

W. H. LARKIN.
PUMP FOR WELLS.
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Patented Nov. 2, 1909.

938,878.

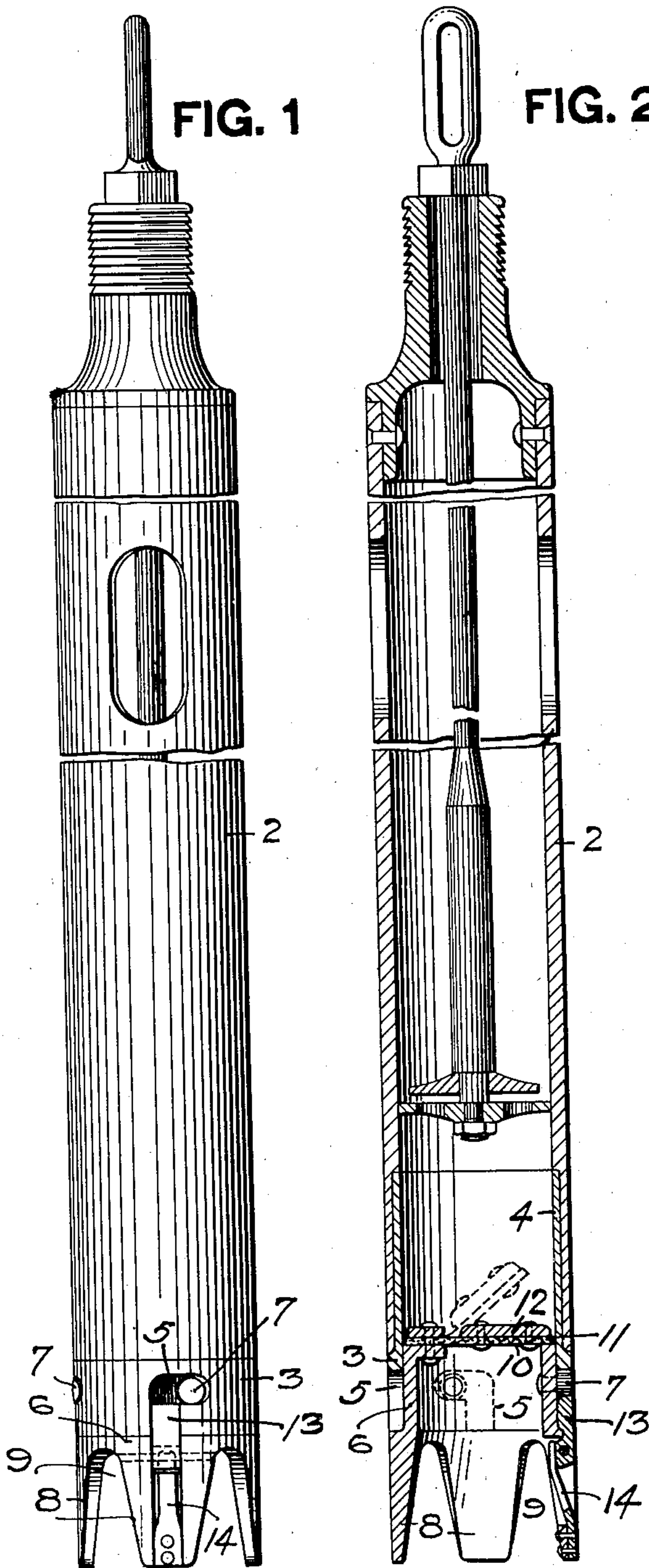


FIG. 3

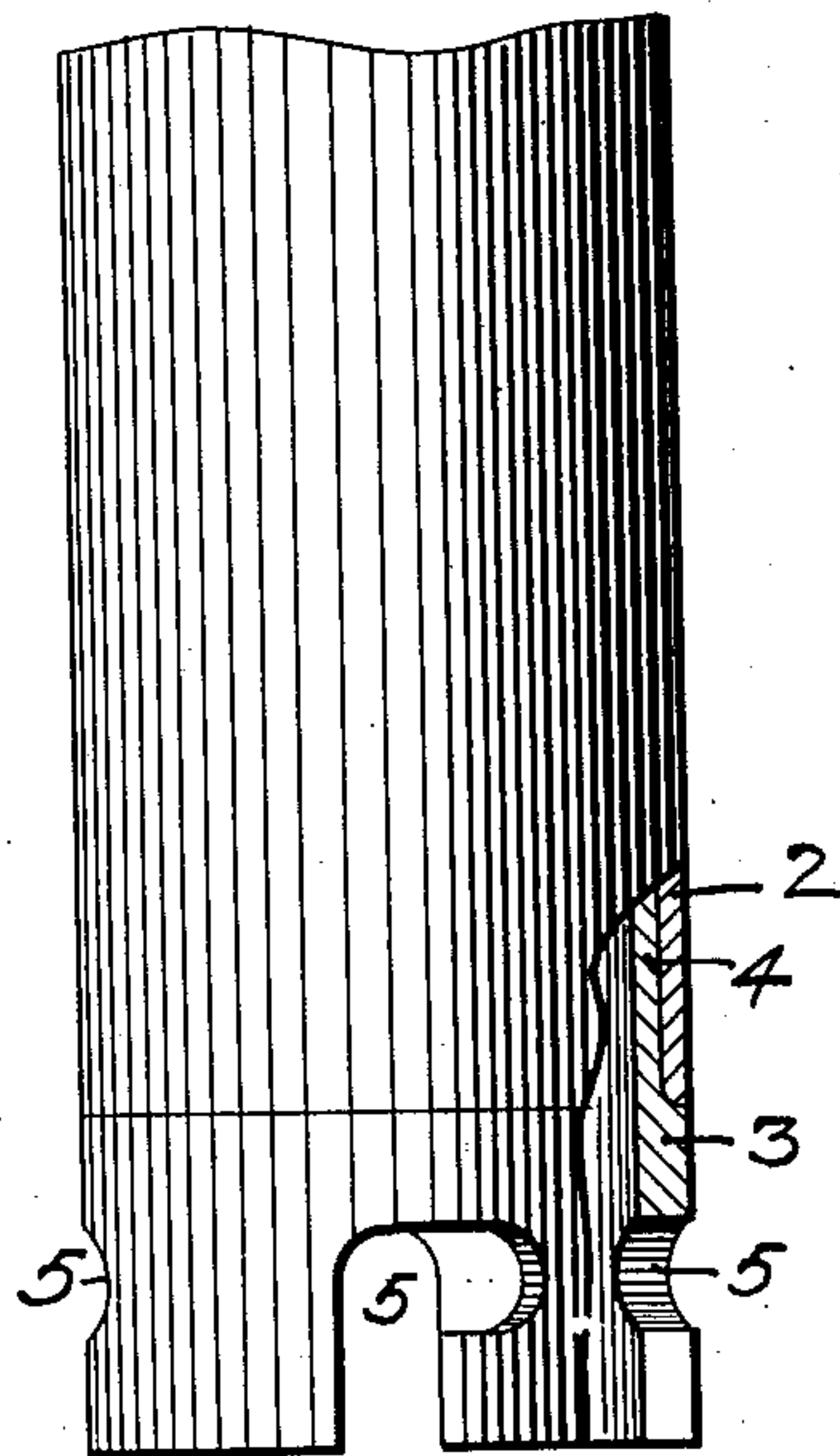
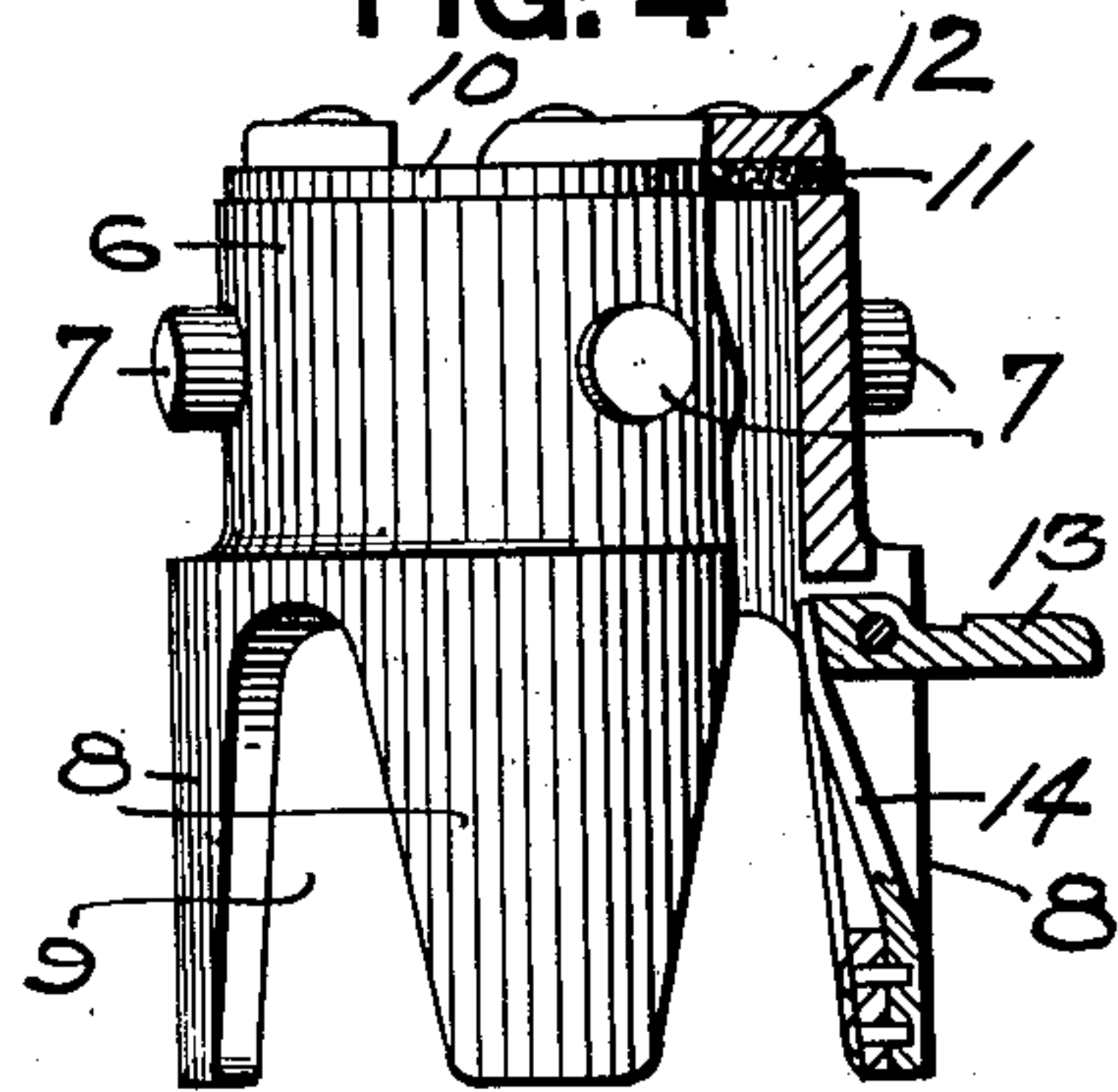


