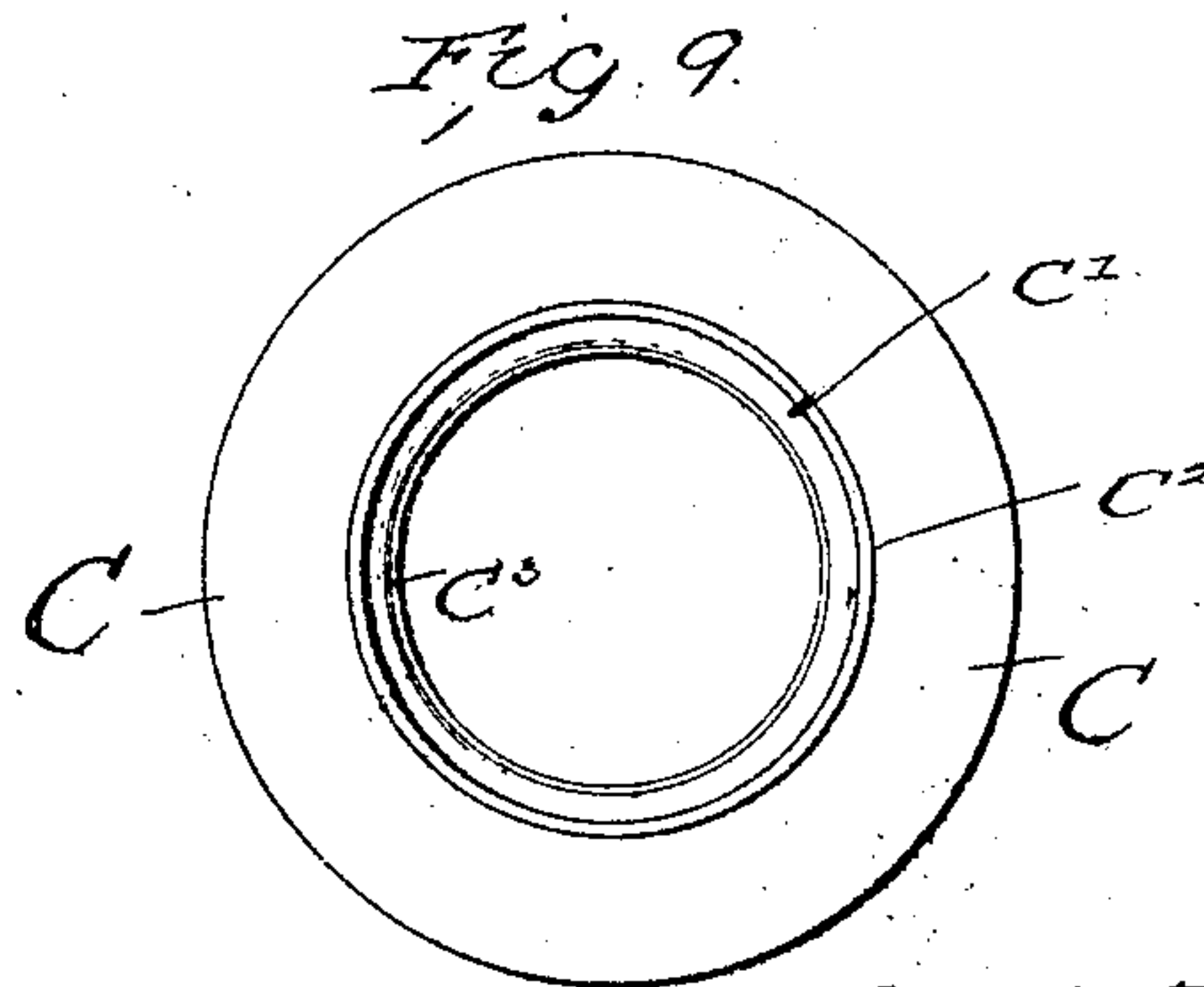
