

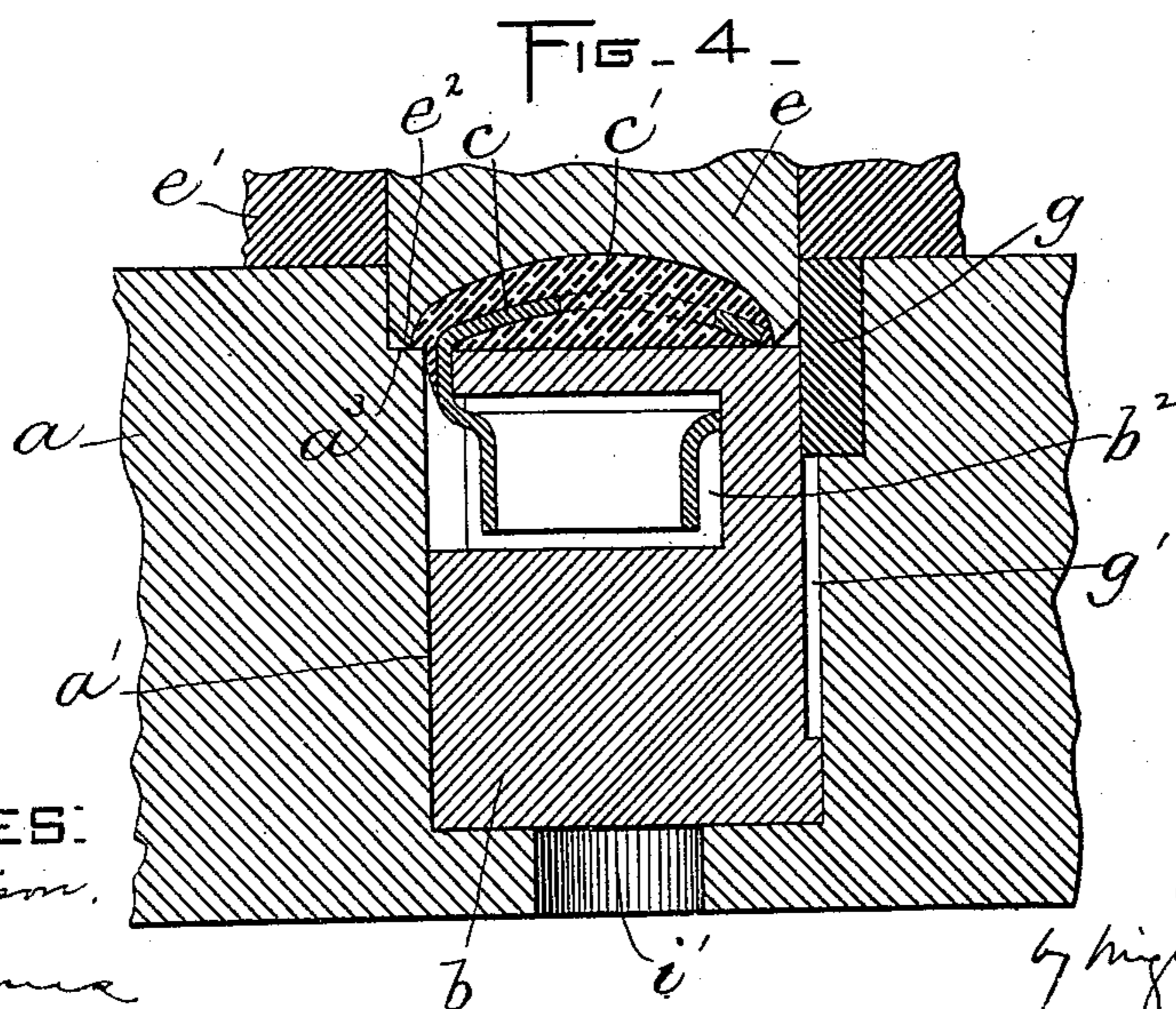
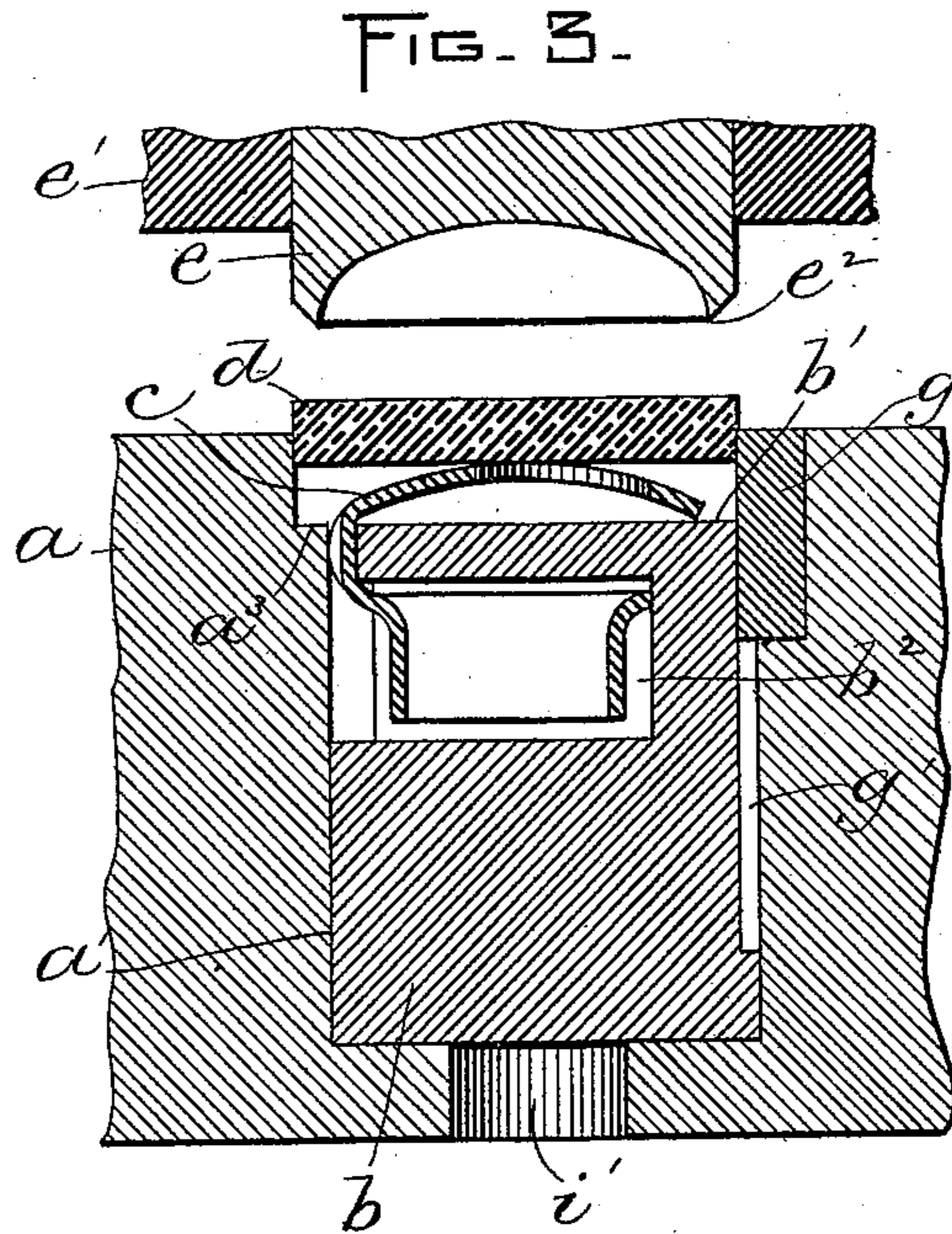
