

No. 683,346.

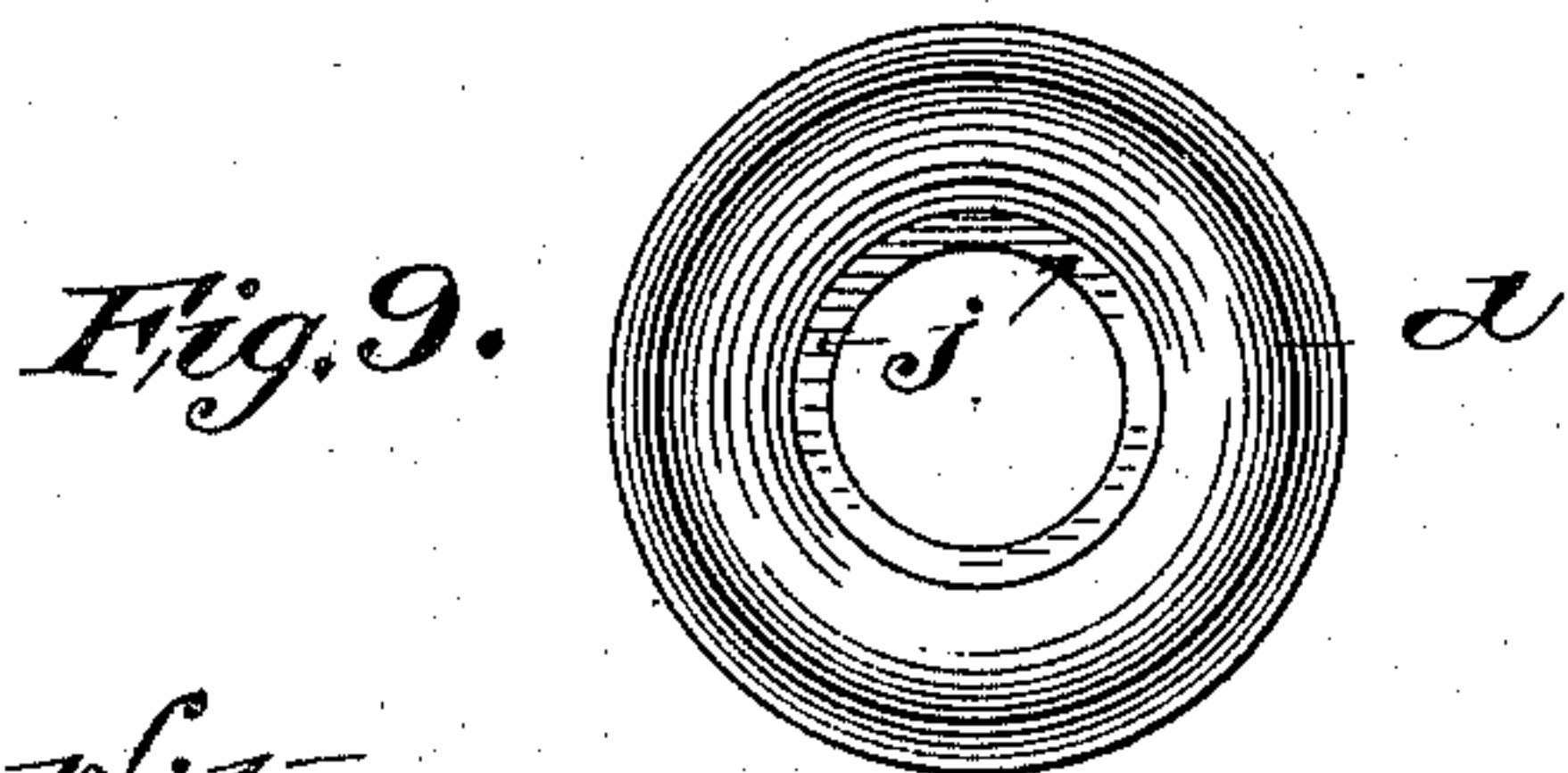
