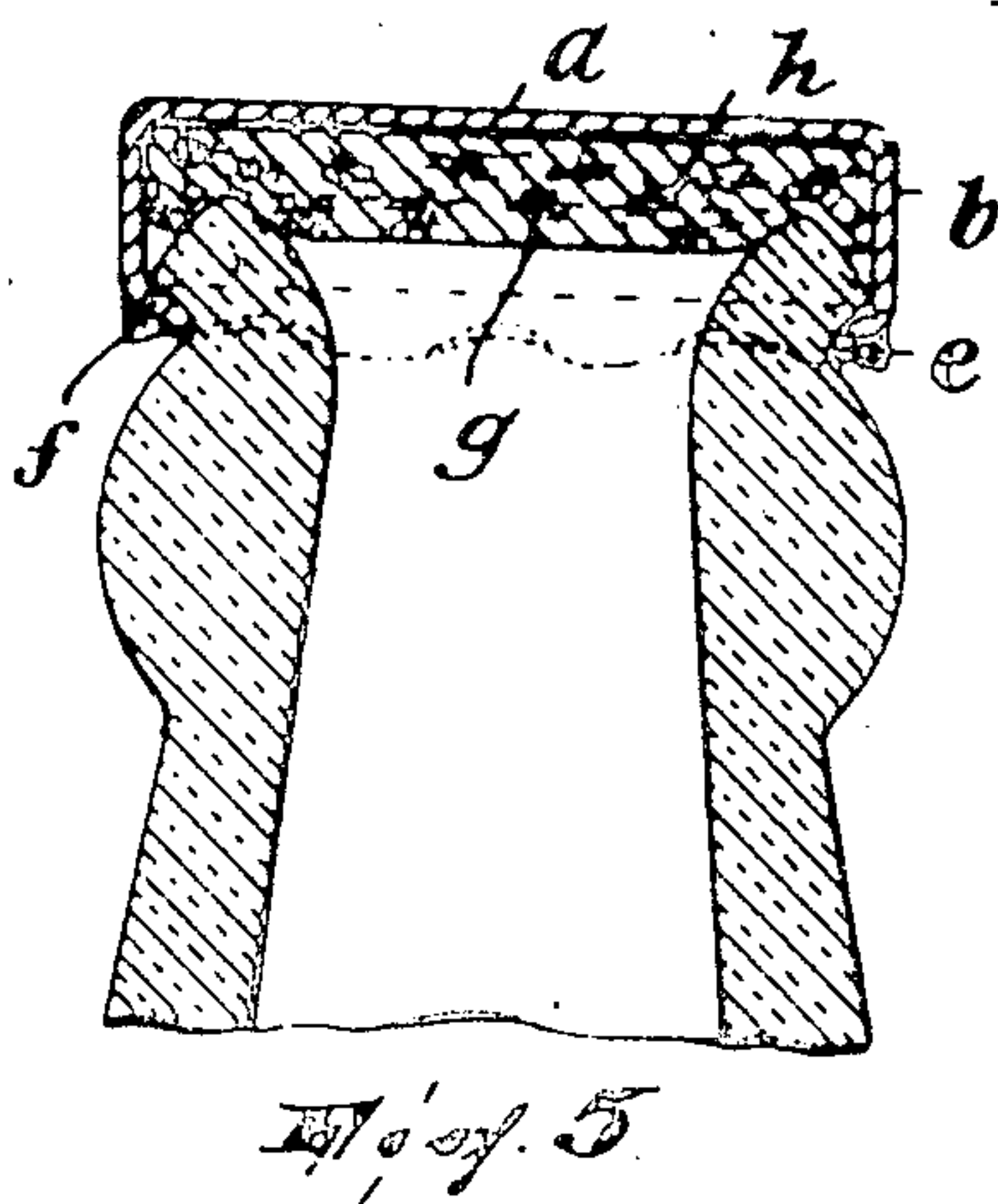
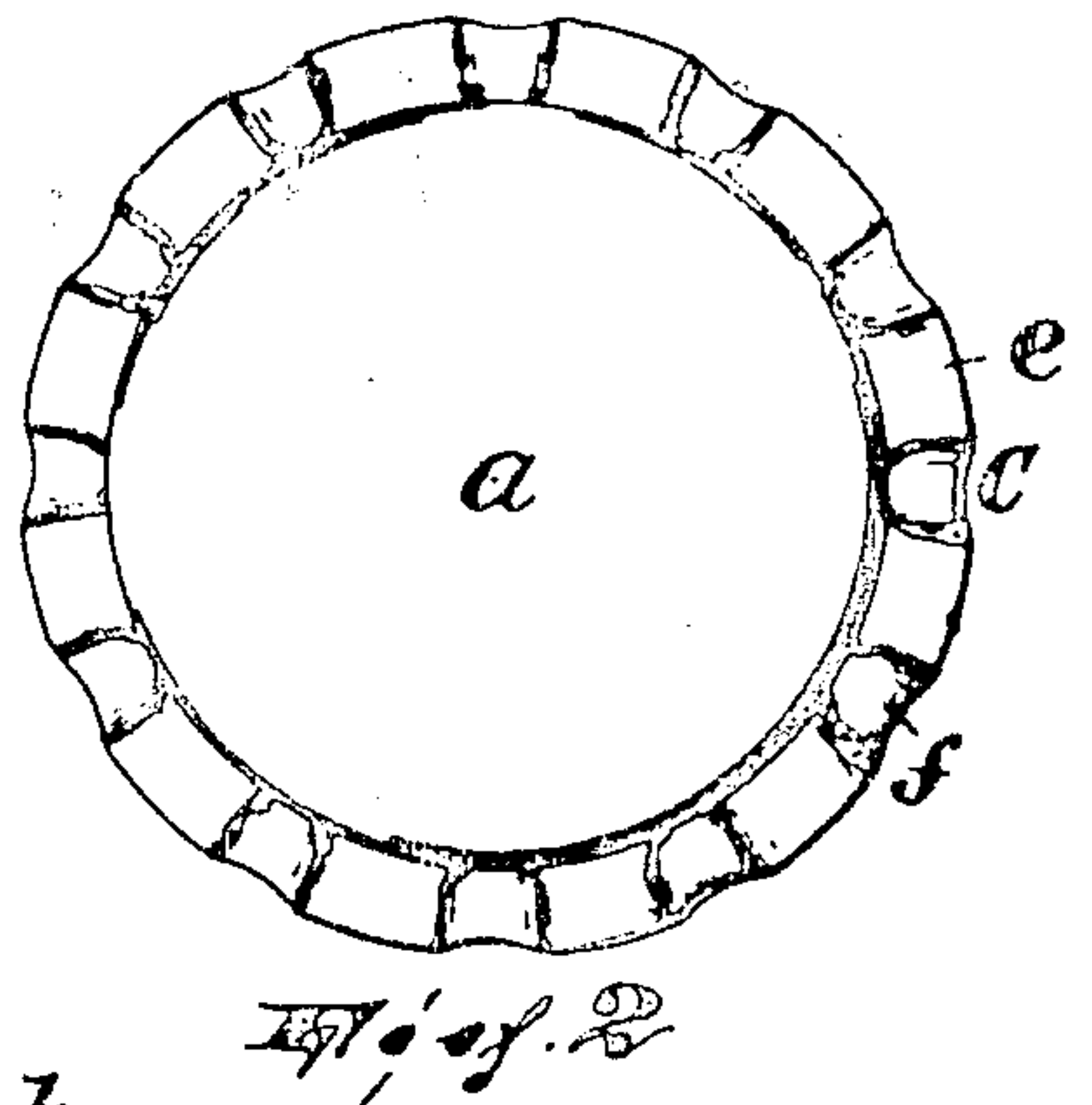