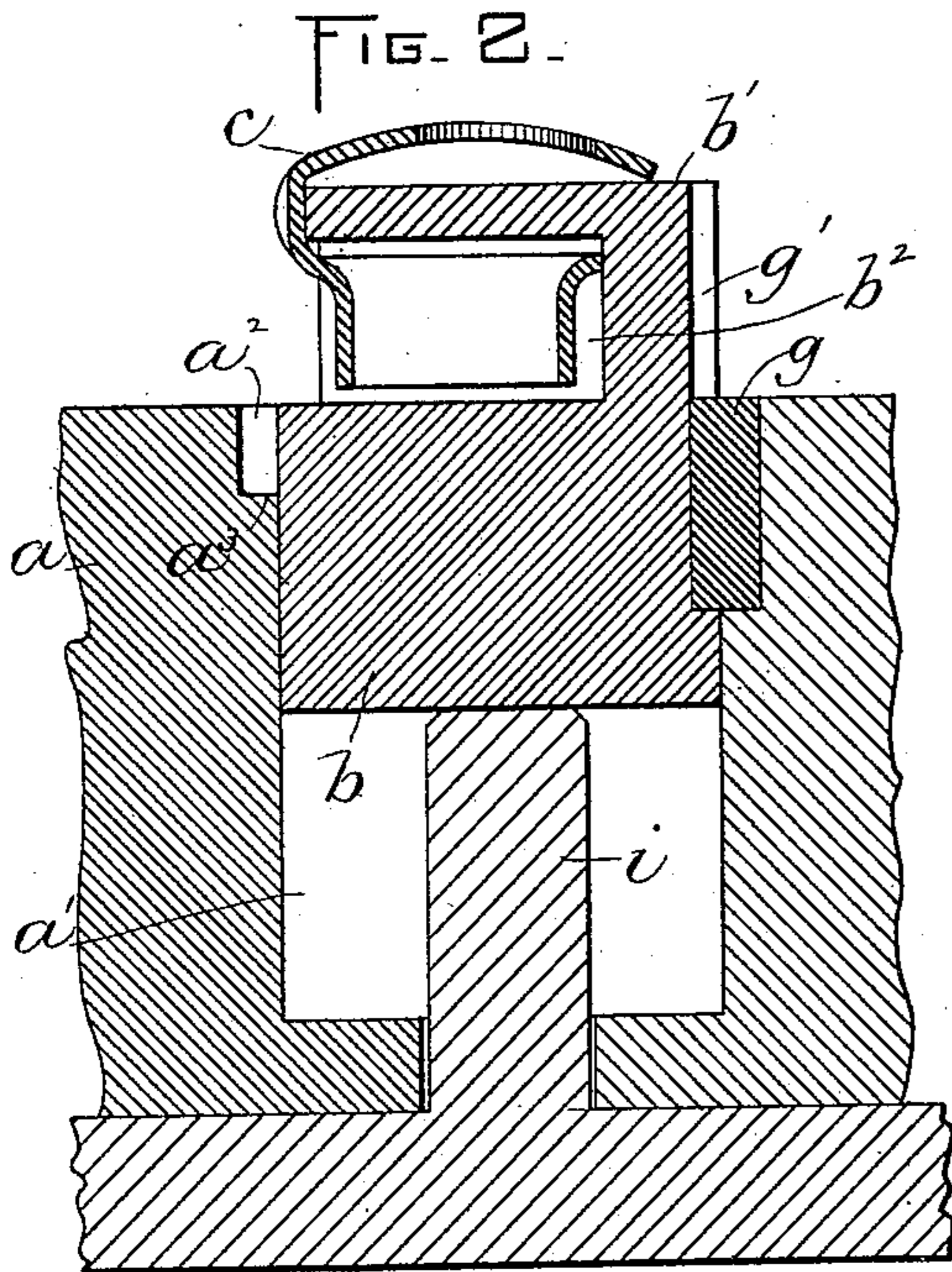
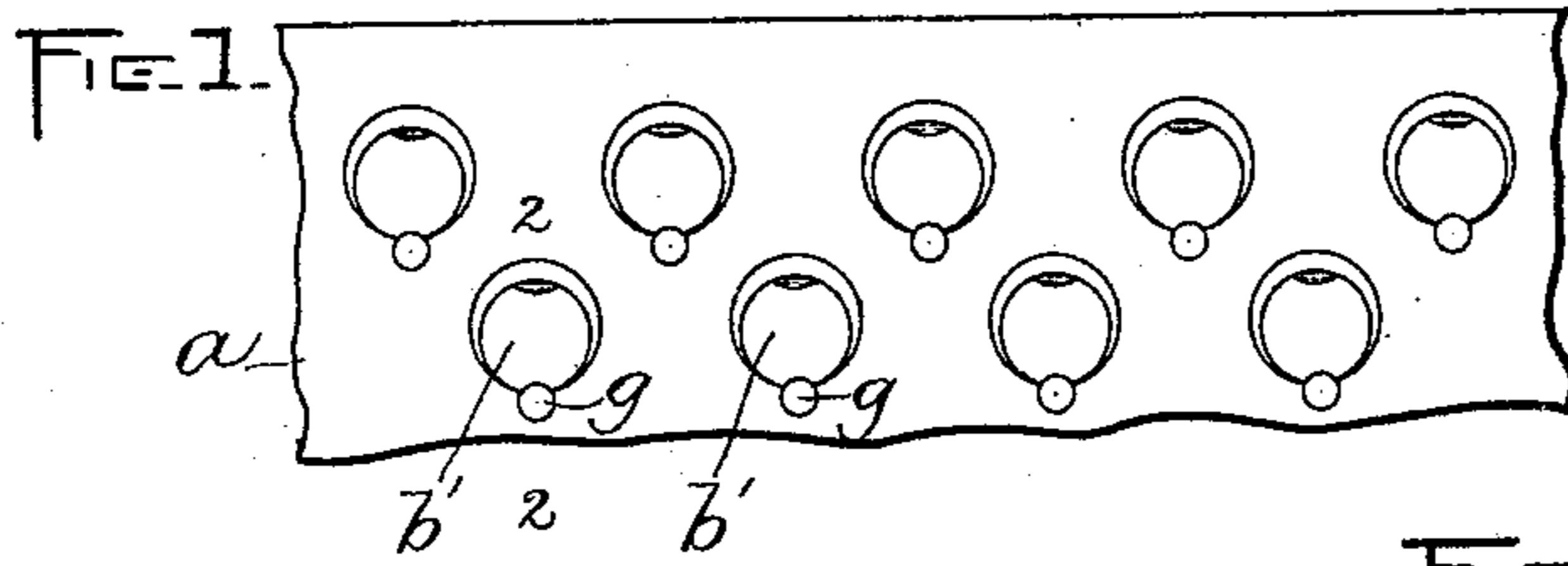
(No Model.)

