

A. S. WRIGHT.
Pump.

No. 199,136.

Patented Jan. 8, 1878.

Fig. 1.

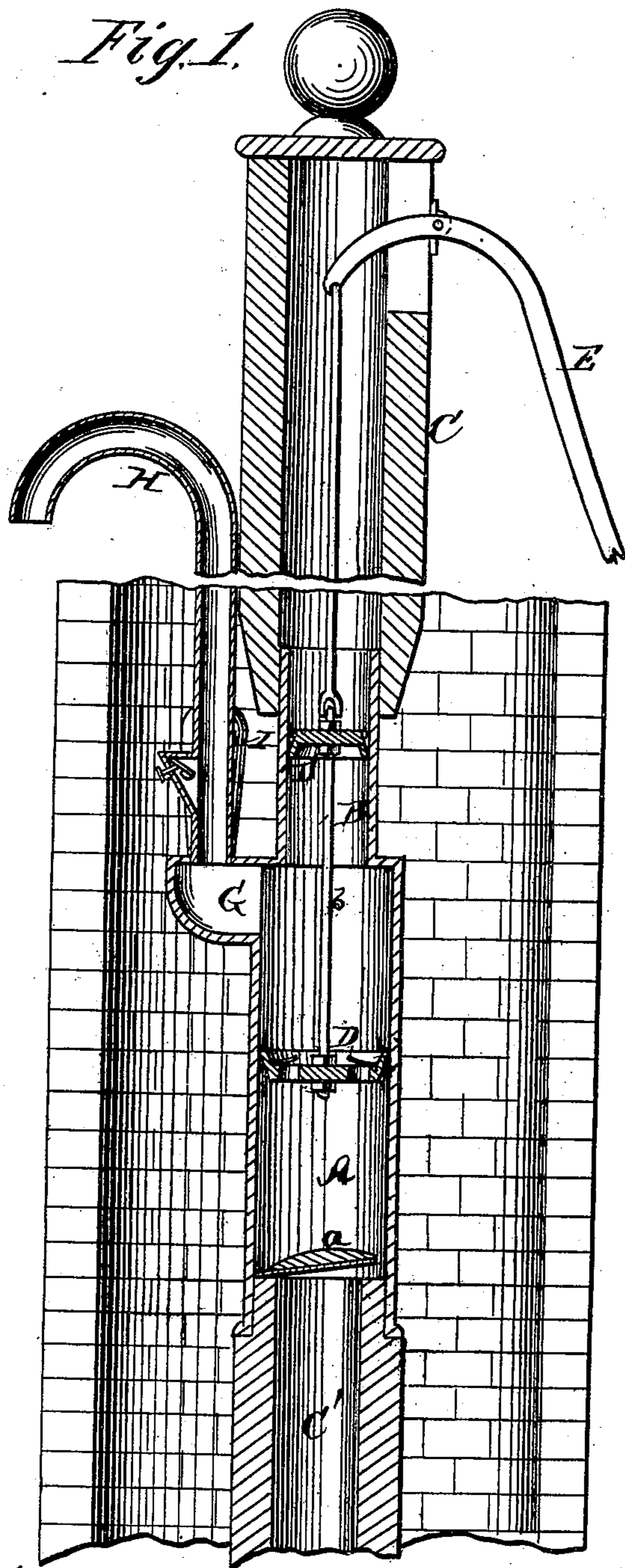
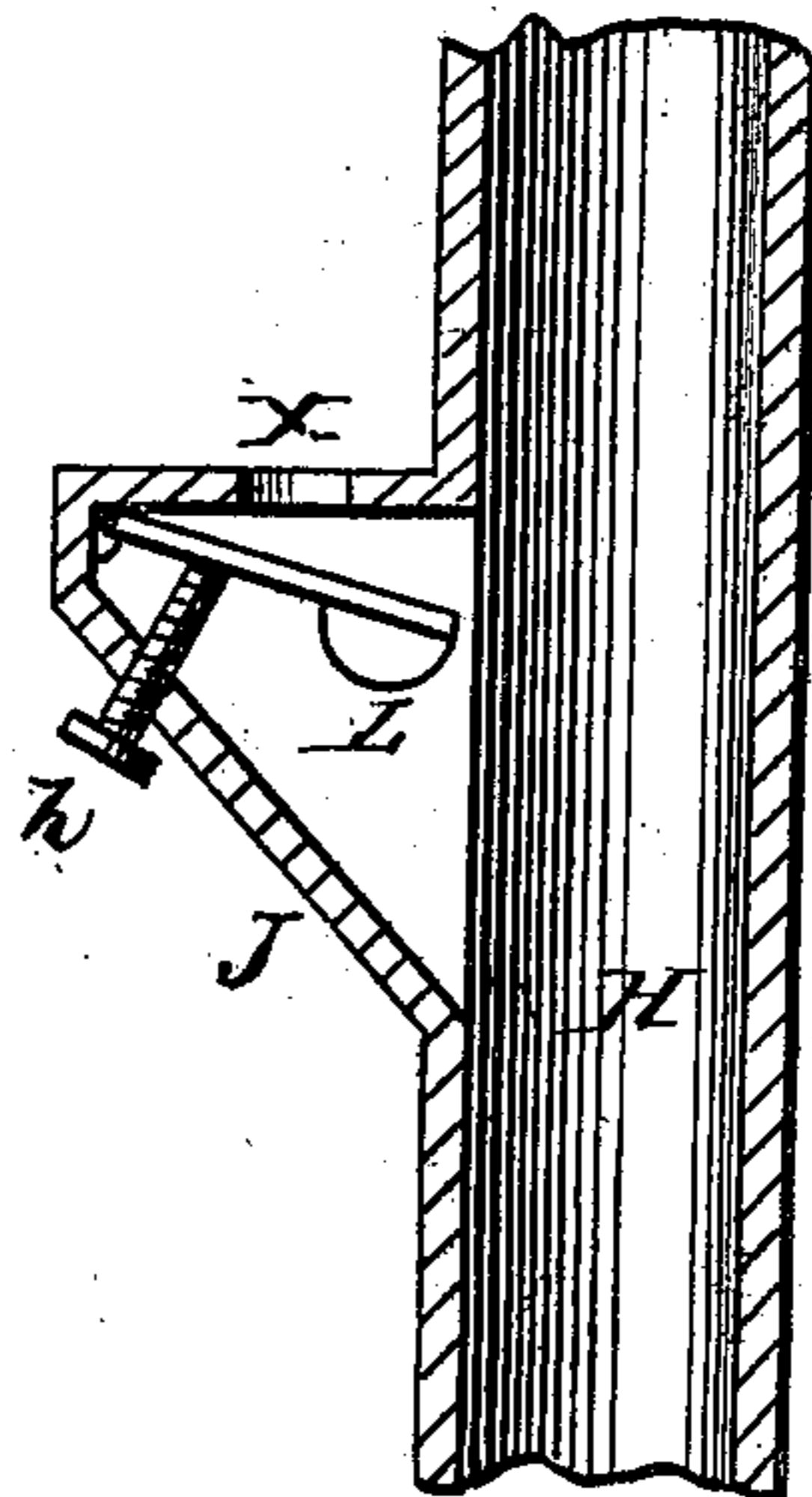


