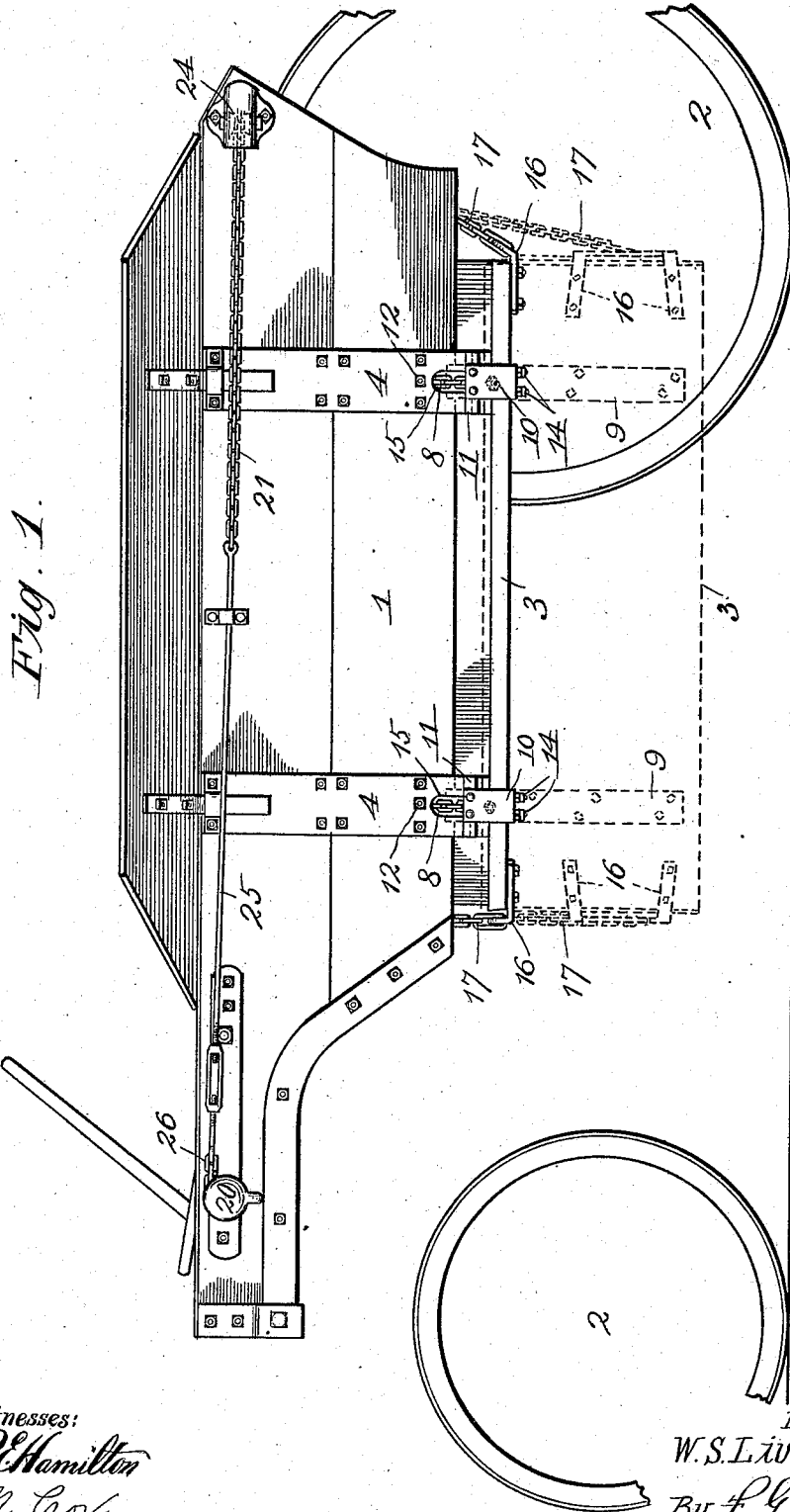


W. S. LIVENGOOD.
DUMPING WAGON.
APPLICATION FILED MAR. 18, 1907.

936,730.

Patented Oct. 12, 1909.
3 SHEETS—SHEET 1.



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Fig. 2.