3 Sheets—Sheet 1.

E. KEMPSHALL.
APPARATUS FOR COVERING LACING HOOKS.

No. 569,969.

Patented Oct. 20, 1896.



WITNESSES:
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(No Model.)

3 Sheets—Sheet 2.

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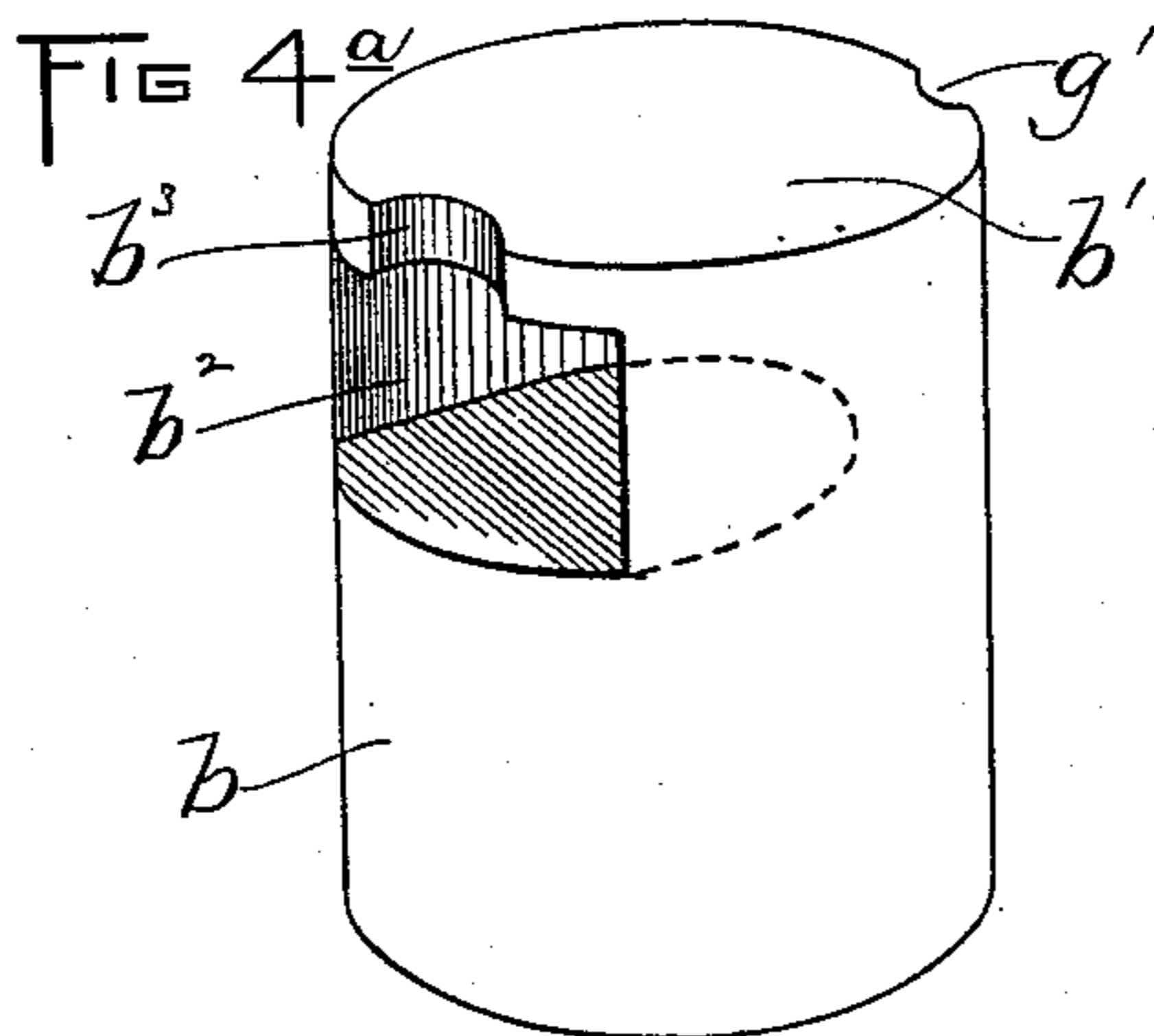


FIG. 5.

