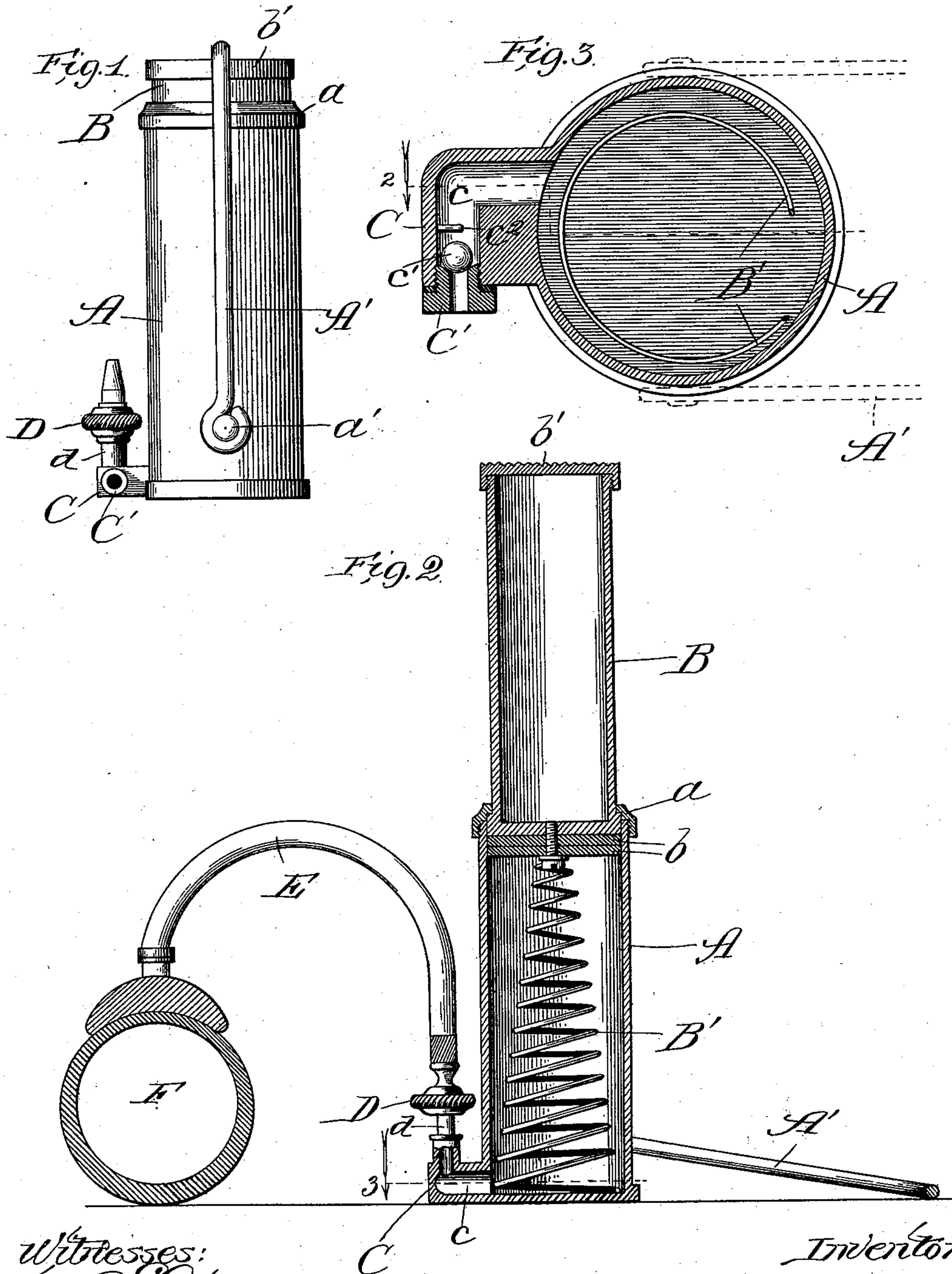


(No Model.)

G. W. COOK.  
AIR PUMP FOR BICYCLES.

No. 601,126.

Patented Mar. 22, 1898.



Witnesses:

Edw. J. Chylard,  
Lute J. J. Allen.

Inventor:

George W. Cook



# UNITED STATES PATENT OFFICE.

GEORGE W. COOK, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE W. COOK, JR., OF SAME PLACE.

