

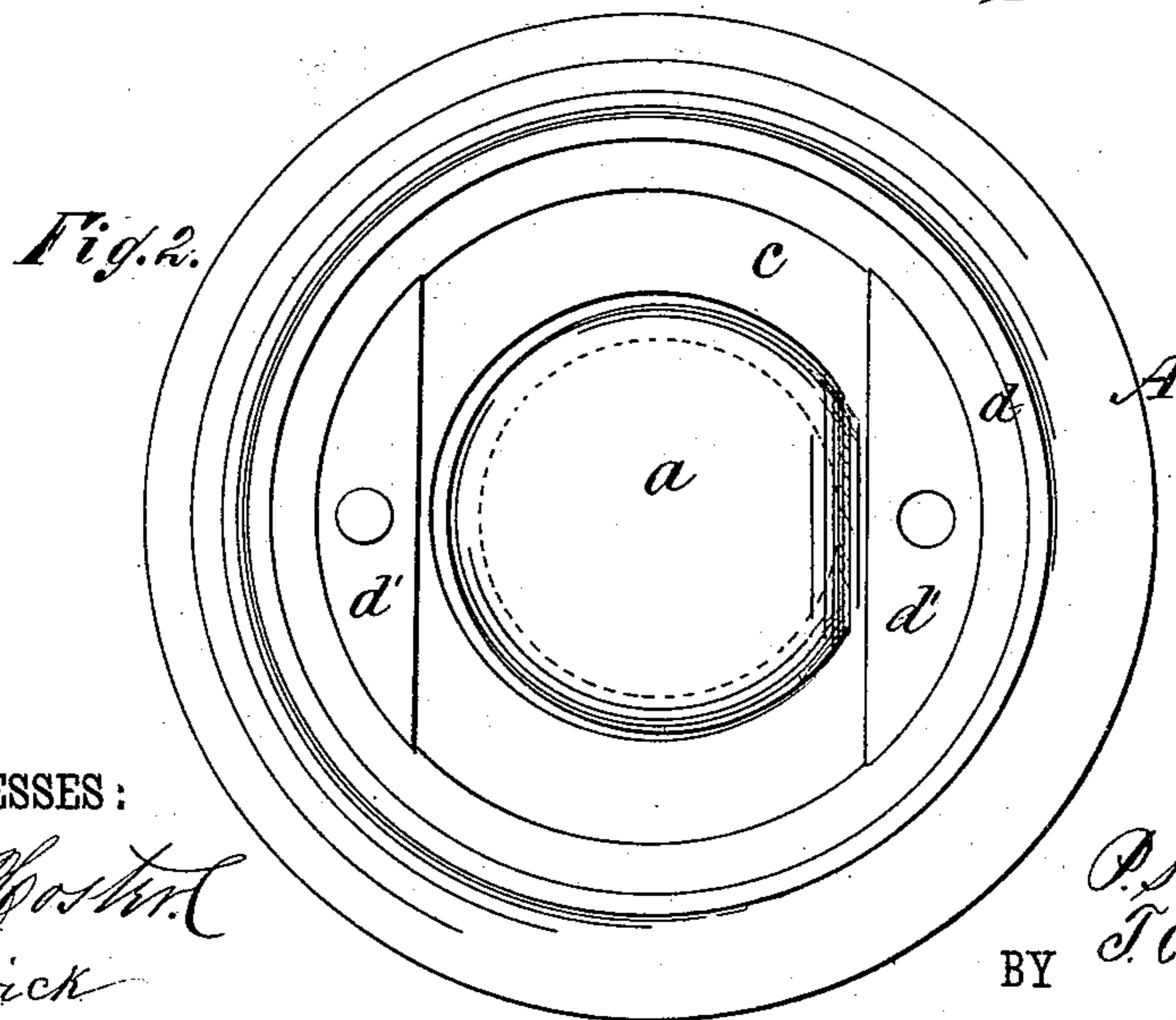
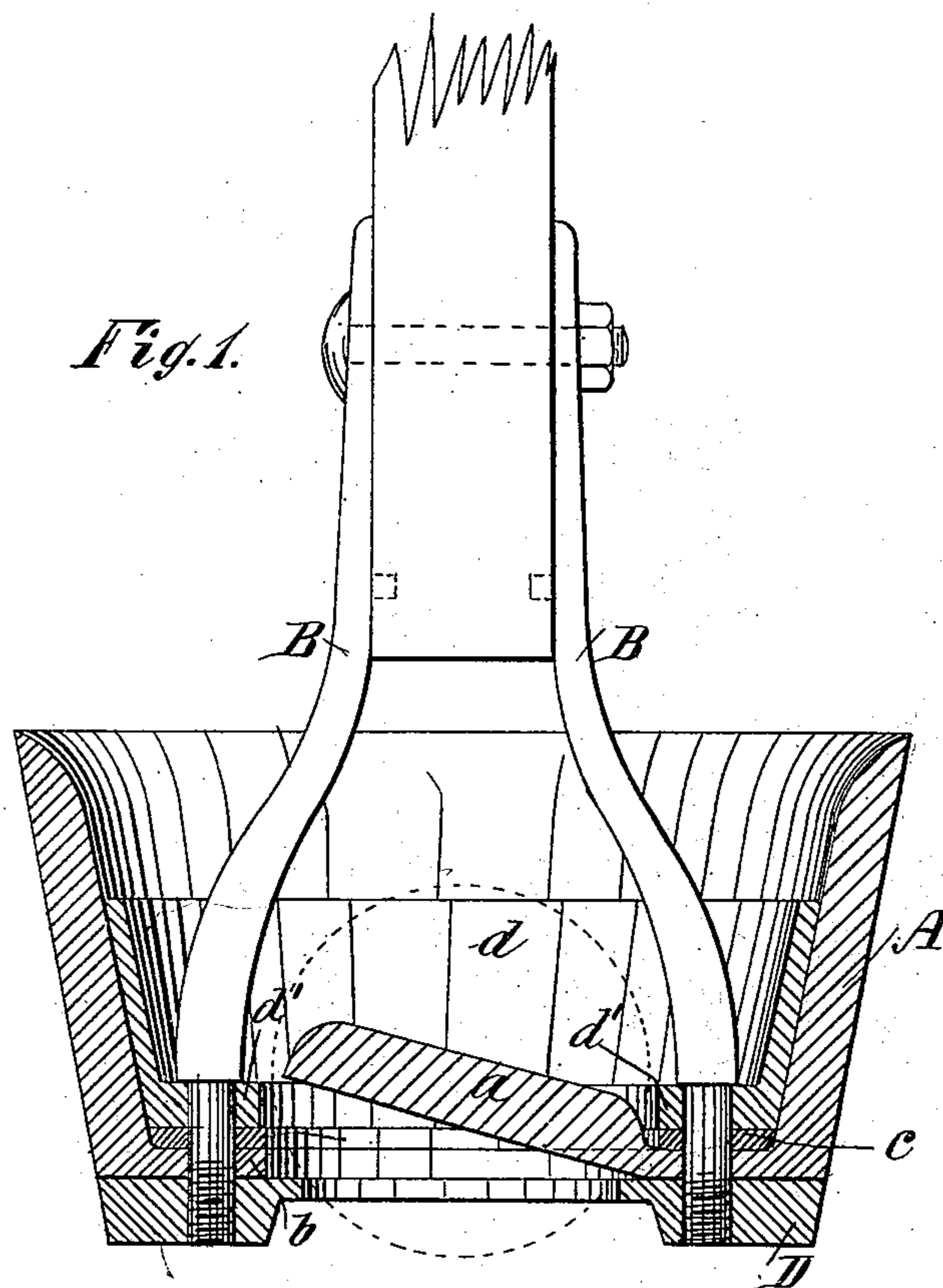
(Model.)

