

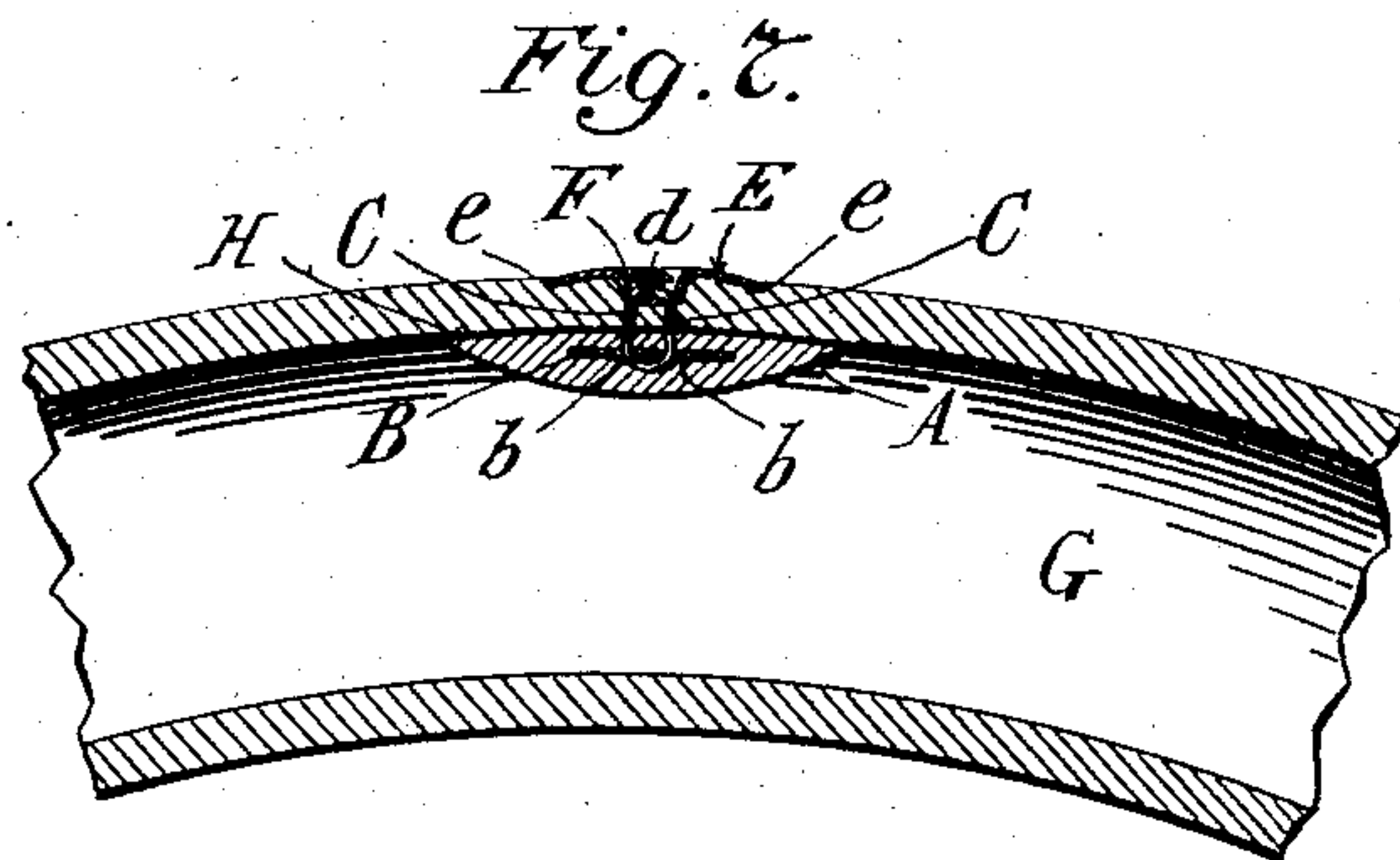
