

L. C. SANDS.
 BAILER FOR OIL AND LIKE WELLS.
 APPLICATION FILED OCT. 1, 1909.

951,408.

Patented Mar. 8, 1910.

Fig. 3.

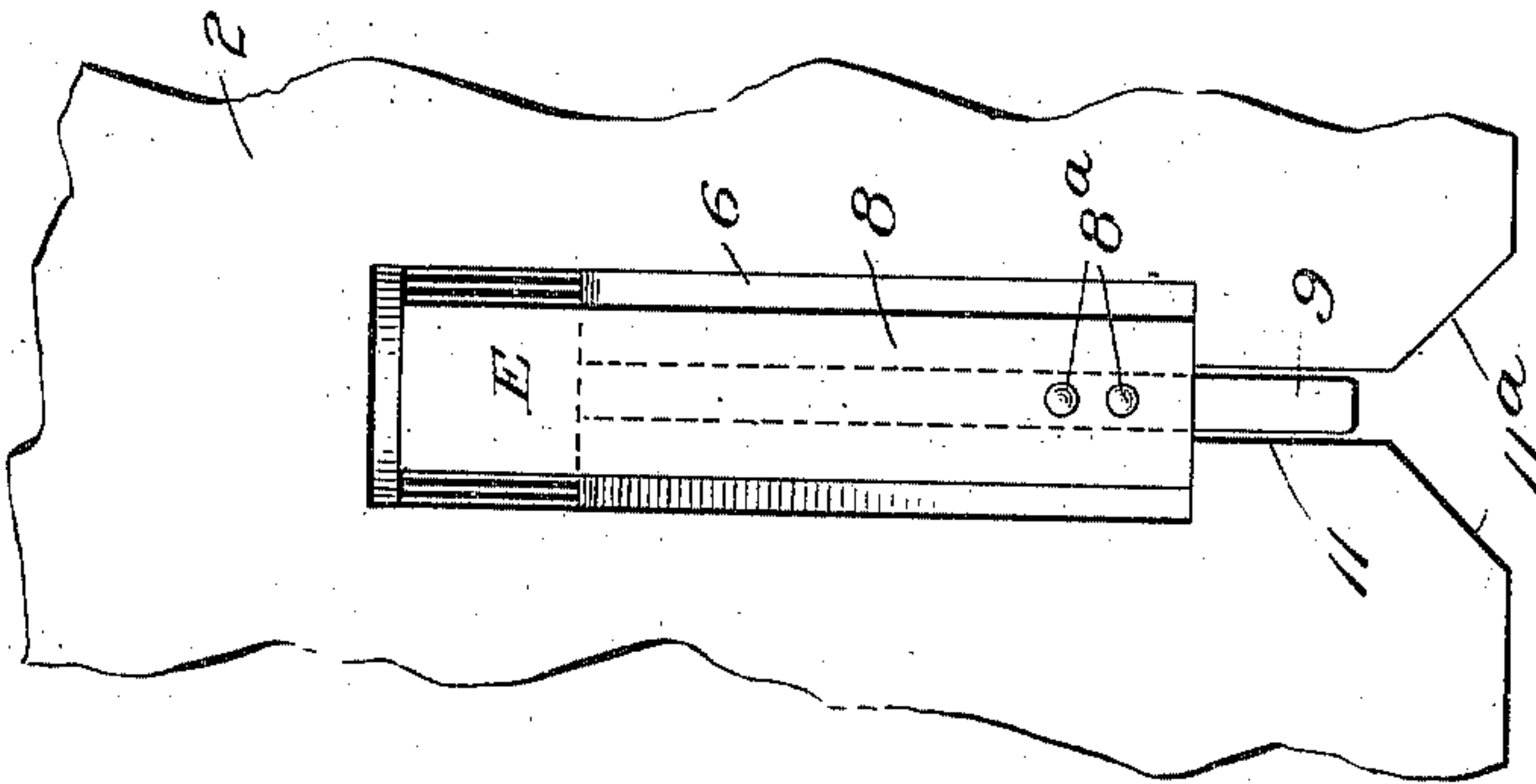


Fig. 2.

