

No. 789,695.

PATENTED MAY 9, 1905.

E. KEMPSHALL.
METHOD OF FORMING EYELETS.
APPLICATION FILED APR. 17, 1905.

Fig. 1.

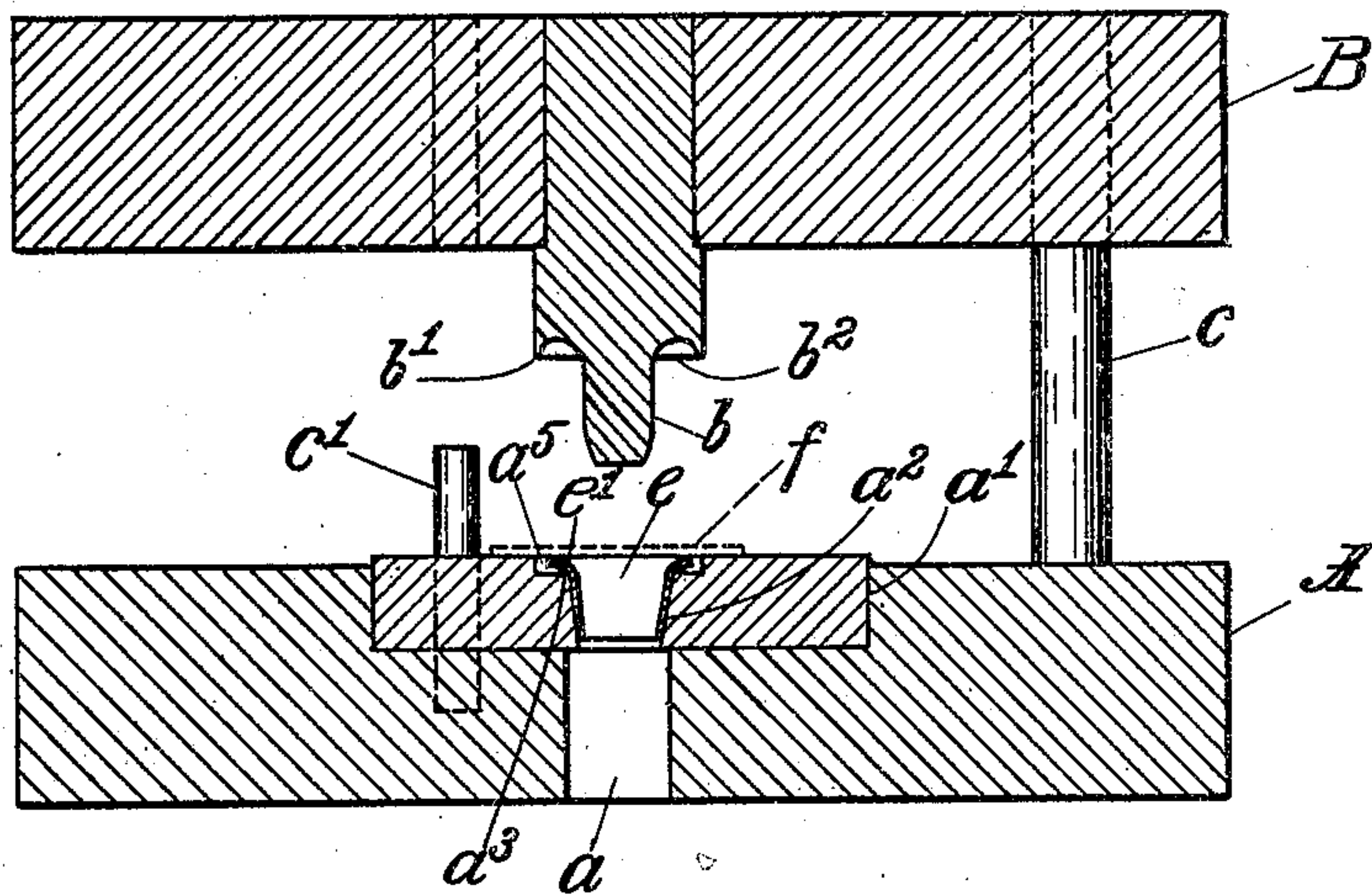


Fig. 2.