FIG. 4



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM H. LARKIN, OF BUTLER, PENNSYLVANIA.

PUMP FOR WELLS.

938,878.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed June 4, 1908. Serial No. 436,615.

To all whom it may concern:

Be it known that I, WILLIAM H. LARKIN, a resident of Butler, in the county of Butler and State of Pennsylvania, have invented a new and useful Improvement in Pumps for Wells; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to sand pumps, or bailers, as they are sometimes termed, such as are employed in connection with the drilling of oil and like wells.

The invention relates more particularly to that class of pump or bailer in which a long tube or cylinder is employed with a piston therein for creating the suction, and which is provided at the bottom with a removable member containing a valve and valve seat, said member being releasably connected with the cylinder so that it may be readily detached from the cylinder to allow for the discharge of the contents of the pump when raised to the top of the well without the necessity of inverting the pump to discharge the sand, gravel and sediment contained therein.

The object of my present invention is to provide a pump of this character free from shoulders or projections at the point where the collar is secured to the pump cylinder, all the parts being flush with the barrel of the pump so that there are no projecting parts for the rock or sand to lodge on, and prevent the easy withdrawal of the pump from the well.

To these ends my invention comprises the novel features hereinafter set forth and claimed.

Referring to the drawings Figure 1 is a side elevation of my improved pump; Fig. 2 is a vertical section thereof; Fig. 3 is an enlarged sectional view of the lower end of the pump; and Fig. 4 is a perspective view of the collar removed.

