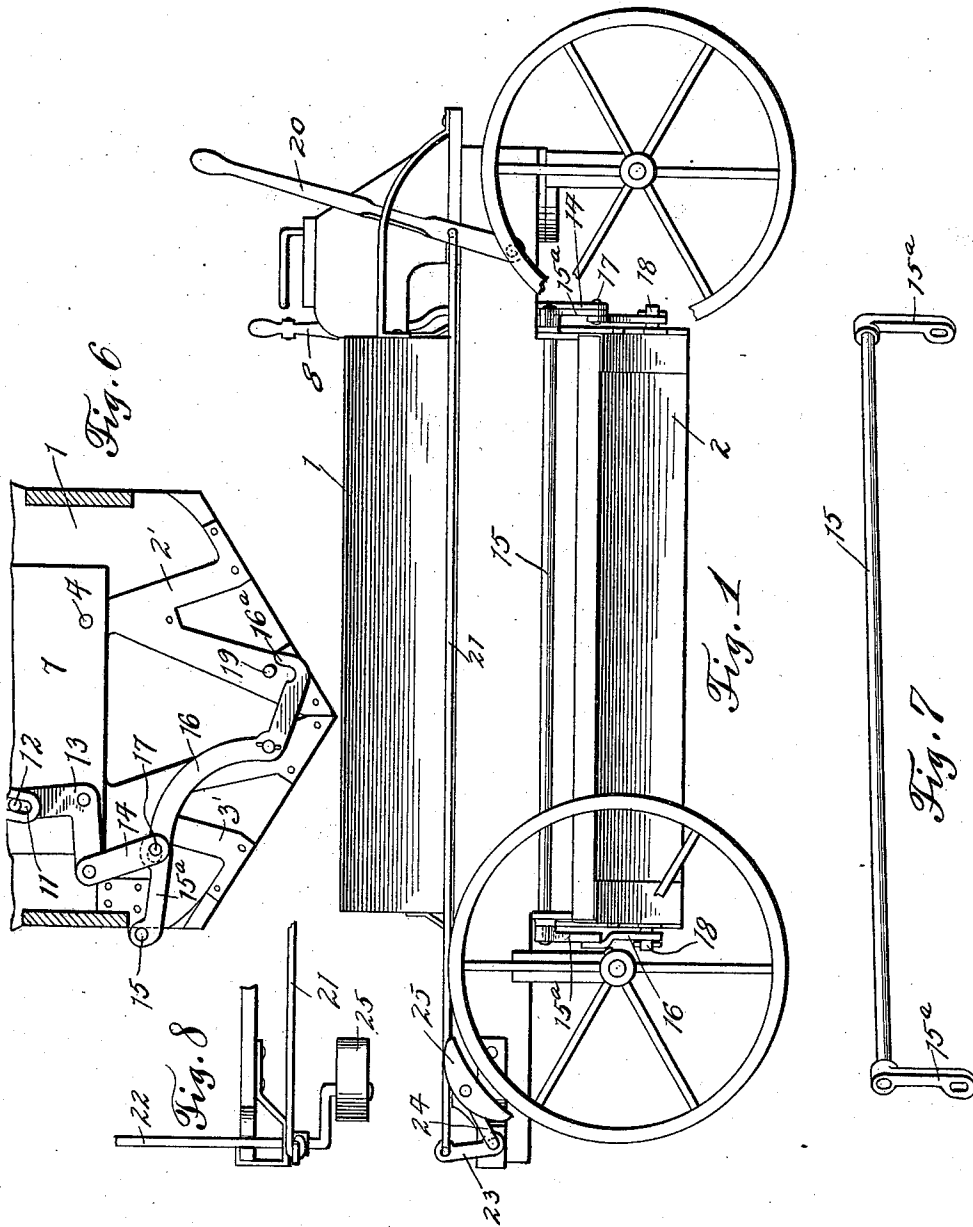


W. A. BUTLER.
DUMPING APPARATUS.
APPLICATION FILED APR. 27, 1911.

1,023,719.

