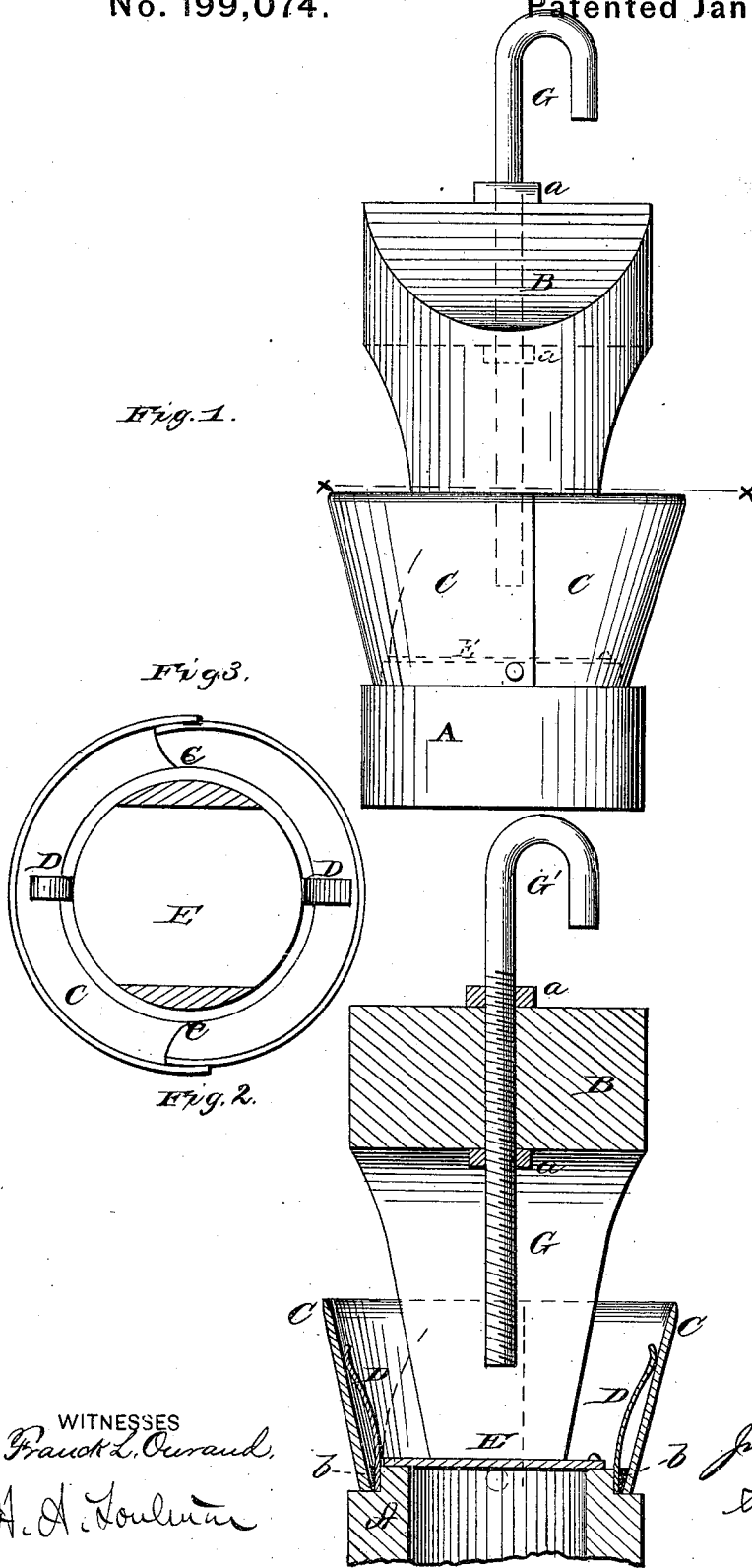


J. KNOUSE.  
 Pump-Plunger.

No. 199,074.

Patented Jan. 8, 1878.



WITNESSES  
*Frauck L. Oerand,*  
*H. A. Toulmin*

INVENTOR  
*Jno Knouse,*  
*Harold Mason*  
 ATTORNEYS

# UNITED STATES PATENT OFFICE.

JOHN KNOUSE, OF HARRISBURG, PENNSYLVANIA.

## IMPROVEMENT IN PUMP-PLUNGERS.

Specification forming part of Letters Patent No. **199,074**, dated January 8, 1878; application filed November 20, 1877.

*To all whom it may concern:*

Be it known that I, JOHN KNOUSE, of Harrisburg, in the county of Dauphin, and in the State of Pennsylvania, 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, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a pump-plunger, as 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, in which—

Figure 1 is a side elevation of my improved pump-plunger. Fig. 2 is a central vertical section of the same; and Fig. 3 is a horizontal section on the line *x x*, Fig. 1.

The body of my pump-plunger is composed of a circular bottom piece, A, with a cage, B, on top thereof, said cage being either formed with or attached to the bottom A.

Ordinarily, in pump-plungers, the packing is composed of a cup of leather or other similar material, which soon wears out, and is also liable to curl or bend at the edges, and thus render the plunger hard to work up and down. In place of such leather cup, I use a metallic cup made in two parts, C C, the ends of which overlap each other, and are pivoted at their lower edges to the body of the plunger, immediately above the bottom piece A. Each part or half of the metallic cup thus formed is pressed outward at the top by a separate

and independent spring, D, as shown in Fig. 2. This cup will not wear out so fast, nor is it liable to bend or curl at the edges, and being made in two parts, with separate and independent springs acting on them, it will accommodate itself to the pump-cylinder, as well as to any possible deviation from a vertical line in its up-and-down movement.

E is an ordinary flap-valve, covering the opening in the bottom piece A.

Through the center of the cage B is passed a screw-rod, G, formed with a hook, G', at its upper end. This rod may extend downward any suitable distance, and is held by nuts *a a*, as shown.

Within the cup C C, at the lower end, suitable packing *a* may be introduced, to make water-tight joint at that point.

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

1. A pump-plunger provided with a metallic cup, made in two parts, overlapping each other, and pivoted at their lower ends, and provided at the inside with separate and independent springs, substantially as herein set forth.

2. The combination of the plunger-body A B, the cups C C, made in two parts and pivoted at their lower ends, the springs D D, packing *b*, and rod G, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of November, 1877.

JOHN KNOUSE.

Witnesses:

FRANK GALT,  
H. AUBREY TOULMIN.