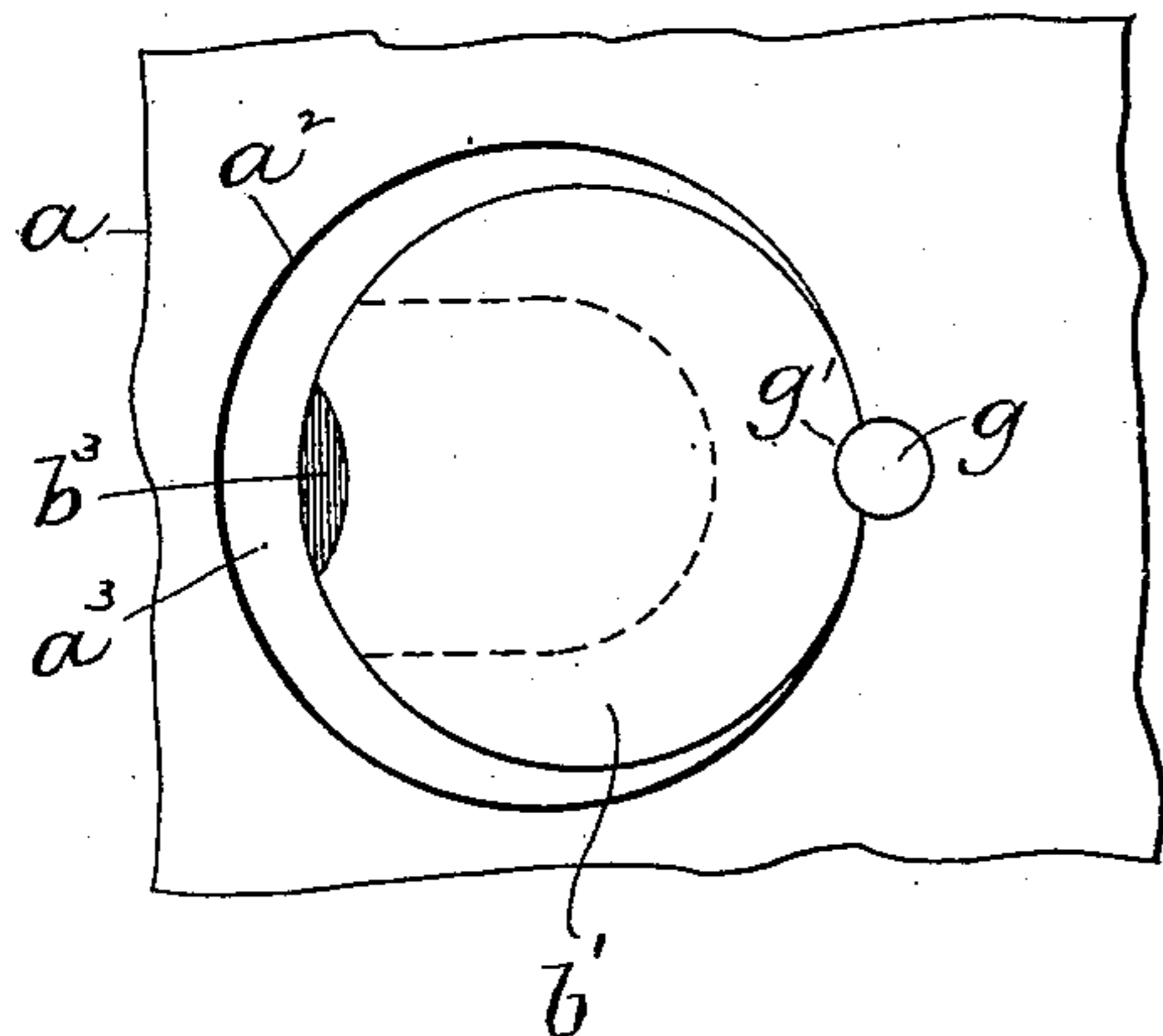


FIG. 6.

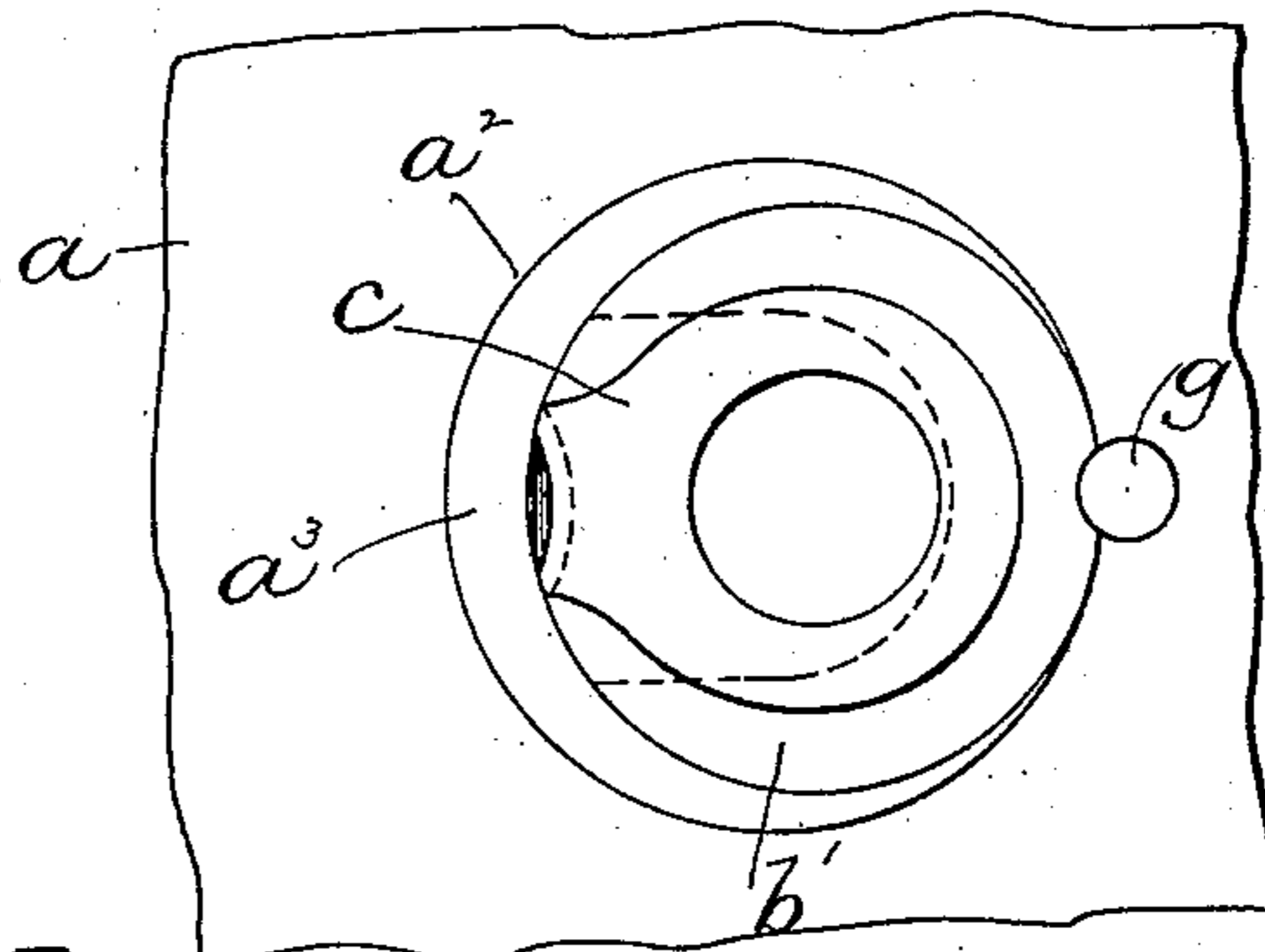


FIG. 7.

