

No. 741,672.

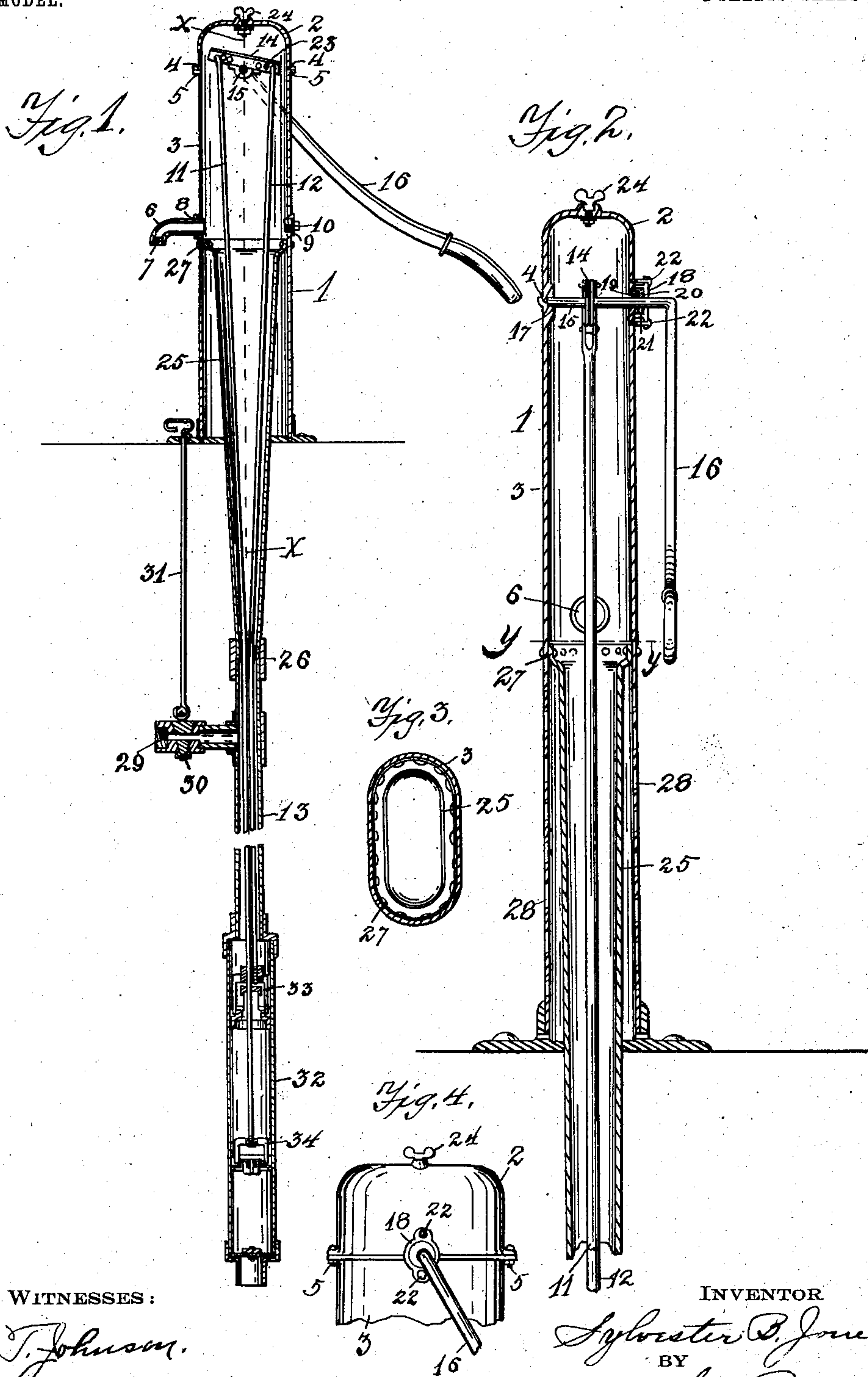
PATENTED OCT. 20, 1903.

