No. 612,449. Patented Oct. 18, 1898.

J. W. WILKINSON & R. CHAPLIN.

MEANS FOR ATTACHING AIR PUMPS OR INFLATERS TO FRAMES OF VELOCIPEDES.

(Application filed Nov. 3, 1897.)

(No Model.) 2 Sheets—Sheet 1.

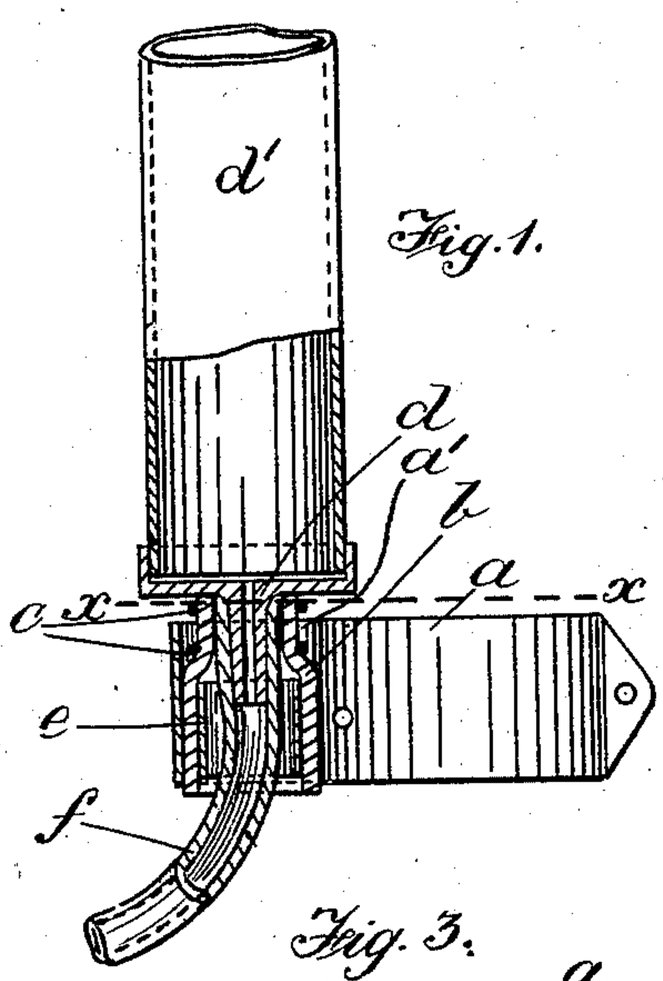

Fig. 1.

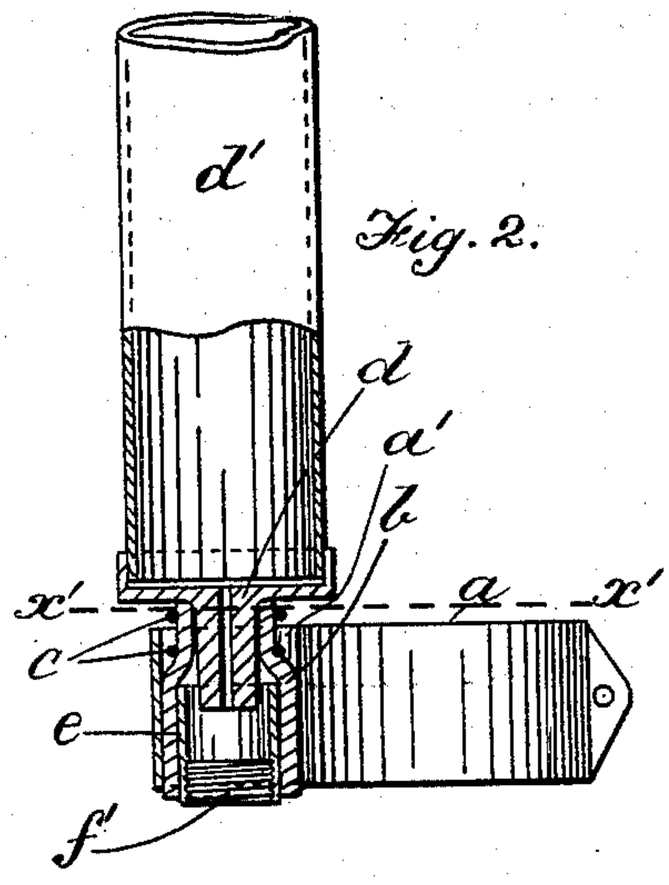

Fig. 2.

