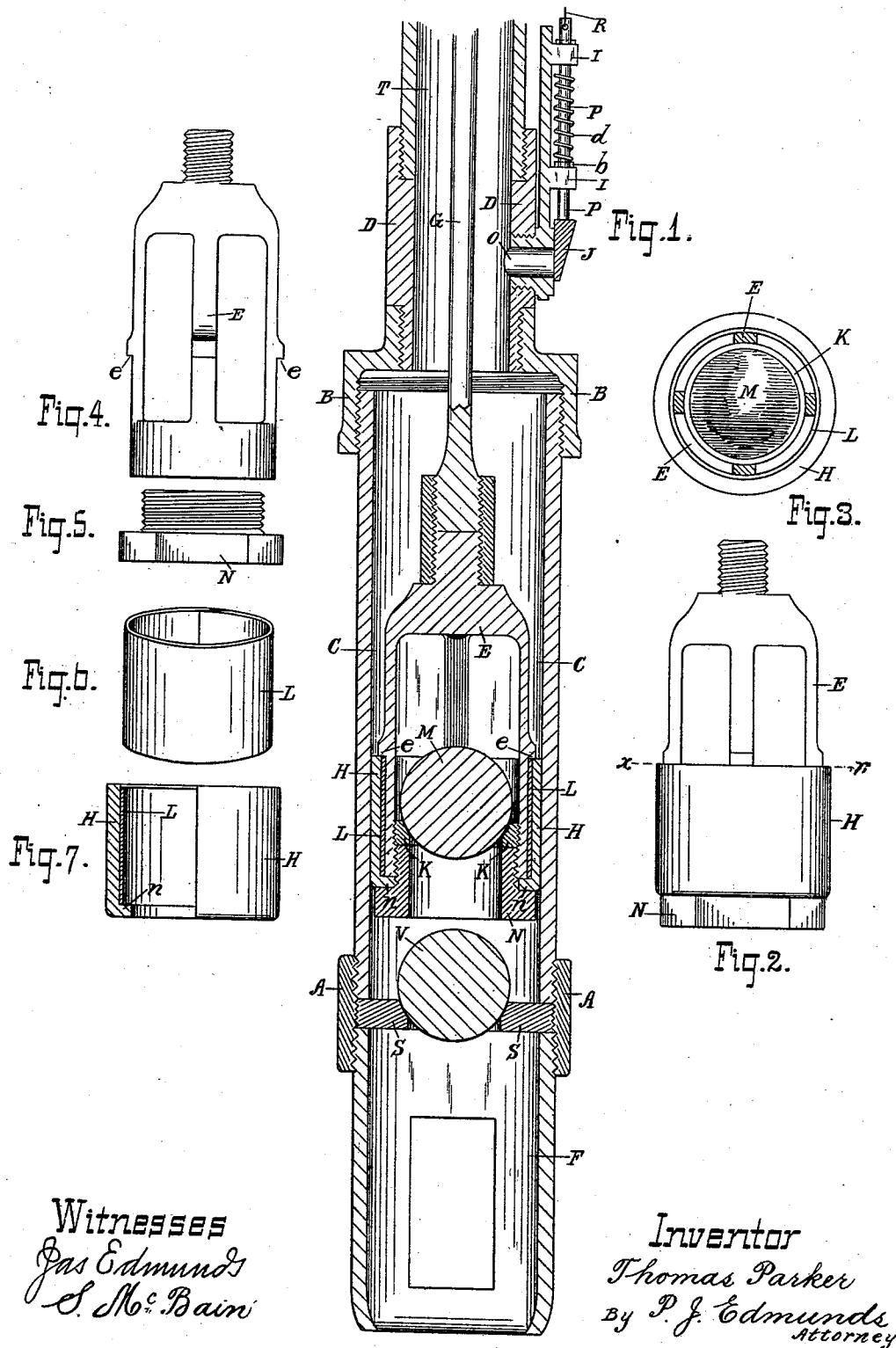


(No Model.)

T. PARKER. PUMP.

No. 523,173.

Patented July 17, 1894.



Witnesses
Jas Edmunds
S. M. Bain

Inventor
Thomas Parker
By P. J. Edmunds
Attorney

UNITED STATES PATENT OFFICE.

THOMAS PARKER, OF WINGHAM, CANADA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 523,173, dated July 17, 1894.

Application filed September 11, 1893. Serial No. 485,305. (No model.)

To all whom it may concern:

Be it known that I, THOMAS PARKER, a subject of the Queen of Great Britain, and a resident of Wingham, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Pumps, of which the following specification, taken in connection with the accompanying drawings, forms a full, clear, and exact description.