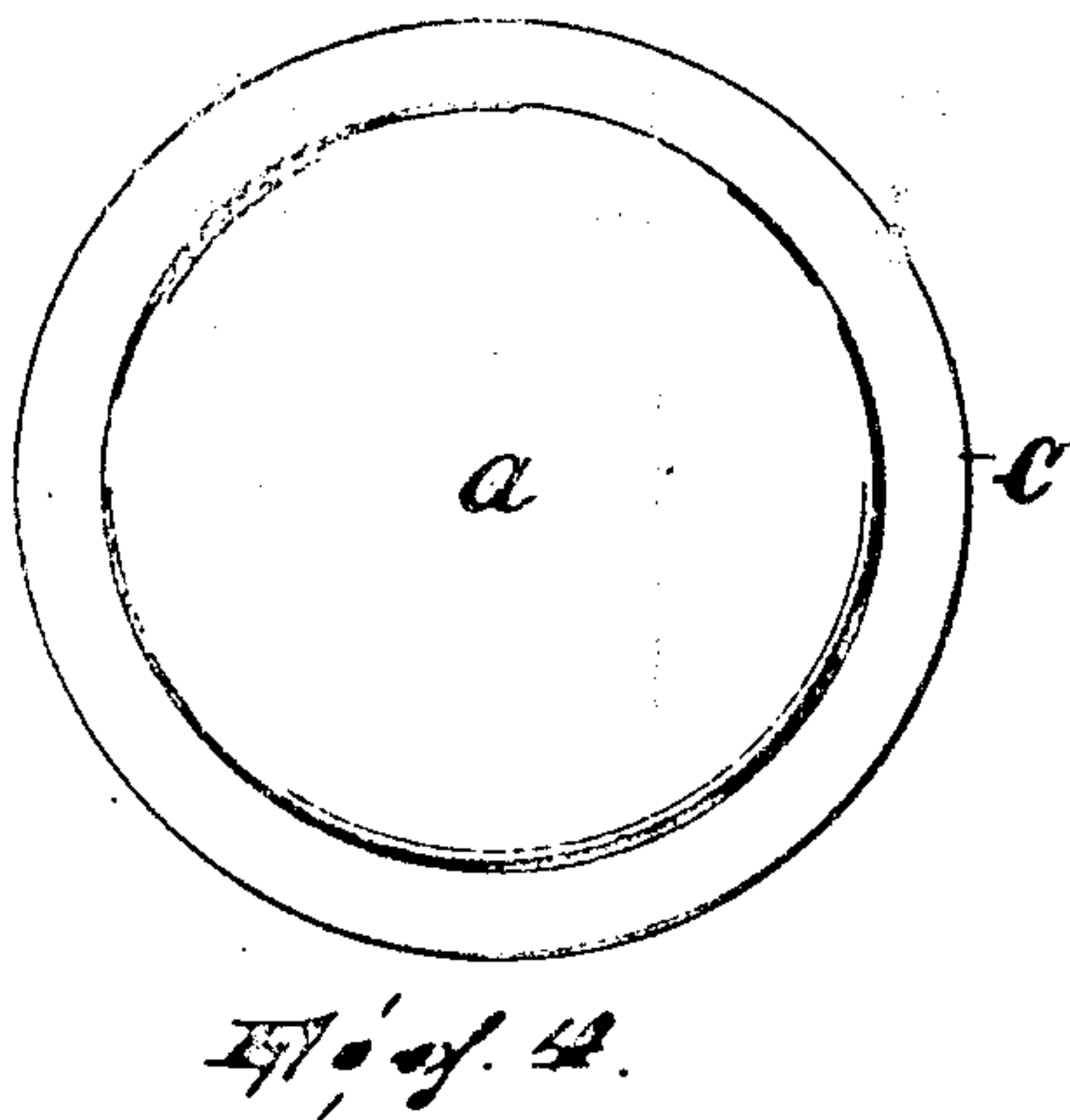
