No. 855,241. PATENTED MAY 28, 1907.

R. S. C. FOW.

DUMPING WAGON.

APPLICATION FILED JAN. 28, 1907.

3 SHEETS—SHEET 1.

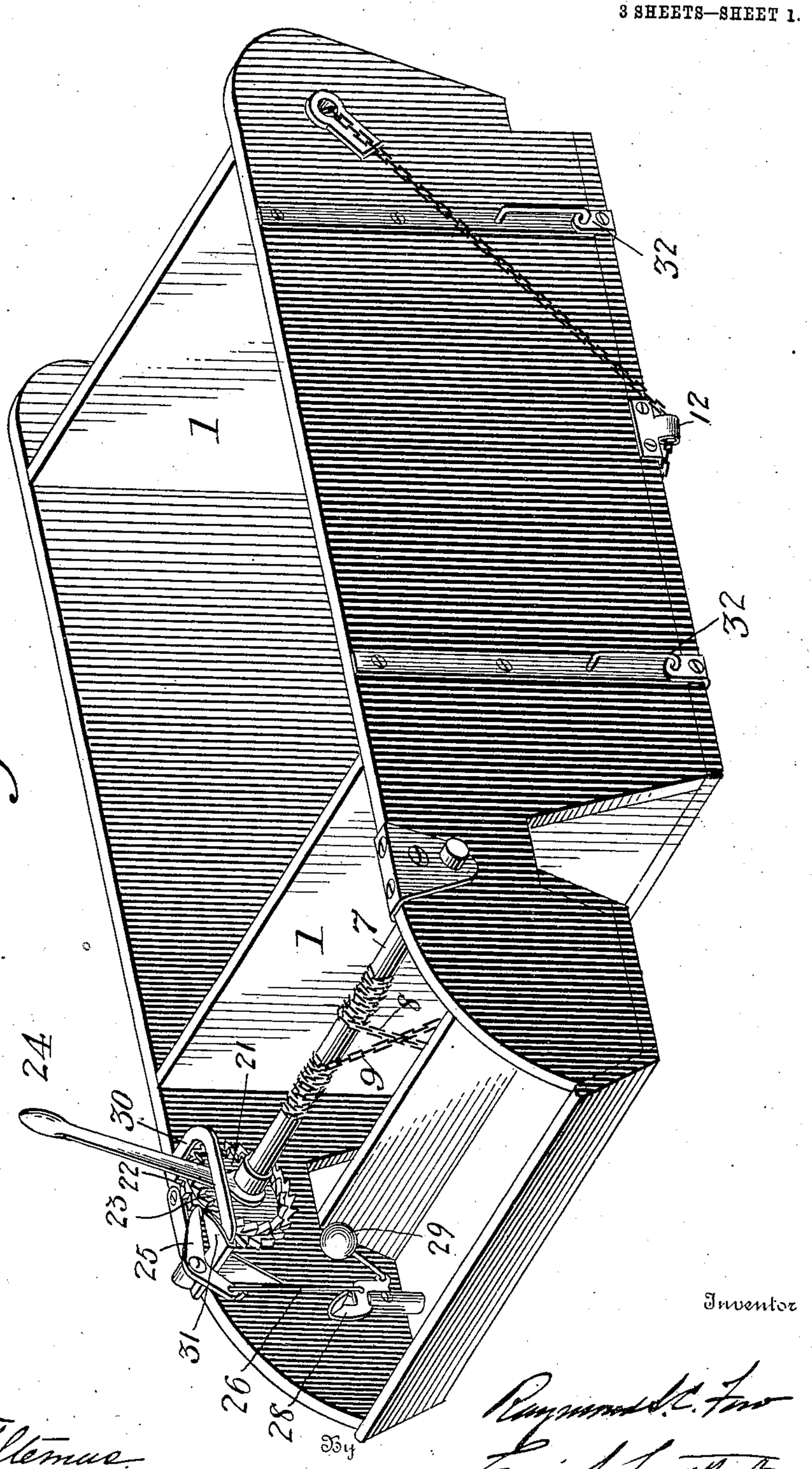

Fig. 1.

