A. L. BECKETT.

BUCKET BOTTOM AND LIFT.

APPLICATION FILED JUNE 29, 1915.

1,227,032. Patented May 22, 1917.

Fig. 1.

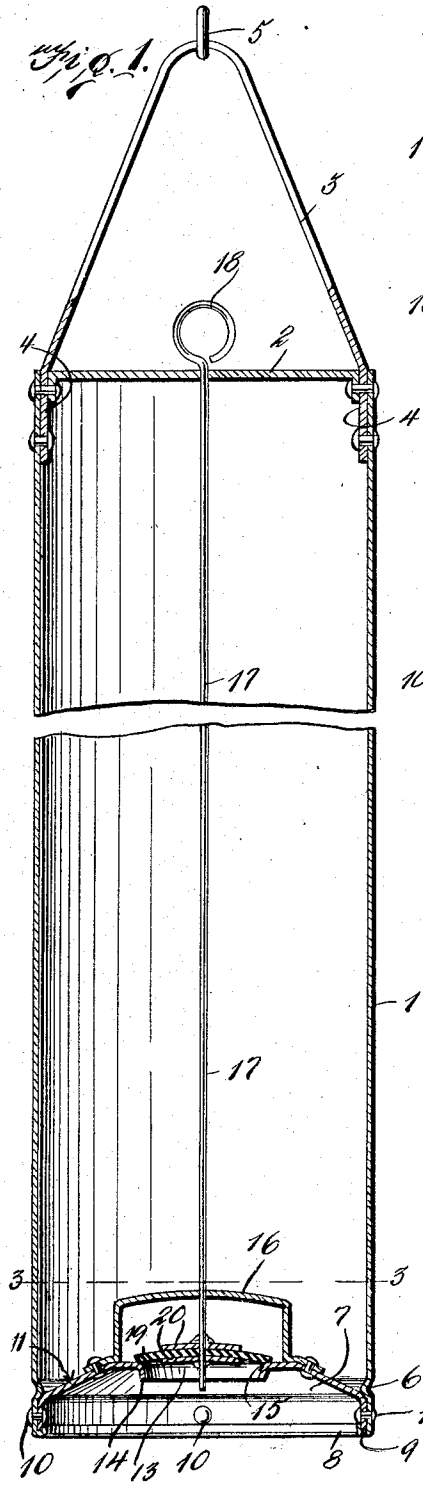


Fig. 2.

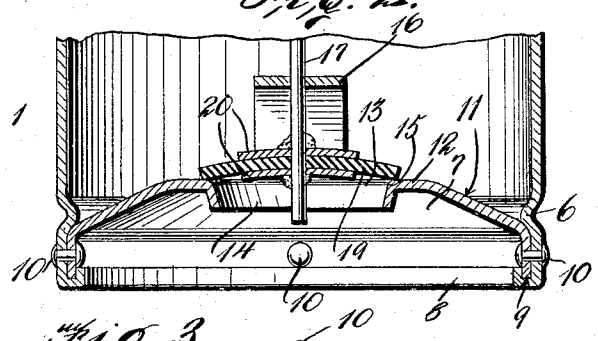


Fig. 3.

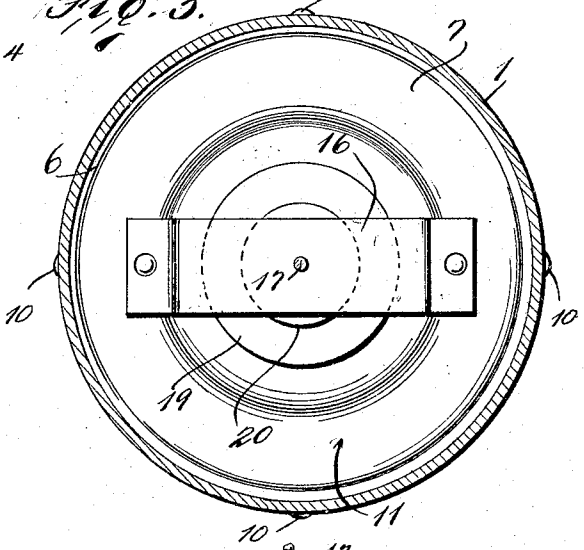


Fig. 4.

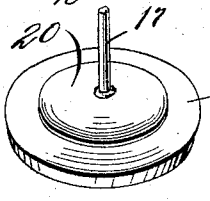
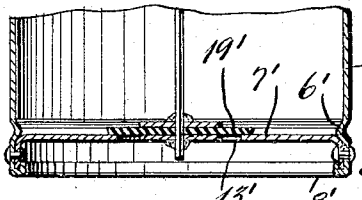


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BUCKET BOTTOM AND LIFT.

1,227,032. Specification of Letters Patent. Patented May 22, 1917.

Application filed June 29, 1915. Serial No. 37,103.

To all whom it may concern:

Be it known that I, ARTHUR L. BECKETT, a citizen of the United States of America, residing at Stigler, in the county of Haskell and State of Oklahoma, have invented certain new and useful Improvements in Bucket Bottoms and Lifts, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to well buckets and has for its object the production of a simple and efficient valve for admitting water through the bottom of a bucket and also closing the bottom of the well bucket against the escape of water after the bucket has once been filled.

Another object of this invention is the production of a simple and efficient means for closing the entrance aperture in the bottom of the bucket by means of a yieldable washer which will snugly fit around the periphery of the aperture and prevent the leakage of water therethrough after the bucket has once become filled.

With these and other objects in view, this invention consists of certain novel combinations, constructions, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings:—

Figure 1 is a vertical section through the bucket.

