

No. 775,651.

PATENTED NOV. 22, 1904.

W. E. HEATH.
BOTTLE SEAL.

APPLICATION FILED JAN. 27, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

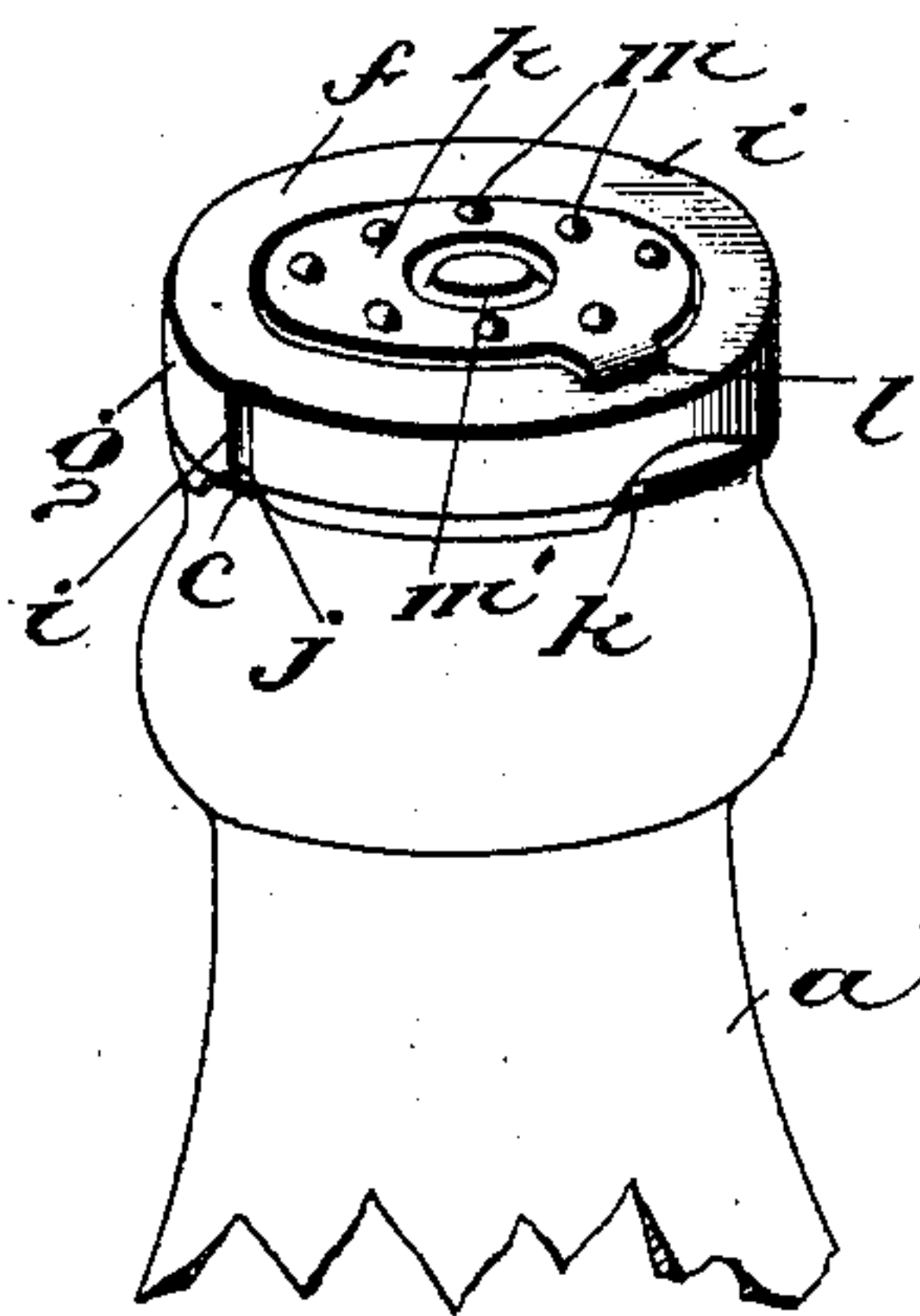


Fig. 2.