Witnesses

J. M. Allemus.

Elwood W. Moore Jr.

Inventor

Raymond C. Fow

Francis L. Lowthorp

Attorney

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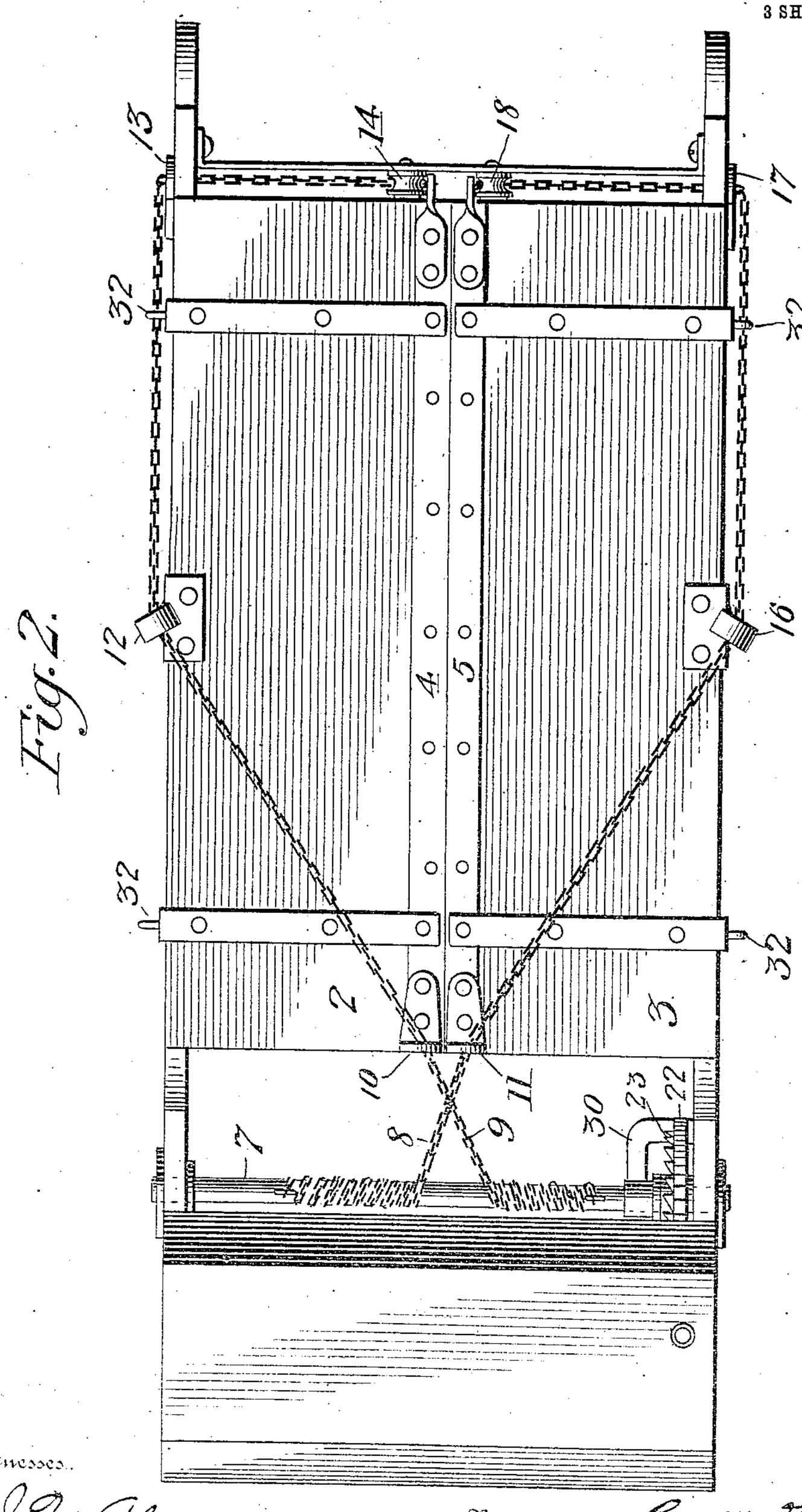

Fig. 2.