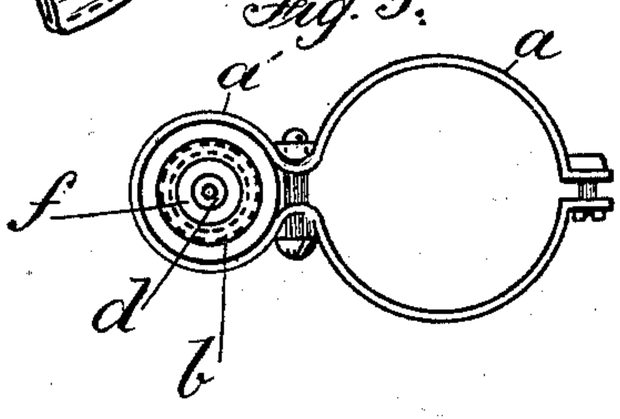

Fig. 3.

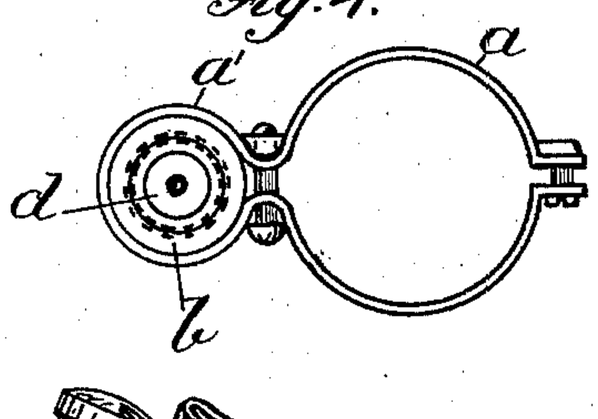

Fig. 4.

