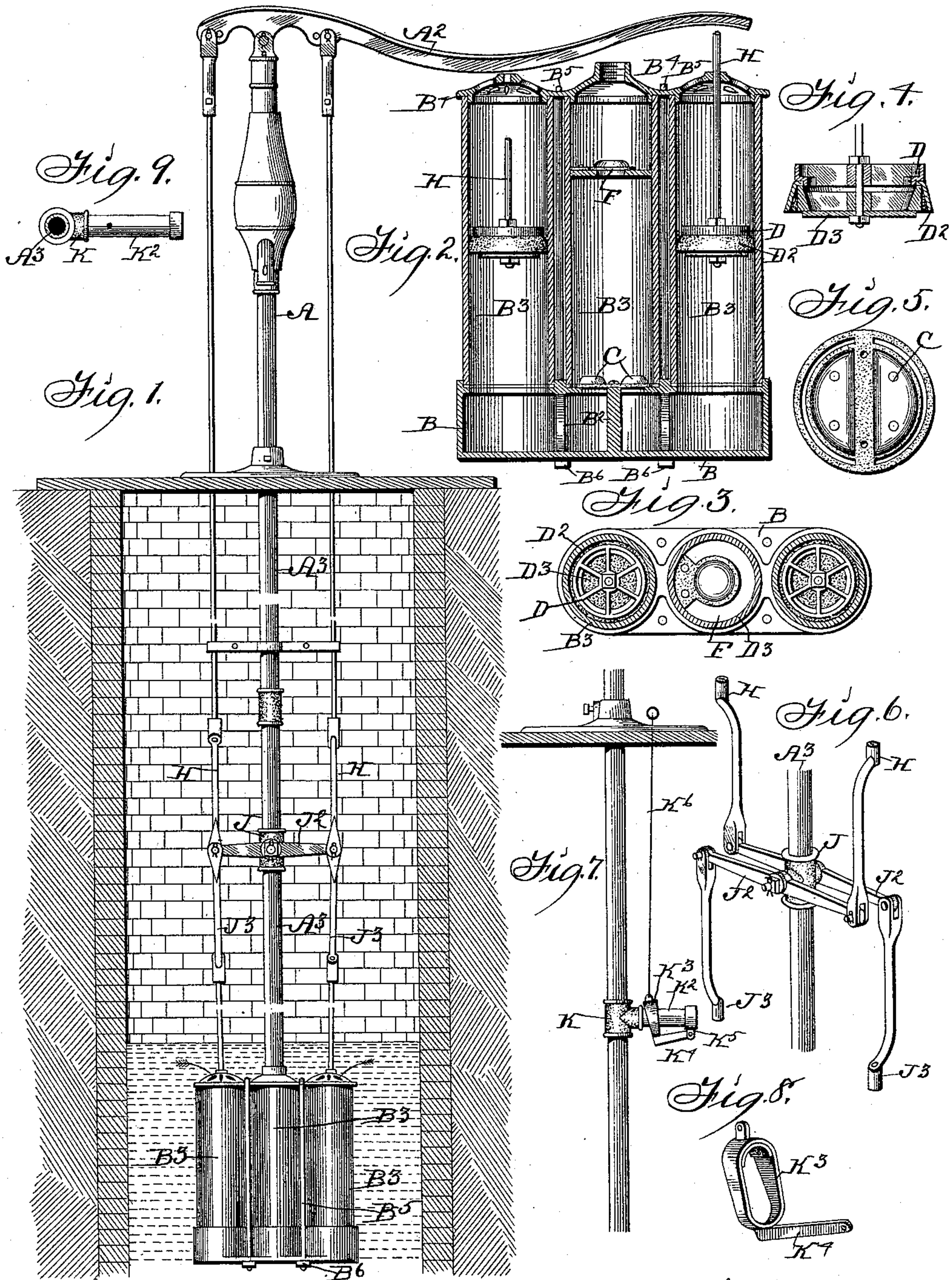


(No Model.)

A. SCHOLL.
DOUBLE ACTION FORCE PUMP.

No. 568,800.

Patented Oct. 6, 1896.



Witnesses:
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Reuben J. Orwig.

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UNITED STATES PATENT OFFICE.

ADAM SCHOLL, OF MURRAY, IOWA.

DOUBLE-ACTION FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 568,800, dated October 6, 1896.

Application filed August 25, 1894. Serial No. 521,285. (No model.)

To all whom it may concern:

Be it known that I, ADAM SCHOLL, a citizen of the United States of America, residing at Murray, in the county of Clarke and State of Iowa, have invented a new and useful Double-Action Force-Pump, of which the following is a specification.

My object is to improve that class of pumps specially adapted for deep wells and that rest upon the bottom of a well and are partially embedded in the soft ground, and also to provide means for draining the top portion of the well-tube as required to prevent water from freezing therein.

