I. SWARTZ.

BAILER.

APPLICATION FILED JAN. 26, 1921.

1,385,760. **Patented July 26, 1921.**

2 SHEETS—SHEET 1.

Fig. 3.

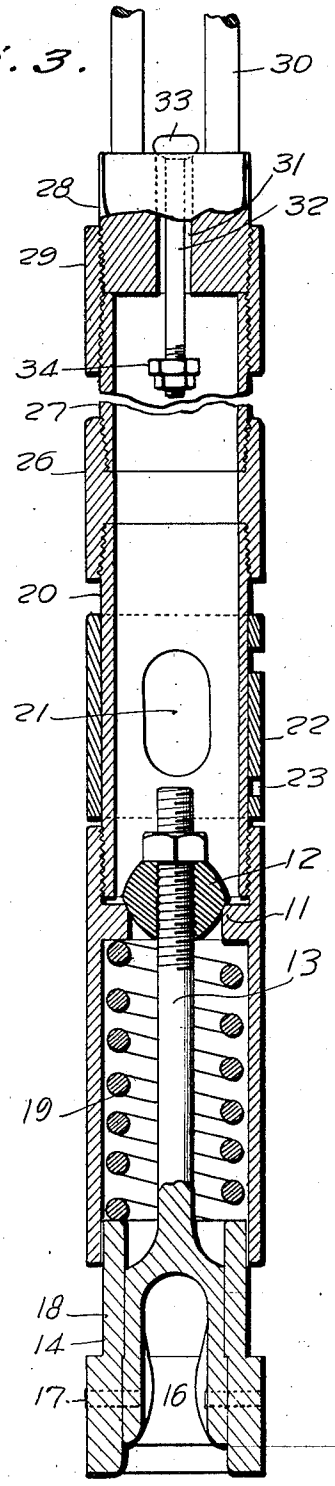


Fig. 2.

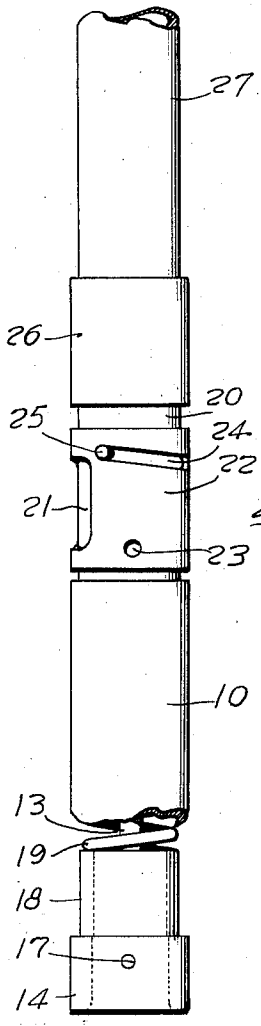
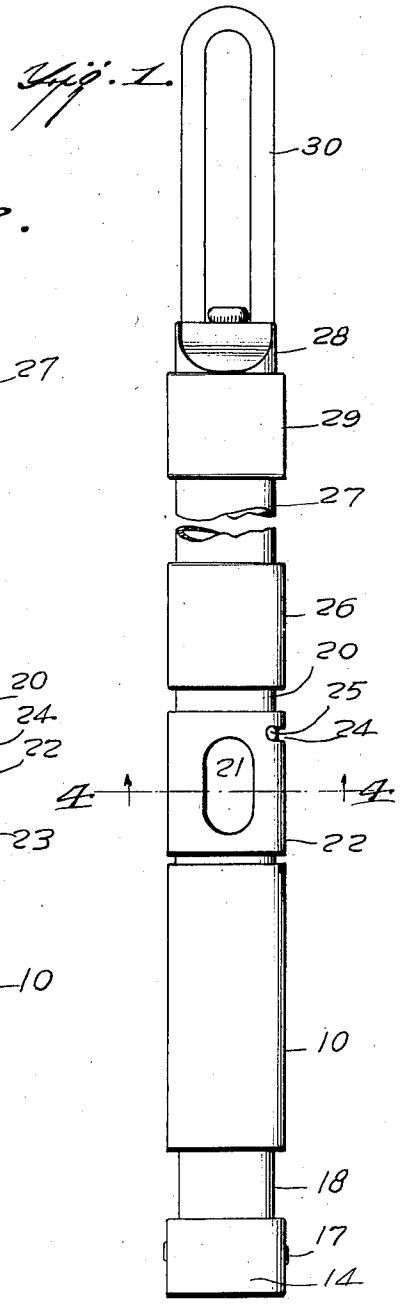


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 4.