The cylinder or barrel 2 which contains the pump mechanism may be of any desired length and this length may be increased over that of the ordinary sand pump as it is not necessary to invert the cylinder in my pump after the same has been filled with water and sediment taken from the well, such pumps having been made of different lengths from 25 to 40 feet. At the lower end of the pump barrel 2 is the sleeve or collar 3 which is preferably shrunk within the cylinder, the

neck 4 of said collar projecting up into the barrel and said collar being flush with the outer walls of said barrel. Formed within the collar 3 are the bayonet slots 5 arranged at suitable intervals around said collar. A ring member 6 is provided with the studs 7 which are adapted to engage the bayonet slots 5. This ring 6 is provided with the legs 8 with the intervening openings 9 to permit of the entrance of the sand and water to the lower end of the pump. Hinged to the ring 6 is the clack valve 10, said valve opening upwardly, as indicated. This valve consists of the body portion 11 formed of leather which also forms the hinge and said valve is reinforced by the metal plate 12 and riveted thereto.

A latch 13 is pivoted to one of the legs 8, said leg being cut away as indicated to provide for said latch and the spring 14 is also secured to said leg, and said spring is adapted to bear against said latch. This latch 13 is adapted to enter one of the bayonet slots 5 and when in engagement with said slot said latch acts to lock the ring 6 securely in position and prevent its accidentally slipping from the bayonet joint when lowered into the well or being withdrawn therefrom. This latch when in engagement with the bayonet slot fits down within said slot so as to be flush with the outer face of the ring 6 and at the same time flush with the pump barrel, so that said lock presents no projection of any kind and is not liable to engage with the sides of the well in withdrawing or lowering the pump, nor is it liable to get caught in the rock or sand which may surround the pump when lowered into the well. Furthermore, the spring 13 is in such position that it does not project in any way beyond the outer surface of the pump barrel and is consequently not liable to injury when the pump is in use.

It is readily apparent that when the pump is lowered into the well with the ring 6 locked in position, the pump can be lowered without danger of any of the parts striking against the sides of the well or projecting rock, while at the same time when the pump reaches the bottom of the well and becomes embedded there is no difficulty in withdrawing the pump due to the lodgment of the rock or sand upon any projecting shoulders. When the pump has been filled

in the ordinary manner by the sand and the water rushing in through the openings 9 at the bottom thereof and lifting the valve 10 to enter the pump barrel, the pump when raised will retain this water, the valve 10 being seated, until raised to the top of the well, whereupon by throwing back the latch 13 to the position indicated in Fig. 4 the ring 6 may be turned to disengage its studs from the bayonet slots of the pump barrel and the ring may be removed, together with the valve 10, so that the contents of the pump may be discharged from the lower end of the pump barrel.

In connection with my invention I have illustrated a pump piston similar to that illustrated and described in Letters Patent of the United States No. 563,055 granted June 30, 1896, to George Palm. However, any suitable pump piston may be employed for creating the suction to draw in the sand and water.

What I claim is:

1. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat connected to said shell by a bayonet joint and having a recessed portion, a valve carried by said ring, and a locking member on said ring in said recessed portion adapted to engage the bayonet slot on said shell.

2. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat connected to said shell by a bayonet joint and having a recessed portion, a valve carried by said ring, and a spring actuated latch on said ring in said recessed

portion adapted to engage the bayonet slot on said shell.

3. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat connected to said shell by a bayonet joint, a valve carried by said ring, and a non-projecting latch on said ring adapted to engage the vertical bayonet slot on said shell.

4. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat adapted to enter said shell, a stud on said ring engaging a bayonet slot in said shell, legs on said ring, and a latch carried by one of said legs and adapted to engage said bayonet slot.

5. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat adapted to enter said shell, a stud on said ring engaging a bayonet slot in said shell, legs on said ring, and a latch pivoted to one of said legs and adapted to engage said bayonet joint.

6. In a sand pump, the combination of a cylindrical shell, a ring member forming a valve seat adapted to enter said shell, a stud on said ring engaging a bayonet slot in said shell, legs on said ring, and a latch pivoted to one of said legs and adapted to engage said bayonet joint, and a spring carried by said leg engaging said latch.

In testimony whereof, I the said WILLIAM H. LARKIN have hereunto set my hand.

WILLIAM H. LARKIN.

Witnesses:

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JOHN F. WILL.