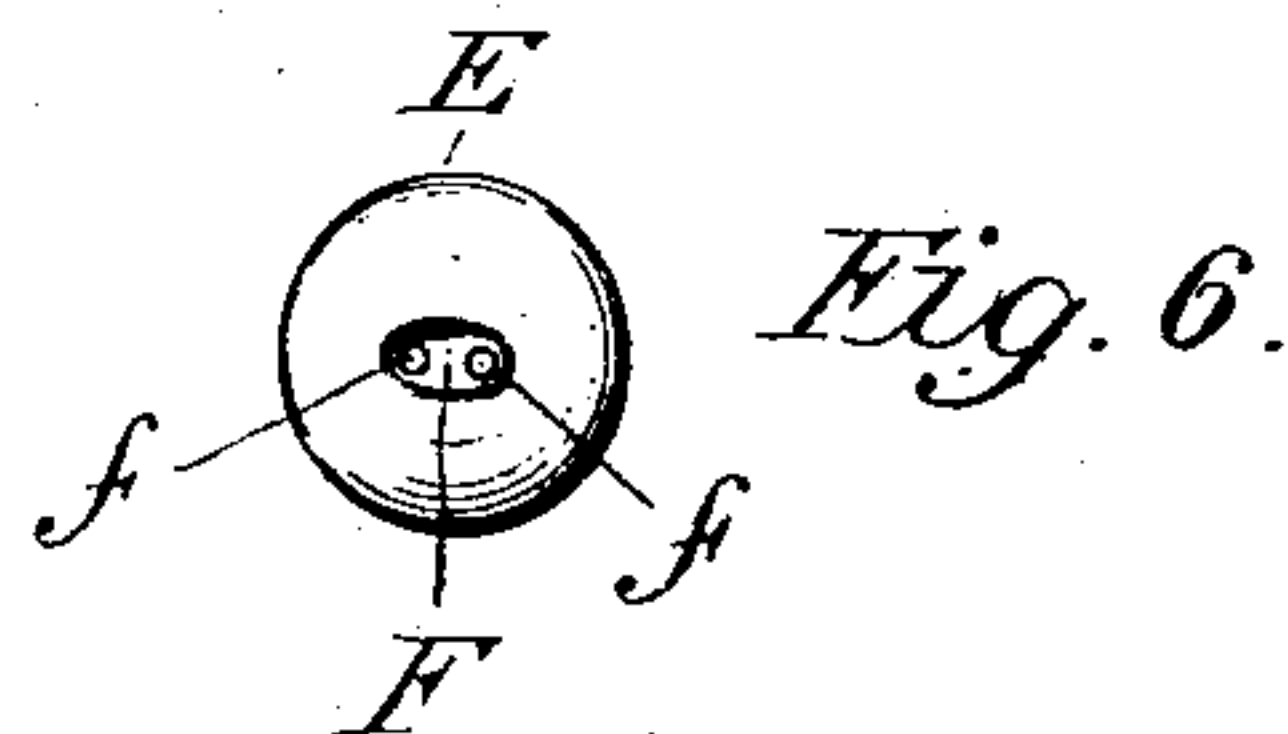
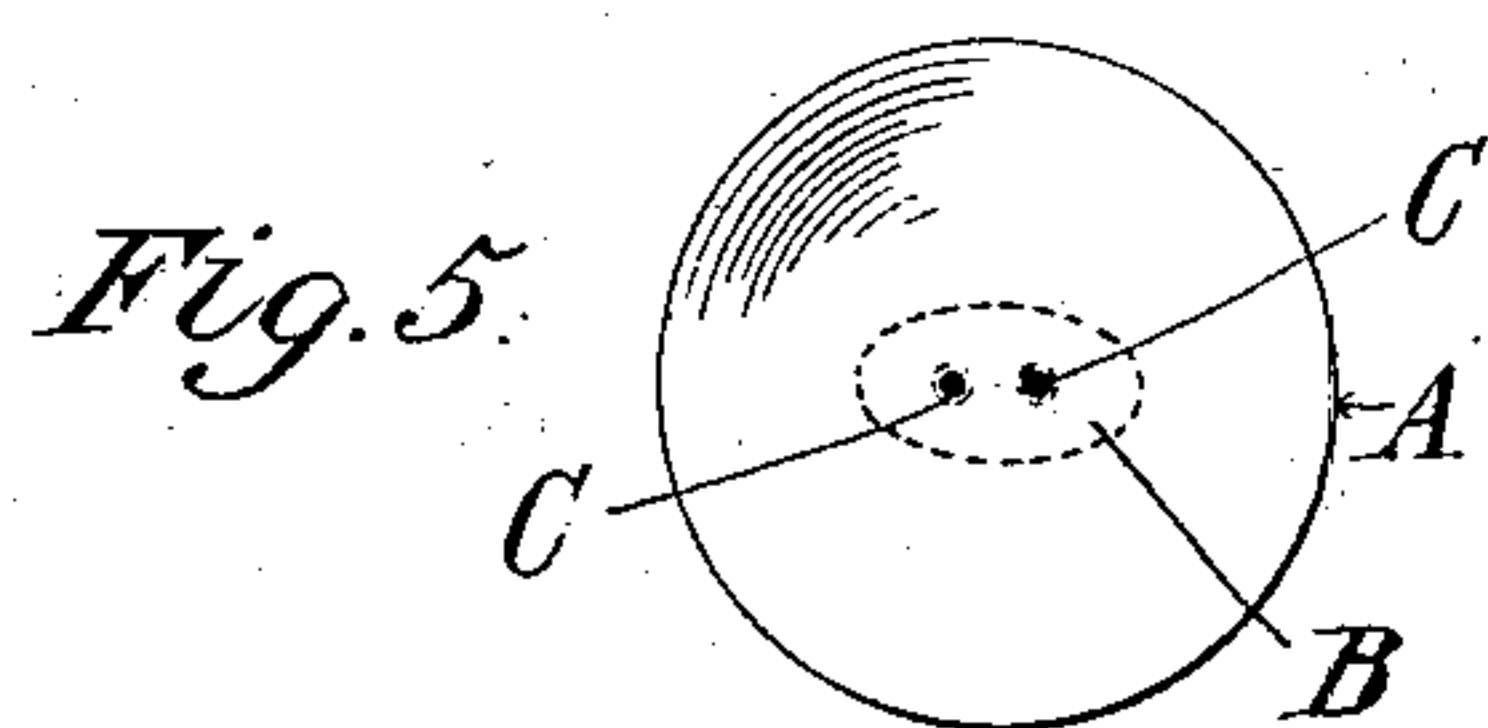