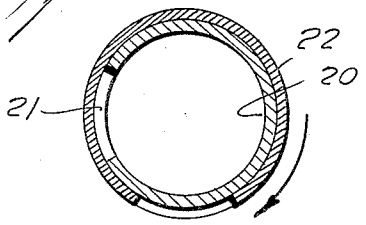


Fig. 5.

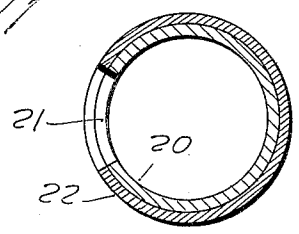


Fig. 6.

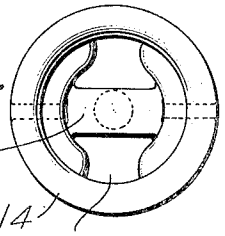


Fig. 7.

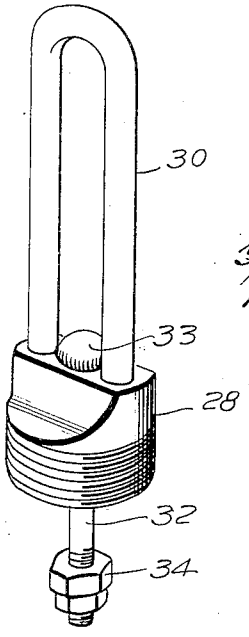


Fig. 8.

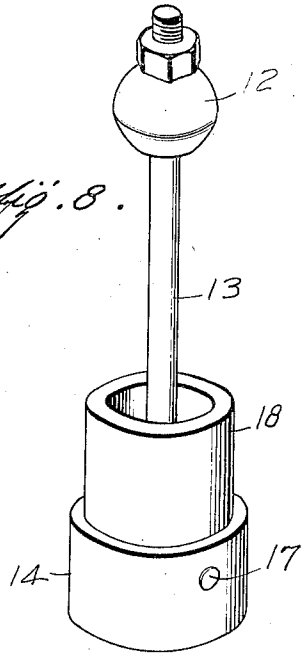
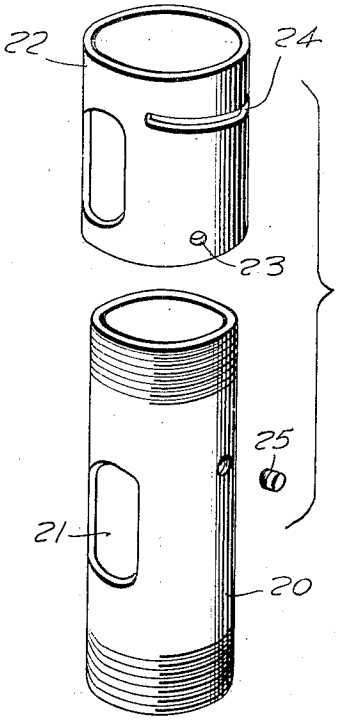


Fig. 9.



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UNITED STATES PATENT OFFICE.

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BAILER.

1,385,760. Specification of Letters Patent. Patented July 26, 1921.

Application filed January 26, 1921. Serial No. 440,067.

To all whom it may concern:

Be it known that I, IRA SWARTZ, a citizen of the United States, residing at Breckenridge, in the county of Stephens and State of Texas, have invented certain new and useful Improvements in Bailers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to bailers for deep wells, such as oil wells for instance, and has for an object to provide a bailer of improved structure having improved features and units embodying novel construction as well as economy of manufacture and use.

A further object of the invention is to provide a bailer having an improved delivery gate with improved means for actuating the closure for the gate when the bailer is withdrawn.

A further object of the invention is to provide the several structural units which combined enter into the organized structure of the bailer.

With these and other objects in view, the invention comprises certain novel elements, units, parts, combinations, functions and arrangements as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a view of the bailer in side elevation, being broken to indicate indeterminate length;

Fig. 2 is a view of the bailer in side elevation, a part being broken away to show the valve actuating spring and foot;

Fig. 3 is a longitudinal diametrical sectional view;

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a transverse sectional view taken on the plane of Fig. 4 with the discharge gate open;

Fig. 6 is a view in end elevation of the normally lower end of the bailer;

Fig. 7 is a perspective view in detail of the bail;

Fig. 8 is a detail perspective view of the valve and foot structure, and

Fig. 9 is a perspective view of the two parts of the discharge gate and its closure separated.

Like characters of reference indicate corresponding parts throughout the several views.

