

F. M. CHENOWETH & A. J. MILLER.
PUMP.

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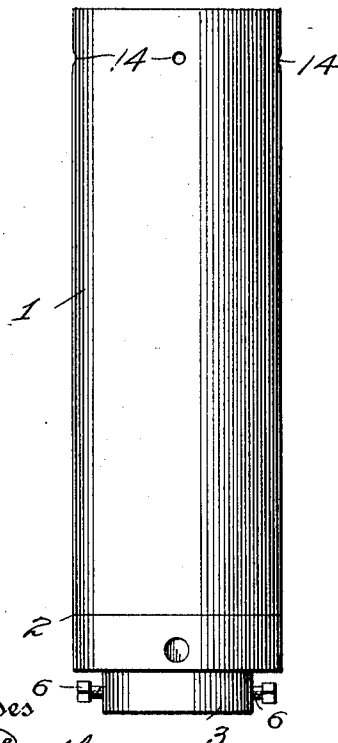
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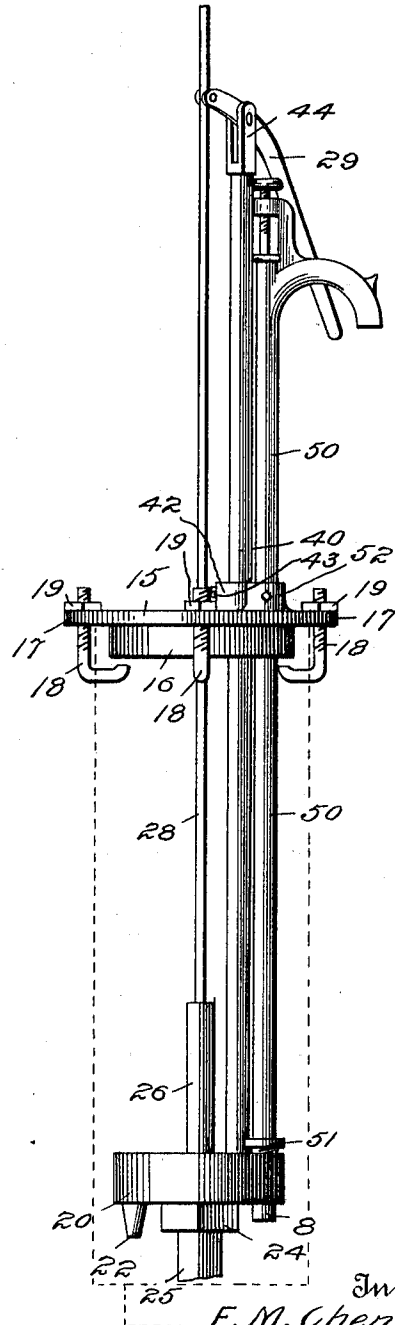
3 SHEETS—SHEET 1.

FIG. 1.

FIG. 5.