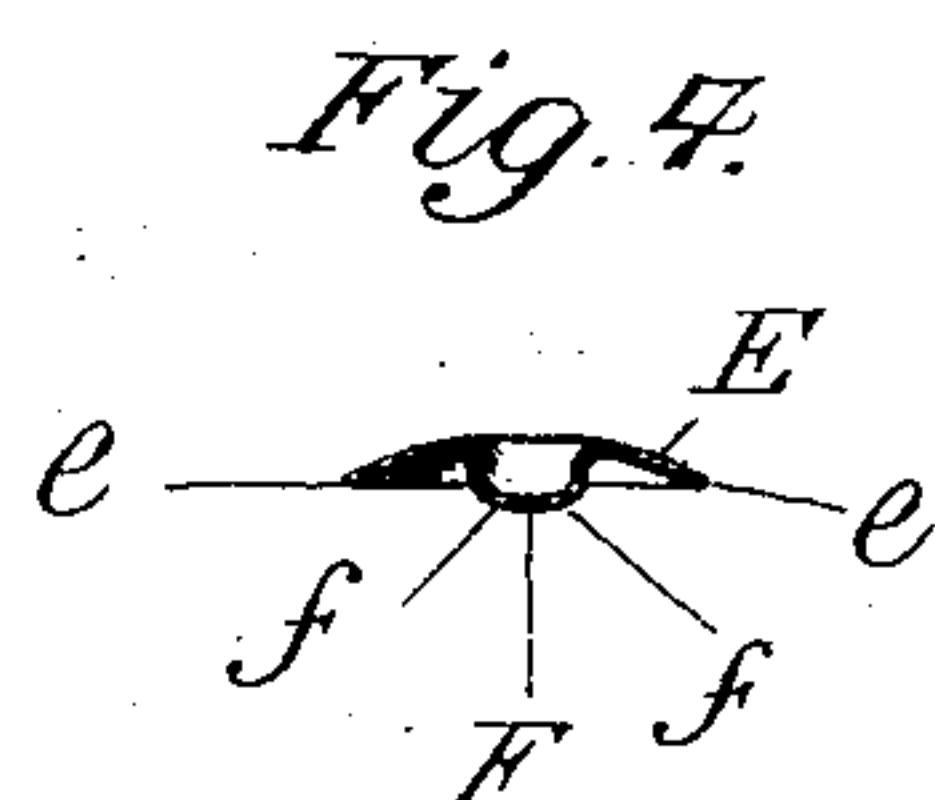
