May 22, 1934.

C. R. EDGECOMB

1,959,660

DUMPING BAILER

Filed Nov. 18, 1933

Fig. 1.

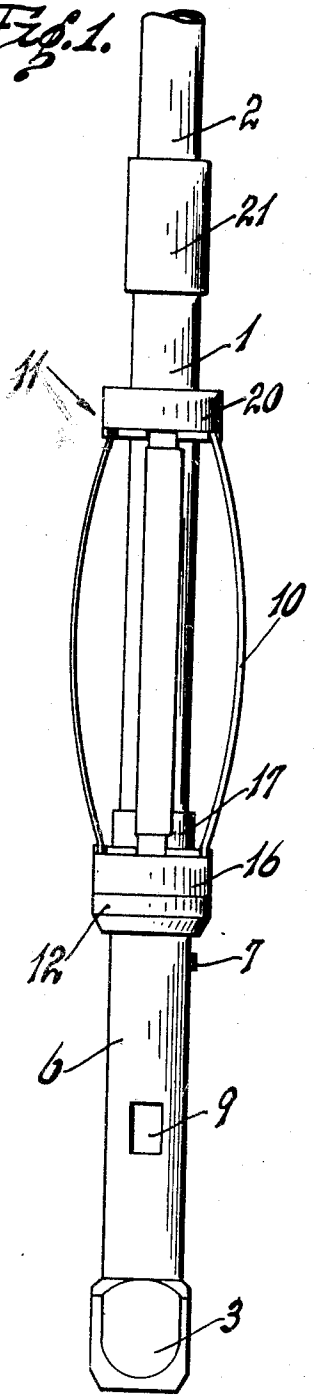


Fig. 2.

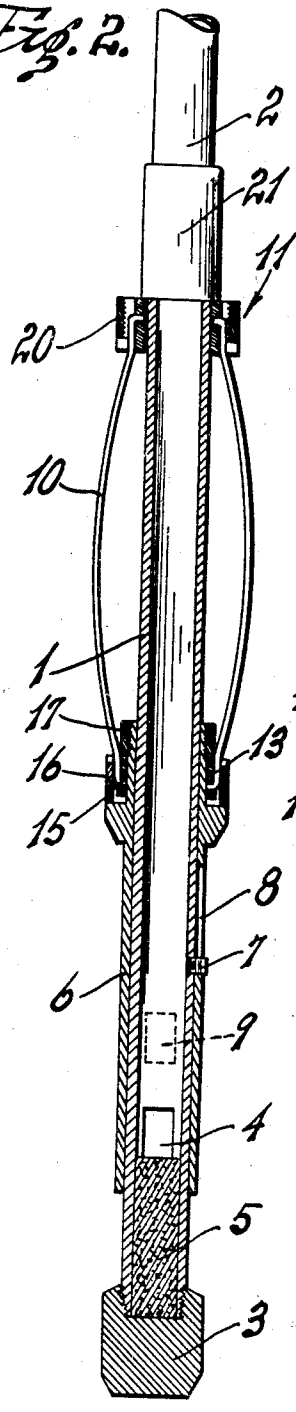


Fig. 3.

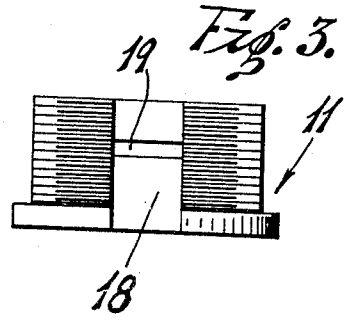
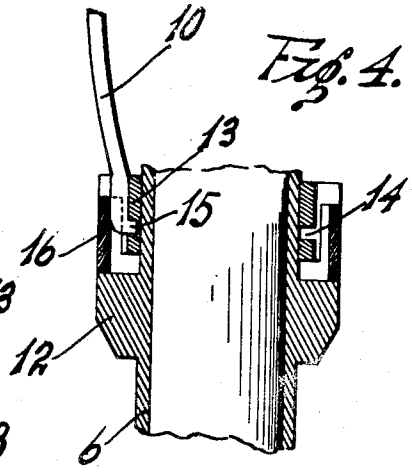


Fig. 4.



