J. WESLEY.

CART AND LOADER.

APPLICATION FILED JUNE 8, 1917

1,292,670.

Patented Jan. 28, 1919.

5 SHEETS—SHEET 1.

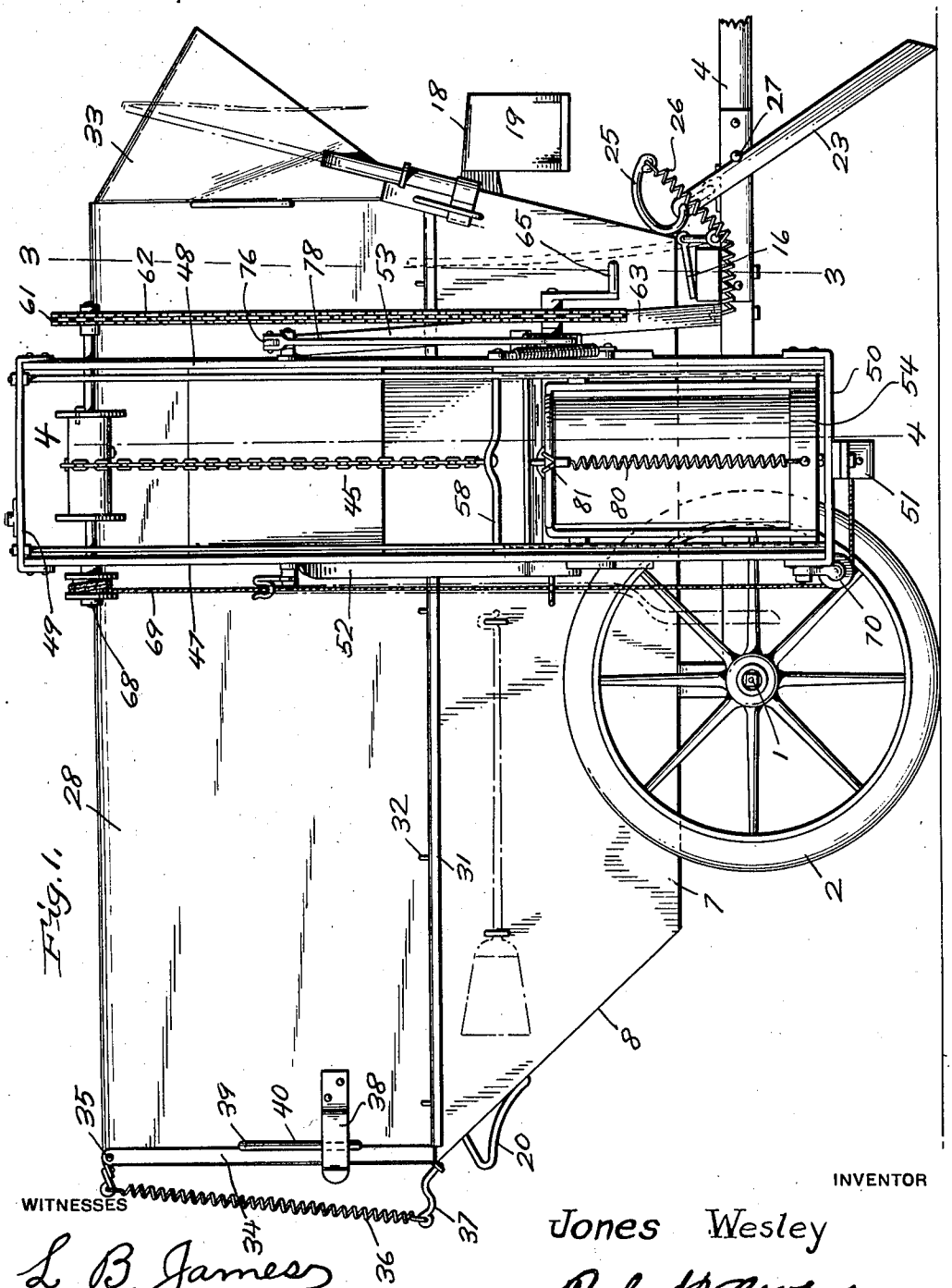

Fig. 1.

