

No. 840,624.

PATENTED JAN. 8, 1907.

C. E. HERMAN.  
DUMPING CAR.

APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.

FIG. 1

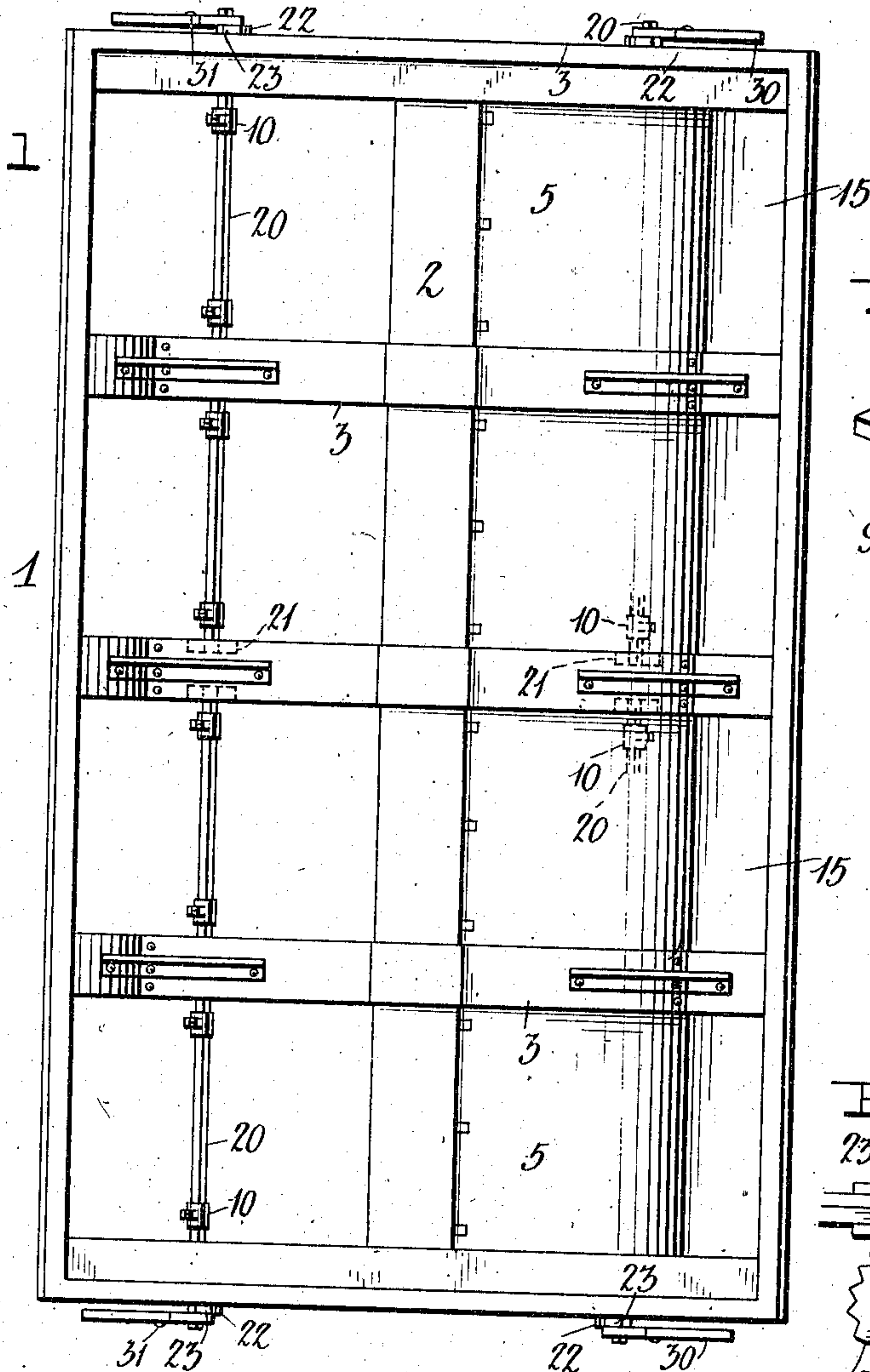


FIG. 6

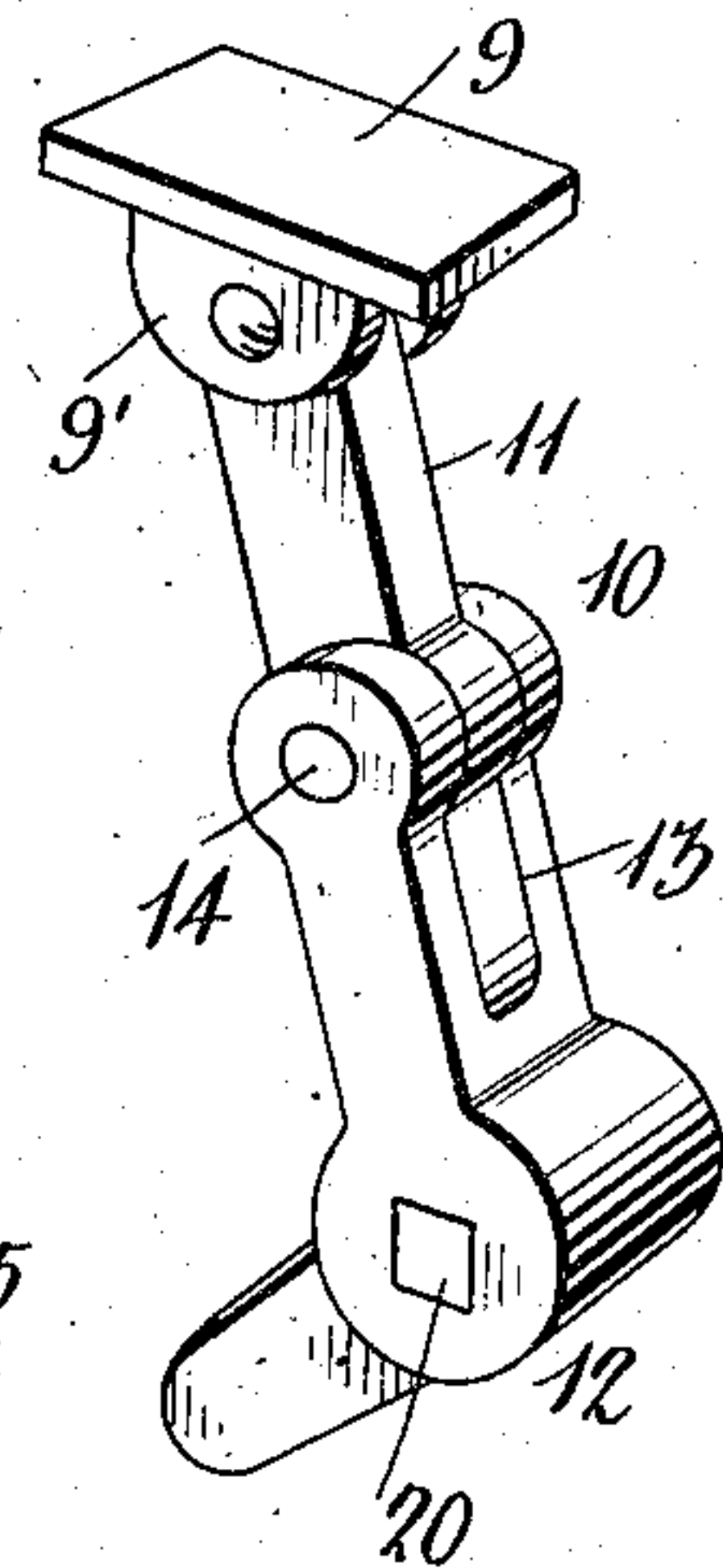


