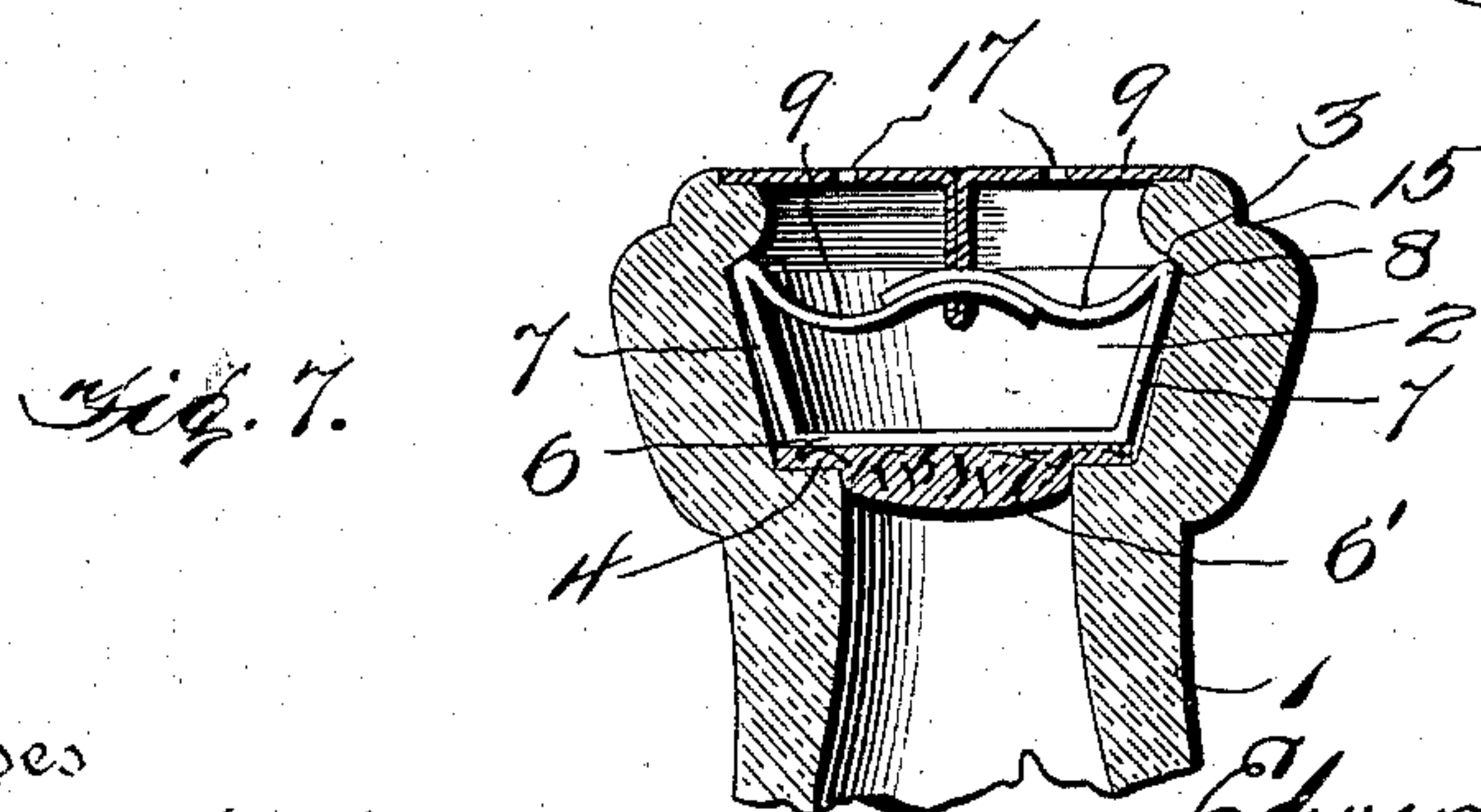