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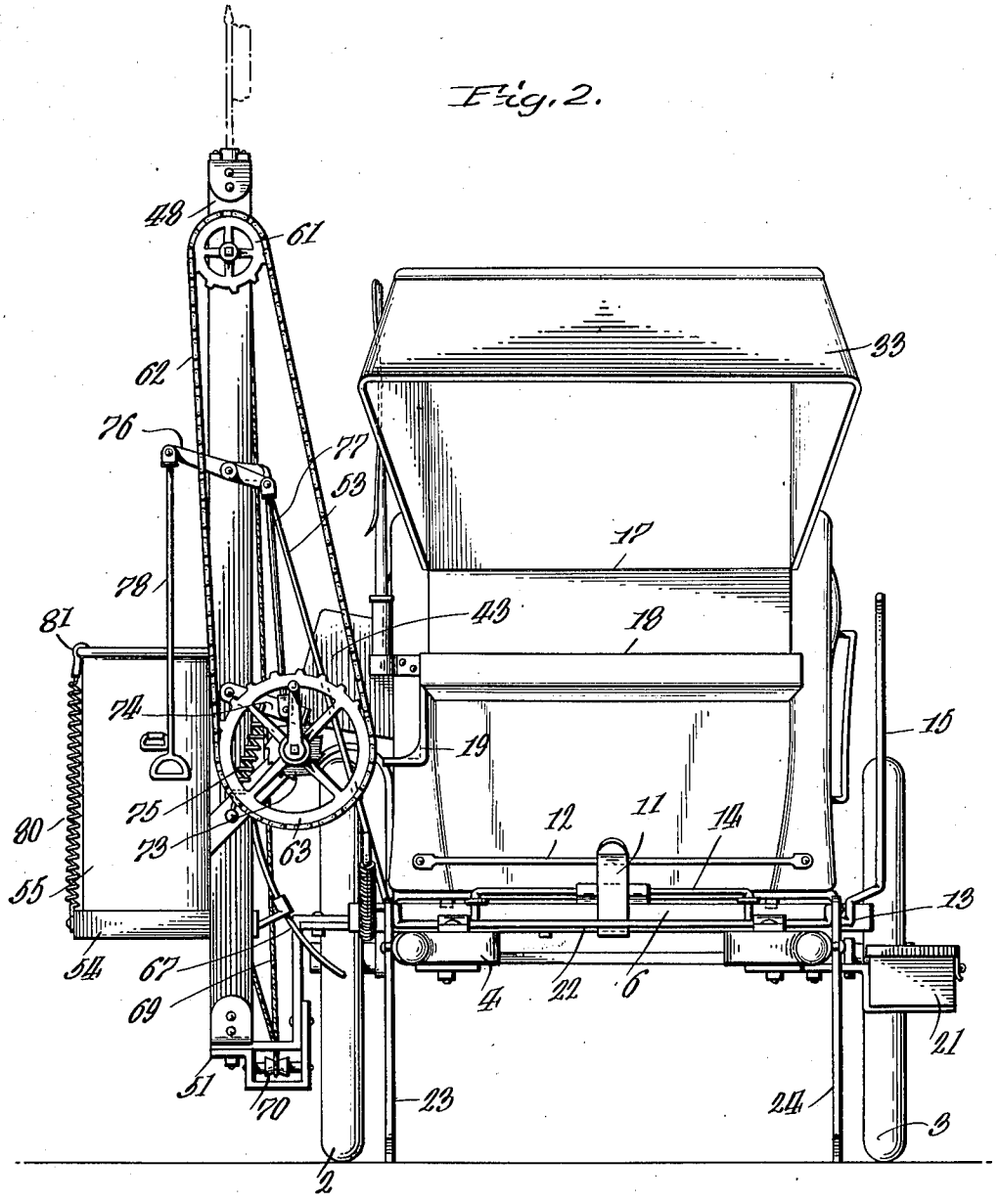
5 SHEETS—SHEET 2.

Fig. 2.



