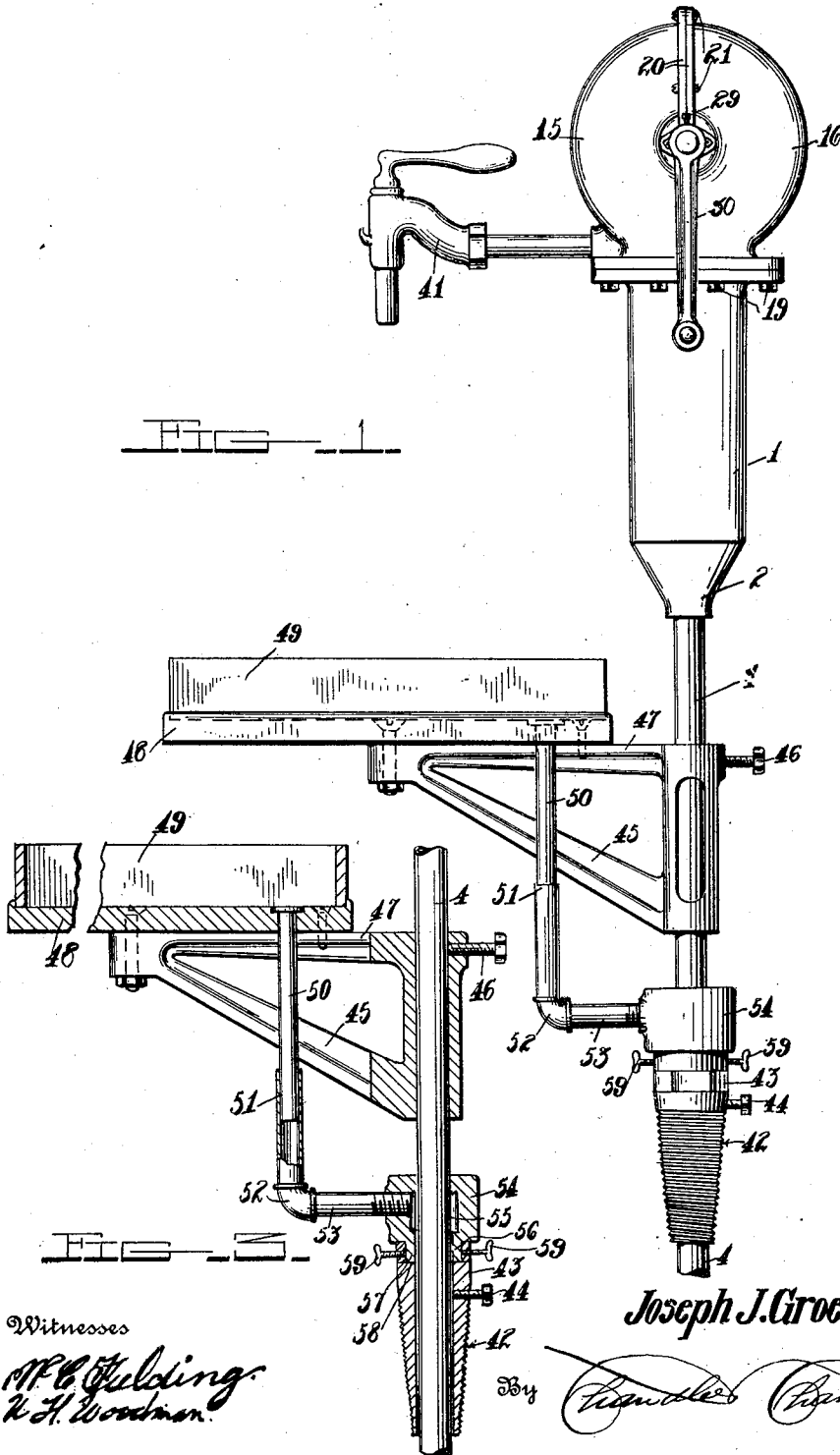


J. J. GROETKEN.
PUMPING APPARATUS.
APPLICATION FILED MAY 29, 1911.

1,025,056.

Patented Apr. 30, 1912.

