G. L. STUEBNER.

BOTTOM DUMPING BUCKET.

APPLICATION FILED NOV. 20, 1908.

954,480.

Patented Apr. 12, 1910.

3 SHEETS—SHEET 1.

Fig 1

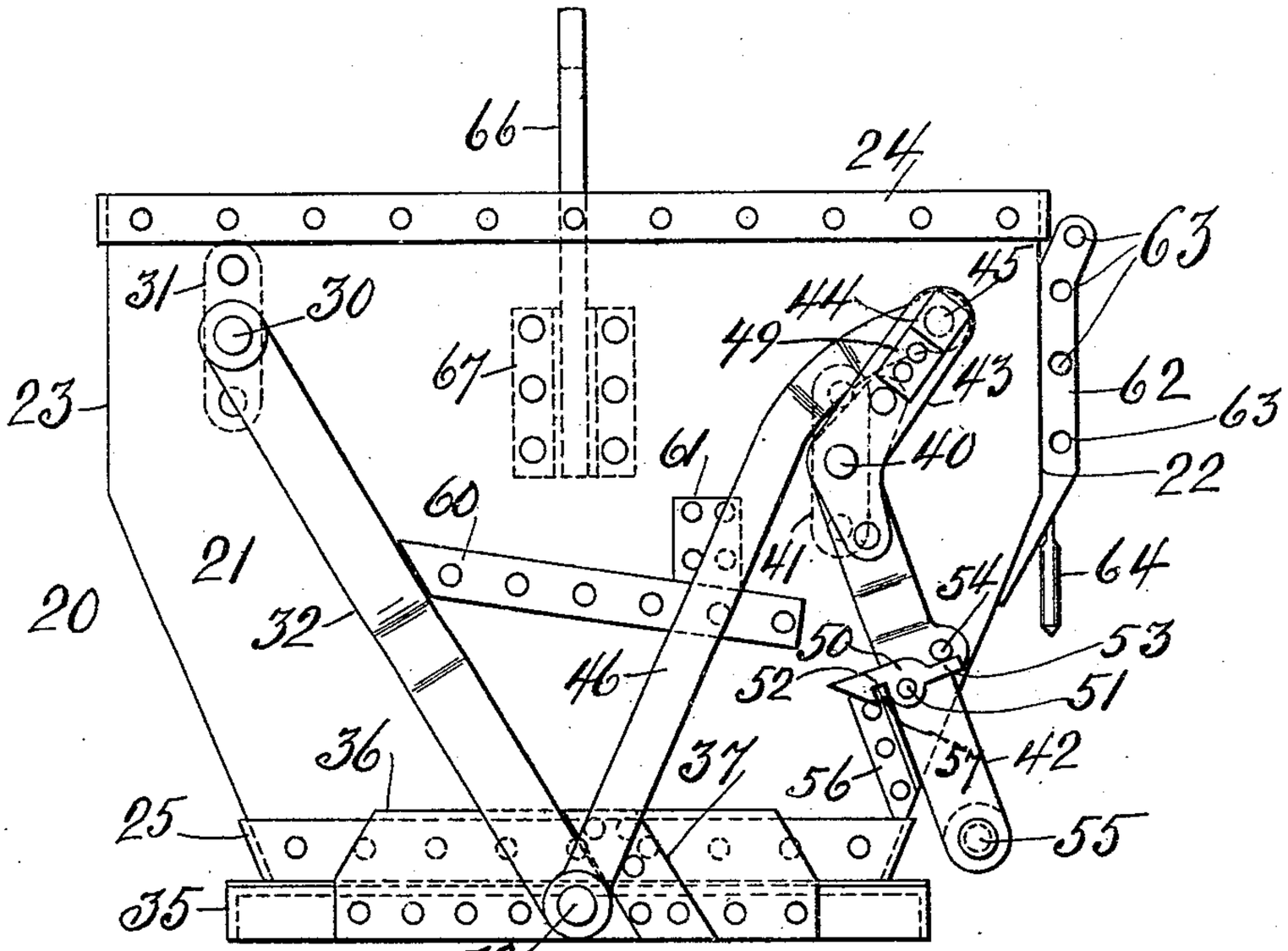
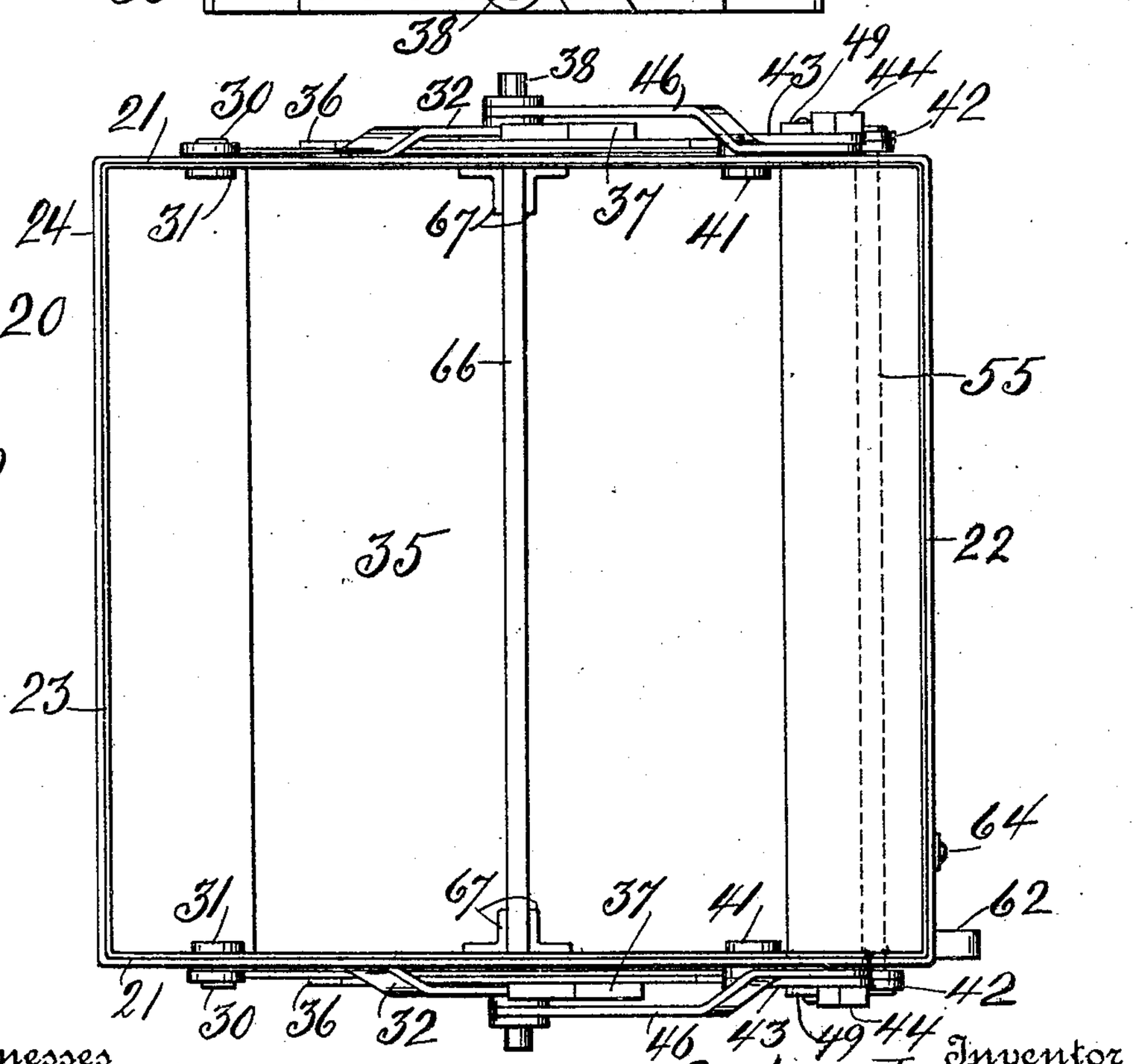


