

J. Bean,

Pump.

No. 86,804.

Patented Feb. 9, 1869.

Fig. 1.

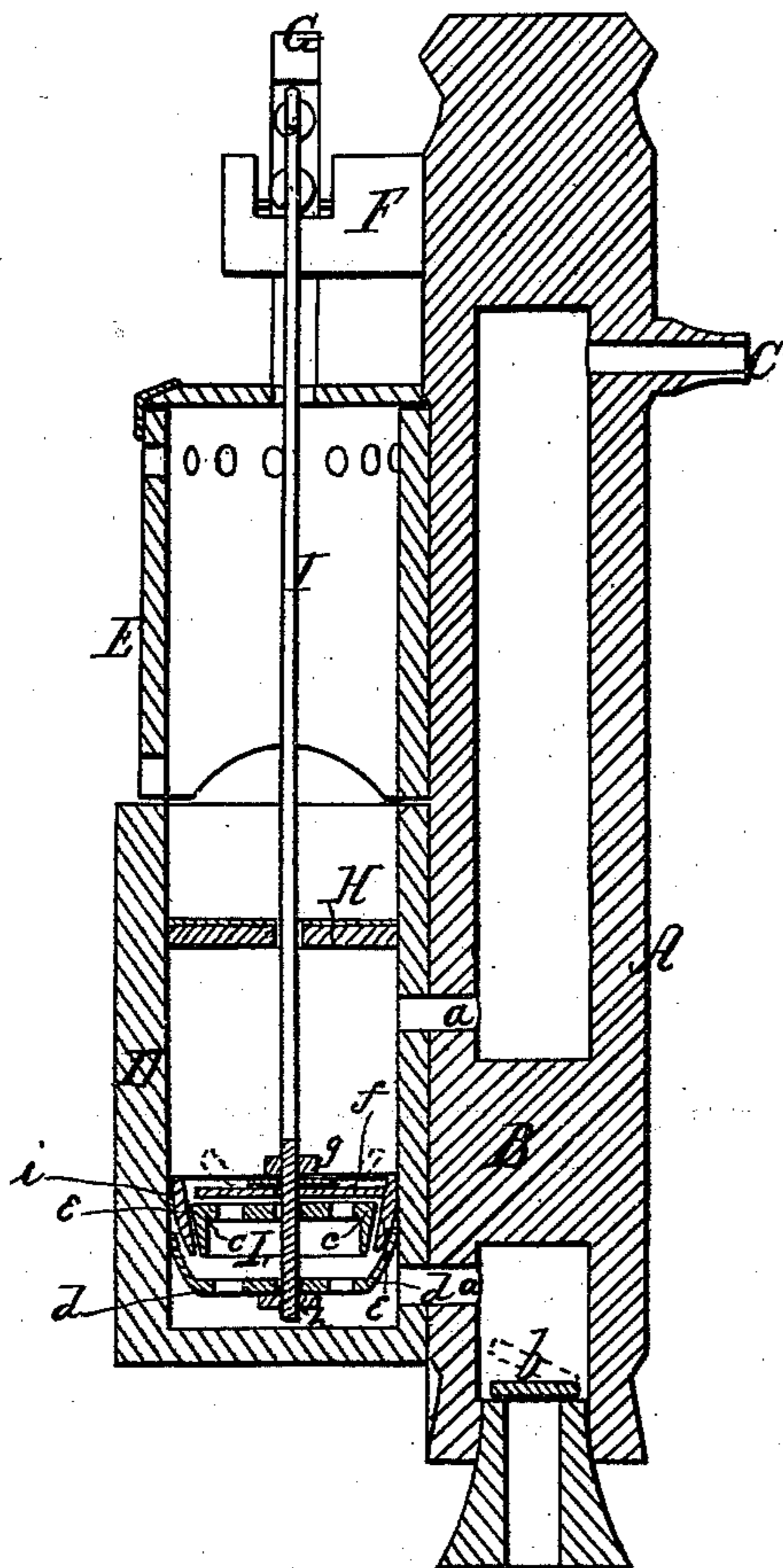
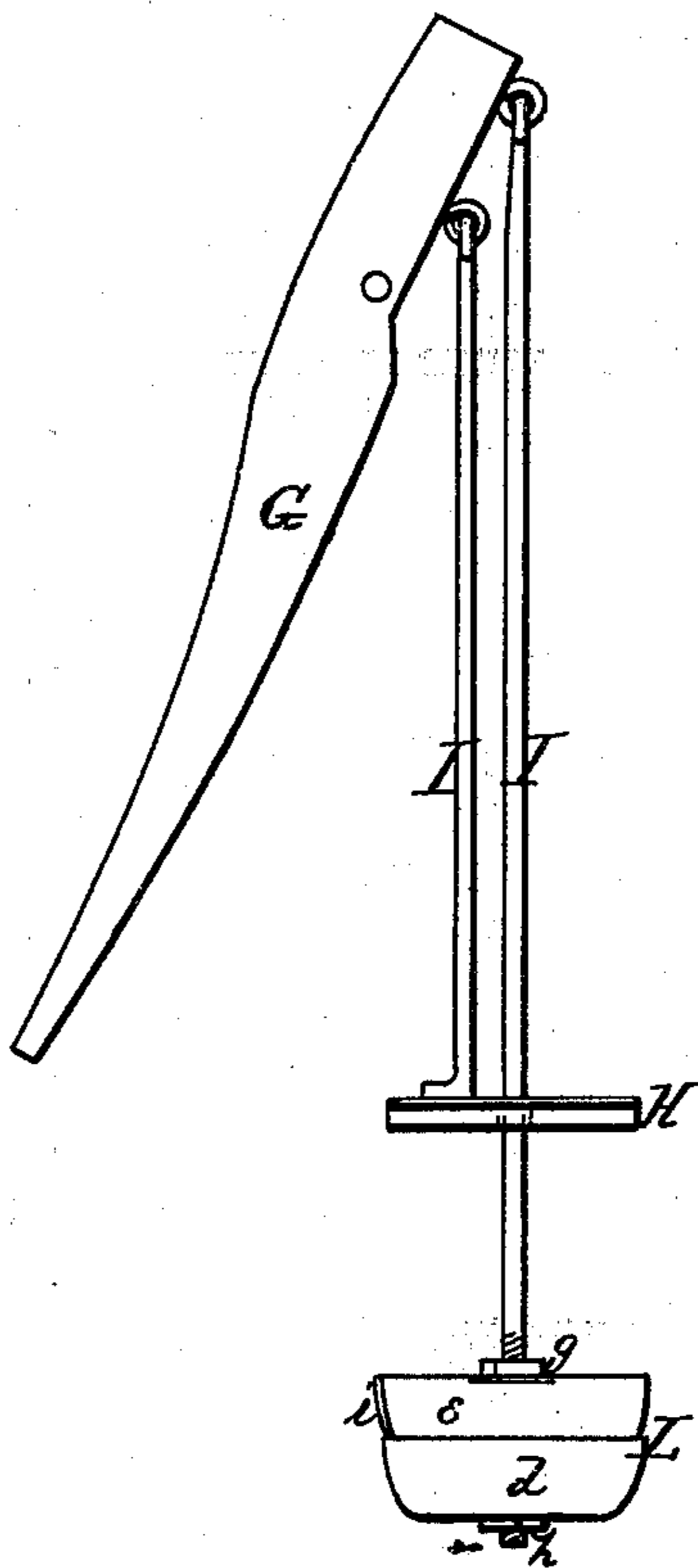