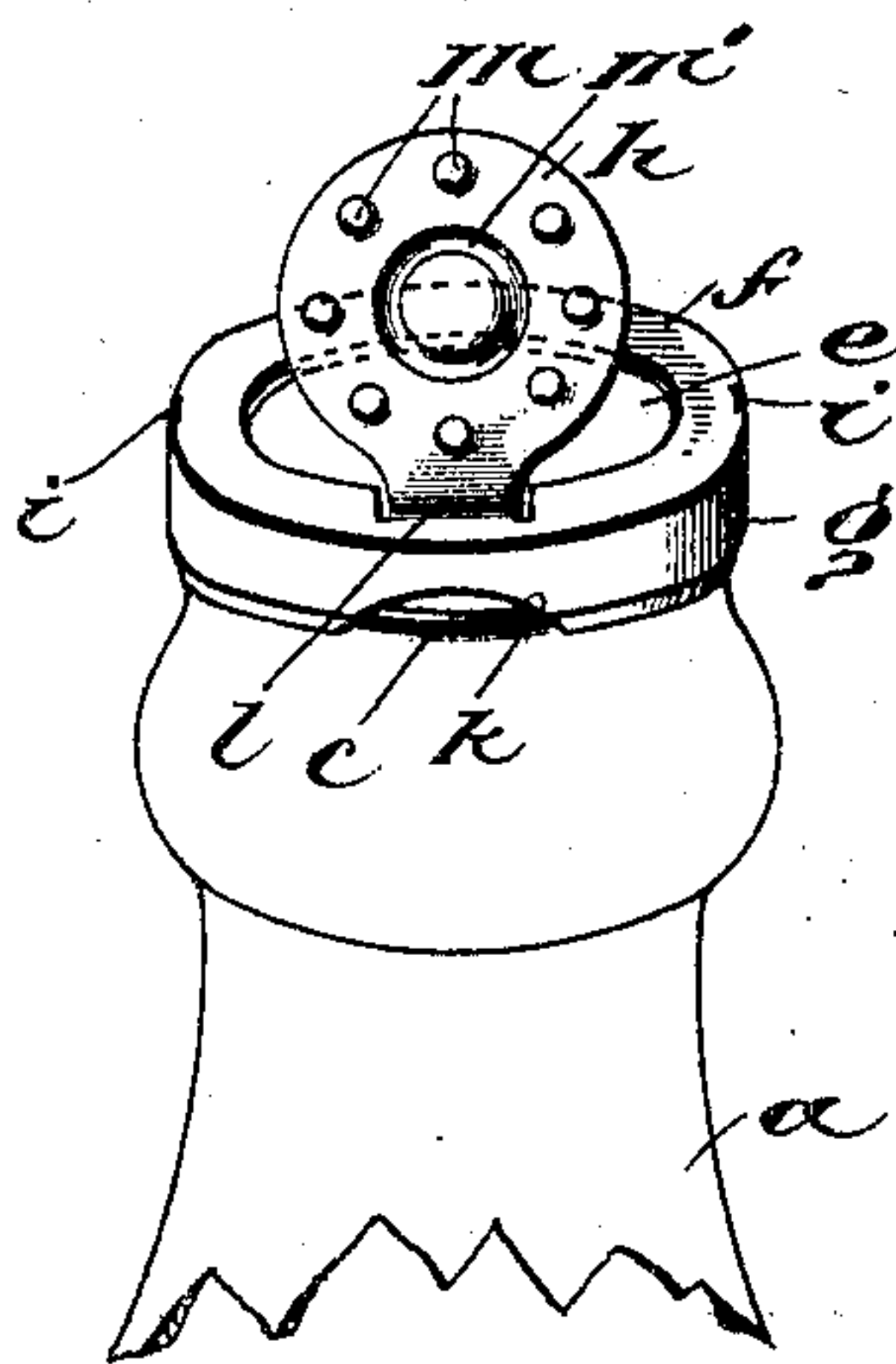