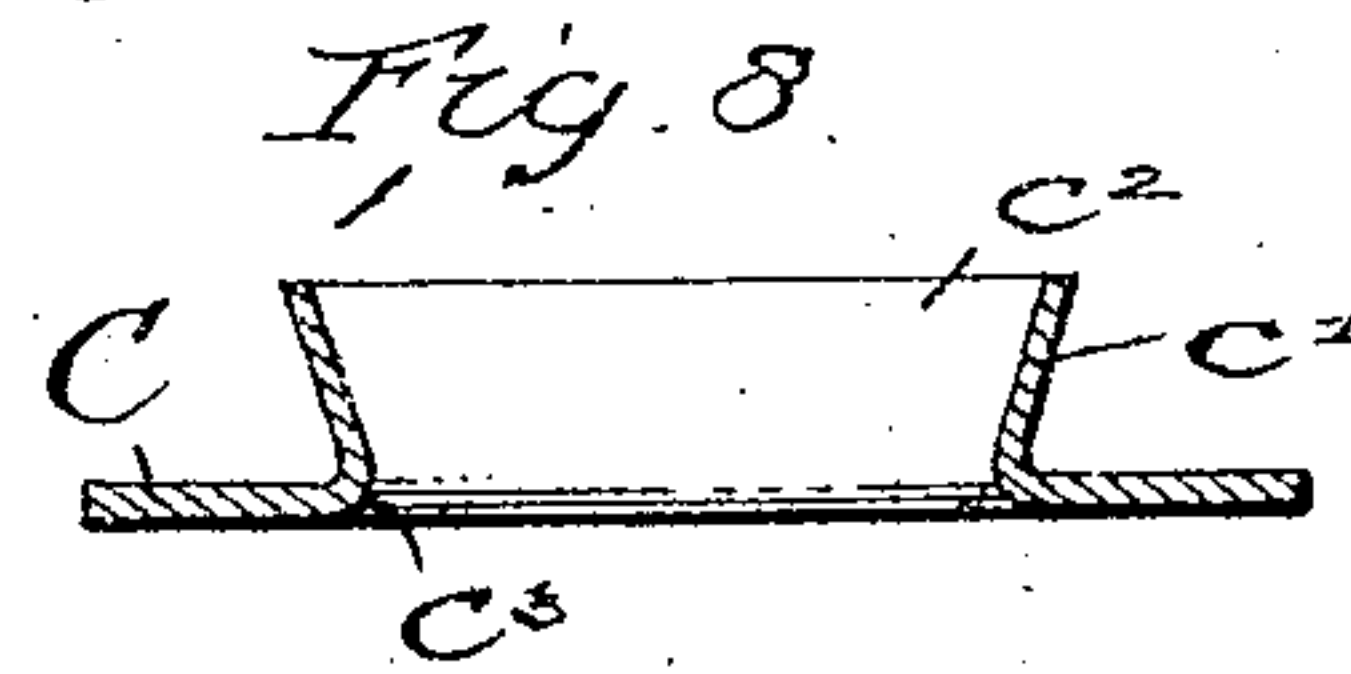
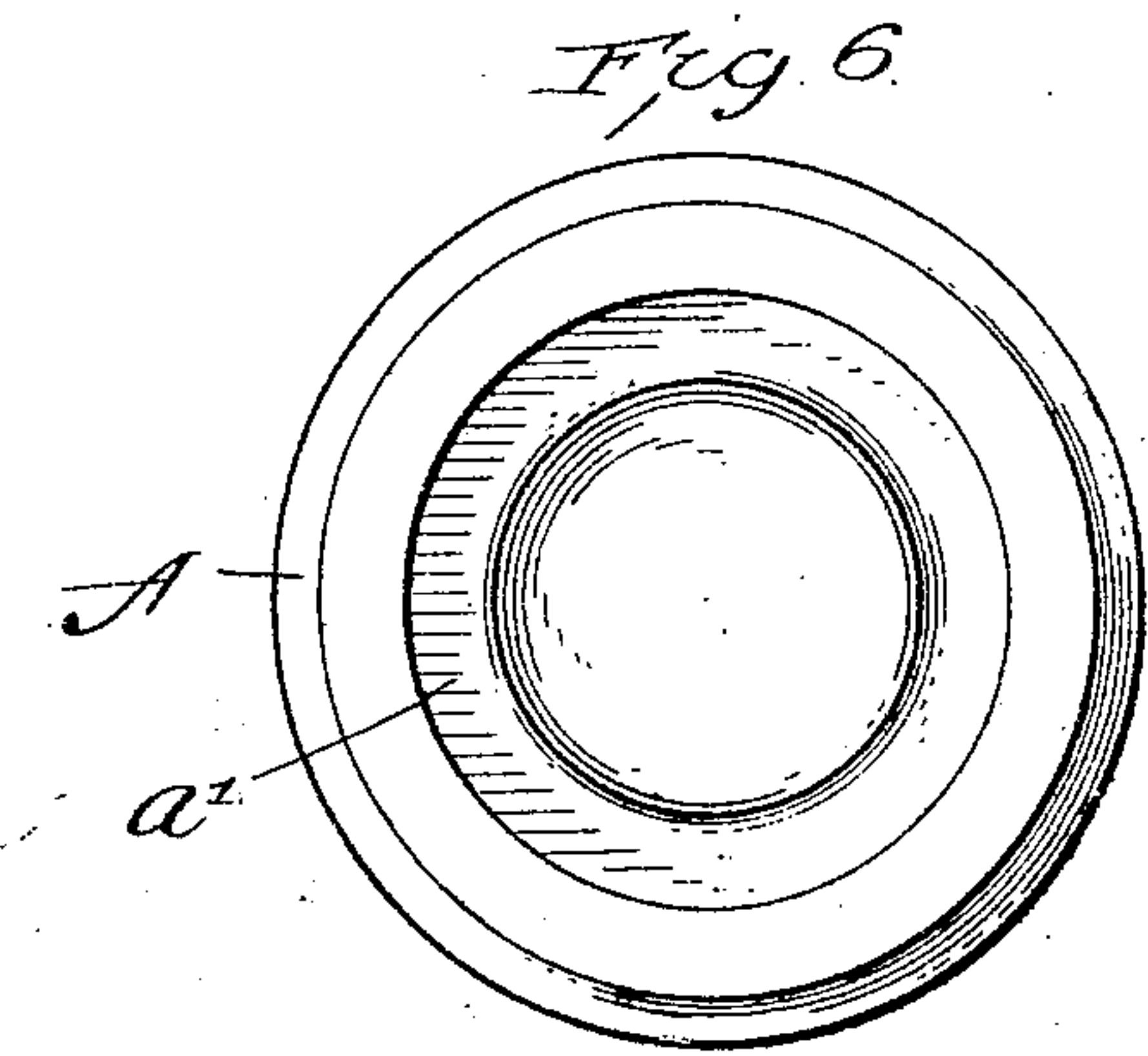