S. B. JONES.  
PUMP.

APPLICATION FILED MAR. 10, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

G. T. Johnson.  
L. T. Baldwin.

INVENTOR

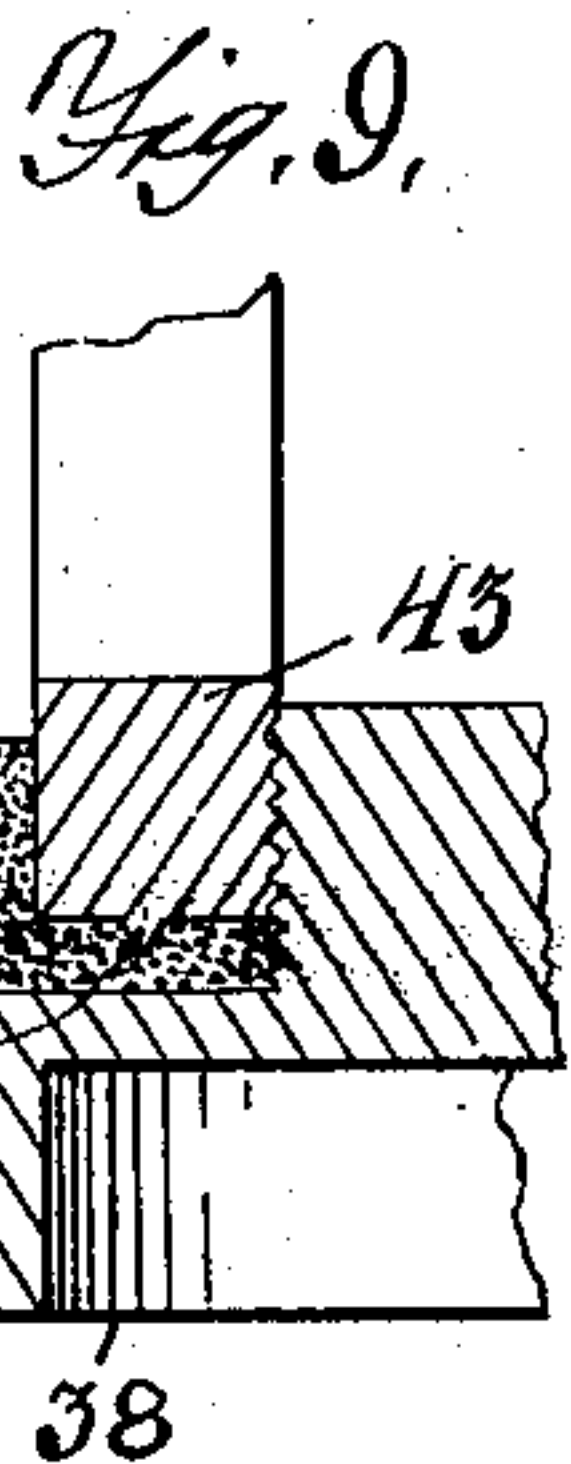
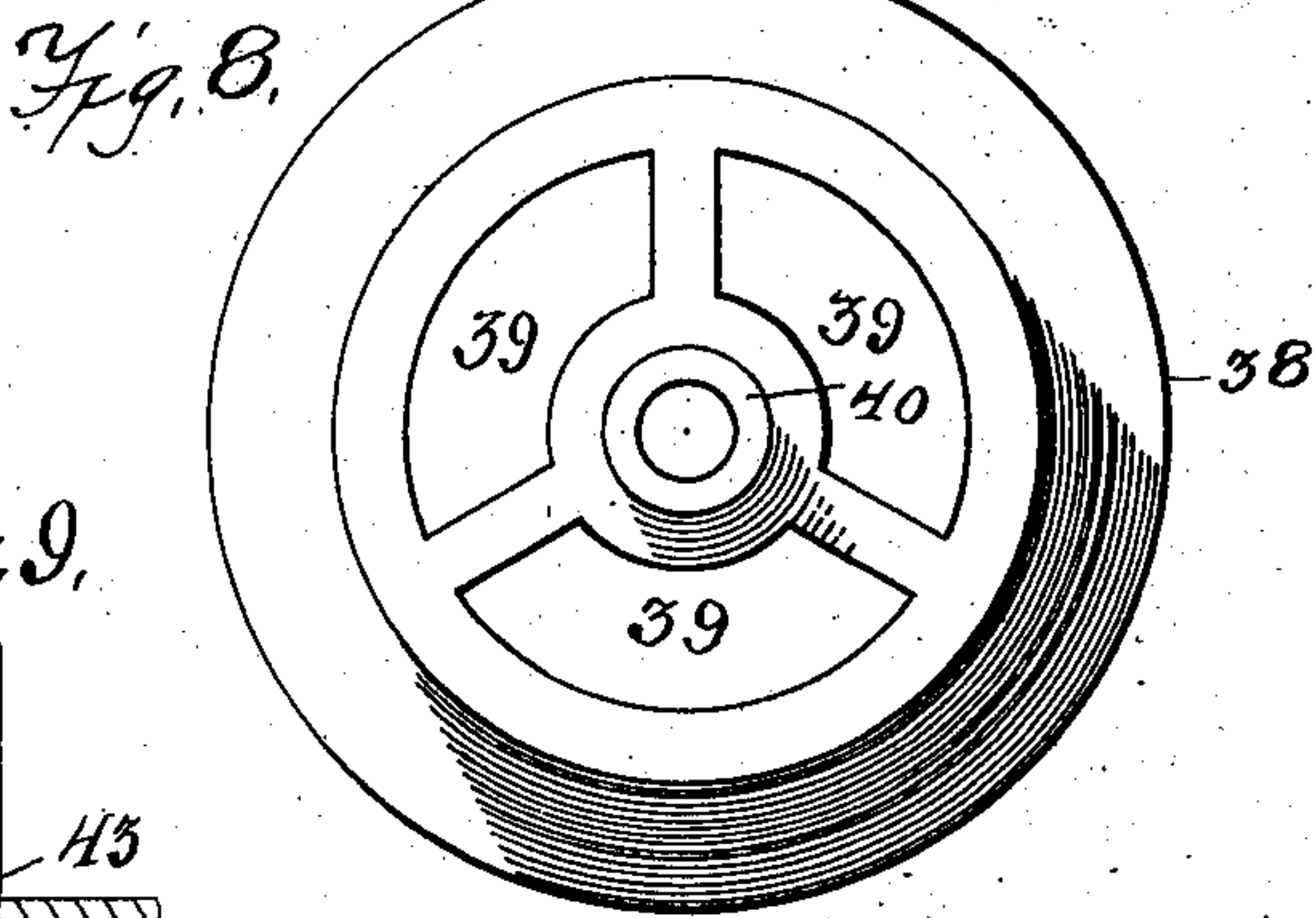