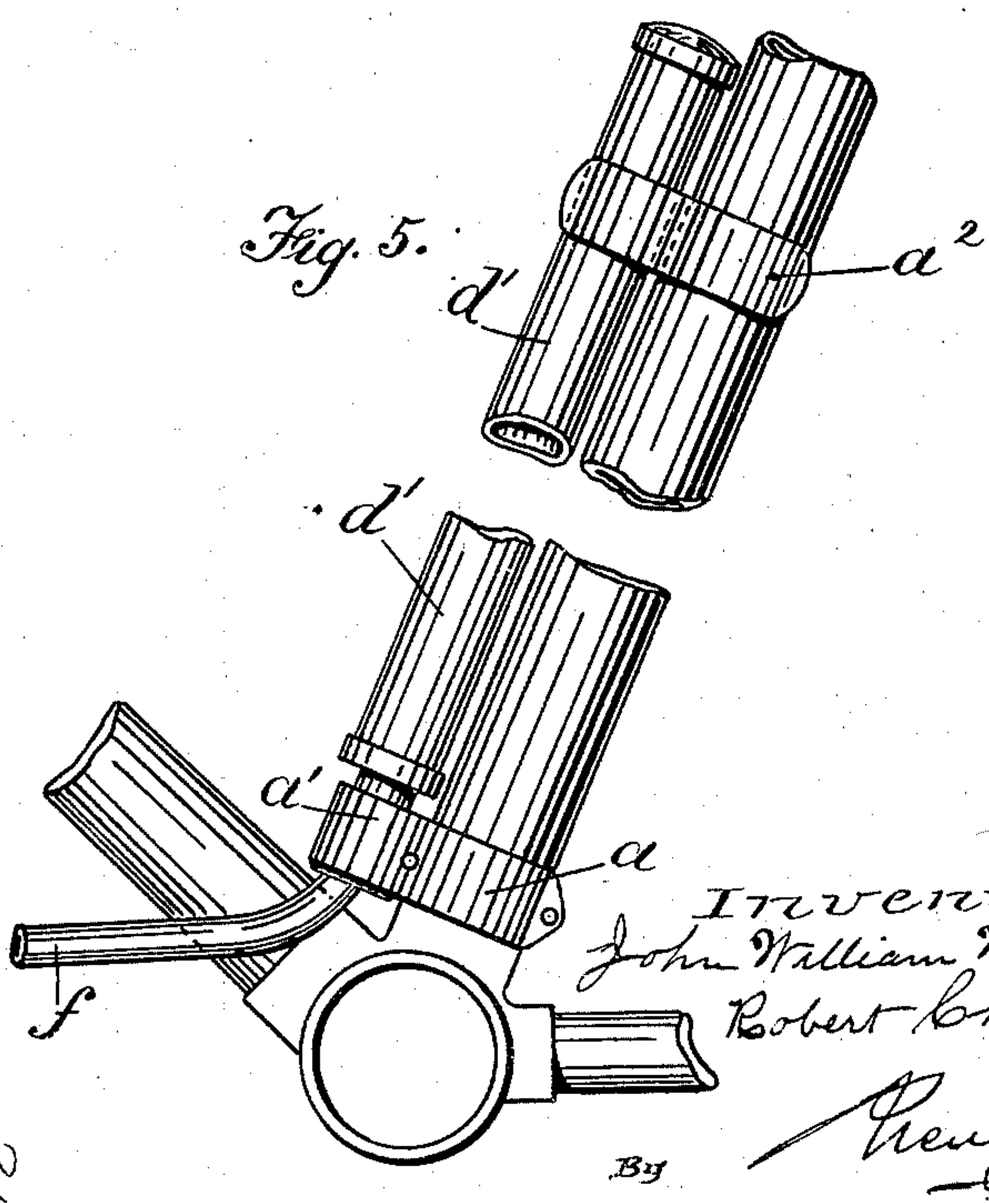

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

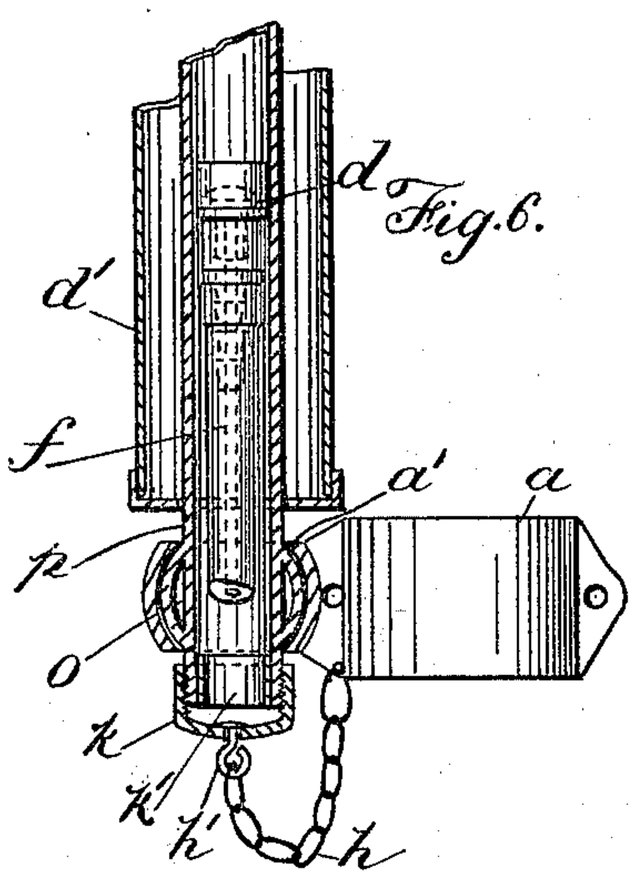


Fig. 6.

