No. 623,662. Patented Apr. 25, 1899.

J. H. GOSS.

FOOT PUMP.

(Application filed Nov. 16, 1898.)

(No Model.)

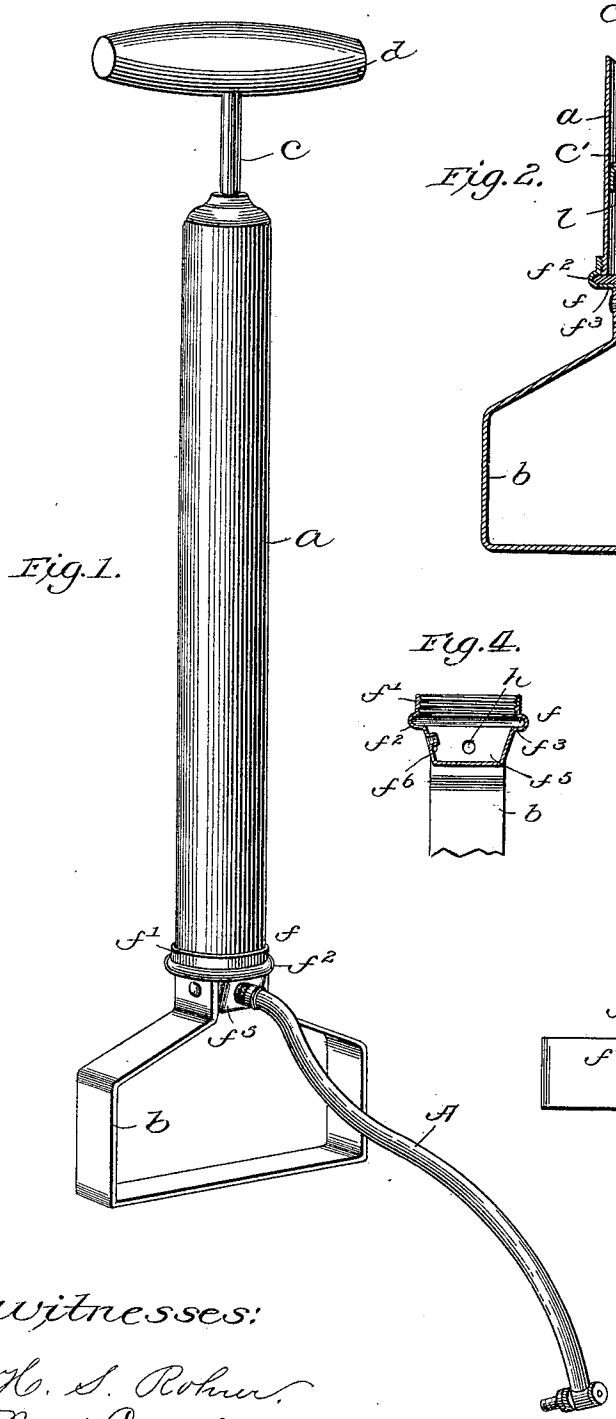


Fig. 1.

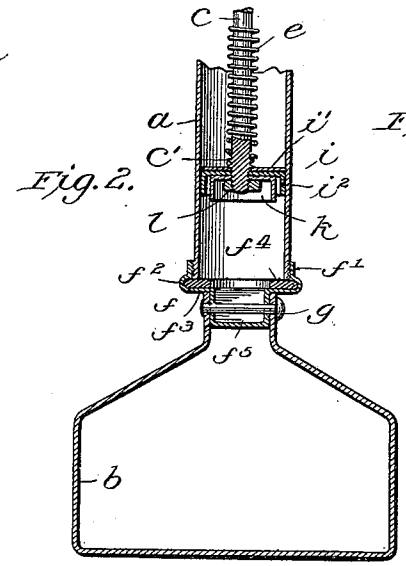


Fig. 2.

Fig. 3.

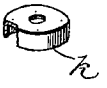


Fig. 7.

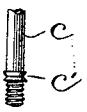


Fig. 4.

Fig. 5.

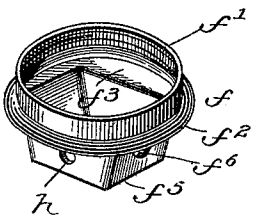
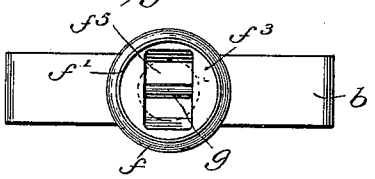


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN H. GOSS, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SCOVILL MANUFACTURING COMPANY, OF SAME PLACE.

FOOT-PUMP.

SPECIFICATION forming part of Letters Patent No. 623,662, dated April 25, 1899.

Application filed November 16, 1898. Serial No. 696,620. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOSS, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Foot-Pumps, of which the following is a full, clear, and exact description.

This invention relates to air-pumps, and more especially to that class of air-pumps which are used for inflating pneumatic tires and are known as "foot-pumps."

