

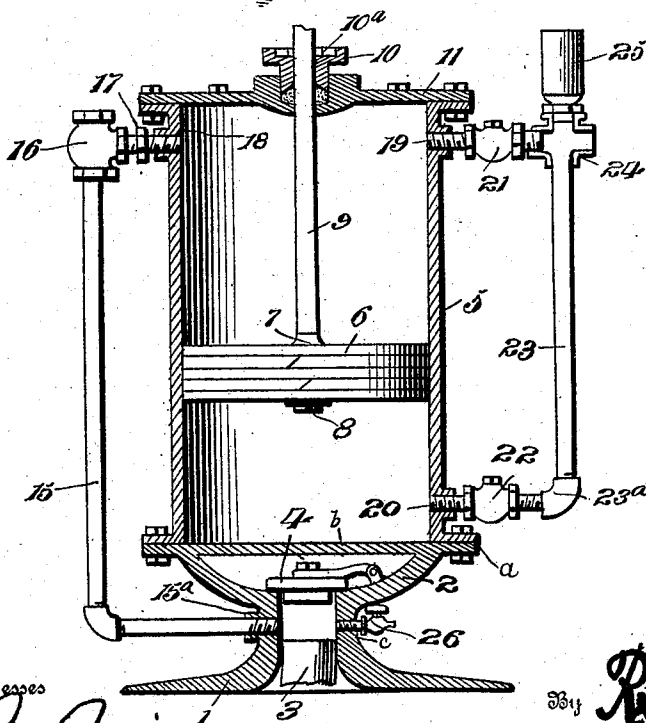
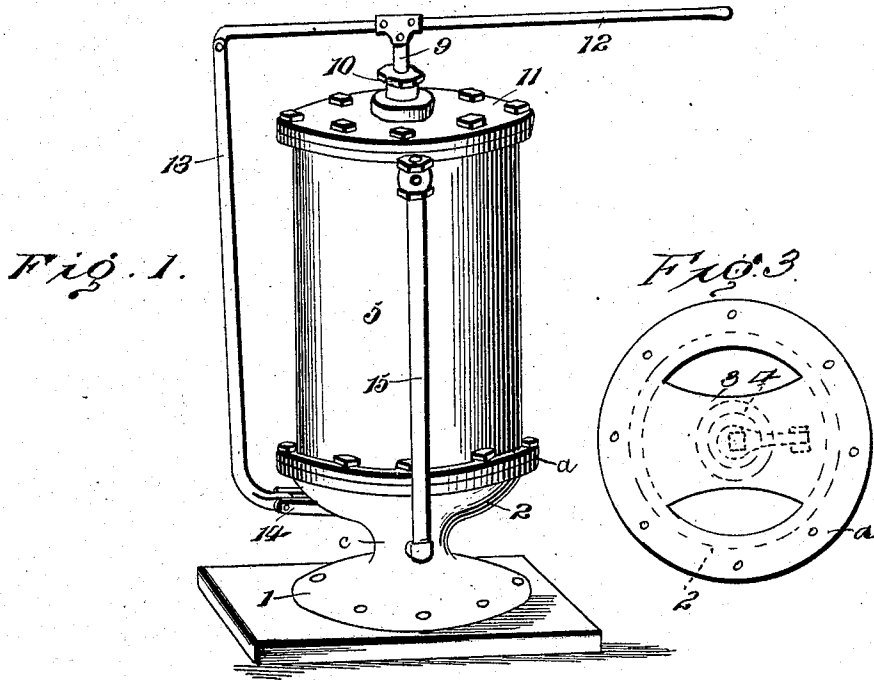
E. A. COSTEPHENS & D. D. SNOW.

PUMP.

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Witnesses

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UNITED STATES PATENT OFFICE.

ELGIN A. COSTEPHENS AND DESKIN D. SNOW, OF NUBIA, TEXAS.

PUMP.

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To all whom it may concern:

Be it known that we, ELGIN A. COSTEPHENS and DESKIN D. SNOW, citizens of the United States, residing at Nubia, in the county of Taylor and State of Texas, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

The object of our invention is to provide an improved construction of double acting pump which will be formed of comparatively few and simple parts that are durable in construction, and efficient in operation, and the invention consists in certain constructions, arrangements and combinations of the parts hereinafter described and claimed.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of my improved pump; and, Fig. 2 is a vertical sectional view thereof, parts being shown in side elevation. Fig. 3 is a top plan view of the stand.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The pump consisting of a cylinder and a piston arranged to operate therein, is mounted upon a stand which is preferably hollow, as shown, and consists of a flared base 1, a flared head 2 and an intermediate contracted portion *c*. The outer flange *a* provided at the upper end of the head, receives the lower flanged end of the pump cylinder, the two being secured by bolts passed through openings formed therein. The main suction pipe 3 connects with the contracted portion *c* of the stand and passes through the base 1 thereof. An upwardly opening valve 4 controls the direct communication between the suction pipe 3 and the hollow head 2, the valve being of the pivoted type and being located centrally within the hollow head and connected thereto. The top *b* of the head is in the plane of the outer flange *a* and is formed near its margin with openings extending there-through, as shown, to establish communication between the head 2 and the pump cylinder and to provide a central portion that is disposed above and in spaced relation to the valve 4 and is arranged to constitute a stop

to limit the upward movement of such valve and also to prevent the lower end of the piston rod from coming in contact with such valve upon the down stroke of the piston.