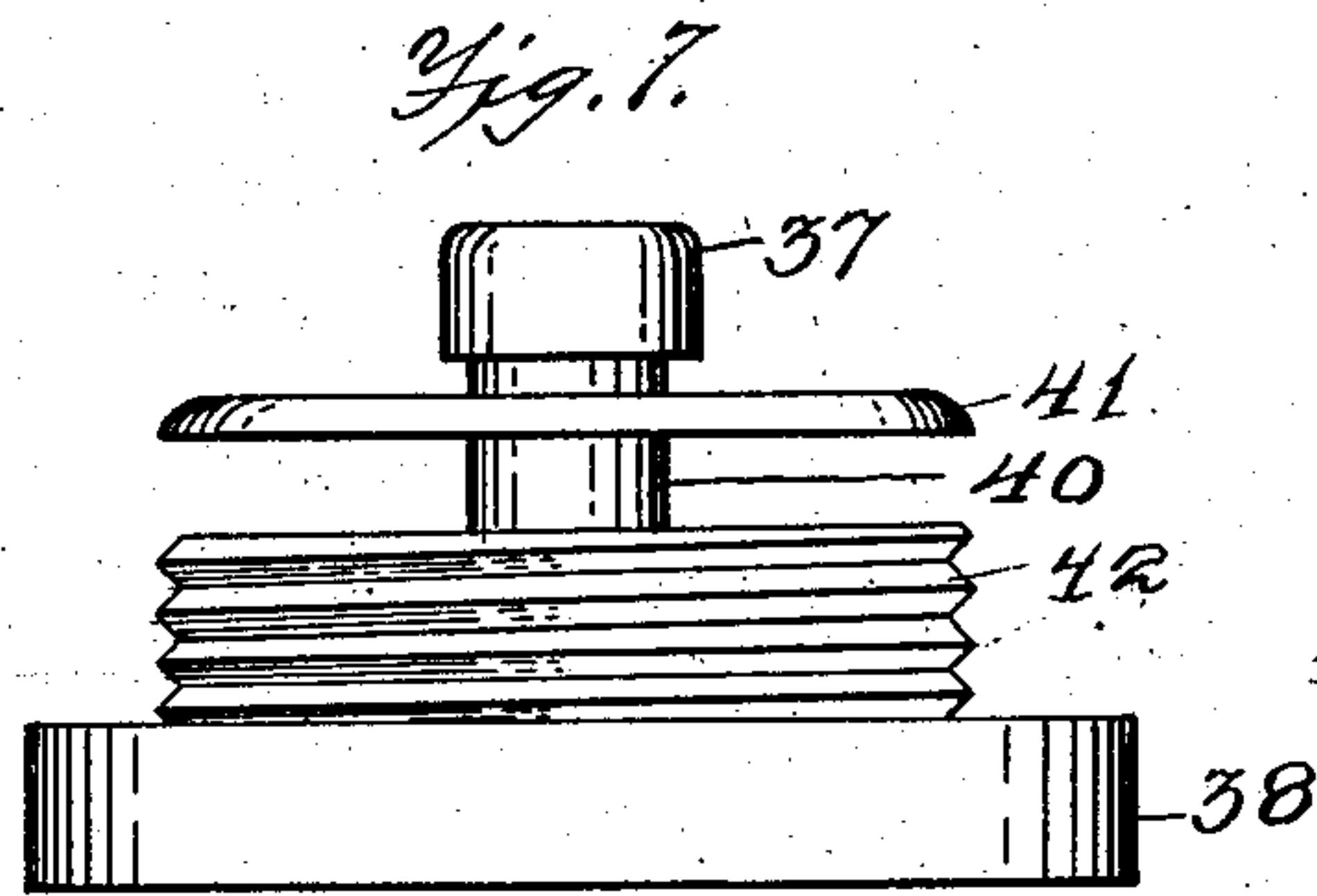
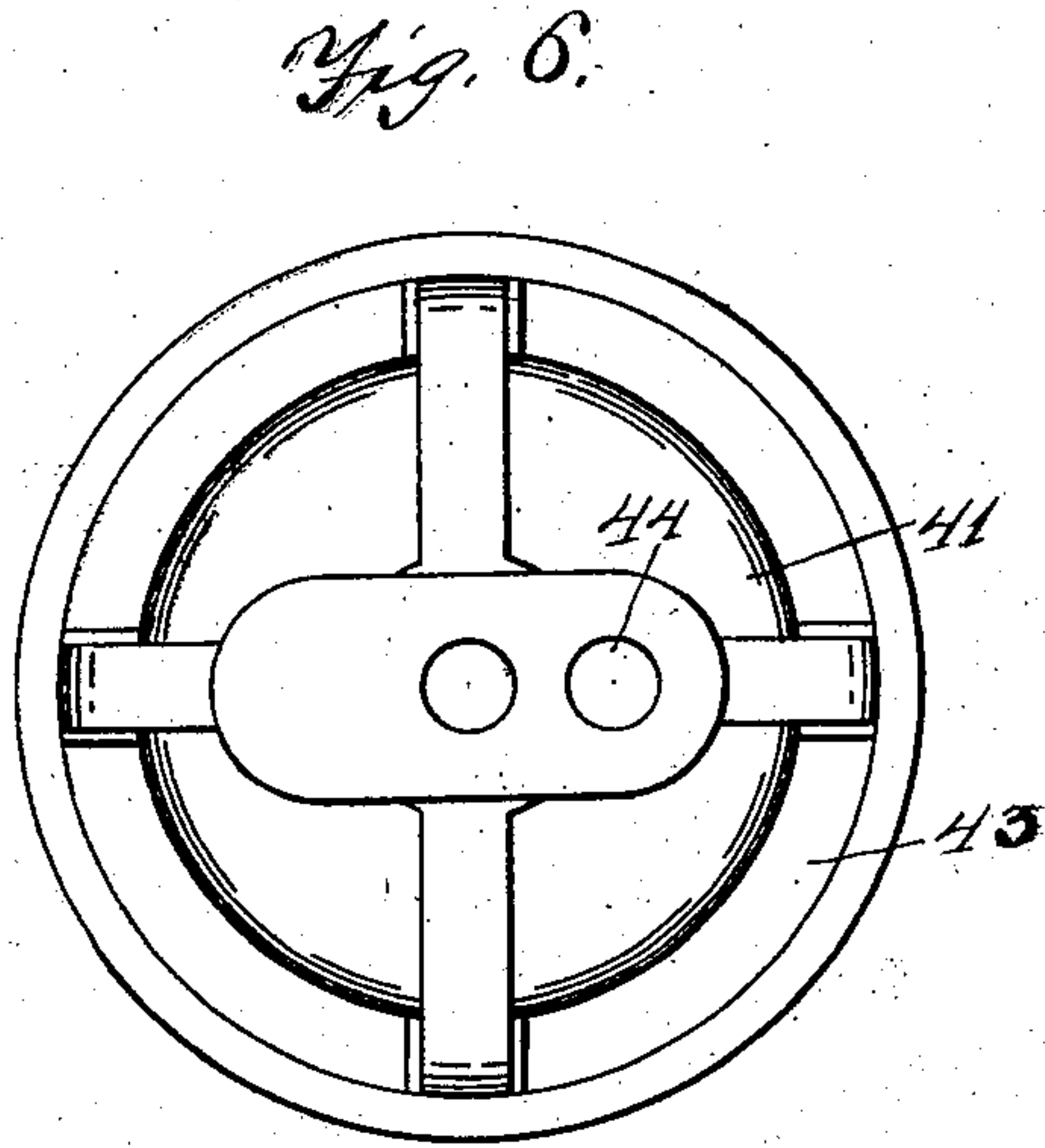