Witnesses
C. C. Duffy
M. B. Hopkins



Inventors
F. M. Chenoweth,
A. J. Miller.
By *A. B. Wilson & Co*
Attorneys

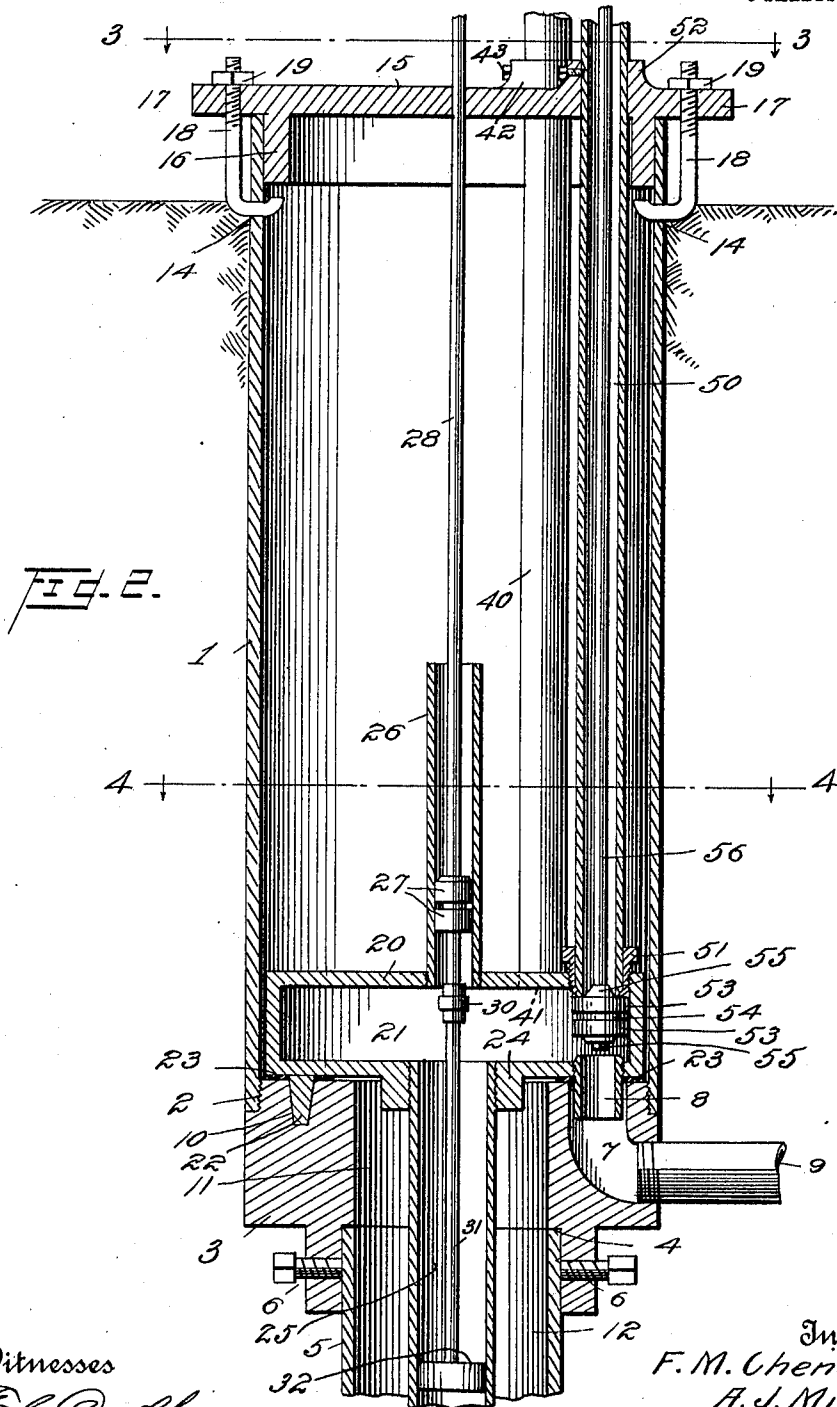
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3 SHEETS-SHEET 2.



Witnesses

E. B. Duffly
O. B. Hopkins

Inventors
F. M. Chenoweth,
A. J. Miller.

