

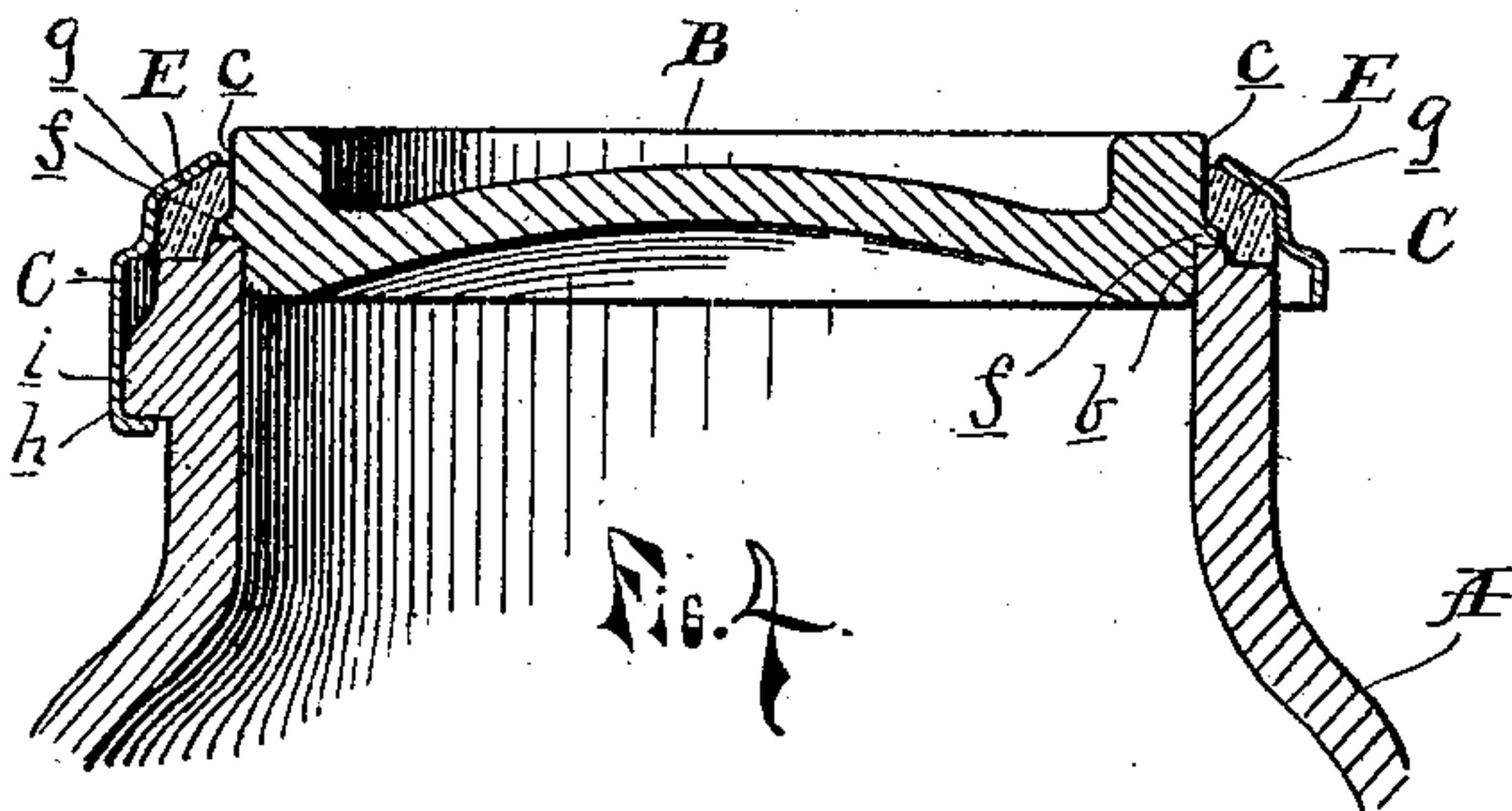