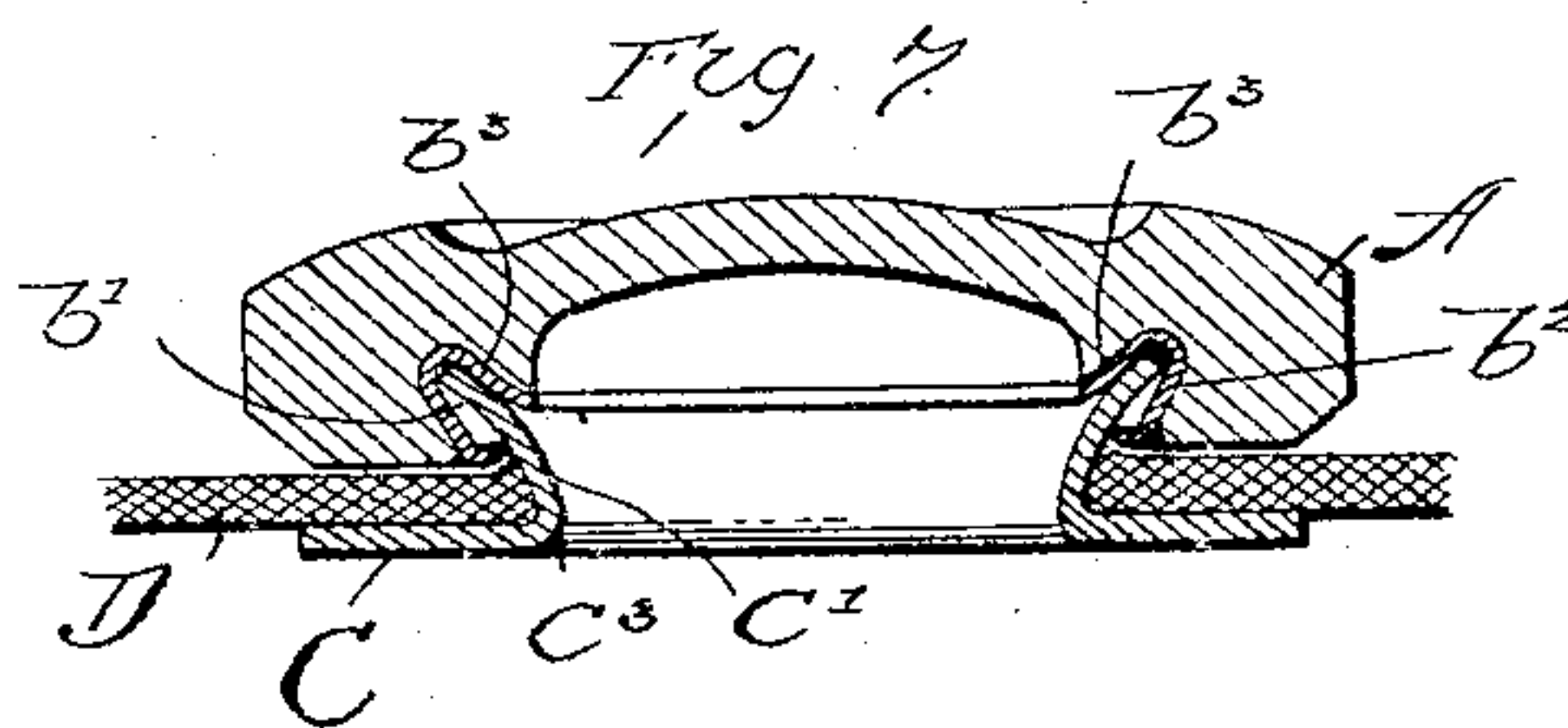