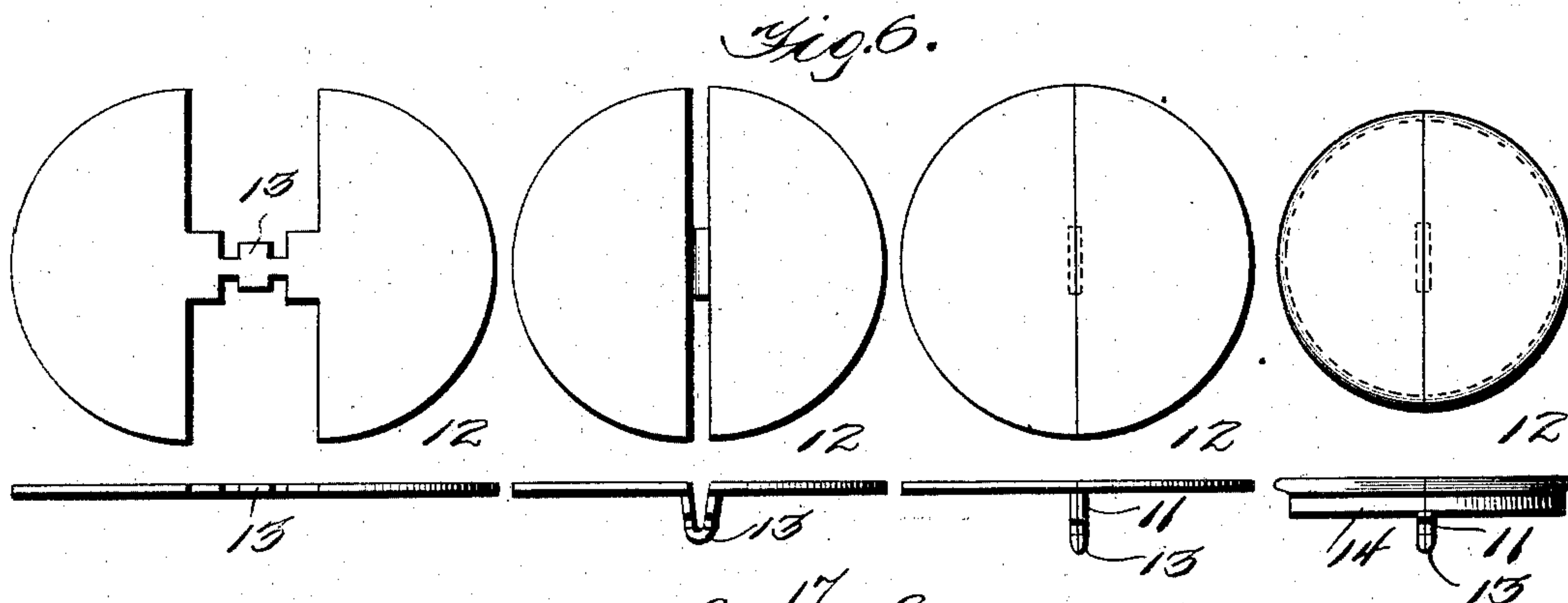
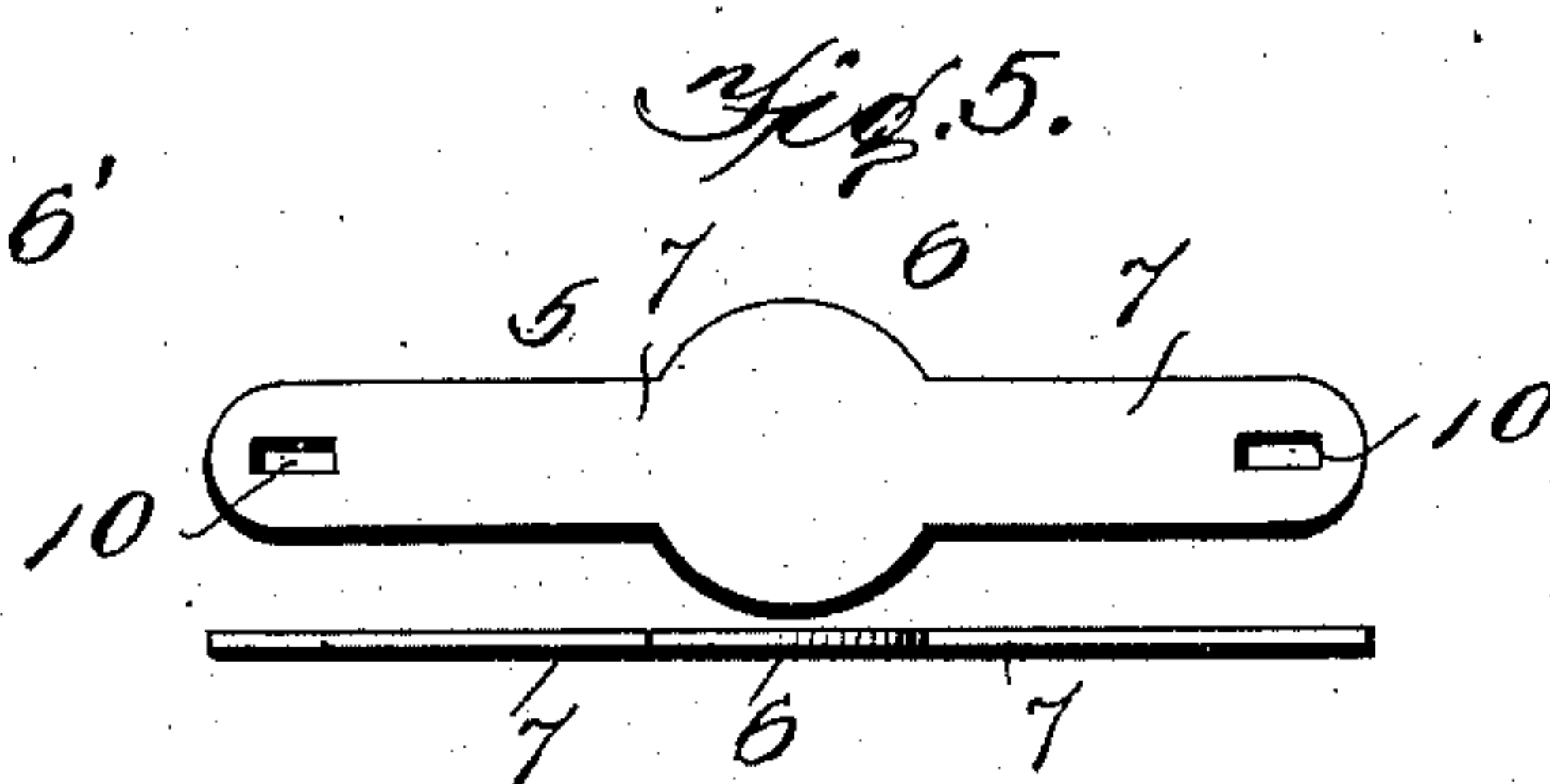