By *A. B. Wilson*
Attorneys

F. M. CHENOWETH & A. J. MILLER.

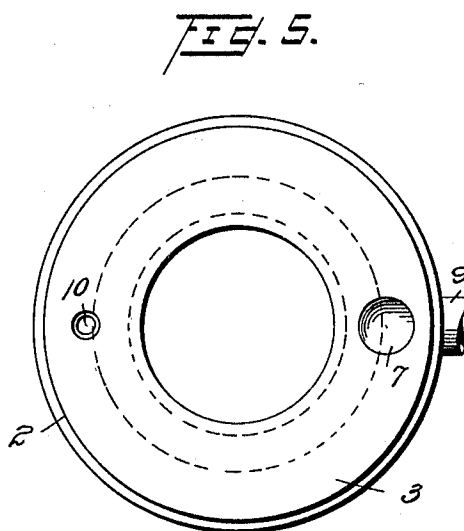
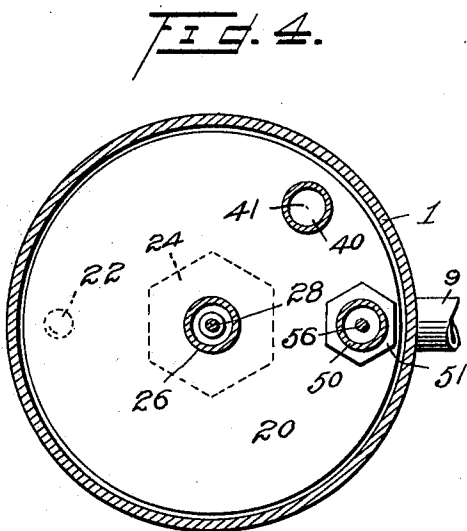
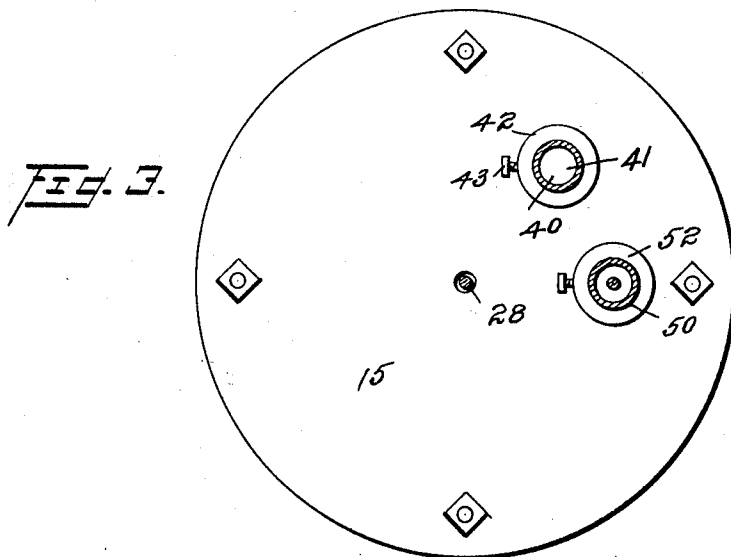
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3 SHEETS-SHEET 3.



Witnesses

E. B. Duffy
O. B. Hopkins

Inventors
F. M. Chenoweth,
A. J. Miller

by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

FRED M. CHENOWETH AND ALDIS J. MILLER, OF LYNN, INDIANA.

PUMP.

1,004,368.

Specification of Letters Patent.

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Application filed May 15, 1911. Serial No. 627,190.

To all whom it may concern:

Be it known that we, FRED M. CHENOWETH and ALDIS J. MILLER, citizens of the United States, residing at Lynn, in the county of Randolph and State of Indiana, have invented certain new and useful Improvements in Pumps; and we do 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 ap-

pertains to make and use the same. This invention relates to pumps, and more especially to that class thereof known as lift and force; and the object of the same is to produce a pump whose working parts are all below the freezing point and located within a metal shell which avoids the necessity for a large pit, and yet are all readily removable from the shell by first removing its cover. These objects we accomplish by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a side view of the pump, the shell indicated in dotted lines; Fig. 2 is a central vertical longitudinal section on an enlarged scale; Fig. 3 is a horizontal section taken on line 3—3 of Fig. 2; Fig. 4 is a similar view on line 4—4 of Fig. 2; Fig. 5 is a plan view of the base; Fig. 6 is a detail side elevation of the pump casing.