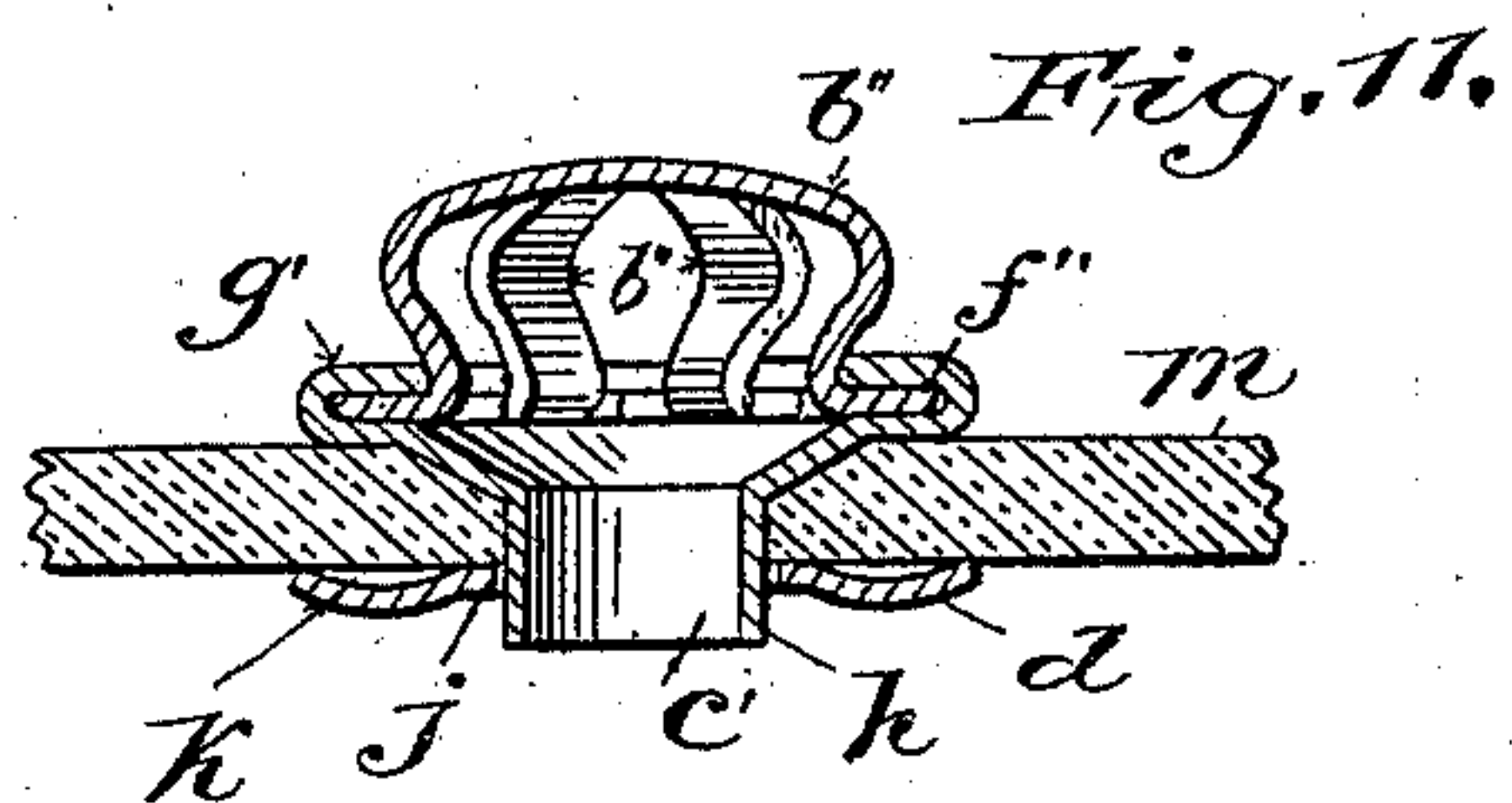
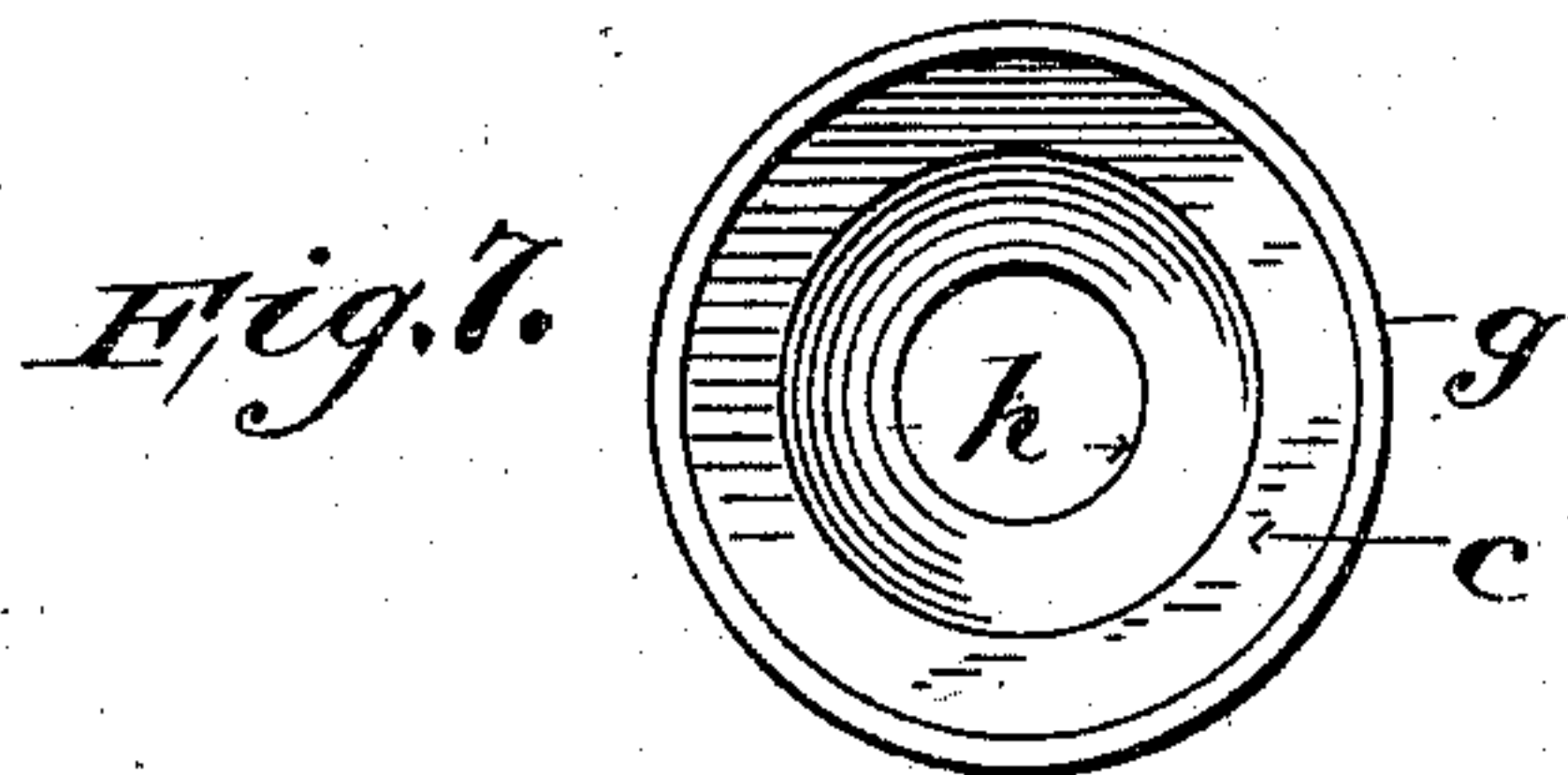
