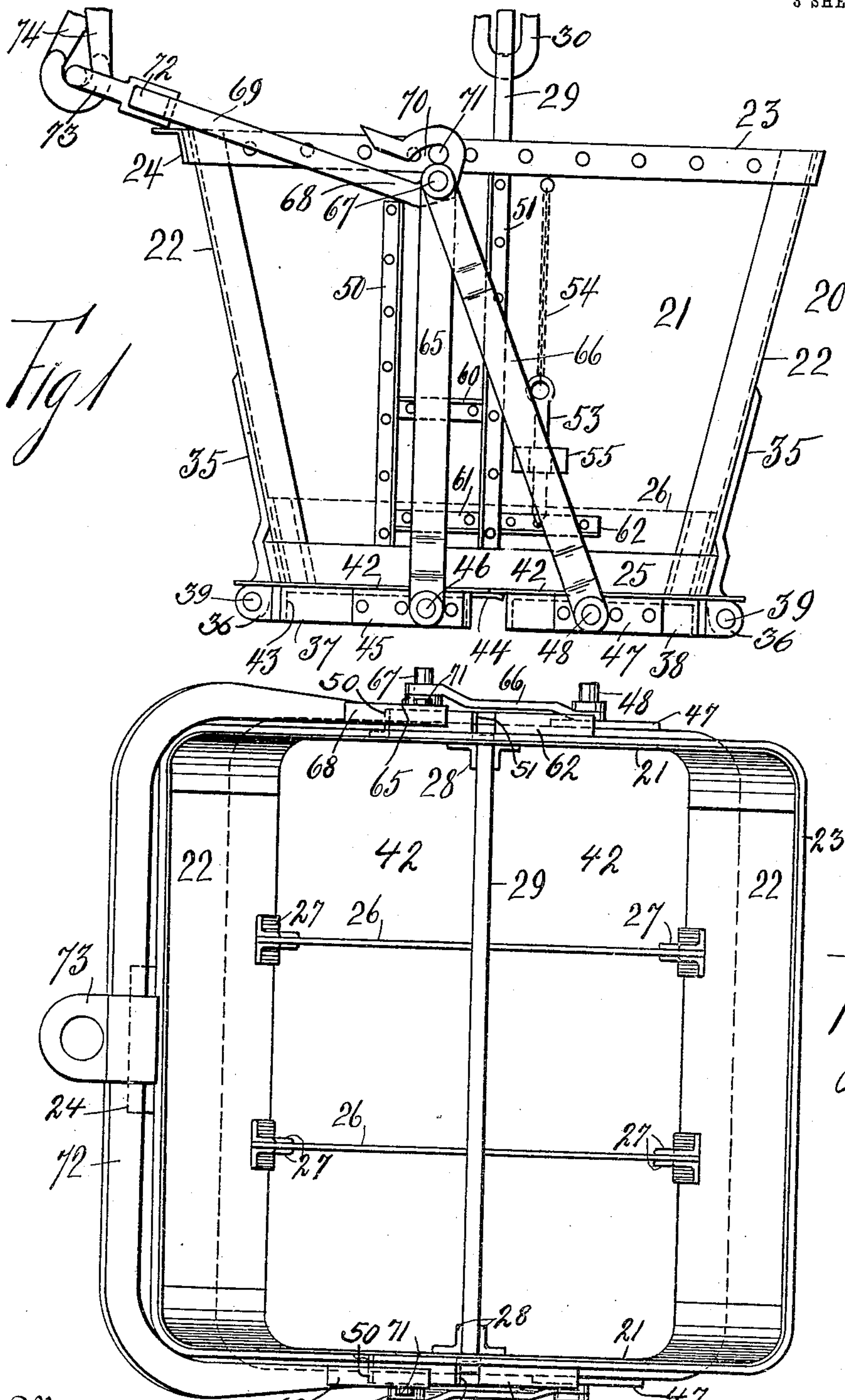


G. L. STUEBNER.
 BOTTOM DUMPING BUCKET.
 APPLICATION FILED MAY 18, 1909.

962,930.

