H. CADWALADER.
Pump

No. 207,592. Patented Sept. 3, 1878.

Fig 1.

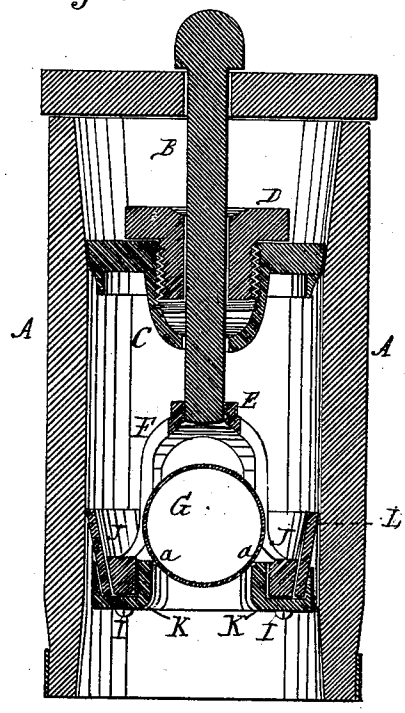


Fig 6.

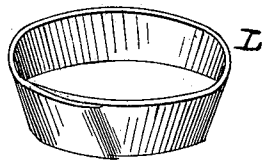


Fig 2.

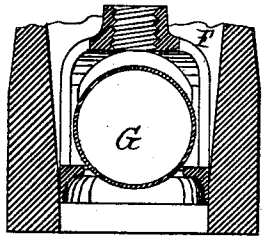


Fig 3.

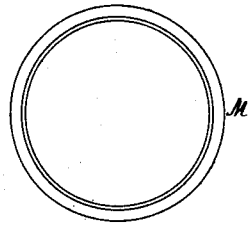
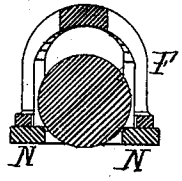


Fig 4.



Fig 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

HOWARD CADWALADER, OF RICHMOND, INDIANA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **207,592**, dated September 3, 1878; application filed February 21, 1878.

To all whom it may concern:

Be it known that I, HOWARD CADWALADER, of Richmond, county of Wayne and State of Indiana, have invented certain Improvements in Pumps, of which the following is a specification:

This invention relates more particularly to improvements in the class of wooden pumps; and the invention consists in the combination of parts, as will be hereinafter fully described, and pointed out in the claims.

Figure 1 is a vertical section of the upper pump-stock. Fig. 2 is a vertical section of the upper end of the lower stock, containing the lower bucket. Figs. 3 and 4 are views of an adjusting-ring, hereinafter explained. Fig. 5 is a vertical section of a ball and ball-frame, as applied to a common iron pump; Fig. 6, a perspective view of the leather L.

A is the pump-stock; B, the pump-rod, attached to the ball-frame F at E, and having the stuffing-box C and nut D, for the purpose of making a force-pump, the air-chamber being below the stuffing-box, as shown in Fig. 1. The stuffing-box is driven down into the taper reamed in the upper end of the pump-stock, as shown.

A distinctive feature of this invention is the adjustable bucket, whereby the bucket, when worn, may be pushed outward and adjusted and tightened in position, as follows: The leather L is chamfered and lapped and placed on the outside of the tapering bottom J of the ball-frame F. The bucket-bottom K, having the tapered or inclined outer flange, is placed upon the outside of the leather, and held in place by means of the screws I. The balls rest upon a very small bearing or corner of the bucket-bottom, as shown at *a*, thereby entirely preventing gravel or sand from catching under the valve, that becomes so troublesome in the ordinary pumps now in use.

When it becomes necessary to adjust the leather of the bucket from wear the screws I are loosened, and the tapered ring M, Figs. 3 and 4, is placed inside the leather, and pressed downward until the necessary outer diameter is attained, when the screws I are again tightened to hold all firmly in place, thus avoiding the repeated replacing of the leather, so common in ordinary pumps. The lower end of the upper stock is reamed tapering, as shown, to receive the upper end of a lower stock. The upper end of the lower stock is provided with a ball and ball-frame, the bottom of which should be tapered or beveled off to correspond with the tapering stock, and this frame is driven down into the upper end of the lower stock to form the lower bucket, and is provided with a screw-thread at its upper end to receive a rod to withdraw it, when necessary.

Another important feature of this invention is shown at Fig. 5, where N represents the valve-seat of the ordinary iron-pumps now in use with my ball and ball-frame applied thereto by simply reaming the corner slightly, to form a seat for the ball. I usually use a solid rubber ball, as shown in this figure, for all the valves in the pump, and all the seats are made very narrow, for the purpose of preventing the gravel or sand from catching on them.

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

1. The combination, with the bottoms J K, of an overlapping adjustable tapering leather, L, substantially as and for the purpose specified.

2. The combination, with the bottoms J K and adjustable leather L, of the tapering ring M, substantially as and for the purpose specified.

3. The herein-described pump-piston, consisting of the ball-frame F, provided with the tapering bottom J, the detachable bucket-bottom K, having a ball-seat and an inclined or tapering outer flange, ball-valve G, overlapping adjustable leather L, and a tapering ring, M, the several parts constructed and relatively arranged as herein shown and described.

HOWARD CADWALADER.

Witnesses:

J. D. CADWALLADER,

JOHN D. JEWELL.