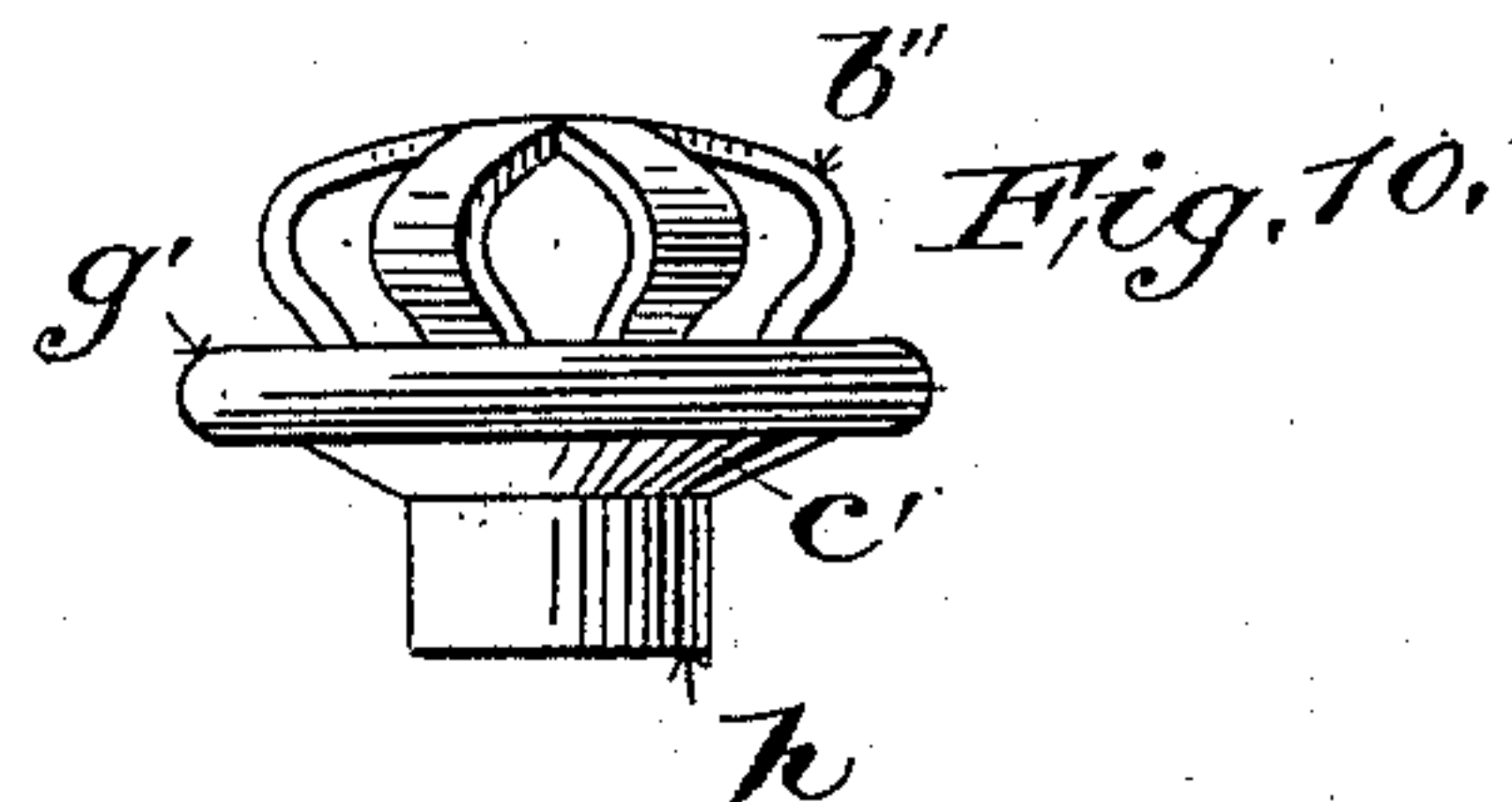
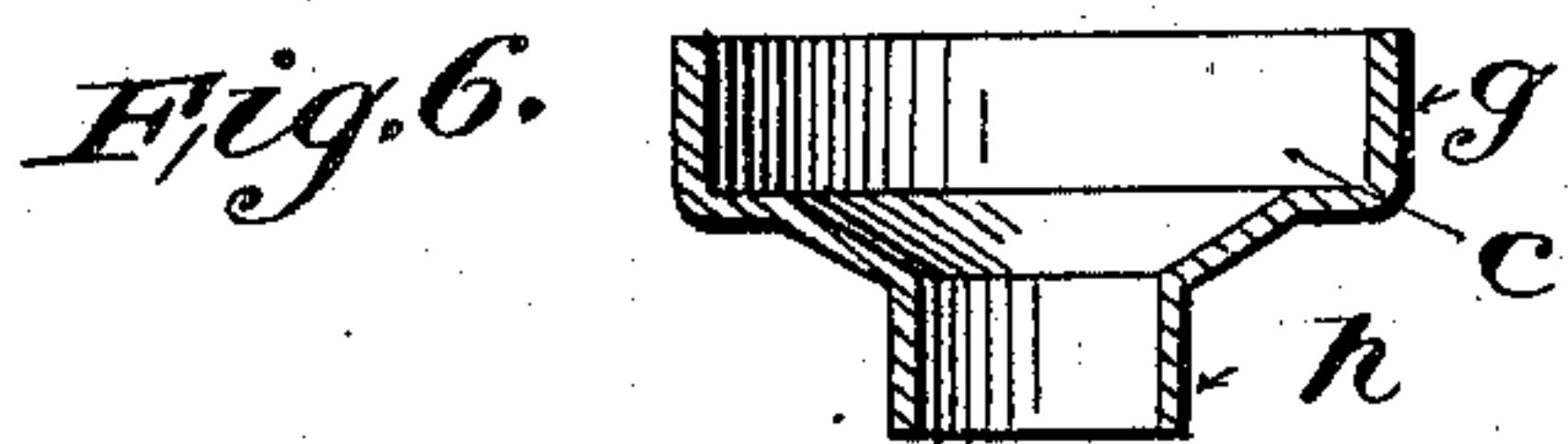