Patented June 28, 1910.

3 SHEETS—SHEET 1.



Witnesses
George B. Smith
Geo. A. Stuebner

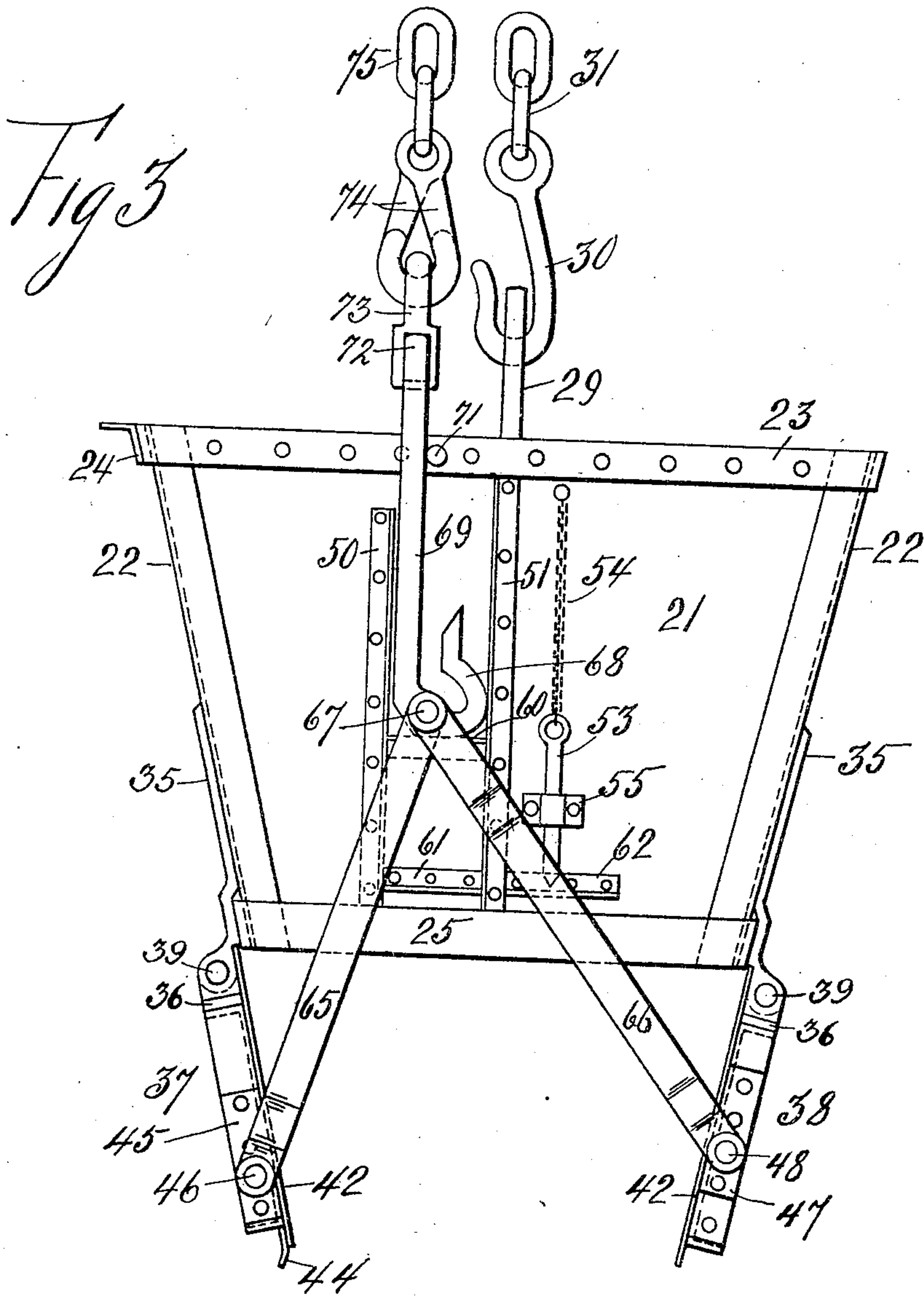
Inventor
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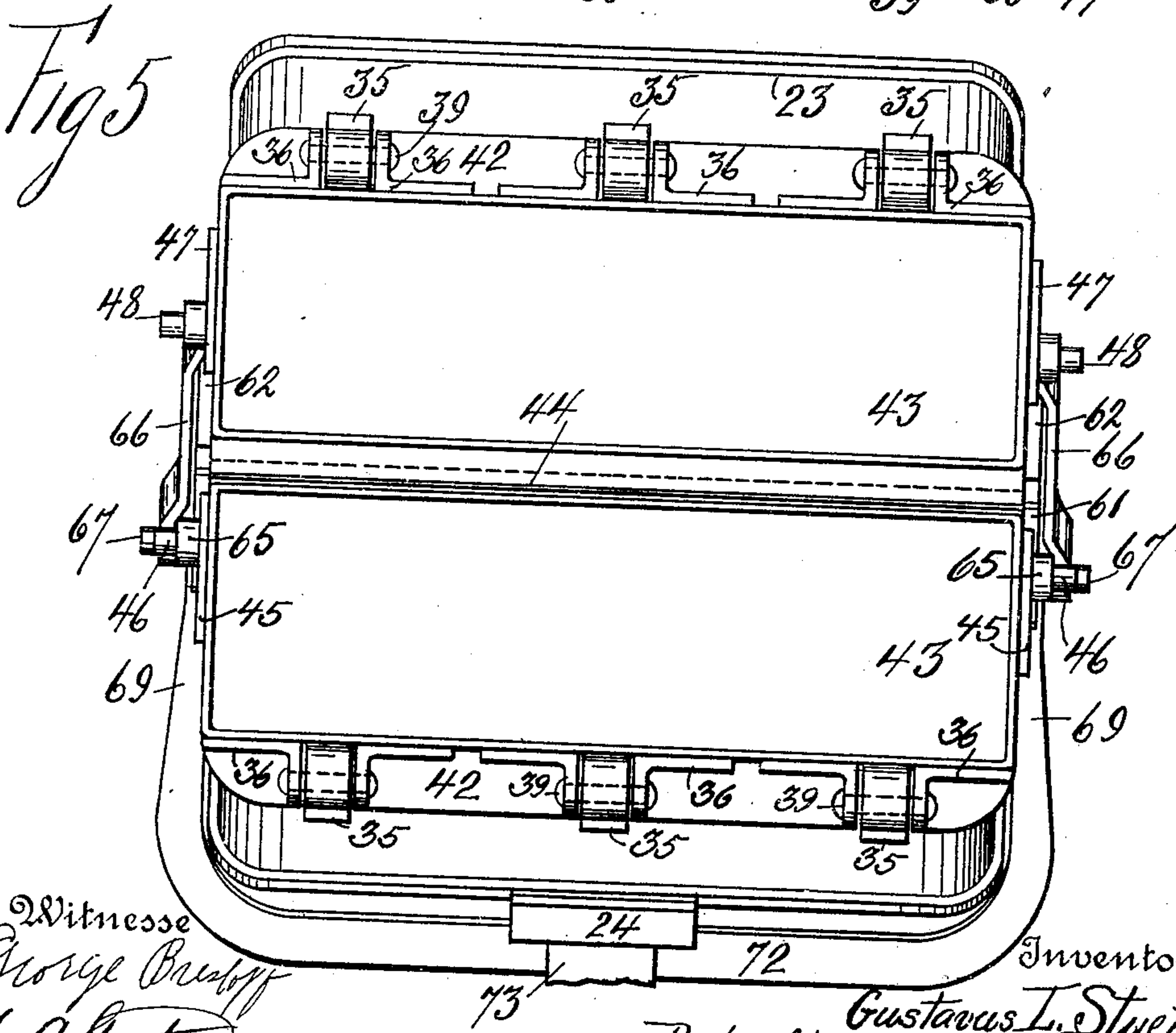