Fig. 2.



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UNITED STATES PATENT OFFICE.

ARTHUR S. WRIGHT, OF MOLINE, ILLINOIS.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **199,136**, dated January 8, 1878; application filed November 9, 1877.

To all whom it may concern:

Be it known that I, ARTHUR S. WRIGHT, of Moline, in the county of Rock Island and State of Illinois, 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to force-pumps; and it consists in the construction of a pump with the cylinders of different diameters or areas, each containing its own piston, but both connected to the same rod and moving in the same direction, whereby a simple double-acting force-pump is produced.

My invention further consists in the construction and arrangement of the waste-valve, all as hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a central vertical section of my improved force-pump; and Fig. 2 is an enlarged section, showing the waste-valve.

A and B represent two cylinders of different diameters, the smaller cylinder, B, being on top of and connected to the upper end of the larger cylinder, A. C is the wooden tubing or pump-stock at the top of the cylinders, and C' is the wooden tubing below the same. On the top of the tubing C' is an ordinary check-valve, *a*.

The cylinders A and B are respectively provided with the pistons D and D', both attached to the same rod, *b*, and both moving in the same direction, said rod being connected to the handle E, as shown. At or near the upper end of the larger cylinder A, on one side, is a chamber, G, from which the discharge-pipe H extends upward. The air-chamber I also connects with this chamber G.

By constructing the pump with cylinders

of different diameters and with separate pistons I get a constant-acting force-pump more simple in construction and occupying less space laterally than where the cylinders are placed side by side.

Many wells are bored or drilled with only six or eight inch drill, which gives so little space that no double-acting force-pump as now generally constructed can be placed therein. Therefore by using the cylinder of this form less space is occupied.

Again, by attaching both pistons to the same rod, and by using the piston in the small cylinder only for the purpose of forcing the water, this piston may be so packed that the packing-box usually employed around the rod can be dispensed with.

Below freezing-point, in the side of the discharge-pipe H, is a small chamber, J, with orifice *x* in the top. Within this chamber is hinged a valve, L, as shown, and below the same is a regulating set-screw, *h*, forming a stop and regulating the fall of the valve.

It will readily be seen that the friction and weight of the water will close the valve L when the pump is in motion, and at the same time it is so placed that its position, as well as its weight, will cause it to open when the pump is at rest, thereby not only preventing a useless waste of water when the pump is in use, but allowing the water to escape at once whenever the pump is at rest.

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

In a pump, the discharge-pipe H, provided with the chamber J, having interior hinged valve L and regulating set-screw *h*, substantially as and for the purposes herein set forth.

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

ARTHUR S. WRIGHT.

Witnesses:

J. T. BROWNING,
H. HARWOOD.