2 SHEETS-SHEET 1.



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Witnesses

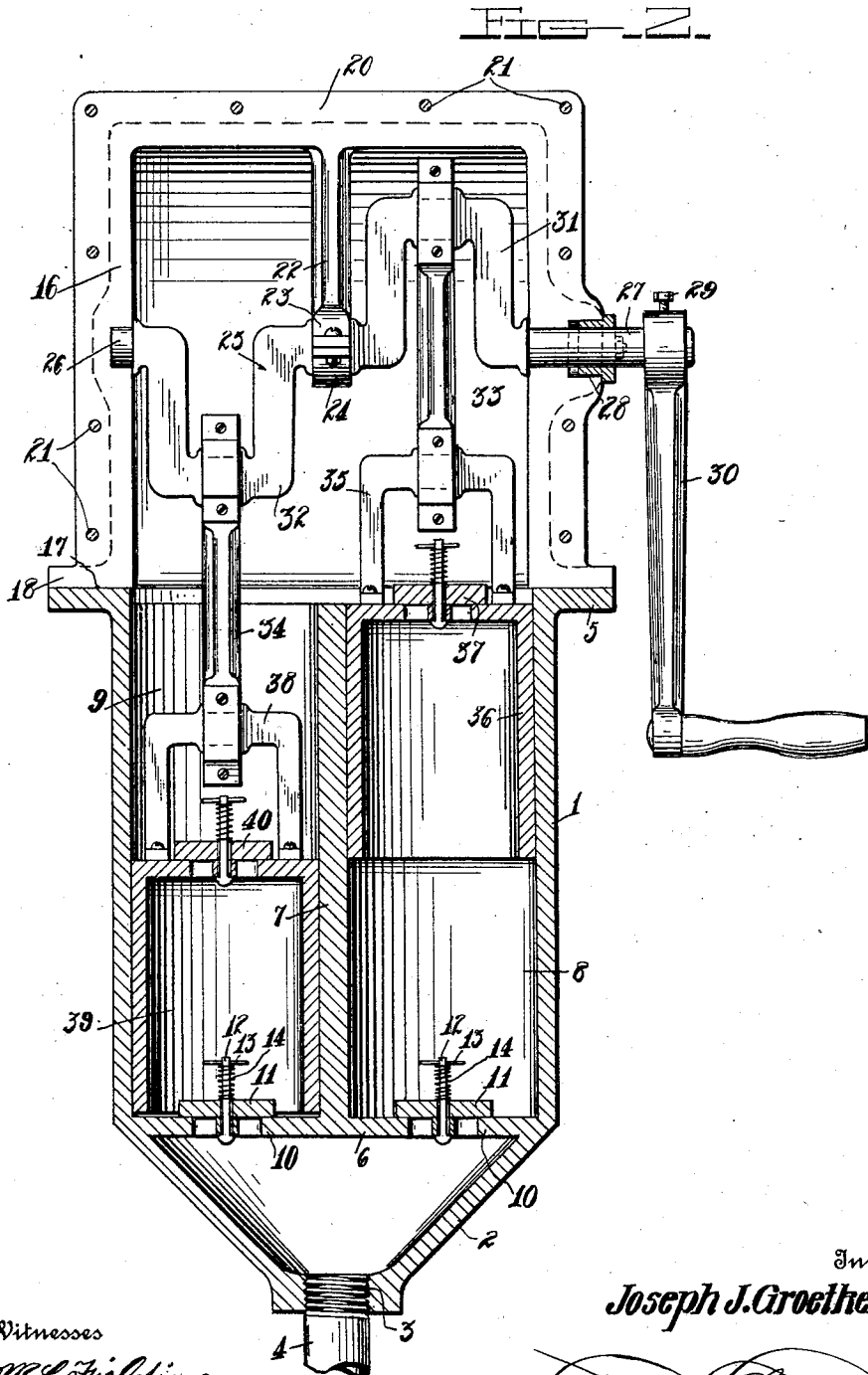
M. E. Guldin
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Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH J. GROETKEN, OF TULSA, OKLAHOMA.

PUMPING APPARATUS.