FIG. 9

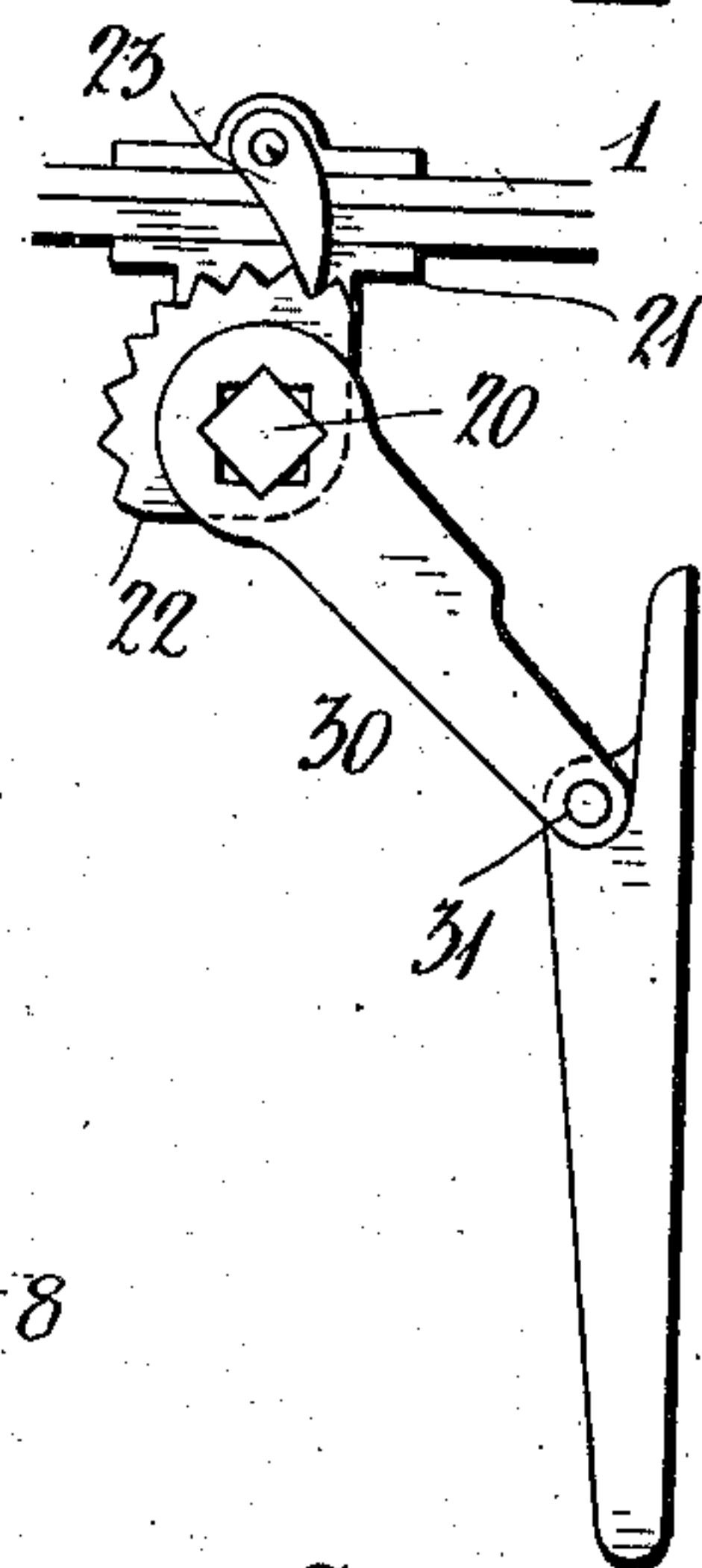
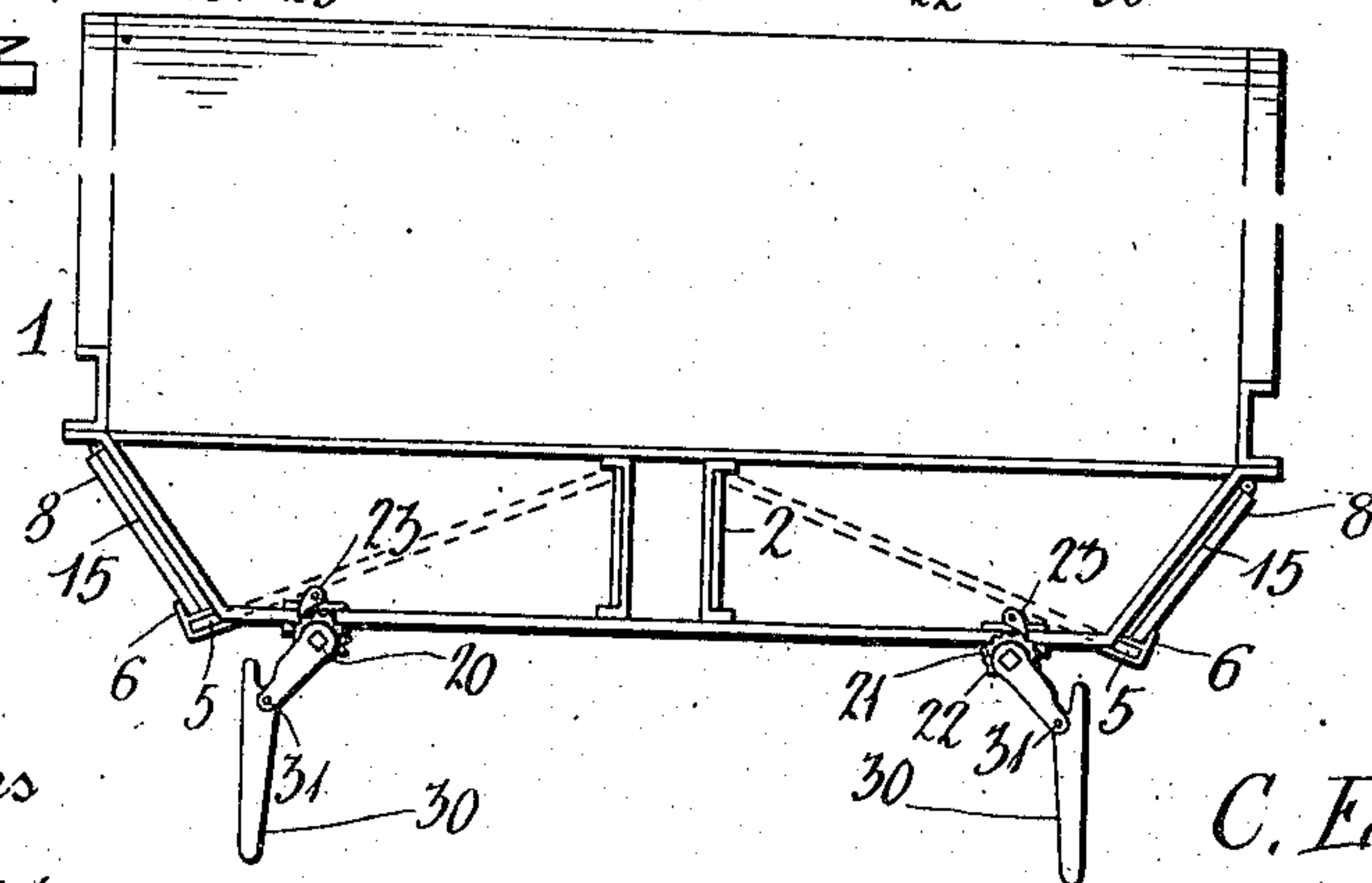