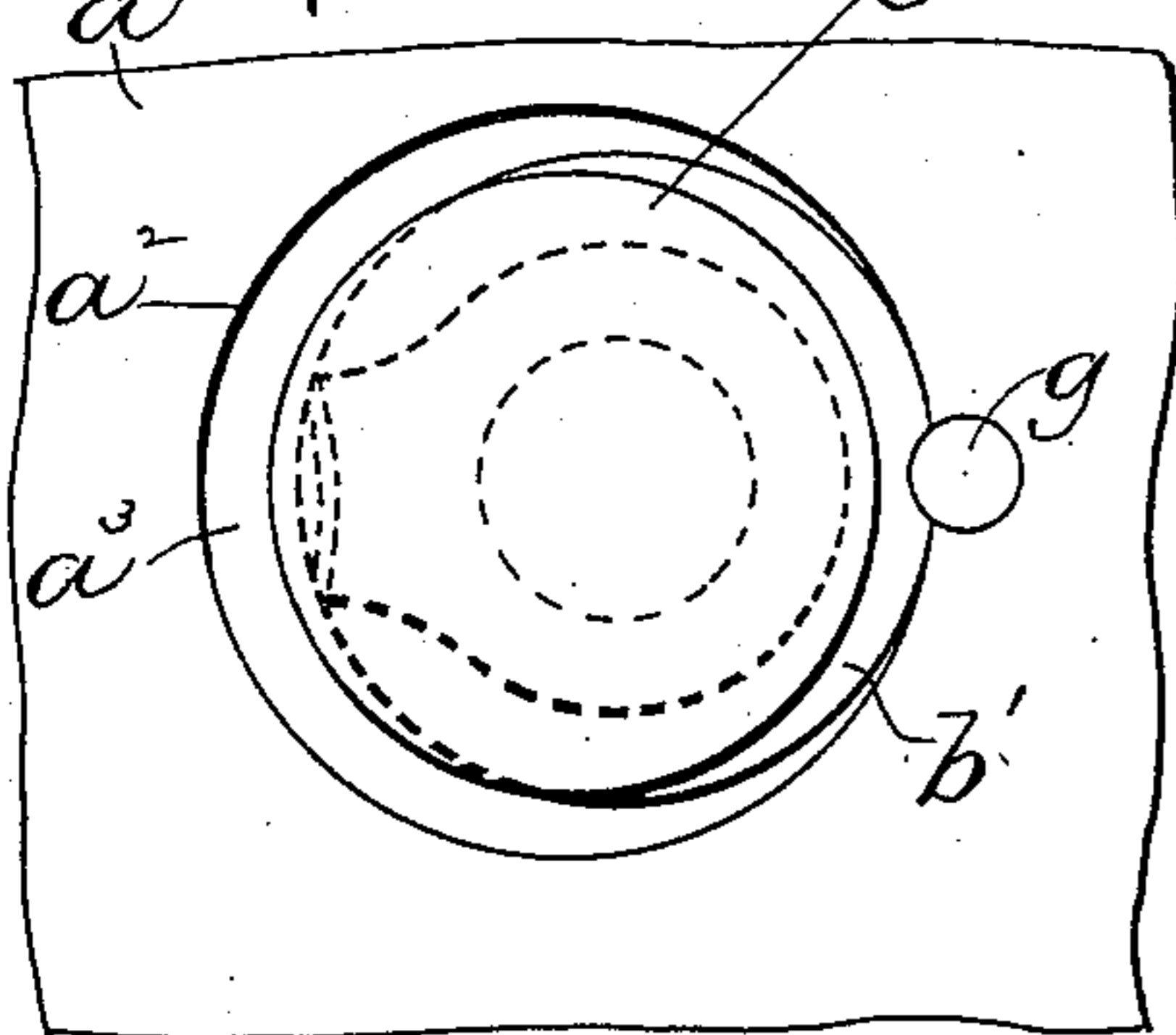
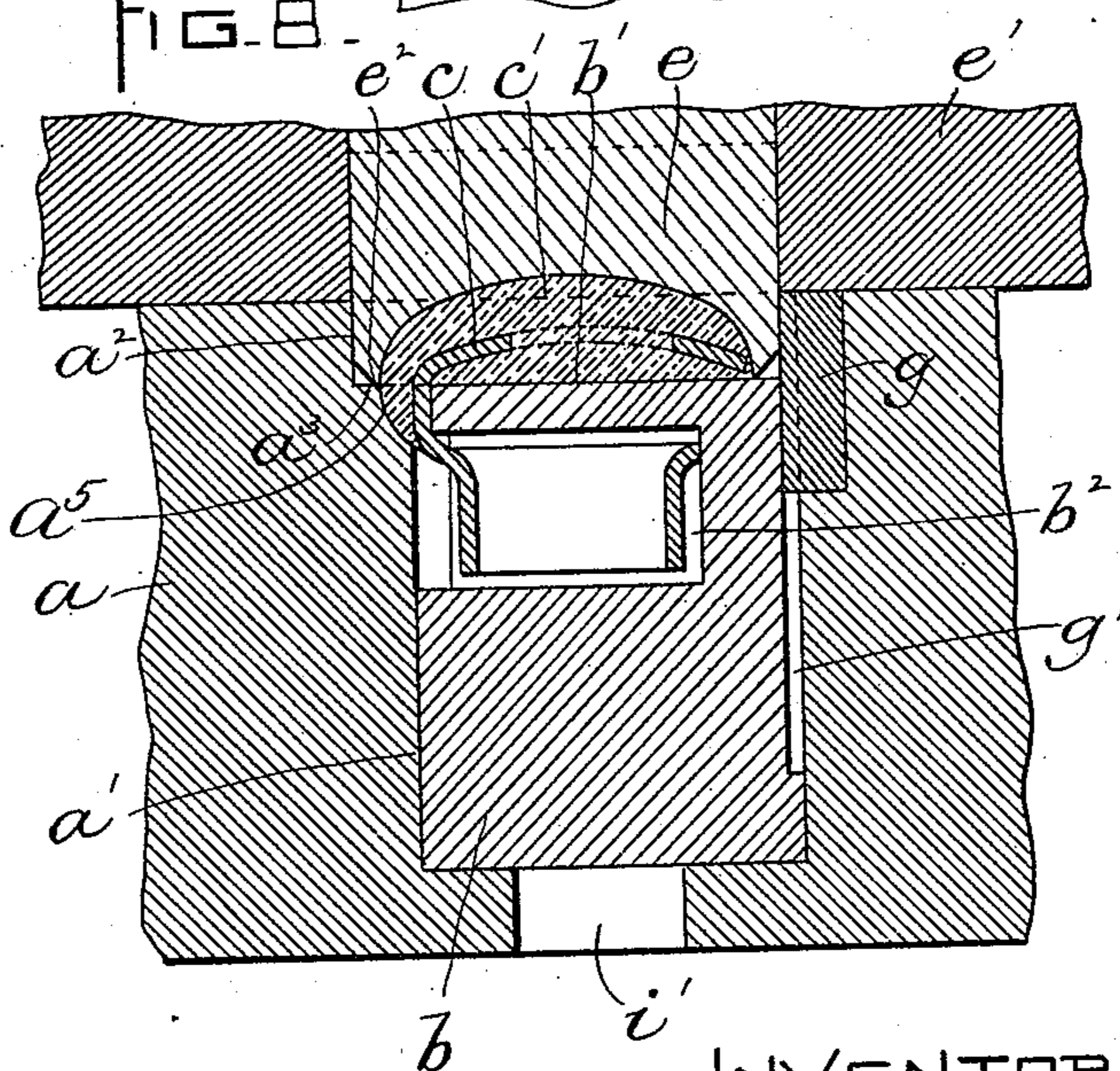


