

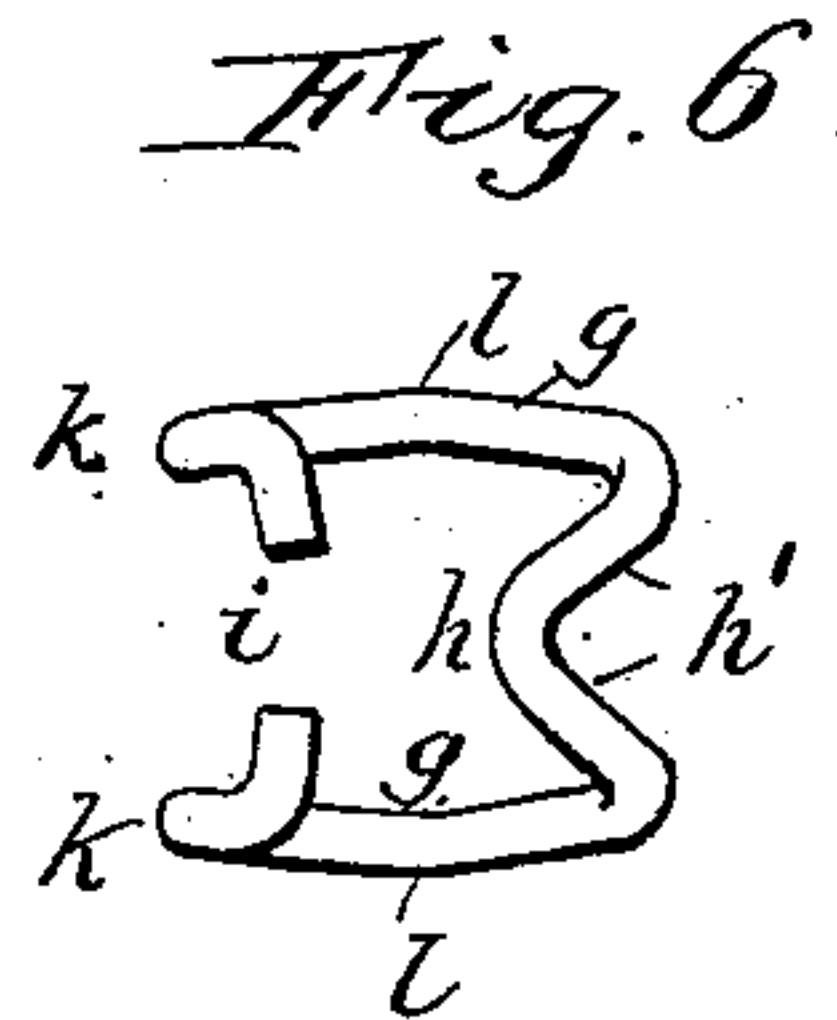