Fig. 2.



Witnesses
Harry King
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UNITED STATES PATENT OFFICE.

JOHN BEAN, OF HUDSON, MICHIGAN.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **86,804**, dated February 9, 1869.

To all whom it may concern:

Be it known that I, JOHN BEAN, of Hudson, in the county of Lenawee, and in the State of Michigan, have invented certain new and useful Improvements in Pumps; and 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.

The nature of my invention consists in the construction of a pump, which will be 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 drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation in section, and Fig. 2 is a side view of the plungers and rods.

A represents a pump, constructed with a partition, B, and two openings, *a a*, one above and one below the said partition. At the lower end of the pump A is a valve, *b*, which opens upward, allowing the water to be drawn up by the action of the plungers, and which valve closes when the plungers move downward, so as to prevent the water from going back again. At or near the upper end of the pump A is a spout, C, through which the water will be forced.

On the side of the pump A is a cylinder, D, made of stone, glass, or wood, or other suitable material, which cylinder has openings corresponding with the openings *a a* in the pump, and extends only a short distance below the lower of said openings *a a*. The cylinder D has a closed bottom and is open at top. Over the top is placed a cap, E, with perforated sides, so as to secure perfect and free ventilation. The rods to the buckets passing through this cap and cylinder throw out the air from the well by continued agitation of the two rods and buckets combined with the ventilator.

At the upper end of the pump A is an arm, F, to which the pump-handle G is attached. To this handle are attached two rods, I I, of different lengths, which descend into the cylinder, and to the lower ends of which the buckets are secured. To the longer rod the

draw-bucket L is secured, and to the shorter the force-bucket H.

The rods I I, with their buckets, are so arranged that the shorter rod, with its bucket H, only moves half the distance of the other, and the longer rod passes through the center of the bucket H. Thus the lower bucket, L, draws the water up into the cylinder when the rods are being raised. Then, when the rods are being lowered, the water passes up through the lower bucket, and the upper bucket, H, presses or forces the water through the upper opening, *a*, and out through the spout C.

After the pump is once started it throws a steady stream of water at the upstroke of the lever equal with the downstroke. This is done by one-half of the water flowing up with the top bucket, while the other half of the water flows up the pipe while the lower bucket is filling, thus making a force-pump for fire purposes. It is also perfectly non-freezing by letting the water run through past the suction-rod from the pump, the cylinder being just below the frost and always full.

The lower bucket, L, consists of two cups, *c* and *d*. The lower one of these cups, *d*, has a flange extending upward, and the upper cup, *c*, a similar flange extending downward.

The packing *e* is cut in the usual form and placed in the lower cup, *d*. The upper cup, *c*, is then placed inside of the former. Where the leather packing *e* comes together is placed a metal plate, *i*, which covers the joint, and prevents the packing from slipping down and letting the water through.

On top of the cup *c* is placed a circular valve, *f*, covering the whole surface of the cup. The rod I then passes through the cups *c* and *d*, both of which are perforated, as shown in Fig. 1, and is fastened by a nut, *h*, on the lower side of the cup *d*, the rod being, for that purpose, provided with screw-threads. A nut, *g*, is, however, first placed on the rod at a suitable distance from the lower end, so as to form a bearing against which the upper cup may rest.

The advantages of a bucket constructed as above described are obvious. It holds the packing of any thickness firmly by opening or sliding together, for thin or thick packing,

by tightening or loosening the nut *h* at the bottom.

The side plate, *i*, holds the packing from opening or sagging down, and keeps it tight from leaking, while the side plate will spring out by the pressure of the water on the bucket and keep the bucket tight, then falls back as the bucket recedes, relieving the friction.

It will also be seen that the packing can easily be removed and replaced in case it is necessary to repair the same.

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

The arrangement of the pump *A* with side cylinder, *D*, having a ventilating-cap, *E*, rods *I I*, and buckets *H* and *L*, all constructed and operating substantially in the manner and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of September, 1868.

JOHN BEAN.

Witnesses:

L. R. PEIRSON,
P. SHUMWAY.