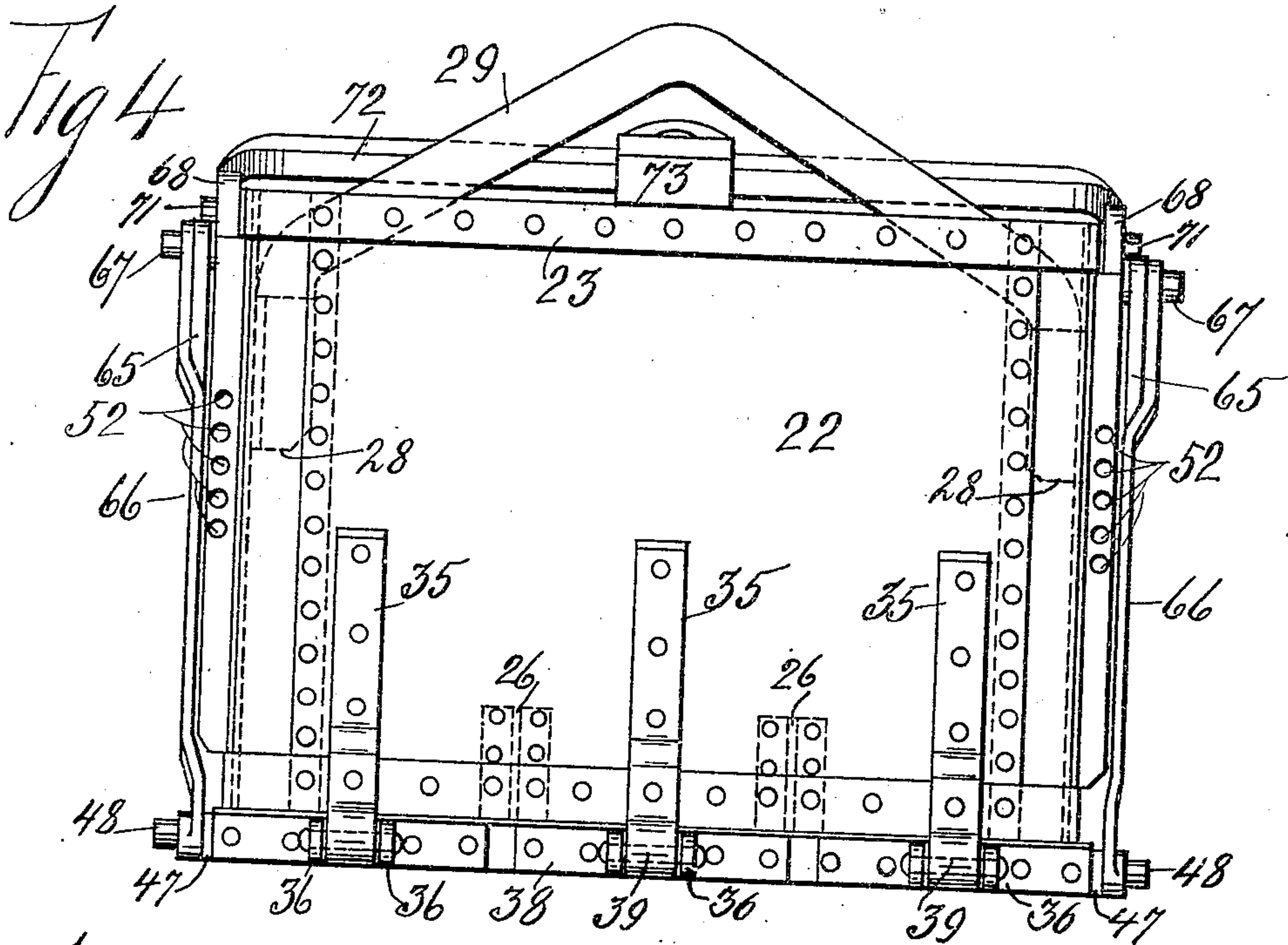
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