P. H. & T. A. SPRAGUE.

PUMP PLUNGER.

No. 250,993.

Patented Dec. 13, 1881.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

PHILIP H. SPRAGUE AND TOBIAS A. SPRAGUE, OF CORNELL, ILLINOIS.

## PUMP-PLUNGER.

SPECIFICATION forming part of Letters Patent No. 250,993, dated December 13, 1881.

Application filed July 1, 1881. (Model.)

*To all whom it may concern:*

Be it known that we, PHILIP H. SPRAGUE and TOBIAS A. SPRAGUE, of Cornell, in the county of Livingston and State of Illinois, have invented a new and useful Improvement in Pump-Plungers, of which the following is a full, clear, and exact specification.

The object of our invention is to provide a valve or plunger for pumps which shall be adjustable or expansible to take up the wear, thus increasing the durability and efficiency of the valve, and also to provide a valve of simplified construction.

The invention consists, principally, of the bucket or valve-cup, formed of a single piece of vulcanized rubber, in combination with a metal cup placed inside the rubber cup, with a removable washer placed between the bottom of the metal cup and the bottom of the rubber cup.

The invention further consists in the arrangement, construction, and combination of parts, as hereinafter more fully described.

In the accompanying drawings, Figure 1 is a central vertical section of our improved pump-valve, and Fig. 2 is a plan view thereof.

Similar letters of reference indicate corresponding parts.

The main bucket or cup A, and the valve *a* are formed of a single piece of vulcanized rubber. The bucket A is slightly conical in form, as shown. Upon the annular bottom or rib *b* of the bucket A, which rim is formed by cutting the bottom of the bucket to form the throat, and to form the valve *a*, is placed the metal washer *c*, and upon this washer is placed the cup *d*, which is preferably of malleable cast-iron, and is also slightly conical and fits the inside of the main cup. Upon the inside of the cup *d*, at the bottom, is formed the inward

extensions, *d'* *d'*, which are perforated for the passage of the lower ends of the irons B B, by which the plunger is secured upon the plunger-rod. These rods also pass through suitable perforations through the washer *c* and the annular rim *b*, and screw into the annular bottom plate, D. This bottom plate is preferably of malleable cast-iron, and the opening through it is of less diameter than that of the valve *a*, and serves to support it during the upward movement of the plunger.

When the bucket A becomes worn so as not to closely fit the pump-tube, the washer *c* is to be removed and the bucket *d* forced down into the main bucket A, so as to expand the main bucket and cause it to tightly fit the pump.

Though we have shown the valve *a* as a flat valve, it is obvious that a ball-valve, as shown in dotted lines, may be used and not depart from our invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the end-threaded rods B B, of the conical rubber bucket A, having perforated rim *b*, the metallic cup *d*, having perforated extensions *d'*, the perforated washer *c*, and the annular bottom plate, D, having screw-holes, whereby all the parts are detachably held together, as shown and described.

2. The bucket A and the valve *a*, formed of a single piece of rubber, substantially as and for the purposes set forth.

PHILIP H. SPRAGUE.  
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Witnesses:

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