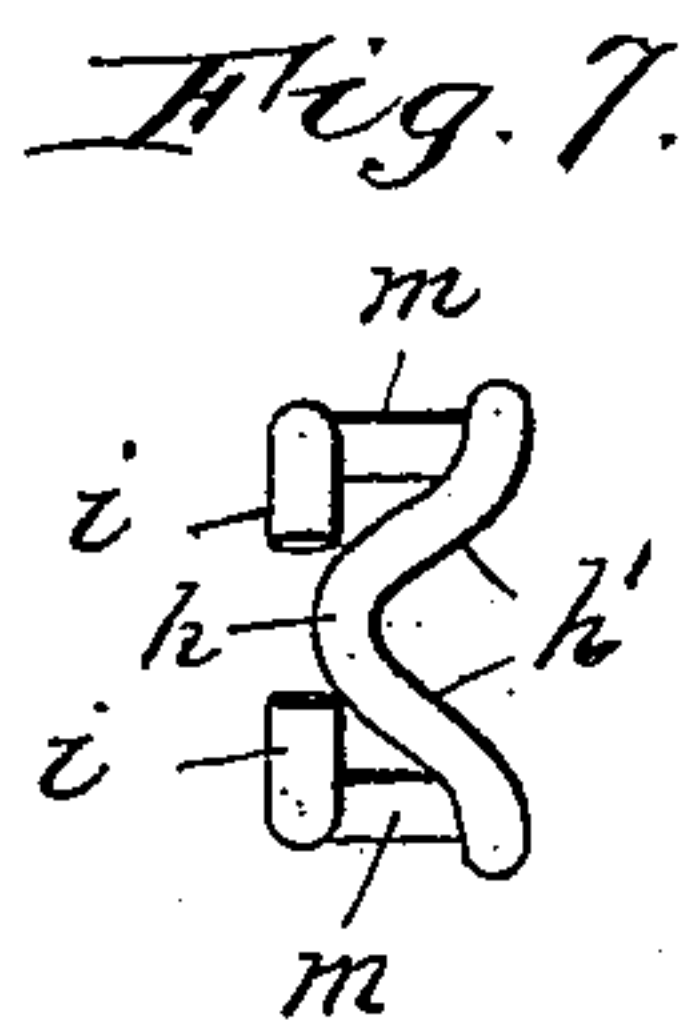