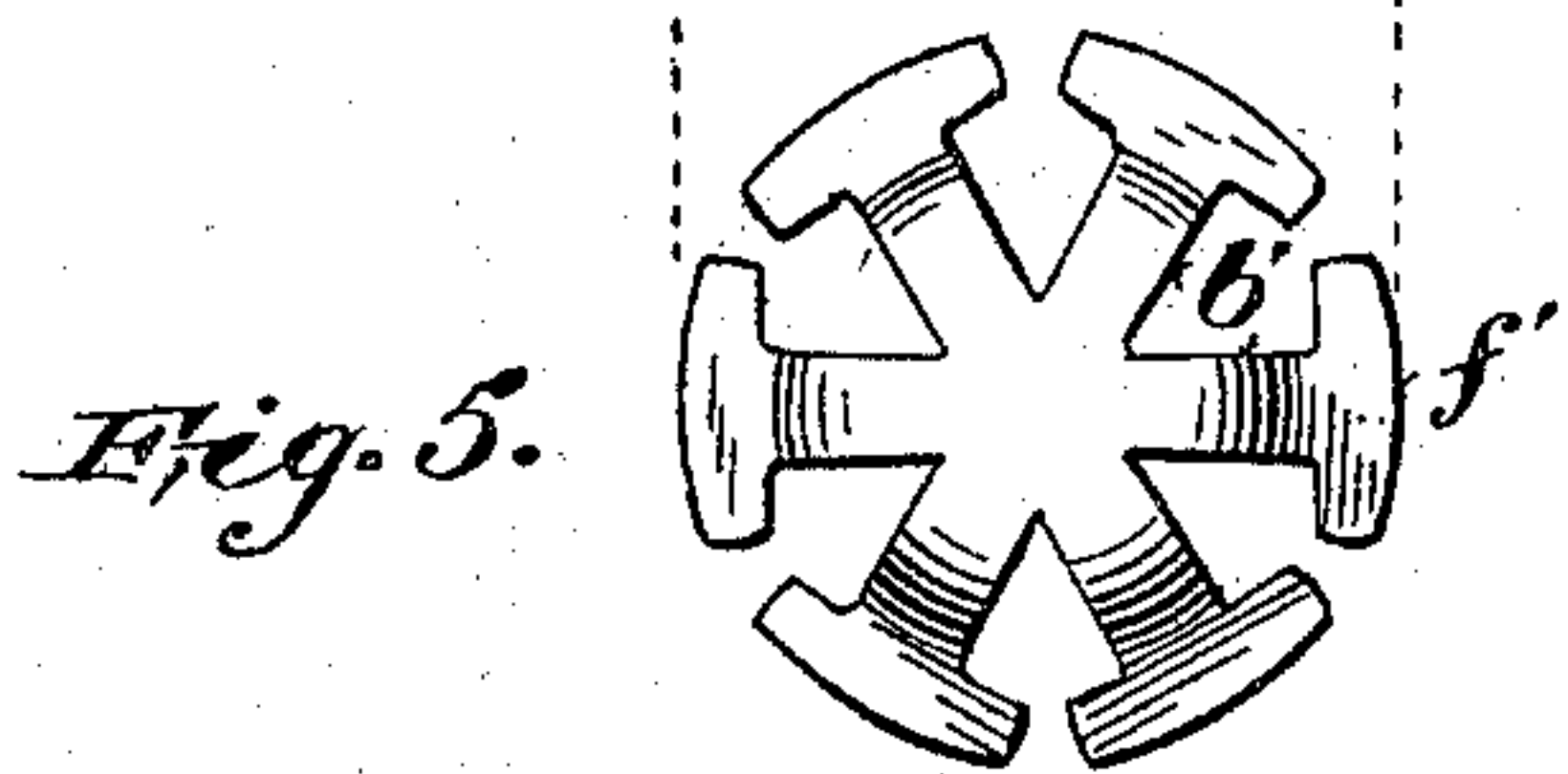
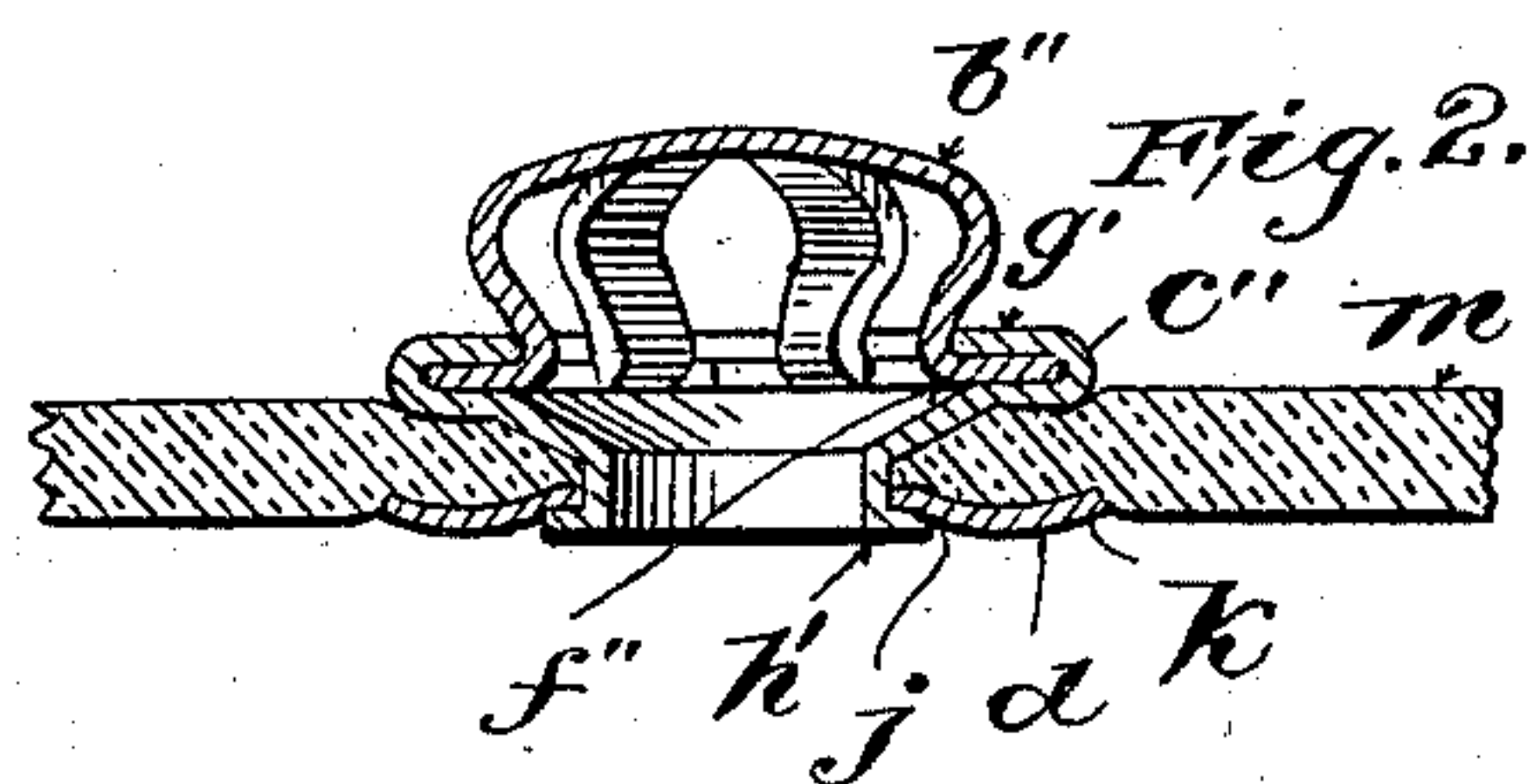