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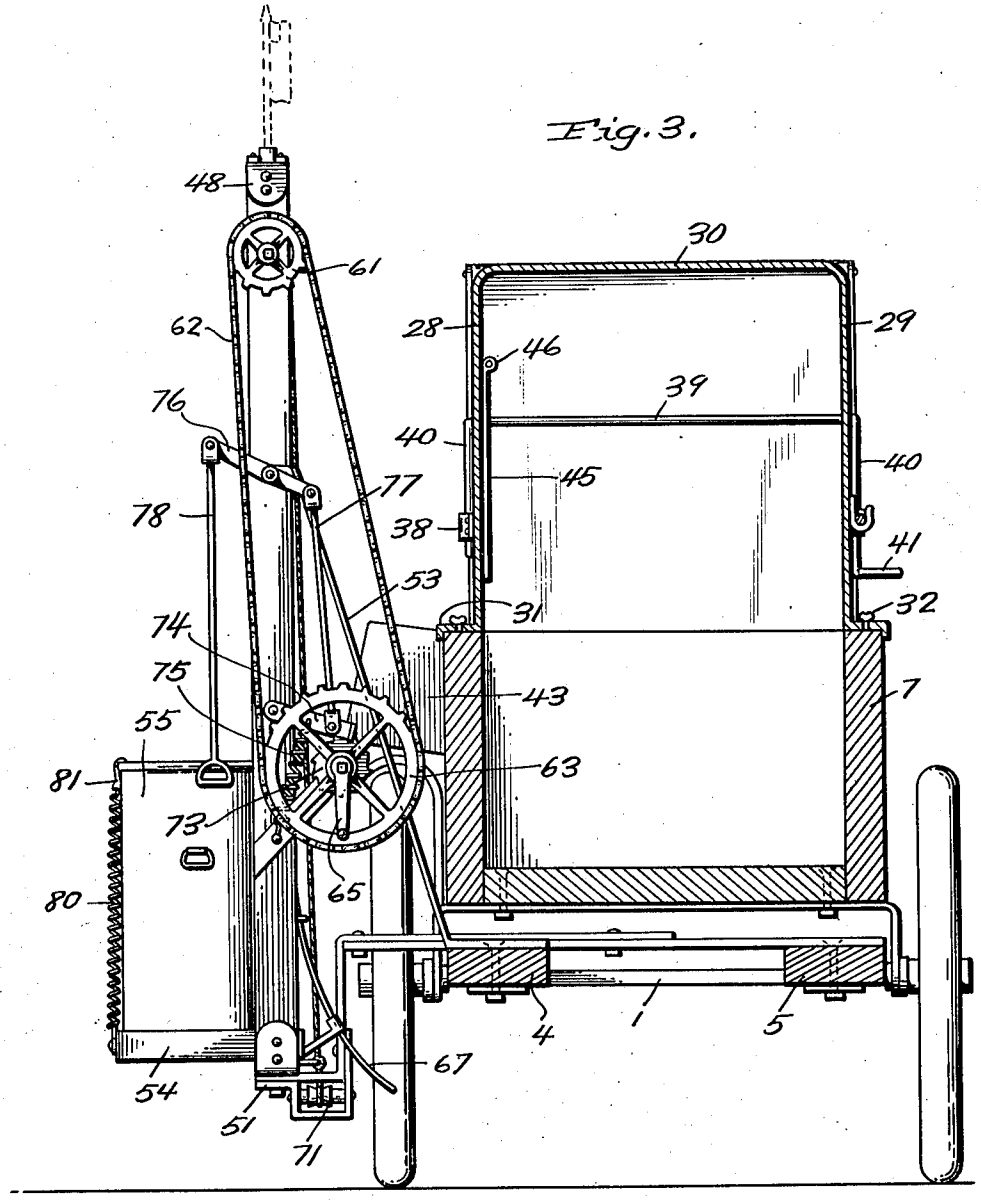
5 SHEETS—SHEET 3.

Fig. 3.