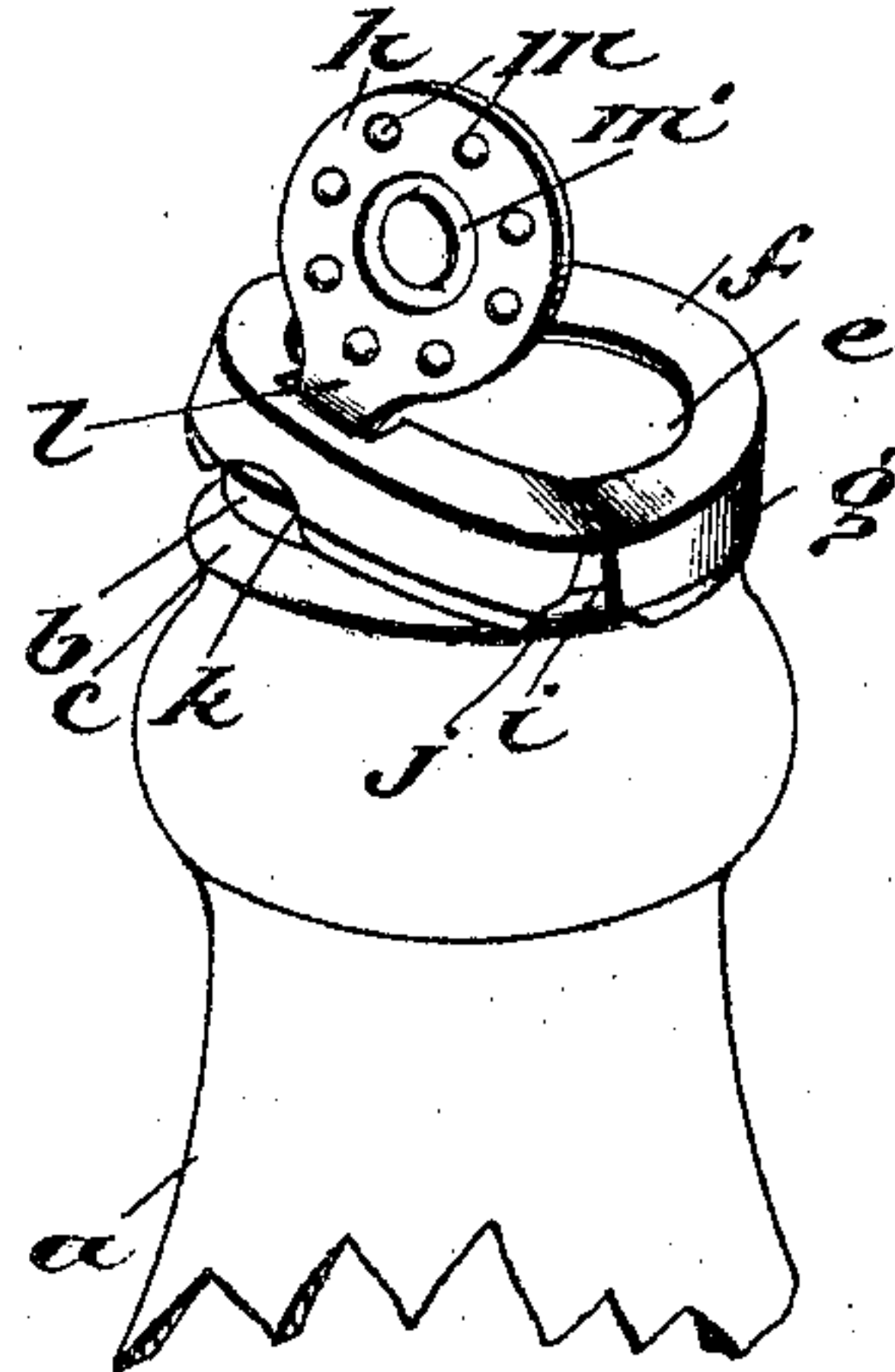


