

(No Model.)

S. G. STODDARD.
AIR PUMP.

Patented May 12, 1896.

No. 559,957.

Fig. 1.

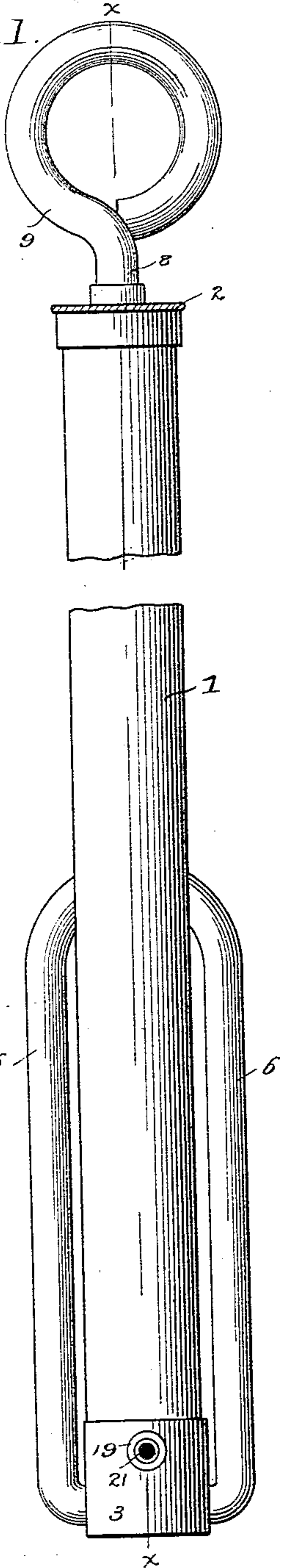


Fig. 2.

