

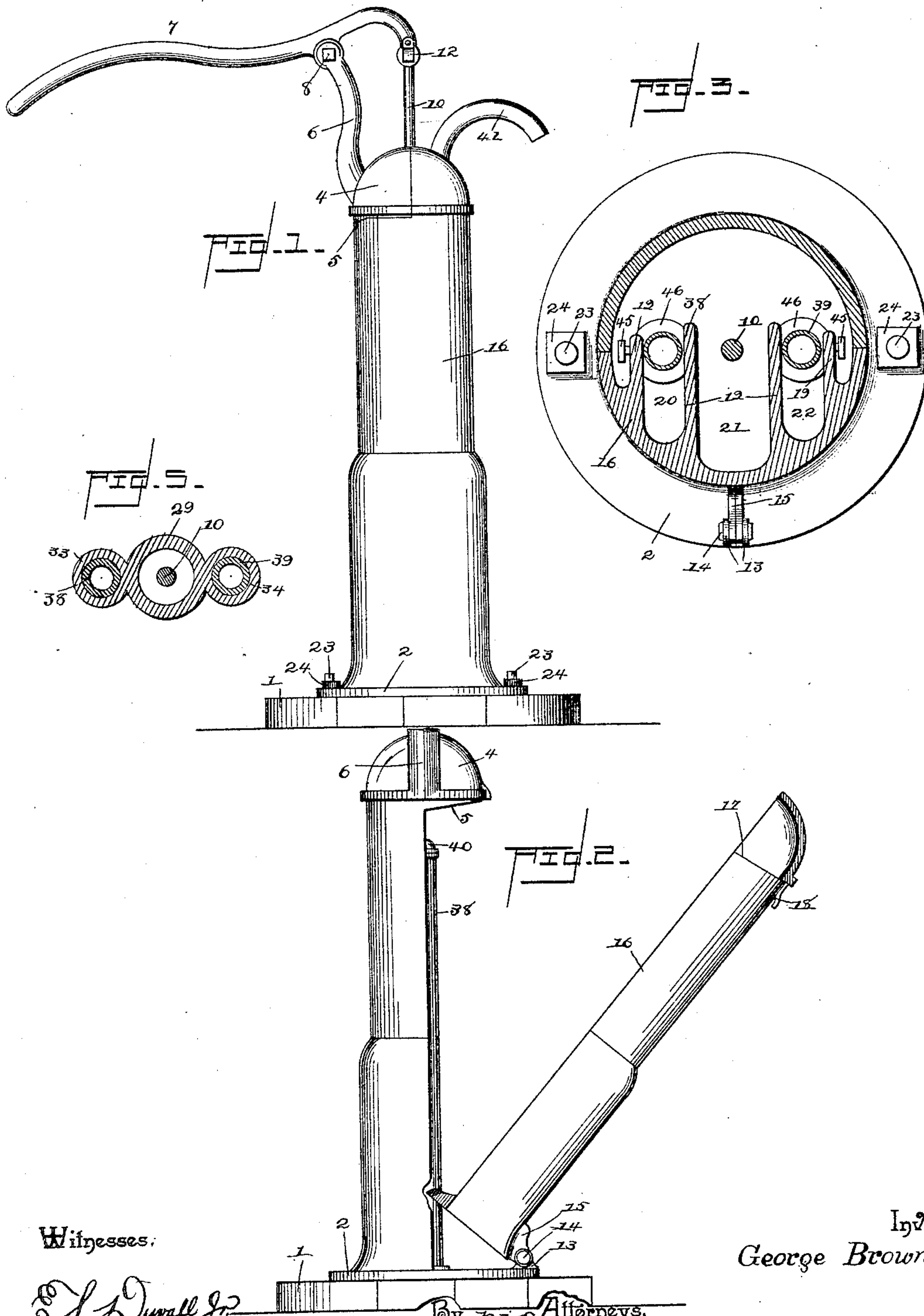
(No Model.)

2 Sheets—Sheet 1.

G. BROWN.
PUMP.

No. 454,609.