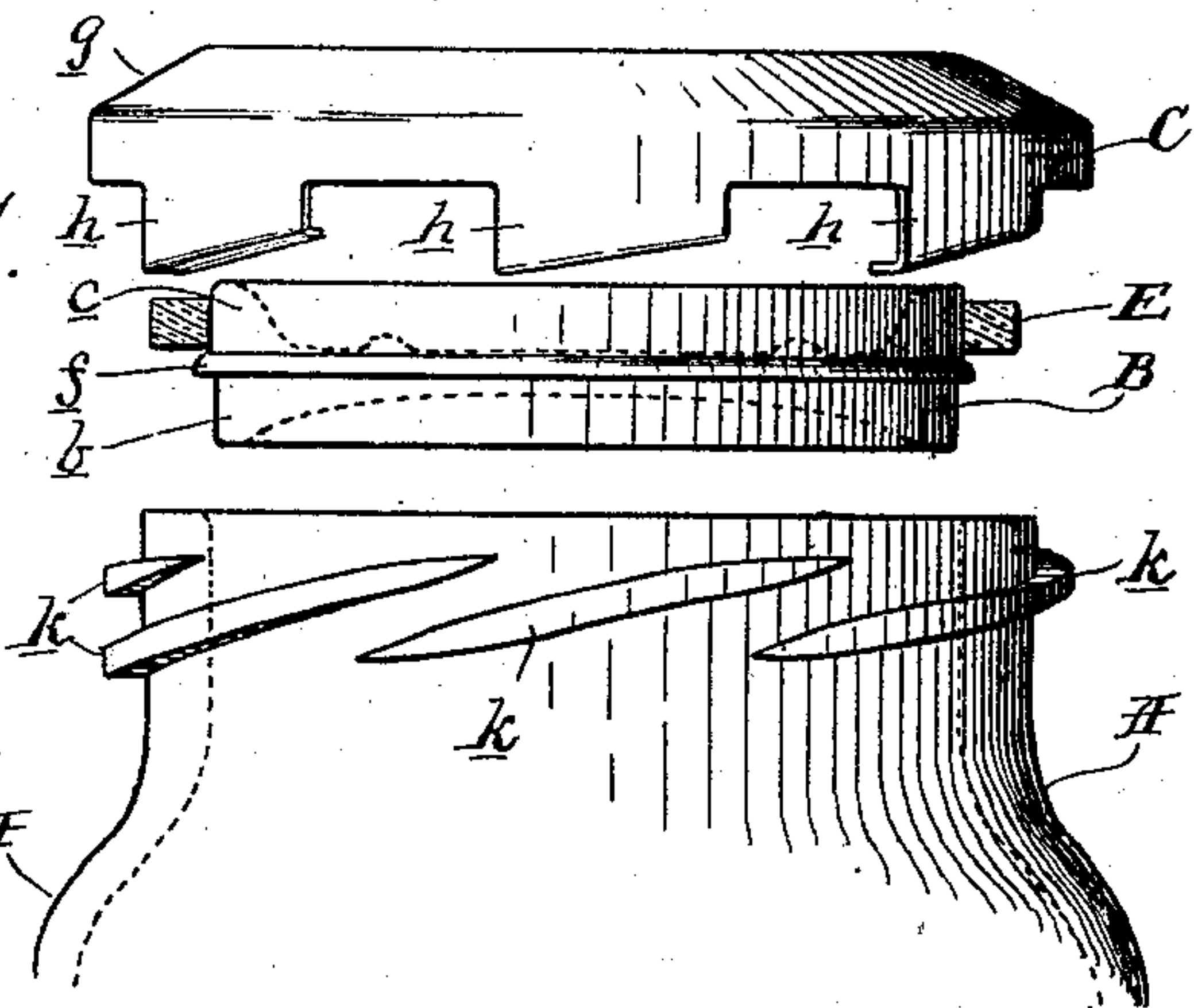