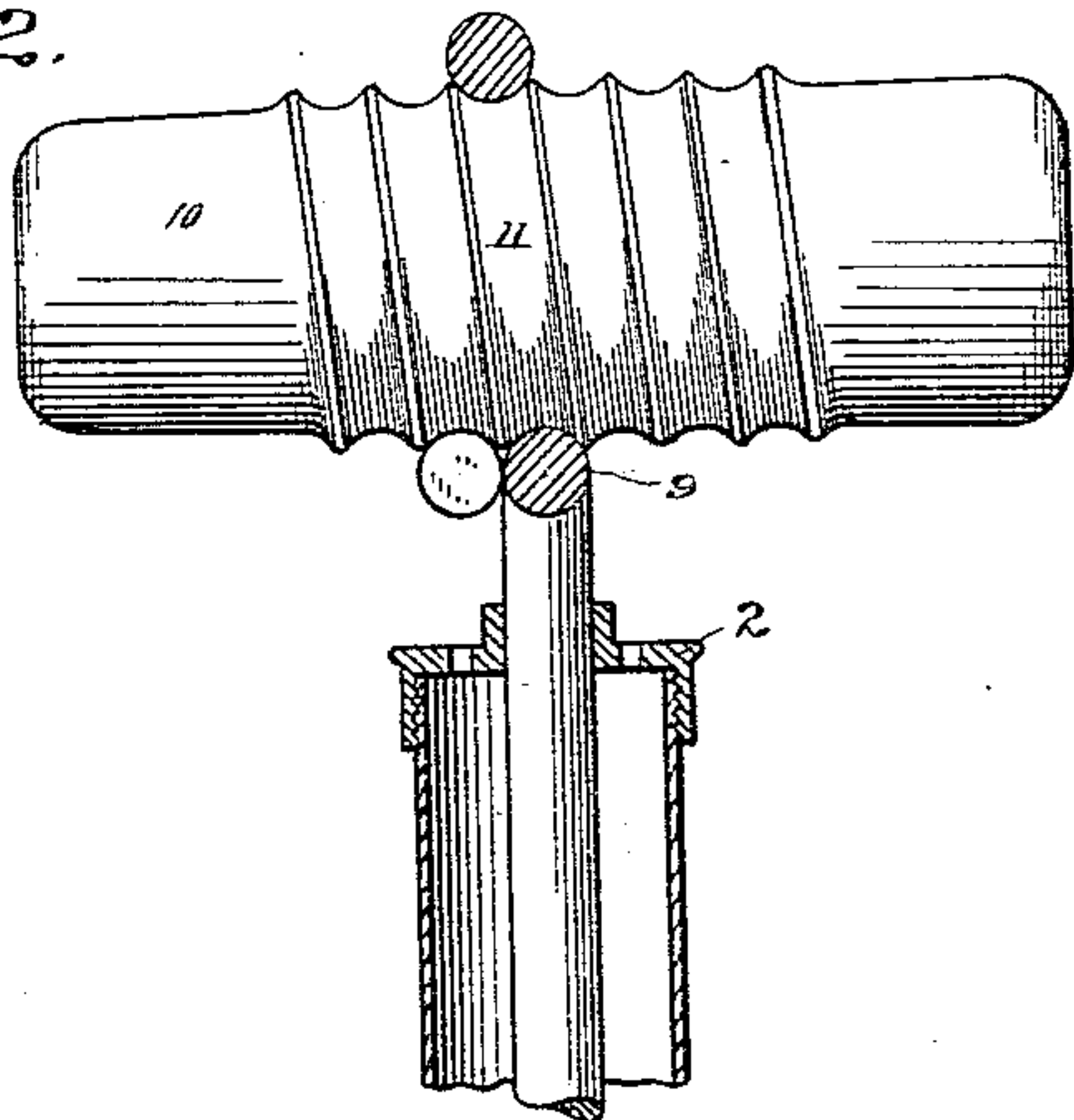


Fig. 3.

