

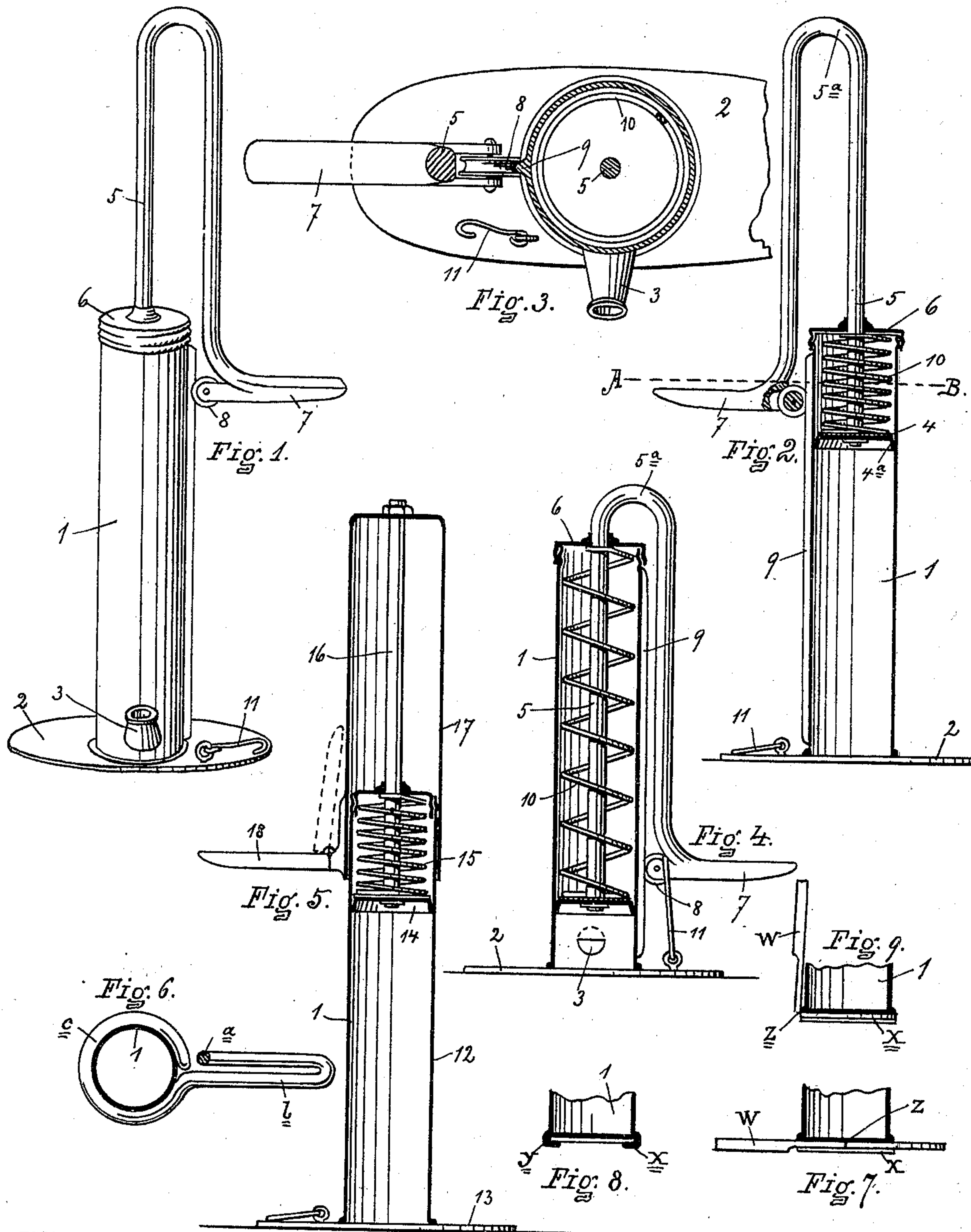
No. 634,961.

DE WANE B. SMITH.
BICYCLE PUMP.

Patented Oct. 17, 1899.

(Application filed June 17, 1897.)

(No Model.)



WITNESSES
Rich. A. George.
Ohebe A. Tanner.

INVENTOR.
DE WANE B. SMITH
BY Milton E. Robinson
ATTORNEY.

UNITED STATES PATENT OFFICE.

DE WANE B. SMITH, OF DEERFIELD, NEW YORK.

BICYCLE-PUMP.

SPECIFICATION forming part of Letters Patent No. 634,961, dated October 17, 1899.

Application filed June 17, 1897. Serial No. 641,087. (No model.)