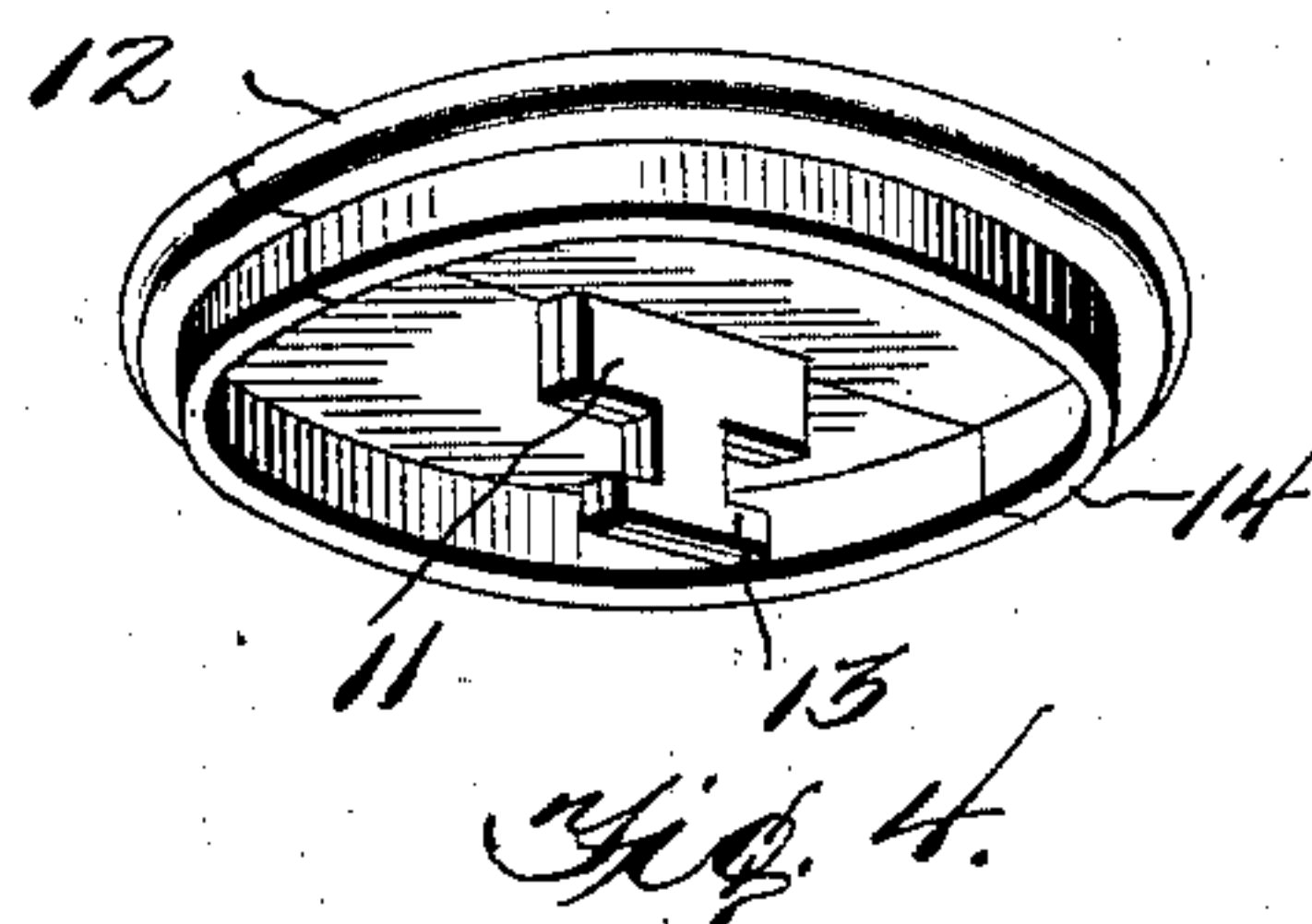