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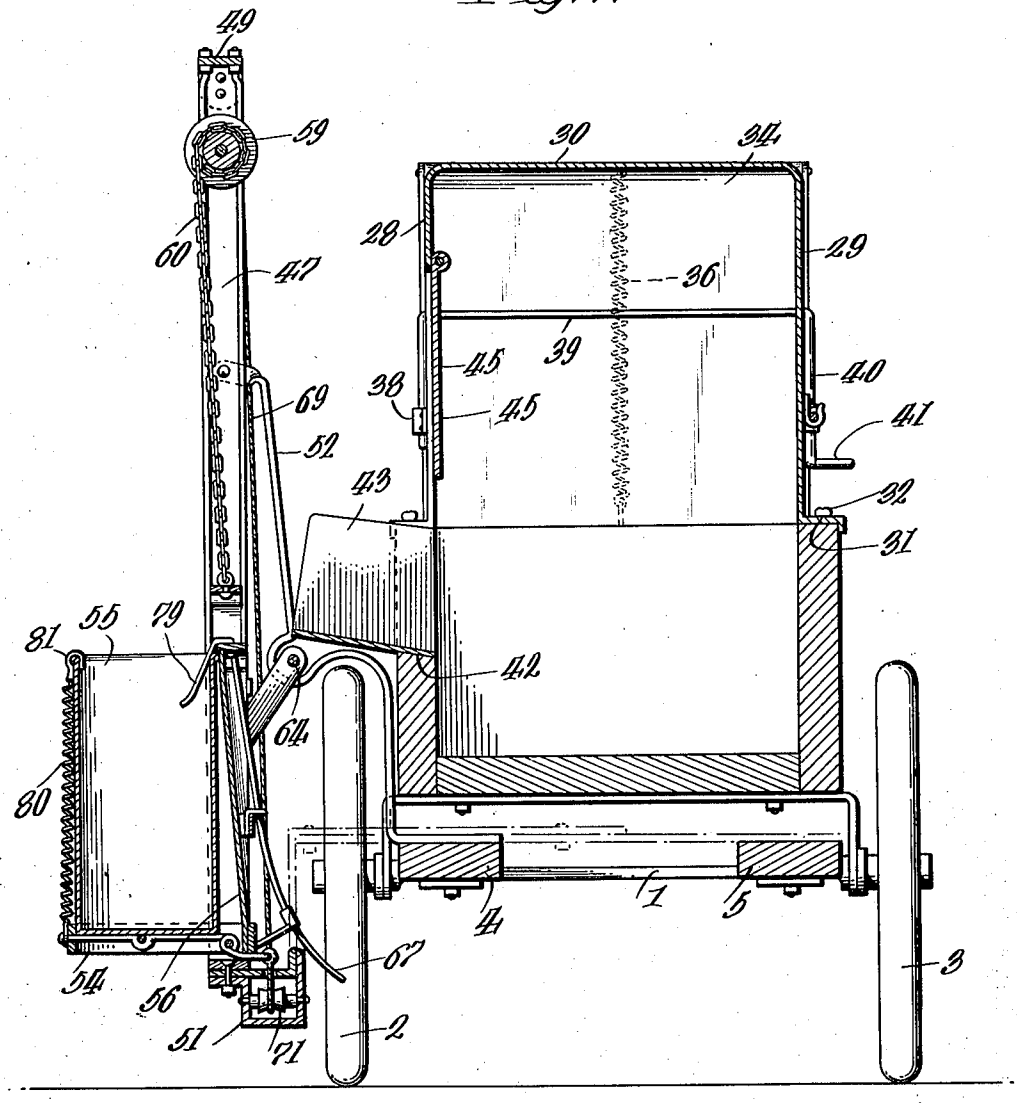
5 SHEETS—SHEET 4.

Fig. 4.



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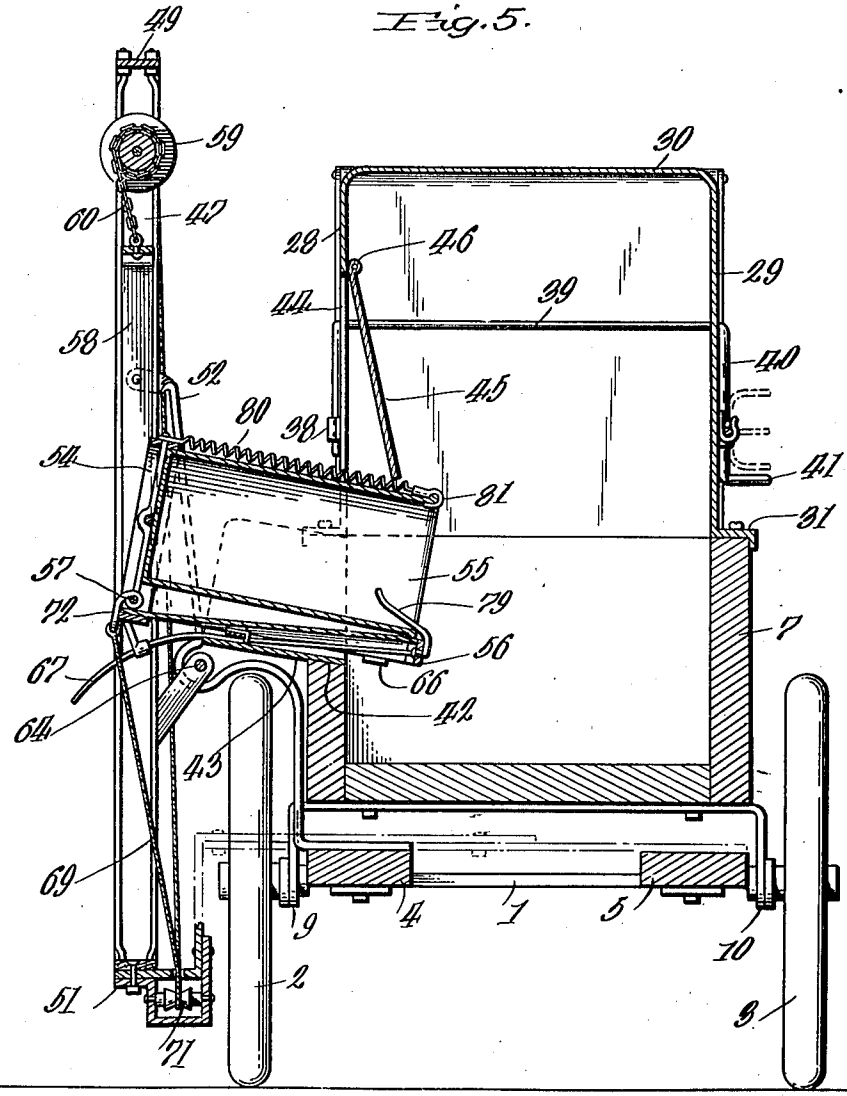
5 SHEETS—SHEET 5.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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CART AND LOADER.