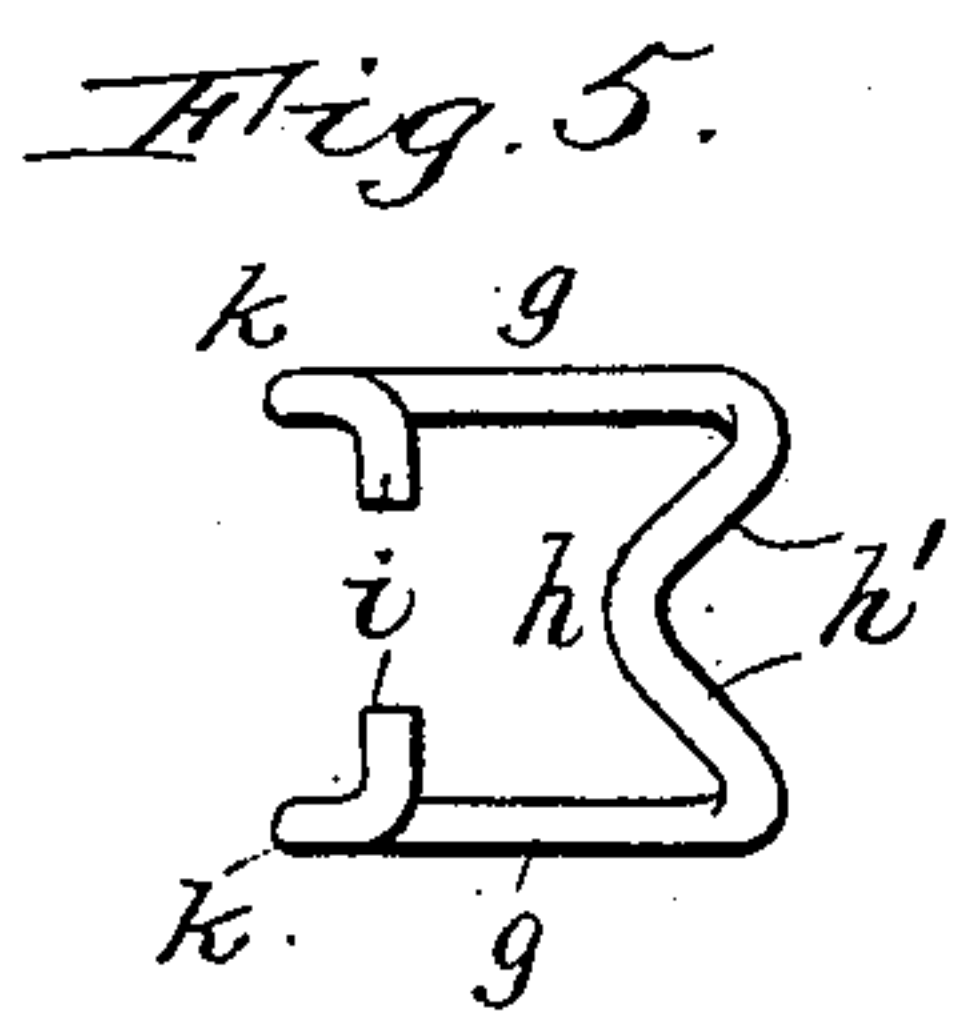
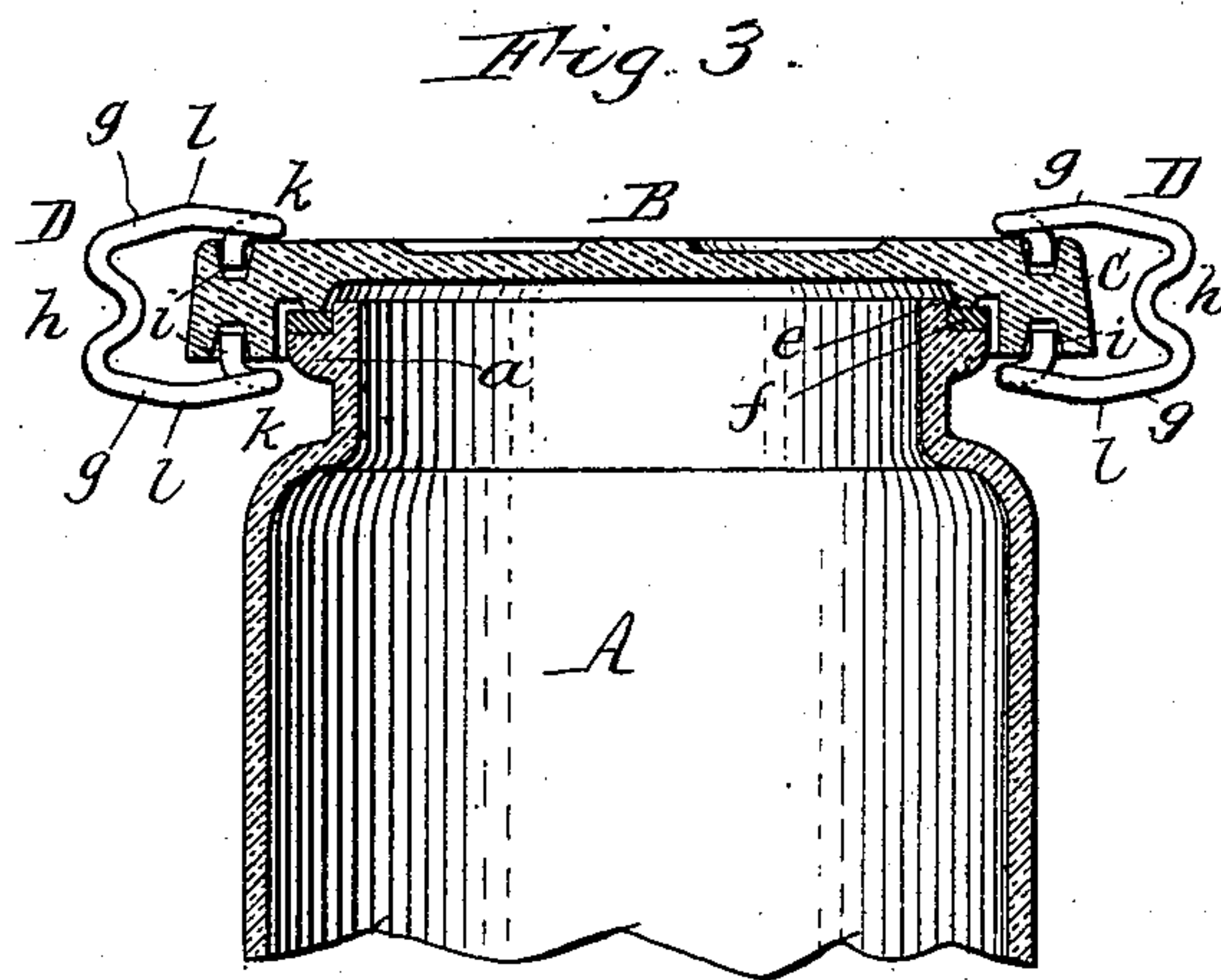