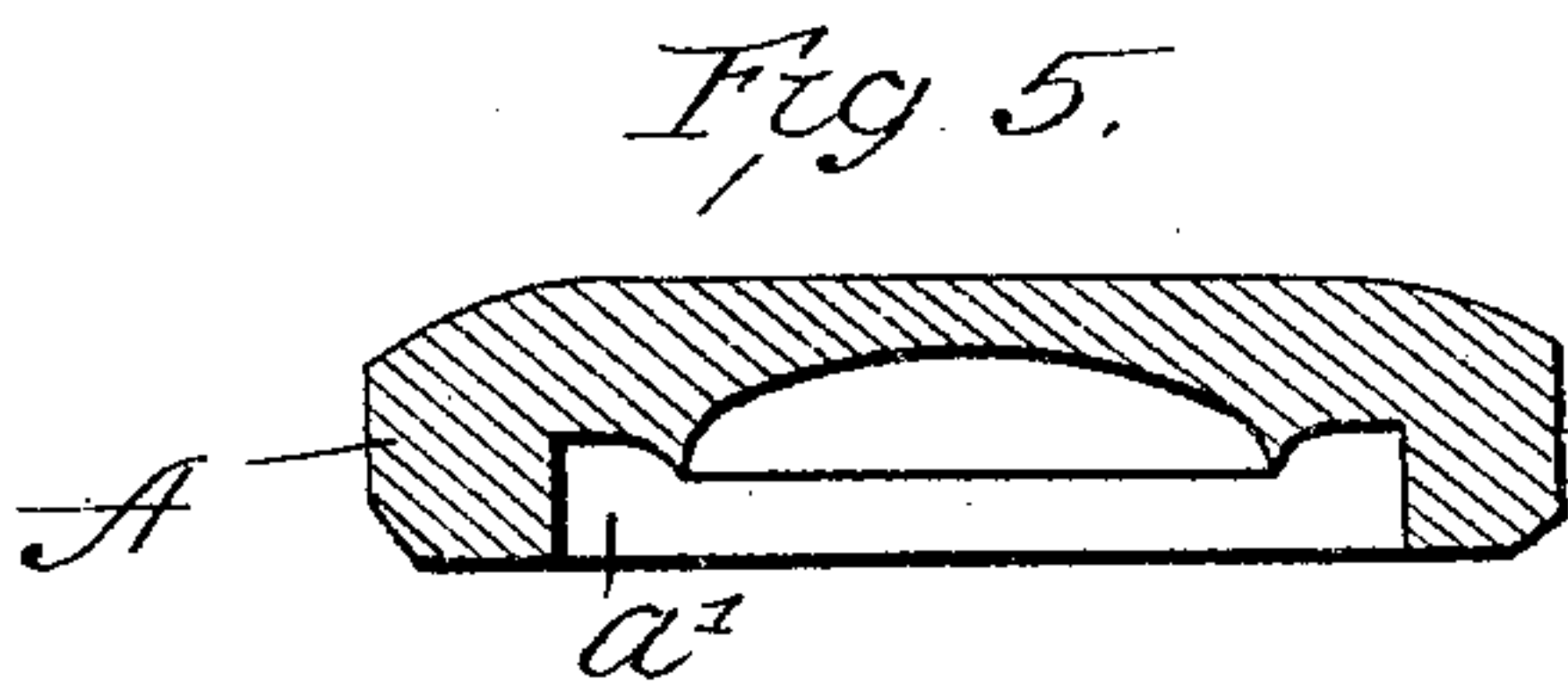
