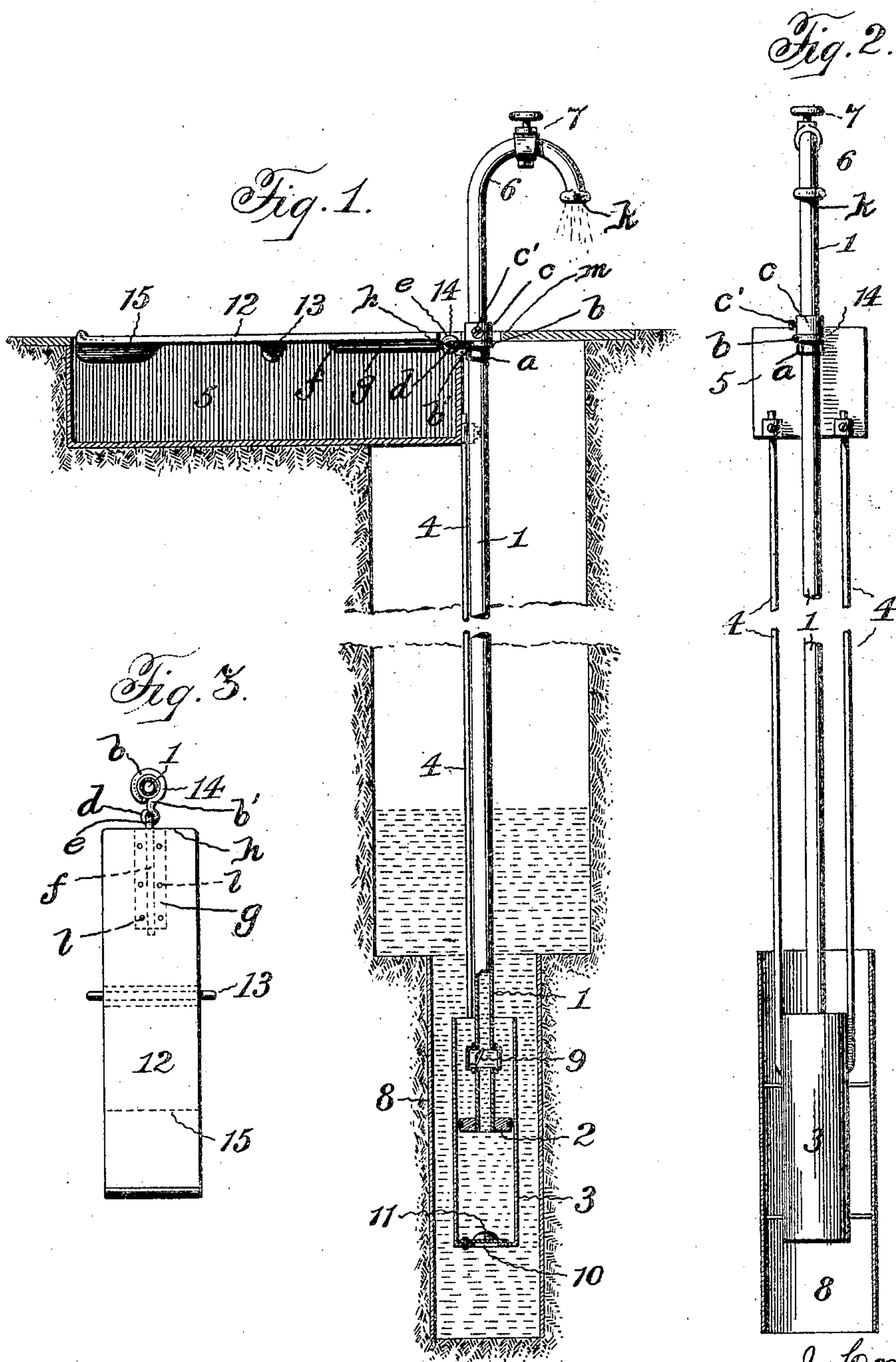


No. 818,522.

PATENTED APR. 24, 1906.

J. COX.
TREADLE PUMP.
APPLICATION FILED JAN. 2, 1902.



Witnesses:
Jas. Hutchinson
G. Keiser.

J. Cox,
Inventor.
by Swift and Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

JOHN COX, OF VANDALIA, ILLINOIS.

TREADLE-PUMP.

No. 818,522.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed January 2, 1902. Serial No. 88,192.

To all whom it may concern:

Be it known that I, JOHN COX, a citizen of the United States, residing at Vandalia, in the county of Fayette and State of Illinois, have invented a new and useful Treadle-Pump; 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.

The invention relates to a treadle force-pump; and it has for its object to provide a pump of this character which will be simple and inexpensive in construction and which will be capable of being easily operated and of being adapted to be readily mounted in position at a well and of effectively operating in water of any depth.

The invention consists in the novel construction and combination of parts hereinafter illustrated and described, and particularly pointed out in the appended claims.

In the drawings forming part of this specification, and in which like characters of reference designate corresponding parts, Figure 1 is a side elevation of a treadle-pump constructed in accordance with this invention. Fig. 2 is a rear elevation, partly in section. Fig. 3 is a detailed view illustrating the construction of the treadle and the manner of attaching the same to the vertically-movable pipe.

