

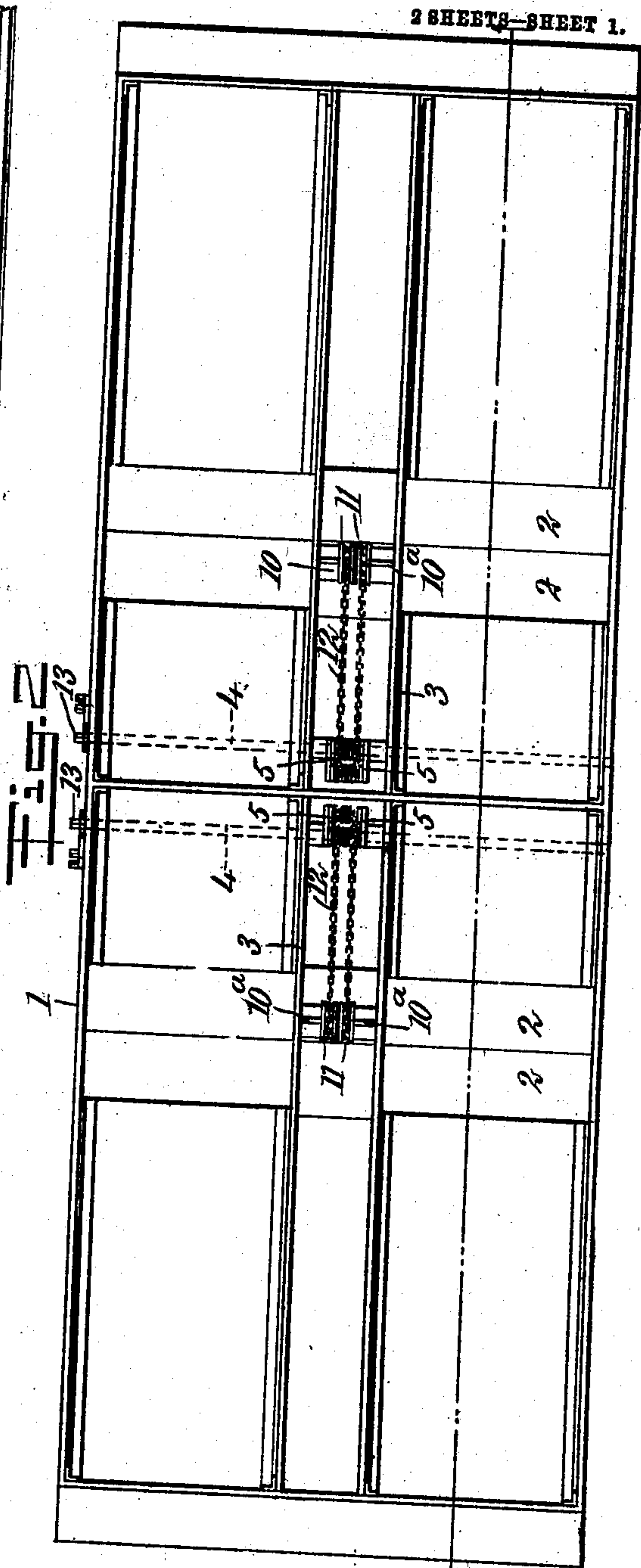
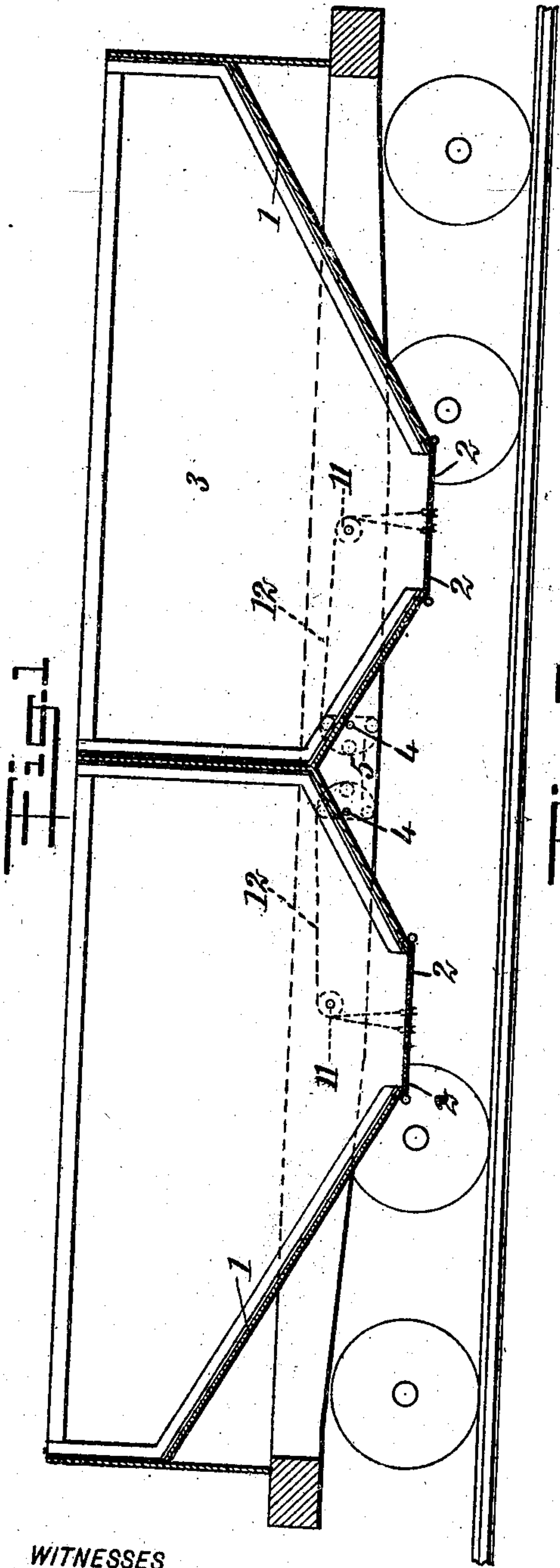
No. 858,927.