FIG. 3



Witnesses  
*D. L. Jenkins*  
*C. H. Griesbauer*

Inventor  
*C. E. Herman*  
by *A. B. Wilson & Co*  
Attorneys

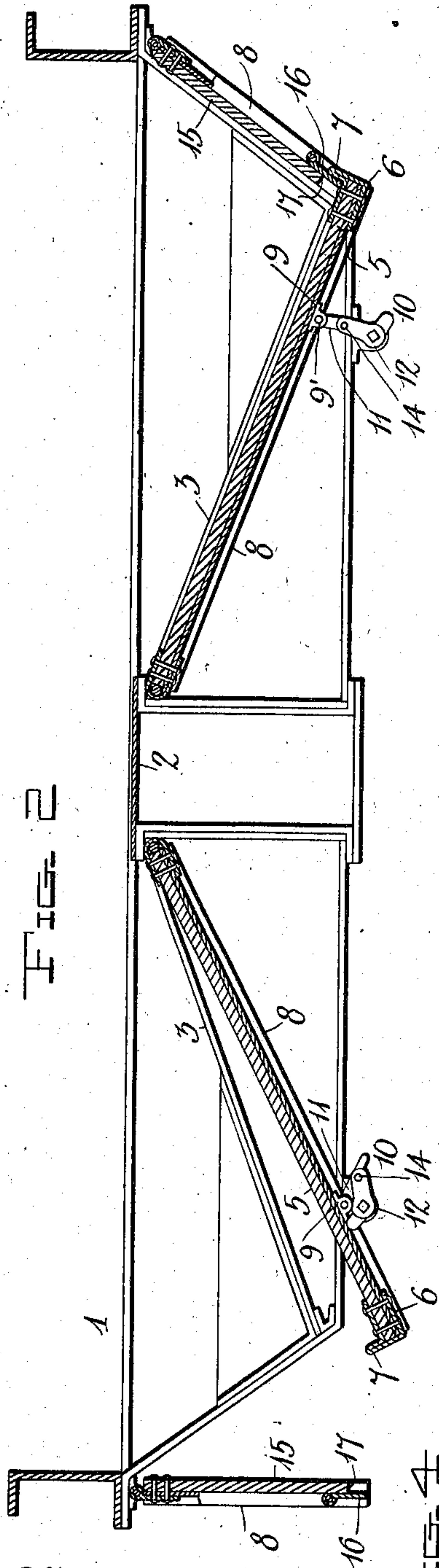
No. 840,624.

PATENTED JAN. 8, 1907.

C. E. HERMAN.  
DUMPING CAR.

APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 2.