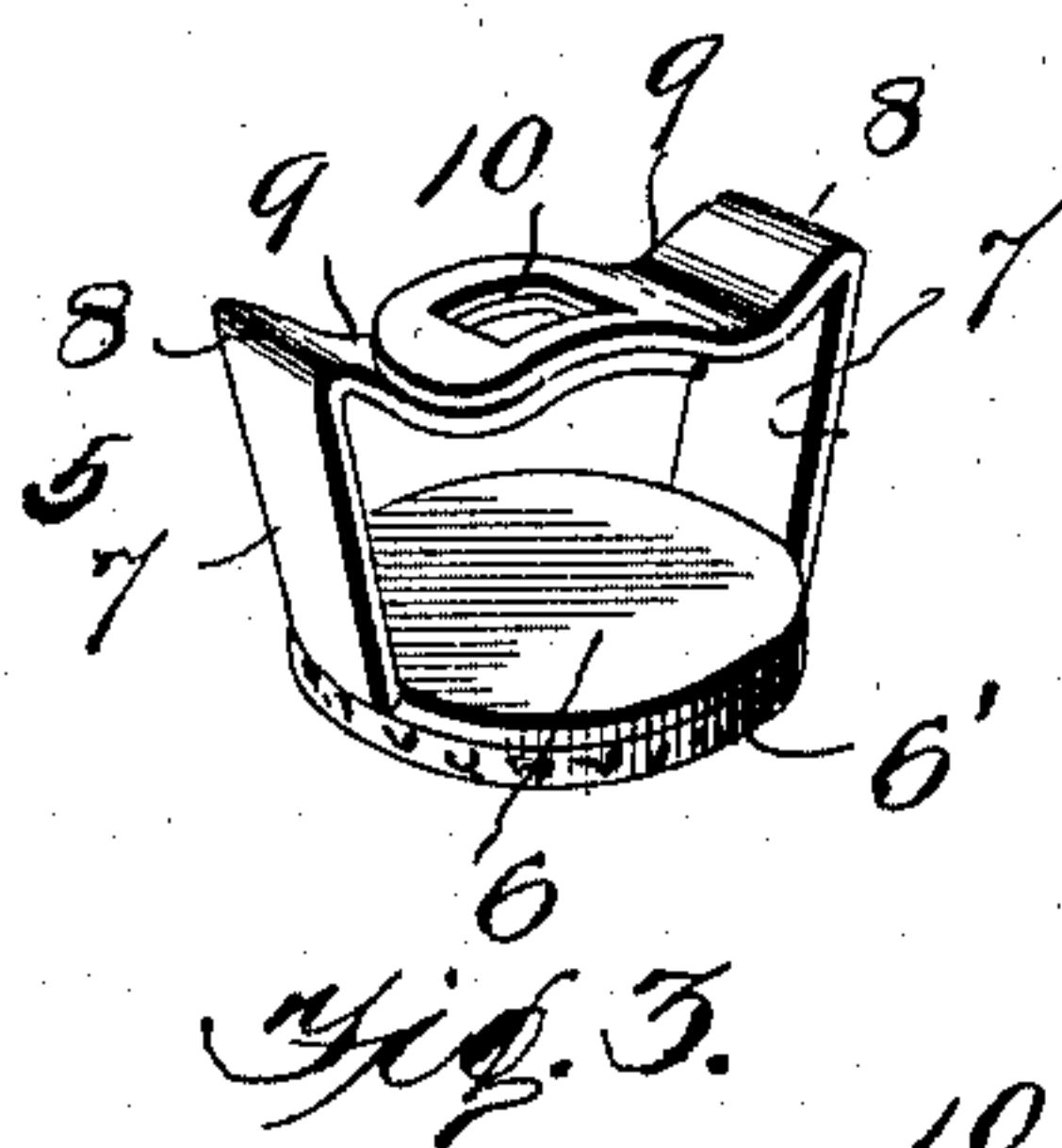
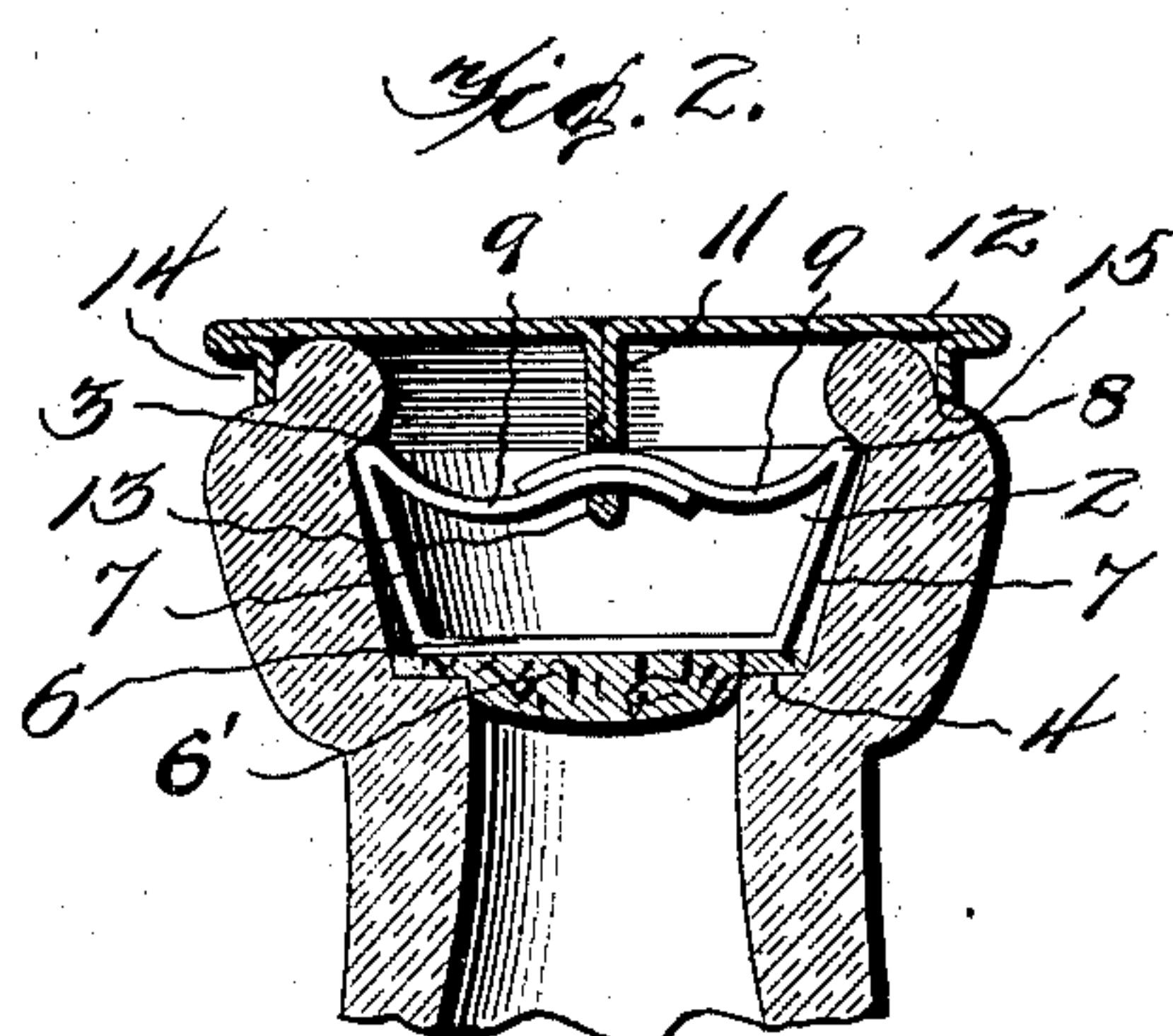