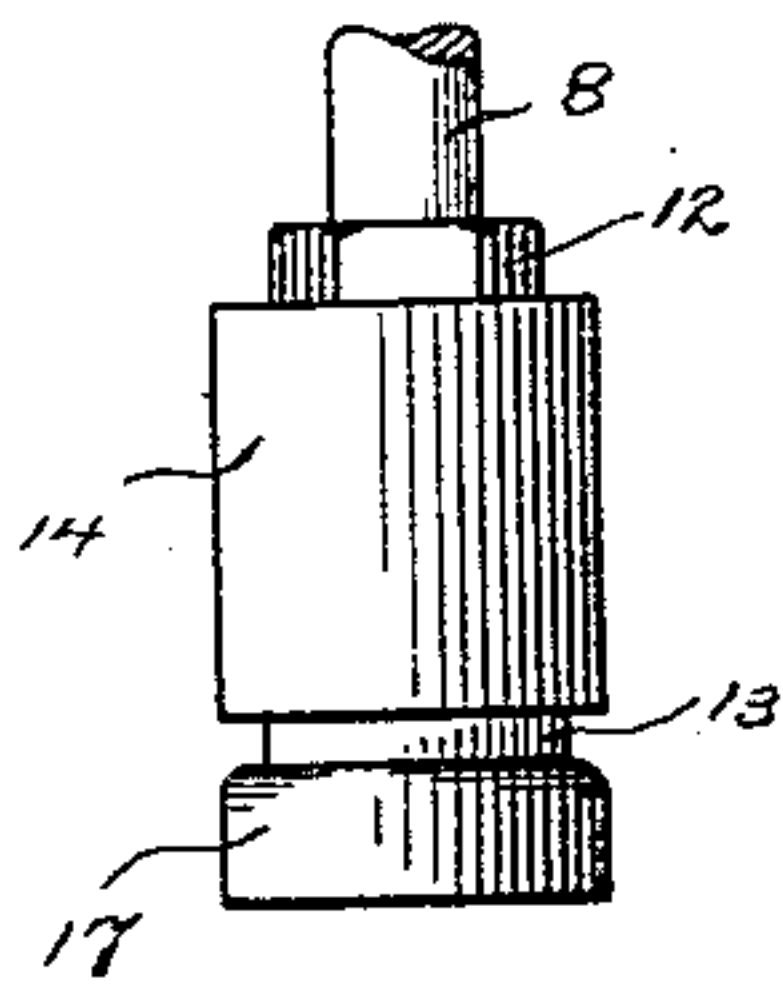
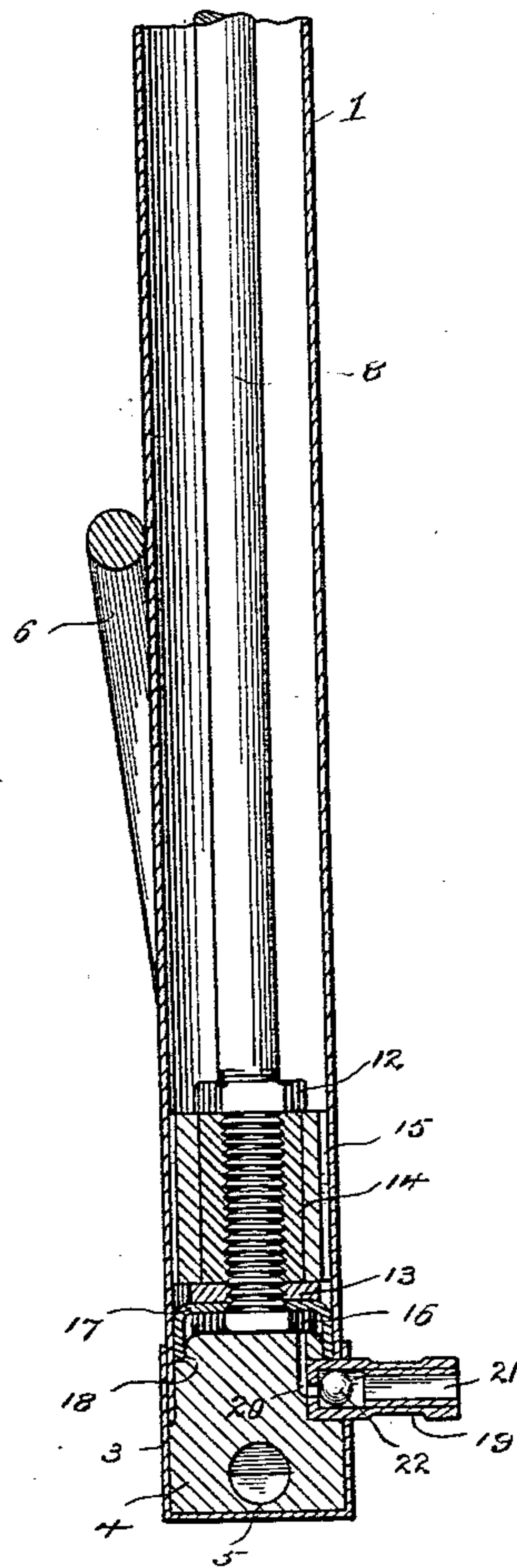
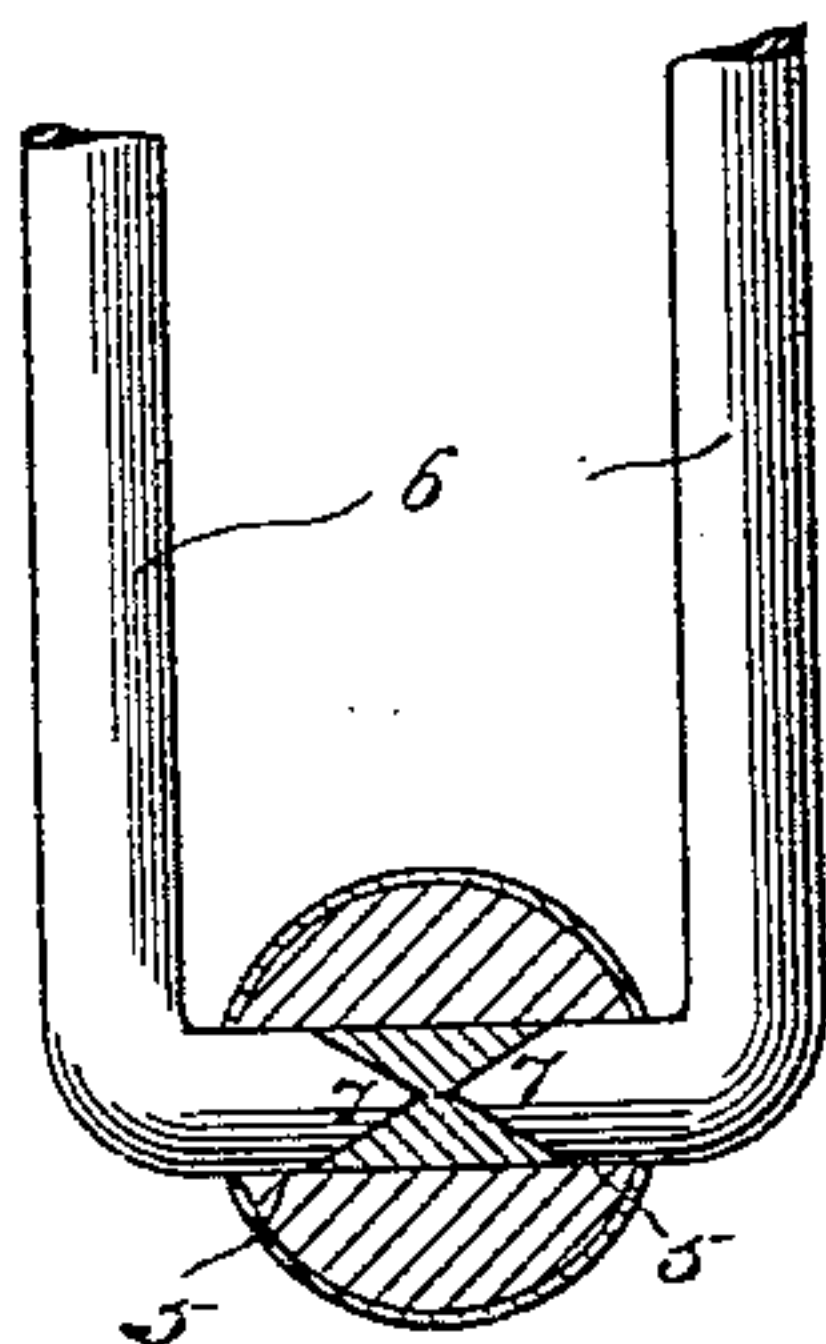