Witnesses  
*J. P. Griesbauer*  
*C. E. Herman*

FIG. 2

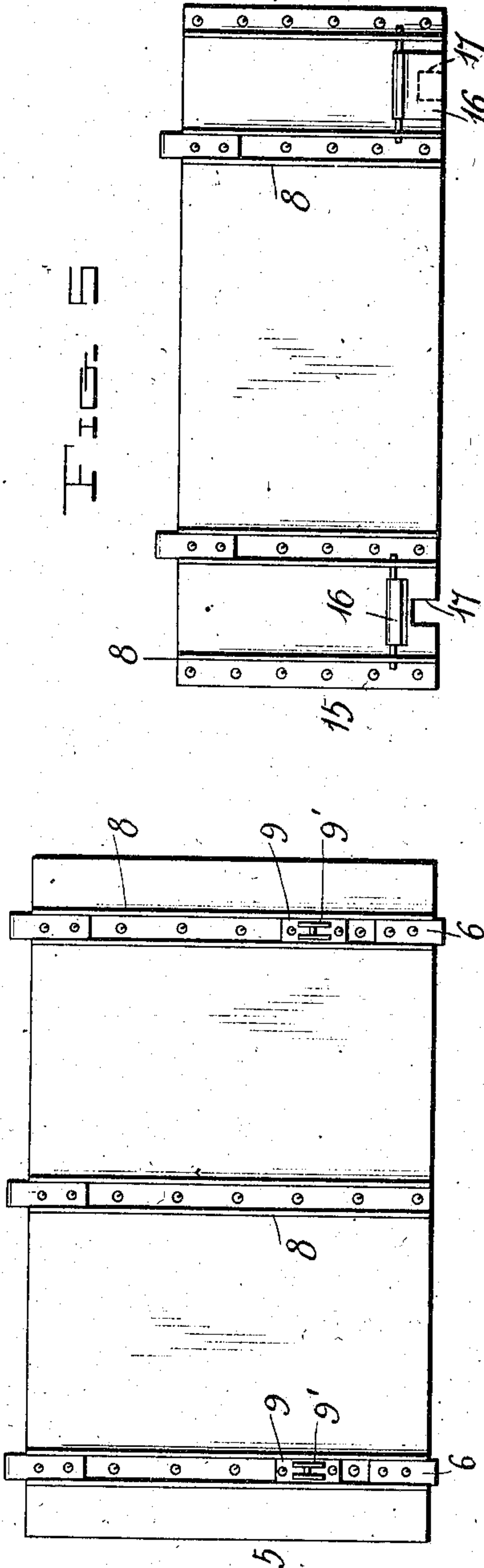


FIG. 4

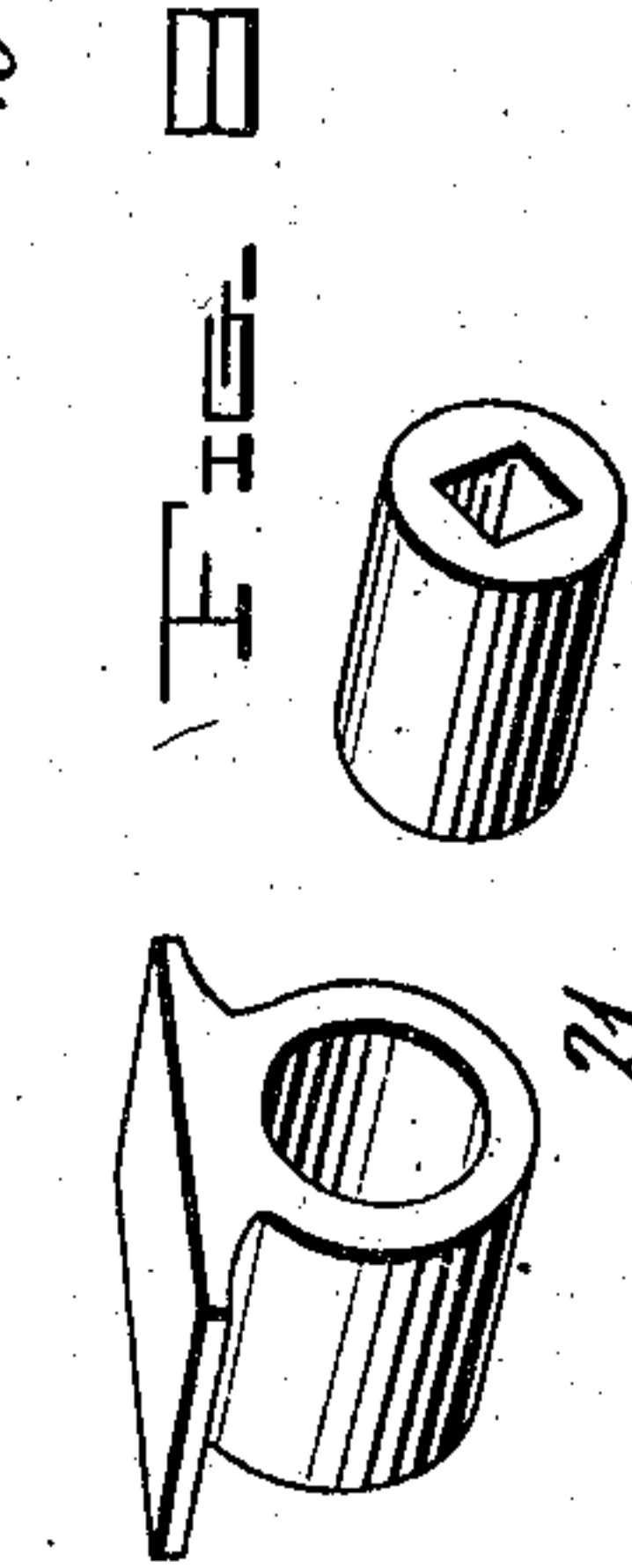


FIG. 5