This invention relates to a device for lifting water and sand or other material capable of being acted upon by a pump, and it consists of a pump bucket or plunger having a cup formed of leather, provided with an interior resilient spring lining. And it also consists of the improved construction and combination of parts of the same, as will be hereinafter first fully set forth and described, and then pointed out in the claims.

Reference being had to the accompanying drawings illustrating my invention, Figure 1. is a central longitudinal sectional view of a portion of a pump embodying my invention. Fig. 2. is a side elevation of the pump bucket or plunger. Fig. 3. is a cross sectional view on the line, *x, x*, of Fig. 2. Figs. 4 and 5, are detail side elevations of the cage and tubular nut respectively. Fig. 6. is a detail perspective view of one form of a resilient spring lining. Fig. 7. is a detail side elevation of the leather cup partly in section, showing the resilient spring lining therein.

C, designates a cylinder, provided with the detachable valve seat, S, with the ball or other suitable valve, V, coupling, A, and the slotted or perforated foot, F.

T, designates the well tube, through which the material acted upon is carried to and discharged at the top of the well; this tube, T, is coupled to the cylinder, C, by the couplings, B, and D; and these couplings, B, and D, may be made in various sizes to adapt the one cylinder, C, to various sizes of well tubes, T.

E, designates the cage of the bucket or plunger, provided with the detachable valve seat, K, and the ball or other suitable valve, M.

G, designates the pump or plunger rod which connects the cage, E, with its operating device (not shown) at the top of the well.

H, designates a cup of leather or other suitable material, secured to the cage, E, by the

tubular nut, N, the inturned end, *n*, of this leather cup, H, is shown interposed between the end of the cage, E, and a shoulder on the nut, N; by screwing up said nut, the leather cup is firmly held in place.

L, designates a resilient spring lining, preferably formed of a plate of spring steel or other suitable material, but it may be formed of other elastic substance; this spring plate or lining is bent in a circular form with its edges overlapping and is placed in the cup, H, for the purpose of pressing and holding said cup, H, compactly against the adjacent face of the cylinder, C.

e, e, designate shoulders formed on the arms of the cage, E, to prevent the lining, L, from working upward out of the cup, H; or any other means may be applied for the same purpose.

O, designates an outlet or vent formed in the coupling, D, as shown in Fig. 1, but this vent may be formed in the cylinder, C, well tube, T, or coupling, B, if preferred.

P, designates a spring actuated plunger, extending through and held in line by the guides, I, and provided with the cover, J; said guides, I, being secured to the coupling, D; a wire or rod, R, extends from the plunger, P, to the top of the well, to permit the cover, J, to be adjusted, and the vent or opening, O, to be readily and easily opened or closed as required; by drawing upward on the rod, R, the cover, J, is raised clear from the vent, O, and the spring, *d*, is compressed, between the upper guide, I and a pin, *b*, secured in the plunger, P, and when the plunger is released, the expansion of said spring, *d*, adjusts the cover, J, over the vent, O, again.

As the plunger or bucket is operated back and forth in the cylinder, C, to lift the quick sand and water or other material, the resilience of the spring lining, L, compacts the leather cup, H, throughout the whole of its outer surface against the interior face of the cylinder, C, and completely prevents any sand or other substance from working in between the adjacent faces of said cup, H, and cylinder, C; at the same time by thus compacting the adjacent face of the cup, H, against the interior face of the cylinder, C, a very effective device for this purpose is produced, by

which a pump of small diameter, is enabled to lift and discharge large quantities of the material acted upon.

5 In the event of the pump becoming choked, or if the pump were to be left standing without operation, for any length of time, the cover, J, could be adjusted from the vent, O, which would permit the sand and water to run out of the pipe, T, so that the apparatus would be
10 perfectly clear, and free for operation at any future time.

While I prefer the construction herein shown and described, I do not limit myself to the details thereof, as they may be modified
15 in various ways, without departing from the spirit of my invention.

Having thus described my invention, I claim—

20 1. In a pump, the combination of the cylinder C, provided with the detachable valve seat S and valve V, the cage E formed with the shoulders *e* and provided with the detachable valve seat K and valve M, and the cup H pro-

vided with a spring lining and secured in the cage E by the nut N, the said spring lining 25 adapted to engage the shoulders on the cage E, substantially as and for the purpose set forth.

2. In a pump, the combination of the cylinder C, the cage E formed with the shoulders 30 *e* and provided with the valve seat K and valve M, working therein, the cup H secured in said cage by the nut N and provided with the spring lining L, formed of a single strip of spring metal bent in a circular form with its 35 edges overlapping, and adapted to engage the shoulders *e* to prevent any vertical movement of the said lining substantially as and for the purpose set forth.

In testimony whereof I have signed in the 40 presence of the two undersigned witnesses.

THOMAS PARKER.

Witnesses:

P. J. EDMUNDS,
S. MCBAIN.