

(No Model.)

2 Sheets—Sheet 1.

H. M. WYETH.

PUMP.

No. 386,910.

Patented July 31, 1888.

Fig. 1.

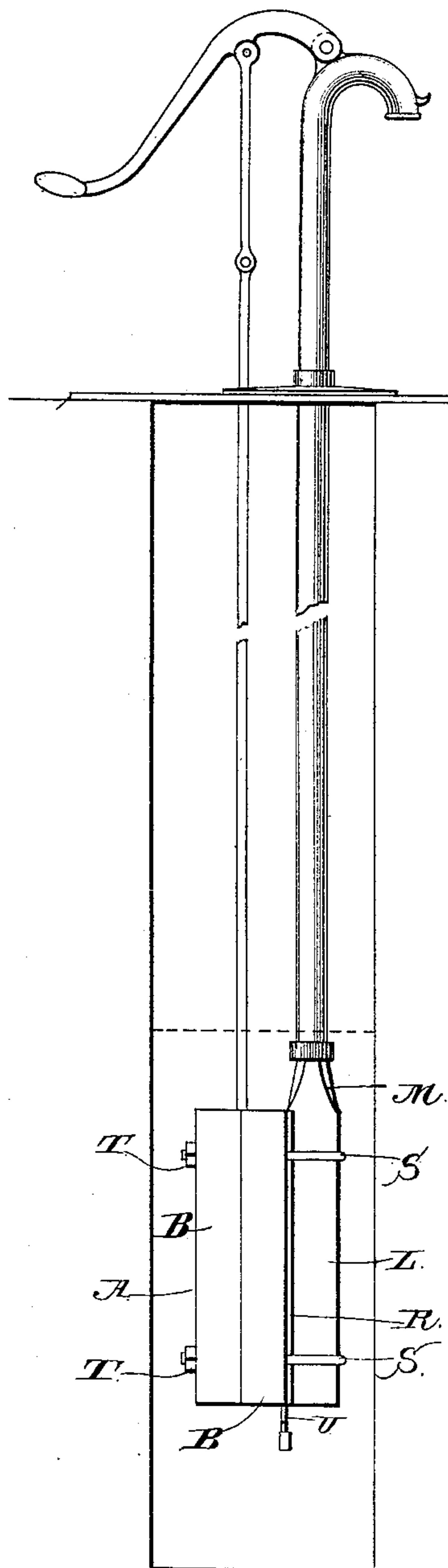


Fig. 3.