I accomplish the results contemplated by the invention hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows the complete pump in position in a well. Fig. 2 is a vertical sectional view of the distinct cylinders combined with my improved base having three distinct chambers and a partition in the central chamber adapted to support a duplex valve. Fig. 3 is a horizontal section taken on a line near the top of the cylinders. Fig. 4 is a sectional view of one of the valved plungers used in the cylinders. Fig. 5 is a top view of the double valve leading into the central cylinder. Fig. 6 is a perspective view showing the mechanism for converting the upward pull of the pump-rods to a downward push. Fig. 7 is a view of a part of the well-tube, showing the means for draining the water from the upper part of the tube. Fig. 8 is a perspective view of the device for closing an opening in a T-shaped pipe-section communicating with the well-tube, and Fig. 9 is a view of said pipe-section.

Referring to the accompanying drawings, the reference-letter A is used to indicate the pump-stock, having a handle or lever A² pivoted in its top.

A³ is the well-tube, leading from the stock into the well.

The water-chambers comprise a base B, having three circular chambers formed thereon communicating with each other and a partition B² in the central chamber.

B³ indicates three cylinders resting upon internal flanges in the chambers B, and B⁴ is

the top piece, adapted to fit over and admit the ends of the cylinders, the part above the outer cylinders being perforated to admit water to flow into the two outside cylinders and the central one being adapted to admit the well-tube A³.

B⁵ are U-shaped rods passed over the top piece and through the base and provided with nuts B⁶, by which the parts are securely held together.

C is a double valve adapted to be secured on top of the partition B² to cover the opening between the interior of the base and the central cylinder, so that water may be forced from either of the side cylinders into the central cylinder.

The valved plungers in the side cylinders are of ordinary construction and comprise a circular frame D, having a flexible washer D² at its outer periphery to engage the interior of the cylinder, and a valve D³ at its bottom adapted to open when the frame is elevated and to close when lowered. It is obvious that when the valved plunger in the side cylinders are alternately operated the water will be admitted to the outside cylinders during the upstroke and forced through one side of the valve C and upwardly into the central cylinder.

F indicates a valve placed in the central cylinder near its top to provide additional protection against the return of water that has been elevated into the well-tube communicating with the top of the central cylinder.

Means are provided for converting the upward pull of the rods H that are connected with the lever A² on opposite sides of its fulcrum to a downward pressure upon the valved plungers in the side cylinders as required to force the water upwardly through the central cylinder as follows: J indicates a casting secured to the well-tube and having bearings at the opposite sides, upon which are fulcrumed the levers J². The rods H are pivoted to opposite ends of these levers, and rods J³ are pivoted to the remaining ends thereof and attached to the valved plungers in the side cylinders, so that a manipulation of the lever A² will alternately force the valved plungers in the outer cylinders downwardly and produce a continuous upward flow

through the central cylinder and the well-tube connected therewith.

K indicates a T-joint adapted to connect the pump-stock with the well-tube, and having a short pipe-section K^2 in its remaining end provided with a hole in its top through which the water in the pump-stock may escape. The valve is composed of an elongated loop K^3 , adapted to encircle the pipe K^2 , and has in its upper interior surface a flexible pad adapted to cover said hole, and an arm K^4 fixed to its lower end and pivoted to a clamp K^5 , mounted on the outer end of the pipe-section.

K^6 is a wire attached to the upper end of the loop and extended upwardly to a point accessible to a person above the well-platform.

It is obvious that the loop normally rests by gravity in a position with the pad covering the hole in the pipe, and that a pull upon the wire will elevate the loop and allow the water to escape.

It is also obvious that the integral partition B^2 in the central chamber of the base strengthens the base and serves as a support for the duplex valve C, that is operated as required to allow water to ascend into the central cylinder from opposite sides of the partition.

It is also obvious that the top B^4 , having three distinct arched covers combined and adapted to be connected with the three distinct cylinders, has two distinct valleys adapted to admit and retain the U-shaped rods B^5 and to facilitate the combination of

the improved base and cylinders and the improved top.

I claim as my invention—

1. An improved pump comprising a base having three open-topped communicating chambers and a partition in the central chamber, a duplex valve fixed to said partition, a cylinder fitted in the top of each of said chambers, valved plungers in the two outside cylinders, a valve in the central chamber to retain water in its upper portion, a top having three integral distinct arched covers fitted to the cylinders as shown, a well-tube fitted to the central part of the top to communicate with the central chamber, U-shaped rods or yokes to clamp the base and cylinders and top together, and means for reciprocating the plungers in the cylinder, arranged and combined in the manner set forth for the purposes stated.

2. A device for draining part of the well-tube of a pump, comprising a T-joint adapted to be placed in the well-tube, a pipe-section attached to the remaining end and having a hole in its top, an elongated metal loop encircling said pipe and having a pad adapted to normally close said hole, an arm formed on said loop, and pivoted to the under side of the pipe-section, substantially as and for the purposes stated.

ADAM SCHOLL.

Witnesses:

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