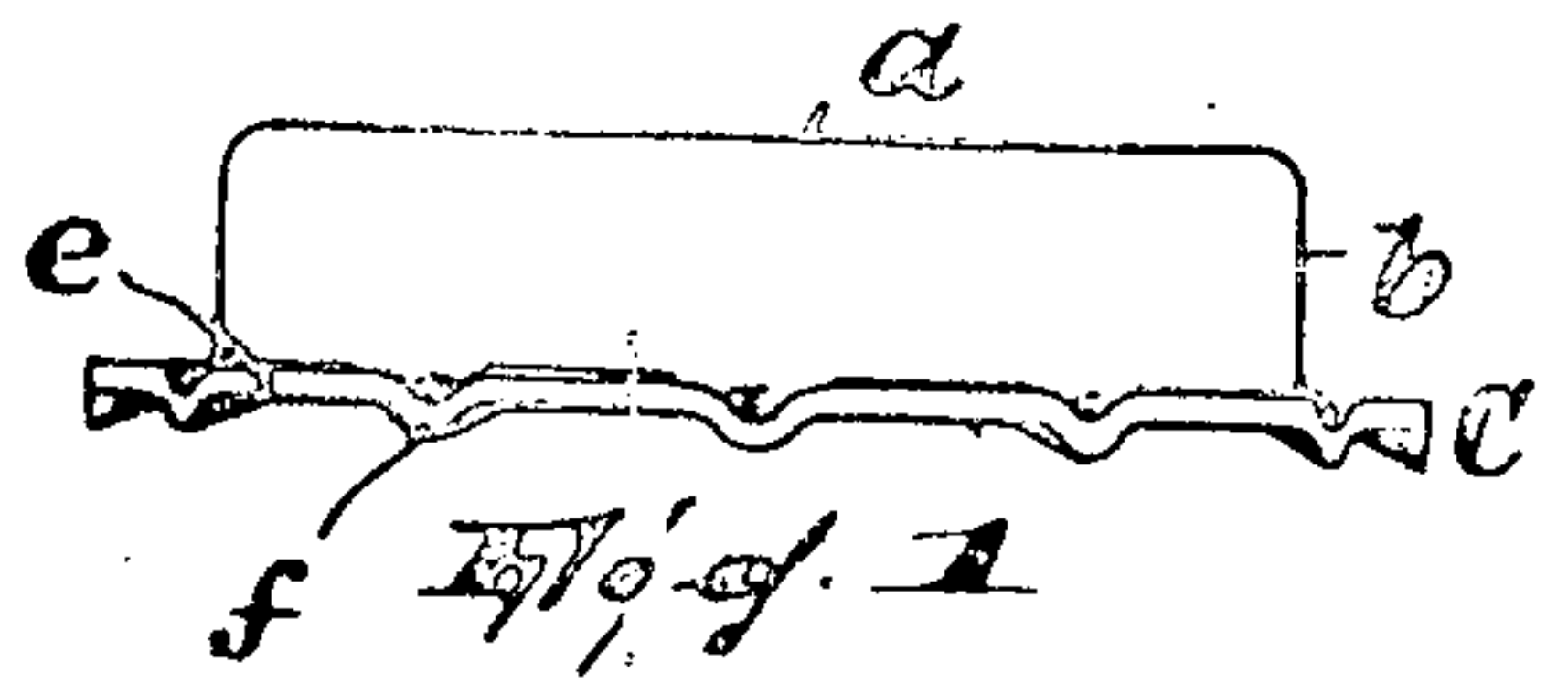
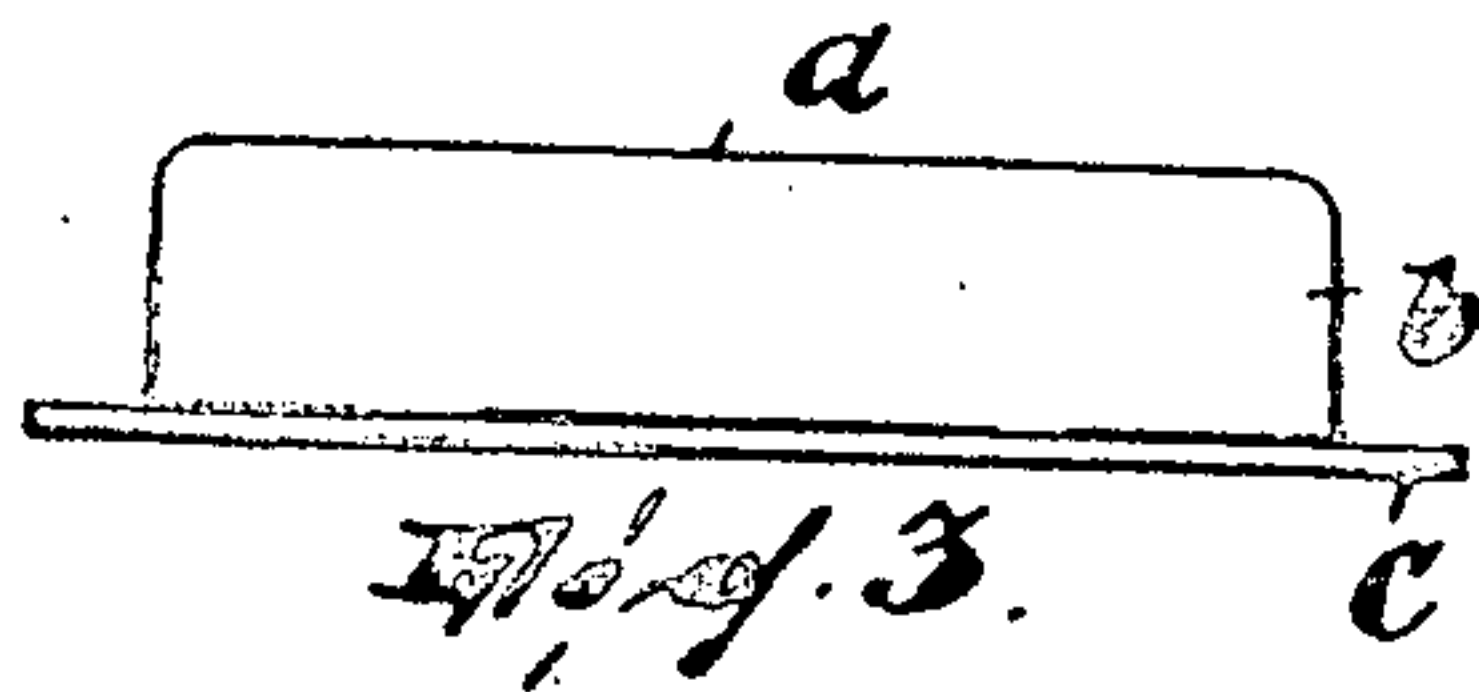