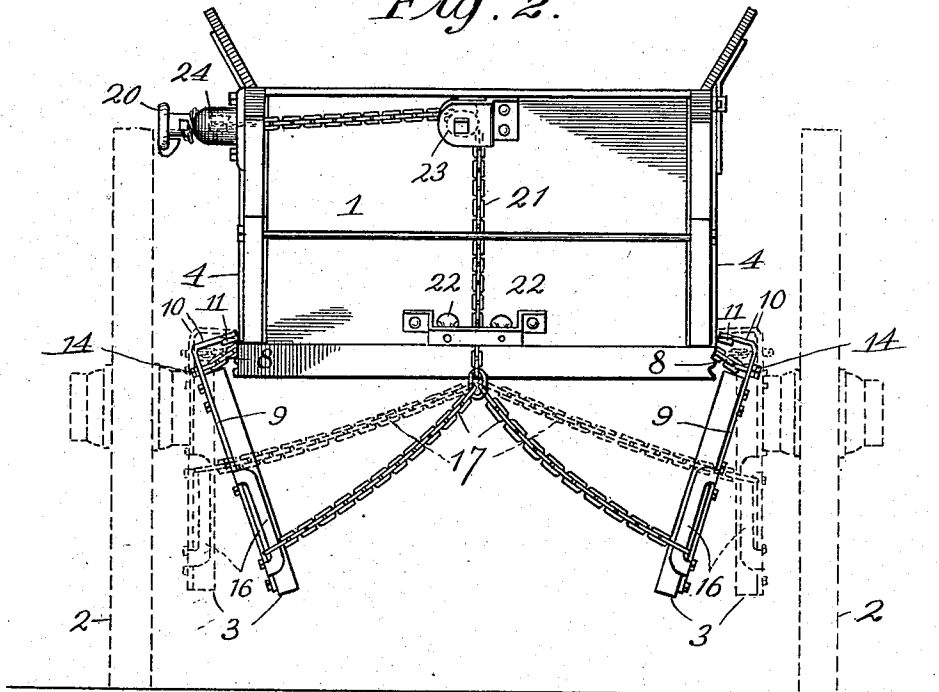
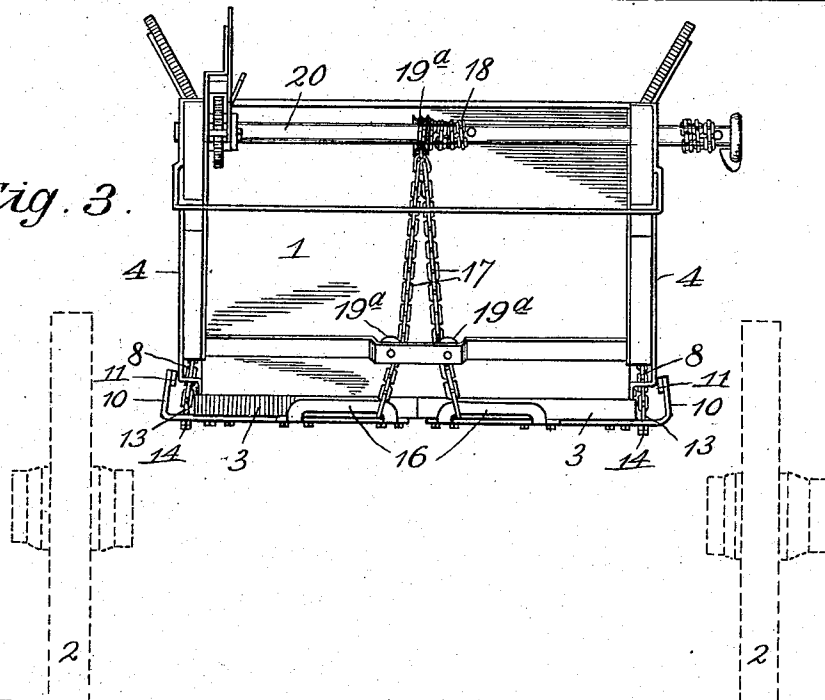


Fig. 3.



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3 SHEETS—SHEET 3.