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

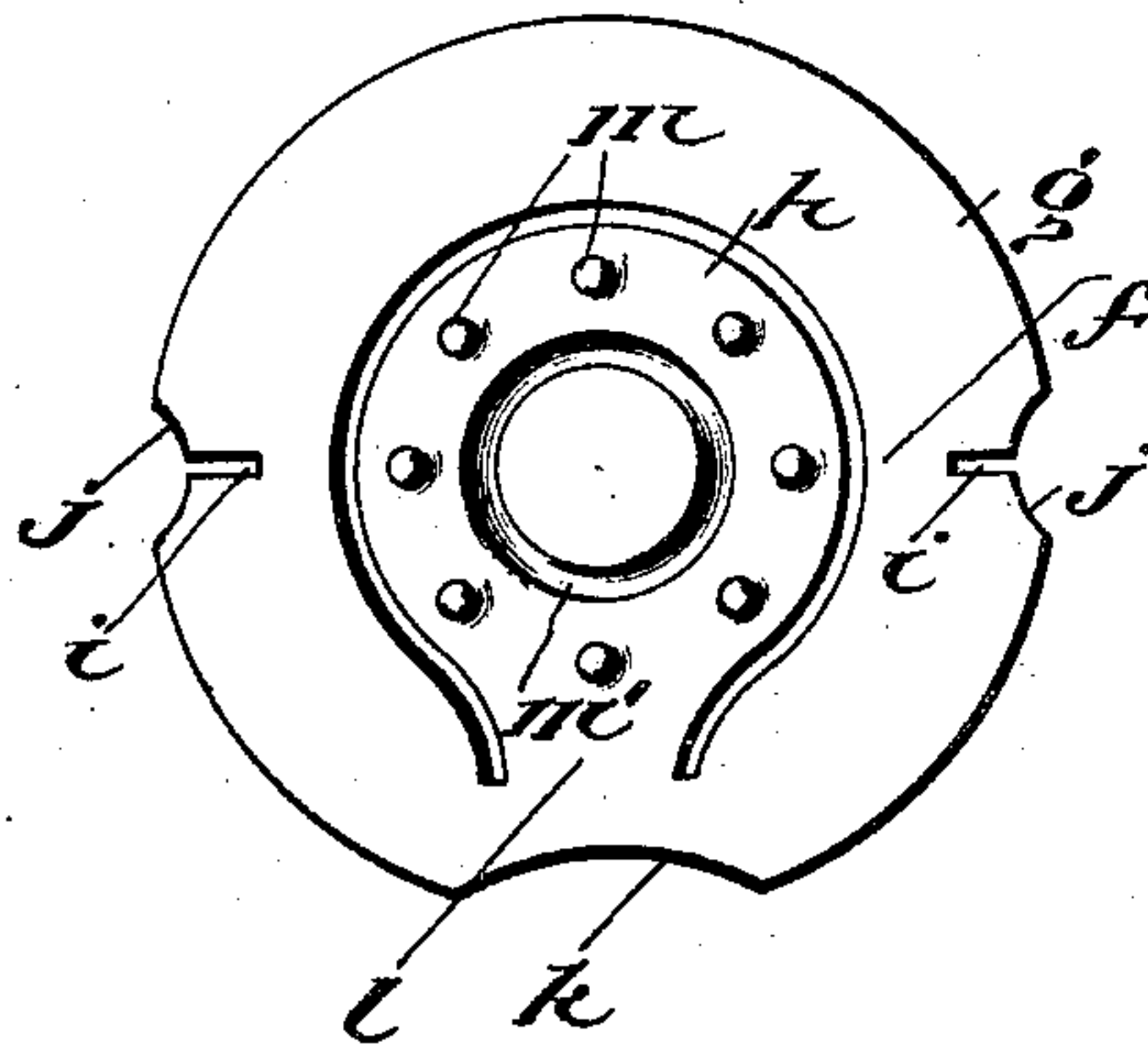


Fig. 5.

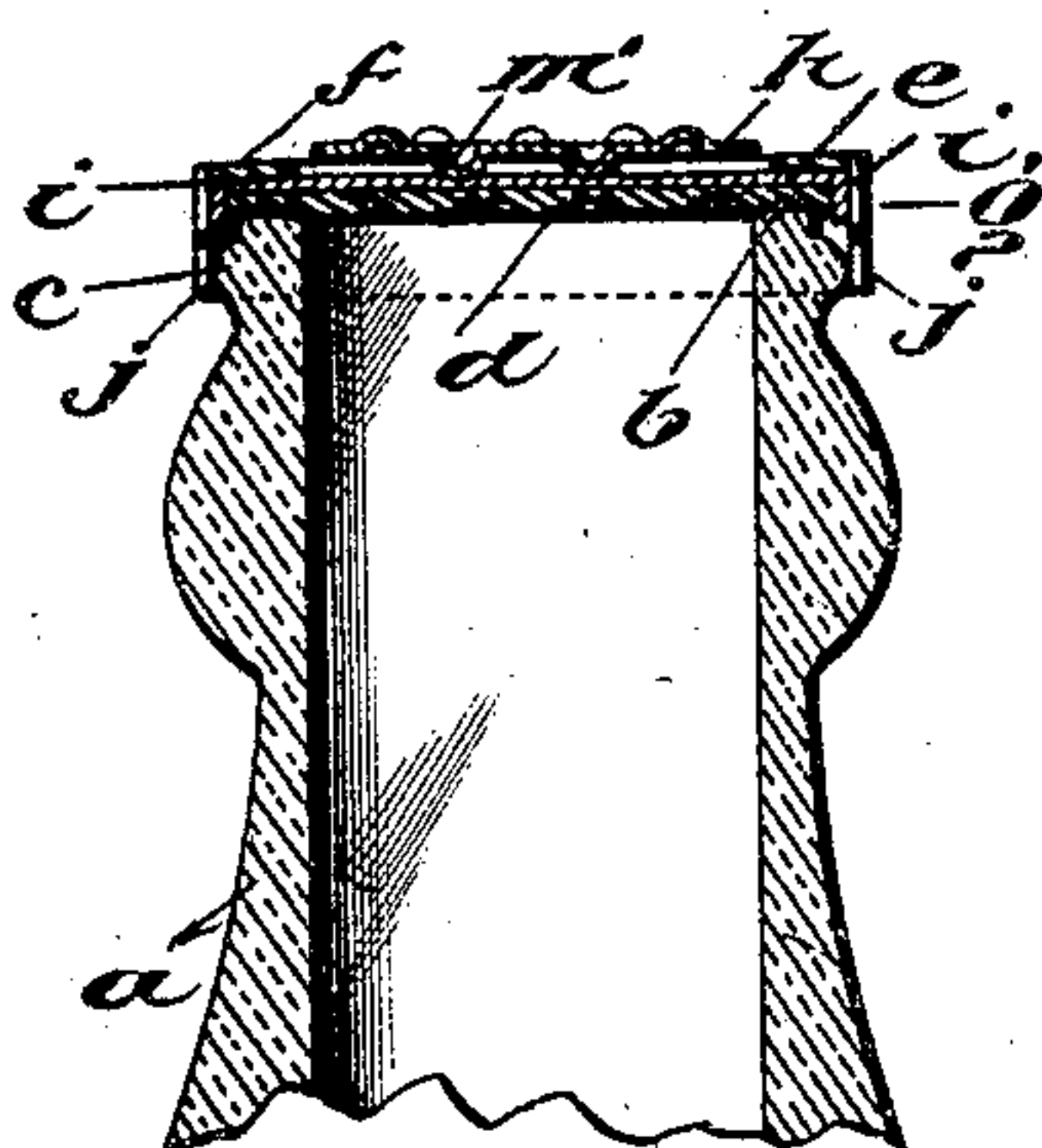


Fig. 6.