Patented Apr. 16, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

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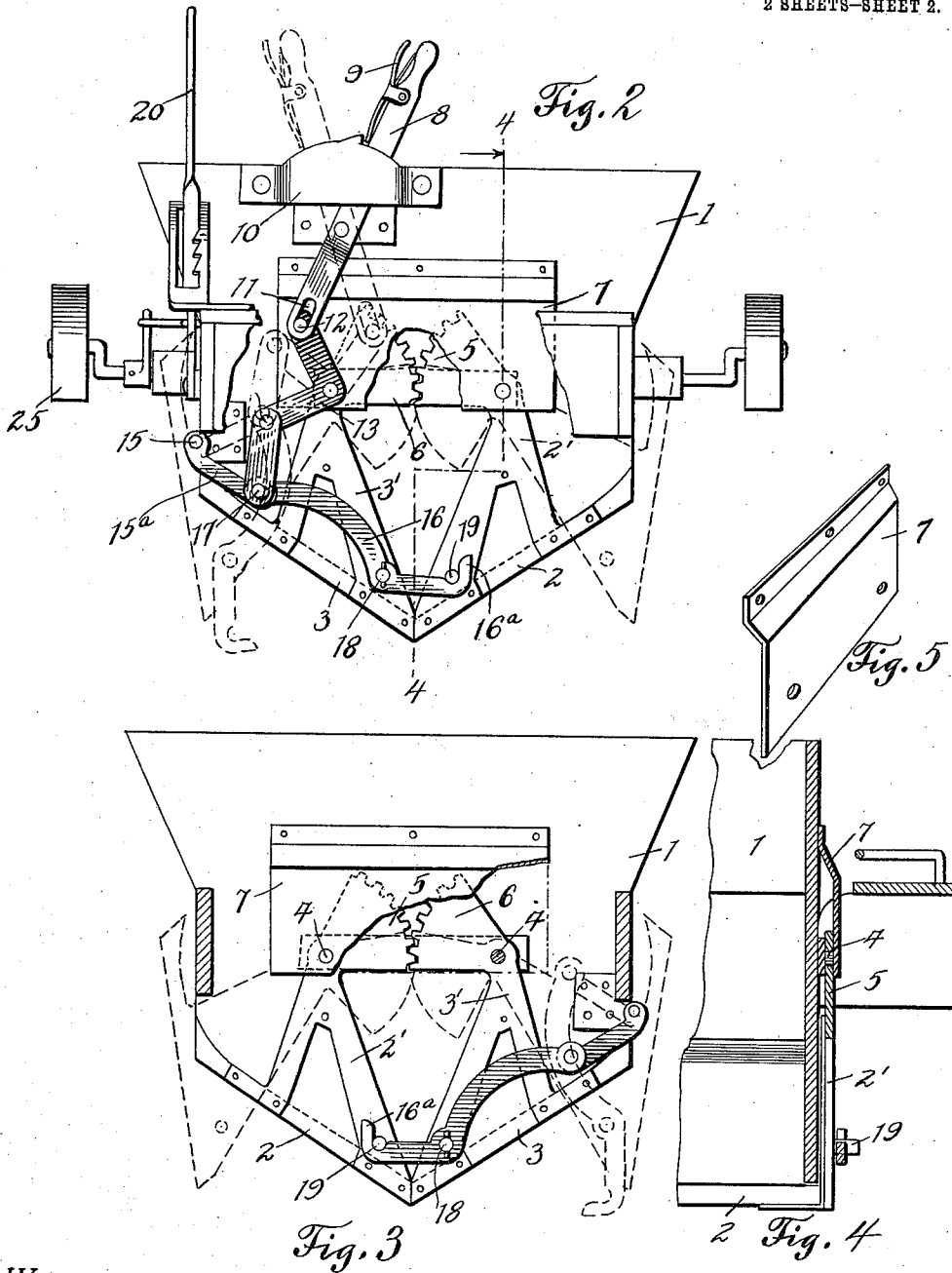
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WASHINGTON A. BUTLER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF
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DUMPING APPARATUS.

1,023,719.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed April 27, 1911. Serial No. 623,684.