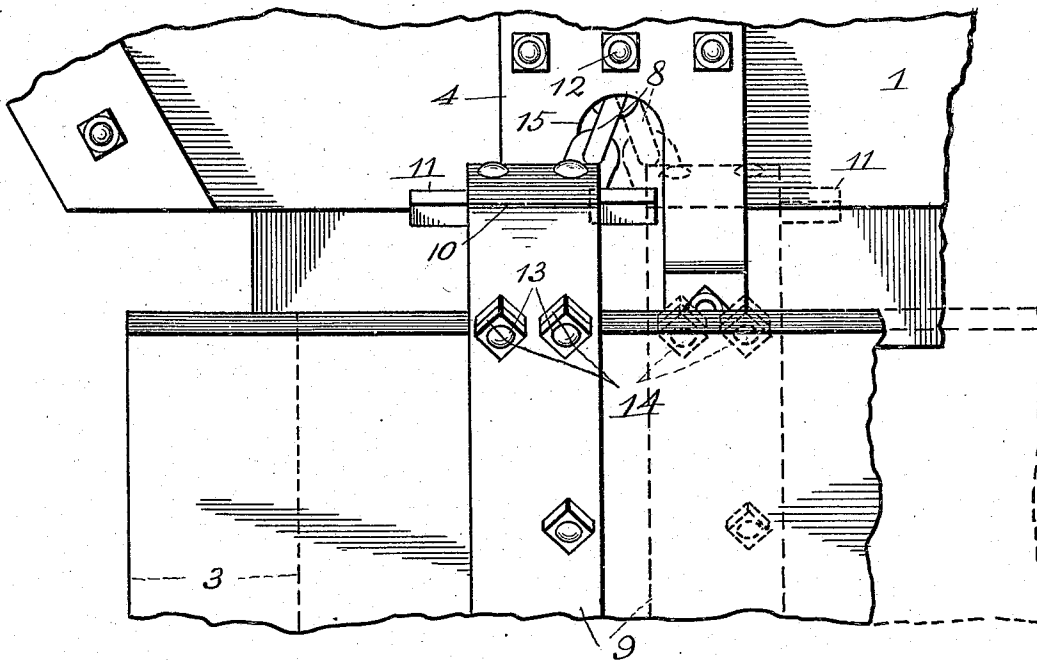


Fig. 4.

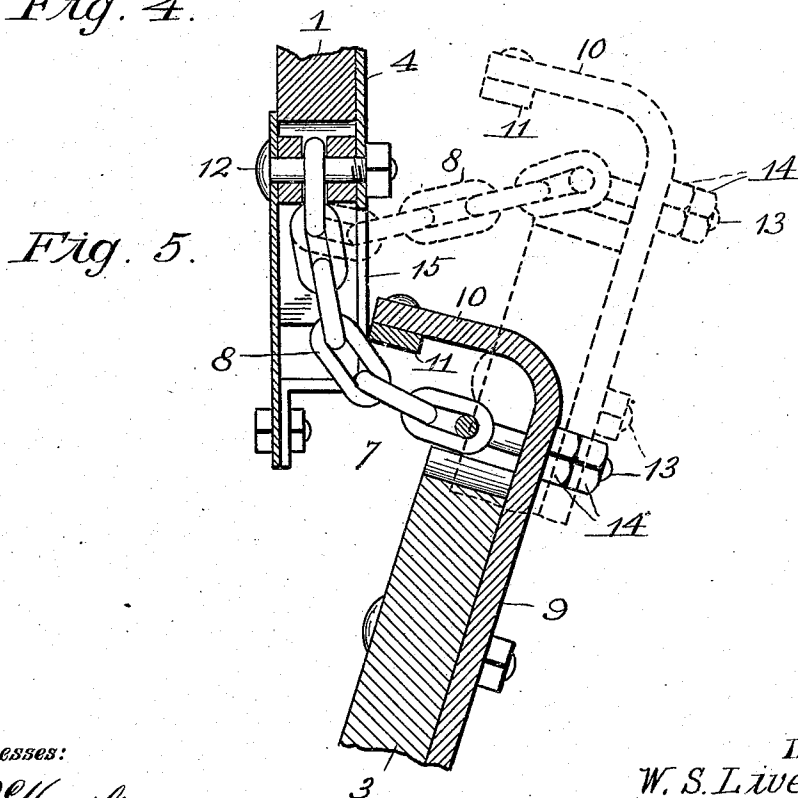


Fig. 5.