FIG. 8.



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FIG. 9.

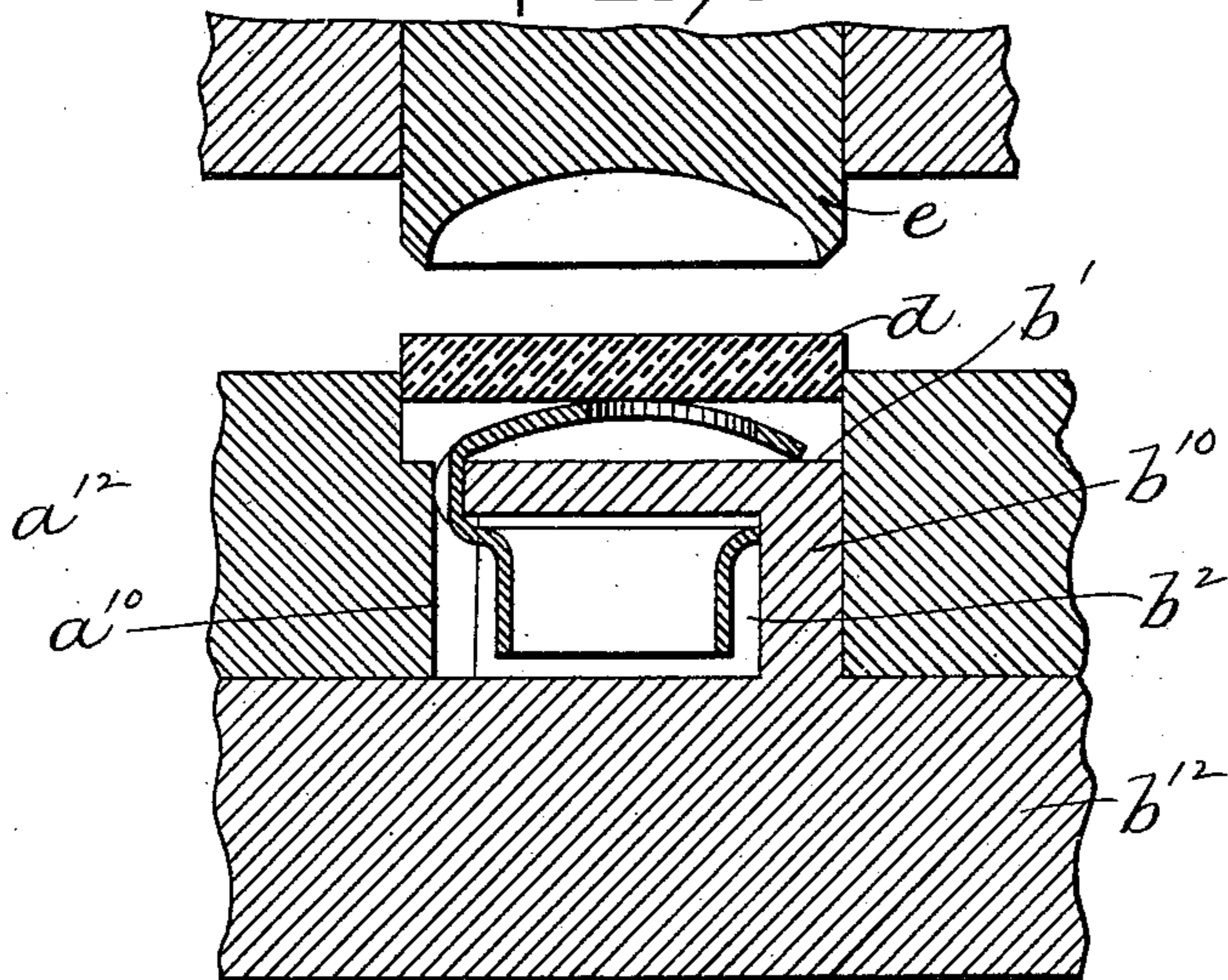
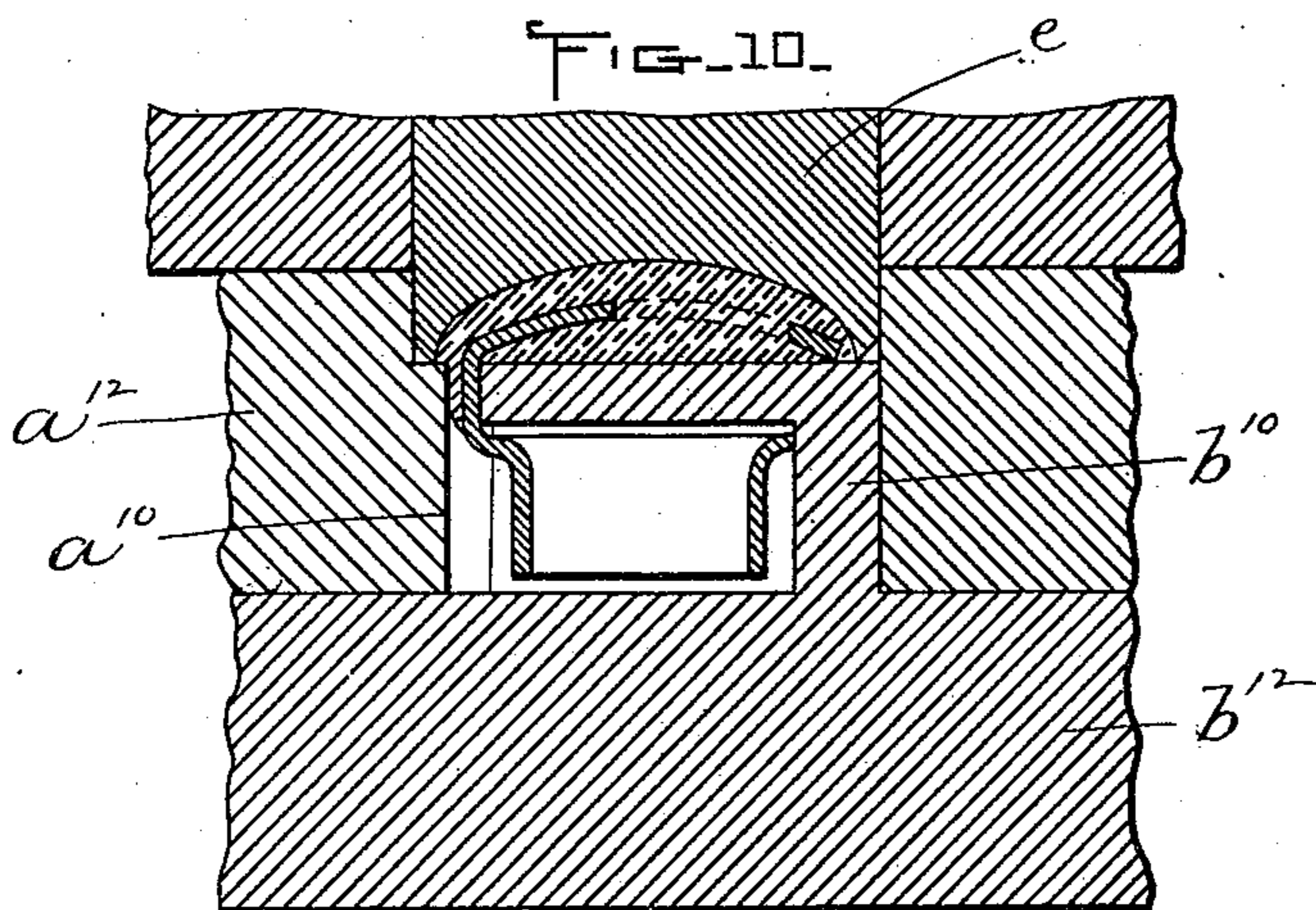


