

No. 641,315.

Patented Jan. 16, 1900.

G. W. MERRILL.
DUMPING WAGON BOX.

(Application filed Sept. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.

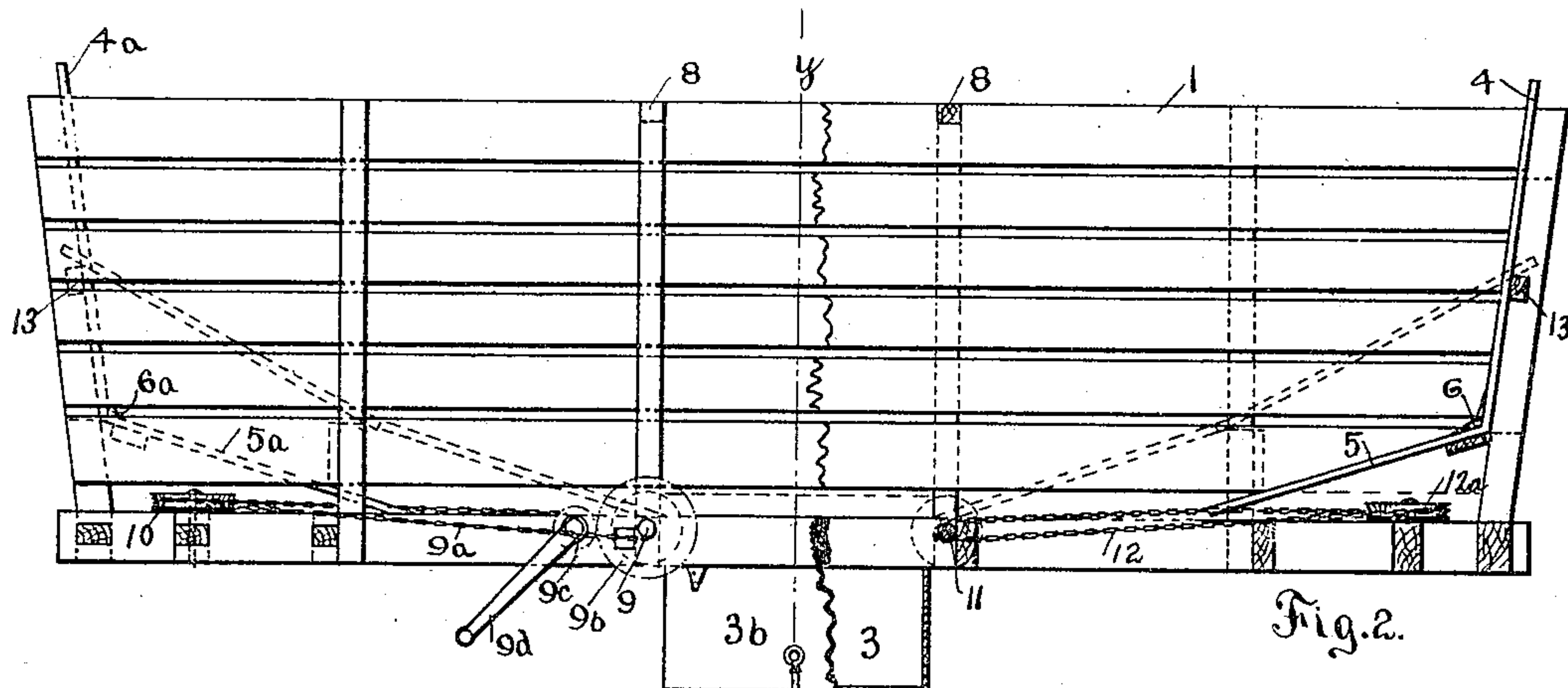


Fig. 2.

