G. H. CORLISS.
Pump-Plunger.

No. 215,801. Patented May 27, 1879.

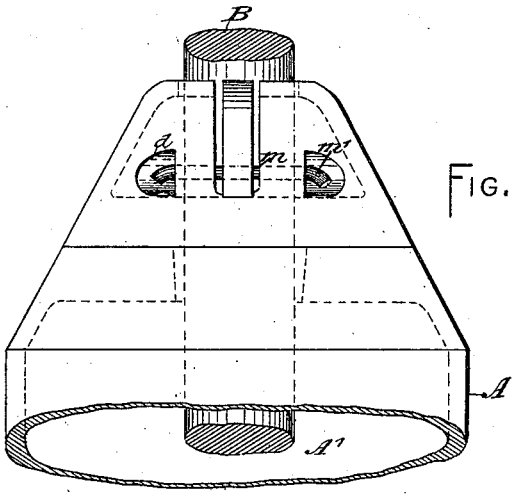


FIG. 1.

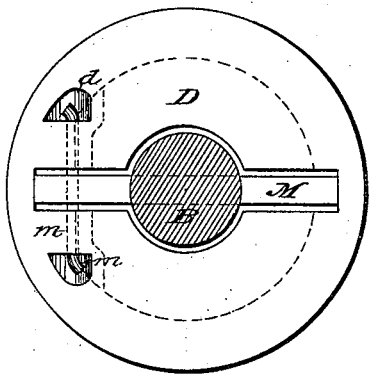
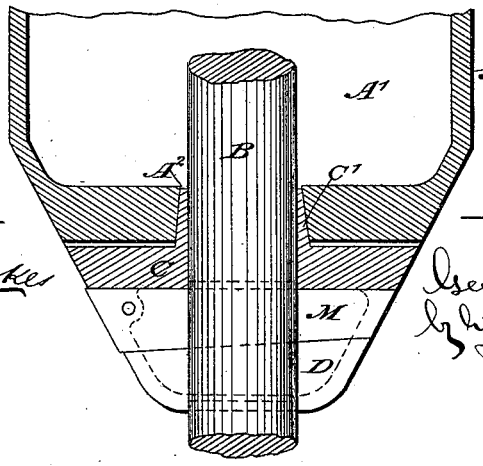


FIG. 3.

FIG. 2.



WITNESSES:—
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UNITED STATES PATENT OFFICE.

GEORGE H. CORLISS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN PUMP-PLUNGERS.

Specification forming part of Letters Patent No. **215,801**, dated May 27, 1879; application filed January 3, 1879.

To all whom it may concern:

Be it known that I, GEORGE H. CORLISS, of Providence, in the State of Rhode Island, have invented certain new and useful Improvements relating to Pump-Plungers, of which the following is a specification.

My invention is especially intended for large pumps used in pumping against a high head, for the supply of towns and cities, but is applicable in all cases where the plunger is separate from its rod and requires to be fixed thereupon.

The following is a description of my invention as applied to a plunger having the two ends alike.

The accompanying drawings form a part of this specification.

Figure 1 is an elevation of one end. Fig. 2 is a longitudinal section of the other end, showing the removable part. Fig. 3 is an end view, seen from below, representing the removable part at the lower end.

Similar letters of reference indicate like parts in all the figures.

A^1 is the hollow body of the plunger. The main cylindrical part thereof may be thin; but at the conical ends it should be stronger. There is a conical chamber, A^2, in the center of each end somewhat larger than the plunger-rod B. The ends being alike, a description of one will suffice for both.

The conical chamber in the center of the plunger end (marked A^2) has its larger end outward. The casting C, preferably of soft brass, is peculiarly formed, and adapted to serve several purposes.

The main plate D serves as a bearing for the key M. The conical extension C′ fits the conical chamber A^2, and, being forced into its place, is compressed around the plunger-rod B, making a perfectly water-tight and permanent joint.

In the casting C, the exterior of which is formed so as to complete the conical ends of the plunger A, provision is made at *d* for holding the transverse wire *m*, which confines the cotter-key M.

The forms of the several parts are shown in the figures. The proportions are so adjusted that when the parts are brought together the lip or conical hollow edge C′ bears in its corresponding chamber A^2 before the general face of the casting C meets the end of the plunger A. Force being then applied, the faces of the casting C and the plunger A are brought together; and by the same action the conical lip C′ is made to clasp the rod B, making the permanent water-tight joint required.

It is an essential condition to the best working of the plunger that it should displace approximately its weight of water, so that the friction in its bearings due to its own gravity is avoided.

When the key M has been driven tightly home it may be confined by an ordinary pinching-screw or other means. For this purpose I have shown the wire *m* passed through holes in the end casting D and the key M, and having its ends bent to retain it in its place.

I claim as my improvement—

1. The end casting C, having a thin compressible lip, C′, in combination with the rod B, and with the main hollow shell A, having a tapering hole, adapted to receive and compress the lip A^2 as the parts are drawn together, as herein specified.

2. The double-ended plunger described, having a tapering end piece, C, with a compressible lip, C′, at each end, and provided with keys M, so as to not only make the tight joint required around the rod, but also to brace the plunger firmly against a motion in either direction on the rod, all substantially as herein specified.

In testimony whereof I have hereunto set my hand this 19th day of December, 1878, in the presence of two subscribing witnesses.

GEO. H. CORLISS.

Witnesses:
JESSE WALRATH,
GEO. W. KENNEDY.