

(No Model.)

J. F. BRAUN.
BICYCLE PUMP.

No. 564,736.

Patented July 28, 1896.

Fig. 1.

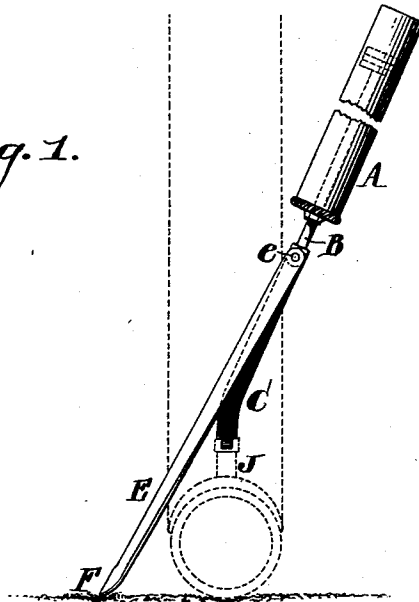


Fig. 2.

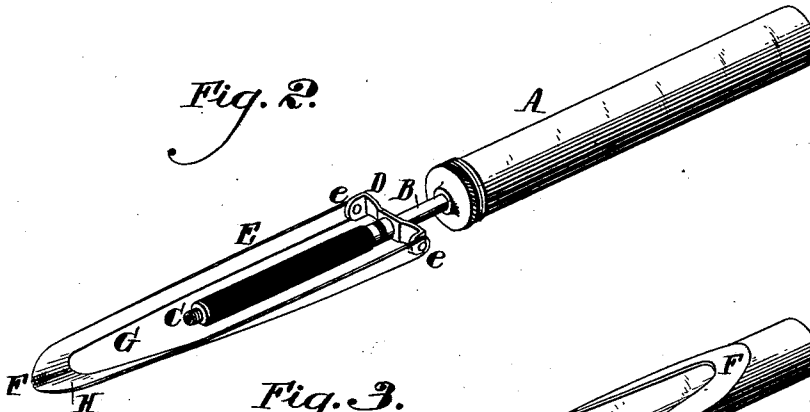


Fig. 3.

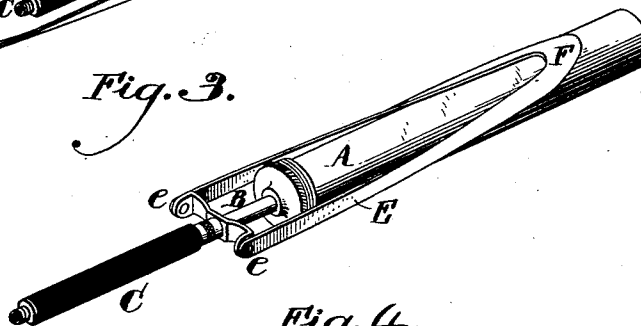
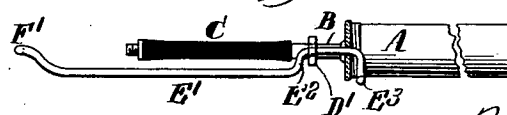


Fig. 4.



Witnesses.

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JOHN F. BRAUN, OF PHILADELPHIA, PENNSYLVANIA.

BICYCLE-PUMP.

SPECIFICATION forming part of Letters Patent No. 564,736, dated July 28, 1896.

Application filed April 27, 1896. Serial No. 589,351. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. BRAUN, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Bicycle-Pumps, of which the following is a specification.

My invention has reference to bicycle-pumps; and it consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide the usual hand-pump carried by bicyclists with means to steady it when pumping, so that all strain shall be removed from the valve-tube and flexible hose on the pump, and furthermore to reduce the labor of the operator in inflating the tire.

In carrying out the preferred construction of my invention I provide the piston-rod of the pump with an adjustable U-shaped frame which may be moved down and beyond the flexible tube connecting with the air-valve, or upward, so as to lie substantially against the face of the cylinder when being packed for carriage. I prefer to form this frame, when hinged, somewhat tapering, so as to be easily turned down over the spokes of the wheel after the pump has been attached to the air-valve of the tire.

In applying my improved air-pump in practice the steadying-frame is turned or adjusted upward against the cylinder of the pump. The rubber hose is then secured onto the air-valve and the pump bent down somewhat approaching a horizontal position and the steadying-frame revolved about its axis between the spokes and project down to the ground, so that the pump-cylinder is upon one side of the wheel while the end of the steadying-frame is upon the other side of the wheel. By connecting the steadying-frame with the end of the piston the cylinder of the pump may be reciprocated without putting any material strain upon the rubber tube of the pump or upon the air-valve tube of the tire. It also greatly reduces the labor in pumping the tire when the same is almost inflated.