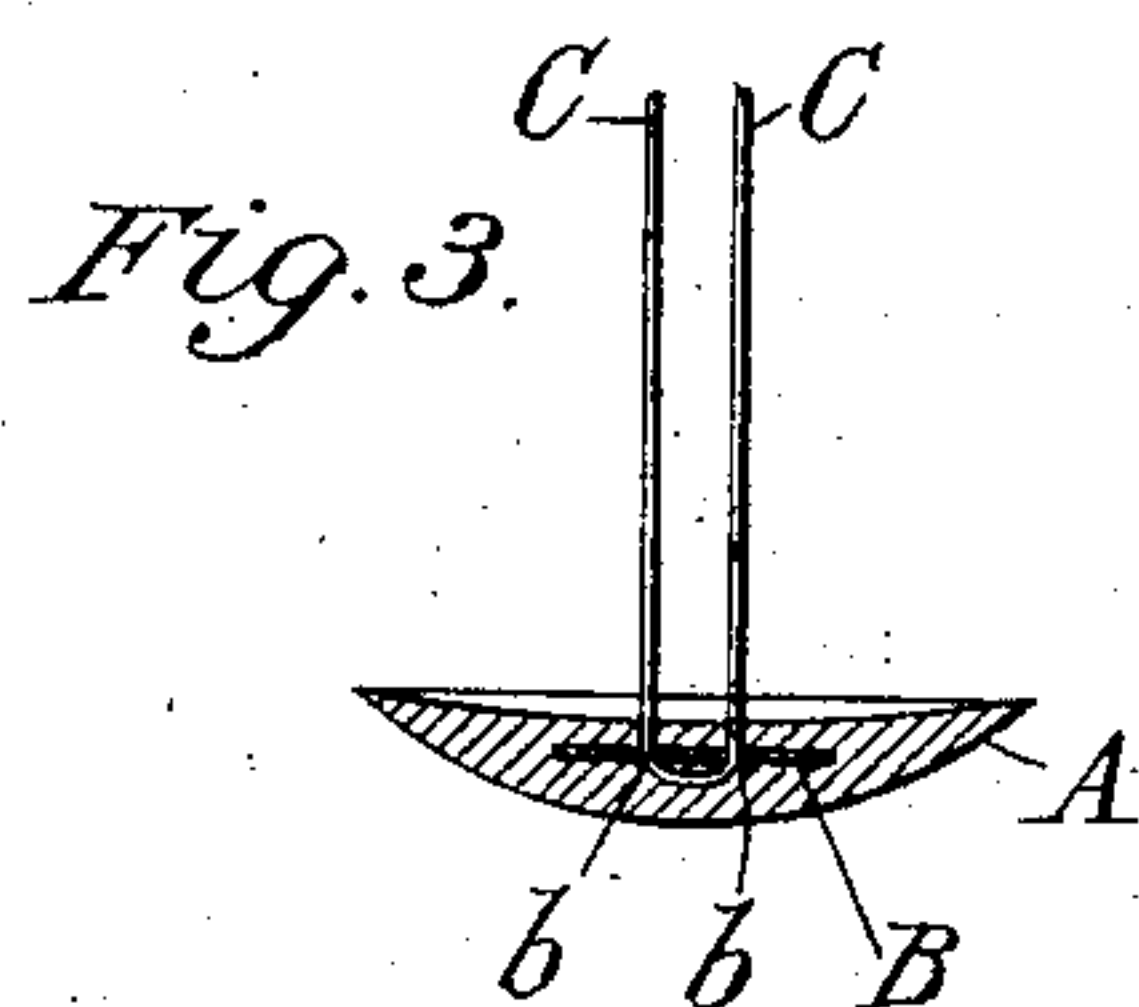
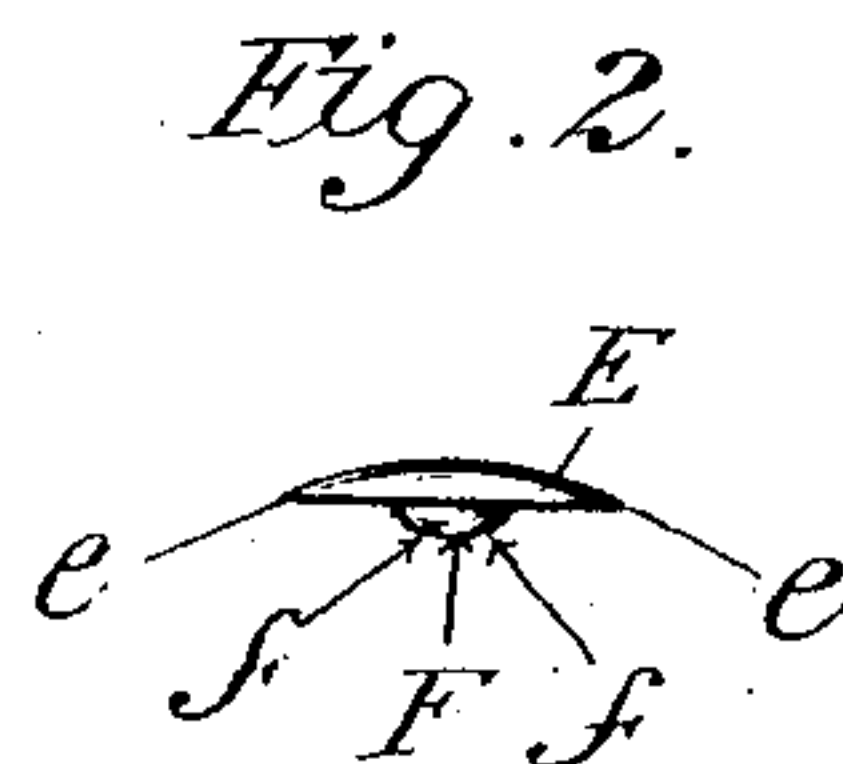
