L. A. BRIGEL.

PUMP.

APPLICATION FILED MAY 6, 1910.

1,119,801.

Patented Dec. 8, 1914.

2 SHEETS—SHEET 1.

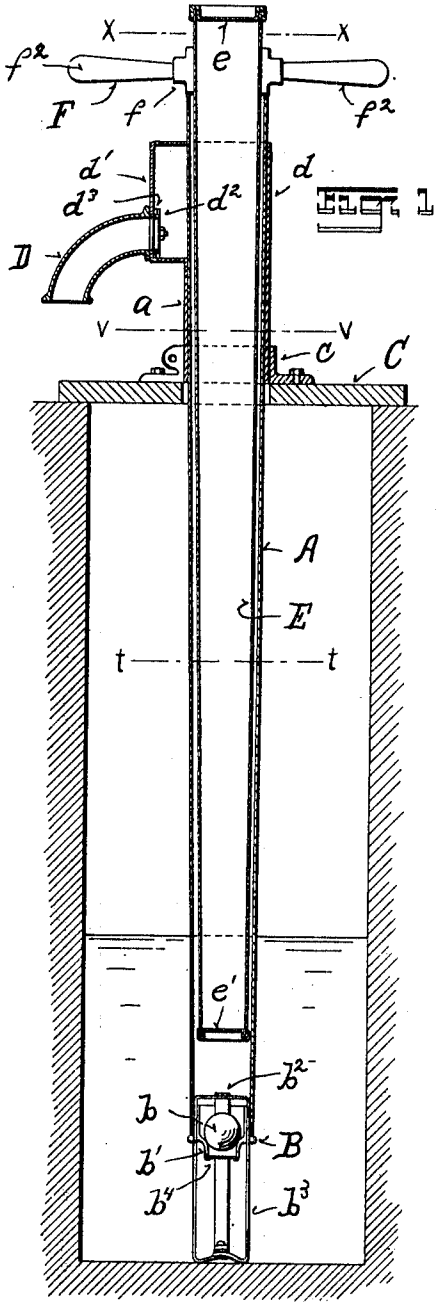



Fig. 1.