My invention will be better understood by

reference to the accompanying drawings, in which—

Figure 1 is an elevation of my improved pump, showing the same in position when in use. Fig. 2 is a perspective view of my improved pump with the steadying-frame turned down. Fig. 3 is a similar view with the steadying-frame turned upward, and Fig. 4 is a side elevation of a modified form of my invention.

A is the pump-cylinder.

B is the piston-rod and piston.

C is the flexible connecting hose or tube for connecting the piston-rod with the air-valve J of the wheel. In this class of pump the piston-rod and piston remain stationary while the pump-cylinder is reciprocated upon them.

D is a cross-head secured to the lower end of the piston-rod, and E is the steadying-frame, pivoted to the said cross-head on transverse pivots *e*. The steadying-frame is preferably stamped out of a flat piece of sheet metal made U-shaped and the two arms thereof thrust into position for fitting with the cross-head, while the lower or pointed end F is curved, as at H, so as to fit the cylinder of the pump when it is turned back upon it for packing, as indicated in Fig. 3.

The steadying-frame E has its center cut away to form the aperture G, so that it can freely pass or swing over the flexible tube C, as is very clearly shown in Fig. 2. Furthermore, by providing the opening G it permits the cylinder A to extend up through said opening when the steadying-frame is turned back for packing, as indicated in Fig. 3. I prefer to form the lower end of the steadying-frame E somewhat pointed or sharply rounded, as at F, so that it will take a firm hold upon the ground or floor and avoid slipping. In practice the parts are brought to the position shown in Fig. 3 and the pump is then secured upon the air-valve. When this is done, the steadying-frame E is turned over upon its pivots *e* and caused to pass between the spokes of the wheel. Its free end F is then brought down to the ground, as indicated in Fig. 1. It will thus be seen that the steadying-frame is substantially in line with the piston-rod,

so that in operating the cylinder upon the piston and its rod the strain produced thereby will be taken up by the steadying-frame E and practically no strain will be put upon the flexible tube C or the valve J.

In place of having the steadying-frame pivoted as above described said frame may be made of bent wire and adapted to slide, as shown in Fig. 4. In this case the cross-head D' is provided with holes through which the wire forming the steadying-frame E' passes. It will be seen that the wire is bent at E² to form a shoulder to act upon the cross-head when the pumping operation is going on. The upper end of the frame is bent over the cylinder of the pump, as at E³. It will be understood that the two sides of this frame E' are alike. To condense the pump from position shown in Fig. 4, the steadying-frame is raised at its free end F', so that the shoulder E² may be worked through the cross-head, and then the frame E' is bodily pushed through the said cross-head to be brought into position upon the side of the cylinder. In this manner the steadying-frame is jointed to the cross-head with practically the same advantageous results as the hinging or jointing of the frame E in Figs. 1, 2, and 3.

I do not confine myself to the mere details of construction of these improvements, as the same may be more or less modified without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a bicycle-pump, the combination of a piston and piston-rod, a flexible tube connecting with the end of the piston-rod for attachment with the air-valve, a movable cylinder carried upon the piston and piston-rod, and a steadying-frame jointed to the lower end of the piston-rod and adapted to be adjusted thereon so as to extend below the flexible tube or upward to lie parallel with the cylinder and piston-rod.

2. In a bicycle-pump, the combination of a piston and piston-rod, a flexible tube connecting with the end of the piston-rod for attachment with the air-valve, a movable cyl-

inder carried upon the piston and piston-rod, and a steadying-frame jointed to the lower end of the piston-rod and adapted to be turned over the flexible tube or back upon the cylinder and piston-rod and consisting of a U-shaped frame having an aperture in the middle through which the flexible tube may freely pass.

3. In a bicycle-pump, the combination of a piston and piston-rod, a flexible tube connecting with the end of the piston-rod for attachment with the air-valve, a movable cylinder carried upon the piston and piston-rod, and a steadying-frame jointed to the lower end of the piston-rod and adapted to be turned over the flexible tube or back upon the cylinder and piston-rod and consisting of a U-shaped frame having an aperture in the middle through which the flexible tube may freely pass and also having its end somewhat tapering and curved in cross-section.

4. In a bicycle-pump, the combination with the piston-rod and piston provided with means for attachment to the air-valve, with a movable cylinder adapted to be reciprocated upon the piston and its rod, and a steadying-frame hinged or jointed to the outer end of the piston-rod and adapted to be turned back over the cylinder or downward into alinement with the piston-rod.

5. In a bicycle-pump, the combination with the piston-rod and piston provided with means for attachment to the air-valve, with a movable cylinder adapted to be reciprocated upon the piston and its rod, and a steadying-frame jointed to the outer end of the piston-rod and adapted to be adjusted over the cylinder or moved downward into alinement with the piston-rod and consisting of a piece of a U-shaped frame of greater length than the flexible tube.

In testimony of which invention I hereunto set my hand.

JOHN F. BRAUN.

Witnesses:

R. M. KELLY,
WM. L. EVANS.