## AIR-PUMP FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 601,126, dated March 22, 1898.

Application filed February 13, 1896. Serial No. 579,127. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. COOK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Air-Pump for Inflating Pneumatic Tires in Use on Bicycles, of which the following is a specification.

My invention relates to improvements in the smaller class of bicycle-pumps constructed with a view to lightness and compactness for convenience in carrying around, commonly known as the "bicycle hand-pump."

The objects of my improvements are, first, to furnish a pump which can be operated by foot-pressure, thereby getting a greater force or pressure than can be had by the use of the ordinary hand-pump; second, to furnish a pump by which the pneumatic tire can be inflated more rapidly and with less exertion than with the ordinary hand-pump, and, third, to produce a powerful, rapid, and compact little pump. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation showing pump in compact form; Fig. 2, a vertical sectional elevation showing all parts adjusted and connected with bicycle-tire ready for use; Fig. 3, an enlarged plan sectional view on line 3 of Fig. 2.

Similar letters refer to similar parts throughout the several views.

In the construction of my pump I use two sizes of brass tubing, varying in size from one inch in diameter to one and one-eighth of an inch or from one and one-eighth of an inch to one and one-fourth in diameter. This tubing is cut into lengths of about three inches each, the smaller size B being used as a plunger and the larger size A as the air-chamber, as shown in the drawings. I use as large tubing for the plunger as the diameter of the air-chamber will admit of in order to gain strength and also to utilize the interior of the plunger as a receptacle for carrying repairs—such as rubber, cement, tapes, cords, needles, or other parts—the cover *b* of that tube being arranged to screw on and off, as shown in Fig. 2.

Both the air-chamber and plunger have

fixed bottoms, while the top rim *a* of the air-chamber is attached by means of screw-threads cut on the rim and tubing. (Shown in Fig. 2.)

The bottom of the plunger B is provided with the leather disk *b*, which fits snugly to the inside of the air-chamber and is held in position by means of a screw entering the bottom of the plunger, as shown in Fig. 2.

In order to get the upward motion of the plunger, I place the spiral and cone-shaped spring B' inside of the air-chamber A, the expanded end of the spring having a bearing on the bottom of the air-chamber and the contracted end a bearing under the bottom and center of the plunger. Thus it will be seen that the spring acts telescopically, taking up but little room when forced to the bottom of the air-chamber.

In order to steady the pump and hold it firm to the ground or floor while in use, I place on opposite sides of the air-chamber the pivoted lugs *a'*, to which I hinge the wire stirrup A'. (Shown in Figs. 1 and 2.) This stirrup serves a twofold purpose, as while it is essential to hold the pump in position while operating it it also acts as a lock when the pump is placed in the most compact form for carrying, as shown in Fig. 1.

I place the small chambered block C, comprising the airway *c* and valve-box C', at the bottom of the chamber A, where the airway connects with the inside of the chamber and allows the air to follow readily upon the upward motion of the plunger, the ball-valve *c'* at the same time moving back against the pin *c*<sup>2</sup>.

Projecting from the top of the block C and connecting with the airway is the tube *d*, provided with universal coupling D, to which one end of the rubber tube E is attached, the other end of the tube being attached to the pneumatic tire F. (Shown in Fig. 2.)

In operating the pump the operator will first turn the pneumatic tire so that the nipple of the tire stands at its lowest point on the floor or ground, place the pump near the tire, and connect the tube E with the tire and universal coupling D, stand by the side, resting on the wheel, place the left foot upon the stirrup A', and, with the right foot placed

upon the top of the plunger, force the plunger down, repeating the operation until the desired pressure is had on the tire. On the downward pressure the valve *c'* will close the  
5 opening in the box *C'* and force the air into the tire.

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

10 In a bicycle-pump the combination with a cylinder or barrel providing an air-chamber, a spring arranged within said chamber and bearing upon one end thereof, a plunger fitting within the barrel and seated upon the

spring, said plunger being normally protruded beyond the barrel by the action of the spring 15 and a stirrup or bail pivoted to the discharge end of the pump-barrel and adapted to be passed over the upper end of the plunger when the latter is forced within the barrel whereby to secure it and also to be thrown 20 down to serve as a foot-brace to hold the pump when in use.

GEORGE W. COOK.

Witnesses:

CASSIUS SHOTWELL,  
WM. C. MCCLAIN.