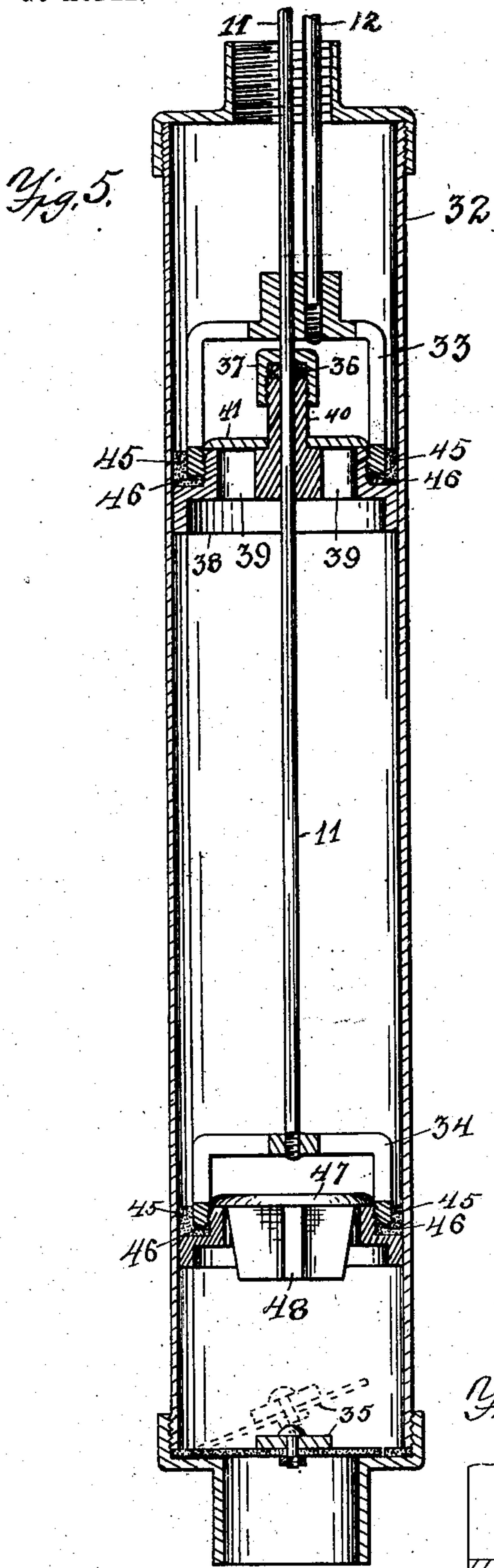
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2 SHEETS—SHEET 2.