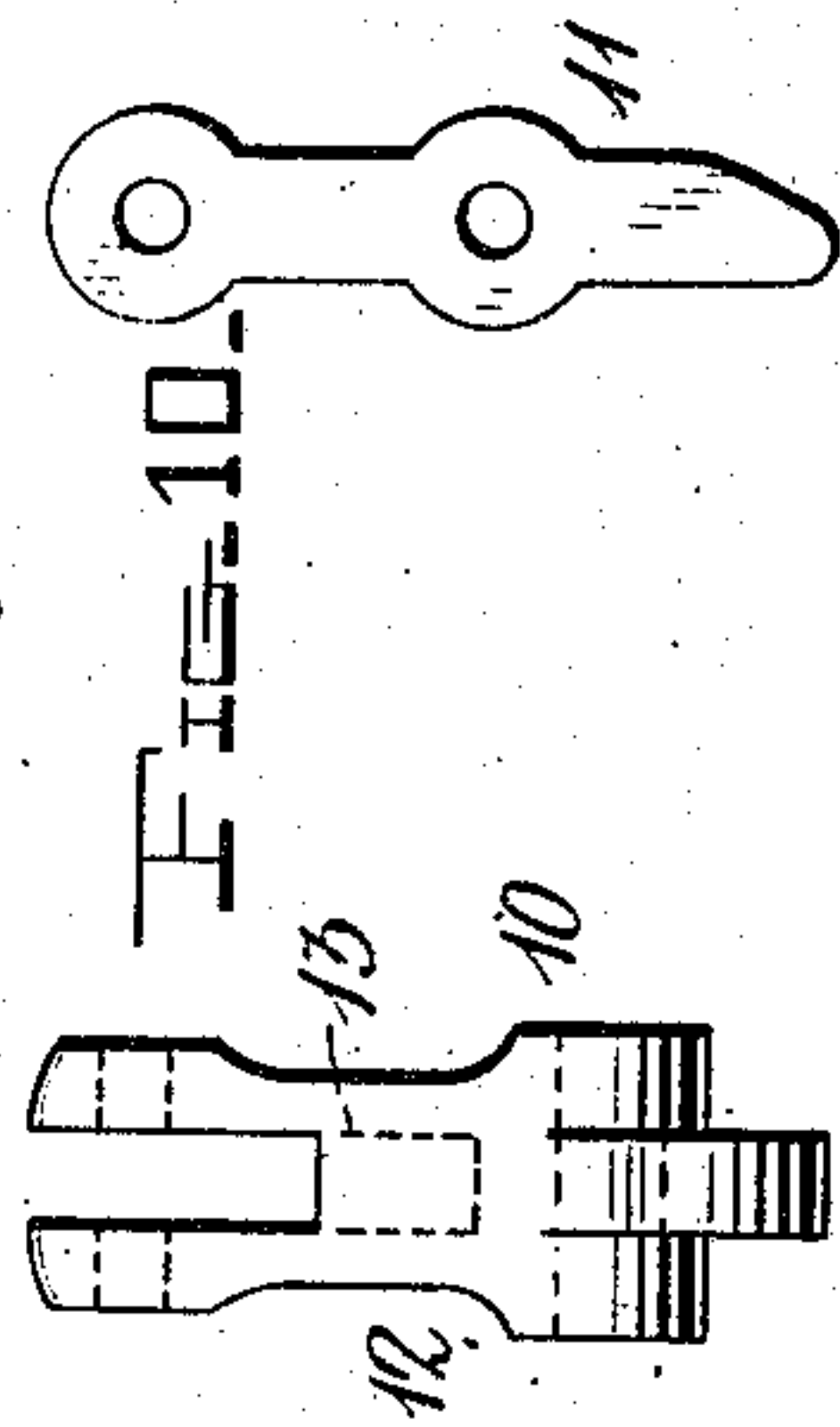


FIG. 10

FIG. 7

Inventor

C. E. Herman

by *A. B. Wilson & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

CLIFTON EDGAR HERMAN, OF COLUMBUS, OHIO.