FIG. 10.



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UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO
THEOPHILUS KING, TRUSTEE, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR COVERING LACING-HOOKS.

SPECIFICATION forming part of Letters Patent No. 569,969, dated October 20, 1896.

Application filed January 30, 1896. Serial No. 577,405. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Covering Lacing-Hooks, of which the following is a specification.

This invention relates to means used for applying a covering of plastic material, such as pyroxylin composition, to metallic articles, such as the heads of lacing-hooks; and it has for its object to provide a simple and convenient apparatus of this class whereby the covering operation may be rapidly and efficiently performed.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of a portion of the supporting plate or base forming a part of my improved apparatus. Figs. 2, 3, and 4 represent sectional views on the line 2 2 of Fig. 1, on an enlarged scale, showing the parts of the apparatus at different stages of the operation. Fig. 4^a represents a perspective view of the holder for the article to be covered. Figs. 5, 6, and 7 are top views, each showing a portion of the base-plate and a lacing-hook holder therein. Fig. 8 represents a view similar to Fig. 4, showing a surface formed to mold the covering on the neck of a lacing-hook. Figs. 9 and 10 represent sectional views showing a different mechanical construction embodying my invention.

The same letters of reference indicate the same parts in all the figures.

In the drawings, referring first to Figs. 1 to 8, inclusive, *a* represents a base-plate, in which is formed a socket *a'*, which is of substantially cylindrical form. In this socket is fitted to move in and out a holder *b*, which is adapted to hold an article to be covered, the said article being in this case a lacing-hook *c*. The holder *b* has an outer face *b'*, which, when the holder is at the bottom of the socket, is within the outer end of the socket, as shown in Figs. 3 and 4, the socket extending above or outside of the face *b'* and

constituting a cavity which receives a circular disk or blank *d* of the covering material and holds said disk in its proper position relatively to the lacing-hook and to the molding-die *e*, hereinafter described. The molding-die *e* is affixed to a plate or carrier *e'*, which is movable toward and from the base-plate *a*, said die having a cutting edge *e²* and being formed to press the blank *d* down upon the head of the lacing-hook held by the holder *b*, cutting off the surplus marginal portion of said blank and forcing a portion of its material through an orifice or orifices in the head of the lacing-hook and against the face *b'* below said head, thus forming a molded cover *c'*, which is interlocked with or anchored to the head of the lacing-hook, as shown in Fig. 4, the face *b'* constituting a bottom die which coöperates with the top die *e*.

The holder *b* is movable in the socket *a'* to elevate the face *b'* and the lacing-hook thereon above the base-plate *a*, as shown in Fig. 2, for the ready removal of the covered hook and the application to the holder of an uncovered hook. The holder *b*, as here shown, has a cavity *b²* below the top face *b'*, said cavity being formed to receive the shank portion of the lacing-hook. In one edge of the top face *b'* is formed a recess *b³*, communicating with the cavity *b²* and formed to receive the neck which connects the head and shank of the lacing-hook.

I prefer to form an enlargement *a²* at the upper end of the socket *a'*, said enlargement being above the top face *b'* of the holder *b* when the latter is in its lowest position in the socket, the bottom *a³* of said enlargement being flush with and constituting an extension of the top face *b'* of the holder, said extension being arranged to coöperate with a portion of the cutting edge *e'* of the die *e* in forming the margin of the cover *c'* at and near the neck of the lacing-hook.