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Patented May 22, 1934

1,959,660

UNITED STATES PATENT OFFICE

1,959,660

DUMPING BAILER

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Application November 18, 1933, Serial No. 698,665

7 Claims. (Cl. 166—19)

This invention relates to a dumping bailer whereby a quantity of cement can be released in a bored hole at any desired depth.

An object of my invention is to provide a bailer, the outlet of which is held in closed position while the bailer is moved downwardly in the well, and which is opened to release cement by a short upward pull of the tubing.

Another object is to provide a novel bailer, the spring arms of which are removably mounted, and are easily and quickly replaced.

A further object is to provide a bailer which can be both opened and closed while it is in the well.

Still another object is to provide a novel bailer which is simple in construction and inexpensive to manufacture.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing

Figure 1 is a side elevation of my bailer.

Figure 2 is a longitudinal sectional view of the same.

Figure 3 is a side elevation of the upper collar.

Figure 4 is an enlarged fragmentary longitudinal sectional view of the lower collar.

Referring more particularly to the drawing, the numeral 1 indicates the inner tubing which is attached to a plurality of stands of tubing 2. The tubes 1 and 2 are filled with cement in the usual and well known manner, i. e., the quantity of cement will not only fill the tube 1 but will also fill some of the stands 2. The tubing 1 is closed at the bottom by a plug 3 which screws onto the bottom thereof. A plurality of outlet ports 4 are provided in the tube 1 adjacent the lower end thereof. The space between the plug 3 and the bottom of the port 4 is filled with a plug 5.

A sleeve 6 is slidably mounted on the tube 1 and has a limited longitudinal movement. A pin 7 projects outwardly from the tube 1 into a slot 8 in the sleeve, thereby holding the sleeve against rotation relative to the tube 1. The sleeve 6 is provided with a plurality of openings 9 which are adapted to match the ports 4 when the tube is in the lowermost position. The tube is limited in its downward movement by the plug 3. When the openings 4 and 9 are in juxtaposition, cement will flow from the bailer.

When the tube is being run into the hole, the sleeve 6 is held in raised position and the ports 4 and 9 are out of registry by means of the following arrangement: A plurality of spring arms 10 are attached to the upper end of the sleeve 6 and to a collar 11 which encircles the tube 1 and is slidable thereon. These spring arms engage the side of the hole or the casing, and thus hold the sleeve 6 in the position shown in Fig. 2. When the point is reached where it is desired to place the cement, the tubing is pulled upwardly, and due to the frictional engagement of the arms 10 with the side of the hole or the casing, the sleeve 6 is held stationary. When the sleeve strikes the plug 3, the ports 4 and 9 will be in registry and cement will pour from the bailer.

The arms 10 are detachably mounted to the upper end of the sleeve 6 to the collar 11 in the following manner: Considering, first, the attachment to the sleeve 6, an annular shoulder 12 is formed adjacent the upper end of the sleeve. A ring 13 closely encircles the upper end of the sleeve 6 and is provided with a plurality of notches 14. The lower ends of each of the arms 10 are bent inwardly, as shown at 15, said bent portions extending into the notches 14. A ferrule 16 bears against the shoulder 12 and encircles the ring 13, thus holding the lower ends of the arms 10 in position. A nut 17 screws onto the upper end of the sleeve 6 against the ring 13, thus holding the ring within the ferrule 16.

The collar 11—which holds the upper ends of the arms 10, is formed with a plurality of vertical grooves 18. A notch 19 is formed in each of the grooves 18 to receive the inturned ends of the arms 10.

A nut 20 screws onto the collar 11 over the upper ends of the arms 10 to securely hold said arms in the grooves 18. It will be evident that by unscrewing the nuts 17 and 20, the arms 10 can be quickly and easily removed, and replaced.

A coupling 21 at the upper end of the tube 1 is engaged by the collar 11 in the raised position of the tube 6 to limit the upward movement of said tube.