A piston 6, which may be constructed of a series of disks with interposed downwardly and upwardly facing leathers or cups, is adapted to be held against a collar 7 on the piston rod 9, by means of the nut 8. The said piston rod extends up through a stuffing box 10 which is held in the seat that is provided for it in the cap piece 11, bolted or otherwise secured to the top of the cylinder. Preferably the gland 10 of the stuffing box is provided in its upper surface with a depression 10^a adapted to catch any water that may be forced through the stuffing box upon the upward movement of the piston or plunger rod, and such water may be then sucked down in the pump when the plunger rod descends. It is manifest that the piston rod 9 may be operated by any suitable power, such as a wind mill or engine of any character as well as by hand. In the present instance, we have shown the plunger as being operable manually and as secured at its upper end to a pump handle 12 which is pivoted to the upper end of the rocking link 13. This link is supported at its lower end upon a bracket 14 or lug projecting out from the head 2.

The contracted portion of the stand 1 is provided below the check valve 4 with an outwardly opening passage 15^a from which the lower laterally extending member of the branch suction pipe 15 extends. This lower member of said pipe is connected by an elbow coupling to the vertically extending member of the said branch suction pipe and the coupling contains an angle check valve 16 designed to open inwardly, that is, toward the cylinder 5 to which it is connected by means of the union 17.

In addition to the opening 18, the pump cylinder 5 is provided with an upper outlet opening 19, and a lower outlet opening 20. Within these respective openings are screwed valve casings, 21, 22, each of which contains an outwardly opening check valve. The passage through these valve casings that are controlled by the said check valve and which lead from the outlet openings 19 and 20 are connected together by the outlet pipe 23 having an elbow 23^a at one end which connects it to the valve casing 22 and a four-way coupling 24 so as to connect it to the valve casing 21. A cylinder 25 providing

an air chamber is secured to one member of this four-way coupling 24, while another member of the coupling may be secured to the final outlet pipe designed to lead the
 5 water to any desired point.

26 designates a drain which is secured to the contracted portion of the pump head below the check valve 4 and which is provided with a suitable valve or stop cock by
 10 which it may be opened whenever necessary to drain the pump.

From the foregoing description in connection with the accompanying drawing, it will be seen that as the plunger or piston 6 moves
 15 upwardly, it will suck water into the lower end of the cylinder 5, the check valve 4 opening during this movement. At the same time water that has, by a previous down stroke been drawn into the upper end of the
 20 pump cylinder, will be forced out through the outlet 19 in the upper end of the cylinder and out through the four way coupling 24 to the desired point. During this up-stroke, it is manifest that the check valve within the
 25 casing 22 will be closed as will also the check valve within the casing 16.

Upon the down stroke of the plunger, it is manifest that the water drawn into the lower end of the cylinder will be forced outwardly
 30 through the outlet opening 20 and through the pipe 23, while water will be supplied to the upper end of the cylinder at the same time by means of the suction which will result in drawing the water from the main suction
 35 pipe 3 and thence through the branch suction pipe 15 and check valve 16 and inlet opening 18.

By a construction of pump as herein described and shown, it is obvious that a comparatively short stroke will be sufficient,
 40 that the pump can be repaired without pulling up any underground pipes or disturbing the working parts that are not of easy access,

and that the actuating parts of the pump may be placed at any reasonable distance
 45 from the pipe or water supply.

Having thus described the invention, what is claimed as new is:

A pump of the character described, comprising a hollow stand consisting of a flared
 50 base 1, a flared head 2 and an intermediate contracted portion *c*, a main suction pipe passing through the base and terminating in the contracted portion, an upwardly opening
 55 valve 4 located centrally within and pivoted to the head and controlling the communication between the latter and the contracted portion *c*, a drain valve leading from the contracted portion of the stand intermediate of the ends thereof a branch suction
 60 pipe 15 connecting the intermediate portion of the contracted part *c* with the upper end of the pump and having an inwardly opening valve 16, a pump cylinder 5 secured to and supported upon the head, a piston 6
 65 reciprocating within the cylinder, and an outlet pipe 23 having connection with opposite ends of the pump cylinder and provided near its ends with outwardly opening valves 21 and 22, the stand being formed at the
 70 upper end of the head with a top formed near its margin with openings extending there-through to establish communication between the head and the pump cylinder and to provide a central portion located above
 75 the valve 4 and constituting a stop to limit the upward movement thereof and to prevent the piston from coming in contact with such valve on a down stroke.

In testimony whereof we affix our signatures in presence of two witnesses.

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