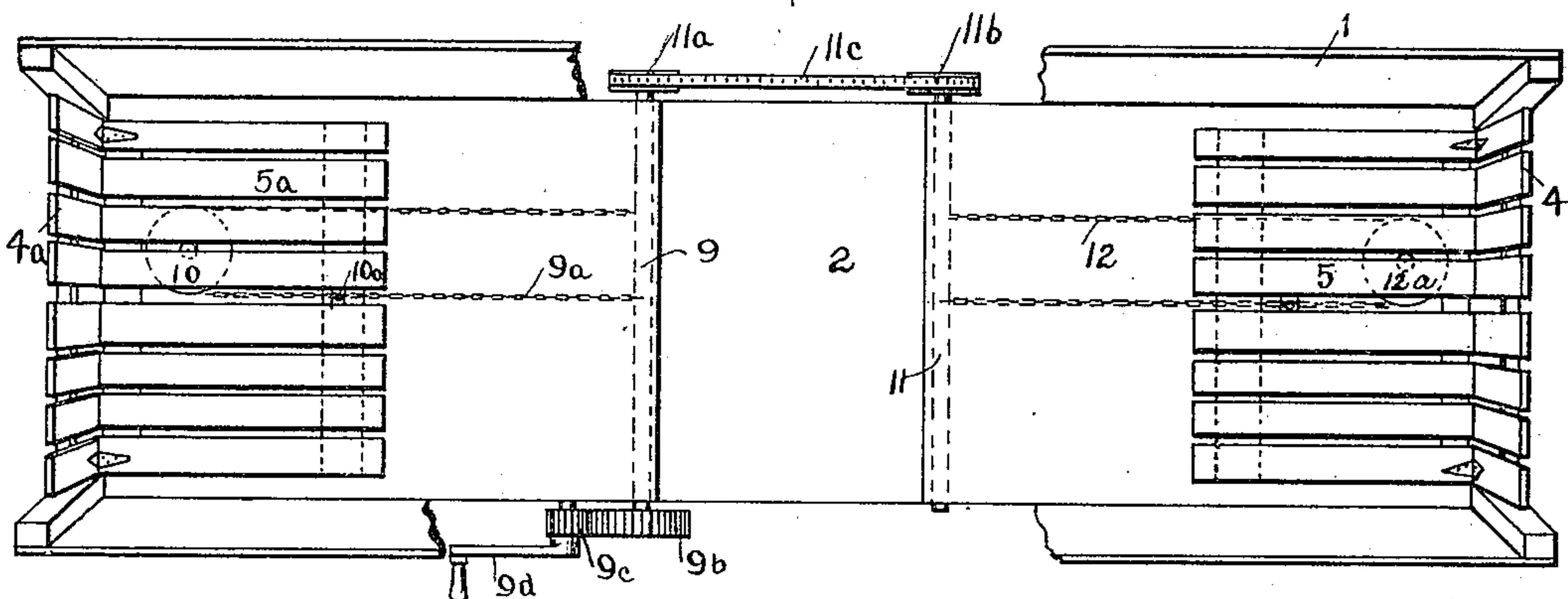


Fig. 1.