Fig 2



Witnesses

Martin Zimansky.

Geo C. Eckholme.

Inventor

Gustavus L. Stuebner

By his Attorney

A. A. de Bonneville

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3 SHEETS—SHEET 2.

Fig 3

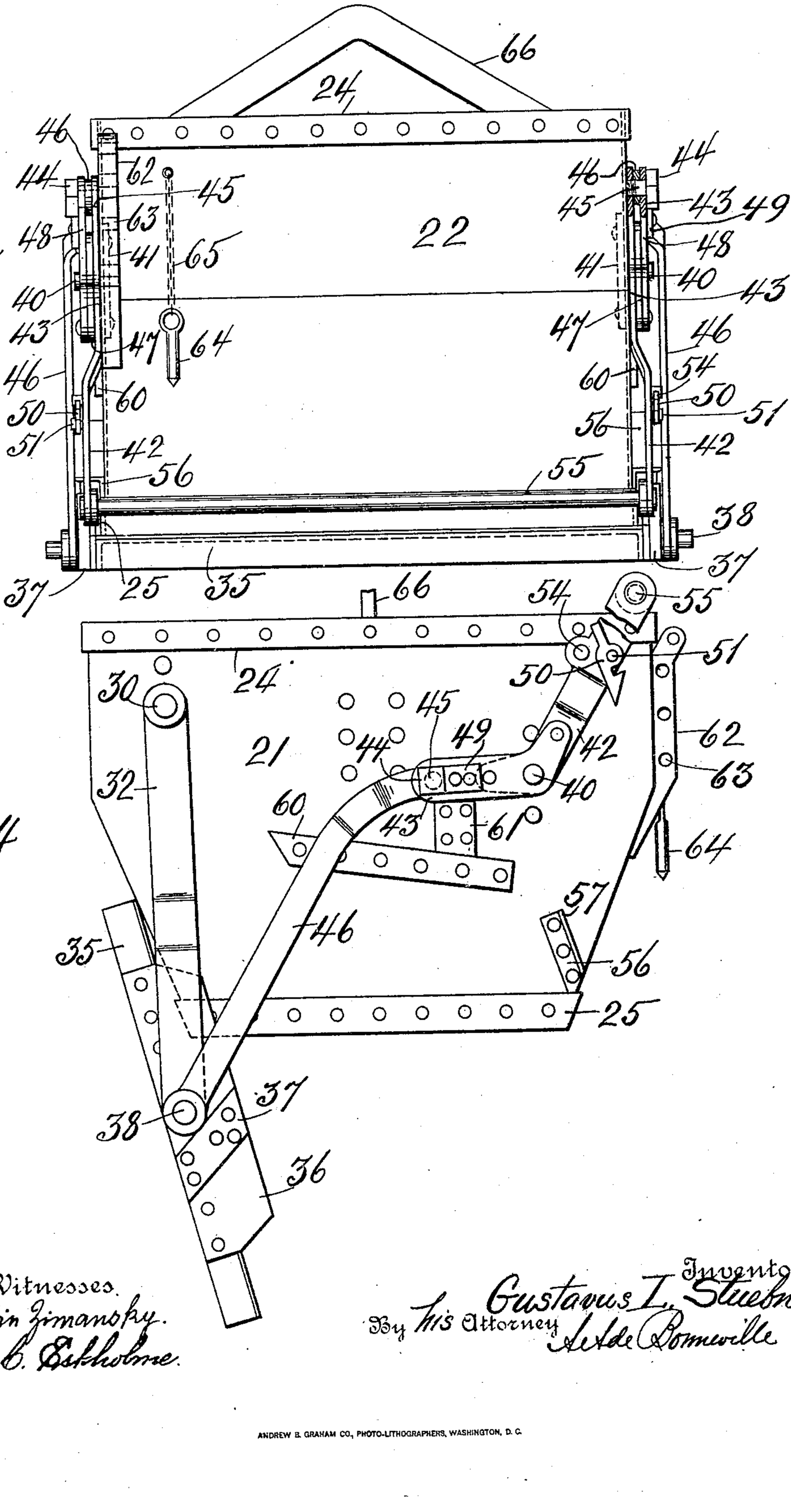

Fig 4

Witnesses.
Martin Zimansky.
Geo. B. Eskholme.