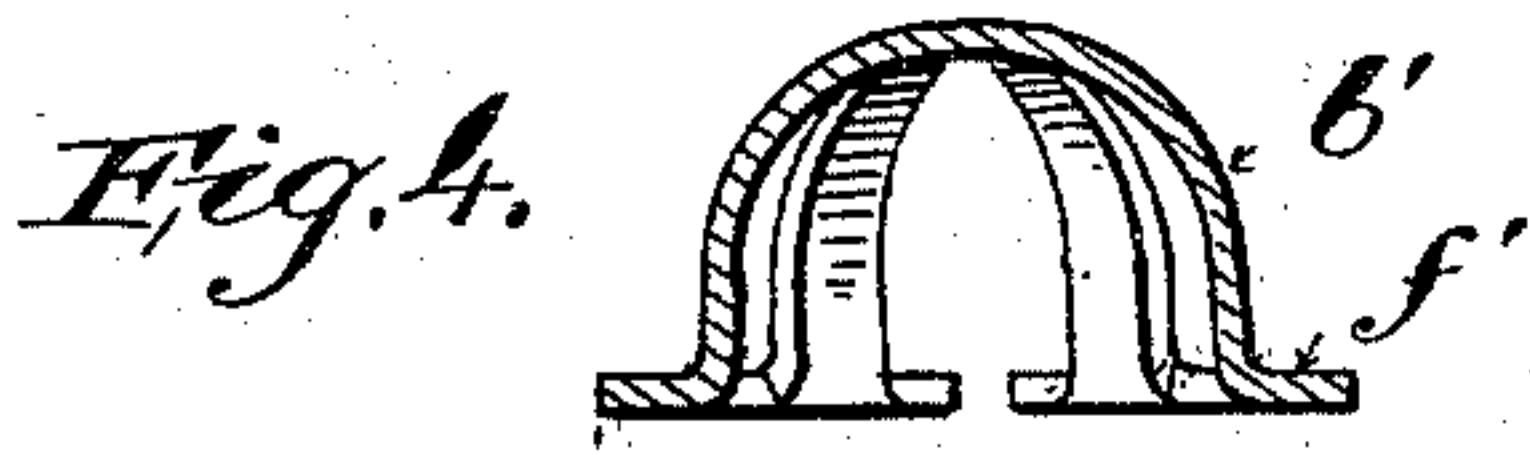
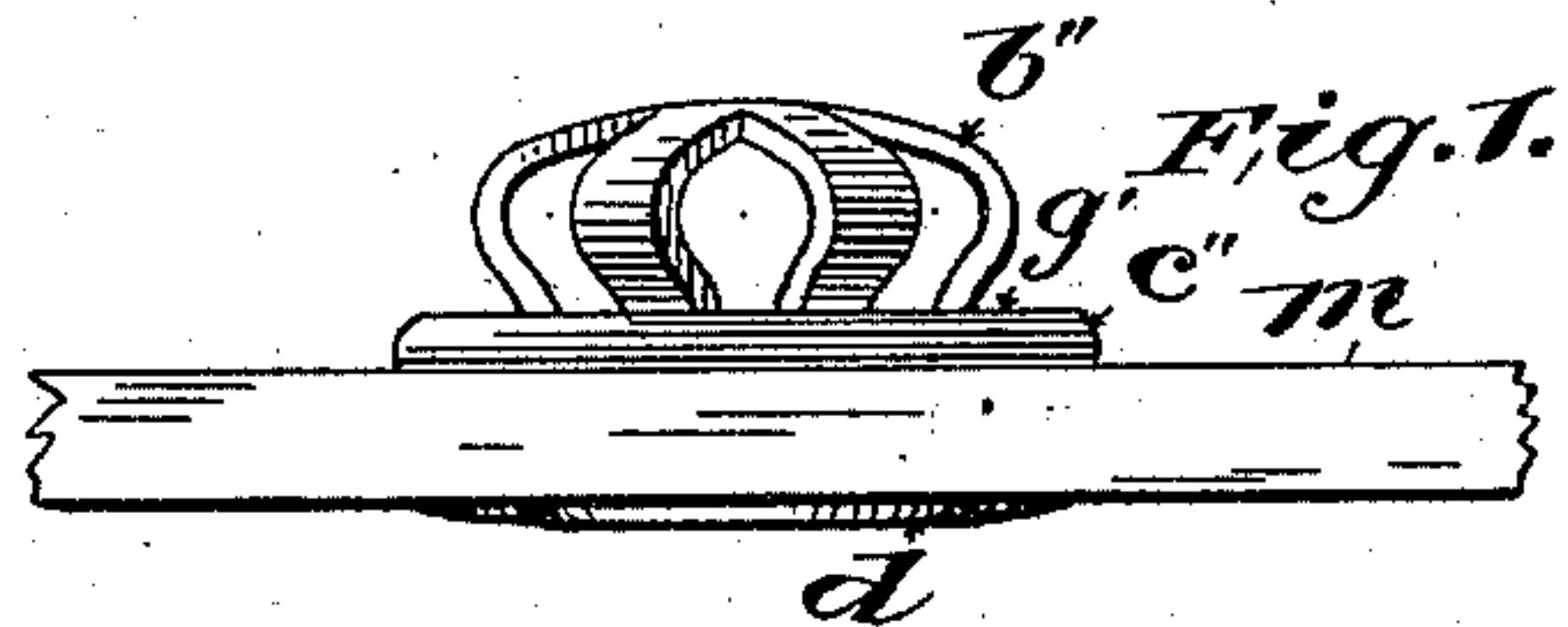