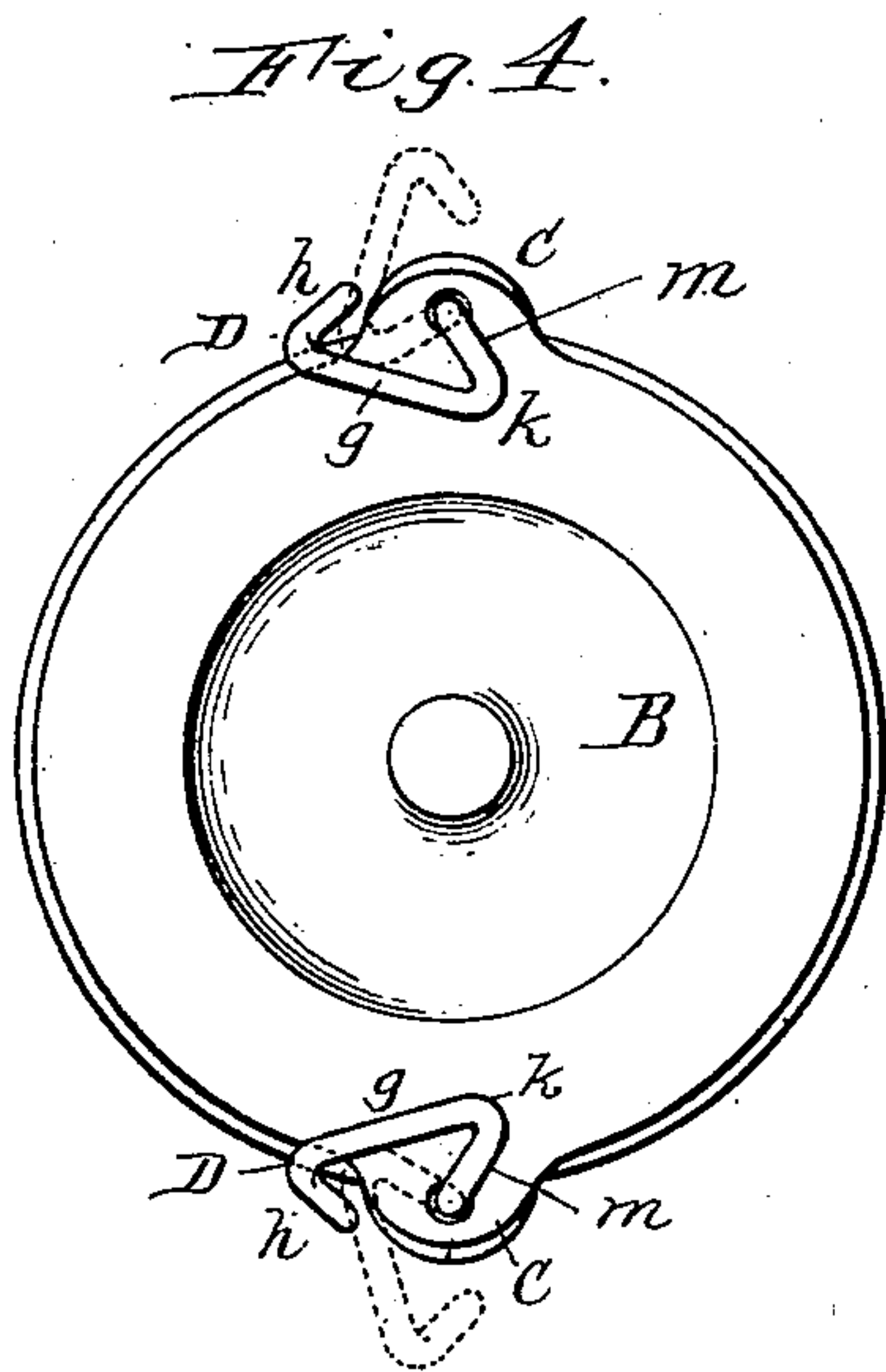