## DUMPING-CAR.

No. 840,624.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed October 22, 1906. Serial No. 340,056.

*To all whom it may concern:*

Be it known that I, CLIFTON EDGAR HERMAN, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to dumping-cars and means for operating the dumping mechanism.

The object of the invention is to provide a dumping-car which may be quickly unloaded, which has means for holding the doors securely fastened when the car is in use, and provided with simple means for opening and closing said doors.

In the accompanying drawings, in which like reference characters indicate corresponding parts, Figure 1 represents a top plan view of a car constructed in accordance with this invention, the doors forming the bottom on one side of the car being omitted. Fig. 2 represents a transverse section through the car, showing the drop-doors at the right side in closed position and those at the left open. Fig. 3 represents an end view of the car. Fig. 4 represents a bottom plan view of one of the middle doors. Fig. 5 represents a similar view of one of the doors which is attached to the sides of the car. Fig. 6 represents a perspective view of one of the folding levers detached. Fig. 7 represents a front view of the bell-crank of one of the folding levers. Fig. 8 represents a perspective view of a shaft-hanger and bearing ready for assembling. Fig. 9 represents a detail view showing a side elevation of the operating-lever, and Fig. 10 represents a side elevation of the upper member of one of the folding levers.

In the embodiment of my invention shown in the drawings the car 1 is provided with a central partition 2, which divides the bottom of the car longitudinally into two compartments braced by suitable sills, as 3. Each compartment has an inclined bottom composed of a plurality of doors, as 5, hinged at one edge to the central partition 2. Corresponding doors 15 are hinged to the side of the car. The doors 5 are provided at their free ends with catch members 6 for engaging

pivoted complementary members 16 on the doors 15 for holding the doors 15 in closed position. These catch members 6 are preferably made from a single metal strap bent to form an L-shaped hook with its free ends placed on the opposite sides of the door edge and bolted thereto and with its foot 7 projecting upwardly at right angles to the door edge in position to engage the pivoted members 16 of the doors 15. These doors 5 are preferably braced on their lower faces by spaced channeled irons 8, to which the hinges and catch members may be attached.

To the lower faces of the doors 5, preferably on the braces 8, are secured plates 9, having spaced perforated ears 9', in which are pivotally mounted jointed levers 10. These levers 10 are each composed of the bar 11, pivoted at one end between the ears 9' of the plate 9, and the bell-crank lever 12 has one of its arms bifurcated at its upper end and provided with a recess or pocket 13, formed in one face of said arm. This bifurcated end is apertured to receive the pivot-pin 14, which also passes through an aperture in the bar 11 at a point some distance from its free end to pivotally connect said bar 11 with the arm of the bell-crank lever 12, said free end resting in the socket 13 and held against inward bending by the wall of said socket, while permitting it to bend outward when desired.

Shafts 20, preferably angular in cross-section, are mounted longitudinally of the car-bottom in hangers 21, secured to the braces 3. Each car is preferably provided with four shafts 20, two being disposed on each side and operated from opposite ends of the car. These shafts 20 have fixed on their outer ends segmental ratchet-gears 22, adapted to be engaged by pawls 23, pivoted to the car-body for holding the shaft against rotation in one direction. On these shafts 20 at points below the doors 5 are fulcrumed the bell-crank levers 12, with their free arms extending toward the sides of the car to engage the doors 5 when disengaged from the doors 15 and limit the downward drop of said doors 5.

On the outer terminals of the shafts 20 is adapted to be mounted a detachable operating-lever 30, having a knuckle-joint 31, which permits the lever to bend in one direction and holds it against bending in the other direction. This lever has an aperture to fit



the angular shafts 20, and it may be removed and reversed when it is desired to operate the shaft in the opposite direction.

The doors 15, which are hinged to the sides 5 of the car, are braced similarly to the doors 5 and have notches 17 cut in their free edges at points opposite the catch members 6 of the doors 5 to permit said catches 6 to pass there-through when the doors 15 are swung inward to close them. On the outer faces of the doors 15, above the notches 17, are pivoted gravity latches or flaps 18, which are pushed outward by the catches 6 when the doors 15 are swung in and drop by gravity over the notches 17 and close them and are engaged by the catch-hooks 6 to hold the doors 15 in closed position.

