

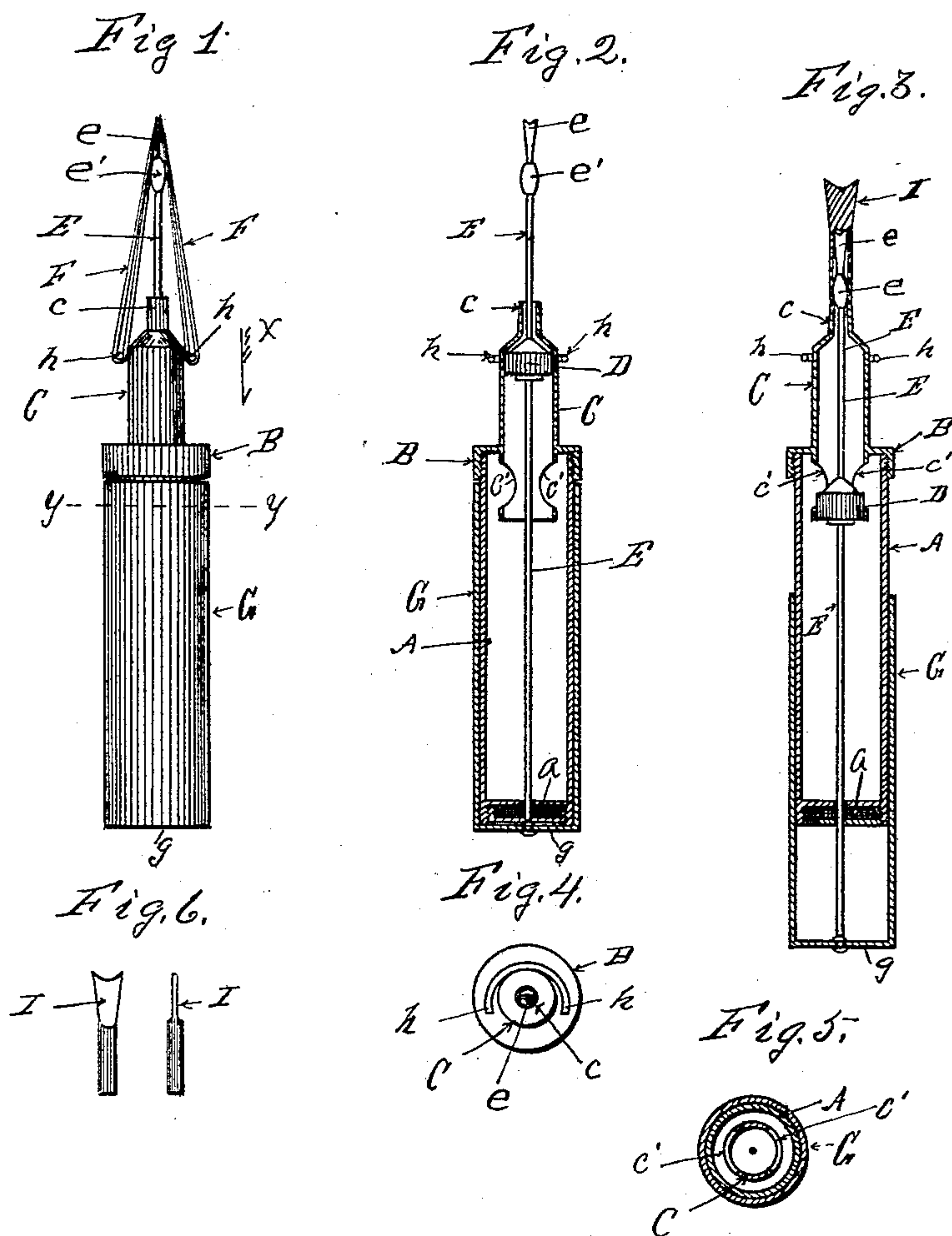
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Patented Sept. 12, 1899.

C. P. GIFFORD.
BICYCLE TIRE PLUGGER.

(Application filed Nov. 14, 1898.)

(No Model.)



WITNESSES:

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CYRUS P. GIFFORD, OF ERIE, PENNSYLVANIA.

BICYCLE-TIRE PLUGGER.

SPECIFICATION forming part of Letters Patent No. 632,936, dated September 12, 1899.

Application filed November 14, 1898. Serial No. 696,451. (No model.)