PATENTED JULY 2, 1907.

T. E. VAN DERWERKEN.  
DUMPING CAR.

APPLICATION FILED APR. 6, 1907.

2 SHEETS—SHEET 1.



WITNESSES  
F. D. Sweet.  
W. H. H. H.

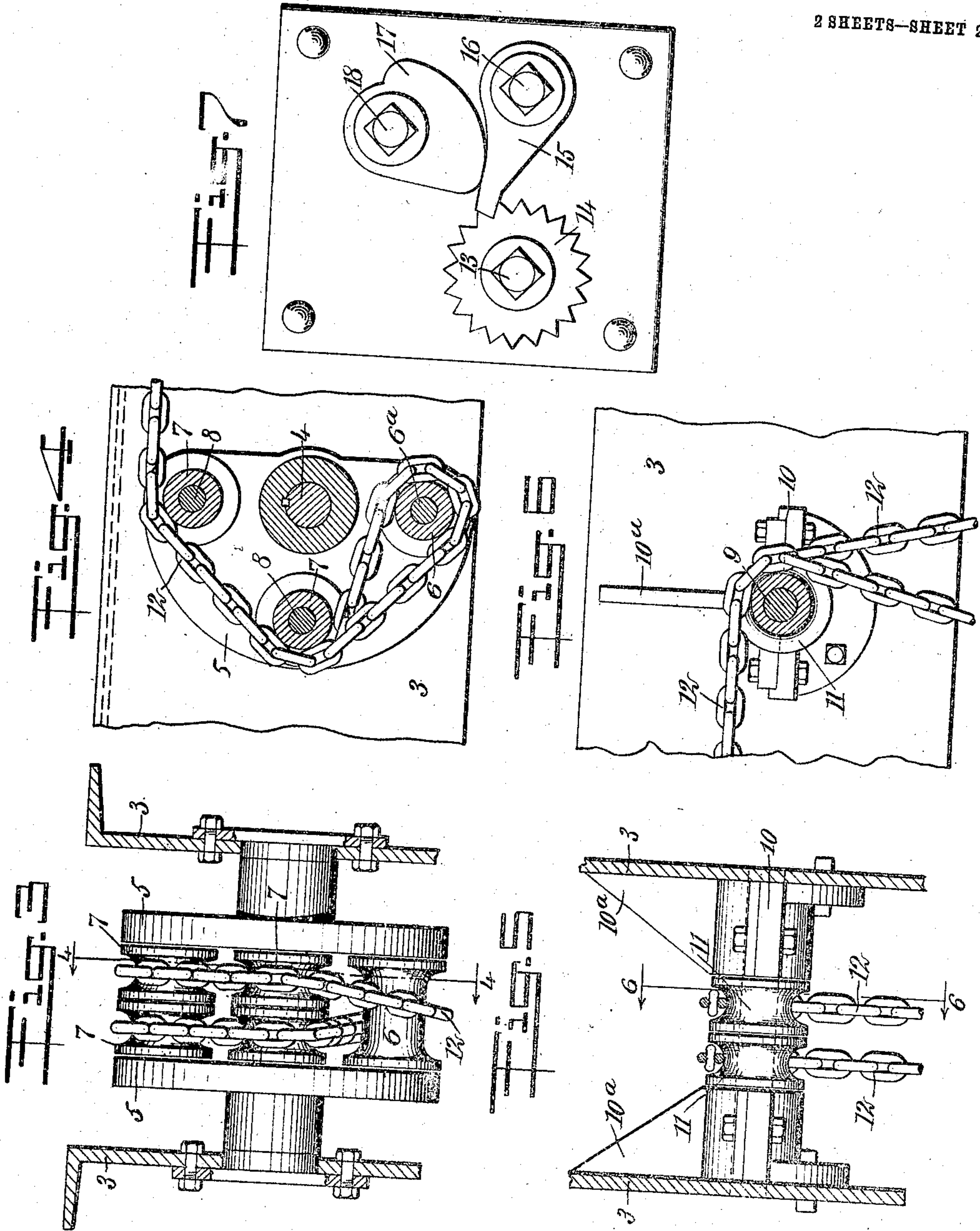
INVENTOR  
Theodore E. Van Derwerken  
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F. D. Sweet.  
W. A. Holt