Witnesses.

J. M. Allemus

Elwood W. Moore Jr.

Inventor

By Raymond S. C. Fow

Francis L. Lowthorp

Attorney

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3 SHEETS—SHEET 3.

Fig. 5.

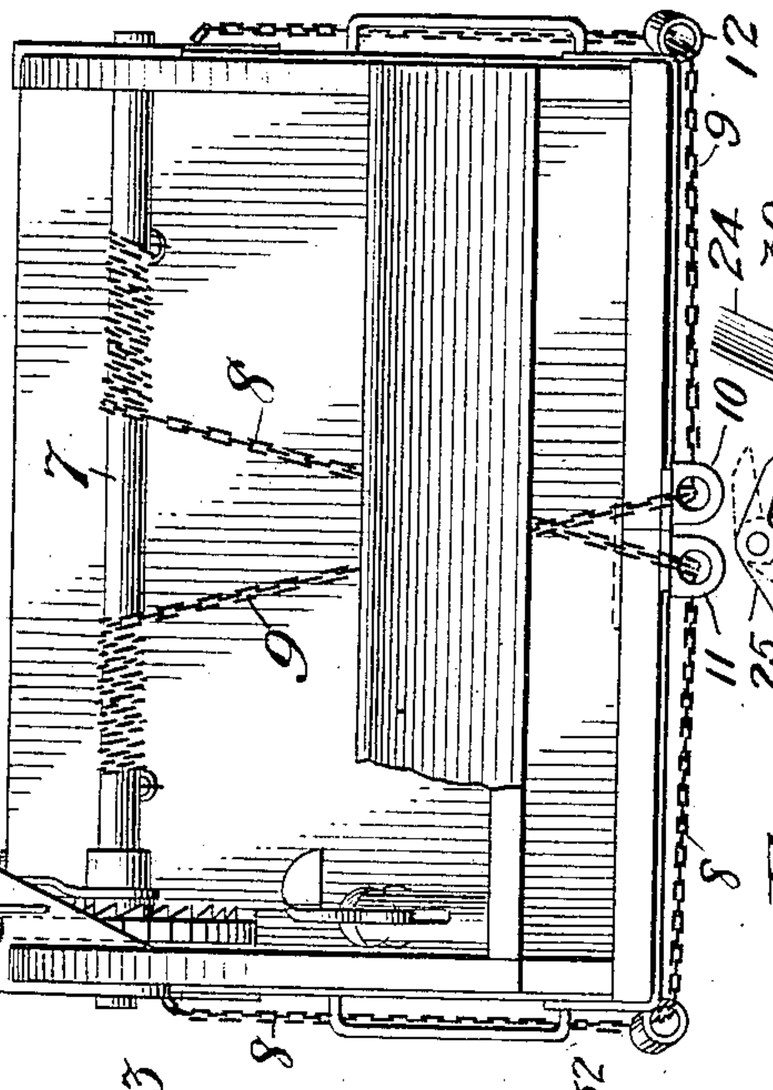


Fig. 6.