To all whom it may concern:

Be it known that I, CYRUS P. GIFFORD, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Bicycle-Tire Pluggers; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in bicycle-tire-puncture pluggers; and it consists substantially in constructing the plugger with a receptacle for holding liquid cement and from which a quantity of the cement can be injected upon the plug prior to and during its insertion into the tire. This and other features of my invention are hereinafter fully set forth, described, and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation of my improved bicycle-tire plugger with an elastic rubber plug in place ready to be inserted into a tire-puncture. Fig. 2 is a longitudinal section of the same without the plug. Fig. 3 is a longitudinal section of the same, showing the application thereto of an enlarged removable plugger-point. Fig. 4 is an end view of my improved plugger, looking in the direction of the arrow *x* in Fig. 1. Fig. 5 is a transverse section of the same on the line *y y* in Fig. 1. Fig. 6 shows two views in elevation of the removable plugger-point, shown in place in Fig. 5.

In the drawings thus illustrating my invention, A is a cylindrical chamber adapted to contain liquid cement, the front end of which is closed by a screw-cap B, through the center of which extends a tube C, terminating at its outer end in a small tube *c*. The inner end of the tube C extends some distance through the cap B into the chamber A, and near the inner end thereof it has openings *c'* in the sides thereof. Within the tube C there is a piston D, secured to a stem E, which is considerably smaller than the opening in the

small tube *c* and projects from the front end of the piston D out through the small tube *c* and has its front end flattened, so as to form a semiforked plugger-point *e*, over which an elastic strip of rubber F can be passed, as illustrated in Fig. 1. Just back of the fork *e* the stem E is provided with an enlargement *e'*, which when the piston D is drawn back, as illustrated in Fig. 3, serves to contact with the outer end of the tube *c* and close it. From the rear end of the piston D the stem E extends through the rear end of the chamber A, where suitable packing *a* operates to prevent the escape of cement, and is secured to the rear end *g* of a sleeve G, which slides back and forth telescopically over the chamber A, whereby the piston D can be moved forward to force the liquid cement in the tube C out through the small tube *c* around the stem E, so that the elastic rubber strip F, used as a plug, can be saturated therewith before and as it is being inserted into a puncture.

On the sides of the tube C, near the front end thereof, there are hooks *h h*, to which the rear ends of the elastic rubber strip F can be secured, as illustrated in Fig. 1.

For plugging punctures of large size I provide auxiliary plugger-points I, Fig. 6, the stems of which are tubular, so that they will pass over the plugger-point *e* and over the enlargement *e'* of the stem E, as illustrated in Fig. 3, by means whereof large strips of elastic rubber can be inserted in large punctures.

In operation a strip of elastic rubber is placed over the hooks *h h* and around forked plugger-point *e* with the piston D drawn back, as illustrated in Fig. 3, which when in this position allows the fluid cement in the chamber A to flow into the tube C through the openings *c' c'* therein. The piston D being then moved forward, the cement in the tube C is forced out through the small tube *c* upon the elastic rubber F, which is also by this movement stretched into the shape illustrated in Fig. 1, when it can be easily inserted into a puncture. The rubber being then released from the hooks *h h*, the plugger-point *e* can be withdrawn from the puncture, leaving the rubber plug F therein so saturated with ce-

ment that as soon as the cement dries it is irremovable, thus closing the puncture, and if the puncture is a large one the larger point I and a thicker strip of elastic rubber can be
5 used in the same manner.

Having thus fully described my invention and its operation, what I claim as new, and desire to secure by Letters Patent of the United States, is—

10 1. The combination in a bicycle-tire plugger, of a receptacle for containing liquid cement, having a small tubular exit, a reciprocating plunger for forcing a portion of said cement out through said tubular exit, and a
15 forked plugger-point secured to said plunger and operating through the tubular exit in the cement-receptacle, substantially as and for the purpose set forth.

20 2. The combination in a bicycle-tire plugger, of a receptacle for retaining liquid cement, a small cylinder in the outer end of said receptacle terminating in a small tubular exit-opening in its forward end, a reciprocating plunger operating in said cylinder,
25 adapted, when moved forward, to force the contents of said cylinder out through the exit-opening in the forward end thereof, and a forked plugger-stem secured to said plunger and extending outward through the opening
30 in the outer end of said cylinder, and moving

in unison with said piston, substantially as and for the purpose set forth.

3. The combination in a bicycle-tire plugger, of a tubular receptacle for retaining liquid cement, a reduced tube in the front end
35 thereof having a small opening in its front end and openings in the sides of its rear end, a piston operating in said reduced tube, a stem on the front end of said plunger extending out through the opening in the front end
40 of said reduced tube and having a forked point, and a stem extending from the rear end of said piston out through the rear end of said receptacle for operating it, substantially as and for the purpose set forth. 45

4. The combination in a bicycle-tire plugger, of a receptacle for retaining liquid cement, and means for forcing the cement out of the front end thereof, with a reciprocating stem for inserting elastic strips of rubber into
50 punctures, and removable points for said stem, substantially as and for the purpose set forth.

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

CYRUS P. GIFFORD.

Witnesses:

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