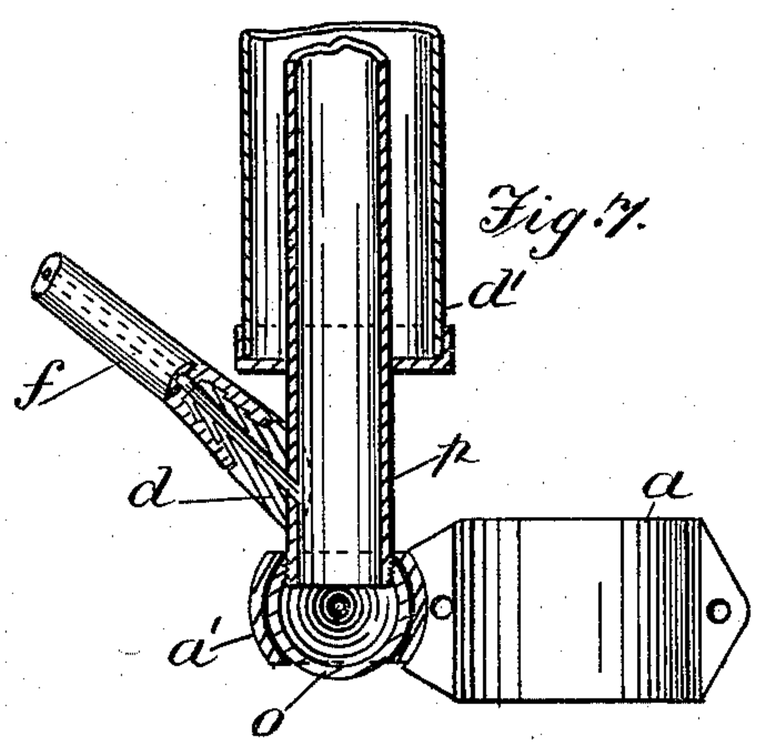


Fig. 7.

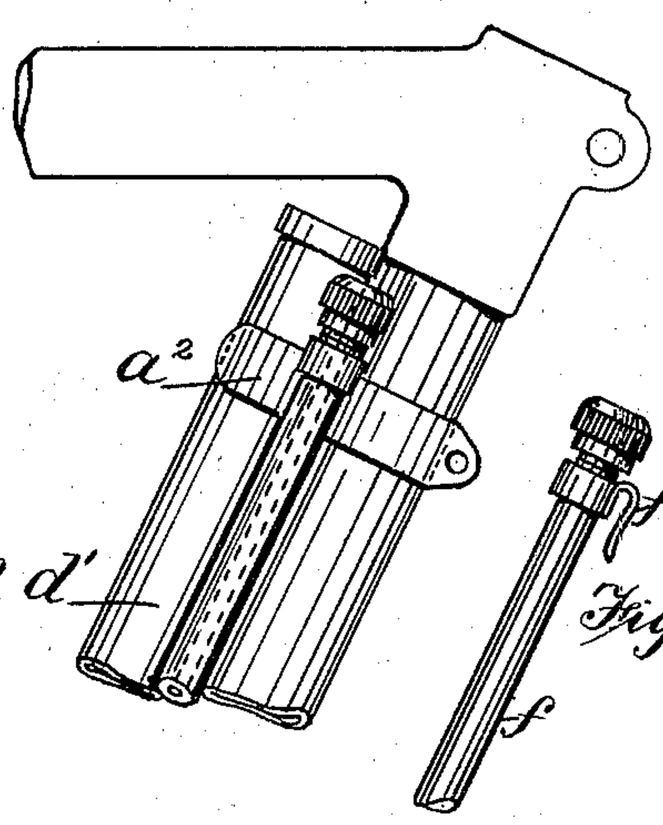
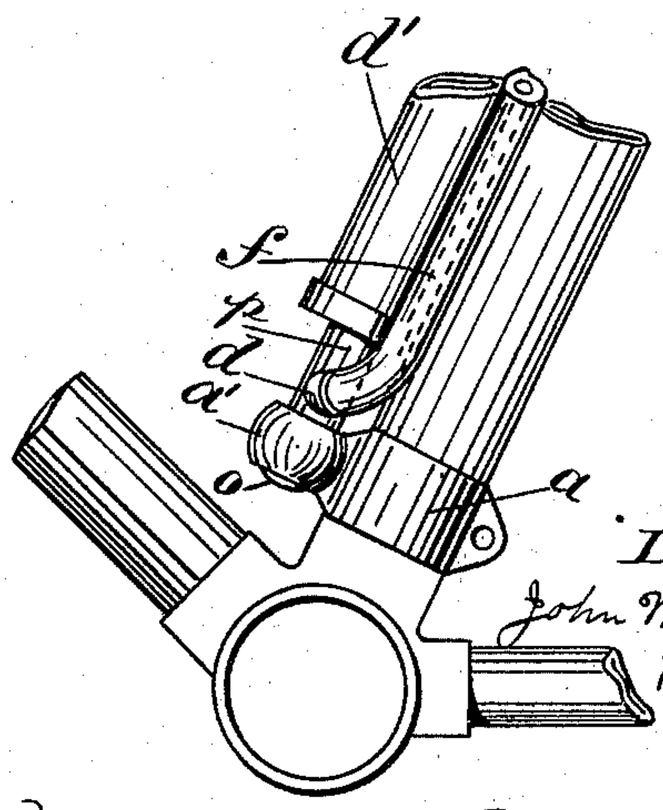