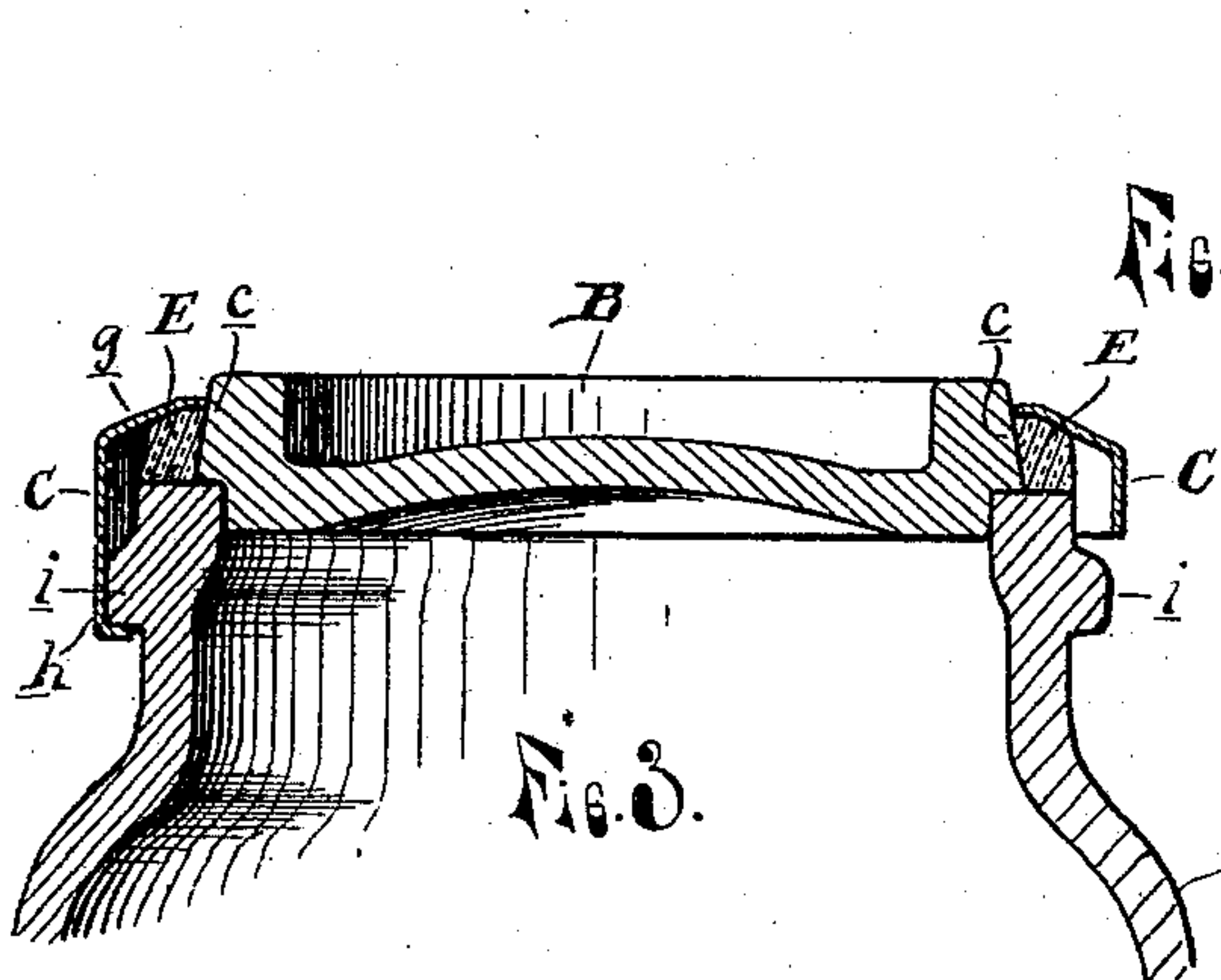
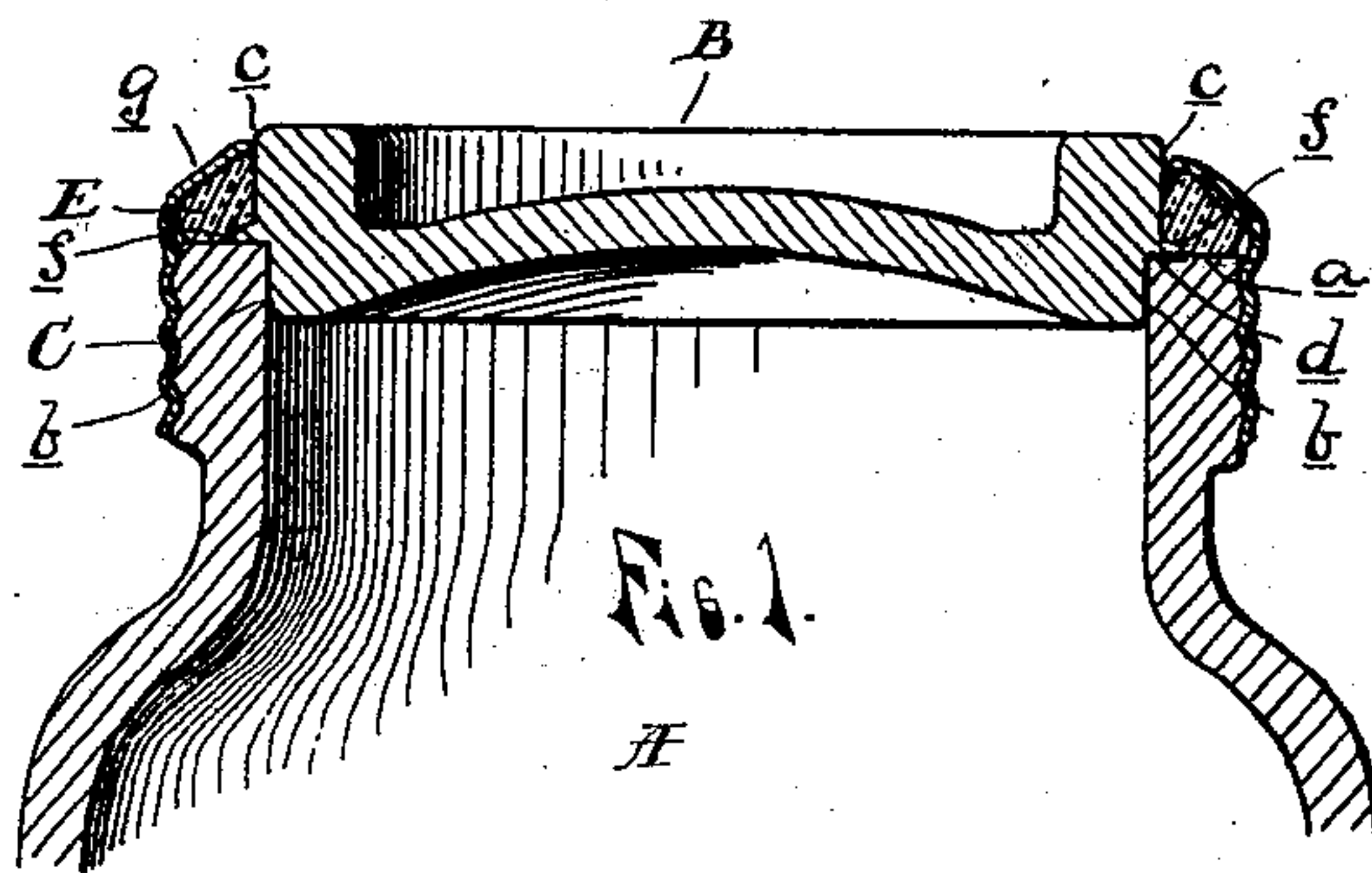