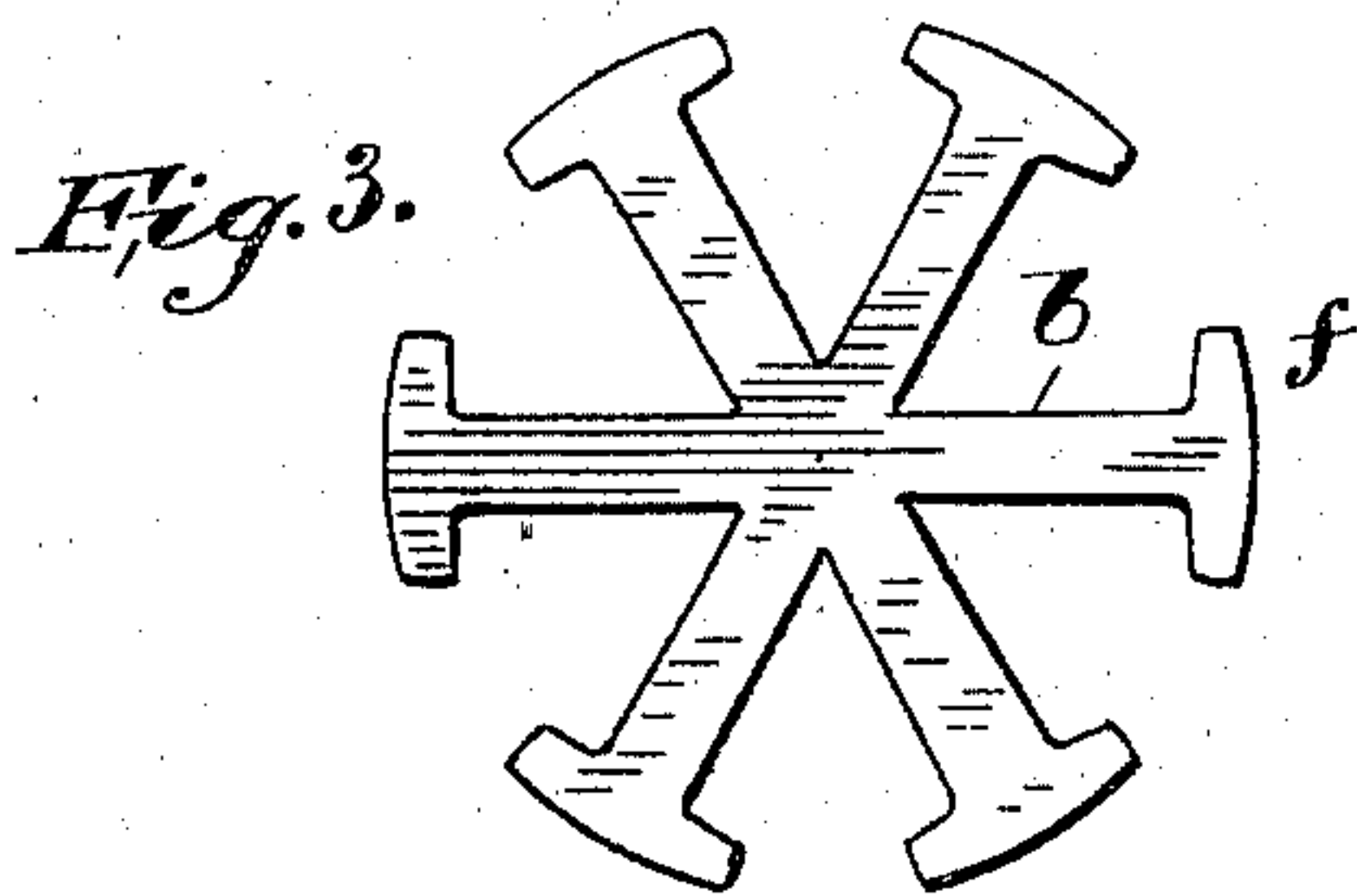
Patented Sept. 24, 1901.