1,025,056.

Specification of Letters Patent.

Patented Apr. 30, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH J. GROETKEN, a citizen of the United States, residing at Tulsa, in the county of Tulsa, State of Oklahoma, have invented certain new and useful Improvements in Pumping Apparatus; 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 new and useful improvements in pumps, and the object of my invention is to provide an improved form of duplex pump, especially adapted for use in removing liquids from tanks and the like.

A further object of my invention is to supply an adjustable bung, whereby the pump tube may be maintained at any desired depth in the tank.

A still further object of my invention is to provide a drip pan having a telescoping drain pipe by means of which the liquid may be returned to the tank.

With these and other objects in view my invention will be more fully described, illustrated in the drawings which show a preferred embodiment of my pump, and then specifically pointed out in the claim which are attached to and form a part of this application.

In the accompanying drawings, Figure 1 is a side elevation of the complete pump system including the return drain. Fig. 2 is a vertical sectional view of the pump showing its interior construction. Fig. 3 is a detail section of the bung and drainage mechanism.

Referring more specifically to the drawings in which similar reference numerals designate corresponding parts throughout, 1 designates the main casing or body portion of the pump which is preferably elliptical in form and which tapers at its lower end to form the cylindrical throat portion 2 through which extends the tapped bore 3 in which is threaded the upper end of pump tube 4. The upper portion of this casing is provided with an outwardly extending flange 5 the upper face of which is machined to furnish a seat for the upper part of the pump casing. A partition member 6 extends completely across the casing adjacent the lower part thereof and this member is further provided with the upwardly ex-

tending medial wall 7, said wall and partition being preferably formed integrally with the casing itself. This wall and partition are so positioned and shaped as to form cylindrical chambers 8 and 9 in which the pump pistons are adapted to act. The lower portion of each of these chambers is provided with a valve seat 10, upon which is seated the valve 11, said valves being slidable upon the valve stems 12 which extend upwardly through the valve seats and valves and are provided adjacent their upper end with cross pins 13 and surrounding the valve stems between the pins 13 and the valves are the helical compression springs 14 which normally maintain the valves in closed position.

The upper portion of the valve casing consists of two parts, 15 and 16, the lower portions of which are machined as at 17 and provided with flanges 18 adapted to be seated upon the upper machined portion of the valve casing proper and to be secured thereto by means of the bolts 19. The abutting edge portion of the casing members 15 and 16 are also provided with outwardly extending flanges 20, which flanges are also machine spaced and secured together by means of bolts 21. The casing member 16 as shown in the drawings, is provided with a downwardly extending arm 22 formed integrally with the casing, and provided at its lower extremity with a half bearing 23, said half bearing co-acting with a half bearing 24 to form a central bearing for the crank shaft 25, the end 26 of which is suitably journaled in a bearing formed in the inner portion of the wall casings 15 and 16. The other end 27 of the crank shaft 25 extends completely through the casing, being journaled in a bearing 28 formed in the walls thereof, and secured upon the end of the crank shaft by means of the set bolt 29 is a hand crank 30.

As best shown in Fig. 2 of the drawings the crank shaft 25 is provided with the oppositely directed crank members 31 and 32 upon the wrist pins of which are rotatably mounted the piston rods 33 and 34 respectively. Rotatably mounted upon the lower end of the piston rod 33 is a yoke member 35 the lower end of which carries a valve cup 36 provided with a valve 37 identical in construction with the valves 11 previously described. The lower end of the piston rod 34 is connected in a similar manner by

means of the yoke 38 with a valve cup 39 having a valve 40. As shown, these valve cups are so formed as to fit closely in the cylindrical chambers 8 and 9 and thus form the pump piston, and it will also be seen that these pistons will operate in opposite phases. The casing member 15 is provided adjacent its lower portion with a tapped opening in which is threaded the cutoff valve 41, and it will be seen that if this cutoff is closed when the pump is not in action it will materially assist the valves of the pump in preventing the liquid already in the pump casing from running back into the tank.