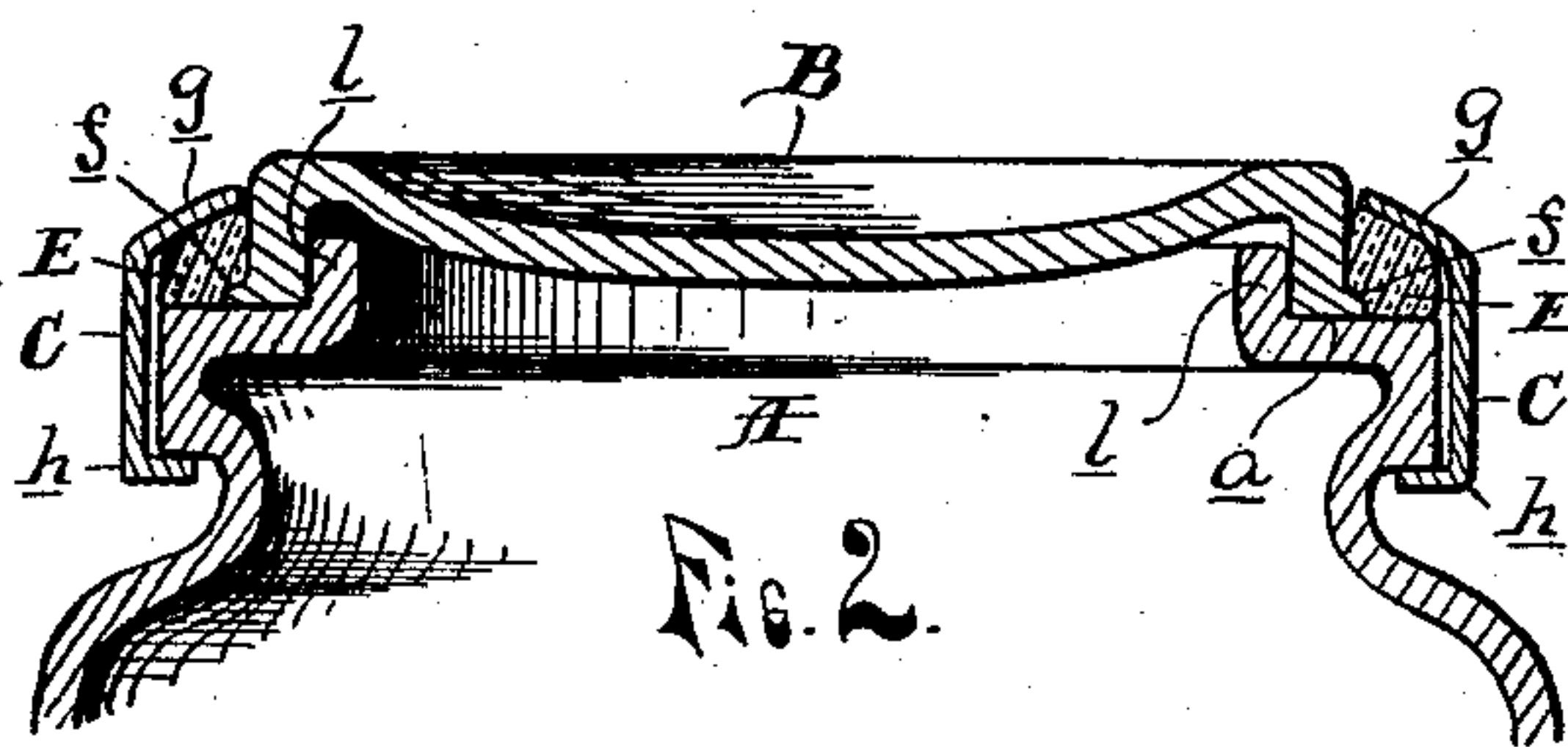