In the drawings the numeral 1 designates the shell which is screwed at its lower end at 2 into a base 3, the latter having a bore surrounded by a shoulder 4 into which fits the upper end of the well casing 5, and set screws 6 holding these parts together. The base is cored out as at 7 with an L-shaped passage in whose upper end extends a nipple 8 and in whose lower end is screwed the underground discharge pipe 9 through which water lifted by the pump may be forced to any desired point beneath the freezing line. Diametrically opposite said cored passage 7 the upper face of the base 3 is provided with a socket 10 for a purpose which will appear. This entire base is by preference one piece of rather heavy casting, and its bore 11 is by preference of the same internal diameter as the bore 12 of the well casing 5.

The shell is closed by a preferably flat cover 15 which forms the base for the pump proper as best seen in Fig. 1, and this cover has an internal flange 16 adapted to fit into

the open upper end of the shell and a surrounding flange 17 through which pass hook bolts 18 having nuts 19 above the flange 17 and having their hooked lower ends engaging holes 14 in the sides of the shell 1.

Within the shell is removably inserted a circular casting 20 which is hollow so as to provide an internal chamber 21, its bottom having a lug 22 adapted to engage said socket 10 so that it may be properly disposed upon the base 3, and opposite said lug this casting 20 may carry said nipple 8, gaskets 23 surrounding the nipple and lug, and a wrench-hold 24 depending from the center of the bottom and adapted to pass into the bore 11 of the base 3, itself being tubular so that the inlet pipe 25 may be screwed into it as shown in Fig. 2. Directly above this pipe and in axial alinement therewith the pump barrel 26 rises through the top of this hollow casting 20, and within it are located the leathers 27 on the pump rod 28 which rises loosely through the cover 15 and is manipulated by a handle 29 in the ordinary manner, its lower end being connected by a coupling 30 with a pump rod extension 31 which may lead downward through the inlet pipe 25 to a piston 32 as indicated in Fig. 2. By the mechanism thus far described, manipulation of the handle 29 causes this piston 32 to raise the water through the inlet pipe 25 to the chamber 21, while the leathers 27 force it out through the nipple 8 and underground discharge pipe 9.

A feature of our invention consists in providing an air chamber 40 which consists of a tube opening at its lower end as at 41 into the top of the chamber 21 and extending thence upwardly and loosely through the cover 15 and through a boss 42 on the top of the same wherein it is held by a set screw 43; and making this tubular air chamber at its upper end into the shape of a fork 44 wherein at 45 is pivotally mounted the handle 29. This tubular air chamber therefore serves not only the function of an air chamber, but also as a means for lifting the hollow casting 20 out of the shell 1 when desired, and as a fulcrum for the handle 29. Through another boss 52 in the cover 15 extends the discharge pipe 50 which leads to a point above ground, its lower end being connected by a bushing 51 with the top of the hollow casting 20. The lower end of this

bushing and the upper end of the nipple 8 serve as valve seats for a valve, which latter consists of two disks 53 separated by a washer 54 and clamped by nuts 55 upon a valve rod 56 which extends upward through the discharge pipe and may be reached at the upper end in any convenient manner. When this rod 56 is raised the uppermost disk 53 closes against the lower end of the bushing 51, and the water within the chamber 21 is forced out the underground discharge pipe 9; and it will be clear that when the valve rod is depressed the lower disk 53 is closed upon the valve seat formed by the upper end of the nipple 8, and the water within the chamber 1 is forced up through the overground discharge pipe 50. Thus we provide means, manipulated from a point above the ground and within reach of the operator, for controlling the outlet of the water raised by this pump.

When it is desired to gain access to the interior of the shell 1, the hooks at the lower ends of the bolts 18 are disengaged from the holes 14 in the shell, the nuts 19 first being loosened, and the entire cover 15 raised. With it comes the tubular air chamber 40 and the overground discharge pipe 50; and obviously the pump rod 28 with its leathers and valve may be drawn upward, or by grasping the pump barrel 26 the entire casting 20 may be lifted out of place. When the parts are restored and the hooks re-engaged with the holes 14, they resume the position shown in Fig. 2 and all working parts are below the ground level and therefore the liability of freezing is decreased.