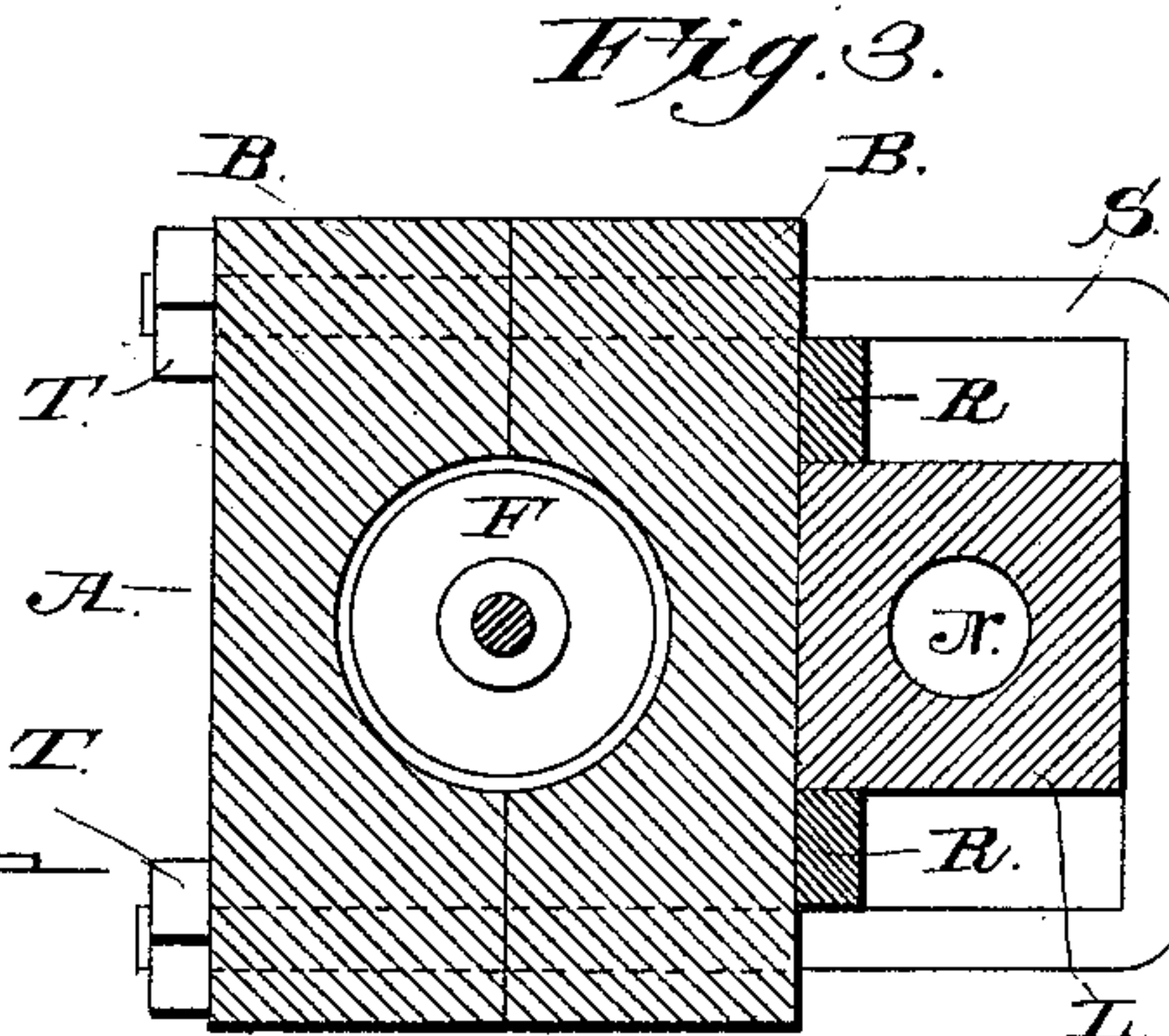
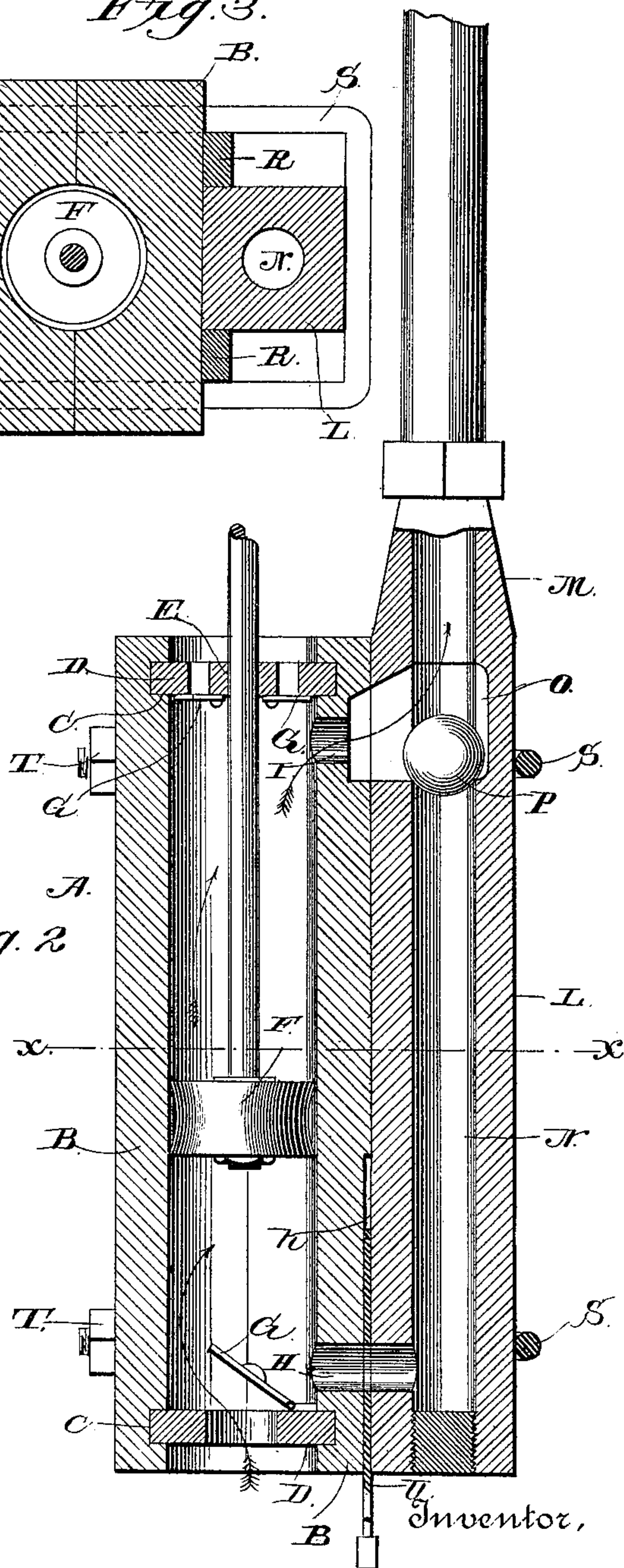