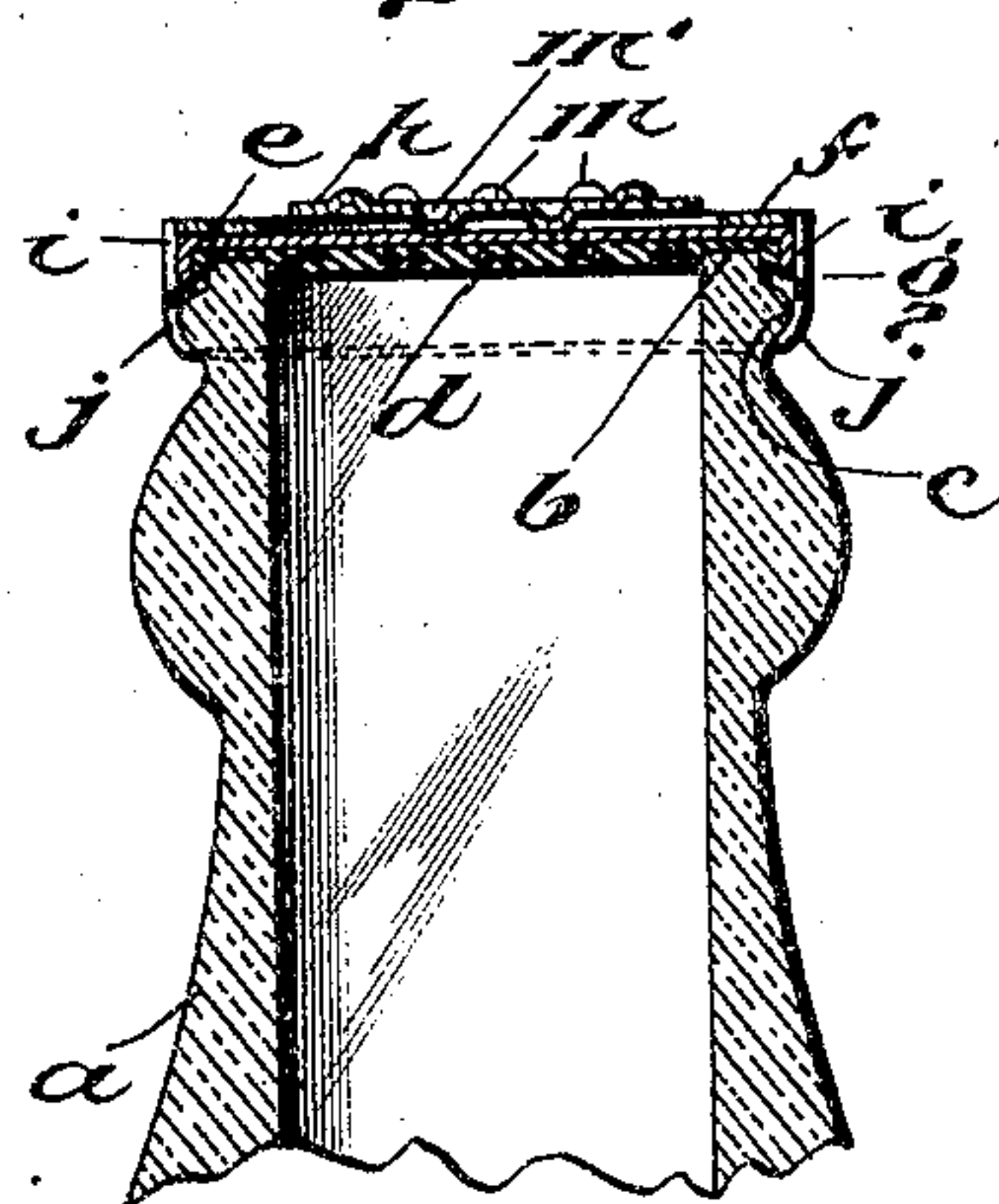
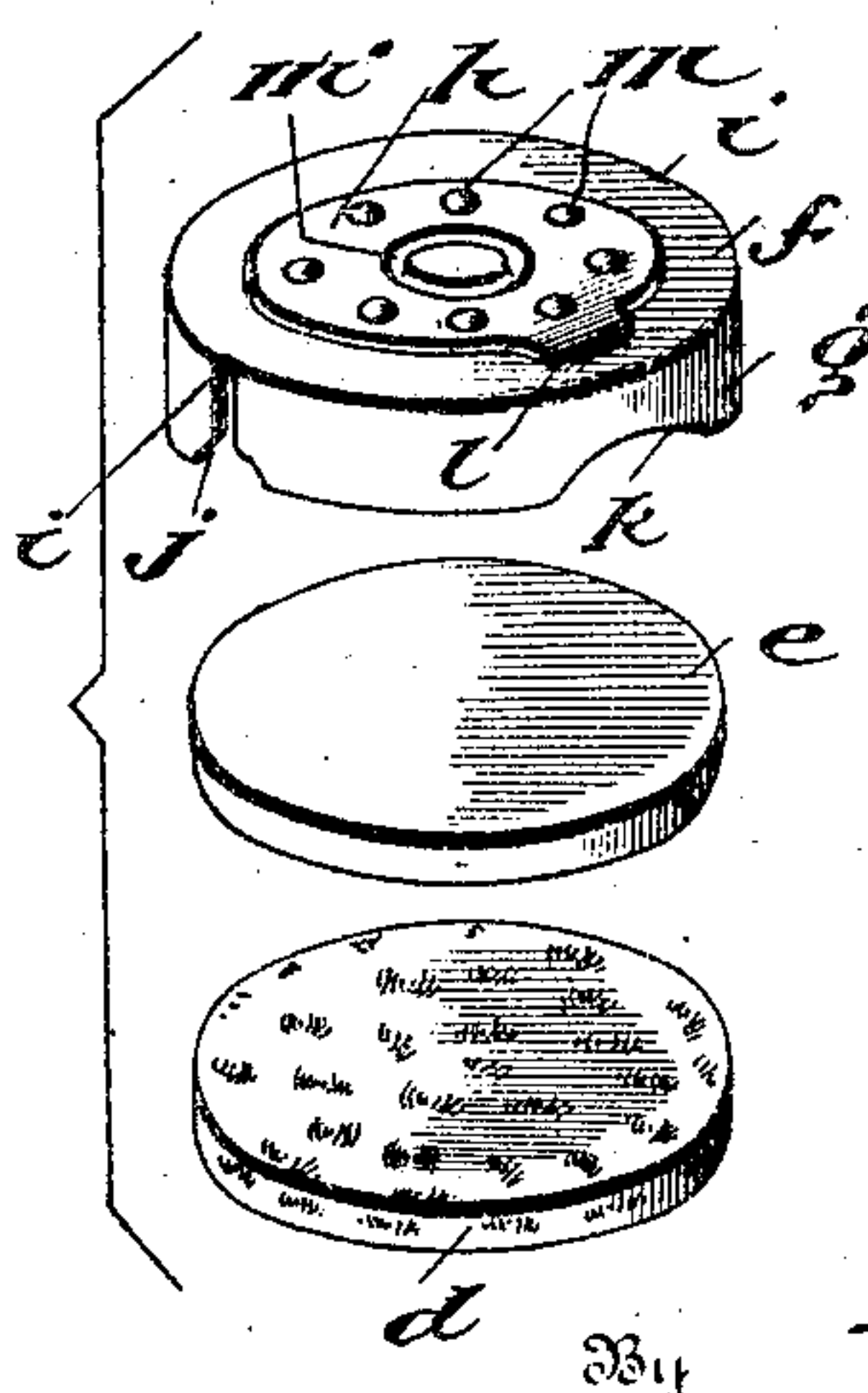


