

E. A. ZEVELY.

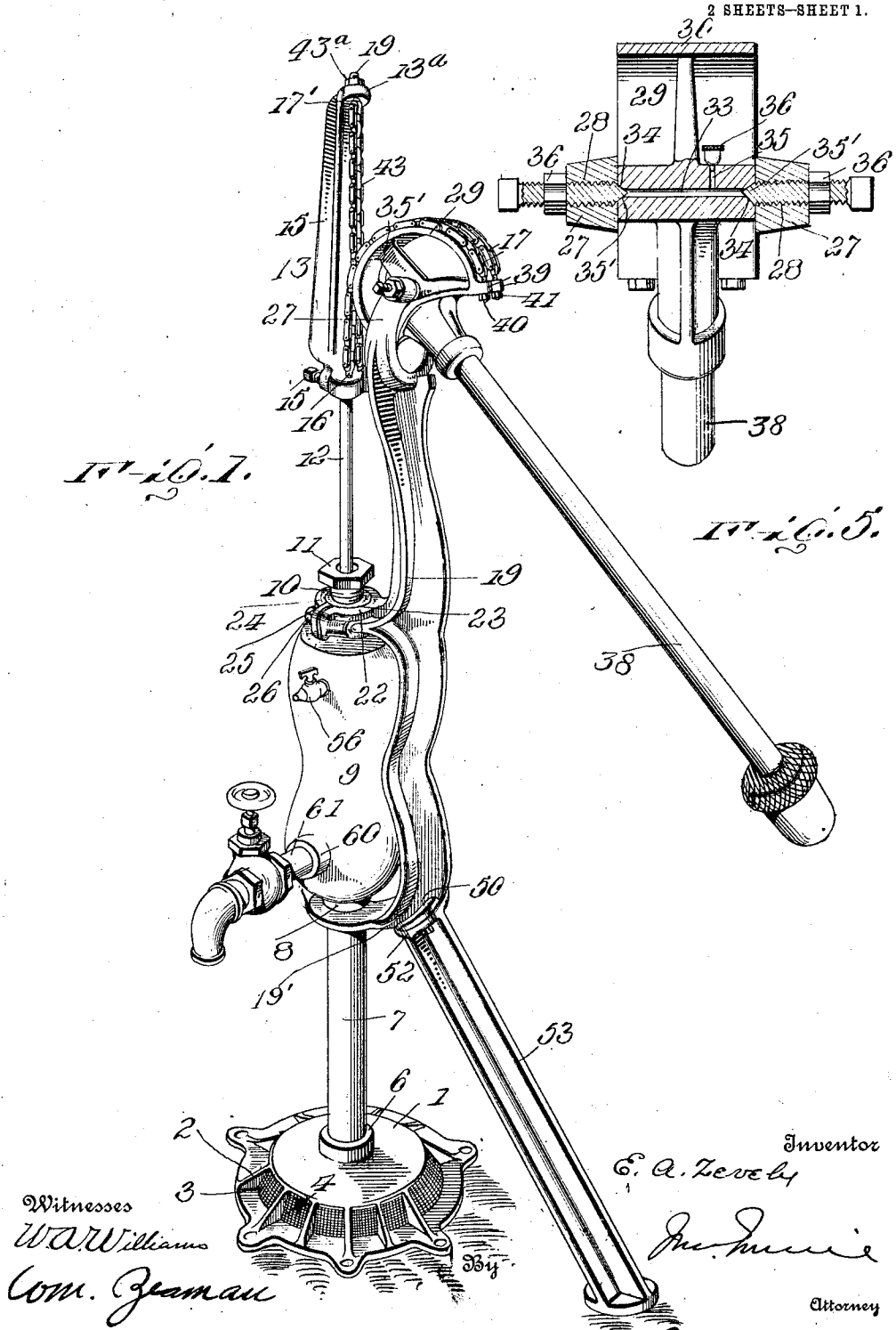
PUMP.

APPLICATION FILED AUG. 24, 1910.

982,168.

Patented Jan. 17, 1911.