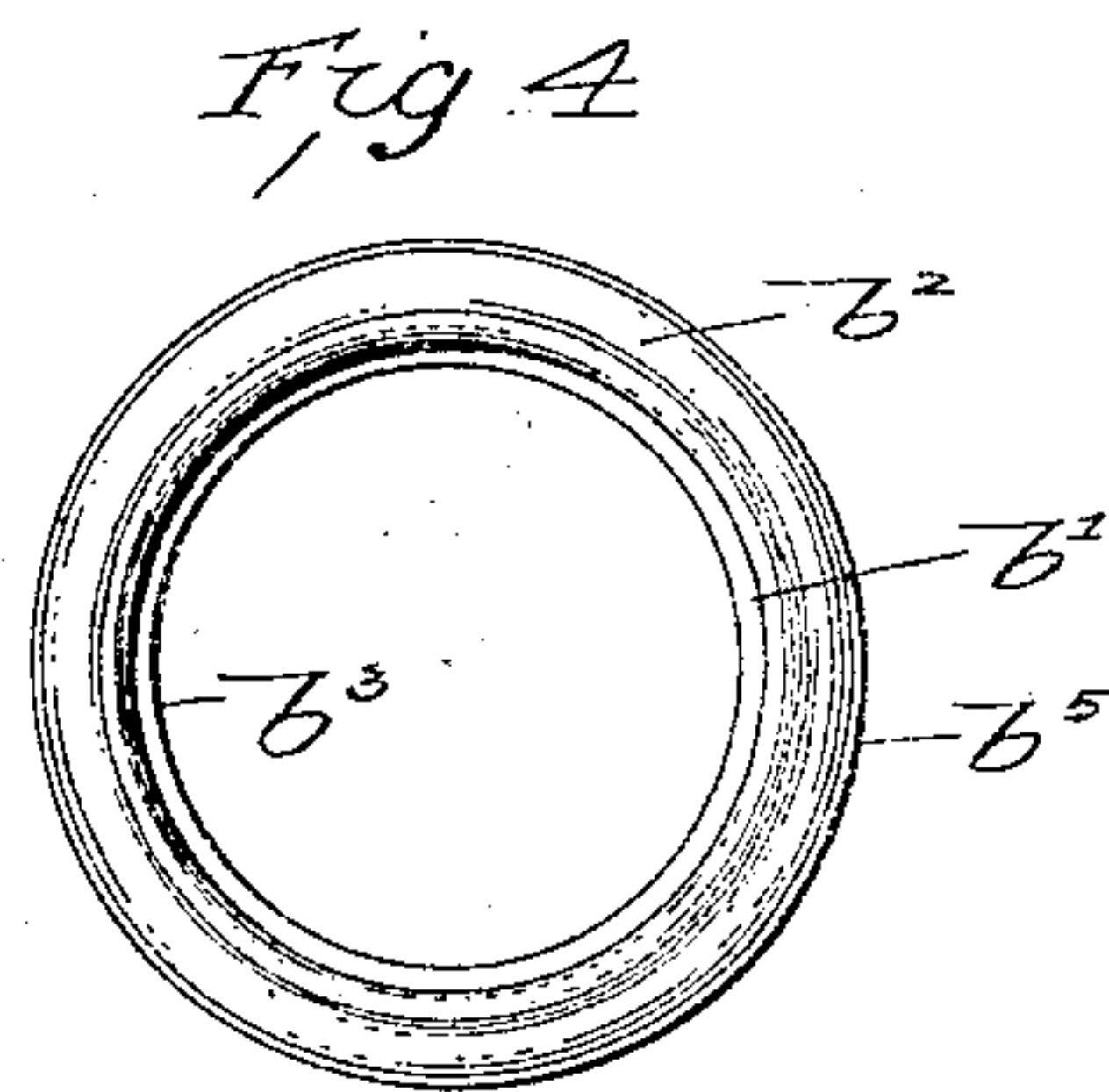