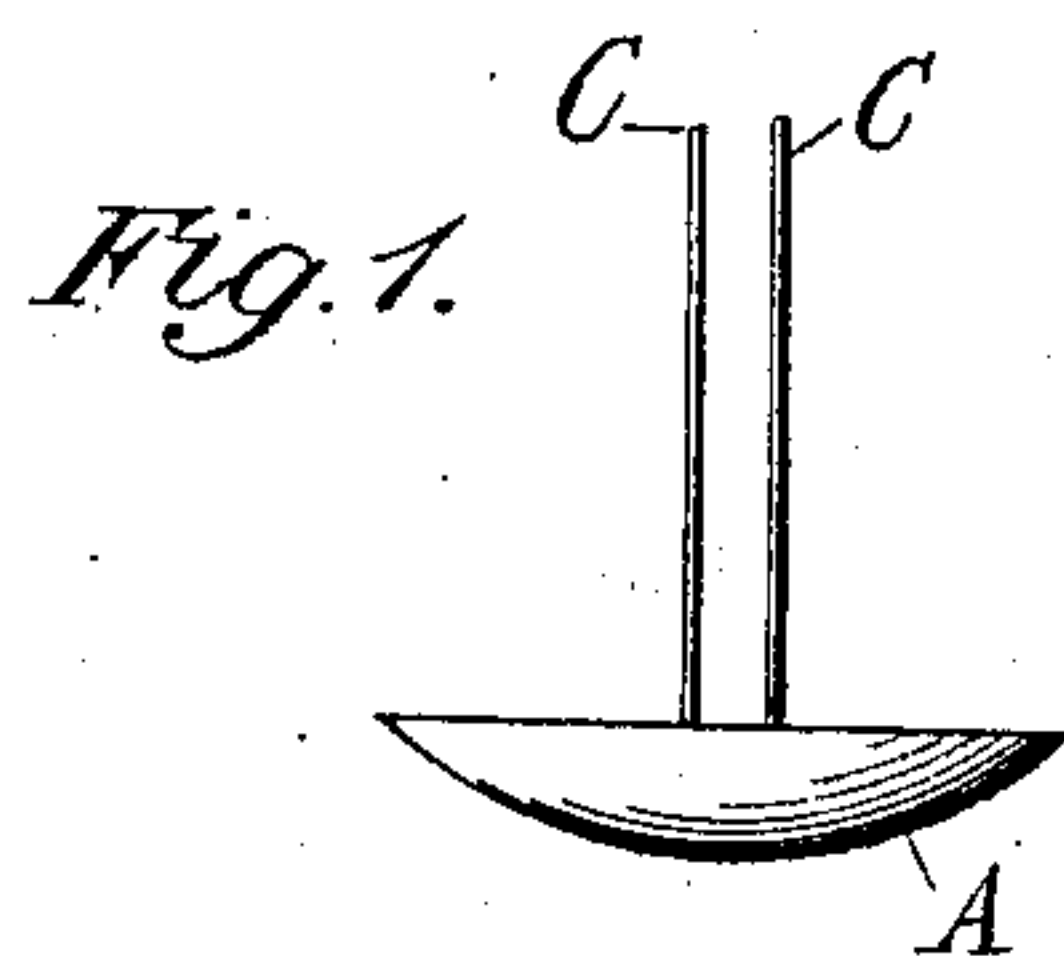
No. 765,324.