Referring to the drawings, 1 designates a vertically-movable pipe forming a tubular plunger-rod and provided at its lower end with a plunger-head 2, arranged within a vertically-disposed tank or chamber 3, and the latter is designed to be submerged within a body of water, such as that of a well, and is rigidly connected by supporting-rods 4 with a box or casing 5, located at the surface of the ground. The vertically-movable pipe 1, which constitutes the discharge-pipe of the pump, has its upper end 6 curved to form a spout and is provided thereat with a cock or valve 7 for controlling the flow of water. The vertically-disposed tank or chamber which is preferably in the form of a cylinder, but which may be of any other desired configuration, is located within a section 8 of well-casing which is mounted within the well in any suitable manner, and the said pipe 1, plunger 2, tank or chamber 3, well-casing 8, rods 4, and box or casing 5 are preferably constructed of galvanized iron; but any other

suitable material may be employed in the construction of the pump.

The plunger-head fits water-tight within the vertically-disposed tank or chamber 3 and is provided with a central opening to permit the water within the tank or chamber to pass upward into the pipe 1 on the down-stroke of the latter. The pipe 1 is provided a short distance above the plunger-head with an upwardly-opening check-valve 9, which is adapted to close automatically and hold the water within the pipe 1 on the upward stroke of the same. When the plunger-head moves upward, water is drawn within the tank or chamber through an opening 10 at the bottom thereof, and the said tank or chamber is provided at the said opening 10 with an upwardly-opening check-valve 11, which closes automatically and prevents the escape of the water from the tank or chamber on the downward stroke of the plunger-head. This vertical movement of the pipe 1 forces water upward through the said pipe, and the said movement is effected by means of a treadle 12, which is mounted within the box or casing 5 on a transverse pivot 13.

The treadle which is pivotally mounted between its ends is adapted to be operated by the foot of a person, and it is connected at its inner end with the vertically-movable pipe 1 by flexible coupling 14. This flexible coupling comprises a hexagon-shaped shoulder *a* upon the pipe 1, upon the upper part of which shoulder rests an eye *b* of a link *b'*, having an eye *d* at its opposite end. To securely clamp the eye *b* against the shoulder *a*, a suitable collar *c* is provided which is securely tightened upon the pipe 1 by means of a screw *c'*. The eye *b* is clamped between the shoulder and collar sufficiently to prevent vertical displacement, but loose enough to allow the pipe 1 to be rotated so as to allow the outlet *h* thereof to be placed at different locations for the convenience of the user. The eye *d* of the link *b'* connects with an eye *e*, which is disposed upon a plane at right angles to the said eye *d*, so as to allow for a vertical pivotal action as the pipe 1 reciprocates, as will be readily understood from an examination of the drawings.

To compensate for the space between the end *h* of the treadle 12 and the circumference of the pipe 1 growing greater, which is due to the ascending of the end *h* of the treadle, the eye *e* is integral with a rod *f*, which reciprocates

rocates between the under side of the end *h* of the treadle 12 and the clamping member *g*, which is securely fixed to the said end *h* by means of suitable bolts *l*, as shown in the accompanying drawings. The edge of the platform, as at *m*, abuts against the pipe 1 and prevents the rod *f* from withdrawing as the pipe 1 moves vertically.

The treadle may be provided at its inner end with an arm having an opening for the reception of the pipe 1 and the latter may be provided above the arm with a shoulder or stop adapted to be engaged by the said arm on the upstroke of the pipe 1. The pipe 1 may be mounted in any suitably-mounted guides, and its weight will carry it down without any exertion on the part of the operator. The treadle is provided at its outer end with a suitable weight 15, adapted to counterbalance or partially counterbalance the weight of the pipe 1 and its contents in order to render the pump easy of operation.

The rods which rigidly support the tank or chamber extend downward from the corners of the box or casing at the inner end thereof, and they are suitably secured to the same and to the tank or chamber, and they may be of any desired length to arrange the tank or casing the desired depth within the water to secure the necessary supply of the same. The well-casing 8 may be of any desired length, and it preferably extends a short distance above the top of the tank or chamber.

From the foregoing it will be clear that the treadle-pump is exceedingly simple and inexpensive in its construction, that it possesses great strength and durability, and that it is adapted to be readily applied to a well. Also it will be seen that the pump is adapted to operate in water of any depth and that it is easily operated, only requiring power on the upstroke, the pump being adapted to drop by gravity on the downstroke. Also it will be apparent that as the shoulders or stops on the discharge-pipe, above and below the coupling for connecting the discharge-pipe with the treadle, are adjustable the treadle may be adjusted vertically with relation to the said discharge-pipe. Instead of using the adjustable collars on the discharge-pipe to

form the stops or shoulders nuts may be employed. I desire it to be understood that changes in the form, proportion, and minor details of construction within the scope of the appended claims, may be made without departing from the spirit of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a treadle-pump, a vertically-movable discharge-pipe having a plunger-head, a valve therein, a chamber to receive said plunger-head and having a valve therein, a treadle to cooperate with said discharge-pipe, a flexible coupling between said treadle and said discharge-pipe comprising a shoulder upon the said discharge-pipe, a collar adjustably mounted above said shoulder, a link composed of two eyes, one of which is clamped between said shoulder and said collar; a clamping member secured to the under side of the treadle, a rod adapted to reciprocate between said clamping member and the under side of the treadle as the pipe and treadle ascend, an eye integral with said rod and being connected to the other eye of the said link.

2. In a treadle-pump, a vertically-movable discharge-pipe, a treadle to cooperate therewith; a flexible coupling between said treadle and said discharge-pipe comprising a shoulder upon the said discharge-pipe, a collar adjustably mounted above said shoulder, a link composed of two eyes, one of which is clamped between said shoulder and said collar; a clamping member secured to the under side of the treadle, a rod adapted to reciprocate between said clamping member and the under side of the treadle as the pipe and treadle ascend, an eye integral with said rod and being connected to the other eye of the said link, and means to prevent the said rod from withdrawing from the clamping member.

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

JOHN COX

Witnesses:

ROBT. W. ROSS,
C. G. WIESTLING.