

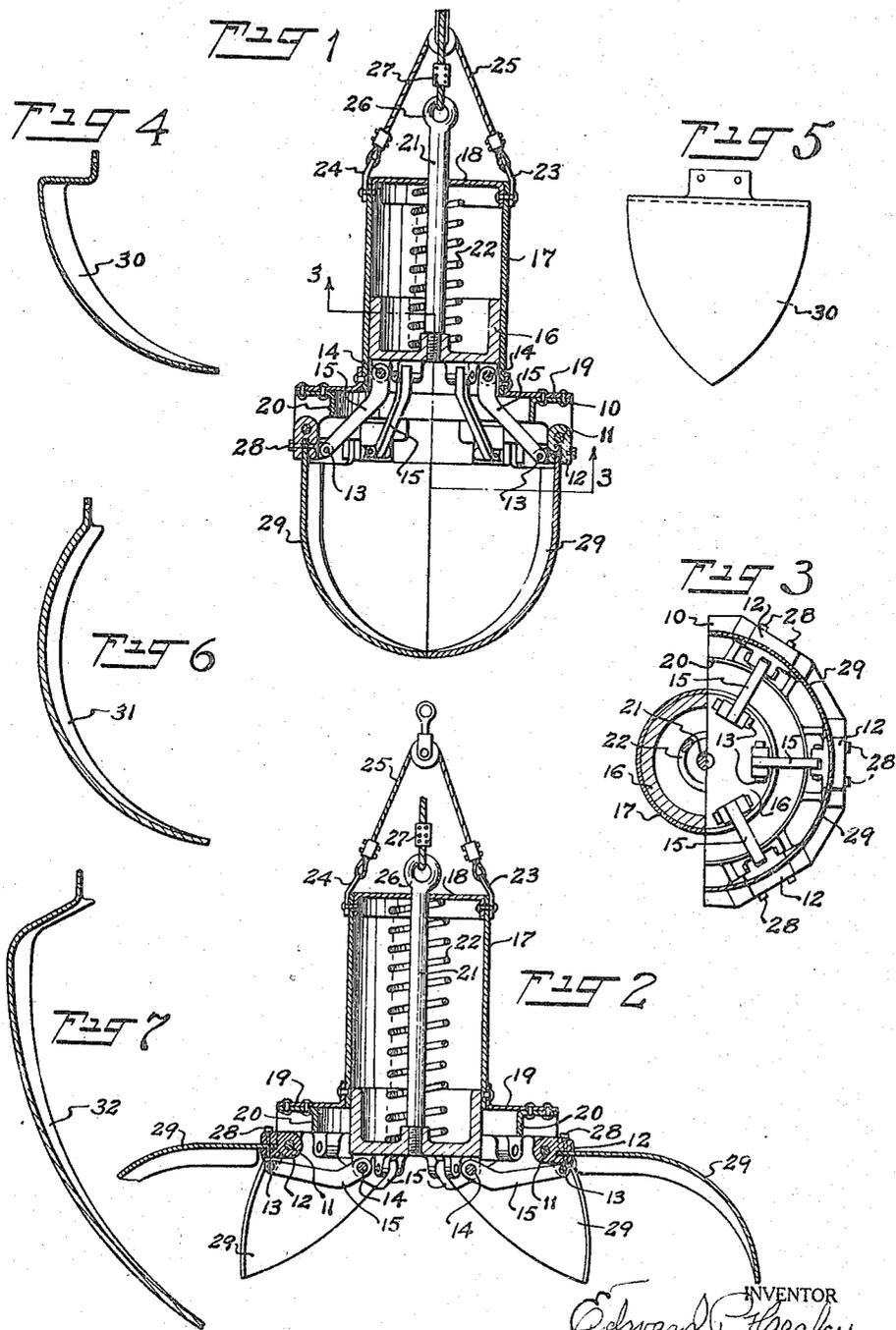
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1,515,856

E. P. HEALEY

GRAB BUCKET

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UNITED STATES PATENT OFFICE.

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GRAB BUCKET.

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To all whom it may concern:

Be it known that I, EDWARD P. HEALEY, a citizen of the United States, and resident of the borough of Manhattan, city, county, and State of New York, 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 of a class of grab buckets usually referred to as orange peel buckets, in that it has a plurality of jaws or blades, rather than merely two, as is customary in clam-shell or digger buckets.

The object of this invention is to provide a bucket wherein the capacity of the bucket may be changed at will and as occasion demands.