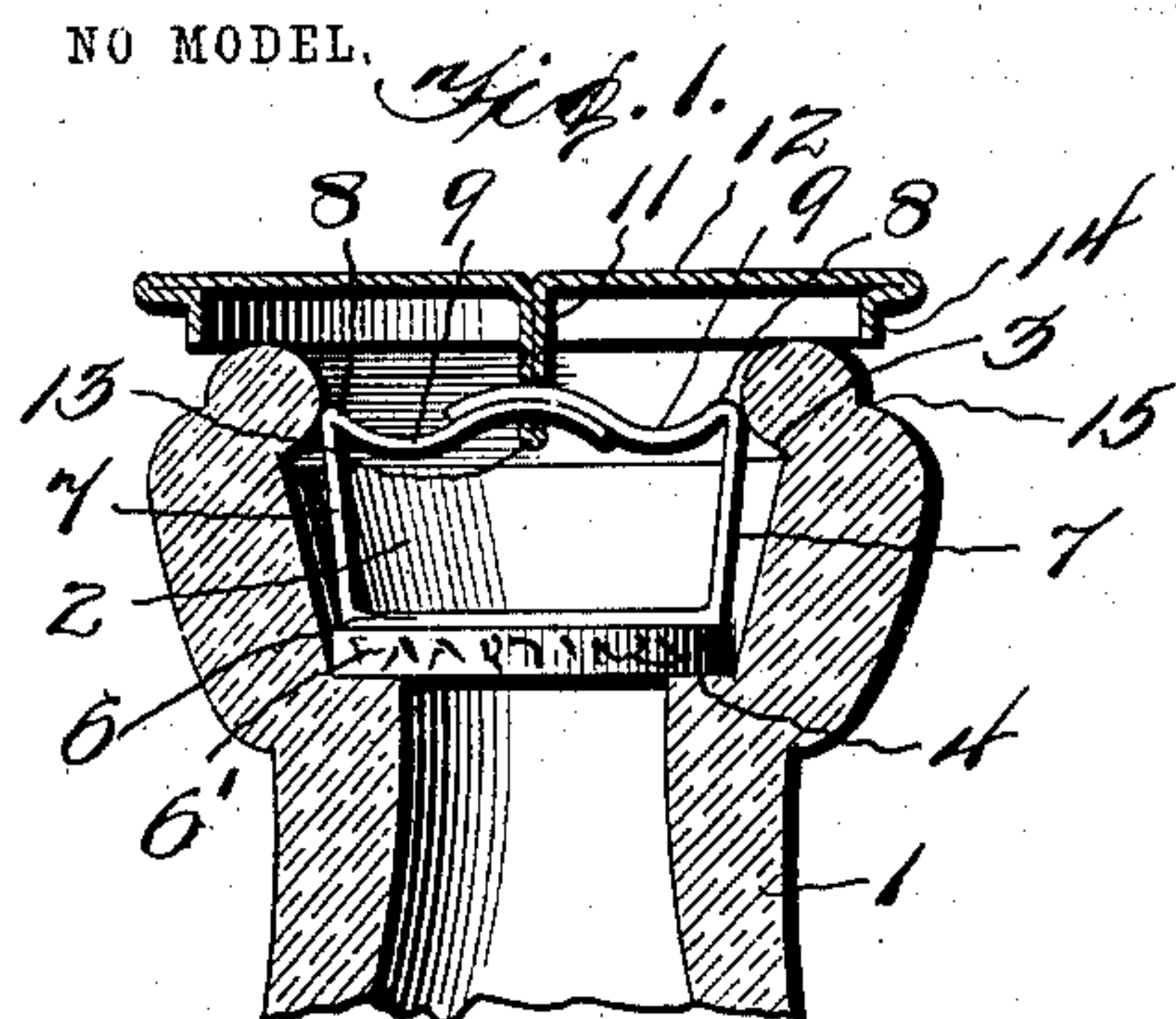