GUSTAVUS L. STUEBNER, OF FLUSHING, NEW YORK.

BOTTOM-DUMPING BUCKET.

962,930.

Specification of Letters Patent. Patented June 28, 1910.

Application filed May 18, 1909. Serial No. 496,838.

To all whom it may concern:

Be it known that I, GUSTAVUS L. STUEBNER, a citizen of the United States, and a resident of Flushing, in the county of Queens and State of New York, have invented certain new and useful Improvements in Bottom-Dumping Buckets, of which the following is a specification.

This invention relates to bottom dumping buckets. Its organization comprises a bucket with a movable bail, connected by links to the doors thereof and means for locking the bail to the bucket when the doors are swung to their closed position, and other means to maintain the bail with its appurtenances at various angles, to vary the inclinations of the doors when lowered from the body of the bucket. A stationary bail is also provided for the bucket, the vertical cross axial plane of which passes preferably through the center of gravity of the bucket, and the similar plane of the movable bail is distant from the said plane of the stationary bail, so that the chains for the bails will not interfere with each other.

The buckets are particularly useful for handling concrete, but may be used for any other material.

In the accompanying drawings Figure 1 represents an elevation of a bucket exemplifying the invention, Fig. 2 is a top plan view of Fig. 1, Fig. 3 is a view similar to Fig. 1 with doors in a lowered position, Fig. 4 shows a right hand side view of Fig. 1, and Fig. 5 is a bottom plan view of Fig. 4.

The bucket exemplifying the invention is shown with the body 20 having the sides 21, ends 22, upper reinforcing band 23 with the supporting angle 24, lower reinforcing band 25 and lower cross-braces 26, the ends of which latter are connected to the angle irons 27 extending from the inner faces of said ends 22. Angle irons 28 extend from the sides 21 and support the stationary bail 29. A hook 30 with the chain 31 is shown suspending the vertical stationary bail 29. Hinge straps 35 are fastened to the ends 22 of the bucket and are straddled by the journal lugs 36 extending from the doors 37 and 38. The lugs 36 with their doors are hinged to said hinge straps 35 by means of the hinge pins 39.

Each of the doors 37 and 38 comprise a cover 42, which is supported on an inverted box shaped frame 43, and a lip 44 extends from the lower face of one of the covers 42

and bears up against the lower face of the cover of the accompanying door when they are in a closed position. Plates 45 with the pins 46 and plates 47 with pins 48 extend from the box shaped frames 43 of the said doors, the plates 47 with their pins 48 being somewhat more distant from the inner end of their door 38, than the distance of the plates 45 with the pins 46 from the inner end of the door 37.

Angle irons 50 and 51 extend from the sides 21 of the body of the bucket and constitute guides for the operating and movable bail to be described. Openings 52 are formed in said angles for stop pins 53 which are suspended on chains 54 having their upper ends fastened to the sides 21 of the bucket. Guide pockets 55 are fastened to the sides 21 of the bucket for the pins 53 when the latter are not in operative position.

Angle irons 60, 61 and 62 are fastened to the sides 21 of the bucket, the angle irons 60 and 61, being located between angle irons 50 and 51. The angle irons 60 constitute stops for the said operating and movable bail, and the angle irons 61 and 62 constitute guards to prevent the bending of the links to be described should they be struck when using the bucket.