A further object is to provide a bucket wherein the blades or jaws will operate quickly and positively and will open to the full extent.

A further object of this invention is to provide blades that may be employed for gathering or lifting loads of loose material and other blades that may be used as digging blades, being so shaped and proportioned as to force themselves into masses of material, more or less firm.

Other objects 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 vertical, sectional view of the bucket with the jaws closed.

Fig. 2, is a similar sectional view of the bucket with the jaws open.

Fig. 3, is a sectional view on the line 3—3 in Fig. 1.

Fig. 4, is a sectional view of a substitute blade or jaw.

Fig. 5, is a side elevation thereof, and

Figs. 6 and 7, are sectional views of additional blades, which may be substituted.

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

At 10, I show a ring member provided with a plurality of lugs 11, for the reception of hinge blocks 12, in each of which I will secure a blade or jaw as shown at 13. Rigidly secured to or formed integral with each hinge block 12 is an arm or lever

14, which lever is pivotally secured to a lug 15, each of the lugs being formed integral with or secured to a piston 16.

The piston 16 is movable in the cylinder 17 and closes the lower end of that cylinder. The upper end of the cylinder is closed by a flanged blade or disk 18 and the ring 10 is secured to the cylinder 17, by means of brackets shown at 19 and 20.

Extending through the cylinder and screw-threaded or otherwise secured to the piston 16, is a piston rod 21 and within the cylinder and around the piston rod 21 is a spring 22, arranged between the piston 16 and the disk 18 and tending to force the piston 16, away from the disk 18.

At the upper end of the cylinder 18, I secure cable lugs or brackets 23 and 24, into which the lifting cable 25 will be secured and an eye 26 in the piston rod 21, receives the operating cable as shown at 27. It will be noted that the blades or jaws 13 are secured in the hinge blocks 12, by means of bolts 28 and that the blades or jaws may be readily removed from their hinge blocks, by the removal of the bolts 28. This constitutes one of the important elements of my invention, as it is my desire that blades or jaws of different shape, be employed with my bucket.

For instance, if the blade or jaw 30, as shown in Fig. 4, is employed, the capacity of the bucket will be increased laterally. If the blade 31, as shown in Fig. 6, is employed, the capacity of the bucket will also be increased. This blade is particularly designed for lifting soft material. The blade 32, shown in Fig. 7, while also increasing the capacity of the bucket, is designed as a digging blade, particularly adaptable for use with semi-soft or hard material. It will be understood that all blades employed at any one time should be of the same size and contour, so as to allow the bucket to close properly.

In the construction shown, I employ six blades. The number may be increased or diminished at will, and while I have shown four different shapes of blades, the shape and size of the blade will be determined by the duty that the bucket is to be called upon to perform.

In the operation of the bucket, the cable 25 is retained taut and when the cable 27 is slackened off, the spring 22 and the weight

- of the piston 16, will cause the blades 13 to open to the position shown in Fig. 2 and when the load is gathered, the cable 27 is drawn in, no additional strain being placed upon the cable 25, whereupon the jaws will be closed into the position shown in Fig. 1 and the load may be lifted, by either the cable 25 or 27 or both.
- 5 Modifications may be made within the scope of the appended claims, but I prefer the whole as shown and described.
- 10 Having carefully and fully described my invention, what I claim and desire to obtain is:—
- 15 1. A grab bucket having interchangeable blades and means for operating them and means as a slotted block and a bolt passing therethrough for temporarily retaining said blades.
- 20 2. A grab bucket having interchangeable blades and means for operating them, said means comprising hinged blocks having slots in which said blades are temporarily secured, inwardly projecting lugs upon said blocks,
- a piston and links upon said lugs to said piston.
- 25 3. A grab bucket having a ring, blocks hingedly secured in said ring, each said block being provided with a slot and a blade removably secured in each said slot and means 30 for operating each said block.
4. A grab bucket having a ring, a block hingedly secured in said ring, blades removably secured in said blocks and means for operating said blocks, comprising a piston 35 and a link connecting said piston with each said block.
5. A grab bucket comprising a ring, a cylinder secured thereto and extending upward therefrom, hinge blocks supported by said 40 ring, blades in said blocks, a piston and a link from each said block to said piston, a piston rod secured to said piston and a spring for operating said piston in one direction.
- 45 Signed at the city, county and State of New York, this 23 day of November, 1923.
EDWARD P. HEALEY.