Fig. 2



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Fig. 4.

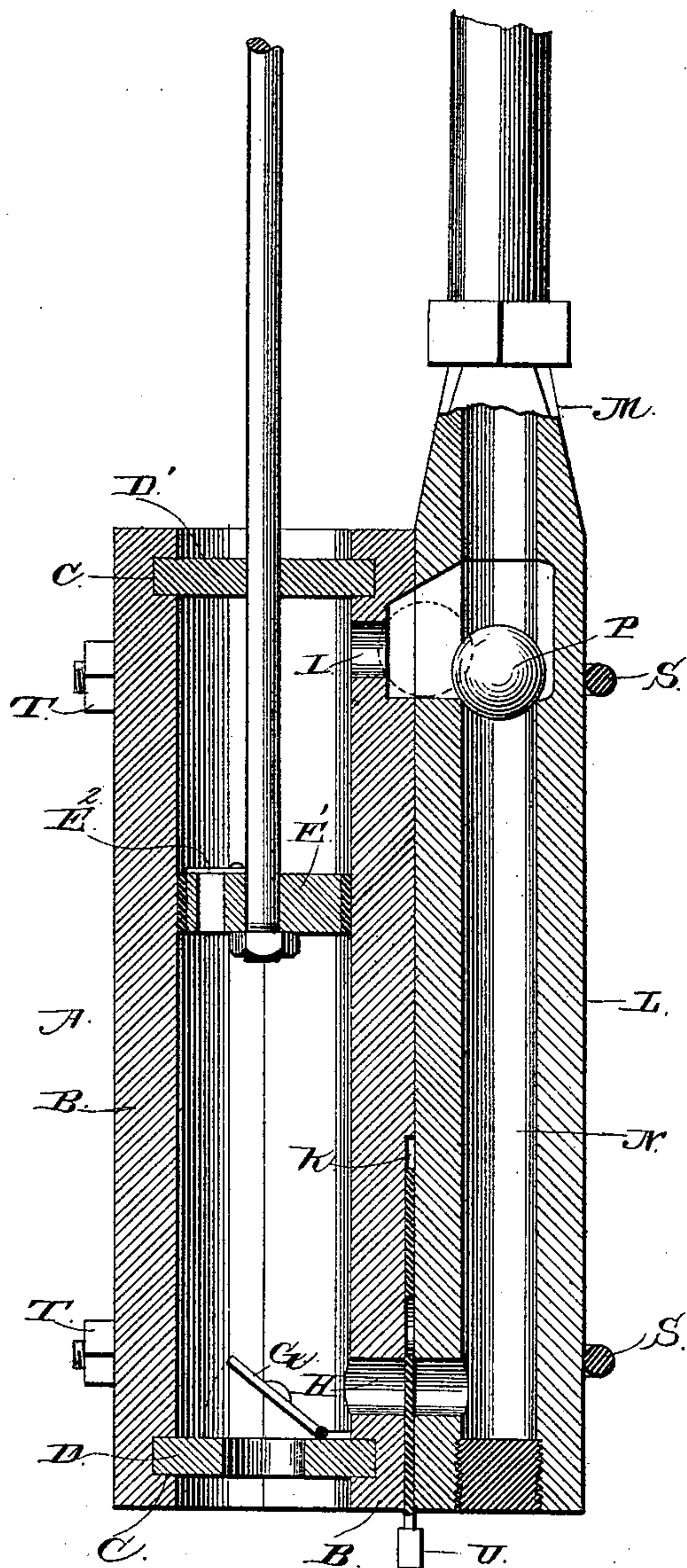
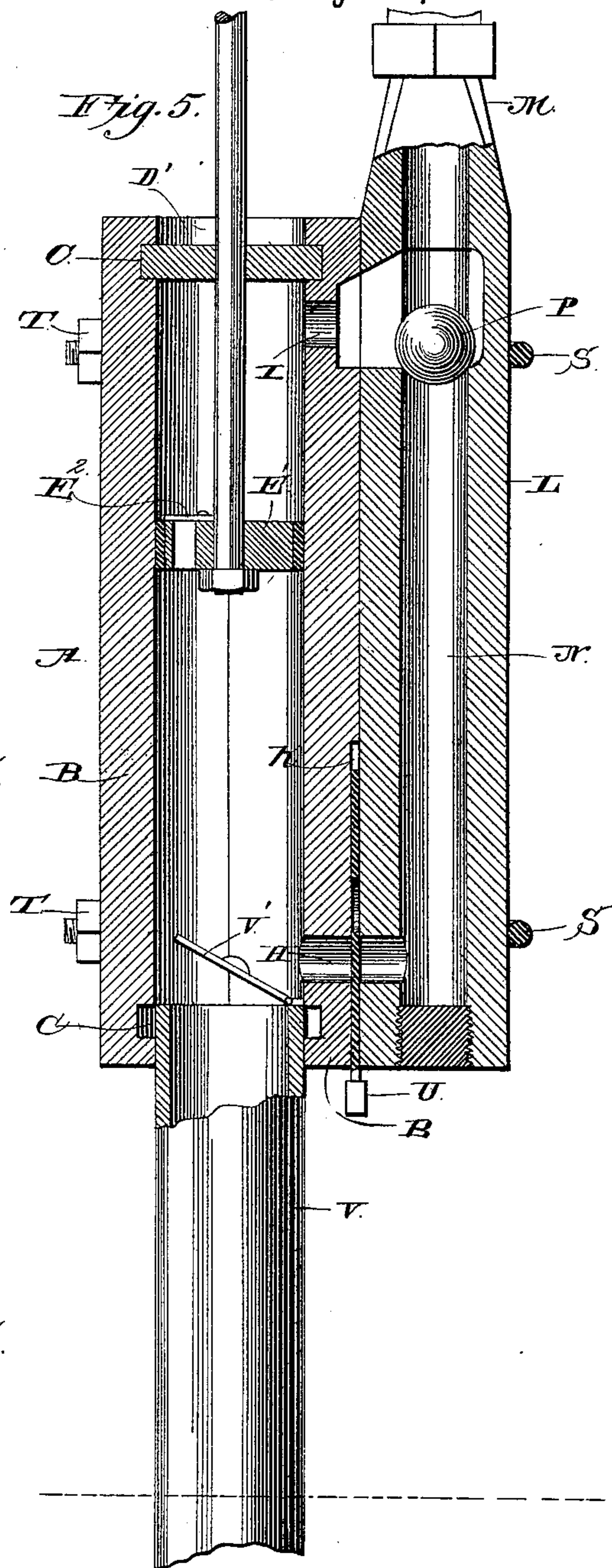


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY M. WYETH, OF COUNCIL BLUFFS, IOWA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 386,910, dated July 31, 1888.

Application filed February 17, 1888. Serial No. 264,326. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. WYETH, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention relates to an improvement in pumps; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claim.

In the drawings, Figure 1 is a side elevation of a pump embodying my improvements. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal transverse sectional view taken on the line *xx* of Fig. 2. Fig. 4 is a vertical sectional view of my pump when adapted for use as a single acting force-pump. Fig. 5 is a similar view of my invention when adapted for use as a lift and atmospheric pump.