WITNESSES:

*E. T. Johnson.*  
*L. T. Baldwin*

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# UNITED STATES PATENT OFFICE.

SYLVESTER B. JONES, OF LAKEWOOD, NEW YORK.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 741,672, dated October 20, 1903.

Application filed March 10, 1903. Serial No. 147,076. (No model.)

*To all whom it may concern:*

Be it known that I, SYLVESTER B. JONES, a citizen of the United States, and a resident of Lakewood, in the county of Chautauqua and State of New York, have invented a new and useful Pump, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in double-suction force-pumps; and the object of my improvement is to provide a simple and durable construction that will satisfactorily meet the many and severe requirements which are demanded of a pump at the present time.

In the drawings, Figure 1 is a sectional view of the pump-head, pipe, and working barrel, showing the sucker-rods and the funnel in which they work and the two plungers in the working barrel. Fig. 2 is a sectional view of the pump-head at line X X in Fig. 1. Fig. 3 is a sectional view of pump-head at line Y Y in Fig. 2. Fig. 4 is a side elevation of the upper part of the pump-head. Fig. 5 is a sectional view of the working barrel on an enlarged scale. Fig. 6 is a plan view of the upper plunger. Fig. 7 is a side elevation of the lower part of the upper plunger. Fig. 8 is a plan view of the part shown in Fig. 7 with the valve-plate and packing-cap removed. Fig. 9 is a detail sectional view showing the manner of holding the leather washer or cup on the plungers.

Similar numerals refer to corresponding parts in the several views.

The numeral 1 is the pump-head, which is usually made of cast metal and is practically water and air tight in order that the pump may be used as a force-pump when desired. Pump-head 1 is made in two parts—a cap-piece 2 and a lower part 3. Cap 2 has a ground-seat 4 on lower part 3 and is secured to part 3 by lugs and bolts 5 5. Lower part 3 of the pump-head is fastened to the platform in a suitable manner and has threaded openings 8 and 9 to receive water-spout 6. Openings 8 and 9 are opposite each other, and a screw-plug 10 is provided for the opening not used. The outer end 7 of spout 6 is threaded for attaching rubber hose.

In providing for the double action of my pump I use the two sucker-rods 11 and 12,

which work side by side in the pipe 13 and are attached to a suitable cross-bar 14, which is firmly secured on the shaft 15 of the handle-bar 16. I usually prefer to make handle-bar 16 and shaft 15 in one piece. One end of shaft 15 works in the bearing 17 in the side of the pump-head. At the other side of the pump-head shaft 15 extends out through the side and has a packing-box 18 to prevent leakage. Packing-box 18 is made with a circular extension 19 on parts 2 and 3 of the pump-head, which extension forms a close bearing about shaft 15. A metal cup 20 closely fits over circular extension 19, inclosing the packing 21 within cup 20. Cup 20 is held in place by bolts 22 in lugs at each side, which bolts extend into parts 2 and 3 of the pump-head. Cross-bar 14 has adjusting-holes 23 in each end for sucker-rods 11 and 12, whereby the expelling power of the pump may be increased or diminished as desired. It is apparent that when the sucker-rods are attached in the outer holes, as shown in Fig. 1, a longer stroke will be attained, and consequently the pump will have greater power and throw a larger stream of water. When the sucker-rods are attached at the inner holes, the pump will have a shorter stroke and operate much easier, but will also have decreased power. A thumb-screw 24 is placed in the top of cap 2 and has a seat in said top with a hole through the same. A washer and nut are placed on thumb-screw 24 on the inside. It is now apparent that a simple turn of thumb-screw 24 admits or excludes the air to or from pump-head 1, thereby interchangeably making the pump-head a tight forcing-head or a common open head.

In order that the air-space within pump-head 1 may be reduced, and thus give greater forcing power to the pump-head to raise the water more quickly and easily to spout 6 and at the same time to accommodate the spread of sucker-rods 11 and 12 to the cross-bar 14, I provide the funnel 25, which extends down to and is attached to pipe 13 by suitable coupling, as at 26. The upper end of funnel 25 is made in the form of an ellipse, as shown in Fig. 3, corresponding to the shape of the pump-head, which elliptical shape is adopted in order to accommodate the action of the spreading sucker-rods. The upper end of



funnel 25 is secured to part 3 of the pump-head at 27 just below the opening for spout 6. The sides 28 of part 3 below point 27 are made in open-work in order that the water may not fill in about funnel 25 and rust out the same or in cold weather freeze and burst the same. A third waterway 29 is provided in pipe 13 with a common valve 30 therein, and a rod 31, with suitable handle, is attached to valve 30 in order that the water may be turned off or on from the surface of the ground. The water may be piped from valve 30 to any desired point.