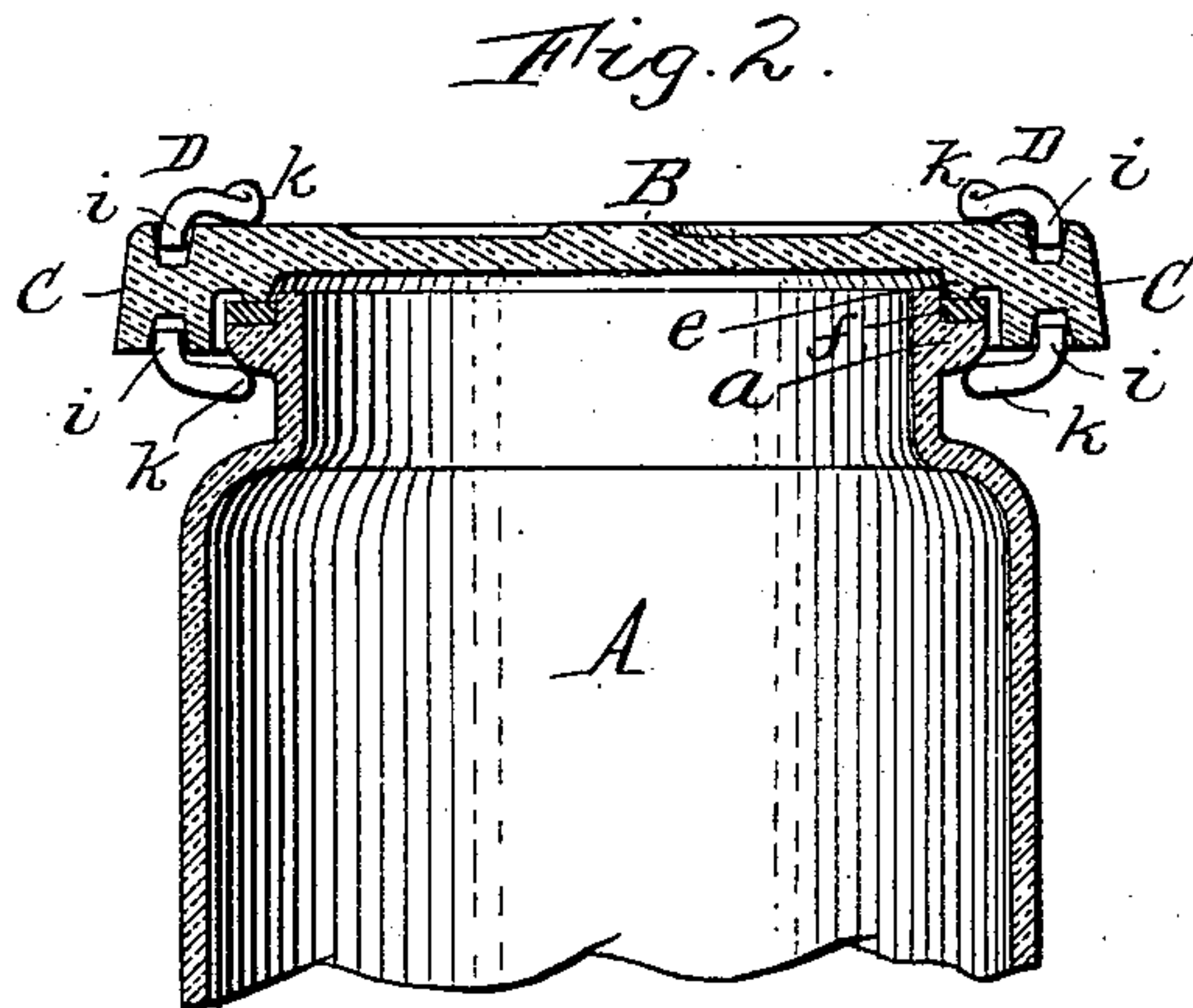