Inventor
Gustavus L. Stuebner
By His Attorney
Leslie Bonneville

G. L. STUEBNER.

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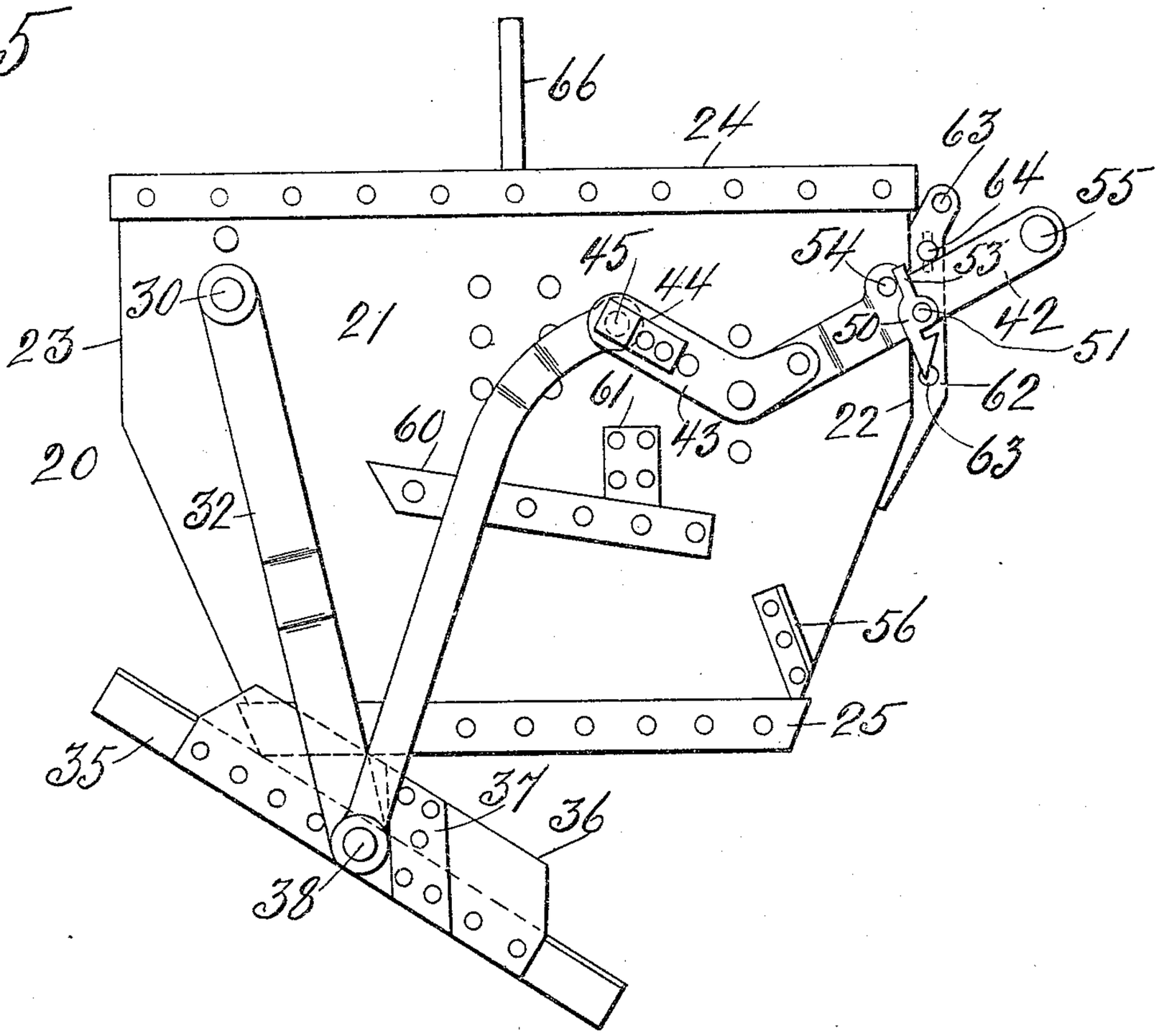
3 SHEETS—SHEET 3.

Fig 5



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Inventor
Gustavus L. Stuebner
By his Attorney
A. A. de Bonneville

UNITED STATES PATENT OFFICE.

GUSTAVUS L. STUEBNER, OF FLUSHING, NEW YORK.

BOTTOM-DUMPING BUCKET.

954,480. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed November 20, 1908. Serial No. 463,568.

To all whom it may concern:

Be it known that I, GUSTAVUS L. STUEBNER, a citizen of the United States, and 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 buckets and particularly to bottom dumping buckets, for handling various materials, and especially concrete. Its organization comprises a body of any desirable form and a bottom pivoted thereto preferably in equilibrium, and means so that the weight of the charge in the bucket maintains the said bottom locked to the said body.

Referring to the drawings, Figure 1 represents a side view of a bucket exemplifying the invention with the bottom closing the body of the bucket, Fig. 2 shows a top plan view of Fig. 1, Fig. 3 is a right hand side view of Fig. 1, Fig. 4 represents a view similar to Fig. 1 with the bottom in its lowered or dropped position and Fig. 5 shows a view similar to Fig. 4 with the bottom held in an angular position.