955,380.

Patented Apr. 19, 1910.
1 SHEETS—SHEET 1.



WITNESSES

Wm. Dell.
Chas. Kaufmann.

INVENTOR,

A. Calleson

BY

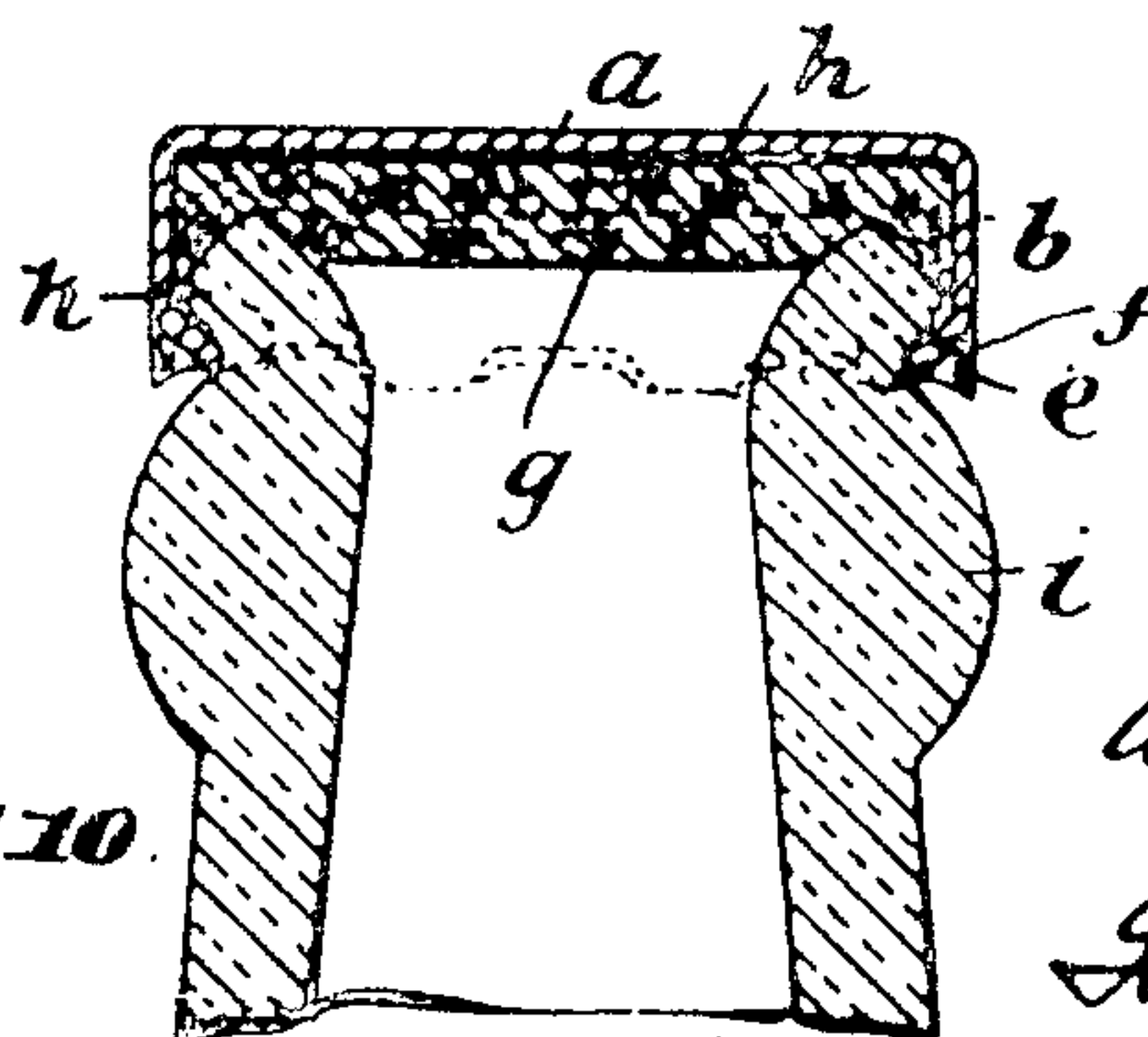
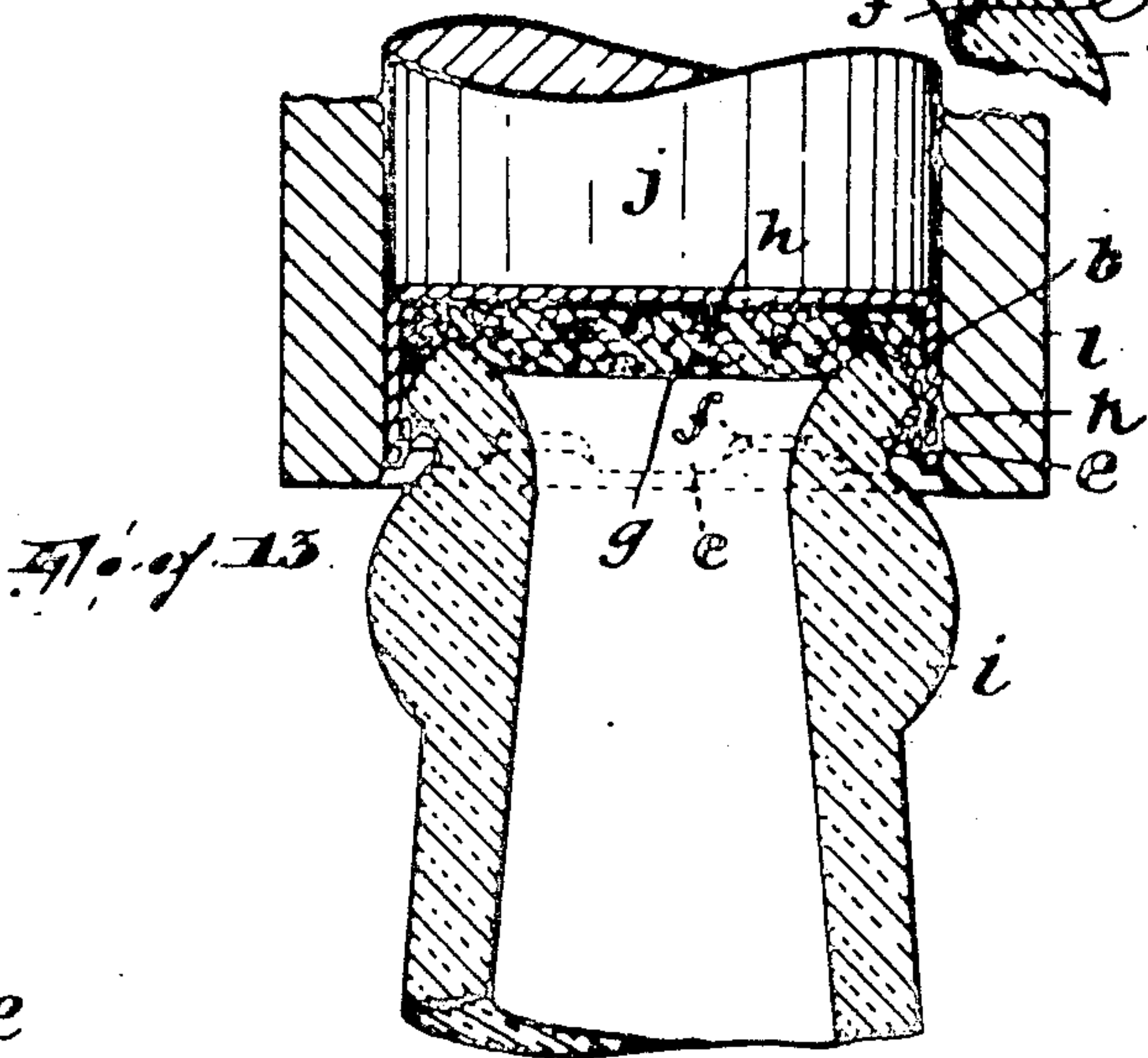
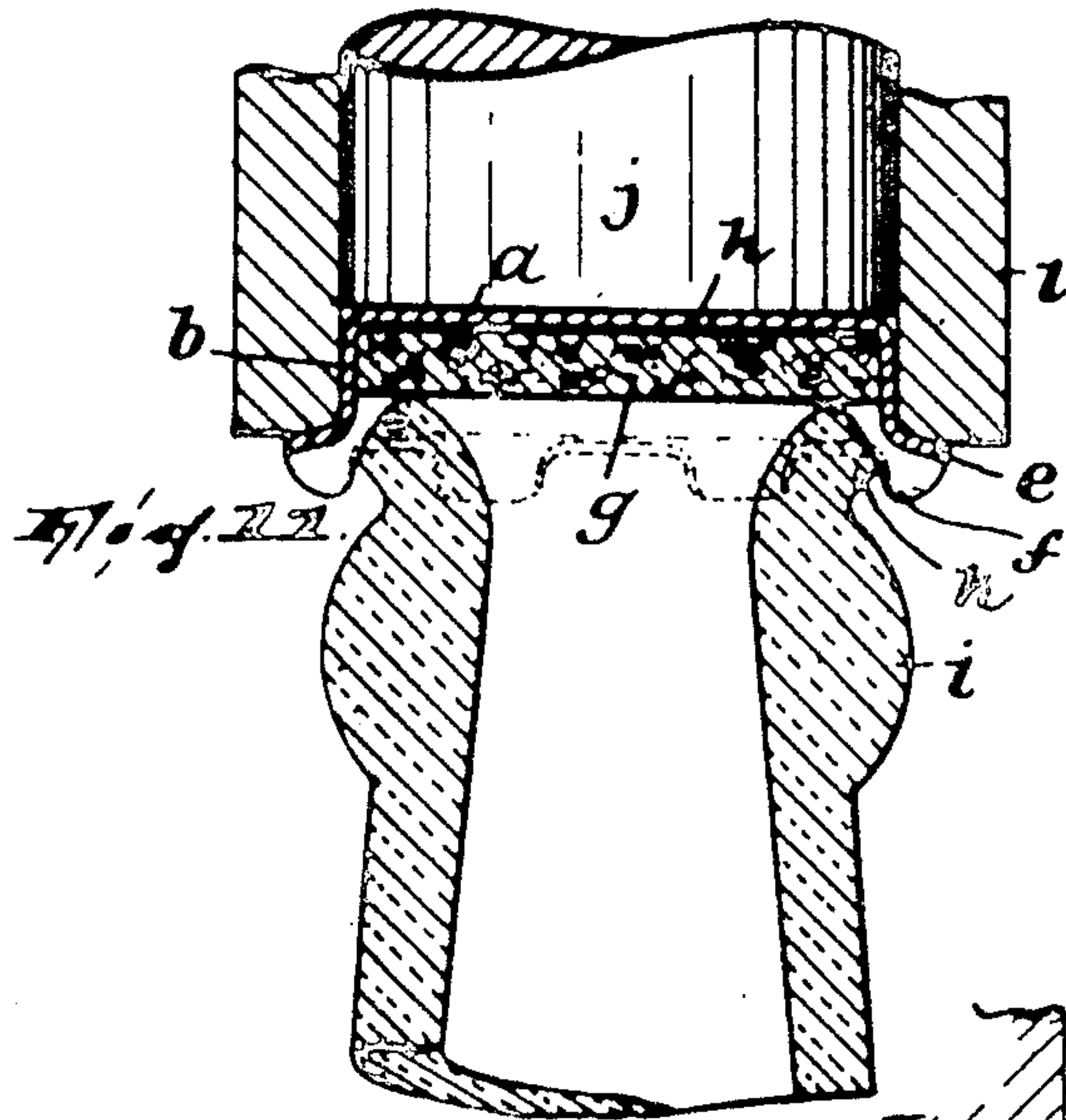