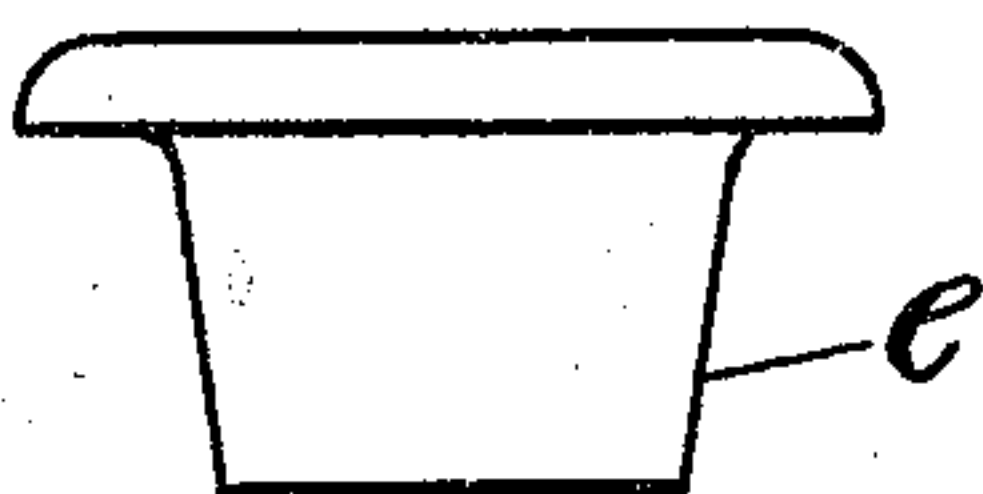
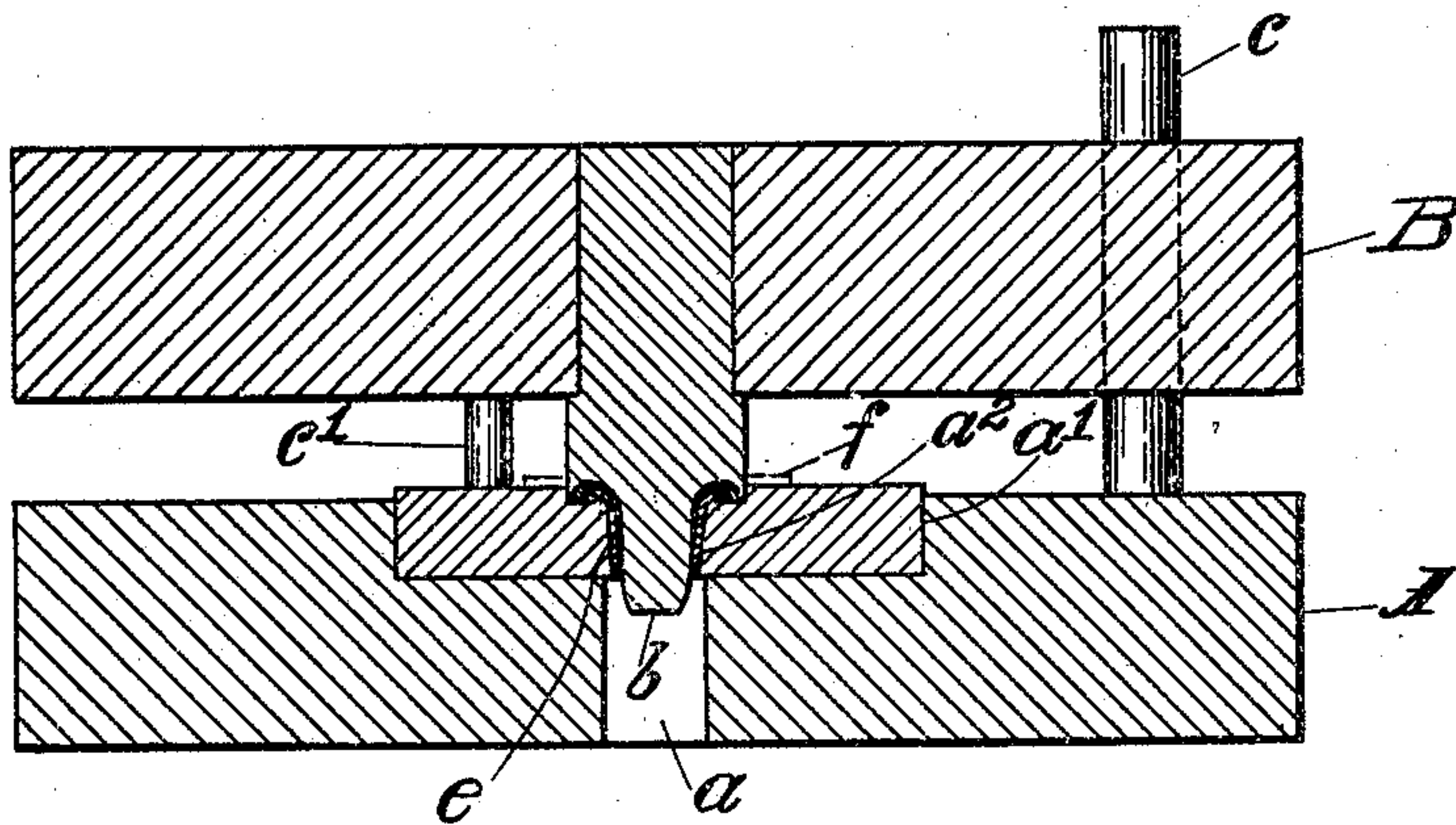