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN WILLIAM WILKINSON, OF WINSHILL, AND ROBERT CHAPLIN, OF LONDON, ENGLAND.

MEANS FOR ATTACHING AIR-PUMPS OR INFLATERS TO FRAMES OF VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 612,449, dated October 18, 1898.

Application filed November 3, 1897. Serial No. 657,246. (No model.) Patented in England April 3, 1897, No. 8,585; in Belgium October 27, 1897, No. 121,551, and in France October 28, 1897, No. 271,749.

To all whom it may concern:

Be it known that we, JOHN WILLIAM WILKINSON, brewer, a resident of 141 Alexandria road, Winshill, in the county of Derby, and ROBERT CHAPLIN, engineer, a resident of 27 Durand Gardens, Clapham road, London, England, subjects of the Queen of Great Britain, have invented a new or Improved Means for Attaching Air-Pumps or Inflaters to the Frames of Velocipedes, of which the following is a specification.

This invention has been patented to us in the following countries: Great Britain April 3, 1897, No. 8,585; France October 28, 1897, No. 271,749, and Belgium October 27, 1897, No. 121,551.

The object of our invention is to produce a special clip or flexible connection by means of which the end of the barrel or plunger of an air-pump or inflater such as is generally in use at the present time for inflating the pneumatic tires of velocipedes may be firmly attached at a convenient point to the frame of the velocipede in such a way as to obviate the necessity of altogether detaching the pump from the velocipede when it is required for use, and thus to facilitate the act of pumping air into the tires, to lessen the liability of the pump or inflater to scratch or chip off the enamel of the velocipede-frame, and to prevent or reduce rattling when riding on rough roads.

In carrying our invention into practical effect we construct a clip one side of which incloses a flexible connection or universal joint and the other side of which serves as a clamp for fixing to the velocipede. This joint may consist of a rubber band or tube of suitable width and diameter, one end of which is wired or otherwise fixed to a nozzle formed on the end of the barrel or plunger of the air-pump and the other end of which is inclosed within the metal or other frame of the clip, a metal bush fitting tightly within this end of the rubber band, and thus securely fixing it within the said clip. One end of the usual rubber tube for connecting the pump to the tire-valve may be screwed onto the said nozzle either by a screw or other suitable connection, or may be wired thereto, together with the rubber band or tube forming the joint, or the said bush fixing the rubber band within the clip may have a screw-thread cut upon its internal surface, the end of the connecting-tube having an externally-screw-threaded connection for engaging therewith. We do not, however, confine ourselves to any particular form of flexible joint, as it is obvious that the latter may be constructed in a variety of ways—for instance, the pump-plunger may project a short distance beyond the barrel and have a ball formed near the end thereof, or a ball may form part of the pump-nozzle, the said ball forming a universal ball-and-socket joint with a suitable socket formed in one side of the clip.

The free end of the connecting-tube is attached when in use to the tire-valve in the ordinary way, and when not in use we arrange this tube, which is generally from fifteen inches to eighteen inches in length, either to slide telescopically within the pump-plunger and be retained therein by a suitable cap screwed or otherwise fitted to the end of the plunger or to be turned up and have the free end thereof secured in a suitable clip, which may be situated on the pump-barrel, or this tube may be entirely disconnected from the pump. The other end of the pump is secured to the velocipede-frame, when not in use, by means of any suitable clip of ordinary construction.