2 SHEETS—SHEET 1.



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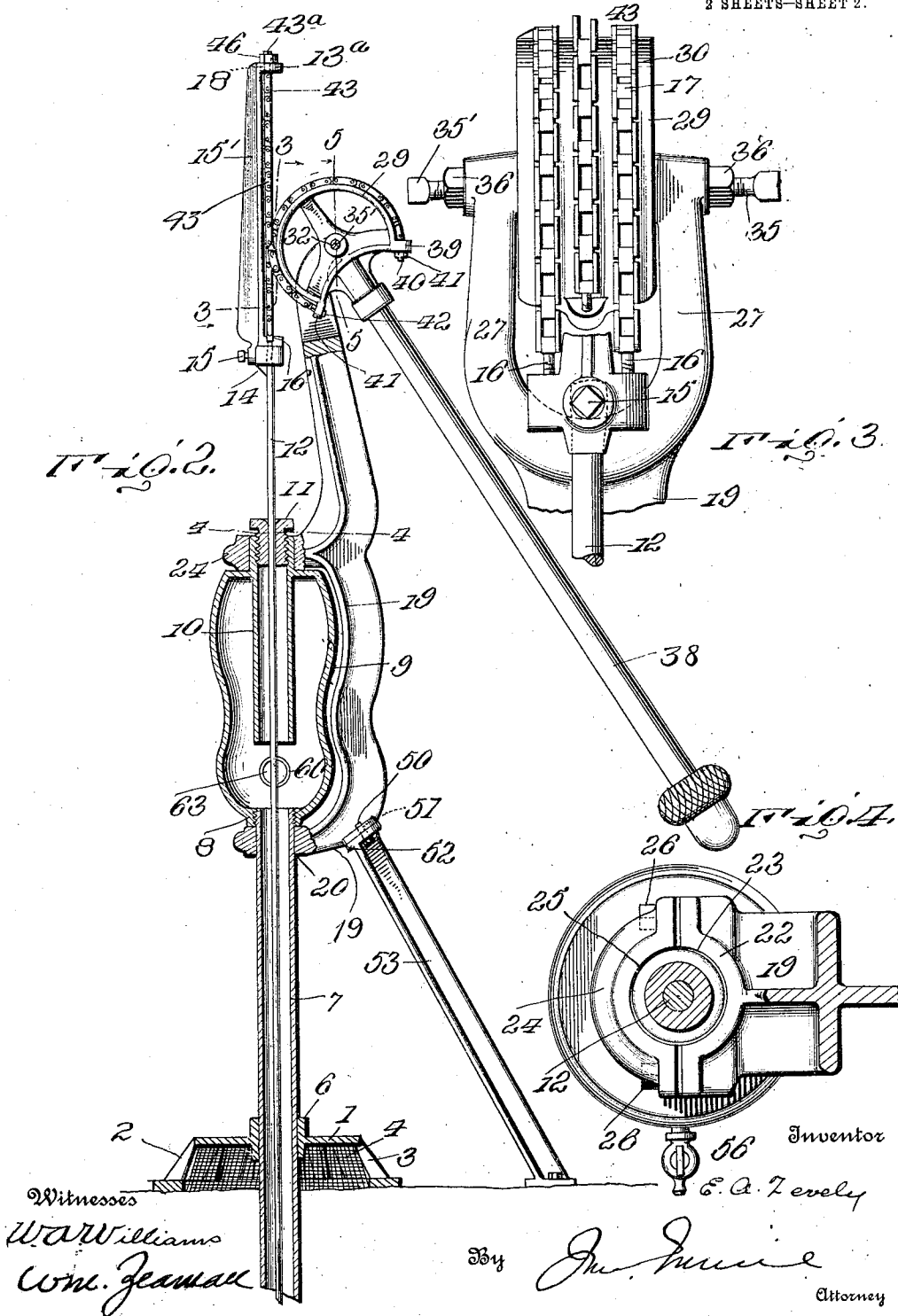
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UNITED STATES PATENT OFFICE.

