Jan. 1, 1924 1,479,384

P. J. HEALEY

GRAB BUCKET

Filed March 4, 1922

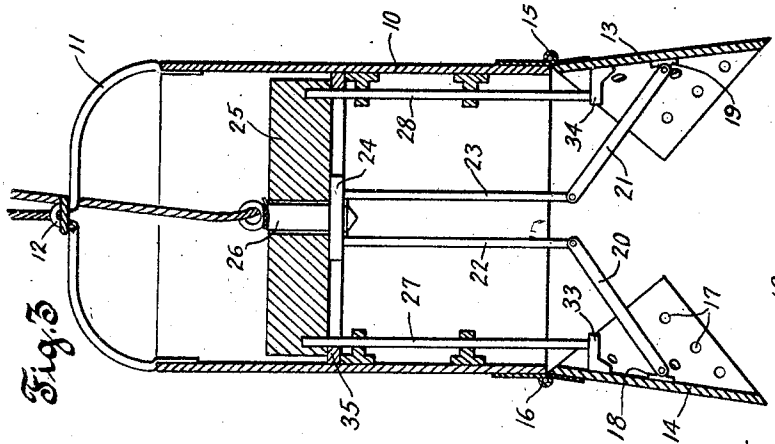


Fig. 3.

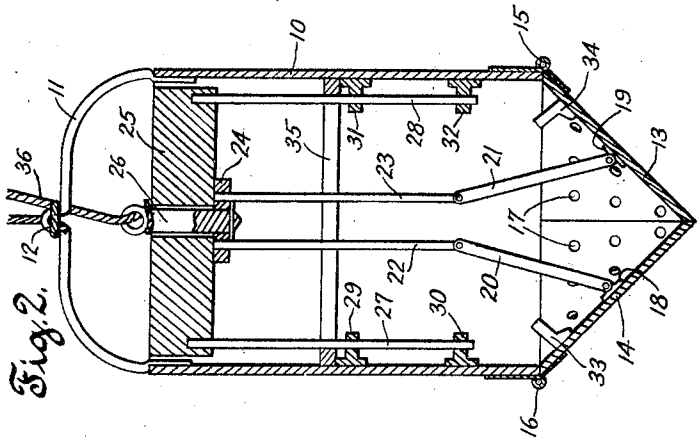


Fig. 2.

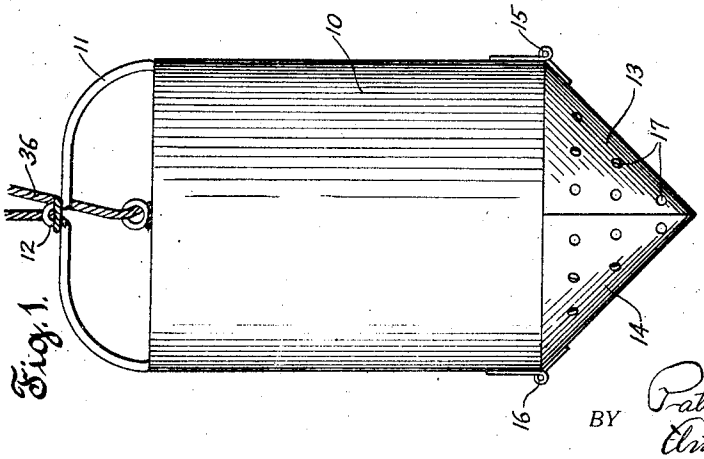


Fig. 1.

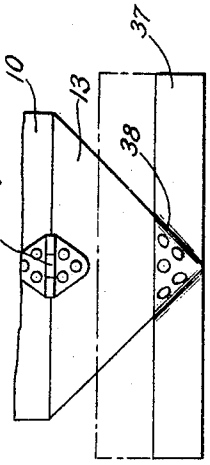


Fig. 6.

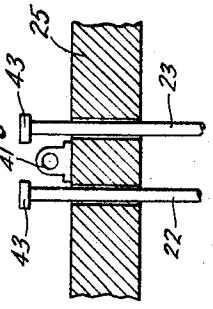


Fig. 5.

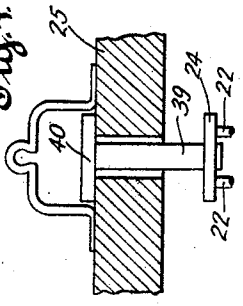


Fig. 4.

BY Patrick J. Healey INVENTOR

Arthur Phelps Marr ATTORNEY

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UNITED STATES PATENT OFFICE.

PATRICK J. HEALEY, OF JERSEY CITY, NEW JERSEY.

GRAB BUCKET.

Application filed March 4, 1922. Serial No. 540,949.

To all whom it may concern:

Be it known that I, PATRICK J. HEALEY, a citizen of the United States, and resident of the city of Jersey City, county of Hudson, State of New Jersey, have invented certain new and useful Improvements in Grab Buckets, of which the following is the specification.

The device the subject of this invention is a grab bucket, particularly designed for use in cleaning catch basins in street drains or sewers and has many elements of construction differing from that of the ordinary grab bucket.

A particular object of the invention is to provide a bucket made in cylindrical form and having jaws that open outward beyond the outer periphery of the cylinder, so that an area greater than that included within the outline of the cylinder may be reached.