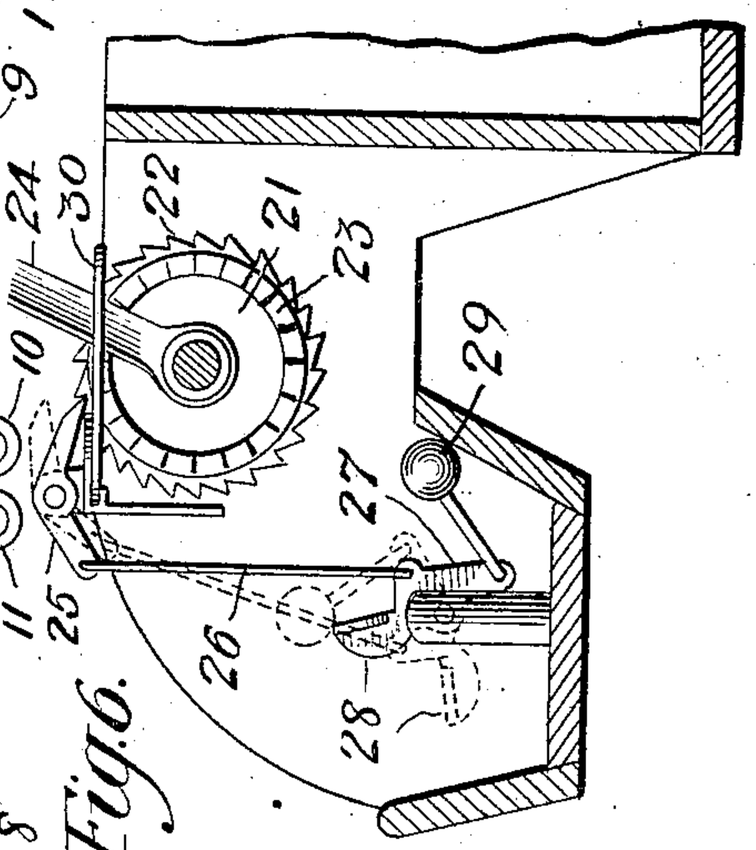


Fig. 3.