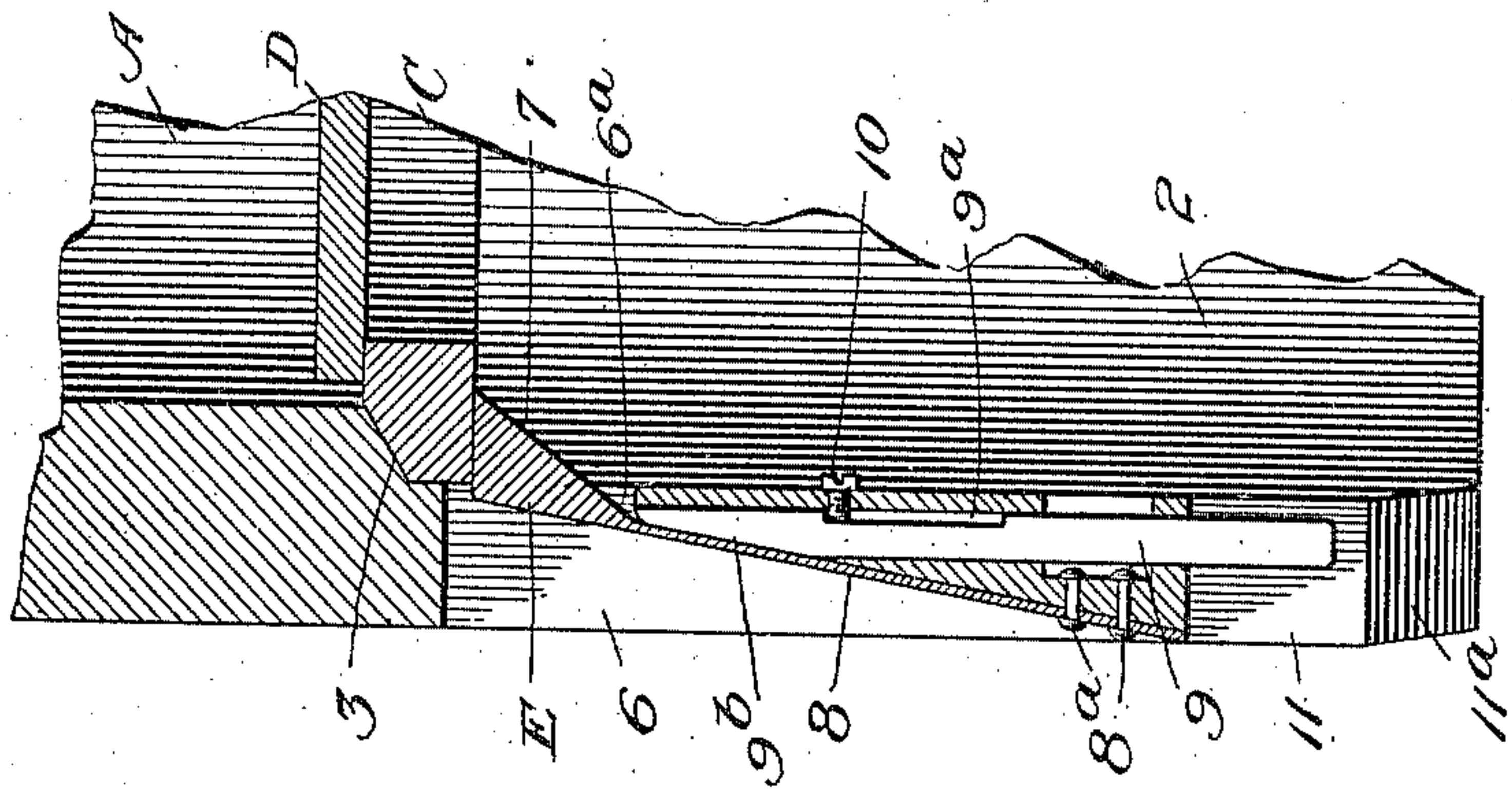
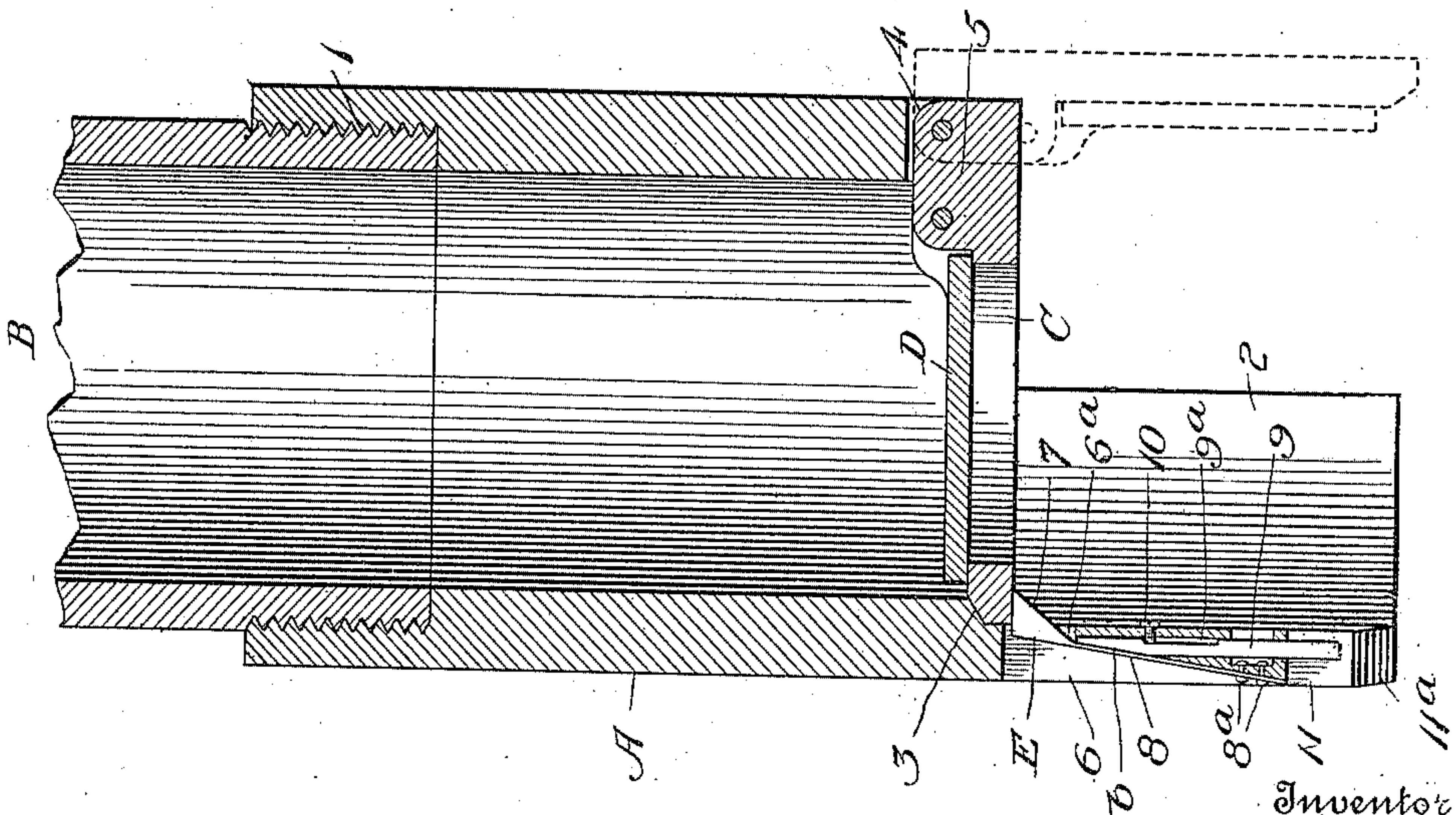