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Theodore E. Van Derwerken  
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# UNITED STATES PATENT OFFICE.

THEODORE EDDY VAN DERWERKEN, OF GREEN ISLAND, NEW YORK, ASSIGNOR OF ONE-HALF TO ERNEST F. PIEPER, OF WATERFORD, NEW YORK.

## DUMPING-CAR.

No. 858,927.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed April 6, 1907. Serial No. 366,677.

*To all whom it may concern:*

Be it known that I, THEODORE EDDY VAN DERWERKEN, a citizen of the United States, and a resident of Green Island, in the county of Albany and State of New York, have invented a new and Improved Dumping-Car, of which the following is a full, clear, and exact description.

This invention has in view the provision of an improved dumping car of the coal car type, in which the mechanism employed in operating the drop doors at the bottom of the car will be separated and protected from the coal or other material with which the car may be loaded, and thus prevent any interference with the operation of this mechanism from this source.

The invention further contemplates the employment of the means for operating the drop doors, whereby the doors may be readily released and speedily closed with an equal pull on each door, and the doors when dropped, will be carried clear of the opening at the bottom of the hopper.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a central, longitudinal, sectional view through a dumping car embodying my invention; Fig. 2 is a plan of the same; Fig. 3 is a view of the winding mechanism for drawing up and releasing the doors; Fig. 4 is a section on the line 4—4 of Fig. 3, looking in the direction of the arrows; Fig. 5 is a sectional view showing the arrangement of the sheaves and supporting means therefor as are positioned above the doors of each hopper; Fig. 6 is a section on the line 6—6 of Fig. 5 looking in the direction of the arrows, and Fig. 7 is a face view of the means employed in operating and locking the doors in place.

As shown in Figs. 1 and 2, the preferred construction of the car comprises two independent load-carrying compartments each being provided with a hopper bottom 1 discharging through openings at each side of the center of a car, each of said openings being closed by two drop doors 2, 2'. These doors are so hinged, as shown in Fig. 1, that when dropped to a vertical position they will swing out of the path of their respective discharge openings and will thus not impede the discharge of the load when the car is dumped. Each of the independent compartments of the car are themselves divided into two compartments by vertical walls 3 arranged at each side of the longitudinal center of the car. The space between the walls is utilized for the mechanism employed in operating the doors 2, this mechanism being thus separated and protected from the coal or other material with which the car might be loaded. The said mechanism is independent for each set of doors and consists of cross shafts 4 journaled in suitable bearings at each side of

the center of the car, preferably close together in order that they may be conveniently operated. Fixed to each shaft between the walls 3 are spaced flanges 5 of substantially semicircular form, each pair of flanges 60 carrying near their circumference a pin 6<sup>a</sup> on which is journaled a grooved roller 6. Diametrically opposite the roller 6 and also at one side thereof, grooved rollers or sheaves 7 are journaled between the flanges, on axes or pins 8, the rollers 7 on each pin 8 being 65 arranged side by side and of about one-half the width of the roller 6.