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM E. HEATH, OF BALTIMORE, MARYLAND.

BOTTLE-SEAL.

SPECIFICATION forming part of Letters Patent No. 775,651, dated November 22, 1904.

Application filed January 27, 1904. Serial No. 190,891. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. HEATH, a citizen of the United States, residing at Baltimore city, Maryland, have invented certain new and useful Improvements in Bottle-Seals; 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.

This invention relates to certain improvements in sealing devices for receptacles, and more particularly relates to improvements in caps for bottles, jars, and the like.

An object of my invention is to provide an exterior sealing cap or ring device adapted to be bent or otherwise locked under a bottle-shoulder and to provide the same with improved means for releasing the ring or cap from the bottle or breaking the seal without requiring the employment of a tool or other separate extracting or releasing device.

My invention consists in certain novel features of construction and in combinations or arrangements of parts, as more fully set forth hereinafter.

The further objects and the nature of my invention will be readily understood by those skilled in the art in the light of the following explanations of the construction shown in the accompanying drawings merely as an example for purposes of illustration of one device from among others within the spirit and scope of my invention.

Referring to the accompanying drawings, Figure 1 is a perspective view of the neck portion of a bottle sealed by a device in accordance with my invention. Fig. 2 is a perspective view of the neck portion of a bottle having my invention applied thereto, the pull or finger piece being shown elevated or swung up to operative position to receive the necessary pulling force for accomplishing the initial release of the cap from the bottle. Fig. 3 is a perspective view of the neck portion of a bottle, showing the cap in the position it assumes during the first portion of the releasing operation. Fig. 4 is a plan view of the exterior cap with the flange flattened out or showing the cap just prior to the bending

down of the flange thereof. Fig. 5 is a vertical sectional view of the bottle-neck and sealing device, showing the sealing device before it is subjected to sealing pressure and before the exterior cap or ring is bent or locked on the bottle-shoulder. Fig. 6 is a section corresponding to Fig. 5, but showing the seal effected and the exterior cap locked under the bottle-shoulder. Fig. 7 is a detail perspective view showing the parts of the sealing device or cap separated from each other.