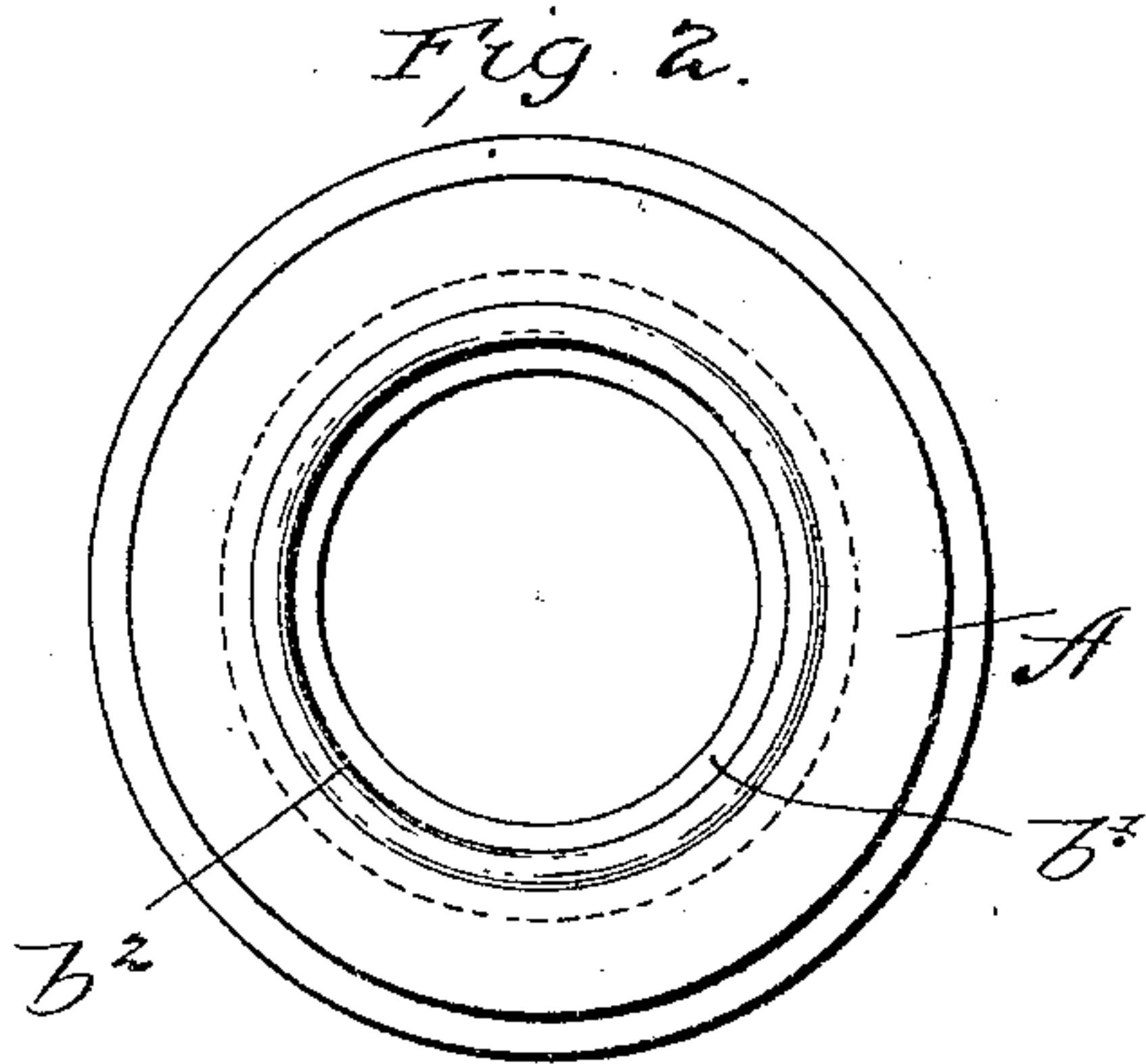
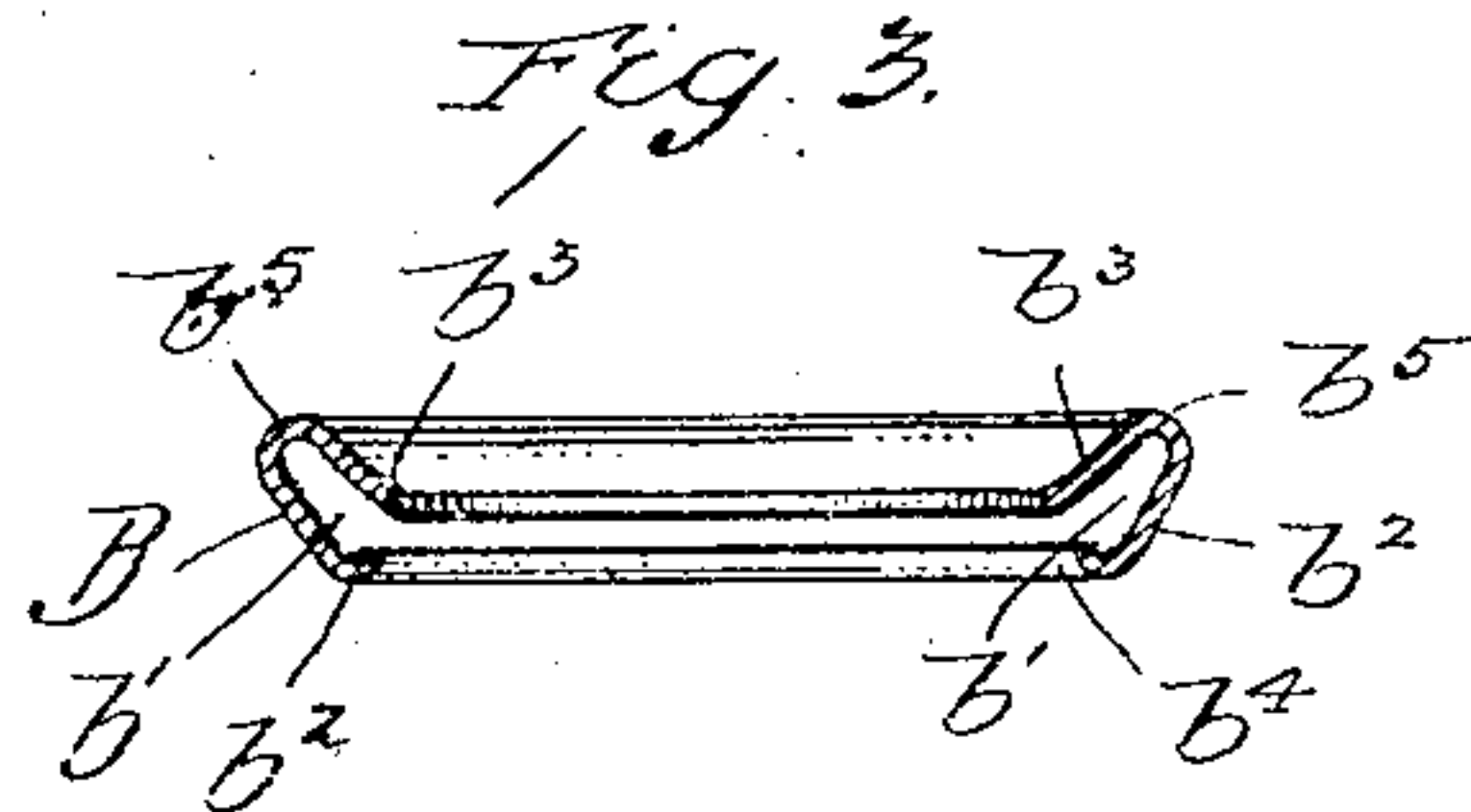