To all whom it may concern:

Be it known that I, WASHINGTON A. BUTLER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Dumping Apparatus, of which the following is a specification.

The present invention involves certain improvements in dumping apparatus capable of being advantageously employed in connection with dumping wagons, dumping carts, or the like.

The invention resides particularly in peculiarly operating mechanism for locking certain bottom members of the dumping device in their closed positions for initially releasing said bottom members to discharge the contents of a suitable receptacle and for subsequently restoring the parts to their normal positions in which the bottom members close the receptacle ready to receive another load.

The invention further resides in the peculiar combination of parts hereinafter set forth whereby an especially advantageous coöperation of such parts is established under working conditions.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a side elevation, showing the dumping apparatus embodying the invention in association with a vehicle; Fig. 2 is a view of the wagon body or receptacle looking from the front end, the housing plate of the gear segments being broken away and dotted lines showing parts arranged as when the sections of the dumping bottom are in open position; Fig. 3 is a view similar to Fig. 2 looking at the wagon body from the opposite end; Fig. 4 is a section taken about on the line 4—4 of Fig. 2; Fig. 5 is a detail perspective view of one of the housing plates; Fig. 6 is an end view of the dumping body or receptacle showing the toggle mechanism with the parts arranged so that the locking lever is just disengaged from the lock pin with which it coöperates; Fig. 7 is a perspective view of the rock shaft and rocker arms thereon; Fig. 8 is a fragmen-

tary perspective view showing more clearly the mounting of the brake shoes.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

Specifically describing the invention, 1 denotes the receptacle forming a part of the dumping apparatus of this invention, which, in the embodiment illustrated, represents the body of a wagon. The receptacle 1 is provided with a bottom composed of sections 2 and 3, each of said bottom sections having the end brackets 2' and 3' respectively, which brackets are pivotally connected to the ends of the receptacle 1, as shown at 4. The brackets 2' and 3' are formed with toothed gear segments 5 and 6 respectively, the teeth of said segments intermeshing. On each end of the receptacle 1 is preferably located a guard or housing plate 7, the upper portion of which is secured to the receptacle 1 and the lower portion of which extends over and houses the intermeshing gear segments 5 and 6.

From the foregoing, it will be understood that the bottom sections 2 and 3 of the receptacle or body 1 are adapted to swing into positions in which their lower edges are in meeting relation, or they may be moved outwardly with the pivots 4 as their axes, in order to spread the same for the purpose of discharging the contents of the receptacle.

Peculiar means are provided for actuating the bottom sections 2 and 3 in order to open and close the same and for locking the same in closed position. The latter means comprises a lever 8 adapted to be locked in its normal position by a latch 9 coacting with a toothed plate 10 secured to the front end of the vehicle carrying the dumping apparatus, the lever 8 being adjacent to the seat of said vehicle for convenient operation by the driver. The lever 8 is pivoted between its ends to the receptacle 1 and the lower end of the lever has a slot 11 receiving a pin 12 on an angle lever 13, thus loosely connecting the parts 8 and 13. The upper arm of the angle lever 13 is the one connected with the lever 8 while the lower arm of said lever 13 is connected to a link 14 which in turn is connected pivotally with a pin 17, the latter

constituting a pivotal connection between a rocker arm 15^a on a rock shaft 15 and an actuating and locking lever 16 which is pivoted between its ends at 18, said rocker arms 15 and lever 16 constituting a toggle. The lever 16 is formed with a locking hook 16^a at its free end, the latter being adapted to engage with a projection 19 carried by the bracket 2' of the bottom section 2. The rock shaft 15 is mounted in suitable bearings in bracket plates attached to the front and rear ends of the receptacle 1 and said shaft 15 extends the entire length of the receptacle 1 and projects slightly beyond the ends of the latter, to receive thereon the rocker arms 15^a, one of which has been above referred to as connected to the lever 8. The arms 15^a are rigidly secured to the shaft 15 and the parts 16 and 19, carried by the bottom sections 3 and 2 respectively, are duplicated at the opposite ends of the receptacle 1. As shown more clearly in Fig. 6, the pin 17 connects the parts 15^a and 16 in a loose manner, one of said parts having a slot therein to provide such loose connection.