Links 65 have their lower ends fulcrumed on the pins 46 of the door 37, and links 66 somewhat longer than the links 65 have their lower ends fulcrumed on the pins 48 of the door 38. The upper ends of each pair of said links 65 and 66 are fulcrumed on the pins 67 extending from the hook ends 68 of the operating and movable bail 69. The movements of the pins 67 are maintained in vertical planes, by virtue of the hook ends 68 of operating bail being guided between the guides 50 and 51. The locations of the pins 46 and 48 with the lengths of the links 65 and 66 maintain the doors 37 and 38 at approximately equal angle with the bottom edge of the bucket when the said doors are lowered therefrom. When the doors are in their closed position links 65 are in vertical positions and the links 66 are inclined thereto. The lower inner openings 70 of the hook ends 68 are formed with the walls that are arcs of circles described from the centers of the pins 67, and the said hook ends are engaged with locking pins 71 extending from the bucket, when the doors are locked in a closed position with

respect to the opening through the body of the bucket. The said pins 71 with said hook ends 68 constitute a locking device. The hook ends 68 extend from the sides of the bail and the latter are formed with the main portion 72 thereof.

A ring hook support 73 is fastened to the main portion 72 of the operating bail, and bears on the supporting angle 24, when the doors 37 and 38 are in a closed position and the hook ends 68 are engaged by the locking pins 71. Hooks 74 with the chain 75 are connected with the operating and movable bail 69.

To explain the operation of the invention the bucket can be considered with the doors 37 and 38 lowered from the body thereof, as shown in Fig. 3, and the bucket suspended with the chain 31 supporting the stationary bail 29 and the chain 75 supporting the operating and movable bail 69, the hook ends 68 bearing on the angle irons 60. The bucket is now lowered to receive its charge and at the same time the chain 75 is hauled in which will close the doors 37 and 38 against the body of the bucket, and the said hook ends 68 will become engaged with the locking pins 71 firmly holding the doors in place. The chain 75 may now be paid out while the bucket with its doors closed is bearing on a support, when the operating bail will fall to the left side of the locking pin 67 and bear on the supporting angle 24, by reason of the left side of the said operating bail being heavier than the right side. When the bail is thus supported on the angle 24 it is securely locked with the locking pins 71. When the bucket is to discharge its charge the chain 75 is hauled in which will cause the bail 69 to assume its vertical position and allow the hook ends 68 to disengage from the locking pins 71, by virtue of which said hook ends will drop to and bear on the angle irons 60 and the doors will drop to the positions shown in said Fig. 3.

The angles of the doors 37 and 38 with the bottom of the bucket when in their lowered positions, can be varied by inserting the pins 53 in the different openings 52.

The invention may be modified by using only one door with the body thereof and one link like 65 or 66 at each of the sides thereof.

Having described my invention what I claim as new therein and desire to secure by Letters Patent of the United States is:

1. In a bucket the combination of a door therefor, a stationary bail connected to the bucket, an operating bail, a connecting element between the bail and the door, means to maintain the operating bail parallel to the stationary bail when actuating said door and means to lock the operating bail with the bucket.

2. In a bucket the combination of a door

hinged thereto, a link with one end pinned to said door, an operating bail pinned to the other end of said link, a hook end for said bail, and a locking pin extending from the bucket located to lock with said hook end.

3. In a bucket the combination of a stationary bail connected thereto, a door hinged to the bucket, an operating bail, a connecting link between the door and said operating bail, and means to move the lower end of the operating bail in a plane parallel to the plane of the stationary bail.

4. In a bucket the combination of a door hinged thereto, a link pinned to said door, an operating bail pinned to said link, a hook end formed with the operating bail, means to guide the movements of said hook end in vertical directions when the door is being actuated, a locking pin extending from the bucket to lock with said hook end when the door is in its closed position, the said locking pin allowing the operating bail to take an inclined position when locked with its pin.

5. In a bucket the combination of a door hinged thereto, a link fulcrumed to said door, an operating bail fulcrumed to said link, a locking pin extending from the body of the bucket in the path of said bail and a stop in the path of the bail to regulate the inclination of the door with the body of the bucket when said door is in its lowered position.

6. In a bucket the combination of a door hinged thereto, a link fulcrumed to said door, an operating bail fulcrumed to said link, a locking pin extending from the body of the bucket in the path of said bail, a stop pin in the path of said bail and means to locate the stop pin in different positions.