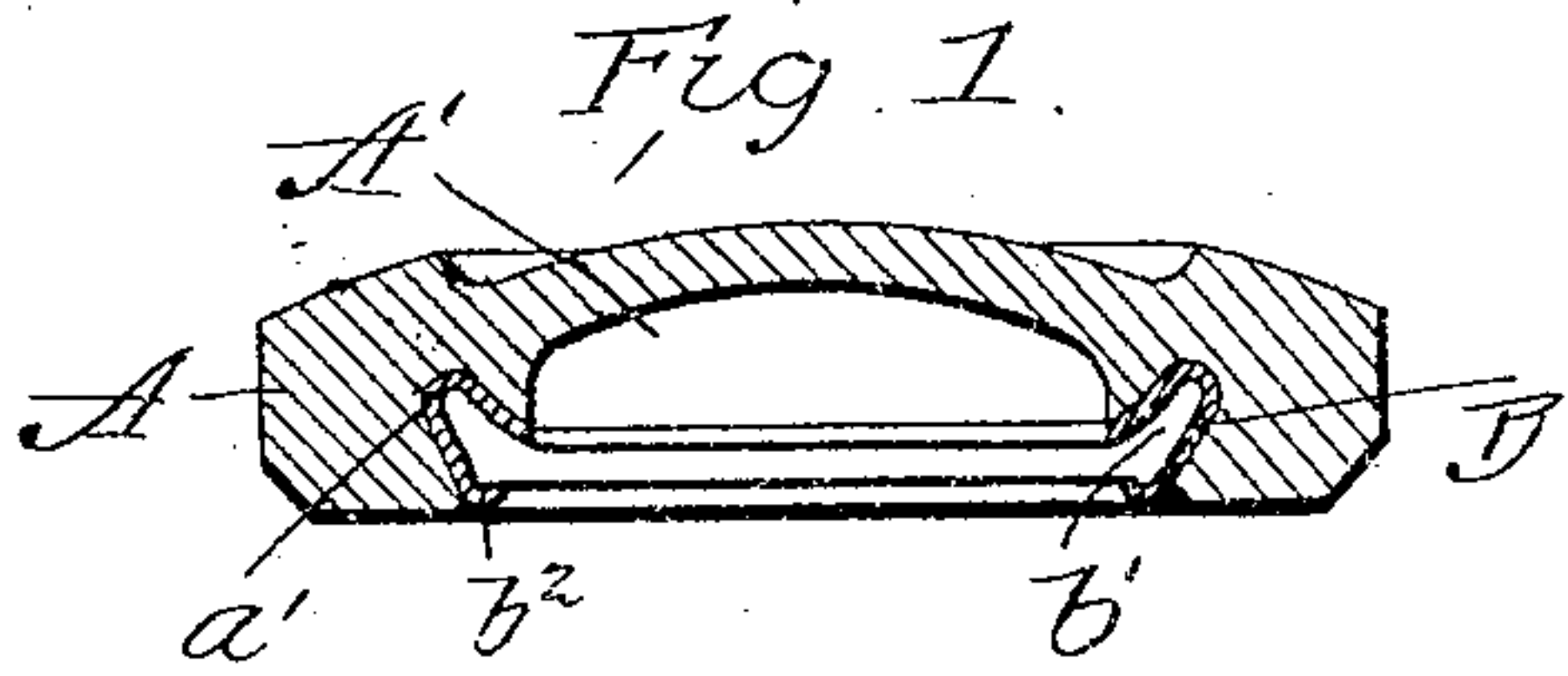