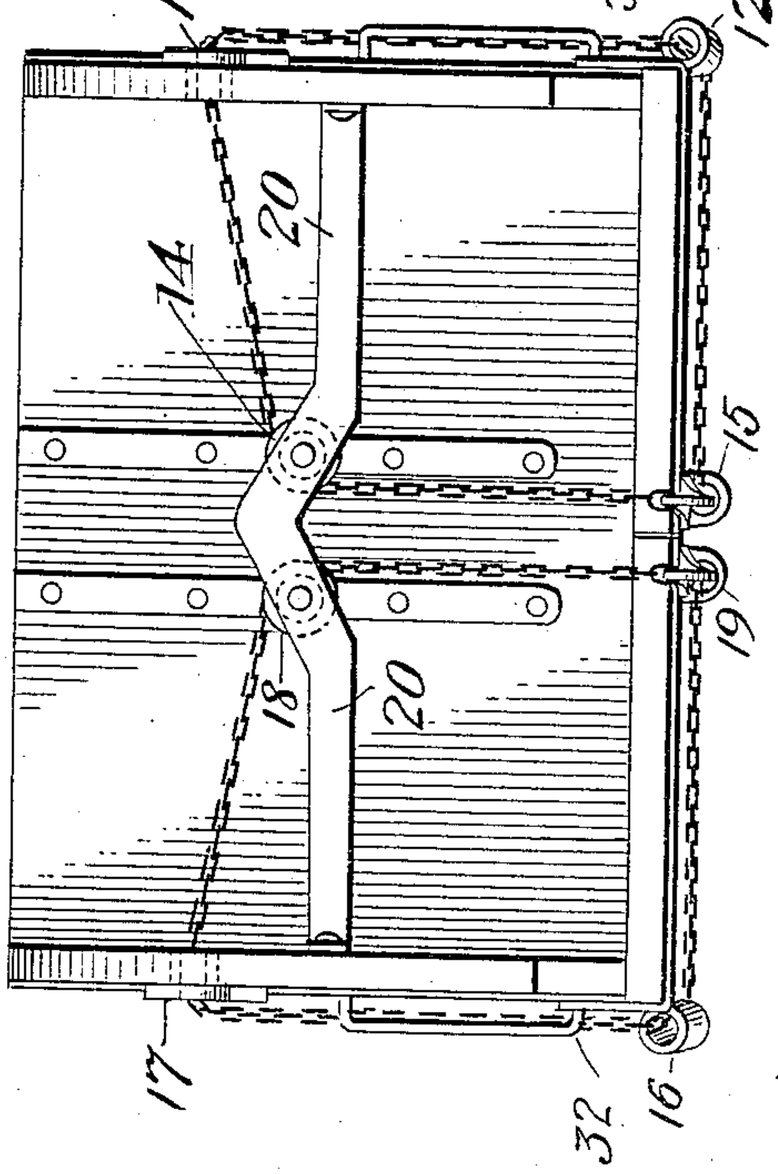
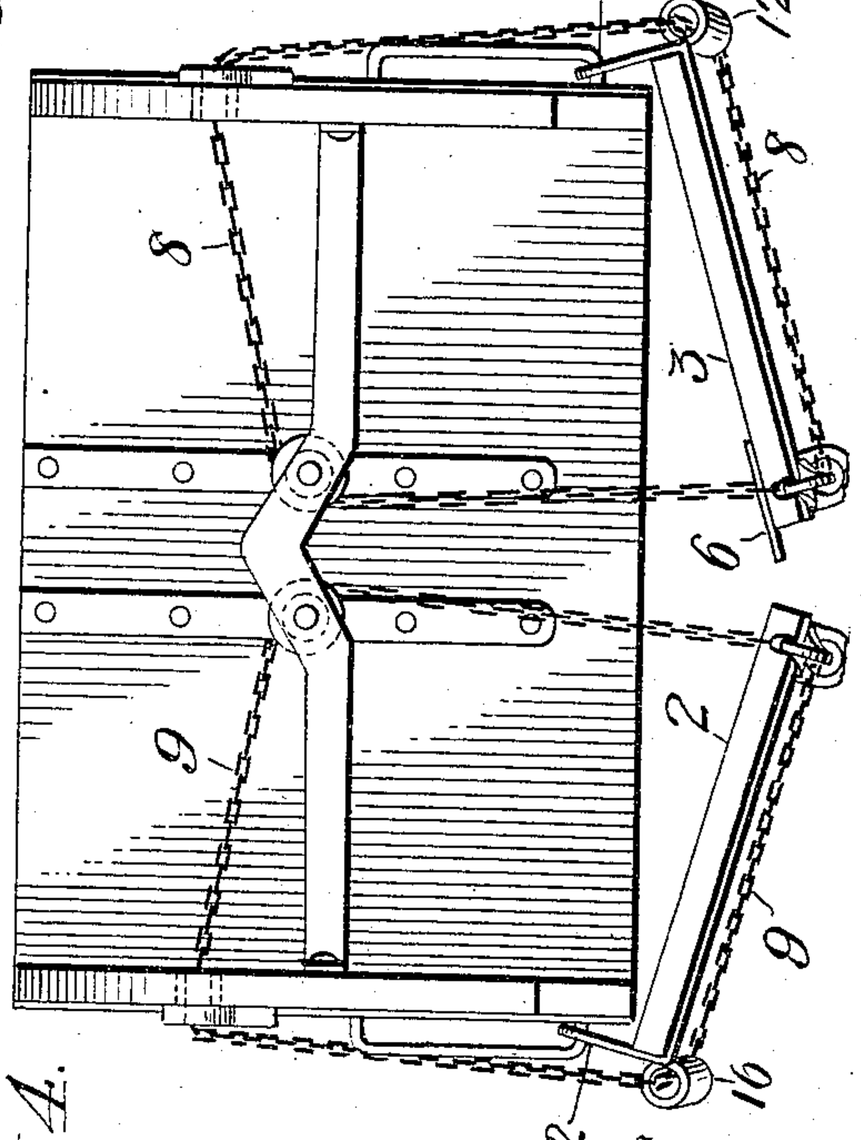


Fig. 4.



Witnesses

I. M. Allemine

Elwood W. Moore Jr.

Inventor

Raymond S. C. Fow

By Francis C. Lowthorp,

Attorney

UNITED STATES PATENT OFFICE.

RAYMOND S. C. FOW, OF TRENTON, NEW JERSEY.

DUMPING-WAGON.

No. 855,241. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 28, 1907. Serial No. 354,562.

To all whom it may concern:

Be it known that I, RAYMOND S. C. FOW, a citizen of the United States, and a resident of the city of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification.

My invention relates to dumping wagons of that type in which the bottom is adapted to drop and discharge the load contained in the wagon under the same.

The objects of my invention are to provide simple and efficient means for operating the dropping bottom of said wagon, so as to discharge the loads carried therein with facility, and to properly close and support said bottom when the wagon is loaded.

