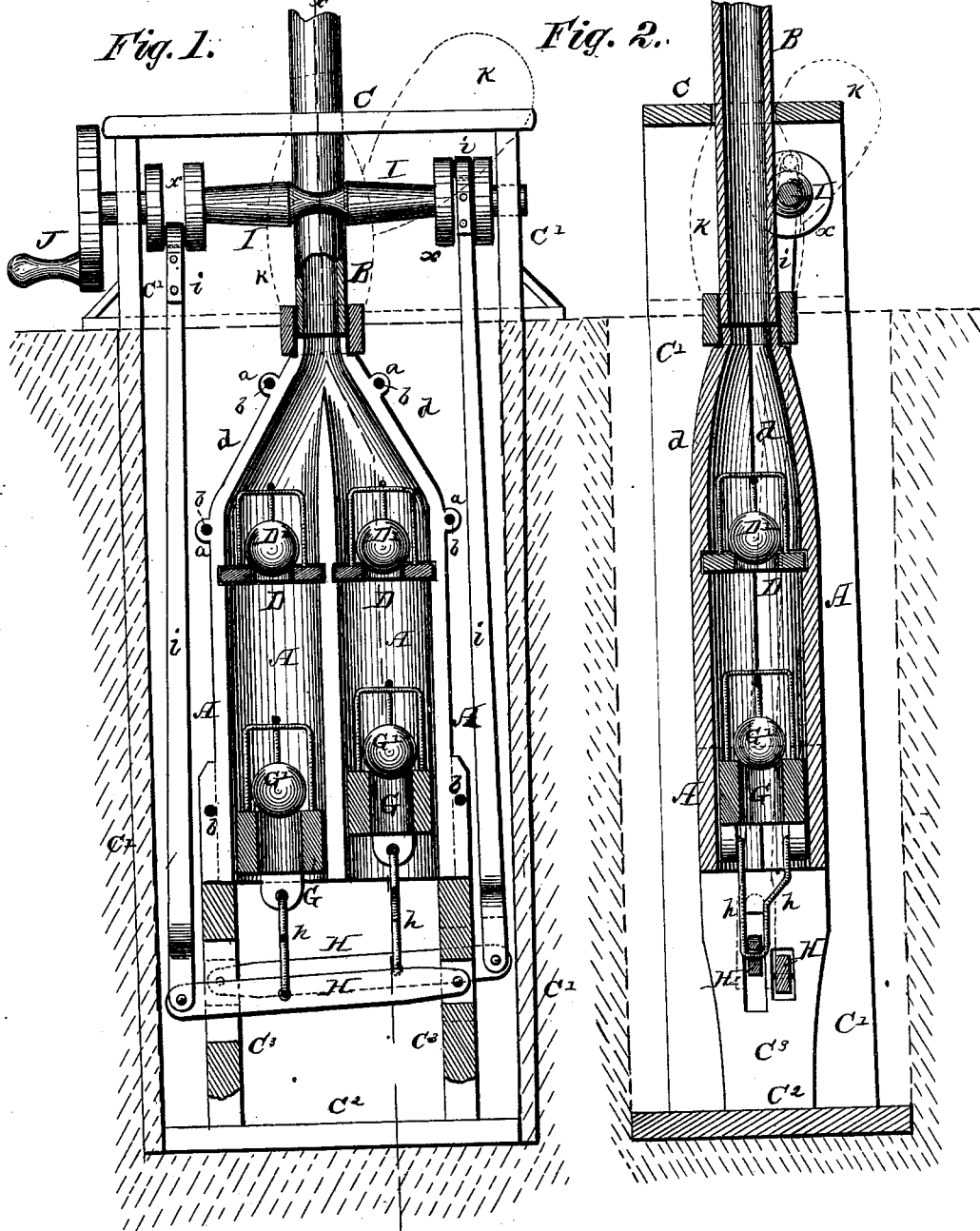


M. D. JUDKINS.  
DOUBLE-ACTING PUMPS.

No. 195,375.

Patented Sept. 18, 1877.



Witnesses:

*P. Dieterich.*  
*Frank A. Duffy*

Inventor:

*Mark D. Judkins.*

Per *C. H. Watson & Co* Attorneys.

# UNITED STATES PATENT OFFICE.

MARK D. JUDKINS, OF OSAKIS, MINNESOTA.

## IMPROVEMENT IN DOUBLE-ACTING PUMPS.

Specification forming part of Letters Patent No. **195,375**, dated September 18, 1877; application filed July 23, 1877.

*To all whom it may concern:*

Be it known that I, MARK D. JUDKINS, of Osakis, in the county of Douglas and State of Minnesota, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a pump, as will be hereinafter more fully set forth.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a front elevation with one side of the cylinders removed; and Fig. 2 is a central vertical section on line *x x*, Fig. 1.

The body of my pump is composed of two cylinders, A A, cast together in two pieces, having flanges *a a* along the sides, through which bolts *b b* are passed to unite the two parts firmly together. Rubber or other suitable packing is placed between the edges of the two parts, so that when the bolts *b* are tightened the joint will be perfectly air and water tight.

The tops of the cylinders A A unite at *d d* in a common discharge-pipe, B, which extends up through the top plank C of the pump-frame. This top plank is connected, by side posts C<sup>1</sup> C<sup>1</sup>, with a bottom plank, C<sup>2</sup>, resting on the bottom of the well or cistern, and on this bottom plank C<sup>2</sup> are secured standards C<sup>3</sup> C<sup>3</sup>, to which the pump-cylinders A A are secured, as shown, and thereby supported a suitable distance above the bottom of the well or cistern.

Within each cylinder A is a valve-seat, D,

with ball-valve D', and below the same is the plunger or piston G, also provided with a ball-valve, G'. Each plunger or piston G is, by rods *h h*, connected with a lever, H, pivoted in the standard C<sup>3</sup>, the lower ends of the cylinders being entirely open, as shown in the drawing, the pump itself being submerged.

The levers H H are, by rods *i i*, connected with eccentrics *x x*, and to a shaft, I. Its bearings are above the platform of the well or cistern, at the top of the ground. This shaft is provided with a crank, J, for operating the pistons, which thus work alternately, and throw a steady and continuous stream through the discharge-pipe B.

There are two reservoirs, *k k*, (shown in dotted lines,) placed at or connected to the top of the pump at the bottom of the well or cistern, which the continuous stream passes through on its way up the pipe, and by being at the bottom of the well or cistern the pressure of water keeps the reservoir continually filled, and thus keeps a continuous supply to said pipe.

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

1. The cylinders A A, in combination with valves G', and connected with bottom levers H, rods *i i*, eccentrics *x x*, and crank J, substantially as and for the purpose set forth.

2. The reservoirs *k k*, cylinders A A, and valves G', in combination with the lever H, rods *i i*, shaft I, and the frame, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

MARK D. JUDKINS.

Witnesses:

M. J. FAY,  
F. JEWELL.