In my invention I employ a novel cap upon the discharge end of the barrel or body of the pump, and this said cap has attached to it the stirrup, and it is also provided with a nipple for the application of the flexible tubing for conveying away the air. The pump-plunger is provided with a rigid (preferably steel) cup, which aids in holding the leather in place and also serves to limit the downward stroke of the plunger. The plunger-rod is provided with a knurled bead to form a shoulder for the metal washer of the piston and a seat to hold the buffer-spring in place.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the complete pump. Fig. 2 is a longitudinal section of the lower end of the pump. Fig. 3 is a perspective view, partly broken away, of the plunger-cup. Fig. 4 is a cross-section of the cap, taken substantially at right angles to the view Fig. 2. Fig. 5 is a perspective view of the cap detached. Fig. 6 is a top plan view of the cap and stirrup detached. Fig. 7 is an elevation of the inner end of the plunger-rod.

The body or barrel *a*, the stirrup or foot-rest *b*, the plunger-rod *c*, modified in construction, as presently described, and its handle *d* and buffer-spring *e* may be otherwise of usual construction.

The cap *f* for closing the lower end of the barrel or body of the pump is made with a flange *f'*, which is internally screw-threaded to engage an external screw-thread on the barrel or body of the pump, and it is further made with a hollow bead f^2, projecting outwardly beyond the perimeter of the flange *f'*. f^3 is a flange at the base of the hollow bead, which flange, in connection with the said bead, receives the packing-ring f^4. (See Fig. 2.) The cap terminates in an angular or other shaped chamber f^5, and this chamber is provided, preferably, with an inwardly-projecting nipple f^6, which is internally screw-threaded to receive the coupling of the discharge-tube A.

The stirrup *b* has its upper ends arranged upon the sides of the chamber f^5 of the cap *f* and is secured thereto by a rivet *g*, passed transversely through holes in the said ends of the stirrup and holes *h* in the sides of the chamber f^5; and these ends of the stirrup may be further secured to the sides of the chamber of the cap *f* by solder or other medium in order to make a perfectly tight and rigid joint therewith. From this construction it is obvious the stirrup and the cap *f* are rigidly secured and movable one with the other and that by this construction a ready means is afforded for assembling and detaching the parts of the pump.

The pump plunger or piston *i* may be composed of the usual metal washer *i'* and leather cup i^2, and beneath this leather cup is a rigid metal cup *k*, which is secured to the rod *e* by means of a nut *l*, secured upon a screw-threaded projection of the rod *e*. This metal cup *k*, preferably of steel, is longer than the leather cup and comes into contact with the packing-ring f^4, and thus prevents the rod *e* from striking the rivet *g* in the descent of the plunger, and so preserves said rivet from distortion and the consequent loosening of the stirrup.

The cap *f* may be struck up in dies or otherwise formed of sheet metal very expeditiously and cheaply, as also may be the steel cup *k*.

While I prefer to make a screw-thread connection of the cap *f* with the body or barrel of the pump, I do not limit my invention to such connection.

A bead *c'* is knurled into the plunger-rod and forms a seat for the steel washer *i* and at the same time affords a place in which to fasten the buffer-spring *e*, and thus keep it from rattling up and down. This construction is cheaper than milling a shoulder on the end of the plunger-rod, which is the usual construc-

tion. The knurled bead is shown as a groove having its opposite edges thrown out by displacement of the metal of the rod. The lower coil or coils of the buffer-spring engages or engage the bead, and thus said spring is held in place on the rod.

By the construction of the various parts described a very efficient, strong, and durable foot-pump may be produced at comparatively small first cost.

What I claim is—

1. A foot-pump, having a body or barrel, a cap therefor constructed with a screw-threaded flange to engage a complemental screw-thread on the body or barrel, said cap terminating in an exit-chamber, a stirrup having its ends applied to the sides of such chamber and a rivet passed through such ends and the cap, to rigidly unite the cap and stirrup, substantially as described.

2. A foot-pump, having a body or barrel, a cap therefor constructed with a screw-threaded flange to engage a complemental screw-thread on the body or barrel, said cap terminating in an exit-chamber, a stirrup having its ends applied to the sides of the chamber and rigidly united with the cap by solder and a rivet, substantially as described.

3. A foot-pump, having a screw-cap for closing the bottom of the body or barrel, and constructed with a hollow bead, a washer therein and an exit-chamber, and a stirrup applied to the sides of said chamber and rigidly secured to the cap by means of a rivet passed through the said stirrup and chamber, substantially as described.

4. A foot-pump, having a body or barrel, a cap struck up from sheet metal and constructed with a screw-threaded flange to engage a complemental screw-thread on the body or barrel, an exit-chamber having an outlet-nipple, a stirrup fitted to the sides of such chamber and secured to the cap by a rivet, substantially as described.

5. In a foot-pump, the combination of a body or barrel, a screw-cap for closing its lower end, a stirrup riveted to said screw-cap, and a plunger having a metal cup projecting below its lower end and adapted to come in contact with the screw-cap above said rivet to clear the descending plunger from said rivet, substantially as described.

6. In a pump, a body or barrel having an exit-chamber, and a plunger having an inverted metal cup applied beneath the packing and serving to arrest the movement of the plunger with relation to the exit-chamber, substantially as described.

7. In a pump, the combination with the piston or plunger having a metal washer, of a buffer-spring, and a plunger-rod having a knurled bead forming a seat for the washer and a fastening for the buffer-spring, substantially as described.

In testimony whereof I have hereunto set my hand this 14th day of November, A. D. 1898.

JOHN H. GOSS.

Witnesses:
EDWARD O. GOSS,
GEO. F. HODGES.