Fig. 1.



Witnesses

G. P. Ritter
Wm. C. Dyre

Louis C. Sands.

By

G. P. Ritter, Jr.

Attorney

UNITED STATES PATENT OFFICE.

LOUIS C. SANDS, OF PITTSBURG, PENNSYLVANIA.

BAILER FOR OIL AND LIKE WELLS.

951,408.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed October 1, 1909. Serial No. 520,453.

To all whom it may concern:

Be it known that I, LOUIS C. SANDS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bailers for Oil and Like Wells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the construction of that class of devices commonly termed bailers or sand pumps employed in well drilling for the removal of sand, &c., from the well, and for like purposes, and it especially relates to that class of such devices wherein there is a drop-bottom valve seat, which requires to be tripped for the discharge of the bailer contents. In this class of devices, the drop-bottom valve seat has heretofore been sustained in position by a spring catch or equivalent means that requires the operator to manipulate the catch with a suitable tool after the bailer has been lowered into the discharge box of the derrick, and this, besides being an arduous task, necessitates a nearness of the operator to the bailer at the time of the discharge of its load that frequently subjects the operator to disagreeable consequences.

The object of the present invention is the provision of means for tripping the drop-bottom valve seat after the bailer has been lowered into the discharge box of the derrick without requiring the operator to approach unpleasantly near the bailer.

To this end the main feature of my invention involves the combination with a bailer having a drop-bottom valve seat and a catch for sustaining the drop-bottom of a trip member for the catch so arranged with relation to the catch and drop bottom as to be actuated by means located in the discharge box of the derrick.

There are other, minor, features of invention, residing in particular combinations, and elemental construction, all as will hereinafter more fully appear.

In the drawings chosen for the purpose of illustrating my invention, the scope of which will be pointed out in the claims, Figure 1 is a vertical central section of my improved bailer showing the drop-bottom or hinged valve seat, and valve, the spring

catch for securing the valve in operative position, and the trip-rod or trip-bolt for tripping the catch when the bailer is to be unloaded. Fig. 2 is an enlarged sectional detail view of the catch, trip-rod, and a portion of the bailer and its drop-bottom valve seat. Fig. 3 is a detail view, in elevation of the spring catch, and portions of the trip-rod and leg of the bailer.