Fig. 4.

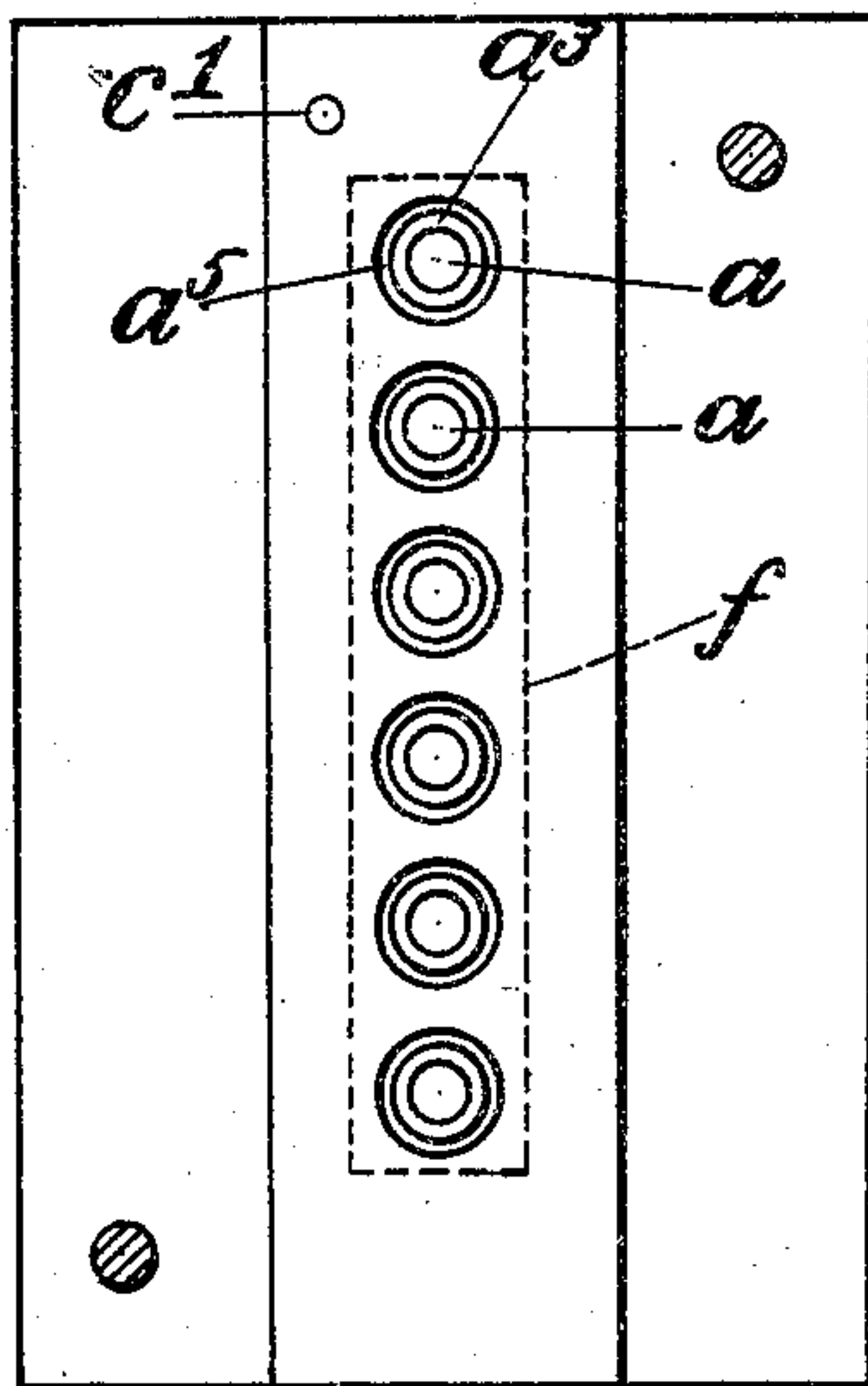


Fig. 3.

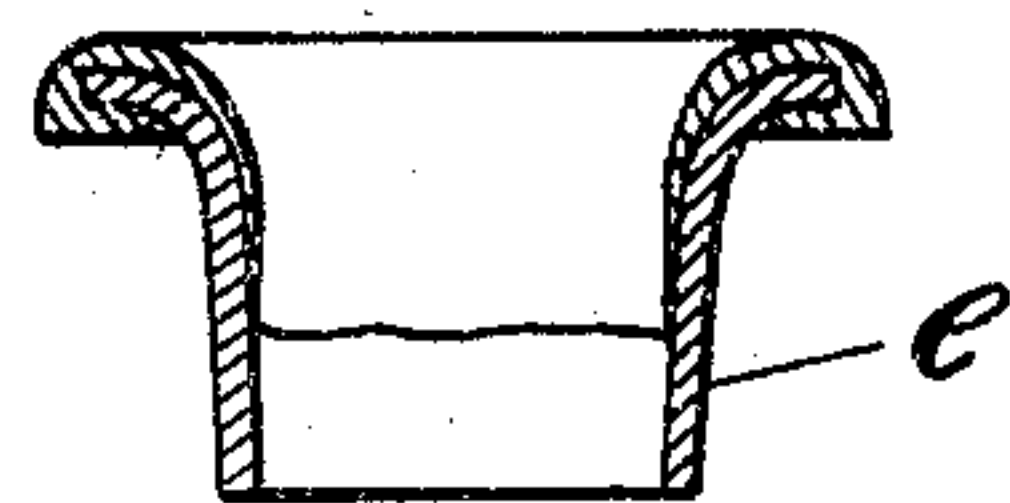


Fig. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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METHOD OF FORMING EYELETS.

SPECIFICATION forming part of Letters Patent No. 789,695, dated May 9, 1905.