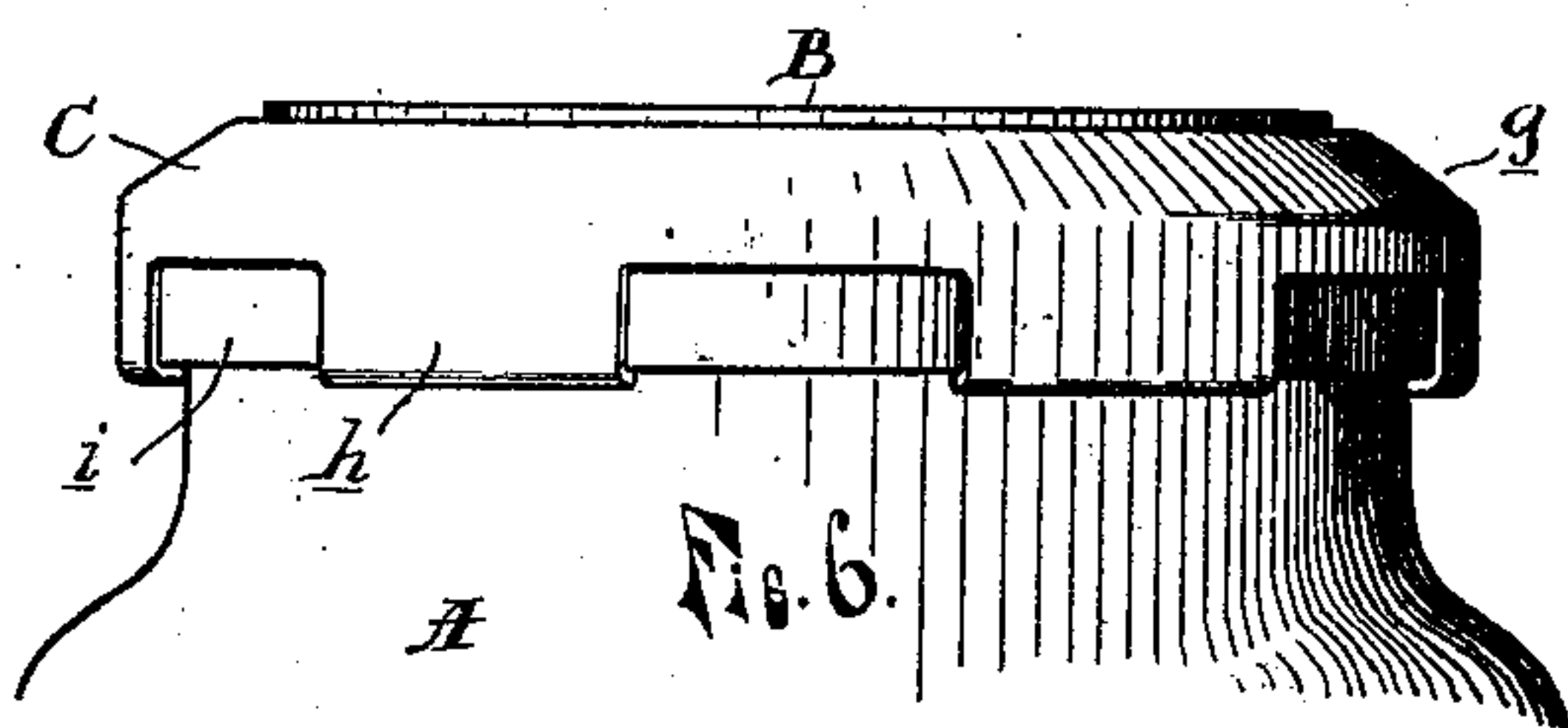