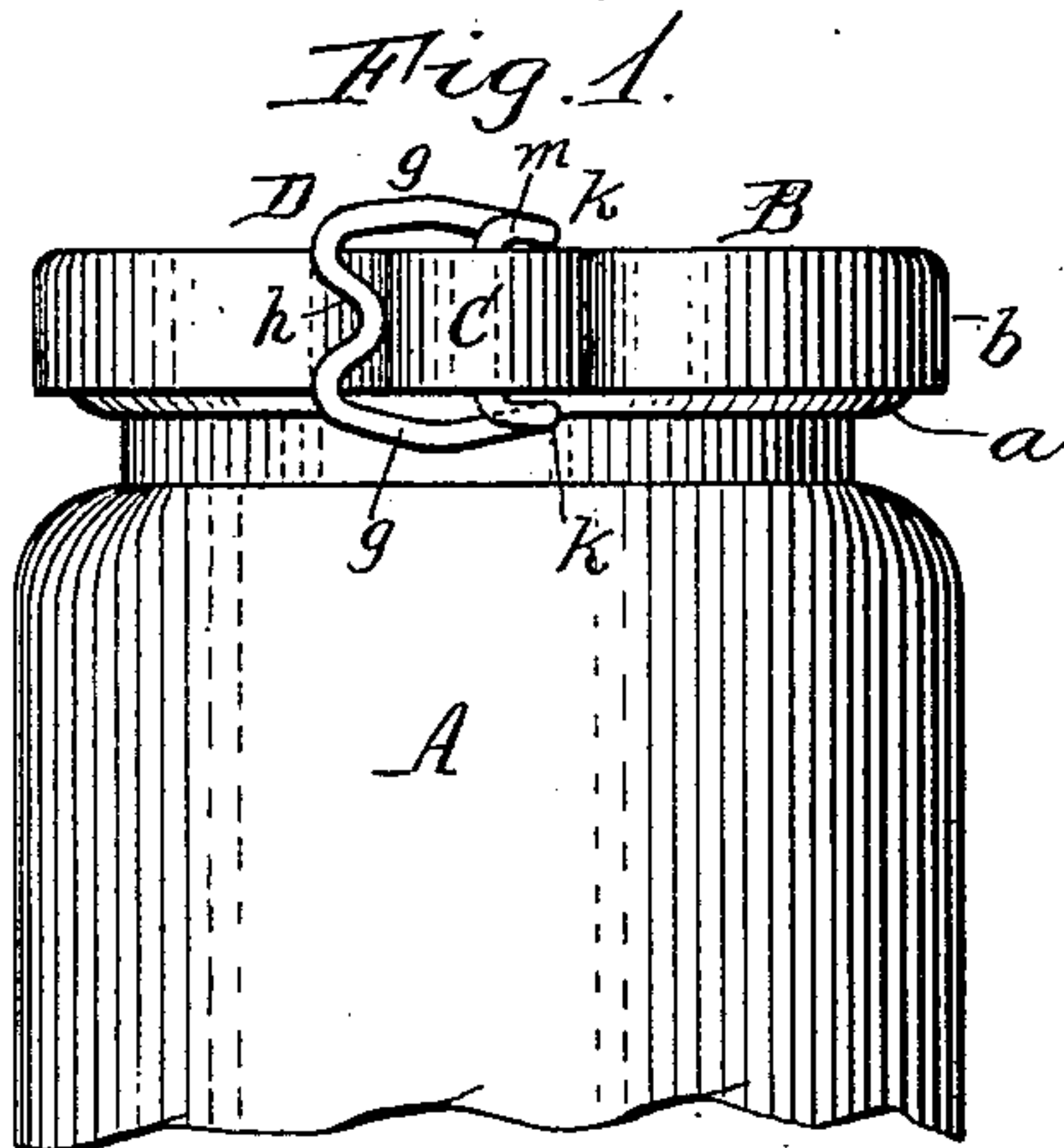
No. 689,543.