Patented June 23, 1891.



Witnesses:

S. L. Duwall Jr.

W. S. Duwall

By *his* Attorneys,

C. A. Snow & Co.

Inventor
George Brown.

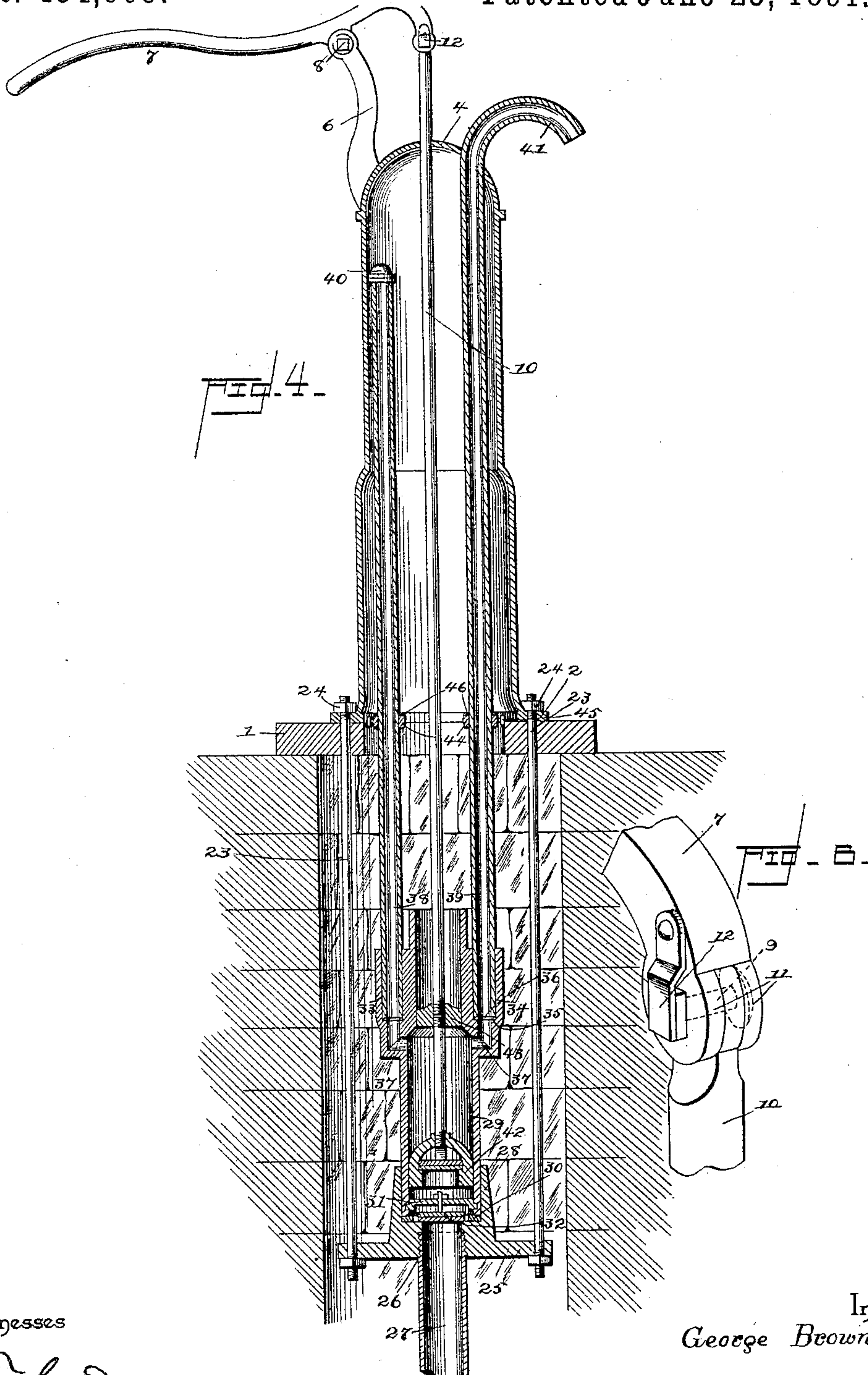
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UNITED STATES PATENT OFFICE.