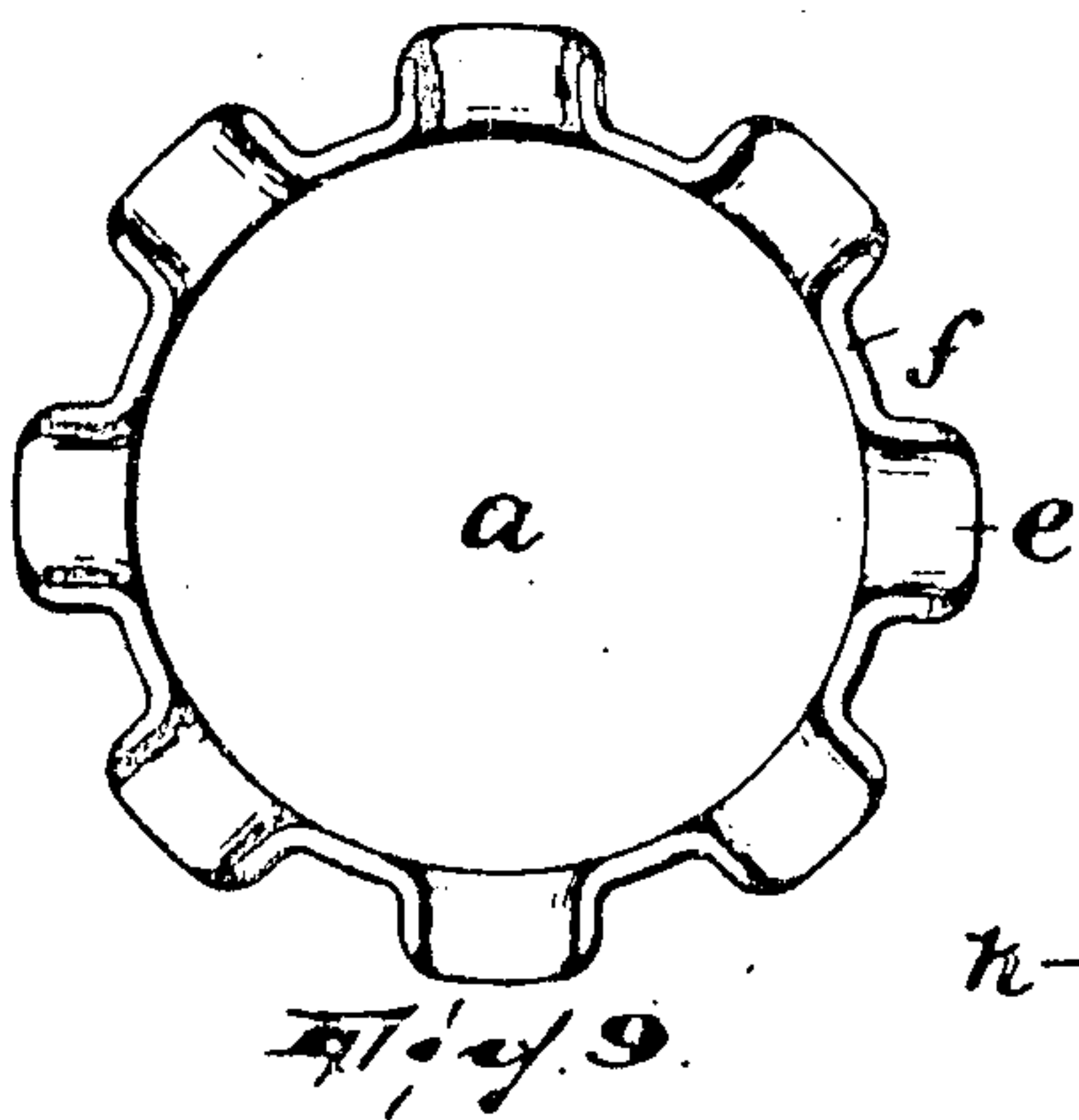
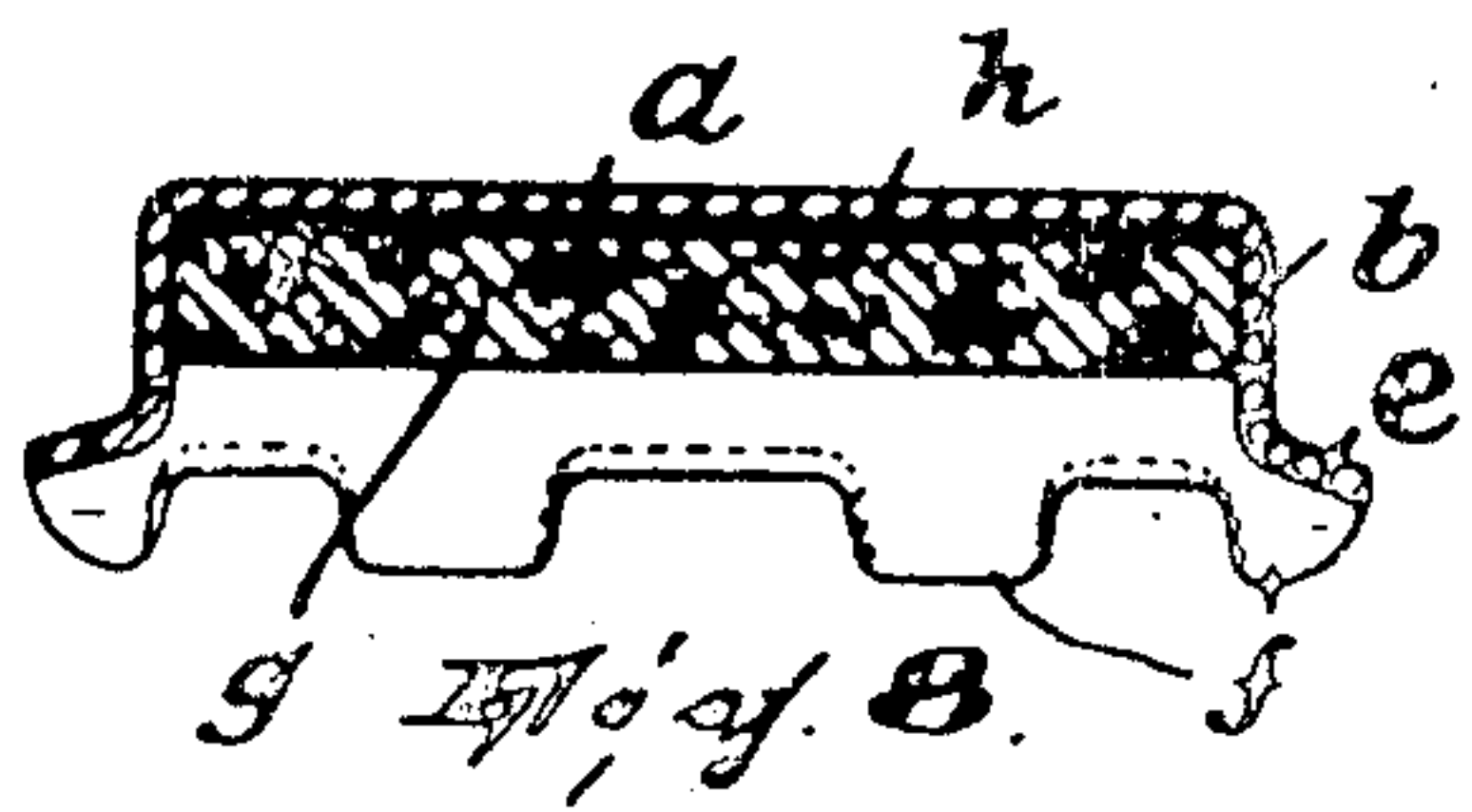
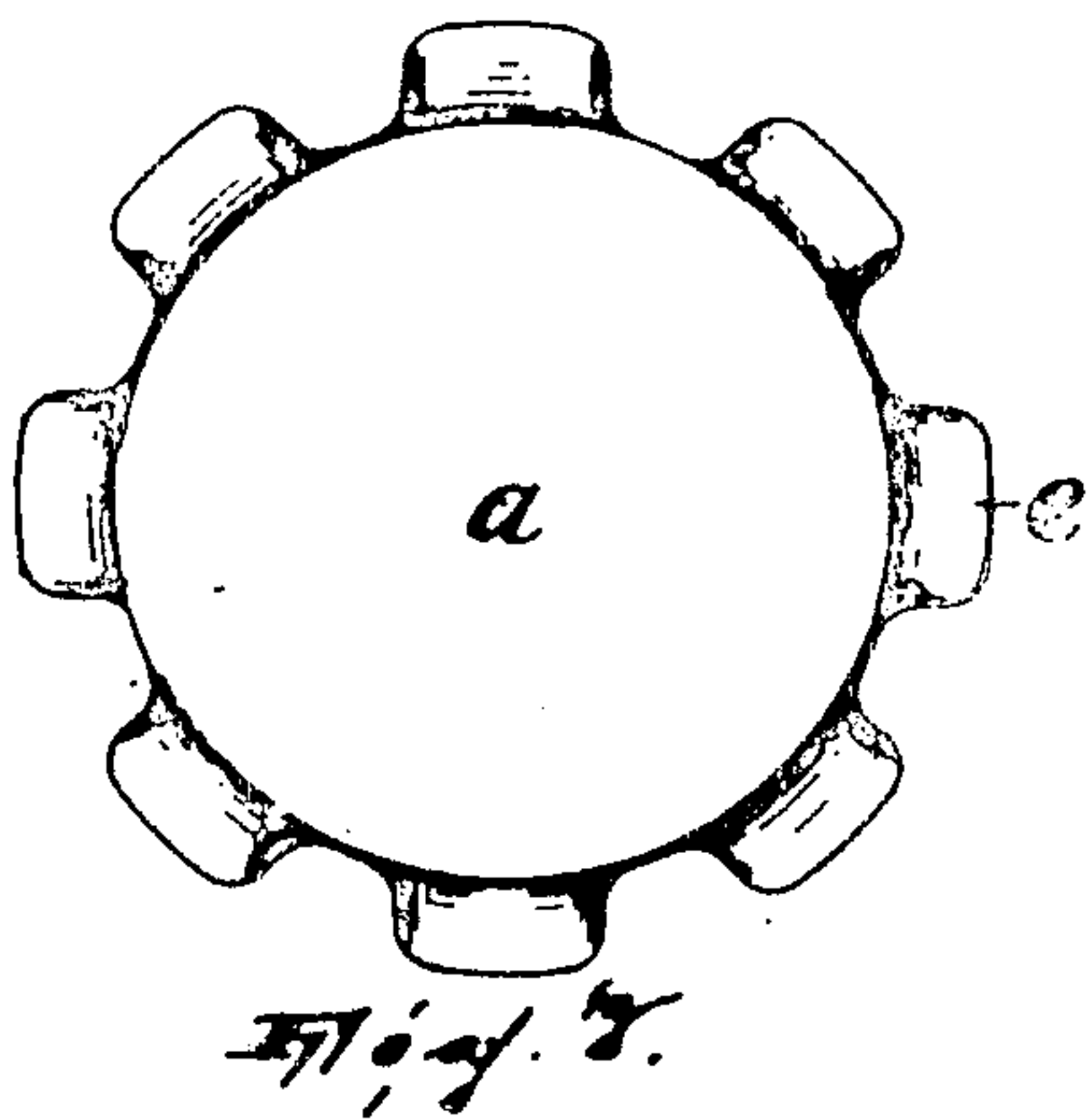
Garties & Sons.
ATTORNEYS.