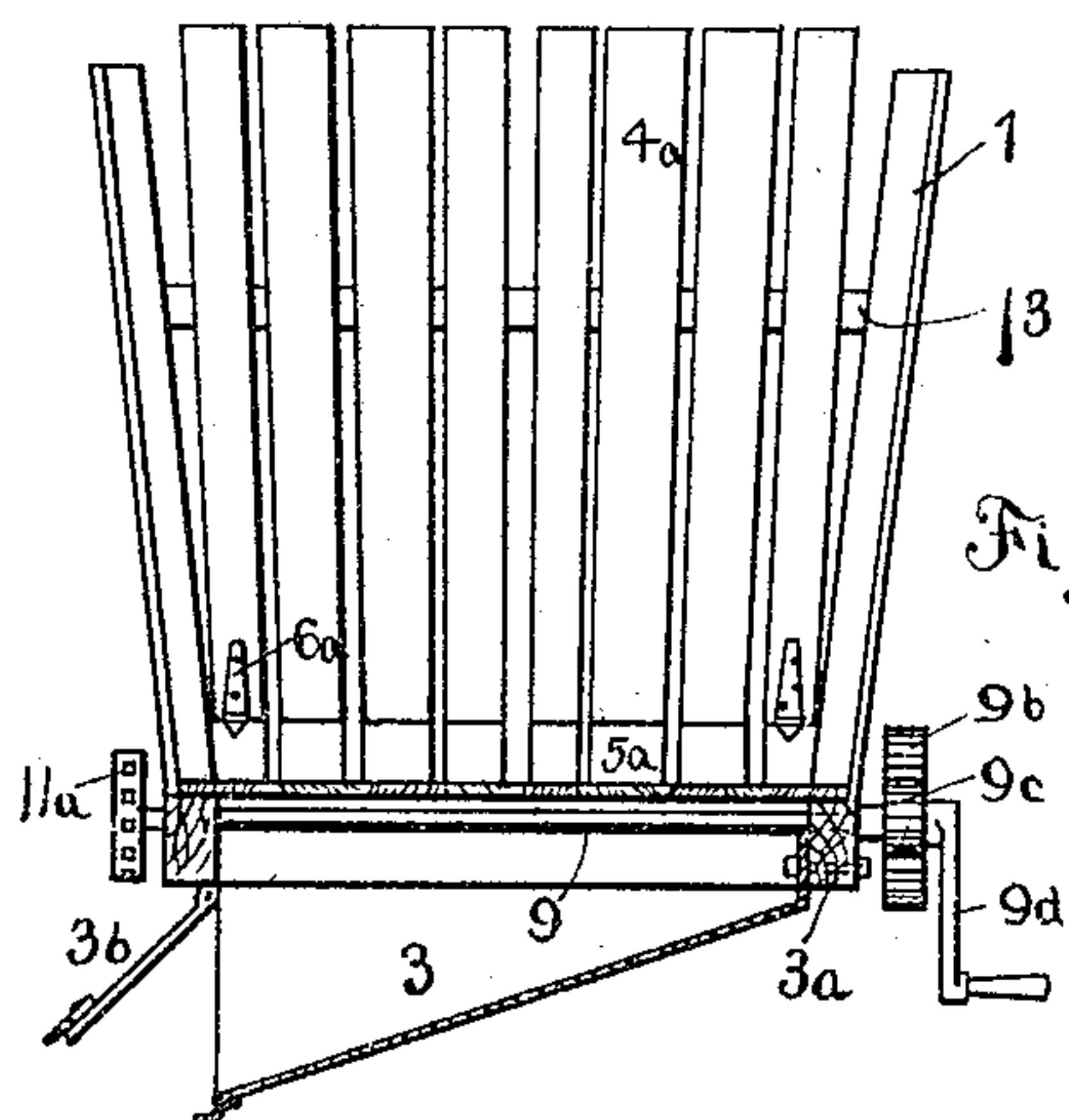


Fig. 3.