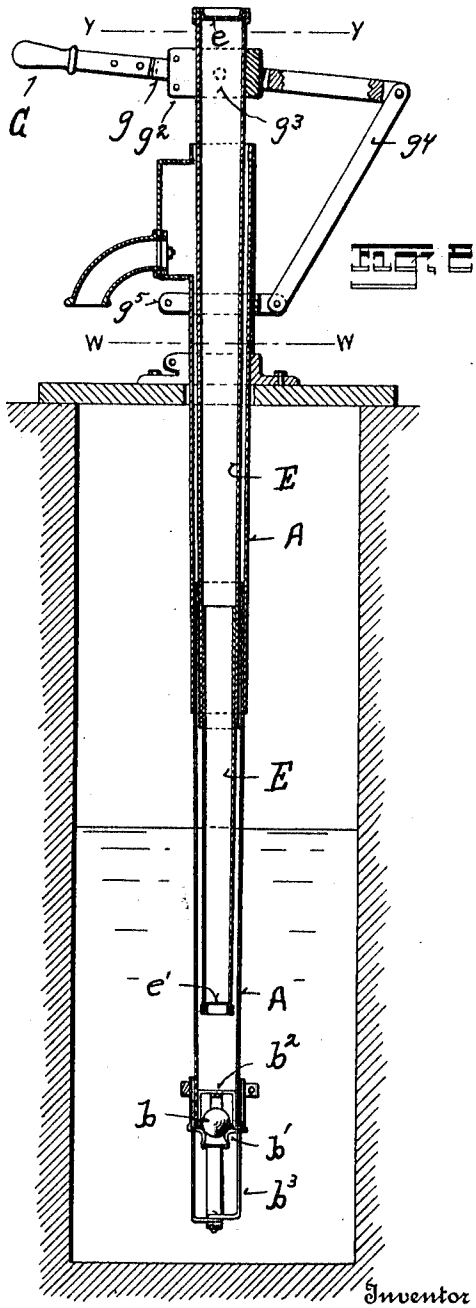



Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

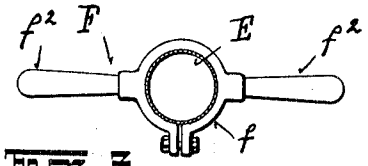



Fig. 3

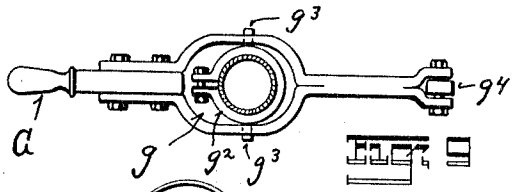



Fig. 9

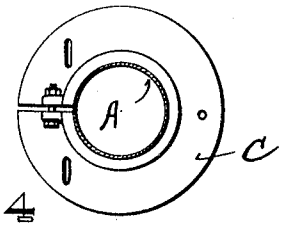



Fig. 4

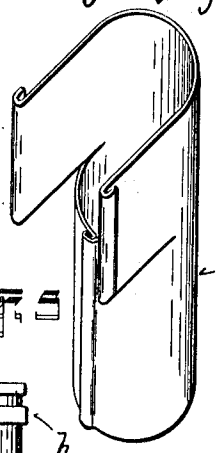



Fig. 5

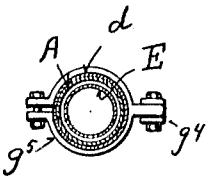



Fig. 10

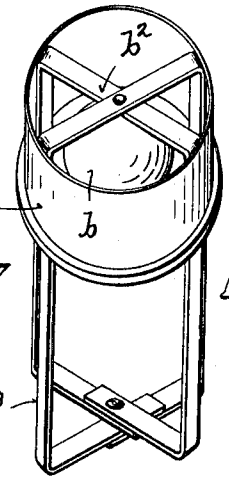



Fig. 7

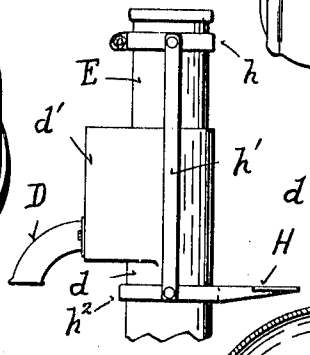



Fig. 11

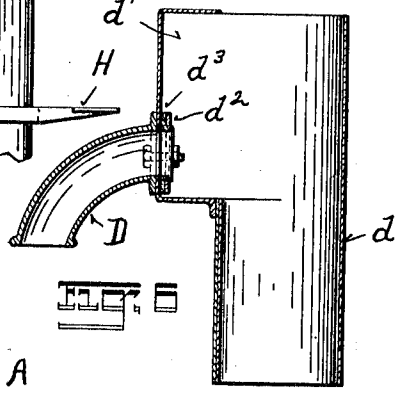



Fig. 6

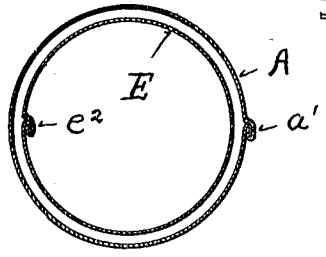



Fig. 8

Witnesses

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# UNITED STATES PATENT OFFICE.

LEO A. BRIGEL, OF CHEVIOT, OHIO.

## PUMP.

1,119,801. Specification of Letters Patent. Patented Dec. 8, 1914.

Application filed May 6, 1910. Serial No. 559,736.

*To all whom it may concern:*

Be it known that I, LEO A. BRIGEL, a citizen of the United States, residing at Cheviot, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to improvements in pumps.

One of its objects is to provide a simple, inexpensive and efficient pump for cisterns and wells of moderate depth.