GEORGE BROWN, OF WAITSBURG, WASHINGTON.

PUMP.

SPECIFICATION forming part of Letters Patent No. 454,609, dated June 23, 1891.

Application filed February 6, 1891. Serial No. 380,402. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BROWN, a citizen of the United States, residing at Waitsburg, in the county of Walla Walla and State of Washington, have invented a new and useful Pump, of which the following is a specification.

This invention relates to improvements in pumps, the objects in view being to reduce the cost of and simplify the construction of the pump, adapting the same to be readily assembled and disassembled, to avoid the use of expensive joints, and to render the pump continuous in its operation.

With the above objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a pump constructed in accordance with my invention. Fig. 2 is a similar view, the pump case or housing swung open. Fig. 3 is a transverse section through the housing or pump-case just above the base of the latter. Fig. 4 is a vertical longitudinal section of the pump-case and pump. Fig. 5 is a detail of the pump-cylinder in transverse section. Fig. 6 is a detail of the joint between the rod or plunger and the operating-lever.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the curbing of the well, and upon the same is mounted the circular base 2 of the pump-case. From one side of the circular base rises the stationary longitudinal section of the case, and at its upper end is provided with an overhanging circular cap 4, the under edge of which is inclined, as at 5, and opposite the unoccupied portion of the circular base, and from the cap rises a standard 6, in which is fulcrumed, as at 8, a lever 7, to the inner end of which is pivoted by a bolt 9 the plunger-rod 10. As best illustrated in Fig. 6, the inner end of the lever 7 is bifurcated, as at 11, and between the bifurcations is located the upper end of the plunger-rod 10, and through the three said bolt 9 passes, the nut of which is held in place by a pivoted locking-plate 12, swung over the same. At the opposite side of the base are located bear-

ing ears or lugs 13, and in the same by a bolt 14 is pivoted an extension 15, formed on the outer side and at the lower end of a longitudinal pump-case section 16, the upper end of which is provided with an inclined wall 17, designed to bind against the inclined wall 5 of the stationary section. The two sections are locked together by a catch 18 or other means. From the base of the section 16 fingers 19, to the extent of four, extend inwardly, said fingers combining to form spaces 20, 21, and 22.

23 designates a pair of hanging rods, which pass through the curbing 1 and also through the base 2, above which they are nuted, as at 24. The lower ends of the rods pass through the opposite ends of a yoke or bridge 25, extending down into the well or water-supply. The yoke or bridge is provided with a central inlet-opening 26, into which the supply-pipe 27, extending down into the well or water-supply, is threaded. The upper side of the yoke or bridge 25 is provided with a surrounding annular flange 28, the inner surface of which and the surrounding portion of the port 26 are smoothly ground. Within the flange 28, which in reality forms a socket, is fitted the lower end of the pump-cylinder 29, the exterior and lower end of which is carefully ground to snugly fit within the flange 28, and between the lower end of the pump-cylinder and the yoke is interposed a leather gasket 30. Immediately above the lower end of the pump-cylinder a guide-bar 31 spans the same, and to the central opening of the guide-bar passes the stem of an upwardly-opening valve 32, seated upon the upper side of the inlet-opening 26.

At opposite sides of the pump-cylinder are chambers 33 and 34, designating the air and outlet or discharge cylinder, respectively. These cylinders are slightly reduced near their lower ends to form seats 35, upon which are mounted gaskets 36, preferably formed of leather, and below the seats the cylinders communicate with the pump-cylinder 29 by passages 37.

38 and 39 designate the air and discharge pipes, respectively. The pipes have their exteriors carefully ground and perfectly smooth, so as to form snug joints for their respective

chambers, and the ends of said pipes rest upon the leather gaskets 36. The pipe 38 has its upper end closed by a cap 40, while the pipe 39 extends outside of the casing and terminates in a delivery-spout 41. The plunger-rod 10 extends down into the cylinder 29 and at its lower end is provided with a valved piston-head 42, which operates between the passages 37 and the lower end of the cylinder 29 and with a second imperforate head 43, which operates above said passages within the cylinder.