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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOOD, OF KANSAS CITY, MISSOURI, ASSIGNOR TO SMITH & SONS
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DUMPING-WAGON.

936,730.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 18, 1907. Serial No. 363,047.

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOOD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification.

My invention relates to improvements in bottom dumping wagons, and relates more particularly to the hinges whereby the bottom doors are connected to the wagon body, and means for closing said doors.

One object is to flexibly hinge the doors so that they may be opened wide enough to clear the load when dumped, and may move forward, or backward, or upward when open so that when contacting with a pile of dirt they will be free to pass over or to one side of the same without damage to themselves or unduly straining the wagon body.

Another object is to form the hinges in such manner that they will raise the doors when opened so that said doors will clear ordinary obstructions.

Referring now to the accompanying drawings, which illustrate the invention:—Figure 1 represents a side elevation of a wagon provided with my improvements. Fig. 2 is a rear elevation of the same with the doors open. Fig. 3 is a front elevation with the doors closed. Fig. 4 is an enlarged broken side elevation showing the extreme forward and backward movements of the door. Fig. 5 is a vertical cross section showing the extreme downward and forward movements of the door.

1 designates the wagon body, which is mounted in the customary manner upon wheels 2, and provided with a pair of bottom dumping doors 3.

4 designates a pair of slotted straps secured to each side of the wagon body.

7 designates the hinges whereby doors 3 are connected to the wagon body. Each hinge consists of a flexible member 8, preferably, in the form of a chain, and a rigid member 9, preferably in the form of a strap, which is secured to the door and has an outer portion 10, bent substantially at right angles thereto and provided with a T-shaped end 11, which loosely engages the lower end of its respective strap 4, so that it may rock and slide thereon as indicated by dotted lines, Figs. 2 and 4. Chain 8 is connected at

its upper end to a bolt 12 and at its lower end to a U-bolt 13, which latter is secured by retaining-nuts 14 to strap 9. Said chain extends through the slotted portion 15 of strap 4 so that it will be free to move in any direction. When the doors are closed the T-shaped ends 11 bear against the lower portions of their respective straps 4 and turn thereon as upon a pivot when the doors are opened. Said T-shaped ends, however, are free to move in any direction upon the straps, so that should the open doors collide with obstructions they will be free to either pass over said obstructions or to one side thereof. When the doors are opened the bent portions 10 swing upward as upon pivots from their T-shaped ends 11, see dotted lines, Fig. 2, and thus lift the doors instead of permitting them to swing downward close to the ground and contact with small obstructions.

The ends of the doors are provided with loops 16, which are adjustably engaged by cables 17, adapted to slide upward thereon, as shown by dotted lines Fig. 2, and permit the doors to swing wide open so that the load may be instantly dumped in a pile when desired, instead of being scattered. Cables 17 are arranged in pairs, the forward pair being connected to the lower end of a main cable 18, which extends upwardly between a pair of sheaves 19 thence over a sheave 19^a and is connected at its forward end to a windlass 20. The rear pair of cables 17 are connected to a main cable 21, guided by sheaves 22 23 and 24, to one side of the wagon body, where it is attached to a tension rod 25 connected by a short cable 26 to windlass 20, so that both cables will be simultaneously wound and unwound and thus simultaneously operate the doors. When the doors are being closed cables 17 slip downward into engagement with the lower ends of loops 16, and thus draw the inner ends of the doors together, as shown in Fig. 3, the straps 9 being so proportioned as to prevent one door from overlapping the other while being closed.

Having thus described my invention, what I claim is:—

1. The combination with the doors of a dumping-wagon, of slotted members secured to the sides of the wagon body, and hinges consisting of flexible members which are secured to the wagon body and extend through

the slots in the slotted members, and rigid members connected to the flexible members and the doors, said rigid members being bent at their outer ends to engage the slotted
5 members, substantially as described.

2. The combination with the doors of a dumping-wagon, of hinges consisting of cables secured to the wagon body, and straps connected to the cables and the doors, said
10 straps having T-shaped outer ends bent to

slidably engage the sides of the wagon body and form pivotal points for the doors to swing upon.

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

WINFIELD S. LIVENGOD.

Witnesses:

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M. Cox.