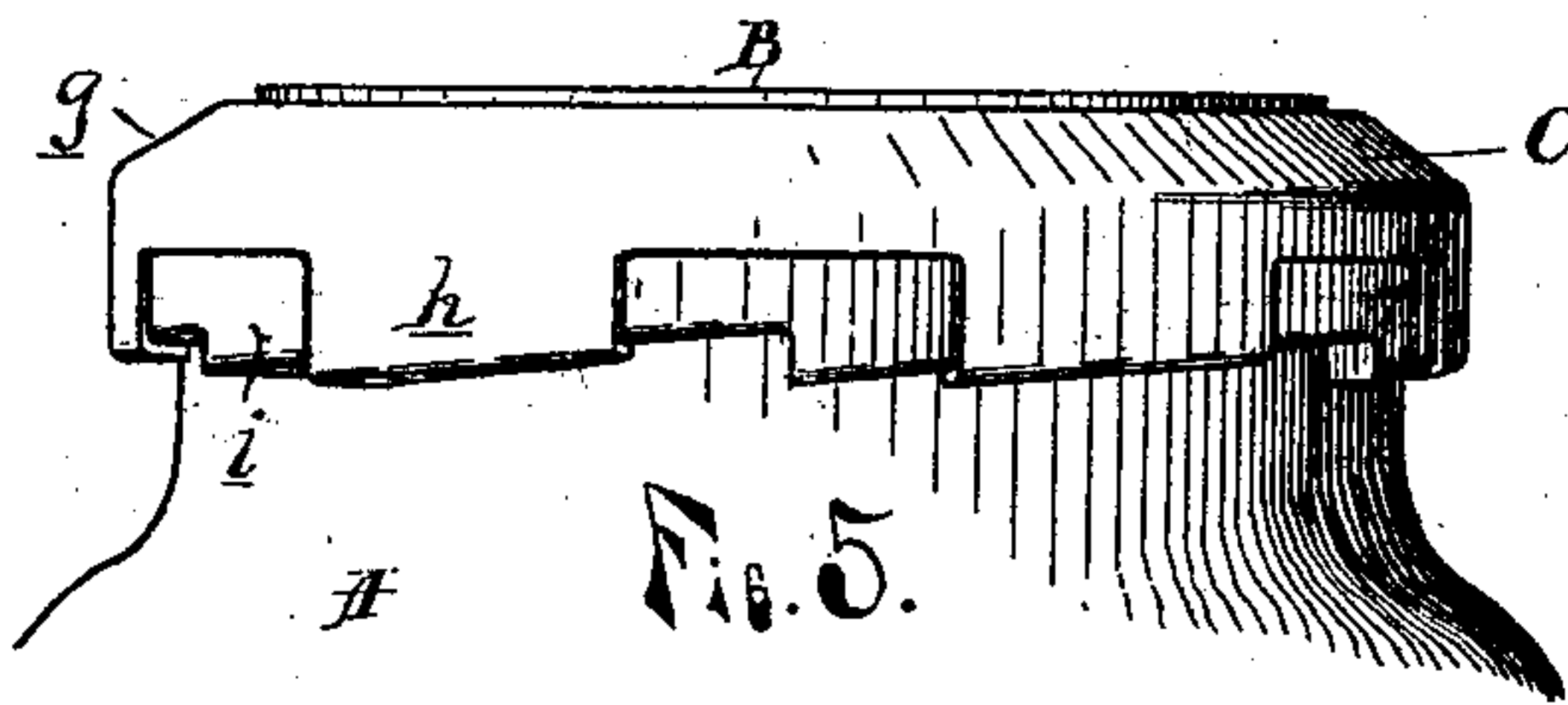
No. 711,452.