The pipes 38 and 39 are provided with collars 44, made adjustable thereupon by a set-screw 45. The several pipes having been mounted in their respective sockets, the collars 44 are adjusted so as to be slightly above the base 2 of the pump-case, and are provided upon their upper sides with leather gaskets 46. The movable or hinged section of the pump-case is now swung to its closed position or upon the base, and by the inclined edges 5 and 17 and the lock 18 the fingers 19 are forced downwardly upon the gaskets 46, and added to this pressure is the weight of the section 16. This serves to force the pipes 38 and 39 snugly into position, and also depresses the pump-cylinder upon its seat, so that snug joints without screw-threads are formed between the pipes 38 and 39 and their seats 35, and between the cylinder 29 and the socket 28 of the yoke. It will be evident that the pump constructed in this manner is simple, cheap, free from expensive joints and multiplicity of parts, and may be taken down and set up with but little trouble.

The operation of the pump will be readily understood from the foregoing description, taken in connection with the accompanying drawings, but may be briefly stated as follows: The upward movement of the piston closes the valved piston 42 and opens the valve 32 of the inlet, thus drawing water through the supply-pipe 27 by reason of the vacuum formed between the head and the valve 32. Air is also forced from above the valve 42. The downstroke of the piston causes the valve 32 to close and the valve of the head 42 to open, so that water is forced through the head 42 into the pump-cylinder. The next upward stroke of the piston causes a repetition of the result previously described, with the exception that water is forced into and partially fills the air-pipe 38 and out of the discharge-pipe 39, so that the water that is forced into the air-pipe 38 serves to compress the air in the upper end of the same, and when the plunger again descends said compressed air forces the water up through the discharge-pipe 39, whereby it will be seen that the flow of water from said pipe is continuous instead of intermittent, as will be the case with this style of pump without the air-pipe attachment.

Having described my invention, what I claim is—

1. In a pump, the combination, with the curbing, rods suspended therefrom, and a yoke supported at the lower ends of the rods and provided with a socket or seat and an inlet having a valve, of a gasket mounted in the bottom of the seat, a pump-cylinder resting on the gasket and fitting the walls of the socket or seat, said cylinders being provided with a discharge chamber or socket having a seat, a gasket mounted therein, a discharge-pipe fitting the wall of the socket or seat, resting upon the gasket, a pump-rod having the piston for operating the pump-cylinder, a shoulder mounted on the rod, a base mounted upon the curbing, a stationary pump-case section, a hinged pump-case section secured to the base, and means for locking the two sections, said hinge-section resting upon the shoulder, substantially as specified.

2. In a pump, the combination, with the curbing, the suspension rods, the yoke or bridge connecting the lower ends of the same, having an inlet provided with an annular flange or socket, a supply-pipe connected to the inlet, a leather gasket mounted in the bottom of the socket, a pump-cylinder resting upon the gasket and provided with an air and discharge chamber communicating with the cylinder and having annular seats, leather gaskets mounted in the seats, a closed air-pipe mounted in one of the seats, and a discharge-pipe in the remaining seat, of a pump-case base mounted on the curbing and having a stationary section rising therefrom provided with an overhanging cap, the under side of which is inclined, a pair of adjustable collars mounted upon the air and discharge pipes, bolts for adjusting the same, leather gaskets mounted upon the collars, a plunger-rod, means for operating the same, and a hinged pump-case section secured to the base and provided with an upper inclined edge adapted to bind against the under edge of the cap and provided with opposite pairs of inwardly-disposed fingers for pressing upon the collars, substantially as specified.

3. The pump-case made in two longitudinal sections, one section being rigidly secured to the base and the other section being pivoted to the base, and a series of fingers 19, formed on the interior of the pivoted section and set apart to form spaces 20, 21, and 22 for the reception of the air and discharge pipes, and the plunger-rod, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE BROWN.

Witnesses:

L. LANG,
CHAS. T. SMITH.