Fig. 4.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

SAMUEL G. STODDARD, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
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AIR-PUMP.

SPECIFICATION forming part of Letters Patent No. 559,957, dated May 12, 1896.

Application filed January 20, 1896. Serial No. 576,113. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL G. STODDARD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Air-Pumps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to air-pumps, and has particular reference to that class or type of appliances which are utilized for inflating the tires of bicycles.

The object of this invention is the production of an inexpensive yet durable and effective air-pump, and one having a handle and a foot-piece so constructed that the bulk of the appliance may be quickly reduced when desired.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

In the drawings which accompany and form part of this specification, Figure 1 represents a side elevation of the pump. Fig. 2 represents a sectional view of the same on the line *x x* of Fig. 1 and with the supplemental handle or grip-piece inserted in the handle-loop of the piston-rod. Fig. 3 represents a detail side elevation of the piston and its adjacent guide-block. Fig. 4 represents a detail view illustrating the pivotal connection of the foot-piece with the lower end of the cylinder.

Similar reference-characters are used in the several views to indicate the same parts.

1 denotes the cylinder, having the head 2 at the upper end provided with an opening for the piston-rod and also preferably having air-inlet holes. Secured rigidly to the lower end of the cylinder is a cup-shaped cap 3, containing a metallic block 4, said cap and block being cut away or recessed to form sockets 5 for the ends of the foot-piece 6, which consists of a U-shaped rod or wire having its ends bent toward each other and beveled or having a flat taper, as at 7. The bottom of each socket 5 is correspondingly tapered or V-shaped, as indicated in Figs. 2 and 4, and the metal be-

tween the bottoms of the two sockets may be integral with the block 4, or it may consist of a separate block driven into a straight bore through the block 4, as indicated in Fig. 4. The construction is such that the inclined flat surfaces of the ends 7 will fit the correspondingly-shaped bottoms of the sockets 5 when the foot-piece is turned down at a right angle to the cylinder, this position being indicated in Fig. 4, and the said piece 6 is of spring metal, so that the resiliency thereof will tend to keep it in that position. When desired, however, the foot-piece may be turned up to the position shown in Figs. 1 and 2, the beveled ends of the foot-piece riding up the inclined flat bottoms of the sockets as they turn relatively thereto.