Another object is to provide such pumps adjustable to variations in the depth of wells and cisterns, and adapted to be conveniently transported and readily assembled and adjusted where required for use.

My invention also comprises certain details of form, combination and arrangement, all of which will be more fully set forth in the description of the accompanying drawings, in which:

Figure 1 is a central vertical section through one form of my improved pump in position for use. Fig. 2 is a similar view showing a modification. Fig. 3 is a horizontal section on line $x\ x$ of Fig. 1. Fig. 4 is a section on line $v\ v$ of Fig. 1. Fig. 5 is a perspective view of a partly formed spout box section. Fig. 6 is a perspective view of the completed spout box section. Fig. 7 is a perspective view of the valve and valve cage. Fig. 8 is a section on line $t\ t$ of Fig. 1. Fig. 9 is a section on line $y\ y$ of Fig. 2. Fig. 10 is a section on line $w\ w$ of Fig. 2. Fig. 11 is a side elevation of a modification.

In the accompanying drawings A represents the pump body comprising a sheet metal tube which may be of uniform diameter, but is preferably slightly tapered from the top downward. To the lower end of the body A is attached a valve cage B, preferably by telescoping with the lower end of said section A. The valve $b$ is preferably a ball valve resting normally upon a seat $b^1$, and held in place by cross bars $b^2$. These cross bars are preferably extended downwardly below the valve seat at $b^3$, and may be employed as a rest or support for the pump body against the bottom of the well or cistern, and to hold the valve a sufficient distance above the bottom of the well to insure a supply of clear water. The entrance to the valve is preferably covered with a screen $b^4$ to prevent the entrance of solid matter.

The pump body A is supported upon the curb C by a sleeve or flange $c$, which is preferably split and adapted to be adjusted and clamped to the desired position on the pump body A. The pump spout D is preferably carried by a separate short tube section $d$, having an offset or box $d^1$ to which the spout is clamped by means of bolts and a metal washer $d^2$, and packing ring, $d^3$, to form a water tight joint. Box $d^1$ gathers and conducts the water to the spout. The sections A and $d$ are preferably secured together by a telescopic joint at $a$ of sufficient length to firmly support the section $d$ in line with the section A. The joint at $a$, and also the joint between the section A and the valve cage are adapted to be finally closed and made water tight by solder after the pump has reached its destination.

E represents the pump plunger, comprising a sheet metal tube closed at both ends by caps $e\ e^1$ and of slightly less diameter than the tube A, and with its seam $e^2$ turned inwardly, while the seam $a^1$ of tube A is turned outwardly. The tube E may be of uniform diameter where a tube A of uniform diameter is employed, but is preferably slightly tapered and employed with a tube A tapered to like degree.

F represents a pump handle having double handle bars $f^2$, carried by a split ring $f$ by means of which it may be clamped to any desired position on the tube or plunger E.

For wells of ten to twelve feet in depth the tubes A E are of one piece as shown in Fig. 1. For greater depths the respective tubes are as shown in Fig. 2 formed of two sections telescoped together for sufficient distances to insure firm connections and good alinement, and are adapted to be transported in sections, and united and soldered at their destination.

In Fig. 2 I have shown a pump handle comprising a handle bar G, having an eye $g$ through which the pump plunger passes. A split ring $g^2$ is adapted to be clamped to position on the pump plunger, and is provided with studs $g^3$ to pivotally connect said ring $g^2$ to the handle bar G. One end of handle bar G is pivotally connected to a link $g^4$ which is pivoted at its opposite end to a split ring $g^5$ clamped to the pump body.

In Fig. 11, I have shown a modification in which the plunger is operated by a foot treadle H which is attached to the pump plunger by means of straps $h$ and a split ring $h^1$, and guided by a ring $h^2$.