J. R. SMITH.

SPRING STUD FOR GLOVE FASTENERS. &c.

(Application filed Nov. 6, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH R. SMITH, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
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SPRING-STUD FOR GLOVE-FASTENERS, &c.

SPECIFICATION forming part of Letters Patent No. 683,346, dated September 24, 1901.

Application filed November 6, 1900. Serial No. 35,619. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RICHARD SMITH, treasurer of the Waterbury Button Company, manufacturers, residing at Waterbury, in the State of Connecticut, have invented certain new and useful Improvements in Spring-Studs for Glove-Fasteners and other Uses, of which the following is a specification, accompanied by illustrative drawings, showing the best form of the invention only.

In certain types of fasteners for gloves and garments a dome-shaped stud secured to one part of the garment snaps into a socket, eyelet, or cap member secured to the other part of the garment. In some forms the socket is made resilient to receive a rigid stud. In other forms the stud member has been made resilient.

The particular improvement that forms the subject-matter of this present patent application relates to spring-stud members of the type wherein the sides of the spring-stud are slotted or have openings which give the necessary spring or resilience. Frequently such a stud has been formed from a flat blank having six or more arms that are bent to form the dome-shaped stud. In the preferred form of the improved construction that forms the subject-matter of this application such a sheet-metal blank having bent arms is employed. Heretofore it has generally been thought necessary to internally support such a spring-stud by an interior rigid dome or by an annular support or eyelet. I have discovered and invented a construction that entirely avoids the necessity of this and so confines and supports the spring member that it cannot be displaced, and yet the construction is characterized by the greatest simplicity and cheapness of manufacture. In its most preferred form the complete stud comprises only three distinct parts—namely, a six-armed spring-stud member, the spring-arms of which have enlarged ends which abut against each other like the stones in an arch and form a rigid flange; secondly, a rivet member which has a turned-over flange which embraces and secures the flange of the spring-stud member, supporting it beneath, exteriorly, and above, and this rivet member has also a second flange which extends through the fabric and is riveted upon a separate flange member, which constitutes the third

element of the construction. This is the preferred construction, which I will now proceed to explain fully in connection with the accompanying drawings, and I will then point out in the claims the broader aspects of the invention by enumerating the novel and characteristic features which I wish to protect.

Figure 1 is a side elevation of the complete spring-stud attached to a piece of leather or other fabric. Fig. 2 is a vertical cross-section of the same. Fig. 3 shows a flat blank from which the spring portion or stud member is formed. Figs. 4 and 5 are a cross-section and a plan view, respectively, of this spring-stud member at an intermediate stage of its manufacture. Figs. 6 and 7 are a sectional view and a plan view of the rivet member ready to be secured to the other elements. Figs. 8 and 9 are a section and a bottom view of the flange member. Fig. 10 is an elevation of the invention at its stage when the spring-stud member has been secured to the rivet member and its form completed, but before the rivet member has been secured to the fabric. Fig. 11 is a cross-section of the same jointly with the fabric and the flange member all in position ready to be riveted to the fabric.