1,292,670. Specification of Letters Patent. Patented Jan. 28, 1919.

Application filed June 8, 1917. Serial No. 173,601.

To all whom it may concern:

Be it known that I, JONES WESLEY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Carts and Loaders, of which the following is a specification.

My invention relates to an improved cart and loader, and more particularly to a cart such as is generally used for collection of ashes, garbage, street-sweepings, or in other like municipal requirements, and to a loading structure by which the cans or other receptacles in which the refuse matter is placed can be elevated and dumped by a single operator and without the usual physical effort.

An object of my invention resides in providing an improved form of cart for use in the collection of refuse, or in other like connections, and to provide appurtenance therefor which makes the cart better adapted for use in those connections where its adoption is intended.

A further object lies in providing a loading structure by which cans or other receptacles of uniform or varied sizes can be elevated substantially from the ground level, to a proper height, and then are automatically tilted to have their contents dumped and loaded into the cart.

Another object is to so construct the loading means that when the cans or receptacles have been elevated or raised to any degree whatsoever, they will be positively held against return movement except that a manually operable releasing means be actuated.

A still further object is to provide means in conjunction with the parts of the loading structure, which are so arranged that following the dumping of the contents of the can, and as the same is again lowered, a chair in which the can is carried will be automatically righted and in consequence the can or receptacle will be again brought to the upright position.

Yet another object lies in providing a cover for the body of the cart which will keep down dust, odors, and the like, and in so constructing the body and the cover that provision is made for the dumping of matter into the cart without spilling any part of the contents of the receptacles, and at the same time the cart is substantially entirely closed against the escape of dust, odors, and the like.

With the above and other objects in view, which will be in part described and part understood from the specification, drawings, and claims, my invention consists in certain novel features of construction and combinations of parts which will be hereinafter more fully set forth.

In the drawings:—

Figure 1 is a view in side elevation of a cart and loaded structure embodying my invention;

Fig. 2 is a view in front elevation of the structure disclosed in Fig. 1;

Fig. 3 is a transverse vertical sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1; and

Fig. 5 is a view similar to Fig. 4 but showing the loading structure in a position which the parts would occupy in the dumping operation.

An axle 1 has the wheels 2 and 3 revolubly mounted on the ends thereof, and shafts 4 and 5 are connected with the axle to extend forwardly for hitching of a draft animal, a cross bar 6 being connected between these shafts to form substantially a frame structure with the shafts as the side bars thereof. A body 7, which can be of any desired construction, but which is preferably under cut at its rear end as shown at 8, is mounted by the bearing members 9 and 10, upon the axle 1, so that it has rocking movement thereon and with respect to the frame structure made up of the shafts 4 and 5 and the cross bar 6.

A spring latch member 11 is secured on the cross bar 6 and is extended up adjacent the forward end of the body 7, a bar 12 being provided at such location on the forward end of the body that this spring latch member 11 will engage and lock therewith when the body is brought down to rest against the cross bar 6, the latch member thus locking the body against movement to the dumping position, and securing the same to move and be carried with the frame portion made up of the shafts and the cross bar. A shaft 13 is mounted in suitable bearings on the cross bar 6 and is provided with a crank portion 14 which is adapted to set inside of the spring latch member 11, a handle 15 being provided on one end of the shaft 13 to be swung forwardly and to consequently impart movement to the crank

portion 14 to bring the same to bear against the spring latch member 11 and force the same from the locking engagement with the bar or rod 12. A plate member 16, which is preferably of flexible metal, is secured on the crank portion 14 of the shaft 13 in such disposition that when the operating lever 15 is swung to bring this crank portion 14 to bear against the latch member 11, this plate 16 will bear against the under side of the body 7 of the cart and will be flexed. As the spring latch member 11 is released, the resilient plate 16 will recoil and in consequence the body 7 will be started from the position in which it is held by inertia and will thus have tilting movement to the dumping position initiated automatically. When the cart body 7 is again brought to the leveled setting, and pressure is brought to bear at the forward end, the spring latch member 11 will be moved back by engagement of the bar 12 therewith and will then spring back into place to lock the body in this relation.