7. In a bucket the combination of a door hinged thereto, a link fulcrumed to the door, an operating and movable bail fulcrumed to said link, a hook end on the bail, a locking pin on the bucket to engage said hook end and a guide on the bucket for said hook end.

8. In a bucket the combination of a pair of doors hinged thereto, a link for each door and fulcrumed thereto, a bail fulcrumed to each of said links, and a locking pin on the bucket located to engage said bail.

9. In a bucket the combination of a pair of doors hinged thereto, a pair of links fulcrumed to each of said doors, one link of each pair on opposite sides of the bucket, a bail for the bucket fulcrumed to said links on the opposite sides of the bucket, a locking pin extending from each side of the bucket and located to lock with said bail.

10. In a bucket the combination of a pair of doors hinged thereto, a pair of links fulcrumed to each of said doors, one link of each pair on opposite sides of the bucket, an operating and movable bail for the bucket, a pair of hook ends for the bail, and the

said links on the opposite sides of the bucket fulcrumed to said hook ends, a locking pin extending from each of the opposite sides of the bucket and located to lock with said hook ends when the said doors are in their closed positions, a guide for each of the hook ends of said bail extending from the sides of the bucket and a stop on each side of the bucket for the said hook ends when the doors are in their lowered positions.

11. In a bucket the combination of a pair of doors hinged to the bottom thereof, a pair of links fulcrumed to each of said doors on opposite sides of the bucket, a stationary bail connected to the bucket, an operating and movable bail for the bucket, a pair of hook ends for the latter bail on opposite sides of the bucket and the links on the opposite sides of the bucket fulcrumed to said hook ends, a locking pin extending from each of the opposite sides of the bucket and located to lock with said hook ends when the said doors are in their closed positions, a guide for each of the hook ends of the operating bail extending from the sides of the bucket, stop pins for each side of the bucket and means to locate the said pins in different positions in the paths of said hook ends to vary the inclinations of the doors with the bottom of the bucket.

12. In a bucket the combination of a pair of doors hinged thereto, a link fulcrumed to each of said doors, said links being inclined to each other, an operating and movable bail fulcrumed to said links, a stationary bail connected to the bucket and horizontally distant from the operating and movable bail.

13. In a bucket the combination of a pair of doors hinged thereto, a pair of links fulcrumed to each of said doors on opposite sides of the bucket, a stationary bail connected to the bucket, an operating and movable bail for the bucket, a pair of hook ends for the latter bail on opposite sides of the bucket and the links on the opposite sides

of the bucket fulcrumed to said hook ends, and guides for each of the hook ends on the sides of the bucket to maintain said hook ends horizontally distant from the vertical plane of the stationary bail.

14. In a bucket the combination of a pair of doors hinged thereto, a pair of links fulcrumed to each of said doors on opposite sides of the bucket, a stationary bail connected to the bucket, an operating and movable bail for the bucket, a pair of hook ends for the latter bail on opposite sides of the bucket and the links on the opposite sides of the bucket fulcrumed to said hook ends, guides for each of the hook ends on the sides of the buckets to maintain said hook ends horizontally distant from the vertical plane of the stationary bail, a locking pin extending from each of the opposite sides of the bucket and located to lock with said hook ends when the doors are in their closed positions, and a stop on each side of the bucket for said hook ends when the doors are in their lowered positions.

15. In a bucket the combination of a pair of doors hinged thereto, a link fulcrumed to each of said doors on opposite sides of the bucket and the links on the same side of the bucket being fulcrumed at different distances from the inner ends of the doors, a stationary bail extending from the bucket, an operating bail fulcrumed to the upper ends of said links and means to maintain the upper ends of said links horizontally distant from the stationary bail, the combination of the links with the doors giving equal inclinations to the latter when they are lowered from the body of the bucket.

Signed at the borough of Queens in the county of Queens and State of New York this 11th day of May A. D. 1909.

GUSTAVUS L. STUEBNER.

Witnesses:

GEORGE BRESLOFF,
GEO. A. STUEBNER.