Patented Oct. 14, 1902.

R. E. MEYER.
JAR CLOSURE.

(Application filed Jan. 8, 1902.)

(No Model.)



WITNESSES.

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UNITED STATES PATENT OFFICE.

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JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 711,452, dated October 14, 1902.

Application filed January 8, 1902. Serial No. 88,853. (No model.)

To all whom it may concern:

Be it known that I, RICHARD E. MEYER, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Jar-Closures, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a device for closing jars hermetically, such as fruit-jars and similar packages.

There is a class of jar-closures in which the rubber gasket is placed on the outside of the cover and is pressed down upon the joint formed between the jar and the cover by a metal cap. This class of jar-closures, which may be called "outside" closures, have the advantage that the seal is more readily broken than in the construction in which the gasket is interposed between the mouth of the jar and the cover and which may be called "inside" closures. The outside closures have also the advantage over the inside closures that the rubber gasket is not in direct contact with the contents of the jar. As typical examples of the outside closures may be cited the Rogers jar patent, No. 228,938, and the Bennett jar patent, No. 96,869. The trouble is especially with the glass covers. Although cast in molds, they will shrink unevenly and warp more or less, and such faulty covers are the main cause of failure of many jar-closures. As the glass-jar manufacturers seem to be unable to remedy this defect, it is up to the inventor to make a jar-closure which in spite of such defects will make a perfect hermetic seal.

40 The object of my invention is to produce such a closure on the type of the outside closure; and to this end my invention consists in the particular construction hereinafter described, and shown in the accompanying drawings, in which—

45 Figures 1, 2, 3, and 4 are all vertical central sections of a jar-closure embodying my invention in four different modifications. Figs. 5 and 6 represent elevations of the jar-closures shown in Figs. 2, 3, and 4, showing different means for fastening the cap; and Fig. 7 is an elevation of the different parts forming the jar-closure detached, involving

also a slight modification of the constructions shown in the other figures of the drawings.

A represents the mouth of a fruit-jar. 55

B represents a glass cover.

C represents a metal cap, and E represents the rubber gasket.

Referring more particularly to Fig. 1, the mouth of the jar is formed with a horizontal seat *a*, and the cover is formed with two distinct rim portions *b c*, forming between them a horizontal annular shoulder *d*, on which the cover is supported upon the seat *a*, with the rim portion *b* extending into the mouth 65 of the jar and with the other rim portion *c* extending above the seat *a* sufficiently to hold the rubber gasket E in position upon the cover, said rubber gasket being, preferably, of rectangular cross-section, as shown. The shoulder *d*, as shown in Fig. 1, is partly 70 formed by a small projecting bead *f*—that is to say, the rim portion *c* is but of slightly-larger diameter than the rim portion *b*—and the remainder of the shoulder is formed by the underside of the projecting bead. However, the shoulder *d* may be entirely formed by the bead *f*. The cap C is formed with an annular angularly-inclined top flange *g*, which projects inwardly and leaves a sufficient opening in the top of the cap for the rim portion *c* of the cover to pass through. The vertically-depending portion of the cap is suitably formed into a fastening device for the cover. Any of the known means for fastening the cap 85 may be used—as, for instance, in Fig. 1 it may be formed with a screw-threaded portion adapted to engage with suitable screw-threads formed on the outside of the jar, as in the well-known Mason fruit-jar, or the cap may be formed with depending hook-shaped portions *h*, as shown in the other figures, and the jar may be correspondingly provided on the outside with suitable cam-lugs to engage therewith, as in the various forms of the so-called "bayonet-couplings." In Figs. 5 and 6 the jar is provided with a continuous flange *i*, which may form either a continuous annular shoulder for the hooks of the cover to engage with, as in Fig. 6, or the shoulder may 100 be formed by a series of inclines, as in Fig. 5. As all these different forms of fastening devices and their manner of operating are so well-known and do not form any part of my

invention, a further description is deemed unnecessary. In Fig. 7 I show, however, a fastening device which I consider to be particularly adapted for the construction of my jar-closure for domestic use. In this construction the cap is formed with hook-shaped depending portions *h*, as in Fig. 5; but the jar is formed with a series of multiple short screw-threads or cam-lugs *k*, which overlap each other. This construction is not so liable as others to result in injury to the hooks of the cap by unskilful manipulation, as the cap in screwing it on or off is always guided by the lugs.