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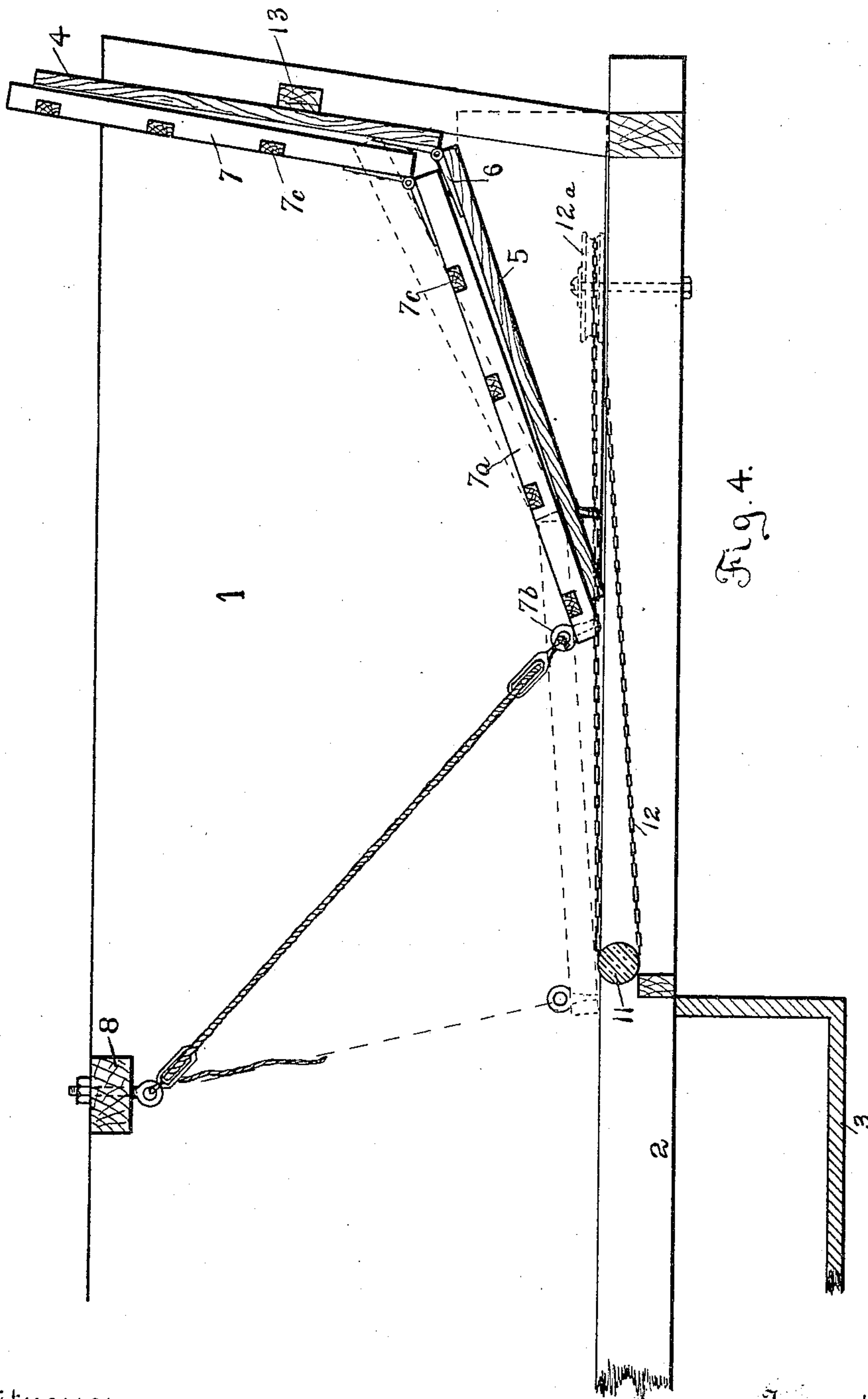


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORGE W. MERRILL, OF BAY CITY, MICHIGAN.

DUMPING-WAGON BOX.

SPECIFICATION forming part of Letters Patent No. 641,315, dated January 16, 1900.

Application filed September 29, 1899. Serial No. 732,059. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MERRILL, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Dumping-Wagon Boxes; and I do hereby 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.

My invention relates to bodies or boxes for wagons and other vehicles; and the improvements consist in certain means and devices applicable to such boxes whereby the several objects of my invention are accomplished, which are, first, to provide a wagon-body that can be applied to existing forms of running-gear that shall be especially adapted for the transportation of sugar-beets, chicory-roots, and like material, as well as cereals, &c., and having a movable bottom and ends comprising means for rapid unloading without shoveling, and, second, to provide a mechanically-operated self-dumping wagon-body that can be manufactured at small expense, that shall be simple in construction and operation, and not liable to get out of order.

My invention is illustrated in the accompanying drawings, throughout the several views of which similar characters of reference designate similar parts and devices.

In the drawings, Figure 1 is a top view of a wagon-box embodying my improvements. Fig. 2 is a side view of the same, broken away in parts. Fig. 3 is a transverse sectional view taken on the line *y y* of Fig. 2. Fig. 4 is a detail of the movable end and bottom sections and the unloading mechanism.

As is plainly shown in the drawings, the device consists in a wagon-body 1 of any usual or suitable form and when used for sugar-beets and like material preferably provided with slatted sides to allow dirt to drop through and to reduce the weight of the vehicle.

Through an opening 2 in the bottom of the wagon-body the load is discharged. A chute 3, removably attached by bolts 3^a or otherwise to the wagon-body under the opening 2, directs the discharge, and a pivoted gate 3^b closes the end of the chute while the wagon is loaded.

The means by which I accomplish the discharge of the entire load, in which means lie the essential features of my invention, consists in providing downwardly and inwardly movable upright ends 4 and 4^a for the wagon-box, pivotally attached at their lower ends to horizontally-movable inclined bottom sections 5 and 5^a, together with suitable mechanism by means of which the two pairs 4 and 5 and 4^a and 5^a of movable end sections may be drawn simultaneously toward the opening 2.