The piston-rod 8 has a loop 9 at the upper end, which may serve as a handle for operating the pump. Preferably, however, the loop is bent to the shape of a screw-thread or coil and is therefore adapted to have screwed into it the handle or grip-piece 10, which, as indicated in Fig. 2, consists of a tapered wooden rod or plug having a screw-thread. Owing to the handle 10 being tapered from end to end of the threaded portion it may be inserted in the loop 9 and turned therein until held by friction in said loop. The lower end of the piston-rod is provided with two nuts 12 and 13, between which is clamped a wooden guide-block 14, which may fit the inside of the cylinder quite closely and be provided with grooves 15 for the passage of air.

Between the lower nut 13 and a nut 16 on the end of the piston-rod is clamped the piston 17, consisting of a cup-shaped flexible disk, preferably of leather. The nut 13, however, may be omitted and the piston then clamped between the nut 16 and the block 14.

The edge of the upper surface of the block 4 is cut away to form a recess 18, into which the annular edge of the piston may move at its extreme downward stroke. This feature of the invention is productive of important results for the reason that it leaves but a very small space at the bottom of the pump in which a body of air can remain.

A nipple 19 is secured in the side of the lower end of the pump and communicates with the space therein by a passage 20 through

the inner end of the nipple and the block 4, and a tube 21, secured in the nipple or any suitable device permitting air to pass forms a stop for the ball-valve 22. The nipple will, in practice, have a flexible tube secured to it, as is common with this class of tire-pumps.

The wood block 14 guides the piston and rod when reciprocated and prevents the possibility of the inner side of the cylinder being scraped by the piston-rod or nuts. Said block or the nut 13 also backs up the flexible piston and prevents it from buckling so as to reverse its flange.

Having now described the invention, what I claim is—

1. The combination with the piston-rod 8 having the coil 9, of the grip-piece or handle 10 composed of a single piece having the external screw-thread 11 corresponding to the pitch of the coil 9, substantially as described.

2. The combination with the piston-rod 8, having the coil 9, of the grip-piece or handle 10 composed of a single piece of wood having the external screw-thread 11 corresponding to the pitch of the coil 9, the threaded portion being tapered.

3. A piston-rod bent at one end to the form of a helix or screw-thread, the eye so formed being adapted for use as a handle, and also adapted to receive a plug or handle having a screw-thread of equal pitch formed on its surface.

4. The combination with a piston-rod having one end bent or formed to the shape of a screw-thread or helix, of a plug or handle

having a tapering threaded portion fitted to engage with the helix formed on one end of the piston-rod.

5. The combination with the cylinder 1 having sockets in its lower end provided with inclined flat bottom surfaces, of the spring-metal foot-piece 6 having its ends beveled and adapted to fit said sockets.

6. An air-pump comprising in its construction a cylinder or pump-barrel having a foot-piece pivotally connected near one of the ends of the cylinder or barrel, said foot-piece being a spring having portions of its length next its ends bent inwardly and having beveled ends, said cylinder or pump-barrel having seats or recesses formed near one of its ends adapted to receive the inwardly-projecting portions of the foot-piece, the bottoms of the seats or recesses being formed to correspond with the beveled ends of the spring foot-piece, whereby the latter must be forced apart except when the foot-piece is substantially at right angles with the cylinder.

7. The combination with the cylinder 1 having the block 4 provided with sockets 5 the bottoms of which are V-shaped, of the foot-piece 6 consisting of a spring-loop having tapered ends 7 fitting said sockets.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL G. STODDARD.

Witnesses:

JNO. G. MILLS,

E. W. FAIRCHILD.