A seat is provided at 17 on the forward end of the body and a foot board 18 is positioned therebelow, the step 19 leading to this foot board. If it is desired, the body of the wagon might have the bumpers 20 mounted on the undercut portion of the rear end thereof to protect the body structure, a tool box 21 might be mounted on the frame portion to be supported outside one of the shafts, and other features of like character and other mechanical refinements might be embodied. While I have herein illustrated a cart which is intended to be horse drawn, it will of course be understood that provision might be made for installation of motor propulsion means, or that the cart might be constructed to be drawn as a trailer, however, when the vehicle is to be moved by draft animals, it is preferable that legs or supports be provided to take the weight from the draft animal, when standing. With this purpose in view, I mount a shaft 22 across the shafts 4 and 5 and connect the legs 23 and 24 to be rigidly connected therewith. A curved arm 25 is provided on one end of the shaft 22, and a spring 26 is connected at one of its ends with the end of this curved arm 25 and its opposite end is connected with the shaft 4, or with the cross bar 6. By the arrangement of the parts in this way, as the legs 23 and 24 are swung forwardly to bear against the stops 27, as is shown in Fig. 1, the spring 26 will be drawing against the arm 25 past the dead center thereof, and as the legs are swung rearwardly to occupy an elevated relation, the connection of the spring 26 with the arm 25 will be swung below the dead center and consequently the legs will be held in the raised position.

By constructing the cart portion in the manner as set forth, a very efficient structure is provided, however, it is preferable that a cover be provided for the body, and with this purpose in view the cover portion made up of the sides 28 and 29 and the top 30 is provided with outstanding flanges 31 at its lower edges to rest against the upper edges of the body, turn buttons 32 being provided to secure this cover portion in place and hold the same against shifting. While the rear end of the cover portion is left open, it is preferable that the forward end be closed and a hood 33 is formed as continuation of the cover to protect the driver when sitting on the seat 17. A door 34 is hinged at 35 at the upper side of the open rear end of the cover, and a coil spring 36 is connected at one of its ends with the cover and at its opposite end with an arm 37 carried by the door 34, so that this spring will normally exert pulling force against the door to raise the same to an open position. Spring latch members 38 are provided on the sides 28 and 29 of the cover in such relation that as the door 34 is swung to a closed position, these spring latch members will engage over the side edges and secure the door in this relation. A shaft 39 is mounted transversely through the side portions 28 and 29 of the cover and has arms 40 extending down to be received beneath the spring latch members 38, and an operating handle 41 is provided on one of these arms so that swinging movement can be imparted thereto to cause the arms 40 to bear against the inner sides of the spring latch members 38 and spring the same outwardly sufficiently that they are disengaged from the edges of the door 34. Normally the arms 40 of the shaft 39 will not bear against the spring latch members 38 and as the door 34 is slammed shut, or is closed forcibly the latch members 38 will be sprung back and will then recoil into place to secure the door.

It will of course be understood that the door 34 must be opened previous to releasing the spring latch 11 for the dumping operation, as otherwise the inclined end 8 of the body would throw the contents thereof against the door 34, however, the purpose of the door is to prevent dust, odors, and the like, from escaping, and as the materials to be transported by the cart must be loaded thereinto, the body 7 is cut away at one side as indicated at 42, and a chute 43 is positioned to extend somewhat from the sides of the body and to lead through this opening 42, it being preferable that the chute be slightly inclined downwardly, as is shown in Figs. 4 and 5. It is the intention that a can or other receptacle shall have its contents dumped into the body of the cart through this chute 43, and as construction of the chute to be of sufficient size to accommodate a can of standard dimen-

sions would throw the chute down relatively near to the bottom of the body, the side 28 of the cover portion for the body, is provided with an opening 44 which forms substantially the continuation of the opening through the chute 43, a door 45 being hinged at 46, on the inner side and at the top of the opening 44 to normally swing by gravity to close or substantially close the opening through the side portion 28.