Original application filed February 9, 1895. Renewed August 23, 1902, Serial No. 120,856. Divided and this application filed April 17, 1905. Serial No. 255,900.

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain Improvement in Methods of Forming Eyelets, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This method is designed to form an eyelet having one end covered with sheet wear-resisting material which is capable of being molded or bent about the head of the eyelet to present a neat or ornamental appearance and to resist wear.

Before the present invention it has been the practice in the manufacture of eyelets to form the head and barrel of the eyelet of metal and then to apply a coating of enamel or paint to impart the desired color or finish to the eyelet. Such methods have not, however, produced satisfactory eyelets, because the enamel or paint soon wears off and exposes a metallic surface, which detracts greatly from the appearance of the article in which the eyelet is inserted.

In practicing the method which comprises the present invention wear-resisting material is applied to one end of an eyelet-blank to form an eyelet having a head provided with a wear-resisting covering. Preferably the blank is provided at one end with a flange and the covering material is applied to both the upper and lower faces and to the inside of the flange. The expression "inside of the flange" is used to denote that portion of the interior of the eyelet which adjoins the upper face of the flange and which is visible when the eyelet is in use.

The method embodying this invention may be practiced conveniently in connection with certain apparatus shown and described in an application of mine filed February 9, 1895, Serial No. 537,747, renewed August 23, 1902, Serial No. 120,856, of which the present application is a division. This apparatus is

shown in the drawings annexed hereto, in which—

Figure 1 is a vertical section of two cooperating dies, showing an eyelet-blank in position to be covered. Fig. 2 is a vertical section similar to Fig. 1, showing the dies in the position of completing the application of the covering. Fig. 3 is a plan view of the eyelet-supporting die shown in Figs. 1 and 2; and Figs. 4 and 5 are respectively an enlarged elevation and an enlarged vertical section, showing an eyelet covered by this method.

For purposes of illustration the method embodying this invention will be described as practiced by means of the apparatus shown in the drawings, which constitutes one of many forms which might be employed for this purpose.

In the drawings there are shown two cooperating dies—the eyelet-supporting die A and the pressure-die B. The coacting parts of these dies, each set thereof being adapted to cover one eyelet at a time, may be indefinitely reduplicated to enable the dies to form a number of eyelets simultaneously. (See Fig. 3.) Since they are all alike, it will suffice to describe a single set of these coacting parts and the manner in which they form a single eyelet.

The eyelet-supporting die A is provided with a countersunk plate a' , having an eyelet-receiving aperture a^2 , which communicates with a cylindrical hole a , extending through the die. Surrounding the mouth of the aperture a^2 and concentric therewith is an annular recess a^5 . A support a^3 , upon which an eyelet rests while being covered, is provided in the recess a^5 . This support extends somewhat above the bottom of the recess a^5 . The pressure-die B is provided with a depending portion b , which enters the aperture a^2 in the conjoint operation of the dies. As shown in the drawings, this depending portion b is of the proper size to fit snugly within the smallest portion of an eyelet-barrel. Sufficient space intervenes between the depending portion b and the walls of the aperture a^2 when the dies are closed to permit the barrel of an eyelet to

lie between them. The depending portion b is provided at its base with an encircling recess b^2 , which contributes to the formation of the face of the eyelet-cover and which is accordingly given the desired construction to suit this purpose. The periphery of this recess b^2 is conveniently given the form of a circular cutting edge b' . Relative lateral movement of the dies during their conjoint operation is prevented by guide-pins c c' , which insure proper registration of the co-acting parts.