In the use of this car when constructed as shown, the car being ready to dump, the operating-lever 30 is placed on the end of one of the shafts 20 with the knuckle of the lever at the top thereof, the pawl 23 is disengaged from the ratchet-wheel 22, and the lever 30 is moved in the direction of the arrow shown at the right of Fig. 3, which movement rotates the shaft 20 and bends the folding levers at their pivot and causes the doors 5 to drop down until the free ends of the arms of the bell-cranks of said folding levers engage the lower faces of the doors 5 and hold them against further downward movement. This dropping of the doors 5 disengages the catches 6 from the flaps 18 and releases the side doors 15, which drop by gravity into the position shown at the left of Fig. 2, permitting the substance contained in the car to drop there-through. When the doors 5 drop, the shaft with the attached lever 30 revolves rapidly and causes the lever 30 to break or bend at its knuckle 31 and prevents the lever from flying up and striking the operator. When the car has been unloaded and it is desired to close the doors 5 and 15, the lever 30 is removed and replaced with the knuckle on the lower side, the pawl 23 is dropped into engagement with the ratchet, and the lever is moved in the direction of the arrow at the left of Fig. 2, turning the shaft 20 until the folding levers are in normal straight position, which holds the doors 5 in closed position. The doors 15 are then pushed by hand toward the doors 5 over the edges thereof, causing the catches 6 to push back the flaps 18 and pass through the notches 17. The latches then drop by gravity over said notches, and when the doors 15 are released they swing down until said catches engage the outer faces of the flaps or latches 18 and hold the doors securely together.

I claim as my invention—

1. A dumping-car having a door hinged to the bottom thereof, another door hinged to said car at a point opposite the first-mentioned door, said doors having complementary locking members, a shaft on said car, a

folding lever fixed on said shaft and pivoted to one of said doors, and means for operating said shaft to fold said lever and separate said doors.

2. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the free ends of said doors being adapted to overlap and provided with complementary locking members, a shaft mounted to rotate on said car beneath one of said doors, a bell-crank fulcrumed on said shaft and having one of its ends bifurcated, a link pivoted at a point above one of its ends between said bifurcated bell-crank arm and pivoted at its free end to one of said doors, and means for operating said shaft to open and close said lever.

3. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the free ends of said doors being adapted to overlap and provided with complementary locking members, a shaft mounted to rotate on said car beneath one of said doors, a bell-crank fulcrumed on said shaft and having a knuckle-joint in one arm thereof, said arm being pivoted to one of said doors, and means for operating said shaft to open and close the joint of said lever.

4. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the free ends of said doors being adapted to overlap and provided with complementary locking members, a shaft mounted to rotate on said car beneath one of said doors, a bell-crank fulcrumed on said shaft and having a socket in one arm thereof, said socket being open at one side, a link pivoted to said socketed arm with one end extending into said socket and pivoted at its other end to one of said doors.

5. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the edge of one of said doors adapted to overlap the other door and having notches therein, flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and engage said flaps to hold the doors together, and means for releasing said catch-carrying door from the other door.

6. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the edge of one of said doors adapted to overlap the other door and having notches therein, flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and engage said flaps to hold the doors together, a jointed lever attached to said catch-carrying door and to a support, and means for breaking said joint to release said doors.

7. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the edge of one of said doors adapted to overlap the other door and having notches therein,



flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and engage said flaps to hold the doors together, 5 a jointed lever attached to said catch-carrying door, a fulcrum-shaft for said lever, and means for operating said shaft to break said joint and release said door.

8. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the 10 edge of one of said doors adapted to overlap the other door and having notches therein, flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and 15 engage said flaps to hold the doors together, a jointed lever attached to said catch-carrying door, a fulcrum-shaft for said lever, a lever removably mounted on said shaft for 20 turning it to open and close said jointed lever to release said doors.

9. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the 25 edge of one of said doors adapted to overlap the other door and having notches therein, flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and engage said flaps to hold the doors together,

a jointed lever attached to said catch-carry- 30 ing door, a fulcrum-shaft for said lever, a lever removably mounted on said shaft for turning it to open and close said jointed lever to release said doors, and means for locking said shaft against rotation to prevent ac- 35 cidental disengagement of the doors.

10. A dumping-car having oppositely-disposed doors hinged to the bottom thereof, the edge of one of said doors adapted to overlap 40 the other door and having notches therein, flaps pivoted on the outer face of said door over said notches, the other door having catches to project through said notches and engage said flaps to hold the doors together, 45 a jointed lever attached to said catch-carrying door, a fulcrum-shaft for said lever, a lever removably mounted on said shaft for turning it to open and close said jointed lever to release said doors, and an operating-lever for said shaft having a knuckle-joint 50 therein.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLIFTON EDGAR HERMAN.

Witnesses:

W. M. THOMPSON,  
E. M. WICKHAM.