EDWARD A. ZEVELY, OF WINSTON SALEM, NORTH CAROLINA.

PUMP.

982,168.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, EDWARD A. ZEVELY, a citizen of the United States, residing at Winston Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Pumps; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in pumps.

The object of the invention is to provide in a pump, a substantially braced frame, whereby the parts will be rigidly held during the operation of the pump.

A further object of the invention is to provide a pump chamber with a seal, the structure being cast integral for the purpose of economy, and for the purpose of providing a support on which the frame work of the pump structure is mounted.

A further object of the invention is to provide an improved bearing on which the pump handle is mounted, and an improved connection coöperating with the handle, whereby the raising and lowering of the pump rod will be directly over the center of the same to relieve the wear and friction incident to the operation.

The invention also relates to the specific details of construction and arrangement of parts which will be hereinafter described and particularly pointed out in the claim.

In the drawings: Figure 1 is a perspective view. Fig. 2. is a central vertical section. Fig. 3. is a detail section on line 3—3, Fig. 2. Fig. 4 is a detail horizontal section on line 4—4, Fig. 2. Fig. 5 is a detail section on line 5—5, Fig. 2.

The numeral 1, indicates a base which is closed at its upper end, and has a downwardly extending frame work 2, provided with a series of slots 3, the base forming an arch structure in which is mounted a foraminous frame 4, whereby to form a series of sieves to prevent foreign matter falling through the slots 3, and into the well, and at the same time afford ventilation.

In the center of the base 1, is a threaded boss 6, in which is mounted the inlet pipe 7 55 which leads down into the well. The upper end of the pipe 7, is screwed into a threaded boss 8, on the lower end of a chamber 9. The chamber 9, is cast with an integral pipe 10, which extends down within said chamber, and terminates above the bottom of the latter, and also extends beyond the upper portion of the chamber to form a bearing, on which a part of the frame work is mounted. The upper end of the pipe 10 is internally threaded and receives a stuffing box 11, through which the pump rod 12 passes, said pump rod also extending downwardly through the chamber, and the inlet pipe 7, to the well, and is provided with the usual 70 piston and valves, (not shown).

To the upper end of the pump rod 12 is secured a casting 13, the latter having a lower projection formed with an opening 14, into which the upper end of the pump rod fits and a set screw 15, passes through the projection and secures the pump rod thereto. The lower projection of the casting 13, is offset from the upwardly extended portion 15', and is provided each side of the center 80 with a tap 16, for the attachment of chains 17, which will be referred to later on. The free end of the casting 13 is provided with an upper projection 13^a, and is provided with an opening 17' in which fits a tap 19, 85 the latter being in direct vertical alinement with the pump rod.

A frame 19', is supported on the pipe 7 and the upper extension of the pipe 10. This frame is formed with a central reinforcing rib, and at its lower end with an opening 20, through which the pipe 7, passes, and is shaped to correspond somewhat to the configuration of the chamber 9, and is provided with an upper extension 22 formed 95 with a curved seat 23, to fit snugly the upwardly extended portion of the pipe 10. A cap 24, having a seat 24^a, is clamped on the front of the extension of the pipe 10, and is provided with a curved seat 25, corresponding 100 to the curved seat 23, and when put in place, the two seats 23, and 25, form an opening which fits snugly around the extended portion of the pipe 10, and is held in place by bolts 26. The frame extends up- 105 wardly from the portion 22, and is bifur-

cated to form two arms 27, formed with openings 28. Mounted between the two arms 27, is a segment 29, having a broad periphery 30, and a central hub 32. The hub is provided with an oil chamber 33, which is reamed at the ends as shown at 34, and communicating with the oil chamber 33, is an oil opening 35 in which fits an oil cup 36, for supplying the bearings with oil. Extending through the openings 28, in the arms 27, are two beveled taps 35', which fit in the reamed portions 34, so as to properly center the segment 29. After these taps have been adjusted, lock nuts 36 are applied so as to hold them in set position.