The first step in the method embodying this invention when this apparatus is employed is to place an eyelet-blank e , having a flange e' , in the eyelet-receiving aperture a^2 . The eyelet-support a^3 contacts with the under side of the flange e' near the barrel of the eyelet. The diameter of the flange e' is less than that of the recess a^5 , and consequently the greater part of the surface of the flange e' is exposed, its lower face being elevated above the bottom of the recess a^5 by the support a^3 , so as to permit the covering material to be applied thereunder. When the eyelet is thus positioned, it is ready to be covered. A strip f of covering material—such, for example, as celluloid—is placed upon the upper face of the flange. The covering material described as employed in this method is normally hard or rigid and may best be rendered plastic by the application of heat. To this end it is a common practice to heat either or both of the coöperating dies, so that the heat communicated from them when the material is being manipulated will render it plastic, so that it may be formed readily into the proper shape. The covering material may, if desired, be heated separately and presented in its altered state to the action of relatively cold dies. The depending portion b in its movement toward the eyelet-supporting die strikes the center of the strip f and passes through it. Descending lower, the depending portion b enters the hole in the flange of the eyelet and presses the plastic material against the inside of the flange and the wall of the barrel. If said barrel be tapered downwardly, this inner covering will be given a diminishing thickness until the surface thereof merges into the inner surface of the barrel. The cutting edge b' coöperates with the edge of the recess a^5 to cut the strip into the form of a washer. The recess b^2 engages a part of the washer thus formed and molds it in such manner that it is pressed down over the upper surface of the flange e' of the eyelet, over the edge of the flange, and beneath the lower face thereof, forming an integral cover for the flange which embraces the flange on both sides and is also integral with the cover extending down upon the inside of the flange and into the barrel.

It is by no means essential that the steps of this improved method be performed in the sequence hereinbefore set forth, and a devia-

tion from this sequence would not remove a method of covering eyelets from the proper field of this invention. For example, the conjoint cutting action of the cutting edge b' and the edge of the recess a^5 might take place before the strip of covering material has been pierced by the depending portion b , whereby a substantially circular disk would be formed instead of a washer. For this reason the word "washer" employed in the subjoined claims should be construed to include covering material of the shape of either a disk or a washer or of any similar form.

While the method of this invention is limited in its more specific application to forming eyelets having central lacing-passages, it should be understood that in its broadest aspect the invention is applicable to the forming of lacing-hooks or other similar articles, and therefore the word "eyelet" wherever occurring in the specification or claims should when the context permits be construed as including eyelets, lacing-hooks, and other similar articles.

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

1. The method of forming eyelets which consists in applying plastic covering material to one end of an eyelet-blank and forming a covered eyelet-head having a central lacing-passage.

2. The method of forming eyelets which consists in applying sheet covering material to both surfaces of one end of a tubular blank and forming an eyelet-head having a central lacing-passage.

3. The method of forming eyelets which consists in applying sheet covering material to the flange of an eyelet-blank and pressing it upon the inside of the flange.

4. The method of forming covered eyelets which consists in applying plastic covering material to the upper and lower faces of the flange of an eyelet-blank and to the inside of the flange.

5. The method of forming covered eyelets which is characterized by manipulating plastic covering material within the flange of an eyelet so as to press said material upon the inside of the flange.

6. The method of forming eyelets which is characterized by inserting a tool into the hole in the flange of an eyelet-blank and thereby pressing sheet covering material upon the inside of the flange.

7. The method of forming eyelets which consists in making a washer of covering material and applying the washer to the flange of an eyelet-blank on its upper and lower faces.

8. The method of forming eyelets which consists in making a washer of covering material and applying the washer to the flange of an eyelet-blank to form an eyelet-head having a central lacing-passage.

9. The method of forming covered eyelets which consists in heating plastic sheet covering material, and applying the covering material to the upper and lower faces of an eye-
5 let-flange.

10. The method of forming covered eyelets which consists in heating plastic covering material and applying said covering material to the flange of an eyelet to provide an eyelet

having a covered head and a central lacing- 10
passage.

In testimony whereof I have signed my name to the specification in the presence of two subscribing witnesses.

ELEAZER KEMPSHALL.

Witnesses:

ERNEST E. LE COMPTE,
NELSON W. HOWARD.