In the accompanying drawings forming a part of this specification, Figure 1 is a perspective view of the body of a dumping wagon embodying my invention. Fig. 2 is a view of the under side of a wagon embodying my said improvement. Fig. 3 is a rear view of such wagon, showing the bottom thereof closed. Fig. 4 is a similar view showing the bottom partly opened. Fig. 5 is a front view of such wagon embodying my invention; and Fig. 6 is a detail view showing the operating mechanism of the windlass used in closing the bottom of the wagon after the discharge of its load.

1 is the body of the wagon having four permanently closed sides, and provided with two swinging bottom sections, 2, 3. These sections, 2, 3, are bound and strengthened at their free edges by metal strips, 4, 5, which are riveted or otherwise fastened to the material forming said bottom sections. One of said sections is also provided with the metal tongue 6, which is intended to cover and close the joint formed between the two sections, 2, 3, when brought together, thus preventing the leakage of fine materials which may be carried in the wagon body. At the forward end of the wagon body is located a windlass, consisting of a drum, 7, with means for operating the same. Fastened to this drum, 7, and adapted to be wound thereon, are two chains, 8, 9. As will be noted (see Figs. 1 and 5) these chains, 8, 9, cross each other at a point between the drum, 7, on which they are wound, and the rings, 10, 11, which are fastened, respectively, upon the forward ends of the free sides of the bottom sections, 2, 3. The chain, 9, after passing through the ring, 10, crosses under the swinging bottom section, 2, through the ring, 12, and the ring or eye, 13, formed in the upper part of one side of the wagon body, thence, over the sheave, 14, and down to the eye, 15, to which it is made fast. The chain, 8, after passing from said drum, 7, through the ring, 11, and from thence to and through the ring, 16, passes from thence to and through the ring or eye, 17, in the top of the rear end of the other side of the wagon body, through said eye, 17, and over the sheave, 18, and down to the eye, 19, to which it is made fast. The sheaves, 14, and 18, are sustained by the brace, 20, which is made fast at its ends to the sides of the wagon body, and is made sufficiently strong to support the load carried on said sheaves. The drum, 7, of the windlass is journaled at its ends in the sides of the wagon body, as shown in Figs. 1 and 2. At one end of the drum, 7, is fastened the ratchet wheel 21. This ratchet wheel is provided with two series of teeth or serrations, 22, 23, shown in Figs. 1, 2 and 3. The series, 22, are formed on the periphery of the ratchet, while the series of teeth, 23, are formed in a circle on one side or face of the ratchet.

24 is a hand lever which is swiveled on the drum, 7, and is adapted to engage with the teeth of the series, 23, on the side of the ratchet. The detent pawl, 25, is arranged so as to engage with the peripheral teeth of the series, 22. This pawl, 25, is connected by a rod, 26, with a crank lever, 27. At one end this crank lever, 27, is provided with a treadle, 28, and at its other end is weighted by the ball, 29. The pawl, 25, is mounted on a frame, 30, on which also is formed a cam guard, 31.

The operation of the wagon is as follows:— The swinging bottom sections being closed up tightly against the body, the wagon may be loaded. When it is desired to dump the load the operator moves the lever, 24, back toward the position shown in Fig. 1, taking the pressure of the peripheral teeth, 22, off of the detent pawl, 25. Pressure of the foot is then applied to the treadle, 28, and the ball, 29, is thrown over the center and into the

position indicated in broken lines in Fig. 6. This throws the pawl out of connection with the teeth, 22, and the lever, 24, is allowed to move forward until it strikes the cam guard, 31, which drives it out of contact with the teeth, 23, on the side of the ratchet. The weight of the load within the wagon body bearing upon the swinging bottom sections, 2, 3, depresses them, simultaneously drawing the chains, 8 and 9 through the various rings and eyes and over the sheaves, 14 and 16, and unwinds said chains from the drum, 7, until the swinging bottom sections, 2 and 3, approximate a vertical position, the load then falling to the ground. To close the bottom of the wagon the operator throws back the weight, 29, to the position indicated by full lines in Fig. 6, and as shown in Fig. 1. This brings the detent pawl in contact with the peripheral teeth of the ratchet. He then forces the lever, 24, backward and forward, each backward throw of the lever bringing it in contact with the teeth, 23, on the side of the ratchet, and the drum is revolved and the chains 8 and 9 are wound thereon until the two swinging bottom portions 2 and 3 are again brought into the position indicated in Fig. 3.