Patented Dec. 24, 1901.

I. P. DOOLITTLE.  
COVER FASTENING FOR FRUIT JARS.

(Application filed Sept. 26, 1901.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

IRVIN PARKER DOOLITTLE, OF TORONTO, CANADA.

## COVER-FASTENING FOR FRUIT-JARS.

SPECIFICATION forming part of Letters Patent No. 689,543, dated December 24, 1901.

Application filed September 26, 1901. Serial No. 76,644. (No model.)

*To all whom it may concern:*

Be it known that I, IRVIN PARKER DOOLITTLE, a citizen of the United States, and a resident of Toronto, in the Province of Ontario, Canada, have invented a new and useful Improvement in Cover-Fastenings for Fruit-Jars, &c., of which the following is a specification.

My present invention relates to fastening devices for the covers of fruit-jars and other vessels of the type described in Letters Patent issued to me January 2, 1900, No. 640,182, and June 12, 1900, No. 651,500. The fastenings shown in said patents consist, briefly stated, of wire clips which are connected to the cover by vertical pivots, so as to swing horizontally in fastening and releasing the cover, and which have each an upper arm which bears upon the cover and a lower arm which engages underneath the rim or flange at the open top of the jar or vessel, each arm having an angular or elbow form and bearing against the cover or rim with its elbow portion, while its free portion projects beyond the peripheral edge of the cover. The fastenings shown in each of my said patents are objectionable in certain respects. In that of the earlier patent the clip is pivoted to the cover by a pivot-pin, which passes through a hole extending entirely through the ear on the glass cover. The hole weakens the ear, so that great difficulty is found in connecting or riveting the clip to the pivot-pin without breaking the ear. The ears also frequently break in the use of the jars. The fastening of the second patent avoids this objection, but is itself open to the objection that it requires the use of a yoke or spanner, which extends across the cover and holds the pivot-pins in recesses in the ears. This materially increases the cost of the fastening and detracts from its appearance.

The object of the present invention is to produce a fastening which will possess the advantages of the type referred to, but which will be free from the objections incident to the patented devices, and which is exceedingly simple and can be produced at a minimum cost.

In the accompanying drawings, Figure 1 is

a fragmentary side elevation of a fruit-jar provided with my improved cover-fastening and showing the fastening-clips in the locked position. Fig. 2 is a fragmentary sectional elevation at right angles to Fig. 1, showing the clips locked. Fig. 3 is a similar view showing the clips unlocked. Fig. 4 is a top plan view showing the clips locked. Fig. 5 is a side elevation of one of the clips before the final hip bends are given to the arms. Fig. 6 is a similar view of a completed clip. Fig. 7 is an edge elevation of the clip viewed from the outer end.

Like letters of reference refer to like parts in the several figures.

A indicates a fruit-jar or other vessel having at or near its open upper end or mouth the usual projecting rim or flange *a*, having a beveled lower face.

B represents the cover or cap, of any suitable or desired shape, adapted to cover the mouth of the jar or vessel. The cover has, preferably, a depending outer flange *b*, adapted to extend down over and surround the rim or flange *a* of the jar.

C represents the projecting pivot-ears, formed on the cover for receiving the fastening-clips D. In order to effect a tight joint between the jar and the cover or cap, the latter is provided on its under side with an annular rib or bead *e*, adapted to bear on the top of a packing-gasket *f*, of rubber or other suitable material, which is placed on the upper face of the jar-rim, as usual.

Any suitable number of fastening-clips may be attached to the cover, two being shown in the drawings on diametrically opposite sides of the cover. Each clip, as shown, is made of a single piece of wire bent into the form shown and comprises upper and lower arms *g*, a bar *h*, connecting the outer or free ends of the arms, and short pivot-studs *i*, formed at the inner ends of the arms. Each arm is formed near its pivot with an elbow or angular bend *k* so arranged that when the clip is closed the elbow portion of the upper arm bears upon the cover and that of the lower arm bears against the under side of the rim, as shown in Figs. 1, 2, and 4, while when the clip is open the elbow of the lower arm



clears the rim, so that the cover can be lifted from the vessel, as shown in Fig. 3. Each arm is bent up near the middle of its main portion between the elbow and the free end of the arm, as shown at *l*, so that the arm has a crowning or hip-shaped form, being concave on its under side. The pivot-studs *i* are bent on the arms toward each other, and the inner portions *m* of the arms on which the studs are formed stand at an acute angle to the main portions, so that when the clip is closed the elbow portions have moved past the dead-center, which lies in the radial line drawn through the center of the cover and the pivot-line of the clip, whereby the clip is prevented from being accidentally opened. The outer connecting-bar *h* lies in a vertical plane which stands at an acute angle to the main portions of the arms and approaches the pivots so that the bar stands near the peripheral face of the cover and the ear when the clip is closed and does not project beyond the ear, as shown at Fig. 4. This connecting-bar is preferably bent to form a thumb-piece composed of converging upper and lower bars *h'*, which are connected by rounded bends with each other and with the outer ends of both arms.