PATENTED JULY 19, 1904.

R. W. SAMPSON.
PUNCTURE CLOSER.

APPLICATION FILED MAY 4, 1904.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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PUNCTURE-CLOSER.

SPECIFICATION forming part of Letters Patent No. 765,324, dated July 19, 1904.

Application filed May 4, 1904. Serial No. 206,261. (No model.)

To all whom it may concern:

Be it known that I, ROBERT WILLIAM SAMPSON, a subject of the King of Great Britain, residing at the city of Quebec, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Puncture-Closers, of which the following is a specification.

My improvements relate to puncture-closers which are intended for use in repairing punctures or holes in pneumatic tires and similar articles by passing a head or expanded portion through and inside of the puncture and then drawing it up to cover the inside of the puncture and securing it in place, so as to effectually close the opening; and my invention consists in certain novel devices for this purpose which I will now proceed to describe, referring in so doing to the drawings, in which—

Figures 1, 3, and 5 are respectively a side elevation, cross-sectional view, and a top view, of the head and wires of my puncture-closer; and Figs. 2, 4, and 6 are respectively an edge view, cross-sectional view, and top view, of the securing-cap, while Fig. 7 is a longitudinal sectional view of a piece of tire with the puncture-closer secured in place.

In all the figures the same parts are designated by similar reference-letters.

The head A of the closer is of a mushroom form and is preferably formed of rubber, although other suitable material may be used. An anchor-plate B (shown in dotted lines in Fig. 5 and embedded in the head) is pierced with holes *b b*, through which is passed a staple of wire C C, the ends of which project a considerable distance above the top of the head.

E is a metal cap provided, preferably, with a somewhat drooping edge *e* and with a depressed central portion F, having two holes *f f* therein. The central depression F, I prefer to make of an elongated form, as shown; but it may be round or of some other form, if desired.

The closer is applied by bending the wires

down and passing the head, to the upper surface of which cement H has been applied, through the puncture, drawing it up by means of the wires against the inside surface of the material G, passing the wires C C through the holes *f f* of the cap E, drawing them taut by means of a pair of pliers and at the same time pressing down the cap, and then twisting the wires into a knot *d* within the depression F of the cap. The portions of the wire projecting above the cap may then be cut off with any suitable instrument. By these means the head of the closer is drawn evenly against the inner side of the punctured material, making an air-tight patch over and around the puncture, and is positively held in place by the wires and cap.

The use of the wires instead of shanks, as heretofore used, enables me to avoid the extra straining and stretching of the puncture by the passage through it of such shank with the head. It also avoids the necessity of cutting out or enlarging the puncture to accommodate or make a seat for the shank, and it permits the retention of all the original material around the puncture. The wires will naturally draw toward opposite extremities of the puncture, and the cap E being guided into place by the wires its elongated depressed portion F will wedge into the puncture and assist in closing it, while the drooping edges of the cap will securely grip and protect the material around the puncture.

This form of closer combines the advantages of the elastic mushroom head with those of a positively-locked metallic plug, is simply and easily applied without the use of special tools, and is permanent and effective.

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

1. In a puncture-closer, the combination with a head, provided with a flexible wire fastening, of a holding-cap to receive and engage with such fastening.

2. In a puncture-closer, the combination with a head, provided with a flexible, dupli-

cate wire fastening, of a holding-cap provided with apertures to receive and engage with such fastening.

5 3. In a puncture-closer, the combination with a head, provided with a flexible, duplicate wire fastening, of a holding-cap, provided with the depressed central portion, having apertures therein, to receive and engage with such fastening.

10 4. In a puncture-closer, the combination with a flexible head, having an anchor-plate therein, and a flexible wire staple secured to such anchor-plate and forming a duplicate fastening, of a holding-cap, provided with an

elongated, depressed central portion having 15 apertures therein, to receive such fastening and to engage with the twisted ends thereof.

5. In a puncture-closer, the combination of a head, a cap, and a flexible wire connect- 20 ing such head and cap.

6. In a puncture-closer, the combination of a head, a cap, and a duplicate, flexible wire connecting such head and cap by being twisted together above the cap.

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Witnesses:

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