Fitting in a threaded opening in a boss on the segment 29, is a handle 38. On the periphery of the segment are two lugs 39, having perforations, in which fit taps 40 provided with nuts 41, and to which the chains 17 are secured. As before stated, the opposite ends of these chains are attached to the taps 16, so that as the handle is rocked in a downward direction, the pull on the pump rod will be in direct alinement therewith. Extending from the opposite edge of the segment 29 is a lug 41, provided with an opening to receive a tap 42, to which is attached the chain 43, the upper end of the chain being secured to the tap 43' fitting in the opening 18, the said tap being secured in place by a nut 46.

Near the lower portion of the frame 19, and extending from the rib, are two laterally extending lugs 50, provided with threaded openings 51, and fitting against these two lugs and straddling the web, is the flange 52, of a downwardly extending brace 53, provided with two openings in its lower end through which may pass screws to secure the pump in position.

Communicating with the chamber 9, above the end of the pipe 10, is a vent cock 56, whereby the air contained in the chamber may be permitted to pass to the atmosphere.

The chamber 9, is provided with two threaded openings 60, in one of which fits a draw-off pipe 61. In the other opening may be fitted a second pipe, or it may be closed by a plug 63, as may be found desirable in the operation of the pump.

In operation, the parts are assembled as described, and as the handle is raised, the pump rod is pulled down by means of the chain 43, and as the handle is lowered, the chains 17 pull the rod up so that a continuous and direct motion is imparted to the pump rod upon each reciprocation of the handle. As the water is drawn up through the pipe 7, into the chamber 9, it flows above the bottom of the pipe 10, and forms a seal in the chamber surrounding the pipe and thereby compresses the air, as is usual in

pumps of this type. If it be desired to regulate the compression in the chamber, the vent cock 56, may be opened.

By constructing the frame 19, in the specific manner set forth, I am enabled to make a substantial frame work for a pump, whereby, once it is set in position, the parts cannot turn or become displaced as is usual in a pump structure of this form. It may also be stated that by reason of the construction shown and described, the position of the chamber may be relatively located to suit the convenience of the operator, so as to direct the water to flow through the pipe 6, in any convenient direction. After the chamber 9 has been positioned to suit the circumstances, the casting 24, is put in place and tightened by means of the screws 26 which lock it fast in place and prevent its turning in the bearing in the frame. It is for this reason that I desire to emphasize the fact that the pipe 10, is cast integral with the chamber 9, for were the pipe 10 made a separate element, the parts would be likely to slip or turn, and as this is not desirable, I have found that by making the casting in the manner described, this inconvenience is overcome. I further desire to emphasize the fact that the disposition of the several chains 17, and 43, are such that their pull is always in direct alinement with the pump rod, so as to prevent sagging or lateral movement of the rod when the handle is operated. This construction I regard of importance as it insures a direct action on the pump rod, with little or no lateral wear on the same when the pump is operated.

What I claim is:

In a pump, the combination of a chamber formed at the bottom with an inlet opening and at the top with a reduced interiorly threaded neck, a pipe fitting in the opening in the bottom of the chamber, a threaded plug formed with an opening and fitting in the threaded opening in the neck, a pump rod passing through the plug the chamber and the pipe, a casting having two projecting portions to engage the upper and lower ends of the chamber, a bifurcated upright extension, the lower projecting portion having an opening through which the pipe passes, the upper projecting portion having a recess to fit the neck, a detachable cap formed with a recess similar to the recess in the projecting portion, the said recess when the cap is clamped to the projecting portion forming an opening to receive the neck, bolts for clamping the cap to the projecting portion, the casting having a reinforcing rib extending from the bifurcated end of the extension to the lower projecting portion, perforated flanges extending from the rib adjacent the lower projecting por-

tion, a brace having perforated end flanges,
bolts securing the flanges on the upper end
of the brace to the flanges extending from
the rib, operating mechanism mounted in
5 the bifurcated extension, and a flexible con-
nection between the pump operating mech-
anism and the rod.

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

EDWARD A. ZEVELY.

Witnesses:

W. N. WOODSON,
JNO. IMIRIE.