No. 803,754.

PATENTED NOV. 7, 1905.

G. F. & A. J. GROVE.
BUTTON.

APPLICATION FILED JULY 12, 1904.



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Att'y

UNITED STATES PATENT OFFICE.

GEORGE FREDERICK GROVE AND ARTHUR JAMES GROVE, OF
HALESOWEN, ENGLAND.

BUTTON.

No. 803,754.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed July 12, 1904. Serial No. 216,288.

To all whom it may concern:

Be it known that we, GEORGE FREDERICK GROVE and ARTHUR JAMES GROVE, button-manufacturers, subjects of His Majesty the King of Great Britain and Ireland, and residents of Halesowen, in the county of Worcester, England, have invented certain new and useful Improvements in Certain Kinds of Buttons, of which the following is a specification.

This invention has reference to that class of buttons which are known as "push-buttons" and are used for fastening gloves, leggings, and other articles and have their front parts made of horn, hoof, celluloid, xylonite, glass, china, or other suitable substance other than metal. This front part of the button is in the ordinary way fixed to the fabric of the glove or other article by a flanged eyelet-like part which passes through the hole in the part of the glove or other article and is fixed by the end of the cylindrical eyelet being pushed and bulged outwardly into an upwardly and outwardly extending groove or recess in the back part of the button-front, so that the fabric of the glove or other article to which the button is affixed is gripped between the flange of the eyelet and the back face of the button-front. This eyelet part of the button is the part into which the other or divided spring dome-shaped part of the button snaps when the button is fastened. Heretofore, owing to variations in the size of the groove in the back of the button-front, caused by the expansion or contraction of the button-front when made of horn or other substance which expands or contracts to an appreciable extent by variations in the atmosphere or temperature, it often happens that although the groove may when the button is manufactured be of exactly the proper size to receive the end of the eyelet, still, owing to the buttons having been kept in stock for some time before being used or through their being in a warmer climate than that in which they have been manufactured or through having been kept in a warmer place, the button has shrunk and contracted to such an extent that it is impossible to force the eyelet into the groove without splitting the button-front, or, on the other hand, if the button-front is made with a larger recess, so as to allow for the contraction, then possibly, owing to the particular nature of the horn or other substance of which the button is formed or to the particular conditions which obtain when the

button is being affixed, the said front part has not shrunk so much as was expected, and thus the eyelet does not take properly into the groove. These defects are overcome by this invention, which enables us to so make the horn or other button-front that the groove for receiving the eyelet will always remain at the exact proper size, no matter whether the button-front itself expands slightly or contracts.

Our invention is illustrated by the accompanying drawings, on which—

Figure 1 is a sectional elevation of a button-front made in accordance with this invention. Fig. 2 is an inverted plan of the same. Fig. 3 is a sectional elevation of a grooved metal ring forming a part of the button-front shown by Figs. 1 and 2. Fig. 4 is an inverted plan of the said ring. Fig. 5 is a sectional elevation of the blank for forming the button-front shown in Figs. 1 and 2, and Fig. 6 is an inverted plan of said blank. Fig. 7 is a sectional elevation of the said button-front attached to a piece of fabric by the usual eyelet, which latter is shown separately in sectional elevation by Fig. 8 and in plan by Fig. 9.

In carrying out this invention we provide and fix in a circular recess a' in the button-front A, having a dome-shaped recess A' , a grooved metal ring B, (shown separately by Figs. 3 and 4,) which by tools worked in a stamp or press is raised from sheet metal to the proper section to form the upwardly and outwardly extending annular groove b' to receive the end of the conical ring part c' of the ordinary eyelet C and to spread and enlarge the end of the eyelet in the groove when the eyelet is forced therein in the fixing of the button-front A to the fabric D of the glove or other article with which it is used.

It will be seen that the walls of the groove b' in the metal ring B are formed by the two flanges $b^2 b^3$ of the ring, which incline outwardly from what may be called the "mouth" b^4 of the ring, so that the groove b' is of a gradually-increasing diameter from the mouth b^4 toward the larger periphery b^5 , where the flanges $b^2 b^3$ join together.

The metal ring B is fixed in the recess a' in the button-front A by any convenient means, but preferably by being placed in said annular groove in the button-front blank before the latter has been compressed in the die, and then when the button-front and the ring B are together compressed in the die the sub-

stance of the button-front A will be forced round the outer flange b^2 of the ring B, which being tapered will be effectually secured in the button-front A, as in Figs. 1 and 2.

5 The fixing of the ring B in the button-front A is effected by press-tools, which form no part of this invention and which are so constructed as to prevent the groove b' from being closed by the pressure of the dies.

10 When the end of the conical ring part c' of the ordinary eyelet C is inserted in the mouth b^4 of the metal ring part B of the button-front A in the fixing of the button-front to the fabric, the rim c^2 of the conical ring part c' of the eyelet on entering the groove b' comes in contact with the inner inclined flange b^3 of the ring B, and then as the pressing of the eyelet C and the button-front A together continues the conical ring part c' of the eyelet C is
15 by the inclined shape of the flange b^3 increased in diameter and spread out into the groove b' , thereby effectually securing the button-front A and eyelet C and the fabric D together, as in Fig. 7.

25 As the grooved metal rings B are raised by press-tools and are of uniform size and made of sheet metal, they are practically unaffected by the expansion and contraction of the horn

or other substance of which the button-front A is formed, and thus the eyelets C being of 30 uniform size will properly enter and fix in the grooves b' , as above described.

It is to be understood that no claim is made in respect of the eyelet C, which is the ordinary eyelet for push-buttons made with a contracted mouth c^3 , into which the usual divided 35 spring dome-shaped part of the button snaps when the button is being fastened.

What we claim as our invention, and desire to secure by Letters Patent, is— 40

A push-button front formed of hoof or horn or other non-metallic substance having a dome-shaped recess in its rear face, a sheet-metal ring having an upwardly and outwardly extending groove therein embedded in said front 45 and surrounding said recess, and an eyelet having a conical ring part which is secured in the groove in the ring and spread therein.

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

GEORGE FREDERICK GROVE.
ARTHUR JAMES GROVE.

Witnesses:

CHARLES BOSWORTH KELLEY,
THOMAS JOHN ROWE.