As the bottom sections 5 and 5^a are drawn toward the opening the lower parts of the end sections 4 and 4^a, which are preferably attached by hinges 6 and 6^a or otherwise to the bottom sections, are drawn forward, while the upper ends drop down, forming with the bottom sections an inclined plane, down which the remainder of the load or that portion not dumped by opening the trap-door 3^b slides into the spout 3. This position of the end sections and bottom sections is indicated in Fig. 2 by dotted lines.

When the beets or roots are in a dry condition and reasonably free from dirt, the entire load is dumped, as above described, without any shoveling or hand labor. In case the load has been hauled a long distance over rough roads and the beets are wet and perhaps partly frozen the contents of the wagon-box packs into a firm mass and will not discharge so easily as it would if dry. To overcome this difficulty, I provide the device illustrated in Fig. 4, which consists in a removable tongue or beam made of an upper piece 7, hinged at its lower end to a second piece 7^a. Each of the pieces 7 and 7^a is of such shape and size as to lie flat upon the corresponding back and bottom sections 4 and 5. The lower end of the piece 7^a is preferably provided with an eyebolt, staple, or other suitable device 7^b, to which a tackle-block may be attached. Transverse strips 7^c may also be provided at intervals along the pieces 7 and 7^a, if desired.

In operation the pieces 7 and 7^a are laid upon the back and bottom sections 4 and 5 or 4^a and 5^a of the wagon before loading is commenced. A suitable block and tackle is attached to the lower end of the piece 7^a, the upper end of the tackle being attached to a

transverse beam 8 near the top of the wagon-box.

When the load is solidly packed by hauling a long distance, the middle part of the contents of the box can be dumped, as above described, by opening the door 3^b. The end portions of the load are then loosened and hauled forward by means of the tackle, which draws the pieces 7 and 7^a forward and downward toward the opening 2. Each end of the load having been broken up and loosened in this manner, the end sections 4 and 5 and 4^a and 5^a are drawn forward by means of the dumping mechanism, and the remainder of the load is discharged through the opening 2.

The means by which the end sections of the wagon-box are drawn forward may consist of any suitable device, the details of which are not material to the essential features of my invention. In practice, however, I prefer to use the device shown in the drawings, which consists in a transverse shaft 9, located at one side of the opening 2 and having the two ends of a chain or rope 9^a attached thereto. The chain passes around an idler-sheave 10 and is attached at 10^a to the bottom section 5. The shaft 9 is driven by a gear 9^b and pinion 9^c, operated by a crank 9^d. To operate the other end of the dumping device, I employ a second shaft 11 at the other side of the opening 2, driven from the shaft 9 by means of sprockets 11^a 11^b and sprocket-chain 11^c. Attached to the shaft 11 is a chain 12, operating over an idler-sheave 12^a and attached to the bottom section 5. By this means revolution of the crank 9^d moves the end and bottom sections of the wagon-box forward toward the opening 2 or back, as desired. Transverse braces 13 at the ends of the wagon-body support and guide the back sections 4^a and 4.

It is thus seen that by the means above de-

scribed I have produced a wagon-box that dumps the center of its load automatically when the door 3^b is opened, and the end portions of the load are easily and quickly discharged by turning the crank 9^d. If the load is frozen or muddy, the pieces 7 and 7^a may be inserted, and by means of them the load is quickly broken loose and partly discharged, after which the remainder may be dumped by means of the crank 9^d.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dumping-wagon box, the combination with a central opening having a door, of longitudinally-movable inclined bottom sections, downwardly and inwardly movable end sections pivotally attached to said bottom sections, and means, substantially as described for moving said bottom sections toward or away from said central opening.

2. In a dumping-wagon box having a central discharge-opening and a door for said opening, the combination with longitudinally-movable bottom sections of end sections attached at their lower ends to the outer ends of said bottom sections, and means for moving said bottom sections toward or away from said opening, together with the hinged members 7 and 7^a resting upon said end and bottom sections, and having means for drawing said members toward said opening, substantially as described and for the purposes set forth.

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

GEORGE W. MERRILL.

Witnesses:

WILLIAM STEPHENS,
L. R. CLOUGH.