A represents the pump-cylinder, which is made of a block of wood bored longitudinally in the direction of the grain and then split into two pieces, B. The ends of the said pieces are grooved on the inner side, as at C, and are thereby adapted to receive heads D, one of which is provided with a central opening, E, for the rod of the plunger F. When the heads are placed in position in the grooves C and the plunger is arranged in the bore of the cylinder, the parts B are secured together in order to confine the heads and the plunger. On the inner sides of the heads are inwardly-opening valves G.

H represents an opening made in the pump-cylinder just above the lower head, and I represents a similar opening made in the cylinder just below the upper head. In the outer side of the pump-cylinder, at the lower end thereof, is a vertical recess, K, which communicates with the opening H.

L represents a flat block, which is made of wood and is trimmed at its upper end to form an extension, M, to which a pipe may be attached. A vertical bore, N, extends through the block and its extension. The lower end of the bore communicates with the upper portion of the recess K at a point directly opposite the opening H.

O represents the transverse opening, which

is made in the inner side of the block L and communicates with and intersects the bore N at a point opposite the opening I, the said opening O being larger than the opening I and forming a seat for a ball-valve, P. The block L is placed against the block A and rests between a pair of vertical flanges, R, with which the block A is provided, and U shaped clamping-bolts S have their arms extended through horizontal aligned openings in the pieces B, and are engaged by clamping-nuts T at their outer ends, the central portions of the said bolts embracing the block L, and thereby the said bolts secure the said block L to the cylinder and secure the parts of the latter together.

The operation of this form of my invention is as follows: The pump-cylinder is submerged in the water at the bottom of the well or cistern. In the recess K is secured a vertically-movable slide, U, which is adapted to cut off communication between the opening H and the lower end of the bore N when the slide is raised and to establish communication between the said opening and the bore N when the slide is closed. At each upstroke of the plunger water is drawn in through the lower valve-head into the cylinder, and the water in the upper part of the cylinder is forced through the opening I, past the valve P, and through the upper portion of the bore N. When the plunger descends, water in the lower portion of the cylinder is forced through the opening H into the bore N and up past the valve P, thereby causing the latter to close the opening I. While the plunger is descending, water is drawn into the upper portion of the cylinder through the upper valve-head.

It will be readily understood from the foregoing that when the pump is thus constructed it forces water at each stroke of the plunger in either direction, and thereby the pump is rendered double-acting.

In order to adapt my pump for use as a single-acting force and lift pump; I remove the upper valved head, D, and substitute a solid head, D', therefor, remove the solid plunger E and substitute therefor a plunger, E', having an upwardly-opening valve, E'. The slide U is then raised in the recess K, so as to close the opening H. When thus arranged, the

plunger draws water into the lower end of the cylinder on the upstroke and forces the water in the upper end of the cylinder up through the bore N past the valve P. On the succeeding downstroke of the plunger the valve E' opens and the valve in the bottom head, D, closes, thus causing the water to pass through the plunger as it descends.

In order to convert the pump into a single-acting atmospheric and force pump, I insert the upper end of the suction-pipe V into the lower end of the bore of the pump-cylinder and provide the upper end of the said suction-pipe with an upwardly-opening valve, V'. When thus arranged, the suction-pipe extends down into the water and the pump-cylinder is raised a considerable distance above the level of the water, as shown in Fig. 5.

By providing the pump with the ball-valve P, seated in the enlarged opening O, the water in the upper portion of the bore N will be caused to flow through the opening I into the cylinder when the pump is not in operation, thereby preventing the water from remaining in the upper portion of the bore N and stag-

nating therein and becoming frozen in cold weather.

Having thus described my invention, I claim—

A pump having the cylinder A, the interchangeable heads D and D', the former being provided with inwardly-opening valves and the latter being solid, the interchangeable plungers, one of which is solid and the other is provided with an upwardly-opening valve, the block L, having the bore N, communicating with the bore of the cylinder near the upper and lower ends thereof, the valve P, arranged in the bore N, and the slide U, adapted to establish or cut off communication between the lower end of the cylinder and the bore N, substantially as described.

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

HENRY M. WYETH.

Witnesses:

N. C. PHILLIPS,
J. W. MORSE.