Above each set of drop doors 2 and at substantially the same elevation as the shafts 4, a pin or axis 9 is fixed at opposite ends in brackets or blocks 10, the latter, as best shown in Fig. 5, being bolted or otherwise secured to the side walls 3. Between these blocks are journaled on the pin 9, grooved rollers or sheaves 11, over which pass the opposite ends of a chain or other flexible line 12 leading from the roller 6 of the winding mechanism about which it is looped. The free ends of the chains 12 are each attached to one of the drop doors 2 near its free edge, engagement of the chain with the rollers 11 being insured by constructing the blocks 10 with ribs 10<sup>a</sup> which are located on the top faces of the blocks and slope from the walls 3 to the rollers 11. When the winding mechanism is operated for drawing up the doors, the construction and arrangement thereof obviously admits of the ends of the chain moving with respect to each other over the rollers, whereby the force expended in drawing the doors to closed position will be equalized.

At one side of the car the shafts 4 are slightly extended and formed with angular wrench-engaging portions 13, and have fixed to them adjacent thereto ratchet-wheels 14. Each ratchet-wheel is engaged by a pawl 15 constructed with an angular wrench-engaging portion 16 by which it may be revolved. The pawl 15 is locked in engaging position by a cam 17, the cam being likewise constructed with a wrench-engaging portion 18. All of the wrench-engaging portions 13, 16 and 18 are preferably of the same form and size in order that all of them may be operated by a single device.

When the car is loaded, the position of the ratchet-wheel 14, pawl 15 and cam 17 are as illustrated in Fig. 7, in which position the drop-doors are securely locked in place. When the car is to be dumped it is only necessary to disengage the cam 17 from the pawl 15 and throw the pawl to an elevated position.

It is evident that various immaterial changes may be made in the construction from that shown and hereinbefore described, and I consider that I am entitled to such modifications as fall within the scope of the annexed claims.

Having thus described my invention I claim as new and desire to secure by Letters Patent:



1. A dumping car having a double-hopper bottom with a discharge opening at the bottom of each hopper, doors for closing said openings, means for operating said doors, and walls arranged at each side of the longitudinal center of the car and extending to substantially the height thereof, inclosing said operating means.
2. A hopper bottom car having a discharge opening at the bottom, doors for closing said opening, a winding mechanism, and a flexible line having the free ends thereof connected with said doors and slidable over said winding mechanism.
3. A hopper bottom car having a discharge opening at the bottom, doors for closing said opening, a winding mechanism comprising a plurality of members revoluble about a common axis, and a flexible line having the free ends thereof attached to said doors and looped about one of said members of the winding mechanism.
4. A hopper bottom car having a discharge opening at the bottom, doors for closing said opening, a winding mechanism, sheaves journaled above said doors, and a flexible line looped about said winding mechanism with the free ends thereof passing over said sheaves and attached to said doors.
5. A hopper bottom car having a discharge opening at the bottom, doors for closing said opening, a winding mechanism comprising a plurality of rollers, sheaves journaled above said doors, and a flexible line looped about one of said rollers of the winding mechanism and having the

free ends thereof passing over said sheaves and attached to said doors.

6. A dumping car having drop doors at the bottom thereof, a winding mechanism including a plurality of rollers carried on a common axis, and a flexible line looped about one of said rollers with the free ends thereof attached to said doors.

7. A dumping car having drop doors at the bottom thereof, a winding mechanism, blocks having tapered ribs on their upper faces supported above said doors, sheaves journaled between said blocks, and a flexible line looped about said winding mechanism having the free ends thereof passing over said sheaves and attached to said doors.

8. A dumping car having a drop door at the bottom thereof, a winding mechanism comprising a shaft having spaced flanges fixed thereto with rollers journaled between said flanges, and a flexible line looped about one of said rollers having the free ends thereof attached to said doors.

9. In a hopper bottom car, a winding mechanism comprising a shaft, flanges spaced apart and fixed to said shaft, and a plurality of rollers revolubly mounted between said flanges.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THEODORE EDDY VAN DERWERKEN.

Witnesses:

ALFRED M. KELLOGG.

OSCAR BOWMAN.