As has been stated, it is a purpose of my invention to provide a loading mechanism by which manual raising of the cans or receptacles to the elevation of the trough or chute 43, and dumping of the contents thereof will be precluded and with this purpose in view, I mount an upright frame structure comprising the track-ways 47 and 48 and top and bottom members 49 and 50, at one side of the frame portion. This frame portion comprises the shafts 4 and 5 and the cross bar 6 and the track ways 47 and 48 are secured to the shafts 4 and 5 by means of the supporting member 51, the shafts 4 and 5 being connected at their rear ends to the axle 1. This supporting member determines the height at which the loaded frame structure, herein before described is carried and brace members 52 and 53 are connected with the guide ways 47 and 48 and then the shaft 4, to thus support the loader frame in an upright position. A chair 54, which is shaped and made of a size to have the can or receptacle 55 from which the material is to be dumped into the cart set and supported thereon, is connected with the upright frame 56, which latter frame is in turn mounted by a shaft 57, within the yoke 58, to be capable of swinging movement. A winding drum 59 is mounted adjacent the upper ends of the guide-ways 47 and 48, and a chain or cable 60 is connected with the yoke member 58, which latter is mounted to slide in the guide-ways, and then its free end is connected with the drum 59. A sprocket wheel 61 is secured on one of the spindles by which the drum 59 is mounted, and a chain 62 is mounted over the sprocket wheel 61 and over an operating sprocket wheel 63, which is mounted on a shaft 64 carried by suitable brackets extending from the guide-ways 47 and 48. A crank handle 65 is associated with this operating sprocket wheel 63 so that the same may be turned to impart movement to the chain 62 to the winding drum 59 and to thus consequently raise the yoke 58 and the chair and frame portion 54 and 56 by which the can or receptacle 55 is supported.

The supporting member 51 and the braces 52 and 53 rigidly mount the motor frame structure consisting of the guide-ways 47 and 48 and the members 49 and 50, outside of and in line with the chute 43 as well as the opening 44 through the side 28 of the cover, and by reason of the fact that the shaft 57 is passed through the chair 54 at one side and the weight of the can or receptacle 55 is placed outside of this point of swinging mounting, the receptacle will naturally exert sufficient gravity weight against the chair to normally hold the chair and the upright frame portion 56 in the relation shown in Figs. 2, 3, and 4, stops 66 being secured to the inner face of the frame 56 and projecting beyond the side edges thereof to limit the outward swinging movement of the frame portion 56 after the same has been raised to a vertical position by engaging the track ways 47 and 48. As has been stated, it is desired to provide an automatic structure in which the can or receptacle will be raised to the proper height and will then be dumped without being tilted or moved by hand, and with this purpose in view I provide the curved dumping rod 67 which extends substantially parallel with the upright frame portion 56 throughout its upper extent and then is curved outwardly, substantially after the manner shown in Fig. 2 *et seq.* Ordinarily these dumping rods 67 will have no action and perform no function but as the chain or cable 60 is wound around the drum 59 and the yoke 58 is consequently raised to elevate the can or receptacle 55 as carried by the chair 54, the curved ends of the dumping rod 67 will engage with the shaft 64 and in consequence the upright frame portion 56 and the chair 54 will be tilted and swung to the position shown in Fig. 5, where the door 45 is swung back and the can or receptacle rests substantially within the chute 43 with the open end thereof inclined downwardly.

The arrangement of the parts as herein before set forth will accomplish elevation of the can or receptacle and dumping of the same, however, provision must be made for the lowering of the can or receptacle and the righting of the same previous to entire removal from the chute, as otherwise any of the waste material which might remain in the receptacle following the dumping operation would be spilled out upon the road or surface upon which the cart is traveling. With this purpose in mind, I provide a cable drum 68 on one of the spindles of the winding drum 59, and extend a cable 69 from this drum 68, downwardly adjacent the guide-ways 47, over a pulley 70, then across and under a pulley 71, and up to connect with a stirrup 72 which is in turn mounted on the shaft 57 connected with the yoke 58. As the handle 65 is turned in a reverse direction from that followed in elevating the yoke and bringing the parts to the dumping position, the chain or cable 60 will be slacked off from the winding drum 59, and at the same time the cable 69 will be taken up on the cable drum 68 and will exert pulling

pressure upon the shaft 57 to thus positively draw down the yoke 58, the chain or cable 60 acting to preclude excessive speed in the movement of the yoke, or falling of the same. As the yoke 58 starts on its downward travel, the bars 67 will again engage with the shaft 64 and in consequence the chair 54 and the frame portion 56 will be again righted.