E. D. SCHMITT.
BOTTLE OR JAR SEALING DEVICE.
APPLICATION FILED SEPT. 17, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD D. SCHMITT, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNIVERSAL SEAL & STOPPER COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

BOTTLE OR JAR SEALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 741,844, dated October 20, 1903.

Application filed September 17, 1902. Serial No. 123,769. (No model.)

To all whom it may concern:

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing in the city of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bottle or Jar Sealing Devices; and I do 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 the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in bottle or jar sealing devices.

The invention has for its object, primarily, to provide a durable cheap seal that can be readily applied to the bottle either by hand or mechanical means and one which can be removed without the aid of a special tool and a seal which can be reapplied to keep the unused contents of the bottle fresh.

A further object of the invention is to effect a seal in a part of the bottle where the same is protected from injury and one in which the bottle or jar adapted for use will not be liable to such injury in shipment or handling as will make it impossible to reuse the same.

A still further object is to so form the locking device that it will prevent the entrance of dust or other objectionable matter into the bottle or jar neck immediately above the point where the seal is effected and at the same time present a flat surface which will permit the bottles or jars to be easily packed for storage or shipment.

I have heretofore invented and patented sealing devices especially adapted for sealing bottles containing highly-charged liquids and which embody the same general idea as that embodied in the device about to be described. The present invention, however, differs in several features, the leading one being the construction of the expanding and locking device, and consists mainly in so forming the same that it will perform the functions of locking or unlocking the seal and at the same time prevent the entrance of dust or other objectionable matter into the bottle

or jar neck above the point where the seal is made. It is also important that the form of the expanding and locking device be such that the bottles or jars may be readily and conveniently packed for storage or shipment and also present a bottle-head that will be adapted to receive a covering of tin or other foil, which when applied will present a neat appearance. With these considerations in view I have produced a seal that will fulfil the desires just mentioned, as well as one that will present a flat metal surface for the reception of advertisements or other matter usually placed upon closures or vessels of this character, all as fully set forth in the following specification.

As the device is shown only in connection with the bottle, I will for the sake of clearness and avoidance of unnecessary surplusage refer to it hereinafter as so applied, although obviously a mere change in proportion would adapt it for use in sealing jars or other receptacles having large mouths.

I prefer to use a bottle having an internal neck formation shown in my Patents Nos. 685,225 and 685,227, of October 22, 1901, and my reissue Patents Nos. 12,032 and 12,033, dated September 16, 1902—that is to say, a bottle formed with a sealing-seat in its neck and a shoulder or other contact-surface above the seat, with the exception, however, in the present instance of a shoulder around the outer edge of the bottle, the purpose of which will presently become apparent.