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BOTTLE CAP.
APPLICATION FILED DEC. 6, 1907.

955,380.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 2.



WITNESSES

Wm. S. Bell Fig. 10.
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UNITED STATES PATENT OFFICE.

AMOS CALLESON, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO BENJAMIN ADRIANCE, OF BROOKLYN, NEW YORK.

BOTTLE-CAP.

955,380.

Specification of Letters Patent: Patented Apr. 19, 1910.

Application filed December 6, 1907. Serial No. 405,343.

To all whom it may concern:

Be it known that I, AMOS CALLESON, a citizen of the United States, residing in Brooklyn, Brooklyn borough, New York, have invented a certain new and useful Improvement in Bottle-Caps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to means for storing liquids of the kind in which the container, such as a bottle, has an exterior shoulder near its mouth and the closure is a cap having its lower edge-portion located under said shoulder on the container.

In order to distinguish my present invention from the prior art as I know it, it may be well to review the essential features of kindred closures heretofore proposed which have come under my observation. A well known type of closure employed in this connection is a cap having its flange or vertical wall crimped, fluted, corrugated or otherwise sinuously shaped so that the inbends produced in such flange or vertical wall serve as the medium directly coacting with the shoulder on the container to lock the cap to the container, while the outbends serve as a means of purchase of a suitable implement for removing the cap. In some instances, the sinuous formation has extended from the lower edge of the flange to, or nearly to, its top (as in the so-called "Crown" cap), thus affecting practically all of the flange. In others, the sinuous formation has been limited only to substantially that portion of the cap which is directly active in locking cooperation with the shoulder on the container. This latter form has the advantage over the first that it will not yield so readily to influences, such as internal pressure, acting to destroy or reduce its interlocking coaction with the shoulder on the container, because, having less vertical dimension in its sinuous portion than the sinuous portion of the form first alluded to, it possesses greater stoutness and rigidity in such sinuous portion; once the sinuous portion is contracted it requires greater force to expand it than in the case of the form first mentioned.

It is to liquid storing means employing this second form of cap that my present invention particularly relates and it distinguishes from structures representing that form in the following way: In place of the cap flange extending substantially straight from its top to its lower edge, the flange has a distinct bend where the sinuous portion thereof merges into the plain upper portion, which bend is localized, i. e., includes a relatively limited part of the vertical dimension of the flange, and affects a relatively large part of the circumference of the flange, although it may be of an interrupted nature, as, for instance, where the inbends of the sinuous portion stand straight or aligned with the upper portion of the flange, as shown in some of the figures of the accompanying drawings, the said bend comprising a series of flexions each located between the upper portion of the flange and extending substantially parallel with the top of the cap; in addition, each outbend and inbend of said sinuous portion is of substantially uniform width from the edge of the flange inwardly to the plane of the flexions. The practical advantages of a cap so constructed are the following: The cap being placed on, and held down in proper relation to, a bottle mouth whereby to form a seal, the interlocking of the sinuous portion of the cap may be effected by a simple downward thrust of a suitable tool adapted to impinge against and displace downwardly and inwardly such sinuous portion with the ultimate effect of forcing the inbends into locking contact under the bottle shoulder, while the outbends stand substantially vertically. The change in position of the sinuous portion from the plane represented by its original position to the plane where its outbends stand in cylindrical disposition is one which has a definitely located moment, so that the metal in its new shape has greater rigidity and stoutness than it would were the flexing thereof not thus localized. Each outbend and inbend being of substantially uniform width from the outer edge of the flange inwardly to the plane of the flexions, the inbends are calculated to engage, with uniform locking effect, with bottle shoulders disposed high or low relatively to the mouths of the bottles.