In many cases it is desirable in removing a liquid from a tank, keg or other receptacle, to remove the same, a portion at a time, with as little disturbance of the remainder as possible in order to avoid drawing impurities which may have settled at the bottom of the receptacle. To do this it is necessary that the pump tube extend downwardly into the upper portion of the liquid only and that means be provided for gradually lowering the same as the liquid is drawn off. In order to provide for this I have constructed an improved form of adjustable bung, which as shown in the drawings, is practically identical with the bung of ordinary construction except that its bore is somewhat greater than the outer diameter of the pump tube. This bung which as a whole is designated by the numeral 42, is threaded into the keg in the customary manner, the upper portion of the bung being provided with angular faces 43 adapted to be engaged by a wrench. The pump tube is then passed through the bung the required distance and secured in place by means of the set bolt 44, and it will readily be seen that by means of this bolt the pump may be adjusted so that the tube will extend into the liquid to any desired extent. By forming the bore of the bung somewhat larger in diameter than the other diameter of the pump tube a drainage space is provided between the two the full purpose of which will be hereinafter more fully explained.

Slidably mounted upon the pump tube intermediate the bung and pump is a bracket 45 provided with a set bolt 46 by means of which it may be secured upon the tube in adjusted position. Securely mounted upon the arm 47 of this bracket is a supporting base 48, preferably formed of channel metal and adapted to support a drip pan 49, which pan is preferably formed of a non-corrosive metal such as galvanized iron. Leading from this pan is a drain pipe 50, which as shown is formed of a plurality of telescoping pipe members 51, each of which preferably telescopes into the one beneath whereby all leakage is avoided. This pipe terminates at its lower end in an elbow 52

from which extends a horizontal pipe 53 upon the free end of which is threaded a casing 54 which forms the drainage chamber. The upper portion of this drainage chamber as best shown in Fig. 3 of the drawings is provided with a bore 55 through which the pump tube extends said bore being preferably provided with some form of packing to form a tight joint with the tube 4. The lower portion of the drainage chamber terminates in a collar member 56 which engages loosely about the pump tube and which extends downwardly within the annular flange 57 of the bung, thus forming a fluid proof joint. This flange 57 is provided with one or more wing bolts 59 by means of which it may be adjustably secured to the collar.

The operation of the pump will be readily understood and therefore needs no description. In filling a vessel by means of my improved pump any overflowing liquid will be caught in the drip pan and will flow down through the drain pipe into the drainage chamber and from there by means of the drainage space between the bung and pump tube into the tank.

As will be readily understood from the above description I have provided a pump especially adapted for removing liquids from tanks and the like and provided with an adjustable bung, whereby the pump tube may be maintained at any desired depth in the liquid. I have also provided a drip pan having a drain pipe leading to a drainage chamber carried by the pump tube, whereby any overflowing liquid will be returned directly to the tank. By forming the drain pipe a telescoping member it is possible to raise and lower the pump tube without readjusting the bracket which supports the drip pan.

It will be seen that the drainage system also furnishes the necessary means for supplying air to the tank to take the place of the liquid withdrawn, and if at any time it is desirable to temporarily close the tank from the air the same may be accomplished by closing the entrance to the drain pipe.

This device is simple and economical in construction easily operated and possesses many advantages over the pump constructions now in use.

What I claim is:—

In a pump, the combination with a lower casing having piston chambers formed therein, and pistons operating in said chambers, of an upper sectional casing mounted upon said lower casing, means for securing said sectional casing to said lower casing, said sectional casing comprising two members provided with flanges upon their abutting edges for securing the same together, the abutting edges of said sections being provided with alined half bearings

registering with each other to form complete bearings when said sections are joined together, a crank shaft mounted in said bearings, connecting rods between said
5 crank shaft and said pistons for operating the same, and an arm formed at the upper edge of one of said sections and depending downwardly into said upper casing, said arm having a bearing formed at its free
10 end to provide a central bearing for said crank shaft whereby to render additional

support to said crank shaft, and to retain the same in the said half bearings of one section when the complement section is removed.

In testimony whereof, I affix my signature, in presence of two witnesses. 15

JOSEPH J. GROETKEN.

Witnesses:

MILDRED HANSEL,
C. H. STRATTON.

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