Another object of the invention is to provide means for urging the bucket through the mud and sludge in the basin, such means consisting of a movable weight arranged within the bucket.

Another object of the invention is to provide means whereby the jaws of the bucket are closed by the lifting cable, assuring that the jaws are fully closed before the bucket is moved.

Another object of the invention is to provide a scraper or means for gathering the material local and adjacent to the jaws of the bucket, so that the jaws may readily gather up the material into the bucket.

Other objects of the invention and the details of construction will be fully set forth as the specification progresses and the accompanying drawing should be referred to for a complete understanding of the specification which follows:

In the drawing:

Fig. 1, is a side elevation of the bucket with the jaws closed.

Fig. 2, is a central, sectional view of the device as shown in Fig. 1.

Fig. 3, is a central, vertical section of the device with the jaws open.

Figs. 4 and 5, are fractional, partial, sectional views of modifications.

Fig. 6, is a side elevation, of one jaw, showing the scraper in position.

Similar reference numerals indicate like parts in all the figures where they appear.

At 10, I show the body of the bucket which in the preferred construction will consist of a cylinder, having a bail 11, secured at and projecting from the upper edge of the cylinder 10 and in the bail, I provide an eye 12 for a purpose to appear later.

The bottom of the cylinder 10 is closed by means of jaws 13 and 14 which together complete a cone shaped projection from the bottom of the cylinder, each jaw is secured to the cylinder by a hinge as shown at 15 and 16 and as shown in Fig. 3 the jaws may open outward so that the extreme edges of the jaws will project beyond the line of the cylinder. The jaws may be provided with perforations as shown at 17, by means of which water may pass from the cylinder.

The jaws 13 and 14 are each provided with lugs as shown at 18 and 19 and in each lug, I arrange a link 20 or 21, one of which is connected to each of the vertical bars 22 and 23. These bars terminate in and are connected to a washer or plate 24 secured adjacent the movable weight 25 by means of the eye-bolt 26 and rods 27 and 28 secured in the weight 25 pass through lugs as shown at 29, 30, 31 and 32 to impinge upon the brackets 33 and 34 for a purpose that will be referred to in the description of the operation.

I provide a ring 35 within the cylinder 10 and upon which the weight 25 may engage.

In the operation of my device, the bail 11 is engaged and retained, while the lifting cable 36 is slackened allowing the weight 25 to move downward and through the bars 22 and 23 and links 20 and 21, opening the jaws 13 and 14 to their full extent if desired.

The bucket is then lowered into the catch basin and may be guided to any part thereof. The weight of the bucket and especially the weight of the member 25 urges the jaws 13 and 14 through the sludge and refuse in the catch basin, the jaws are then closed by tension applied to the rope 36 and the bucket is withdrawn from the catch basin to deposit its contents wherever desired.

It will be noted that the jaws are retained open by means of the rods 27 and 28 resting upon the brackets 33 and 34 and cannot be closed until the weight 25 is lifted.

As the free ends of the jaws 13—14 are pointed I may provide a scraper member as shown at 37 in Fig. 6 which member may be of any desired width and which may be secured to the free end of the jaws 13 and

14. The scraper consisting of two elongated members arranged parallel to each other and extending outward to any desired degree, the mid-length of the scraper may be shaped as shown at 38 to conform to the shape or outline of the jaw.

I have found it desirable to provide means for imparting a hammer blow from the weight 25 through the rods 27 and 28 to the jaws of the bucket. I accomplish this in either of the methods shown in Figs. 4 or 5. In Fig. 4, I provide an elongated bolt 39 to which the plate or disk 24 is secured, the rods 22 and 23 terminating in this plate 24 and from this construction it will be observed that the weight 25 may be moved upward and downward to certain extents independently of the jaws 13 and 14, but when moved upward to its full extent, the head 40 of the bolt 39 will also be moved closing the jaws.

In the construction shown in Fig. 5, the bolt extending through the weight is omitted and a lug 41 substituted. The rods 22 and 23 extend through the weight and are headed over as shown at 42 and 43. The operation of this device is very similar to that shown in Fig. 4.

I may provide independent cables for the weight 25 and bail 11. The additional cable serving to retain the bail when the jaws are to be opened or for changing the position of the cable without changing the position of the jaws, but the addition of one or more cables on a grab bucket is not considered invention due to the present state of the art. The size and general shape of the bucket may be changed at will and other modifications may be made within the scope of the appended claims without departing from the principle or sacrificing the advantages of the invention.

Having carefully and fully described my invention what I claim and desire to obtain by Letters Patent of the United States is as follows:—

1. A grab bucket having jaws, a weight within said bucket for urging said bucket downward guides for said weight and brackets upon said jaws, upon which said rods rest to prevent the closing of the jaws during the downward movement.

2. A grab bucket having jaws and a weighted member for operating said jaws, parallel rods secured to said weighted member and links extending from said parallel rods to said jaws.

3. A grab bucket having jaws and a weighted member for operating said jaws, parallel rods secured to said weighted member and links extending from said parallel rods to said jaws, brackets upon said jaws and additional parallel rods secured to said weighted member and adapted to engage upon said brackets for retaining said jaws open.

Signed at the city, county and State of New York, this 27th day of Feb., 1922.

P. J. HEALEY.