Various changes in the details may be made without departing from the spirit of our invention, and it is clear that the sizes, proportions, and materials of parts are not essential. The operation of pumps of this character is so well understood that we will not amplify here.

What is claimed as new is:

1. In a pump of the class described, the combination with a cylindrical shell having a removable cover, a base screwed into its lower end and having a central bore, a socket in its upper face at one side of the bore, and a cored passage at the other side of the same, the lower end of the bore having an internal shoulder, the well casing fitting within said bore and against said shoulder, set screws taking through the base and against the well casing, and an underground discharge connected with the lower end of said passage; of a hollow casting removably inserted within said shell and having a depending lug adapted to engage said socket and a nipple adapted to pass into the upper end of said passage, a pump barrel rising from the top of this casting and a pump barrel extension depending from its bottom and extending downward into said

well casing, a pump rod and pump elements working in said barrel, and a valve adapted to close against said nipple.

2. In a pump of the class described, the combination with a cylindrical shell having a removable cover, a base connected with its lower end and having a central bore, a socket in its upper face at one side of the bore, and a cored passage at the other side of the same, the lower end of the bore having an internal shoulder, the well casing fitting within said bore and against said shoulder, set screws taking through the base and against the well casing, and an underground discharge connected with the lower end of said passage; of a hollow casting within said shell having a depending lug engaging said socket and a nipple adapted to pass into the upper end of said passage, a pump barrel rising from said casting and a pump barrel extension depending from it into said well casing, pump elements in said barrel, an overground discharge pipe leading through the top of said hollow casting and upward through the shell, a bushing connecting the lower end of this pipe with the top of said casting, a valve rod depending through said pipe, and a compound valve secured upon its lower end and adapted to make alternate contact with the lower end of said bushing and the upper end of said nipple.

3. In a pump of the type described, the combination with a shell having a base provided with a bore, the well casing connected with the latter, said base having a passage cored through its top and out its side, and an underground discharge pipe connected with the lower end of said passage; of a hollow casting removably resting upon said base and having a nipple depending into the upper end of said passage, a bushing through its top above said nipple, an overground discharge pipe rising from said bushing through the cover of the shell, a valve rod depending through this pipe, a compound valve at the lower end of said rod including disks alternately contacting with said bushing and nipple, and a pump barrel and pump elements carried by said tubular casting.

4. In a pump of the type described, the combination with a hollow shell having a base communicating with the well casing, a hollow casting resting on said base and having a pump barrel, a bushing screwed through the top of this casting, an overground discharge pipe screwed into said bushing and rising therefrom, a rod depending through this pipe, and a valve at the lower end of the rod adapted to close against said bushing; of a tubular air chamber rising from the top of said casting and forked at its upper end, a handle pivoted in said fork, a pump rod pivoted to said handle and carrying pump elements

working in said barrel, and a cover remov-
ably mounted upon the upper end of said
shell and through which projects said dis-
charge pipe, tubular air chamber, and pump
5 rod.

5. In a pump of the type described, the
combination with a hollow shell having a
base communicating with the well casing, a
hollow casting resting on said base and hav-
ing a pump barrel, a bushing screwed
10 through the top of this casting, an over-
ground discharge pipe screwed into said
bushing and rising therefrom, a rod de-
pending through this pipe, and a valve at
15 the lower end of the rod adapted to close
against said bushing; of a tubular air
chamber rising from the top of said casting
and forked at its upper end, a handle piv-

oted in said fork, a pump rod pivoted to
said handle and carrying pump elements 20
working in said barrel, a cover closing the
upper end of said shell and having a flange
depending into it, bosses on said cover
through which project the discharge pipe
and air-chamber, set screws in the bosses 25
against said chamber and pipe, and hook-
bolts through the cover with their hooks
engaging holes in said shell.

In testimony whereof we have hereunto
set our hands in presence of two subscribing 30
witnesses.

FRED M. CHENOWETH.
ALDIS J. MILLER.

Witnesses:

E. H. REYNOLDS,
G. H. GERLACH.

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