In order to prevent the locking of the two swinging bottom portions, 2 and 3, by improper contact of the tongue, 6, with the opposing edge of the bottom portion, 2, the mechanism is so arranged as to provide for the closing of the bottom portion, 3, against the lower edge of the wagon body slightly before the swinging section 2 is brought up thereto. This may be arranged for in various ways. The chain, 8, may be made a link shorter than the chain, 9, or that portion of the drum, 7, upon which said chain 8 is wound may be made of a slightly larger diameter than the portion upon which the chain 9 is wound; but I prefer, as a simpler method, to make the chain 8 one link shorter than the chain 9.

By arranging the operating chains 8 and 9, as shown, I procure an exceedingly effective support and brace for the wagon body without the use of additional devices, other than the hinges, 32, connecting the bottom sections, 2, 3, with the body, 1. By disposing the said chains in the manner indicated, I provide support for each bottom section at five different points located on the free and hinged sides thereof, and also pass the chains diagonally beneath the forward portions of the sections, thus affording an effective brace and clamp to the entire wagon body.

For convenience in illustration, I have shown the lever, 24, as thrown back from the cam guard, 31, but its normal position when the wagon is loaded is its forward position, where it is held between the brace, 30, and the cam guard, 31. This is so arranged in order to prevent any accident occurring through the lever being thrown suddenly forward in the event of the detent pawl, 25, becoming in any way disengaged from the teeth, 22.

Having thus described my invention, I claim:

1. In a dumping wagon a combination of a box having a swinging bottom section, a chain supporting said bottom section at its hinged side and at the front and rear ends of its free side, a windlass adapted to operate said chain, to drop and raise said bottom sections, and means for operating said windlass.

2. In a dumping wagon, the combination of a box having two swinging bottom sections, a chain supporting each of said bottom sections at its hinged side and at the front and rear ends of its free side, a windlass adapted to operate said chains to drop and raise said bottom sections, and means for operating said windlass.

3. In a dumping wagon, the combination of a box having two swinging bottom sections, two chains, each of said chains supporting one of said bottom sections at its hinged side and at the forward and rear ends of its free side, and having a fixed connection with said rear end, and a sliding connection with said forward end, and passing diagonally under the forward portion of said bottom section, and a windlass adapted to operate said chains, to drop and raise said bottom sections, and means for operating said windlass.

4. In a dumping wagon, the combination of a box having a swinging bottom section; a chain supporting said bottom section at its free side and its hinged side; a windlass adapted to operate said chain to drop and raise said bottom section, and means for operating said windlass.

5. In a dumping wagon, the combination of a box having a swinging bottom section, a chain connected with said bottom section and adapted to close or open the same, a windlass on which said chain may be wound, said windlass having a drum, a ratchet wheel provided with a series of teeth on its periphery, and a similar series of teeth on one of its sides, an operating lever adapted to engage the said teeth on the said ratchet wheel, and a detent pawl adapted to engage the teeth on the periphery of said ratchet wheel.

6. In a dumping wagon, the combination of a box having a swing bottom section, a chain connected with said bottom section and adapted to close or open the same, a windlass on which said chain may be wound, said windlass having a drum, a ratchet wheel provided with a series of teeth on its periph-

ery, and a similar series of teeth on one of its sides, an operating lever adapted to engage the said teeth on the said ratchet wheel, and a detent pawl adapted to engage the teeth on the periphery of said ratchet wheel, means for operating said detent pawl, and a cam guard adapted to prevent contact of said lever with said teeth on the side of said pawl when the said lever is in its normal condition.

RAYMOND S. C. FOW.

Witnesses:
I. M. ALTEMUS,
ELWOOD W. MOORE, Jr.