Having described my invention, I claim:

1. A dumping bailer comprising a tube, said tube having an outlet port therein, a sleeve surrounding said tube and slidable thereon, said sleeve having a hole therein adapted to move into and out of registry with said port, a collar slidably mounted on the tube, and yieldable arms attached to said sleeve and collar, said arms frictionally engaging the wall of the hole.

2. A dumping bailer comprising a tube, said tube having an outlet port therein, a sleeve surrounding said tube and slidable thereon, said

sleeve having a hole therein adapted to move into and out of registry with said port, a collar slidably mounted on the tube, spring arms attached to said sleeve and collar, said arms frictionally engaging the wall of the hole, and means engaging the sleeve whereby it is held against rotation relative to the tube.

3. A dumping bailer comprising a tube closed at the bottom and open at the top, said tube having a port therein adjacent the lower end, a sleeve slidably mounted on the tube, said sleeve having a hole therein adapted to move into and out of registry with said port, means limiting the longitudinal movement of said sleeve relative to the tube, a collar slidably mounted on the tube, and spring arms removably secured to said collar and to the sleeve.

4. A dumping bailer comprising a tube, said tube having an outlet port therein, a sleeve surrounding said tube and slidable thereon, said sleeve having a hole therein adapted to move into and out of registry with said port, a collar slidably mounted on the tube, a ring surrounding the sleeve, said ring having slots therein, a nut screwed into the sleeve against the ring, spring arms, the lower end of each arm being bent to enter one of the slots, a ferrule fitting around the lower ends of the spring arms, said collar having grooves formed therein, the upper end of each of the arms fitting into a groove, and a nut screwed onto the collar whereby the upper ends of the arms are held in said collar, said arms engaging the walls of the well.

5. A dumping bailer comprising a tube, said tube having an outlet port therein, a sleeve surrounding said tube and slidable thereon, said sleeve having a hole therein adapted to move into and out of registry with said port, a collar slidably mounted on the tube, a ring surrounding the sleeve, said ring having slots therein, a nut screwed into the sleeve against the ring, spring arms, the lower end of each arm being bent to enter one of the slots, a ferrule fitting around the lower ends of the spring arms, said collar having grooves formed therein, the upper end of each of the arms fitting into a groove, a nut screwed onto the collar whereby the upper ends of the arms are held in said collar, said arms engaging the walls of the well, said sleeve having a slot formed therein and a pin projecting from the tube into the slot whereby the sleeve is held against rotation relative to the tube.

6. A dumping bailer comprising a tube closed at the bottom and open at the top, said tube having a port therein adjacent the lower end, a sleeve slidably mounted on the tube, said sleeve having a hole therein adapted to move into and out of registry with said port, means limiting the longitudinal movement of said sleeve relative to the tube, a collar slidably mounted on the tube, a ring surrounding the sleeve, said ring having slots therein, a nut screwed into the sleeve against the ring, spring arms, the lower end of each arm being bent to enter one of the slots, a ferrule fitting around the lower ends of the spring arms, said collar having grooves formed therein, the upper end of each of the arms fitting into a groove, and a nut screwed onto the collar whereby the upper ends of the arms are held in said collar, said arms engaging the walls of the well.

7. A dumping bailer comprising a tube closed at the bottom and open at the top, said tube having a port therein adjacent the lower end, a sleeve slidably mounted on the tube, said sleeve having a hole therein adapted to move into and out of registry with said port, means limiting the longitudinal movement of said sleeve relative to the tube, a collar slidably mounted on the tube, a ring surrounding the sleeve, said ring having slots therein, a nut screwed into the sleeve against the ring, spring arms, the lower end of each arm being bent to enter one of the slots, a ferrule fitting around the lower ends of the spring arms, said collar having grooves formed therein, the upper end of each of the arms fitting into a groove, a nut screwed onto the collar whereby the upper ends of the arms are held in said collar, said arms engaging the walls of the well, said sleeve having a slot formed therein, and a pin projecting from the tube into the slot whereby the sleeve is held against rotation relative to the tube.

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