Like symbols refer to like parts wherever they occur.

I will now proceed to describe my invention more fully so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the bailer which may be of any desired length and is threaded at its upper end, as at 1, for the attachment of a section of tubing B which will be supplied with the usual sand pump piston or plunger. Extending down from the bailer A is a leg 2, or pendent portion, which serves to support the bottom of the bailer above the bottom of the well when lowered therein, and above the bottom of the discharge box of the derrick when the load of the bailer is to be discharged, and in this latter position permits the drop of the hinged bottom of the bailer. The lower end of the bailer is beveled out as at 3 to form a seat for the drop bottom, and slotted or recessed as at 4 to permit of the hinging of the bottom of the bailer.

C is the drop-bottom of the bailer which is beveled to fit the seat 3 therefor on the bailer and is provided with a lug 5 whereby it is hinged to the bailer, and the clack valve is hinged to the drop bottom. This drop-bottom is of annular form and constitutes the seat of an upwardly opening clack or flap valve D which is hinged to the lug 5 on the upper face of the drop bottom C.

The leg or downward extension 2 of the bailer is recessed as at 6 for the reception of a spring catch E which projects through a slot 6^a in the leg 2 beneath the drop bottom of the bailer and serves to support said bottom and valve-seat in an elevated or operative position. This catch E has its inner face beveled as at 7 and is provided with a flat or leaf spring extension 8 by means of which and suitable rivets 8^a it is secured in operative position in the recess 6 of the leg 2, with the catch E projecting through the slot 6^a in the leg.

Beneath and in line with the catch E the leg 2 is bored out, or a channel is otherwise formed therein for a sliding trip-rod 9 which is held in position in the leg by means of a screw 10, the end of which enters a groove 9^a in the rod 9. The upper end of this trip-rod 9 is preferably beveled as at 9^b to co-act with the spring 8 and the beveled inner face 7 of catch E. The lower end of the leg 2 is slotted as at 11 to permit the entrance of a projection, or a piece of bar iron which is set in a vertical plane in the discharge box of the derrick floor, by means of which the trip rod 9 is actuated when the bailer is lowered into the discharge box. To facilitate the engagement of the projection last noted with the trip-rod 9, I prefer to cause the walls of slot 11 to diverge as at 11^a so as to form a V-shaped opening in the lower end of the leg 2 for the entrance of the vertically placed bar or projection in the discharge box of the derrick.

The construction being substantially such as hereinbefore noted, the operation of the bailer will be as follows: The drop-bottom and valve-seat C being raised and secured in position by the catch E, and the clack valve down on the valve seat, as indicated in full lines Fig. 1, the bailer is lowered into the well until its leg 2 rests on the bottom, whereupon when a partial vacuum is created in the bailer in the usual manner, the clack valve will rise and permit the bailer to fill. When the tube has filled and is raised the clack valve E will close and the bailer can be drawn from the well and lowered into the discharge box of the derrick so that a vertically disposed bar or projection therein will enter the slot 11 in the leg 2 of the bailer and force up the trip-rod 9 which in turn forces back the catch E and releases the drop-bottom and valve-seat C permitting the drop-bottom to swing down into the position indicated in dotted lines, Fig. 1, thus effecting the discharge of the contents of the bailer without requiring any

direct manipulation by or exposure of the operator.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination in a bailer, of a body portion, a perforate automatically movable drop-bottom constituting a valve seat, a valve secured to the drop-bottom, a catch for supporting the drop-bottom, and a trip device for retracting the catch which supports the drop-bottom to permit the automatic descent of said drop-bottom.

2. The combination in a bailer, of a body portion having a pendent extension below the bottom thereof, a drop-bottom constituting a valve seat, a valve therefor, a catch on the pendent extension for supporting the drop-bottom, and a trip-rod on the pendent extension for retracting the catch which supports the drop bottom.

3. The combination in a bailer of a body portion having a leg or pendent extension slotted at its lower end, an annular drop-bottom constituting a valve seat, a clack valve therefor, a catch for supporting the drop-bottom, and a sliding trip-rod arranged on the leg or pendent extension for retracting the catch which supports the drop-bottom.

4. The combination in a bailer, of a body portion having a pendent portion provided with a slot having divergent walls, a catch secured to said pendent portion, a trip-rod for actuating the catch said rod alined with said slot and catch, a perforate drop-bottom supported by said catch and which constitutes a valve seat, and a valve for said valve seat.

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

LOUIS C. SANDS.

Witnesses:

A. G. HEGGEM,
G. P. RITTER.