The clip is preferably formed in the form shown in Fig. 5, with the arms straight and substantially parallel between the elbows and outer ends, and is applied to the cover by placing one pivot-stud in its socket and then springing the opposite stud into its socket. In this condition of the clip the elbows are liable to be so far apart that the springing of the elbows in use is liable to spring the studs out of their sockets. The main portions of the arms are now bent by a suitable tool to form the hip-bends, whereby the elbow portions of the arms are brought closer together. These hip-bends are preferably made after the clip is applied to the cover, for the reason that otherwise the arms would have to be spread so far apart in springing the clip in place on the cover that the resiliency of the arms would be more or less impaired. The elbow portions of the arms being thrown nearer together than the outer ends of the arms by reason of said hip-bends, the elbow portions engage the rim or flange and the marginal portion of the cover, while the outer portions of the arms are held clear or out of contact. The described bent formation of the connecting-bar adds to the inherent resiliency of the metal of the clip a torsional spring action which greatly increases the clamping strength and life of the clip and also enables the outer ends to spread as the elbows are spread in riding up on the incline, whereby the tendency to spreading at the pivoted ends of the arms is correspondingly reduced.

The sockets are somewhat larger than the pivots in order to insure an easy movement

of the clips and prevent cramping or binding, which might cause the breaking of the ears.

The under face of the flange or the upper face of the cover, or both, are beveled or inclined, so that the arms are spread or sprung apart when the clips are turned into locking position, their elastic tendency to return to their normal position pressing the cover tightly down on the jar.

When the cap or cover is to be secured to the jar, the clips are swung out, as shown in Fig. 3 and in dotted lines in Fig. 4, until their elbow portions lie outside of the edge of the rim or flange. The cover or cap is then placed on the jar or vessel with its edge flange inclosing the rim and its bead resting on the packing-gasket, after which the fastening-clips are swung into the locked position, (indicated in full lines in Figs. 1, 2, and 4,) in which their elbow portions engage the marginal portion of the top of the cap and the lower face of the jar-rim.

My improved fastening is very simple in construction, it can be produced at comparatively small expense, it does not tend to break the ears of the cover either in applying the clips to the same or in use, and it produces a tight and efficient closure of the jar or other vessel.

I claim as my invention—

1. The combination with a vessel provided at its open end with a projecting rim or flange and a cover or cap having pivot-sockets in its upper and lower sides, of a fastening-clip consisting of upper and lower arms adapted to bear, respectively, against the cover or cap and said rim or flange and having at their separated ends inturned pivot-studs which engage in said sockets and at their opposite ends a connecting member, substantially as set forth.

2. The combination with a vessel provided at its open end with a projecting rim or flange and a cover or cap having pivot-sockets in its upper and lower sides, of a fastening-clip consisting of upper and lower arms having clamping-elbows adapted to bear, respectively, against the cover or cap and said rim or flange and having at their separated ends inturned pivot-studs which engage in said sockets and at their opposite ends a bent connecting member, substantially as set forth.

3. The combination with a vessel provided at its open end with a projecting rim or flange and a cover or cap having pivot-sockets in its upper and lower sides, of a fastening-clip consisting of upper and lower arms having clamping-elbows adapted to bear, respectively, against the cover or cap and said rim or flange, and having at their separated inner ends pivot-studs which engage in said sockets and having outside of said elbows hip bends and at their outer ends a connecting member, substantially as set forth.

4. The combination with a vessel provided



5 at its open end with a projecting rim or flange,  
and a cover or cap having pivot-sockets in its  
upper and lower sides, of a fastening-clip con-  
sisting of upper and lower arms adapted to  
bear, respectively, against the cover or cap  
and said rim or flange and having at their  
separated ends intumed pivot-studs which  
engage in said sockets and at their opposite  
ends a connecting member which is bent out

of the plane of the upper and lower arms and 10  
adds to the spring action of the latter, sub-  
stantially as set forth.

Witness my hand this 12th day of Septem-  
ber, 1901.

IRVIN PARKER DOOLITTLE.

Witnesses:

ALBERT PHOBES,

DICK MCQUISTRON.