The holder *b* may be guided in its movements and prevented from rotating in the socket by any suitable means, preferably a key or spline *g*, inserted in a cavity formed for its reception in the wall of the socket *a'* and projecting into a groove *g'*, formed in the

holder *b*, the inner end of said groove and the lower end of the key *g* forming stops which limit the outward movement of the holder, as shown in Fig. 2.

5 The operation is as follows: The holder *b* being raised, the lacing-hook is placed upon it, as shown in Fig. 2. The holder is then depressed, carrying the hook into the socket, and a blank *d* of pyroxylin composition is
10 placed in the mouth of the socket above the holder and resting on the head of the hook, as shown in Fig. 3. The die *e* is then depressed, as shown in Fig. 4, and molds the material of the blank in the manner described
15 and shown, the holder, base-plate, and die being suitably heated to soften the blank and make it sufficiently plastic to assume the form shown in Fig. 4. After the formation of the cover, the holder *b* is raised, thus removing
20 the covered hook from the socket and permitting its ready removal from the holder.

The base-plate *a* in practice will contain a large number of sockets and holders, and said plate is preferably portable or movable, so
25 that it may be set up edgewise while the uncovered hooks are being applied, and may then be placed horizontally upon a suitable supporting-bed while the dies *e*, which are assembled in a corresponding number on a
30 suitable die-plate or holder *e'*, are being brought down to mold the covers.

The holder *b* may be simultaneously raised to eject the covered hooks from the die-plate by placing the die-plate upon a series of pins
35 or spindles *i*, affixed to a suitable supporting base or plate and arranged to coincide with orifices *i'*, formed in the bottom of the base-plate *a* and communicating with the sockets *a'*, the base-plate *a* being removed from the
40 bed which supports it during the molding operation above described and placed upon the pins *i'*, which support the holders in their elevated position during the removal and application of the hooks. Any other suitable
45 means may be used for simultaneously raising or displacing the holders without departing from the spirit of my invention.

I do not limit myself to the provision of blank-receiving cavities in the sockets at the
50 outer ends of the holders, as the blanks may be cut by the dies from sheets placed between the dies and bed, or the blanks, if previously formed, may be held in any other suitable way.

55 It is obvious that the essential features of my invention, namely, a base-plate having a socket and a holder formed to be contained in the socket and to hold the article to be coated therein, the holder and socketed plate
60 being relatively movable, so that the holder and a portion of the article engaged therewith are securely held within the socket when the said parts are in their operative position and are removable from the socket to permit the
65 ready application and removal of the article, may be used in apparatus for covering other articles besides lacing-hooks, the form of the

holder and die and, if necessary, of the socket in the base-plate being modified to suit the form of the article.

By my improvement I am enabled to form a cover upon a lacing-hook or other like article without forming a mark across the top surface of the cover, as is necessarily the case when said top surface is formed by two half-
75 dies the joint of which extends across said surface.

In Fig. 8 I show a cavity *a⁵* formed in the wall of the socket *a'* adjacent to the recess *b³* in the holder *b*, said cavity being formed
80 to mold an extension of the cover on the outer side of the neck of the lacing-hook.

In Figs. 9 and 10 I show the holder as a stud or projection *b¹⁰*, formed on a fixed bed or plate *b¹²*, the corresponding socket *a¹⁰* being formed in a removable plate *a¹²*. In this case the holder is exposed for the application and removal of the article by removing the plate *a¹²*, the holder being covered and the article confined by placing the plate *a¹²* on the
90 plate *b¹²*.

I claim—

1. An apparatus of the character specified, comprising a base or plate having a socket which is open at the upper side of the plate,
95 a holder formed to be inclosed by said socket and having a cover-molding upper face or bottom die adapted to support a head to be covered and a shank-receiving cavity below said face, and a top die formed to act on a
100 plastic blank interposed between the holder and die, the holder and socketed plate being relatively movable to cover and uncover the holder.

2. An apparatus of the character specified,
105 comprising a base or plate having a socket, a holder movable in said socket and adapted to support an article to be covered, a die formed to act on a plastic blank interposed between the holder and die, and means for
110 displacing the holder to raise the covered article from the socket.

3. An apparatus of the character specified, comprising a base or plate having a socket and a molding-face at one side of the socket,
115 a holder formed to be inclosed by the socket and having a molding-face which coincides with the molding-face on the plate when the holder is in its operative position, and a die adapted to cooperate with said molding-faces
120 in forming a head from a plastic blank on an article supported by the holder.

4. An apparatus of the character specified, comprising, first, a base or plate having a socket and a molding-face at one side thereof;
125 secondly, a lacing-hook holder formed to be inclosed by said socket and having a head-supporting and cover-molding face at its outer end, a shank-receiving cavity under said face, and a neck-receiving recess between said cavity and face, the said molding-face coinciding with the molding-face of the plate when the holder is in its operative position;
130 and thirdly, a die formed to cooperate

with said molding-faces in forming a covering on the head of a lacing-hook.

5 A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, and hook-holders movable in said sockets, each having a head-supporting and cover-molding face at its outer end and a shank-receiving cavity below said face, the
10 said cavities being within the sockets when the holders are in their operative positions and projected from the sockets for the reception and removal of the hook-shanks when the holders are displaced.

15 6. A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, hook-holders movable in said sockets, each having a head-supporting and
20 cover-molding face at its outer end and a shank-receiving cavity below said face, the said cavities being within the sockets when the holders are in their operative positions, and means for simultaneously displacing said
25 holders.

7. A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, the other side of the plate having

orifices coinciding with the sockets, hook- 30 holders movable in said sockets, each having a head-supporting and cover-molding face at its outer end and a shank-receiving cavity below said face, the said cavities being within the sockets when the holders are in their op- 35 erative positions, and a plate or holder having a series of pins adapted to enter the orifices in the plate to simultaneously displace the hook-holders.

8. An apparatus of the character specified, 40 comprising a holder adapted to support an article to be covered, a base or plate having a socket formed to receive said holder, the plate projecting above the holder, so that the mouth of the socket forms a blank-receiv- 45 ing cavity above the said holder, and a die formed to act on a plastic blank in said cavity, the socketed plate and holder being relatively movable to cover and expose the holder.

In testimony whereof I have signed my 50 name to this specification, in the presence of two subscribing witnesses, this 13th day of January, A. D. 1896.

ELEAZER KEMPSHALL.

Witnesses:

C. F. BROWN,
A. D. HARRISON.