Referring, now, to the drawings, in which Figures 1 to 5 show one form of cap embodied in my invention and Figs. 6 to 13 show

another form embodied therein, Fig. 1 is a side elevation of the first-mentioned form; Fig. 2 a top plan view; Figs. 3 and 4 are side and top plan views of the first form without its flaring portion having the sinuous formation, which latter, it will be understood, may be imparted to the cap after it has been drawn into the general shape shown in these figures; Fig. 5 is a vertical sectional view of a bottle closed and sealed in accordance with my invention, the cap involved being that shown in the first four figures; Figs. 6 and 7 are side and top plan views of the other form of the cap; Fig. 8 is a vertical sectional view thereof; Fig. 9 an underneath view; Fig. 10 a vertical sectional view of a bottle sealed and closed in accordance with my invention and involving a cap of the two forms above mentioned; and, Figs. 11, 12 and 13 are vertical sectional views illustrating, progressively, the manner in which the cap and bottle are assembled in closing relation to each other.

A cap like that shown in Figs. 3 and 4, having the top wall *a* and depending flange *b*, the lower edge-portion *c* of which is flaring and stands substantially at right angles to the flange *b* (which is substantially plain and cylindrical) may, either during or after the operation of drawing it into shape, have its flaring edge portion *c* made sinuous, thus producing what are herein designated the "out-bends" *e* and "in-bends" *f* projecting, respectively, up and down in the initial form of the cap. Or, referring to Figs. 6 to 13, instead of the flaring edge portion *c* projecting at a right angle to the flange *b* of the cap, it may stand somewhat inclined downwardly; so far as the sinuous formation of the flaring portion *c* is concerned, it should be understood that there is no difference in the form shown in Figs. 6 to 13 over the form shown in Figs. 1 to 5 except that, since the incline of the flaring edge portion *c* in the former case results in the reduction of its diameter, the displacement of the metal involved in such flaring portion manifests itself in the relative deepening of the in-bends and heightening of the out-bends, so that the sinuous formation is more marked or acute. In short, if the edge-portion *c* of the cap shown in Figs. 1 to 5 were drawn downwardly to assume the incline represented in the edge-portion of the cap shown in Figs. 6 to 13, its sinuous formation would be substantially identical to that shown in Figs. 6 to 13. The advantage of the form shown in Figs. 1 to 5 over that shown in Figs. 6 to 13 is that it gives the working tool a better initial bearing and that it accentuates the angle existing between the edge-portion and the flange *b* of the cap and more sharply localizes the plane of flexing.

In Figs. 6 to 9 the outbends and inbends

are all relatively wide; this increases the resilience of the sinuous portion of the cap, reducing the danger of fracturing the bottle head, and at the same time affords a broad contact for each inbend with the bottle shoulder, having for its effect to augment the grip of the cap on the bottle head while permitting the cap to be removed with greater facility than would be the case if the inbends were relatively narrow.

Referring to Figs. 11 to 13, in the operation of closing and sealing a bottle by means of my improved cap, the cap (which it will be understood has the usual cork lining disk or the like *g* and paper disk *h* interposed between the top wall *a* of the cap and said cork disk) being placed on the mouth of the bottle *i* in the position shown in Fig. 11, may be pressed down against the same, to the extent necessary to insure the proper sealing contact, by a suitable plunger *j*; this brings the flaring edge-portion *c* of the cap down to about the plane of the annular exterior shoulder *k* of the bottle. Thereupon, a tool *l*, which may be cylindrical in form and is adapted to slip over the upper part of the cap and bear against its edge-portion *c*, is made to effect a downward thrust. The result of this is that the sinuous flaring edge-portion *c* is, as to every radial part thereof, displaced about an annular axis which is located definitely where the flaring portion merges into the upper part of the flange *b*, leaving the high parts of the out-bends *e* substantially aligned with the flange *b* while the inbends are moved in under the shoulder *k* of the bottle. The cap is thus made to change its form entirely, and in place of having a flaring edge-portion, it now has, in side elevation, a cylindrical form; moreover, the upper or plain part of the flange is practically uninvolved in the action of the applying tool, which exerts itself only upon the sinuous edge-portion. Again, in place of surfaces more or less remote from the edge of the flange on the inside thereof being brought to bear against the under side of the shoulder *k*, it is rather the edge-portions of the in-bends *f* which engage the shoulder. As a result of this, and also of the fact that the edge-portion of the flange is alone moved in effecting locking contact with the shoulder on the bottle, the cap is adapted to a greater range of variations in the diameter of locking shoulders than is possible in other bottle caps of the general class in question. Furthermore, the hold or grip of the cap on the bottle is more secure and thus capable of standing greater internal pressures. It will be understood that the out-bends, being left standing as aligned portions of the flange *b* in the final result of the operation of the tool *l*, then serve as a means of purchase for an opening implement.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:

1. As an article of manufacture, a closure
5 for containers consisting of a cap having the
lower portion of its flange sinuous in form
and having flexions located between said
lower portion and the upper portion of the
flange and each above an outbend of the
10 sinuous lower portion, each flexion extend-
ing substantially parallel with the top of the
cap and each inbend of said sinuous portion
being of substantially uniform width from
the outer edge of the latter to the horizontal
15 plane represented by said flexions, substan-
tially as described.

2. As an article of manufacture, a closure
for containers consisting of a cap having the

lower portion of its flange sinuous in form
and having flexions located between said 20
lower portion and the upper portion of the
flange and each above an outbend of the
sinuous lower portion, each flexion extend-
ing substantially parallel with the top of
the cap and each inbend of said sinuous por- 25
tion being relatively wide and of substan-
tially uniform width from the outer edge of
the latter to the horizontal plane represented
by said flexions, substantially as described.

In testimony, that I claim the foregoing, I 30
have hereunto set my hand this 2nd day of
Decr. 1907.

AMOS CALLESON.

Witnesses:

W. F. HORN,

W. D. C. BOGGS.