The bucket shown comprises the body 20 with the sides 21, the front 22 and the back 23, the two latter inclining toward the center at their lower ends. A band 24 reinforces the upper end of the body of the bucket, and a band 25 reinforces the lower portion thereof. Pivots 30 extend through the sides 21 of the said body adjacent to the back 23, and are secured thereto by means of the flanges 31 thereof which latter are fastened to the inner faces of said sides. Sustaining links 32 are pivoted at their upper ends on the pivots 30. The bottom 35 of the bucket has extending from its sides the reinforcing guide plates 36, and on the outer surfaces of the latter are secured the stop plates 37. A pivot rod 38 extends through the sides and guide plates of the bottom 35, the ends of the rod constituting pivots for said bottom. The lower ends of the sustaining links 32 are pivoted on the outer ends of the said rod 38.

Pivots 40 extend through the sides 21 adjacent to the front 22 of the body of the bucket and are secured to the said sides by means of the flanges 41 thereof, which latter are fastened to the inner faces of said sides. Operating bell cranks are pivoted on the pivots 40 and each comprises the legs 42 and 43. Upon the legs 43 are placed separators 47 and upon the latter are located secondary legs 48, the legs 43 and 48 with the fillers 47 being fastened together and constituting forked ends for the said bell cranks. Screw pins 45 with the heads 44 are secured in said forked ends and stops 49 are fastened to the secondary legs 48 to prevent the heads 44 of the screw pins 45 turning. Connecting links 46 at their lower ends are pivoted to the pivot rod 38 and at their upper ends are pinned to the forked ends of the operating bell cranks by means of the pins 45. The legs 43 of the bell cranks and the connecting links 46, constitute locking devices for the bucket. A latch 50 is pinned to each one of the legs 42 of the bell cranks on the pins 51. Each latch has a notch 52 in its front leg and the rear leg 53 thereof is in the path of the pin 54 on the leg 42 of the bell crank. The latches 50 with their appurtenances constitute secondary locking devices for the bucket. A handle 55 joins the lower ends of the legs 42 of the operating bell cranks. Stops 56, the upper ends of which constitute catches 57, extend from the sides 21 of the body of the bucket. The catches engage the notches 52 of the latches 50, and the stops are in paths of the legs 42.

Stop and protecting plates 60 extend from the sides 21 for the sustaining links 32 and the connecting links 46, and stops 61 extend from said sides for the legs 43 of the bell cranks.

A locking bar 62 is fastened to the front 22 and contains the openings 63 for the pin 64, which is supported by means of the chain 65 that is fastened at its upper end to the said front 22. A bail 66 is fastened to the angles 67 that are secured to the sides 21 of the body of the bucket.

To use the bucket it will be noted that the bottom 35 is closed when the movable elements are located as shown in Fig. 1, the sustaining links 32 bearing against the beveled ends of the stop and protecting plates 60 and against the sides of the stop plates 37, the notches 52 of the latches 50 engaging the catches 57 of the stops 56, and the legs 42 of the bell crank bearing against the stops 56. In this position of the elements the center lines passing through the center of the

pivot rod 38 and the pins 45 are below the center of the pivots 40, so that the weight of the bottom 35 and any charge in the bucket will tend to lock the bottom against the bottom opening of the body of the bucket, by reason of the moments having each an arm equal to the distance from the center of the pivots 40 and the line passing through the center of the pivot rod and the pins 45. To completely drop the bottom 35 the operator releases the latches 50 from their catches 57 and raises the handle 55, until the center lines passing through the pivot rod 38 and pins 45 are above or to the left of the axial centers of the pivots 40, after which the weight of the bottom and charge in the bucket will completely drop the said bottom 35 to the position shown in Fig. 4, the legs 43 of the bell cranks bearing on the stops 61. Should it be desired to only partially drop the bottom 35 from the body of the bucket, so as to maintain the said bottom at a predetermined angle with the lower edge of the body 20, the operator before releasing the latches 50, inserts the pin 64 in one of the openings 63 of the locking bar 62. Next the latches 50 are disengaged from their catches 57 and one of the legs 42 of one of the bell cranks is brought to bear against said pin 64. The bottom 35 will then be only partially dropped as shown in Fig. 5, the said bottom making an angle with the lower edge of the bottom of the body 20, to give a predetermined direction and velocity of flow to the discharge of the contents of the bucket.