The improved bailer which forms the subject matter of this application comprises a cylinder 10 having an annular shoulder 11 (see Fig. 3) which forms the seat for a valve 12. The valve 12 is carried upon a valve stem 13 which extends downwardly and is rigidly attached to the foot 14. As shown at Figs. 3 and 6 the foot 14 is in the form of a spider having passages 15 with a cross-bar 16, which is preferably integral with the stem 13 and is rigidly secured to the foot in any approved manner, as by the rivets 17. The foot is preferably reduced in radius, as indicated at 18, to provide the proper diameter to slide within the cylinder 10, as indicated more particularly at Fig. 3, and a spring 19 is provided within such cylinder embracing the stem 13 to hold the valve 12 normally to its seat 11.

Above the cylinder 10, a nipple 20 is secured in any approved manner, as by the threaded connection indicated, said nipple being provided with an opening 21 in the side, as indicated more particularly at Figs. 3 and 9, although shown in other of the figures. About the nipple 20 a sleeve 22 is employed rotatable thereon, such rotation being manually accomplished by the use of a wrench or spanner engaging the sleeve in any approved manner, as by the provision of the perforation 23 for such purpose. The sleeve is also provided with a slot 24 and a pin 25 is inserted through such slot and engages the nipple 20.

Upon the upper end of the nipple 20 a coupling 26 is employed, above which a pipe 27 extends to any height desired to produce a barrel of any length and capacity that the use of the device may make necessary. At the upper end of the barrel 27 a head block 28 is attached in any approved manner, as by the use of a coupling 29, and to the head block is secured a bail 30 for the attachment of the cable. The head block is provided with a valve opening 31 within which is located a valve stem 32 carrying a valve 33 at its upper end, adapted to close the vent 31. A limiting nut 34 is provided on the lower end of the valve stem 32 for the purpose of preventing displacement. The valve 33 is an air valve for educting air from the barrel 27, as the liquid and sand being bailed fill the barrel by the vertical reciprocation of the bailer.

In operation it will be understood that the bailer is lowered into the well by the cable attached to the bail 30 and after reaching the bottom or the material to be bailed,

is "jumped" by the use of necessary appliances attached to the cable above the ground. The impingement of the foot 14 upon the bottom and the momentum of the structure above causes the spring 19 to yield, opening the valve 12 and forcing the water and sand into the barrel 27. The valve 33 opens as may be necessary to permit the inflow of the material being bailed, such jumping being continued until the barrel has been filled full, or until the required, or desired volume has been introduced.

The implement is then withdrawn from the well in the usual well known manner and the discharge gate opened by rotating the sleeve 22 upon the nipple 20 until the opening in such sleeve 22 registers with the opening 21 in the nipple 20 whereupon the contents will be discharged from such opening. When the contents has been discharged the device will again be closed and put in operative position by the rotation of the sleeve 22 in the opposite direction to close the opening 21.

What I claim to be new is:

1. A bailer comprising a cylinder, a valve stem mounted in the cylinder, a valve carried by the stem and adapted to close the upper end of the cylinder, a foot carried by the stem and slidable in the cylinder, a yielding member within the cylinder adapted to hold the valve normally yieldingly closed, a barrel communicating with the cylinder and positioned to receive material passing by the valve, and an air valve communicating with the barrel.

2. A bailer comprising a cylinder having an annular shoulder adjacent its top, a valve stem mounted within the cylinder, a valve carried by the stem proportioned and positioned to co-act with the annular shoulder as a valve seat, a foot rigidly secured to the stem and slidable within the cylinder, a spring mounted within the cylinder adapted to hold the valve yieldingly to the seat, a barrel located above the cylinder and communicating therewith and positioned to receive material passing by the valve, an air valve for permitting eduction of air from the barrel, and means for attaching a lifting cable to the barrel.

3. A bailer comprising a cylinder, a valve located adjacent the top of the cylinder and adapted to close the upper end, a valve stem extending downwardly from the valve through the cylinder and rigidly secured to a foot slidable within the cylinder, a spring adapted to hold the valve normally yieldingly to the seat, a barrel erected above the cylinder and communicating therewith and provided with a side opening, a sleeve mounted to rotate upon the barrel and provided with an opening proportioned to at times register with the opening of the barrel, and means to attach a lifting cable to the structure.

4. A bailer comprising a tubular member having a side opening, a sleeve mounted to rotate upon the tubular member and provided with an opening proportioned to at times register with the opening in the tubular member and at other times to close said opening, a valved induction member secured to the lower end of the tubular member, an outlet valve at the upper end of said tubular member, and means to attach a lifting cable to said structure.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

IRA SWARTZ.

Witnesses:
W. W. McCallie,
T. Bass.