My invention is capable of several modifications. Thus in Fig. 2 the mouth of the jar is provided with an upward flange *l*, which projects above the seat *a* into a recess formed on the under side of the cover, thereby holding the cover against lateral displacement. The cover is also formed with the small bead *f*. In Fig. 3 the bead *f* is omitted, but in lieu thereof the rim portion *c* of the cover has the outer face inclined, which in a measure is the equivalent of the bead. In Fig. 4 the seat *a* is formed with a step whereby the portion on which the cover is seated is made somewhat higher than the portion on which the rubber is seated. It will be seen, however, that all the different modifications have the same characteristic—that is, the joint upon which the seat *a* and the shoulder on the cover meet is a horizontal joint and the flange *g* of the cap presses the rubber gasket precisely in the same manner against the joint.

The parts being constructed as shown and described, they are intended to operate as follows: The space in which the rubber gasket is confined is in substance a triangular space—that is to say, the rubber is held mainly between the seat *a*, the outer face of the rim *c* and bead *f*, and the inclined flange *g* of the cover. When the cap is therefore screwed down, the rubber becomes, in effect, a flexible wedge, and as the pressure of the inclined flange is mainly in the center line of the wedge (the rubber being of rectangular cross-section while the joint is at the point of the wedge) it will be readily understood that the flow of the rubber is strongest against the joint and equally directed against the seat *a* and the bead *f* and the adjacent portion of the rim *c*. It will therefore make no difference if the parts of the joint between the cover and jar are more or less imperfect, as would be the case if the cover is warped, so that the bead *f* is only in contact with portions of the seat *a*. The point of the flexible wedge formed by the rubber gasket being directed against the joint will always seal it, and the pressure of the rubber upon the bead

f is sufficient to hold the cover down if the rubber should be forced into the joint itself where such joint is imperfect.

Those familiar with the fruit-jar trade and acquainted with the trouble arising from the causes I have pointed out will readily understand and appreciate my invention.

What I claim as my invention is—

1. In a jar-closure in which the hermetic seal is formed upon the outside of the jar and cover, the combination of a jar formed with a horizontal annular bearing-face around the mouth of the jar, a cover formed with a vertical bearing-face for the rubber gasket and with a horizontal shoulder below said bearing-face adapted to seat the cover upon the inner marginal portion of the bearing-face of the jar whereby a portion of said bearing-face extends beyond the shoulder and bearing-face of the cover and forms a bearing for the rubber gasket upon the jar, a projecting bead upon the cover at the base of its vertical bearing-face, a rubber gasket adapted to seat against the respective bearing-faces of the jar and cover when the jar is closed and a metallic cap provided with means for securing it to the mouth of the jar, said cap formed with an inclined bearing-flange for the rubber, whereby when the cover is pressed down upon the rubber gasket, said gasket is confined in a substantially triangular space formed by said bearing-flange of the cover and the respective bearing-flanges on the jar and cover, substantially as described.

2. In a jar-closure in which the hermetic seal is formed upon the outside of the jar and cover, the combination of a jar formed with the bearing-face *a*, the cover *B*, formed with the bearing-face *c* for the rubber and with the shoulder *d* below its bearing-face, adapted to seat the cover upon the marginal inner portion of the bearing-face of the jar, whereby said bearing-face extends beyond the cover and forms a seat *a* for the rubber gasket, a bead *f* at the base of the bearing-face of the cover, a rubber gasket adapted to be seated against the respective bearing-faces of the jar and cover, a metallic cap *C* having an inclined bearing-flange *g* adapted to bear upon the rubber gasket, the dependent hooks *h* formed on said cap and the multiple screw-threads *k* formed below the mouth of the jar and adapted to engage with the dependent hooks of the cap.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD E. MEYER.

Witnesses:

OTTO F. BARTHEL,
LEWIS E. FLANDERS.