In the drawings, *a* is the neck portion of the bottle, having the top-sealing edge *b* around its mouth.

c is an annular bead around the exterior of the top portion of the neck of the bottle and forming the exterior locking-shoulder of the bottle, which in the present instance is shown as an annular shoulder, although I do not wish to limit all features of my invention to employment in connection with an annular shoulder. In the specific example shown the bead *c* is located a short distance below the top-sealing edge *b*, so that the exterior diameter of the bottle-neck is reduced above the bead *c*. However, I do not wish to limit all features of my invention to this detail.

d is the sealing medium, composed of any suitable compressible or soft, preferably impervious, material, which can be treated, if desired, to render it impervious. This sealing medium can be composed of various materials—such, for instance, as cork or a suitably-prepared fabric or pulp material. The sealing medium shown is in the form of a flat circular disk which is imperforate and is of a diameter to close the bottle-mouth and rest on and project beyond, if necessary, the top annular edge *b*. In the specific example illustrated I show this sealing-medium disk *d* carried by or faced throughout its top surface by an imperforate circular flat metal disk *e*, preferably, although not necessarily, formed with a depending annular flange, rendering said metal disk somewhat cup-shaped to receive and hold the sealing-medium disk *d*. However, I do not wish to limit my invention in all features to the flanged disk *e*.

The sealing-medium disk is located concentrically within and is adapted to be held tightly

compressed on and around the bottle-sealing edge *b* to maintain the tight seal by an exterior somewhat stiff metal sealing-cap *f*. This exterior locking or sealing cap is preferably
 5 formed from one piece of comparatively thin sheet metal and consists of the flat approximately annular ring-like top located immediately above the sealing edge *b* of the bottle and the vertical depending flange *g* and the
 10 pull or finger releasing piece, portion, or tab *h*. The depending flange *g* has a diameter enabling the exterior cap to snugly receive the sealing-medium disk *d* and its disk *e* and to enable the flange to pass down around the
 15 bottle-bead *c*. This flange *g* is of such length that when the parts have been assembled on the bottle-neck, as shown in Fig. 5, and the necessary pressure is applied to tightly compress the sealing medium between the edge *b*
 20 of the bottle and the annular top of the cap the flange can be bent, spun, or otherwise turned under the bottle-locking shoulder to a sufficient extent to maintain the exterior cap in its position, holding the sealing medium
 25 tightly compressed to maintain the necessary or desired tight seal. In order to permit the ready release of this exterior cap, I divide the flange *g* at several points, preferably so that the cap will have the transverse or usually
 30 diametrical bending-line. In the specific example illustrated I divide the flange *g* at least about to the top of the cap by diametrically opposite vertical slits or slots *i*, and I preferably enlarge these slots at their lower ends by
 35 notching at *j* the lower edge of the flange *g*, so that the lower end of the flange *g* will not lock under the bottle-shoulder immediately adjacent to the slots *i*. At a point about mid-way between the slots *i* I preferably so cut,
 40 notch, (see *k*.) or otherwise form the flange *g* so that it will not turn or lock under the bottle-shoulder. I provide this exterior cap with a releasing device attached or joined to the cap immediately above the notched or
 45 non-locking portion *k*, so that when the cap is locked to the bottle sufficient upward pull on said releasing device will cause the initial release of the cap by reason of the flange *g* pulling or slipping past the locking-shoulder
 50 of the bottle on both sides of the notch *k*, so that said half of the cap formed with the notch *k* will bend upwardly on a diametrical line between the slots *i*, thus enabling the cap to be pulled laterally or tilted completely from
 55 the bottle-neck. It is obvious that the notched portions *j* will assist in the easy ready release of the cap from the bottle, and thus when the half of the cap having the notch *k* has been released from the locking-shoulder that the
 60 other half of the cap can be readily slipped or pulled from the bottle. The notched or cut-away portion *k* permits the ready initial release or starting of the unlocking or releasing movement of the cap. While as at present
 65 ent advised by experience I deem it desirable

that the cap be not locked at a point below the application of the releasing-pull, yet I do not wish to so limit all features of my invention. This releasing device can be constructed and arranged in various ways under the
 70 broad features of my invention.

In the specific example illustrated I show said releasing device composed of the sheet-metal disk *h*, cut out from the top of the cap *f* and connected thereto by the neck *l* at a
 75 point above the notch *k*. I show this finger-piece or pull device formed with irregularities *m m'* to afford a finger hold or grip, and the depression *m'* engages the disk *e* when the cap is compressed and locked, and there-
 80 by holds the finger-piece *h* slightly above the plane of the top of the cap *f*, (see Fig. 6,) so that the finger of the operator can so engage the edge of the finger-piece *h* as to readily bend the same up to the position shown in
 85 Figs. 2 and 3. These irregularities *m m'* can be formed in any suitable manner and of any suitable or desirable form, usually by indenting or corrugating the disk of the finger-piece, for instance, about as shown. The
 90 downwardly-pressed indentation or indentations *m'* will engage the top surface of the disk *e* to slightly elevate the disk of the finger-piece above the plane of the top of the cap. The operation of applying the cap, as
 95 well as the operation of releasing the same through the medium of the pull-piece, will be readily understood by the foregoing description.