We will now proceed to more particularly describe our invention in connection with the accompanying drawings, in which the same letters of reference indicate like parts in the various figures.

Figure 1 is a sectional view of a clip and flexible connection or joint made according to our invention, showing a clip having two sides *a* and *a'*, the side *a'* of which incloses a flexible connection or joint consisting of a rubber band or tube *b*, having one end thereof fixed by means of the wires *c* to the nozzle *d* of an air-pump and having the other end thereof firmly held in the side *a'* of the clip by means of the metal bush *e*, the rubber connecting-tube *f* being also shown attached to the pump-nozzle *d*, the one set of wires *c* binding both the tube *f* and band *b* to the nozzle *d*. The side *a* of the clip serves as a clamp

to fix the joint to any convenient part of the velocipede.

Fig. 2 is similar to Fig. 1, but the band *b* only is wired to the nozzle *d* by the wires *c*, and the inner surface of the end of the bush *e* is screw-threaded, as at *f'*, so as to receive a suitable externally-screw-threaded connection on the end of the rubber connecting-tube.

Figs. 3 and 4 are plans of the joint shown in Figs. 1 and 2 and taken on the lines *x x* and *x' x'*, respectively.

Fig. 5 shows an air-pump *d'*, having its lower attached to the end bottom bracket of a bicycle by means of the joint and clamp described in the foregoing figures and having its upper end removably attached to the frame of the bicycle by means of a clip a^2 of ordinary construction.

Fig. 6 is a sectional elevation of a flexible connection made according to our invention, in which the air-pump plunger *p* is shown projecting a short distance beyond the pump-barrel *d'* and having formed upon such projecting part a ball *o*, the side *a'* of the clip forming a socket to receive the ball *o*, a ball-and-socket joint being thus formed. The side *a* of the clip forms the necessary clamp for attaching the joint to the velocipede. The rubber connecting-tube *f* is shown thrust up within the plunger *p*, ready for traveling, and is there retained by means of the screw-cap *k*, screwed to the end of the plunger *p*. This cap *k* is attached to the clip *a* by means of a chain *h* and swivel-hook *h'*. When it is required to use the pump, the cap *k* is removed, when the tube *f* falls out of the plunger *p* ready for use, but is prevented from entirely escaping therefrom by means of a shoulder formed on the nozzle *d* coming in contact with the bush *k'* or its equivalent, fixed within the end of the plunger *p*.

Fig. 7 shows a similar clamp and ball-and-socket joint to that shown in Fig. 6; but the nozzle *d* is formed at the side of the end of the plunger *p* and the tube is not carried within the plunger when not in use.

Fig. 8 shows an air-pump *d'*, having the end of the plunger *p* attached to the bottom bracket of a bicycle by means of a clamp and ball-and-socket joint, as already described, and having its upper end removably attached to the frame of the bicycle by means of the clip a^2, the tube *f* having its lower end attached to the nozzle *d* and having its upper end secured for traveling by means of a hook f^2, (shown in Fig. 9,) which engages with the clip a^2.

When it is required to use the pump, the free end thereof is removed from the clip a^2, the end of the connecting-tube *f* attached to the tire-valve, and the tire inflated in the usual way, the fixed flexible or universal joint permitting the pump to be inclined in any convenient position during the operation of pumping and the bicycle or other velocipede acting as a holder, and thereby considerably reducing the amount of work involved.

What we claim is—

1. In combination with a bicycle, a pump-cylinder and piston-rod, a permanent pivotal connection between the cylinder and frame member, and a detachable connection between the piston and frame member, substantially as described.

2. In combination with a bicycle, a pump-cylinder and piston-rod, a permanent universal-joint connection between the piston-rod end and frame member of the bicycle, and a detachable connection between the opposite end of the cylinder and frame member, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

JOHN WILLIAM WILKINSON.
ROBERT CHAPLIN.

Witnesses:
JOHN TURNER,
JOHN WILLIAM SHILTON.