Throughout the several figures similar letters of reference indicate the same elements or parts of elements, one or more prime-marks being added to the letters to indicate different stages of manufacture.

The blank *b*, from which the spring-stud member is preferably formed, may consist of a six-armed cross or star, as shown in Fig. 3, the arms of which have enlargements *f*, that afterward form the flange-sectors for securing the spring-stud member. In making the improved stud the blank *b* (shown in Fig. 3) may be first bent to the shape shown in Figs. 4 and 5. The rivet member (shown in Figs. 6 and 7) when ready to receive the spring-stud member has two cylindrical flanges *g* and *h*. The flange *h* is for the purpose of riveting it to the fabric, as will be understood from Figs. 11 and 2. The flange *g* receives and fits about the flange-sections *f'* of the spring-stud member, and then the flange is turned inward and pressed tightly down over the flange-sections *f'* into the position shown in Figs. 10 and 11, where it is lettered *g'* and where the flange-sections of the spring-

stud are lettered f'' . Care should be taken that the flange members f'' are all crowded together in close abutting contact and are so held by the turned-over flange g' . This being the case the several flange-sections f'' are all fitted together like the stones of an arch and are self-supported against displacement inward, because no one of them can move inward without its neighbors being moved outward, and as the flange g' absolutely prevents outward movement the entire circular flange, consisting of the several sections f'' , is rigidly held and supported without necessitating any internal annular ring or dome. Preferably in the same operation with the turning over of the flange g' the dome portion of the spring-stud member is crushed down slightly, so as to expand it laterally into its final form shown in Figs. 1, 2, 10, and 11. When the spring-stud member has been thus finished and secured to the rivet member c' , as shown in Fig. 10, it forms a complete article of manufacture ready to be sold to glove manufacturers and others jointly with the flange members d shown in Figs. 8 and 9. These flange members d are preferably concave on the side next to the fabric, so that the outer edge will sink into the fabric and will not only hold the fabric more securely, as shown at k in Fig. 2, but will also give a convex beaded shape to the exposed side of the flange member, improving its appearance and also making it smoother to the touch and less likely to catch on anything. The aperture through the flange member should fit around the flange h of the rivet member, as seen in Fig. 11, and in the immediate vicinity of the aperture it has a flat plane surface j , which forms a seating-flange for the upset end of the flange h when it is upset and riveted, as at h' , in Fig. 2. Consequently after the flange h has been thrust through the fabric m and the ring or flange member d , as in Fig. 11, and after it has been riveted over and compressed against the seating-flange j of the flange member d , the fabric m is compressed and firmly held between the upper portion of the rivet member c'' , Figs. 1 and 2, and the flange member d with the upset flange of the rivet h' . Furthermore, the upset portion of the rivet-flange h' , resting as it does upon the seat j , is flush, or may even lie farther back or above the beaded portion or convex surface of the flange member d , as seen in Figs. 1 and 2, giving an extremely smooth finish which is not liable to catch on foreign bodies or scratch the hand of the wearer, and which in appearance looks merely like a second inner bead upon the flange member d , and which has frequently been mistaken for part of the flange member even when closely examined. While it might be possible by making the flange h' of the rivet member considerably broader to thus do away entirely with the separate flange member d , such an expedient is undesirable and objectionable, because it would then require a very consider-

able expansion of the flange h , Fig. 11, in upsetting it, and this is apt to cause a tearing of the edge of the metal with the consequent roughness and lack of finish.

It will be noticed in Figs. 2, 6, 7, 10, and 11 that the rivet member has a conical portion connecting its two flanges g and h , Figs. 6 and 7. This is important in order that that portion of the rivet member may be sufficiently stiff to resist the crushing action during the riveting over of the flange h . Furthermore, in effecting the riveting the rivet member has to be supported against a riveting pressure by means of its already overturned flange g' , as will be seen from Figs 2, 10, and 11. The conical form of this intermediate portion of the rivet member affords the necessary strength to prevent deformation during the riveting action.

Having now fully described the invention in its most preferred form, I claim, without attempting to enumerate the possible modifications, the following novel and characteristic features as my invention:

1. A spring-stud for glove-fasteners and other uses combining the following three distinct elements, to wit: a spring-stud member provided with spring-arms terminating in a flange for securing it; a rivet member which has a flange embracing and securing the spring-stud member flange and has a second flange riveted over to hold the fabric; and a flange member concave on the side next to the fabric and coöperating with the said riveted-over flange of the rivet member to secure the fabric, substantially as set forth.

2. A spring-stud for glove-fasteners and other uses combining the following three distinct elements, to wit: a spring-stud member which has an exterior flange for securing it; a rivet member in which the said flange is secured; and an annular flange member through which the said rivet member protrudes and upon which it is secured, when turned over and riveted, to hold the fabric, substantially as set forth.

3. A spring-stud member of sheet metal having several arms terminating in enlargements which form an exterior flange for securing it, in combination with a rivet member for securing it to the fabric, which rivet member has a flange extending beneath, around and above the flange of the stud member and holding it exteriorly, confining the said enlargements in close contact with each other and thereby preventing the dislocation interiorly, said rivet member having also a second flange or annular portion to compress the fabric against its first said flange when riveted over, substantially as set forth.

Signed this 2d day of November, 1900, at Waterbury, Connecticut.

JOSEPH R. SMITH.

Witnesses:

A. C. MINTIE,
BERTHA M. PINNEY.