The chuck, which engages the cap to com-
 100 press the seal during the sealing operation, need only engage or apply pressure to a flat annular portion of the top of the cap.

By cutting out the top of the cap so that the cap is somewhat ring-like in form the
 105 cap can more easily bend along the diametrical bending-line during the releasing operation than where the top of the cap is closed, and hence I do not consider it necessary to extend the slots *i* into the top of the cap, if such be
 110 necessary, where the top of the cap is closed.

I do not wish to limit my invention to the form and arrangement of the pull-releasing device nor to the manner of attaching the
 115 same, and it is obvious that various modifications might be resorted to in the forms, constructions, and arrangements of the parts shown without departing from the spirit and scope of my invention, and hence I consider myself entitled to all such variations as fall
 120 within the spirit of my invention.

What I claim is—

1. A cap for a bottle or the like having a depending locking-flange severed to form a transverse bending-line and a releasing device
 125 consisting of a pull-piece integral with the cap and arranged at the top thereof.

2. An exterior bottle-sealing cap formed of one piece partially divided to bend on a diametrical line and comprising a depending
 130

locking-flange and a top-releasing pull-piece or member.

3. An exterior bottle-sealing cap having depending non-ripping upwardly-releasing gripping or locking members and a top finger pull-piece integral with the cap and normally bent down in horizontal position and adapted to be bent up and exert upward pull to release said members, substantially as described.

4. A bottle-sealing cap comprising a top and depending gripping members and adapted to bend on a transverse line between said members, a portion of said top forming a pull releasing finger-piece adapted to be swung up to exert an upward pull on the cap.

5. A sealing device comprising an exterior metal cap formed with a divided depending flange adapted to be bent inwardly under a shoulder of the bottle to lock the cap, and with a releasing pull or finger tab adapted to be bent outwardly and to exert upward releasing pull on said flange, substantially as described.

6. A metal sealing-cap having a divided depending flange adapted to be bent inwardly for locking the cap, said cap formed with a releasing pull-piece adapted to exert upward pull on said flange approximately midway between said divided portions.

7. An exterior bottle-sealing cap formed with a depending flange adapted to be bent inwardly to lock the cap on the bottle, diametrically opposite portions of the cap being divided and a releasing pull-piece.

8. An exterior bottle-sealing cap formed with a depending flange adapted to embrace the exterior of the bottle-mouth and be bent inwardly to lock the cap, said cap being diametrically weakened to approximately divide the same into two sections, one of which can be bent upwardly independently of the other and provided with a releasing pull-piece.

9. An exterior bottle-sealing cap having a depending locking-flange, opposite portions of the flange being divided by slots, a portion of the flange at a point approximately midway between said divided portions being notched to prevent locking of the flange at that point, and a releasing pull-piece above said notch.

10. An exterior bottle-sealing cap having a depending flange, opposite portions of the flange being divided, and a releasing pull-piece capable of being bent up to exert a releasing pull on the flange.

11. A cap for a bottle consisting of a disk having an annular ring-like top formed with a depending annular flange having diametrically opposite slots extending through the flange, whereby said top will bend on a diametrical line.

12. A cap for a bottle consisting of a disk having an annular ring-like top formed with a depending annular flange having diametrically opposite slots extending through the flange, said top having a releasing pull-piece normally located within the same.

13. A bottle-cap having a divided depending locking-flange, a portion of said flange being non-locking, said cap formed with a releasing pull-piece located above said non-locking portion and adapted to exert upward pull on the cap immediately above said portion.

14. A bottle-cap having depending gripping portions and a pull-piece cut from the top of the cap and connected thereto and having an irregularity to hold the pull-piece raised above the plane of the top of the cap when the cap is locked to the bottle.

15. A sealing-cap having a depending locking-flange adapted to lock under an exterior shoulder of a bottle, said cap provided with a top pull-piece capable of being bent up to exert an upward releasing pull on said flange and having means to hold said piece elevated for the purposes substantially as described.

16. A sealing-cap formed to lock under an exterior shoulder of a bottle and partially divided to bend up and release from the bottle under upward pull, and a top finger pull-piece.

17. A sealing-cap formed to lock under an exterior shoulder of a bottle and to be released therefrom by upward pull and provided with a pull-piece capable of being bent up to exert upward releasing pull on the cap, said cap having a non-locking portion beneath the pull-piece.

18. A sealing-cap formed to lock under a locking-shoulder of a bottle-neck and to bend and release therefrom by upward pull, said cap formed with a non-ripping finger pull-piece removing with the cap and capable of being bent up to exert the upward releasing pull on the cap.

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

WILLIAM E. HEATH.

Witnesses:

WARREN H. SADLER,
D. ARDIN CARRICK.