The hollow plunger E is light in weight and normally floats on the water in the pump body which rises on the inside of the pump body through the valve $b$ to the same height as it stands in the well. In operation the plunger E, when forced downwardly, displaces the water in the lower portion of the pump body, causing it to rise and flow out, at the spout, and where the tubes are slightly tapered a tight fit between the pump body and plunger can be attained when the plunger is in the lower position, and practically all the water in the pump body can be displaced and flow through the spout. When the plunger is again lifted water flows in at the valve to replace that removed through the spout. By lifting the plunger above the point at which it would normally come to rest, at each stroke an increased quantity of water can be pumped. The various adjustable attachments permit the pump part to be readily adjusted to correspond to varying heights of water in the well or cistern, and to wells of different depths, and facilitate transportation of the pumps. The various joints of the body and plunger can be readily made tight and rigid by solder at their destination.

As illustrated in Fig. 1, the valve cage telescopes within the end of the body section, while as illustrated in Fig. 2, the valve cage telescopes over the end of the body section.

The mechanism herein illustrated and described is capable of considerable modification without departing from the principle of my invention.

Having described my invention, what I claim is:

1. In a mechanism of the character described, a tubular body section, a valve cage having a tubular section telescopically united to the lower end of said body section and provided with a valve adapted to admit water to the lower end of said body section, an independent spout member having a tubular section telescopically united to the upper end of said body section, means attached to the exterior of said body section to adjustably support said body section upon a curb, a hollow displacement plunger closed at its lower end and at its upper end projecting above said body section and adapted to be reciprocated within said body section, and mechanism to reciprocate said plunger clamped upon the exterior of said plunger above said body section and adjustable longitudinally of said plunger.

2. In a mechanism of the character described, a tubular body section, a valve cage provided with a valve and a tubular section to telescopically engage and close the lower end of said body section, an independent spout member having a tubular section to telescopically engage the opposite end of said body section, a member encircling and adapted to be adjustably clamped upon the exterior of said body section and to rest upon a curb and to support said body section relative to said curb, and a tubular displacement plunger closed at its lower end and adapted to be reciprocated within said body section.

3. In a mechanism of the character described, a tubular body section, a detachable valve section telescopically secured to the lower end of said body section and provided with a valve adapted to admit water to the lower portion of said body section, an independent spout member secured to the upper end of said body section, a member adapted to be clamped upon the exterior of the body section and to adjustably support said body section relative to a curb, a hollow tubular displacement plunger closed at its lower end and adapted to be reciprocated within said body section, and a pump handle pivotally connected relative to said body section and clamped to the exterior of said plunger above said spout section, said clamp being adjustable relative to said plunger.

4. In a mechanism of the character described, an extensible body section comprising a plurality of tubular sections telescopically united, a valve section adapted to close the lower end of said body section and provided with a valve adapted to admit water to the lower portion of said body section, a member adapted to be clamped upon the exterior of said body section and to support said body section with reference to a curb, an independent spout section detachably connected to the upper end of said body section, a hollow displacement plunger comprising a plurality of tubular sections telescopically united and closed at the lower end, and adapted to be reciprocated within said body section.

5. In a mechanism of the character described, a downwardly tapered tubular body section, a valve cage having a tubular section adapted to telescopically engage the lower end of said body section and provided with a valve adapted to admit water to the lower portion of said body section, an independent spout member having a tubular section telescopically secured to the upper end of said body section, means engaging the exterior of said body section to adjustably support said body section upon a curb, and a downwardly tapered tubular displace-

ment plunger closed at the lower end and adapted to be reciprocated within said body section.

6. In a mechanism of the character described, a downwardly tapered body section comprising a plurality of tubular sections telescopically united, a valve section closing the lower end of said body section and provided with a valve adapted to admit water to the lower portion of said body section, a spout section attached to the upper end of said body section, means to adjustably support said body section upon a curb, and a downwardly tapered displacement plunger closed at the lower end and comprising a plurality of tubular sections telescopically united, said plunger being adapted to be reciprocated within said body section.

In testimony whereof I have affixed my signature in presence of two witnesses.

LEO A. BRIGEL.

Witnesses:
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ALBERT W. SCHWARTZ.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**