(No Model.)

M. D. TEMPLE.

PUMP.

No. 303,339. Patented Aug. 12, 1884.

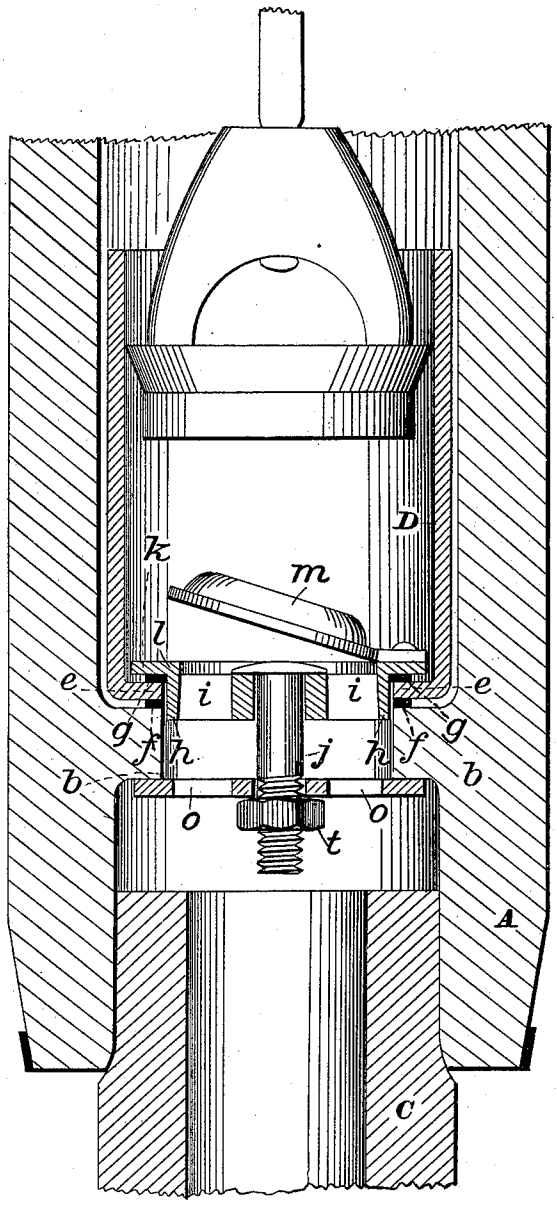


Fig. 1

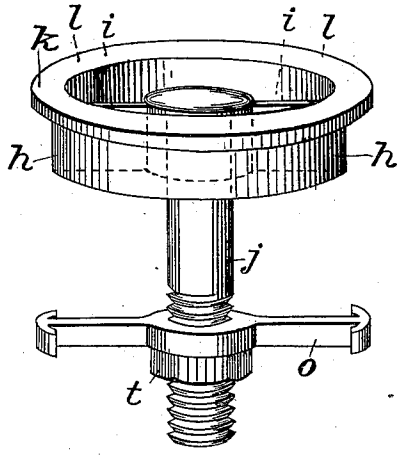


Fig. 2

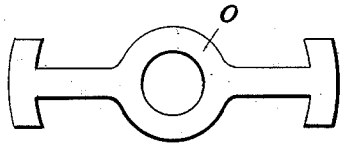


Fig. 3

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UNITED STATES PATENT OFFICE.

MORRIS D. TEMPLE, OF CHICAGO, ILLINOIS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 303,339, dated August 12, 1884.

Application filed November 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, MORRIS D. TEMPLE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pumps; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention relates to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is, first, to construct a pump with a body or barrel of wood, and with a bucket chamber or cylinder made of glass, hard rubber, metal, or enameled metal, and to unite said parts in such a manner that the value of the finished structure cannot be in any way injured by the shrinking or by the swelling of the wooden part; and, second, to apply the same construction to iron pumps, thereby making a better article and at the same time save much labor in the construction of the same. This construction of a pump with an internal cylinder attains three specific ends, viz: First, when the pump-barrel is made of wood, it provides a means of firmly securing the cylinder thereto in such a manner that the wooden pump-barrel may shrink without injury to itself or the cylinder, and may swell without loosening the cylinder from its position; second, the mechanism which secures such internal cylinder firmly in place also forms a seat for a check-valve, in connection with which any known form of check-valve may be used; third, this construction is equally applicable to iron pumps, whereby a porcelain or like cylinder for a bucket-chamber may be fastened within the pump, being more desirable for the bucket to work in and more easily and cheaply made and applied than it is to bore out the rough casting.