In the operation of the dumping apparatus, as above described, it will be apparent that when the parts are in the full line positions shown in Fig. 2, the bottom members or sections 2 and 3 converge downwardly toward and meet at their lower longitudinal edges, this being their closed position in which they are positively locked by the means coöperating with the lever 8. When the operator desires to discharge the contents of the receptacle 1, the lever 8 is grasped and by releasing the latch 9, said lever is moved pivotally into the dotted line position, shown in Fig. 2. When the lever 8 is initially moved, the upward pull on the link 14 imparts an upward movement to the rocker arms 15^a simultaneously raising the outer ends of the levers 16 at the opposite ends of the receptacle 1, whereby the hooks 16^a are disengaged from the projections 19, permitting the bottom members 2 and 3 to open wide simultaneously because the opening movement of the member 3 communicates a like movement to the member 2 through the intermeshing gear segments 5 and 6 of said members. The parts 15^a and 16 have a sort of toggle action, the raising of the link 14 causing the joint between said parts to be broken, so to speak. After the hooks 16^a have been disengaged from the projection 19, should the weight of the contents of the receptacle 1 not be sufficient to open wide the members 2 and 3, it is apparent that the parts 8, 13 and 14 are capable of lifting the connection 17 far enough to positively throw the bottom sections 2 and 3 wide apart.

In order to close the bottom of the receptacle 1, the lever 8, of course, is forced into

its normal position, forcing downwardly the link 14 and the points of connection between the rocker arms 15^a and the levers 16, the final movement of the lever 8 causing the levers 16 to be moved sufficiently to engage the hooks 16^a with the projections 19 and lock the bottom sections 2 and 3 in closed position.

A brake lever 20 is carried by the vehicle which supports the receptacle 1 and is connected by a rod 21 to the arm 23 of a shaft 22, the latter having arms 24 carrying brake shoes 25.

Having thus described the invention, what is claimed as new is:

1. In a dumping apparatus, the combination of a receptacle, bottom sections therefor mounted for opening and closing movement, means connecting said bottom sections for simultaneous movement thereof, means for opening and closing said bottom sections, said means including a locking lever pivoted between its ends to the end of one of the bottom sections, the free end of said lever being formed with a hook, a projection carried on the end of the opposite bottom section and adapted to normally be engaged by said hook, a rocker arm pivotally carried by the wagon body and pivotally connected to said locking lever at the end of the latter opposite the hook, and an operating lever having link connection with said locking lever and rocker arm where the same are pivotally connected.

2. In a dumping apparatus, the combination of a receptacle, a bottom section therefor mounted for opening and closing movement, means for operating said bottom section, said means including a locking lever pivoted to the bottom section, a rocker arm carried by the body of the receptacle, said rocker arm and locking lever being pivotally connected, a locking projection, means carried by the locking lever adapted to engage said locking projection, and an operating lever having link connection with said latter lever and rocker arm where the latter are pivotally connected, said pivotal connection being adapted to be moved by said operating lever, substantially in a line with the respective pivots of the rocker arm and the locking lever, all for a purpose set forth.

3. In dumping apparatus, the combination of a receptacle, bottom sections mounted for opening and closing movement thereof, means connecting said sections for simultaneous movement, a rock shaft mounted on the receptacle, rocker arms carried by said shaft and arranged adjacent to the opposite ends of one of the bottom sections, locking levers pivoted intermediate their ends to the last mentioned bottom section and connected at one end to the rocker arms and having locking hooks at their opposite ends,

locking projections carried by the other of the bottom sections and adapted to be engaged by the locking hooks aforesaid, a link connected to one of the rocker arms and its adjacent locking lever at the point of connection of the same, an angle lever connected to said link, an operating lever operably connected to the angle lever, and means for locking the operating lever in a position such that the bottom sections are held closed.

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

WASHINGTON A. BUTLER.

Witnesses:

JAMES MASON,
M. V. COLLINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."