The stop plates 37 prevent the bottom 35 tipping backward when it is being lowered, by reason of the sustaining links 32 bearing against the side edges thereof. The pivot rod 38 is shown midway between the front and rear edges of the bottom, but this can be varied and if located nearest to the front edge a counterweight may be added to the front end of the bottom to assure its tipping when released from the body of the bucket.

The lower legs 42 of the bell cranks might be dispensed with and a lever or arm similar to the upper legs thereof used. The reinforcing guide plates 36 always maintain the bottom in proper lateral position with the body of the bucket.

It will be noted that the stop and protecting plates 60 besides constituting stops for the sustaining links 32, are protecting plates for the connecting links 46. Should the latter come in contact with some obstruction, the plates 60 will prevent their bending.

The latches 50 prevent the bottom becoming disengaged from the body of the bucket, in case the handle 55 or the operating bell cranks come in contact with some obstruction.

The invention may be simplified by eliminating one of the latches 50 of the bell cranks.

Having described my invention, I claim.

1. In a bucket the combination of a bottom, pivots extending from the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the pivots of the bottom, a connecting link with its lower end joined with one of the pivots of the bottom, an operating bell crank pivoted to the body of the bucket with one of its legs pinned to the upper end of the connecting link, a stop on the body of the bucket and a latch on the operating bell crank located to engage said stop.

2. In a bucket the combination of a bottom, pivots extending from the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the pivots of the bottom, a connecting link with its lower end joined with one of the pivots of the bottom, an operating bell crank pivoted to the body of the bucket with one of its legs pinned to the upper end of the connecting link, a stop on the body of the bucket, a latch on the operating bell crank located to engage said stop, a stop plate on the body of the bucket in the path of one of the sustaining links, and a second stop in the path of one of the legs of the operating bell crank.

3. In a bucket the combination of a bottom, pivots extending from the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the pivots of the bottom, a connecting link with its lower end joined with one of the pivots of the bottom, an operating bell crank pivoted to the body of the bucket with one of its legs pinned to the upper end of the connecting link, a locking bar extending from the body of the bucket, a pin arranged to be secured in different locations in the said locking bar and in the path of the operating bell crank.

4. In a bucket the combination of a bottom, pivots extending from the said bottom, stop plates on the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the pivots of the bottom, a side of each sustaining link bearing against its stop plate on the bottom when the latter bears up against the body of the bucket, a connecting link with its lower end joined with one of the pivots of the said bottom, and an operating bell crank pivoted to the body of the bucket with one of its legs pinned to the upper end of the connecting link.

5. In a bucket the combination of a bottom, a pivot rod connected to the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their

lower ends supporting the pivot rod, a connecting link on each side of the body of the bucket with its lower end joined with said pivot rod, an operating bell crank pivoted to each side of the body of the bucket with one leg of each pinned to the upper end of each connecting link, a stop on the body of the bucket and a latch on a leg of one of the bell cranks located to engage said stop.

6. In a bucket the combination of a bottom, a pivot rod connected to the bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the pivot rod, a connecting link on each side of the body of the bucket with its lower end joined with said pivot rod, an operating bell crank pivoted to each side of the body of the bucket with one leg of each pinned to the upper end of each connecting link, a locking bar with openings extending from the body of the bucket, a pin for said openings located in the path of one of the bell cranks.

7. In a bucket the combination of a bottom, a pivot bar with its ends extending beyond the sides of said bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting the ends of the pivot bar, a connecting link on each side of the bucket with the lower end of each joined with the pivot rod, a bell crank pivoted on each side of the bucket each with one leg pinned to the upper end of its accompanying connecting link, a handle joining the other legs of the bell cranks, and stops for the latter legs of the bell cranks on the bucket.

8. In a bucket the combination of a body, a bottom therefor, pivots extending from the sides of the said bottom, sustaining links with their upper ends pivoted to the body of the bucket and their lower ends supporting said pivots, a connecting link on the side of the bucket with its lower end joined with one of said pivots, a bell crank pivoted on one side of the body of the bucket with one leg pinned to the upper end of the connecting link, and constituting therewith a locking device, a secondary locking device for the bucket carried on the bell crank, and a locking bar on the body of the bucket to maintain the bottom thereof at different angular positions.

Signed at the borough of Queens in the county of Queens and State of New York this 17 day of November A. D. 1908.

GUSTAVUS L. STUEBNER.

Witnesses:

H. MATHISON,

GEO. A. STUEBNER.