In the drawings, Figure 1 is a section of a bottle, showing the seal in place therein just before the locking operation takes place. Fig. 2 is a similar view showing the seal in place and locked. Fig. 3 is a perspective view of the securing member with the expanding and locking member omitted. Fig. 4 is a similar view of the expanding and locking member, showing the under side thereof. Fig. 5 is a plan view of a blank adapted to be bent to form a securing member. Fig. 6 is a series of views showing a manner in which the expanding and locking member or cap may be developed or formed, and Fig. 7 is a modification showing the seal locked in place with the top of the expand-

ing and locking member flush with the upper edge of the bottle.

Referring to the drawings, the numeral 1 indicates a bottle formed with a chamber 2 in the inside of the neck thereof, in which parts of the seal expand, a shoulder or contact-surface 3, and a second shoulder or sealing-seat 4 below the first-mentioned shoulder.

The numeral 5 designates what I term the "securing member," which is preferably formed of a single piece of spring metal, with a circular bearing portion 6, to which is attached a sealing member 6' and has arms 7, having engaging shoulders 8, adapted to engage the upper inclined shoulder 3 in the bottle-neck, and curved terminals 9, provided with slightly-elongated openings 10, which register with each other and are adapted to receive the lower end of a short depending arm 11 of the expanding and locking cap or member 12. This arm is provided with a cross-head 13, which is capable of passing through the openings 10 in the terminals of the securing member, and the final position of said cross-head is transverse to the direction of the length of the openings, so that the cap and securing member are locked together in such a way that when the cap is removed the securing member will also be removed. The cap is preferably formed with a short depending flange 14, which rests upon the annular shoulder 15 on the outside of the bottle-neck. This flange prevents the locking member from sliding laterally or being accidentally knocked to one side or the other and is for this reason preferably used, although a plain disk may be used either set into the top of the bottle, as shown in the modification, Fig. 7, or resting upon the upper edge of the bottle-neck. The openings 10 in the terminals in the securing member are sufficiently elongated to permit of the slight lateral movement which takes place in the locking and unlocking operation of the seal when said arms are caused to slide upon each other to a certain degree, depending upon the degree of lateral extension or contraction of said terminals. The sealing member may be secured to the securing member by means of cement or in any other suitable way, and said member is preferably of cork, although any material suitable for making close sealing-contact with the lower shoulder may be employed.

The locking and unlocking of the seal is accomplished by depressing or raising the terminals of the securing member, which obviously will either expand or separate the arm 7 or move the same toward each other, as the case may be, the action upon said terminals by the locking and unlocking member being a toggle action with the upper shoulder of the bottle-neck or the side wall of the chamber in said neck being the abutment to limit the lateral movement of the shoulders 8 of the securing member. When the terminals are depressed by applying pressure to

the locking member, the engaging shoulders 8 are thrown outward against the inclined shoulder 3 of the bottle-neck, which will cause a wedging tendency, resulting in a downward movement of the securing member and consequent compression of the sealing member, thus producing a perfect seal. When the terminals of the securing member reach or pass the line of their greatest lateral resistance, a seal will be made; but it is preferable, of course, to so construct the parts that the seal will be effected just after said terminals have passed such lines, as this will prevent the seal from being too easily removed—say, for instance, by the accidental movement of the expanding and locking member or cap. The arms of the securing member in entering the mouth of the bottle will be moved toward each other, but will expand into the chamber 2 when the engaging shoulders of the securing member are sufficiently in the chamber to permit them to expand against the shoulder in the bottle-neck, and a further downward movement of the seal will bring the cap or locking member into final position upon the bottle-neck and the sealing member into close sealing-contact with the lower shoulder or sealing-seat, thus producing a perfect seal.

In the modification shown in Fig. 7 the construction of the seal only differs in the particulars that the flange 14 is omitted and the top plate of the locking member is set in the top of the bottle. This of course necessitates a slight variation in the form of the bottle, and an annular seat 16 is provided to receive the plate. The numeral 17 represents small openings made in the plate of the locking member, into which the point of an instrument may be inserted to remove the seal.

To unlock the seal, it is only necessary to apply sufficient force to the locking member with a tendency to lift the same. This action will cause the terminals to resume the position shown in Fig. 1, when obviously the seal will be readily removable.

I claim—

1. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof a shoulder or contact-surface, and a sealing-seat below said shoulder or surface, of a sealing member, a securing member adapted to bear upon the sealing member, said securing member having engaging arms bent to form terminals, and a locking device having connection with the terminals and adapted to act thereon to force the engaging arms of the securing member into engagement with the upper shoulder in the locking operation, substantially as described.

2. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof a shoulder or contact-surface, and a sealing-seat below said shoulder or surface, of a sealing member, a securing member adapted to bear upon the sealing member, said securing

member having engaging arms bent to form terminals, and a locking device having connection with the terminals and adapted to act thereon to force the engaging arms of the securing member into engagement with the upper shoulder and retract the same therefrom in the unlocking operation, substantially as described.

3. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof a shoulder or contact-surface, and a sealing-seat below said shoulder or surface, of a sealing member, a securing member adapted to bear upon the sealing member, said securing member having engaging arms bent to form terminals, and a locking device having connection with the terminals and adapted to have a toggle action thereon, whereby the engaging arms are forced into locking engagement with the upper shoulder, substantially as described.

4. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof a shoulder or contact-surface, and a sealing-seat below said shoulder or surface, of a sealing member, a securing member adapted to bear upon the sealing member, said securing member being bent to form engaging arms having shoulders thereon and terminals, and a locking device having connection with the terminals and adapted to have a toggle action thereon, whereby the engaging shoulders of the securing member are forced into engagement with the upper shoulder in locking operation, and retracted therefrom in the unsealing operation, substantially as described.

5. In a bottle or jar seal, the combination with a bottle or jar having a shoulder or contact-surface in the neck thereof, and a sealing-seat below said shoulder, of a sealing member, a securing member adapted to bear upon the sealing member, said securing member being bent to form engaging arms having terminals, and a locking device having connection with said terminals, and adapted to have a toggle action thereon for the purpose set forth, said locking device being also formed with a portion adapted to cover the top of the receptacle, substantially as described.

6. In a bottle or jar seal, the combination with a bottle or jar having a shoulder or contact-surface in the neck thereof, and a sealing-seat below said shoulder, of a sealing member, a spring-metal securing member adapted to bear upon the sealing member, said securing member being bent to form engaging arms having terminals, and a locking device adapted to have a toggle action upon the terminals, to lock and unlock the seal, substantially as described.

7. In a bottle or jar seal, the combination with a bottle or jar having a shoulder or contact-surface in the neck thereof, and a sealing-seat below said shoulder, of a sealing member, a securing member adapted to bear upon the sealing member, said securing member being bent to form engaging arms having

overlapping terminals with openings therein, a locking device formed with a depending portion passing through the openings in the terminals, said locking device being adapted to have a toggle action on the terminals, to lock and unlock the seal, substantially as described.

8. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof a shoulder or contact-surface, and a sealing-seat below said shoulder, of a sealing member, a securing member with spring-arms having engaging shoulders and overlapping terminals having openings therein, a locking device having a portion passing through said openings whereby the locking device and securing member are connected, said locking device being also formed with a portion adapted to cover the top of the receptacle.

9. In a bottle or jar seal, the combination with a bottle or jar formed with an annular shoulder on the outside of the neck thereof, a shoulder or contact-surface in the inside of the neck and a shoulder or sealing-seat below said shoulder or contact-surface, a sealing member, a securing member formed with engaging arms having terminals, a locking device adapted to have a toggle action upon the terminals whereby the securing member is forced into engagement with the upper shoulder and retracted therefrom in the sealing and unsealing operations, said locking device being also formed with a portion adapted to cover the top of the receptacle and having a flange adapted to engage the annular shoulder on the outside of the bottle, substantially as described.

10. A bottle-seal comprising a sealing member, a securing member bent to form engaging arms having substantially horizontal terminals, and a locking device adapted to act upon the terminals for locking and unlocking purposes, substantially as described.

11. A bottle-seal comprising a sealing member, a securing member bent to form arms having terminals, and a locking device adapted to have a toggle action upon the terminals to lock and unlock the seal, substantially as described.

12. A bottle-seal comprising a sealing member, a securing member having spring-arms formed with engaging shoulders and bent to form terminals, a locking device adapted to have a toggle action upon the terminals to lock and unlock the seal, substantially as described.

13. A bottle-seal comprising a sealing member, a securing member formed of spring metal and having a portion to bear upon the sealing member and bent to form engaging shoulders and terminals, and a locking device adapted to have a toggle action upon the terminals for locking and unlocking purposes, substantially as described.

14. A bottle-seal comprising a sealing member, a spring-metal securing member bent to form engaging shoulders and terminals, a

locking device adapted to have a toggle action thereon for locking and unlocking purposes, said locking device being formed with a flat top surface, substantially as described.

- 5 15. A bottle-seal comprising a sealing member, a spring-metal securing member bent to form engaging shoulders and having overlapping terminals with registering openings therein, a locking device having a portion
10 passing through said openings in the terminals whereby the locking device is connected with said terminals and adapted to have a toggle action thereon for locking and unlocking purposes, substantially as described.

- 15 16. A bottle-seal comprising a securing

member formed with a circular bearing portion and spring-arms having engaging shoulders, said arms being also bent to form terminals, a sealing member carried by the securing member, and a locking device adapted 20 to have a toggle action upon the terminals to expand or contract the arms for locking or unlocking purposes, substantially as described.

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

EDWARD D. SCHMITT.

Witnesses:

JOHN W. HEWES,

MARK A. ELLIOTT.