While the parts might operate efficiently if constructed in the manner as set forth, yet it would be required that the operator at all times have hold of the operating handle 55, and to obviate the necessity for this, I provide a ratchet wheel 73 to turn with the operating sprocket wheel 63, and mount a dog 74 to be normally held by a spring 75 to guard against back turning of the ratchet wheel, and consequently of the winding drum 59 which is directly controlled by the operating sprocket wheel 63. A rocking lever 76 is mounted on the guide-way 48 and has an operating rod 77 connected at one end thereof and then with the dog 74, a hand pull 78 being connected with the remaining end of the rocking lever 76 and brought to a position to be convenient to the operator. As the hand pull 78 is moved to swing the rocking lever 76, the dog 74 will be raised against the resilient force exerted thereupon by the spring 75, and the operating wheel 63 can then be freely turned backward.

While the can or receptacle 55 would doubtless be held by its own weight against shifting from a position when placed upon the chair 54, it is perhaps advisable that a retaining member 79 be carried at the upper end of the upright frame portion 56 to engage over the rim edge of the can or receptacle, and that a coil spring 80, connected at one of its ends at the forward side of the chair 54, have a gripping finger 81 carried at the free end thereof to be fitted over the upper rim edge of the can or receptacle. By providing the parts in this arrangement, the can or receptacle will be positively gripped and held on opposite sides at the rim edge and in consequence shifting or displacement thereof in use is secluded.

Care has been exercised as the description has progressed, to set forth not only the construction and mounting of the parts, but also the manner in which the same will be used, and their operation in use, and therefore it is not believed that recapitulation need here be indulged in.

From the foregoing it will be seen that I have provided a cart and loaded structure which is of such character that it can be embodied in and with carts adapted for conveying ashes, garbage, street-sweepings, or other waste, and which has the various parts so constructed that receptacles containing the material to be loaded into the cart can be handled and dumped, and the cart as an entirety can be handled and used by one man, and when in use will place a minimum strain upon both the operator and the draft animal, and further it will be noted that by arranging the loading mechanism in the manner set forth and then providing the chute 43 and the door 45, dust, odors, and the like will not escape from the cart even during the loading operation, while at the same time the cart can be readily dumped by simply grasping and moving the handle 41 to permit the door 34 to be open, and then operating the lever 15 to release and tilt the body.

While I have herein shown and described only certain specific forms and constructions of the parts, it will be understood that changes and variations might be resorted to in the form and arrangement of the several parts of the structure, that power driven tractor or traction wheels might be embodied with the cart structure to be used in place of a draft animal, and that a number of other changes and variations might be resorted to in reduction of the device to a commercial proposition, and without departing from the spirit and scope of my invention, in view of which fact I wish to be limited only to such points as may be set forth in the claims.

I claim:—

1. In combination with a cart comprising a shaft, a body mounted thereon, of a loading frame mounted upon said shaft and independent of said body, a supporting member carried by said shaft and extending under the lower end of said frame, a plurality of vertically extending braces secured to said shaft and engaging said frame near the upper end thereof, a winding drum carried by the upper end of said frame, means for rotating said drum, an article supporting carriage slidably mounted upon said frame, means connecting said article supporting carriage to said drum, and means for swinging said article supporting carriage upon said frame when the same reaches a predetermined position thereon.

2. In combination with a cart comprising a pair of shafts, a body mounted for dumping movement thereon, of a loading frame, said loading frame comprising a plurality of trackways, a supporting member extending across said shafts and supporting the lower ends of said trackways, a plurality of vertically extending braces secured to said shafts and engaging said trackways near their upper ends for bracing the same and supporting said trackways in spaced relation relative to said body and in an independent relation relative thereto, a carriage slidably mounted upon said trackways, and means supported upon said carriage for automatically swinging an article to a dumping position mounted thereon.

3. In combination with a cart comprising

a shaft, a body mounted thereon, a loading frame mounted upon said shaft, an article supporting carriage slidably mounted upon said frame, means for raising and lowering said article supporting carriage, a longitudinally extending tripping rod carried by said article supporting carriage, a bracing member engaging said rod near the outer end thereof, said rod projecting at the outer end beyond said bracing means and being curved slightly away from said article supporting carriage, and means engaging said rod for automatically swinging said article supporting carriage when the same reaches a predetermined point.

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

JONES WESLEY.

Witnesses:
JACOB BENECKSON,
JONATHAN HALL.