Metallic cylinders have been applied to wooden pumps hitherto either by driving the cylinder into the bore of the pump-barrel or by driving the pump into the cylinder. In both cases the cylinders were held by frictional contact and lateral pressure. When a metallic cylinder was driven into the bore of a pump, when the wood was not thoroughly seasoned and the pump remained in store a length of time before being used in a well, the wood was cracked, split, and ruined by shrinking against the unyielding cylinder; or if the cylinder was made of glass, it was broken, being unable to resist the pressure of the shrinking wood. On the other hand, if the wooden barrel of a pump was thoroughly dry at the time, a metallic cylinder was inserted, when put to use in a well and saturated with water, it swelled, enlarging the bore. The cylinder consequently became loose, the water escaped, air was admitted, the suction impaired or destroyed, and the pump rendered useless. Again, when wooden pumps were driven into metallic cylinders obversely, similar difficulties were encountered. By the shrinking of the wood the cylinders became loose and dropped off, by the swelling of the wood the cylinders were cracked unless made very strong and heavy and much more costly than in my construction, in which all said difficulties, arising from dissimilar natural properties of the material used, are entirely overcome.

In the drawings, Figure 1 represents a vertical central sectional elevation of the parts of a pump in which my improvements are made. Fig. 2 represents the ring *h*, cross-bar *o*, and bolt and nut connecting the same. Fig. 3 is a plan view of *o* of Figs. 1 and 2.

Like letters refer to like parts.

In the drawings, A represents a pump-barrel provided with an interior flange, *b*, at a sufficient distance from the lower end thereof to permit driving the end of the stock C securely into its place without disturbing the flange *b* or its attached parts, preferably leaving some free space, as shown. Above the flange *b*, and within the barrel A, is placed a cylinder, D, of glass, hard rubber, porcelain, metal, or enameled metal, provided with a flange, *e*, which rests upon a packing-ring, *f*, which bears upon the flange *b*. Upon the flange *e* is placed a packing-ring, *g*. Through the cylinder D is passed a metallic ring, *h*, provided with arms *i*, leaving water-ways between them. Attached to the arms *i* is a bolt or stem, *j*. Said ring *h* has an exterior flange, *k*, which rests upon the packing-ring *g*, placed upon the flange *e*. The cylinder D is free from the barrel A and the ring *h* from the flange *b*, a sufficient space being left to permit the barrel A to shrink without coming into lateral contact with the metallic parts. To prevent the water from running back through the said free space around the

cylinder D and the ring *h* is the office of the packing-ring *f*. Likewise the packing-ring *g* prevents the escape of water between the flanges *k* and *e*. The bolt or stem *j* passes through an opening in the cross-bar *o*, is threaded, and provided with the nut *t*.

When all the parts mentioned are placed in their several positions, the cylinder is firmly clamped to the flange *b* by tightening the nut *t* against the cross-bars *o*, which bears against the under side of the flange *b;* and it is obvious that said parts may be taken out of the pump-barrel for repair or renewal at any time by removing the nut *t*.

It will be observed that the ring *h*, with its flange *k*, stem *j*, and nut *t*, together with the cross-bar *o*, form a mechanism by which the cylinder D is secured to the pump-barrel A by vertical longitudinal pressure on the flange *b*, which forms an integral part of the pump-barrel A.

It will also be observed that the pressure on the flange *b* is against the ends of the grain or fibers of the wood in the only direction in which the wood will not shrink or swell, and also that there is no lateral contact between the wood and metallic parts. The upper edge or face *l* of the ring *h* forms a valve-seat for the check-valve *m*.

The distinguishing feature of my invention is an internal flange within the ends of the pump-barrel, having shoulders upon both its upper and under sides, to which an internal cylinder may be attached, pointing in either direction.

I am aware that pumps with internal shoulders have heretofore been made on which internal cylinders with flanges have been placed; but I do not claim such constructions.

What I claim is—

1. A pump-barrel provided between the ends of its bore with an internal flange, in combination with an internal cylinder attached to said flange at one of its ends, substantially as specified.

2. A pump-barrel provided with internal flange within the ends of its bore, in combination with an internal flanged cylinder and a check-valve seat, all within each other, and mechanism to unite said parts, substantially as specified.

3. In combination with a pump-barrel having internal flange between the ends of its bore and an internally-flanged internal cylinder, a flanged ring, all within each other, and mechanism to unite said parts, all being free from lateral contact, substantially as specified.

4. In combination with an internally-flanged pump-barrel and internally-flanged cylinder, a flanged ring provided with water-ways, arms, and a stem, and mechanism to unite said parts, substantially as specified.

5. The combination, with a pump-barrel provided with an internal flange between the ends of its bore and internal flanged cylinder and flanged ring attached thereto, of the packing between said flanges, substantially as specified.

6. In combination with a pump-barrel, A, provided with an internal flange, *b*, a cylinder, D, provided with flange *e*, and a ring, *h*, having valve-seat and flange *k*, arms *i*, stem *j*, cross-bar *o*, and nut *t*, substantially as specified.

7. A pump-barrel, A, provided with flange *b*, and cylinder D, with flange *e*, in combination with ring *h*, with valve-seat *l*, and flange *k*, having arms *i*, stem *j*, cross-bar *o*, nut *t*, valve *m*, and packing *f* and *g*, substantially as specified.

8. A pump-barrel provided with internal flange within the ends of its bore, in combination with a flanged cylinder and mechanism for uniting said flanges, substantially as specified.

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