My working barrel 32 is made of sufficient length for an upper plunger 33 and a lower plunger 34. Barrel 32 has a common trap-valve 35 at its lower end. Valve-piece 35 is held in place by the lower end of the barrel fitting against the end of the tubular barrel, with suitable screw-threads to hold the parts in place. Sucker-rod 11 works freely through upper plunger 33 in a suitably-sized opening. Rod 11 is packed within plunger 33 at 36, a suitable cap 37 being screwed down over the packing 36 to hold it in place, and said cap 37 is held in place by the upper part of the plunger, as shown, so that the operation of rod 11 cannot work the cap loose. The packing of rod 11 prevents all water from passing up or down beside the sucker-rod, and thus adds greatly to the force of the plunger 33. Plunger 33 is made with a lower part 38 of the same size as the opening in the tubular barrel and has ports 39 (see Fig. 8) for the water about a central tubular portion 40, through which central part sucker-rod 11 works and upon which part packing 36 is confined by cap 37. Before cap 37 is placed upon central part 40 a valve-plate 41, having an opening for tubular central portion 40, is placed thereon. Valve-plate 41 sets upon suitable seats, and thereby closes and opens ports 39. The upper bracketed or basket portion of the plunger 33 has a lower circular rim 43, which screws onto lower part 38 on screw-threads 42, and has a second opening 44 in the top, besides the central opening through which sucker-rod 11 plays. Opening 44 is threaded to receive the lower end of sucker-rod 12, and thereby actuates plunger 33. Rim 43 holds in place the usual leather cup or washer 45. Leather cups 45 are usually made in the factory by means of a machine which presses them into cup shape while the leather is damp, and they thereby fit and hold tight upon the plunger within the barrel; but it is found that a large share of the washers 45 are hand-made and placed on the plunger by the users, who are often farmers far from a supply-house. Accordingly I have provided the metal projection 46 on the lower edge of rim 43, which presses into the leather 45 as the rim 43 compresses the leather washers, thereby locking the leather firmly in place, so that the plunger can be forced into the tubular working barrel without withdrawing leather

washer 45 from the joint. Lower plunger 34 is made in the common form with a metal valve-piece 47 and the upper bracketed arms to hold the valve-piece 47 in place, valve-piece 47 having the common extension 48 to hold it in place. I provide a metal projection 46 on the lower edge of the bracketed rim, the same as on plunger 33.

It is now apparent that when handle 16 of the pump-head is raised and lowered cross-bar 14 will thereby be given a rocking motion, reciprocally actuating sucker-rods 11 and 12, thereby causing plungers 33 and 34 to move alternately to and from each other, thereby causing a constant flow of water up pipe 13 and into pump-head 1. It is also obvious that the steady forcing of the water into pump-head 1 with greater flow than the natural egress flow through spout 6 will turn pump-head 1 into a forcing-head of great power. This is especially true when high speed of reciprocation is given to handle 16.

It has been my aim to so construct my pump as to provide for the greatest durability of the parts and at the same time so construct the parts that they can be easily and cheaply made.

I claim as new—

1. In a double-acting pump, a pump-head consisting of a body portion with suitable delivery-spout, a cap for said body portion, and an elliptical funnel from the spout to the well-pipe, substantially as and for the purpose specified.

2. In a double-acting pump, two sucker-rods having plungers thereon one above the other and means for actuating said rod, the upper plunger having a solid bracketed portion and an opening for a sucker-rod to work through said upper plunger, a central tubular portion to said upper plunger having a packing-box cap locked thereon by said bracketed portion, substantially as and for the purpose specified.

3. In a double-acting pump, the combination of a pump-head having the body portion 3, a funnel 25 attached within said body portion and extending below part 3 to the well-pipe, a cap 2 having a ground-seat on part 3, a crank-shaft having a bar 14 thereon and means for oscillating said bar, sucker-rods attached to said bar having plungers attached thereto one above the other, the rod for the under plunger working through and having suitable packing within the upper plunger, and a working barrel for said plungers having a valve-vent at its lower end, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SYLVESTER B. JONES.

Witnesses:

A. W. KETTLE,  
S. A. BALDWIN.