To all whom it may concern:

Be it known that I, DE WANE B. SMITH, of Deerfield, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Bicycle-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

In the drawings, Figure 1 shows in perspective the bicycle-pump. Fig. 2 shows a vertical section of same with the piston in its upper position. Fig. 3 shows a section taken on line with A B of Fig. 2, with a plan view of the parts below the line, all on a larger scale. Fig. 4 shows a vertical section with the piston down and secured. Fig. 5 shows a vertical section of a modified form of construction with the piston in upper position. Fig. 6 shows details of a modified form of certain parts of the construction. Fig. 7 shows details of a folding base adapted for use with the pump, shown in open or extended position from the side. Fig. 8 shows the same from the end. Fig. 9 shows the same base folded.

Referring to the reference characters in a more particular description of the construction, 1 indicates the pump-cylinder, which is secured on the base 2 and is provided at its lower end with a nipple 3, to which a piece of hose may be attached. Within the cylinder is provided a piston or plunger head 4, provided with a packing 4^a to cause it to fit airtight on its downward stroke. The plunger or piston head is secured on the end of the piston-rod 5, which passes through an opening in the cylinder-cover 6 and has a sufficient length of straight portion to permit the plunger to descend substantially to the lower end of the cylinder. The piston-rod beyond its straight portion is bent over at 5^a and passed down the outside of the cylinder to a point nearly opposite the piston-head, where it is provided with a treadle projection 7. At the point of junction between the treadle projection 7 and the lower end of the outside por-

tion of the piston-rod is provided a groove-faced wheel or roller 8. This wheel or roller runs on the rib-track 9 on the side of the pump-barrel when the pump is operated. For elevating the piston and connected parts there is provided a spring 10, attached at one end to the cover 6 of the cylinder and at the other to the piston, and for securing the parts with the piston substantially at the lower end of the cylinder there is provided a hook or catch 11.

In operation the pump is set on the floor and held by one foot placed on the base 2. The piston or plunger is moved by the other foot placed on the treadle projection 7 from the position in which the parts are shown in Figs. 1 and 2 to the position in which they are shown in Fig. 4 or below. The compressed air from the cylinder may be conducted by a piece of hose attached to the nipple 3 to the tire to be inflated or for other use. The treadle is prevented from swinging around the cylinder or barrel when being operated by the groove-faced wheel 8 running on the track 9.

It will be noted that the piston may be made to descend quite to the bottom of the cylinder, expelling practically all the compressed air.

In the modified form of construction shown in Fig. 5 there is provided a compression-cylinder 12, secured to a base 13 and provided with a piston 14 and spring 15, similar to the previously-described construction. The upper end of the piston-rod 16 is secured to the head of the outer shell 17, which shell is adapted to slide up and down the outside of the cylinder 12. On the shell 17 is provided a treadle projection 18, which may be jointed to fold, as indicated. In the modified form of construction shown in Fig. 6 instead of the wheel 8 and rib 9 or the outer shell 17 the outer depending portion or extension of the piston-rod *a* is given a double bend to form a treadle projection *b*, and is then formed around the cylinder, as shown at *c*, to provide a slide or guide for the piston-rod extension.

In lieu of the fixed base for the cylinder heretofore described there may be provided on the lower end of the cylinder a pair of guides *x y*, in which slides the folding base *w*, having a joint at *z*, which permits the projec-

tion portion to be folded, as shown in Fig. 9, when moved, so as to bring the joint outside of the guides.

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

1. The construction in a bicycle-pump of a cylinder having a track on its side, a piston in the cylinder, a treadle a connection between the treadle and piston and a wheel mounted on the treadle and running on the track, substantially as set forth.

2. The combination in a pump of a cylinder, a piston, a treadle arranged at the side of the cylinder and guided thereby and a connection between the piston and treadle.

3. The combination in a pump of a cylinder, a piston, a treadle arranged at the side of the cylinder to move parallel with the cylinder, a connection between the piston and treadle and a spring arranged to elevate the piston and treadle.

4. The combination in a pump of a cylinder having a track at its side, a piston in the cylinder, a treadle connected with the piston

through the top of the cylinder and guided by the track, substantially as set forth.

5. The combination in a pump of a cylinder, a piston in the cylinder, a treadle arranged at the side of the cylinder, and a U-shaped piston-rod or connection between the piston and treadle, one arm of which is arranged to pass down the interior of the cylinder and the other arm on the exterior of the cylinder.

6. The combination in a pump of a cylinder, a piston, a treadle arranged at the side of the cylinder, a U-shaped piston-rod or connection between the piston and treadle, one arm of which is arranged to pass down the interior of the cylinder and the other arm on the exterior of the cylinder, and a spring arranged to elevate the piston and treadle.

In witness whereof I have affixed my signature in presence of two witnesses.

DE WANE B. SMITH.

Witnesses:

PHEBE A. TANNER,
D. H. COLEGROVE.