Fig. 2 is an enlarged sectional view, showing the construction of the bottom of the bucket.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a detailed perspective of the valve adapted to close the bottom of the bucket against the escape of water or other liquid.

Fig. 5 is a sectional view through the bottom of a well bucket, showing a modified form of construction of the bucket.

Referring to the accompanying drawing by numerals it will be seen that 1 designates the body of the bucket which is preferably formed of a cylindrical type having a transversely extending guiding bar 2 secured to the top of the bucket. A suspending loop 3 has its lower ends secured to the sides of the bucket as indicated at 4 in Fig. 1 and any suitable elevating means may be connected to the eye 5 supported by the loop 3 for the purpose of raising and lowering the bucket 1.

The bucket 1 is provided near the bottom end thereof with an inwardly projecting annular bead 6 which constitutes a stop for limiting the inward movement of the closure cap 7. The lower end of the bucket 1 is folded backwardly to constitute an inwardly extending flange 8 which is arranged in spaced relation with respect to the sides of the bucket 1, thereby constituting an annular pocket 9 around the lower end of the bucket 1 for receiving the lower edge of the closure cap 7, as illustrated clearly in Fig. 2 of the drawing.

Rivets or other suitable securing means 10 are employed for firmly securing the cap 7 in engagement with the bucket 1. It will be seen that by means of the beaded portion 6 and the inwardly extending flange 8, the cap 7 will be firmly clamped against movement, thereby relieving considerable strain from the rivets 10.

The cap 7 is provided with inclined side portions 11, which inclined side portions terminate in a flat top 12 in which an entrance aperture 13 is formed. A depending annular flange 14 is formed around the periphery of the entrance aperture 13 as illustrated clearly in Figs. 1 and 2, the inner edge of the aperture 13 being rounded as indicated at 15 in Fig. 2 for the purpose of producing a smooth edge around the inner end of the aperture 13.

A guiding bridge 16 is secured to the top of the cap 7 and straddles the aperture 13 as illustrated in Fig. 1, and a valve carrying rod 17 extends through this bridge 16 and also through the bar 2, the bar 2 and bridge 16 constituting guides for the rod 17. An eye 18 is secured to the top of the rod 17 for facilitating the lifting of the rod 17 when so desired.

A flexible disk 19 is secured to the lower end of the rod 17 between the metallic plates 20, which metallic plates 20 are soldered or otherwise secured to the rod 17 for the purpose of firmly clamping the flexible disk 19 upon the rod 17.

From the foregoing description it will be seen that a very simple and efficient means has been produced for efficiently supporting a flexible washer 19 and firmly gripping the same so as to conveniently and firmly hold the washer 19 in engagement with the rod 17.

It should further be understood that a very simple and efficient means has been produced for firmly clamping the cap 7 in engagement with the lower end of the

bucket for preventing the cap from being accidentally detached from the bottom of the bucket. It should be understood that the bucket is preferably formed of sheet metal such as galvanized iron or other suitable material which may be found convenient.

In Fig. 5 there is shown an embodiment of the invention wherein the bucket 1^a is provided with a beaded portion 6′ and has its lower end provided with a flange 8′ for constituting a pocket for receiving a cap 7′. The cap 7′ as illustrated in Fig. 5 is provided with a flat top portion as clearly illustrated, having an aperture 13′ formed therein normally closed by means of the flexible disk 19′ in a similar manner as that previously described with reference to the construction shown in Figs. 1 and 2 of the drawing.

From the foregoing description, it will be seen that a very simple and efficient metal bottom has been produced for a well bucket which will be securely and efficiently held in engagement with the well bucket for controlling the admission of water into and discharge of water from the bucket.

It should also be understood that as the bucket is let down into the well, the water will force the valve upwardly and permit the bucket to become filled. Upon the upward movement of the bucket, however, the pressure of the water will cause the valve to become seated and thereby close the opening or aperture 13 and prevent the further entrance or discharge of water into and from the bucket 1. When the bucket 1 has been brought to the surface or top of the well, the water may be readily discharged from the lower end of the bucket by the operator placing his finger through the eye 18 and pulling upwardly upon the rod 17, thereby removing the valve from its seat and permitting the discharge of water from the aperture 13. It should be understood that the bridge portion 16 will constitute a means for limiting the upward movement of the valve and at the same time hold the valve in such a position as to permit the valve to become readily seated.

It should be further understood that the present form of bucket or bucket bottom may be used in connection with any style or class of tubular bucket used in bored or drilled wells, without departing from the spirit of the invention.

It should be understood that in actual use the bucket is often let down to the very bottom of the well and by its weight forcing the water upwardly through the hole in the bottom, it forms a suction for drawing small gravel, particles of clay or other substances into the aperture, this would allow the collection of gravel and other particles to become seated upon the edge of the aperture but owing to the flexibility of the valve and the construction of the inwardly inclined flange, a means has been produced for cleaning the aperture and freeing the same from any obstruction which would cause the leaking of the bucket around the valve should a pebble or other means be seated upon the valve seat.

What I claim is:—

A well bucket comprising a casing, a one piece bottom secured thereto, said bottom provided with a straight upwardly inclined side wall terminating in a horizontally extending platform provided with a centrally located discharge aperture having a depending flange extending around the periphery thereof, a flexible valve adapted to sit upon said horizontally extending platform of said bottom and adapted to be cupped by downward movement of the valve for sweeping obstructions from said horizontally extending portion when a load is applied to said valve.

In testimony whereof I hereunto affix my signature.

ARTHUR L. BECKETT.

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