

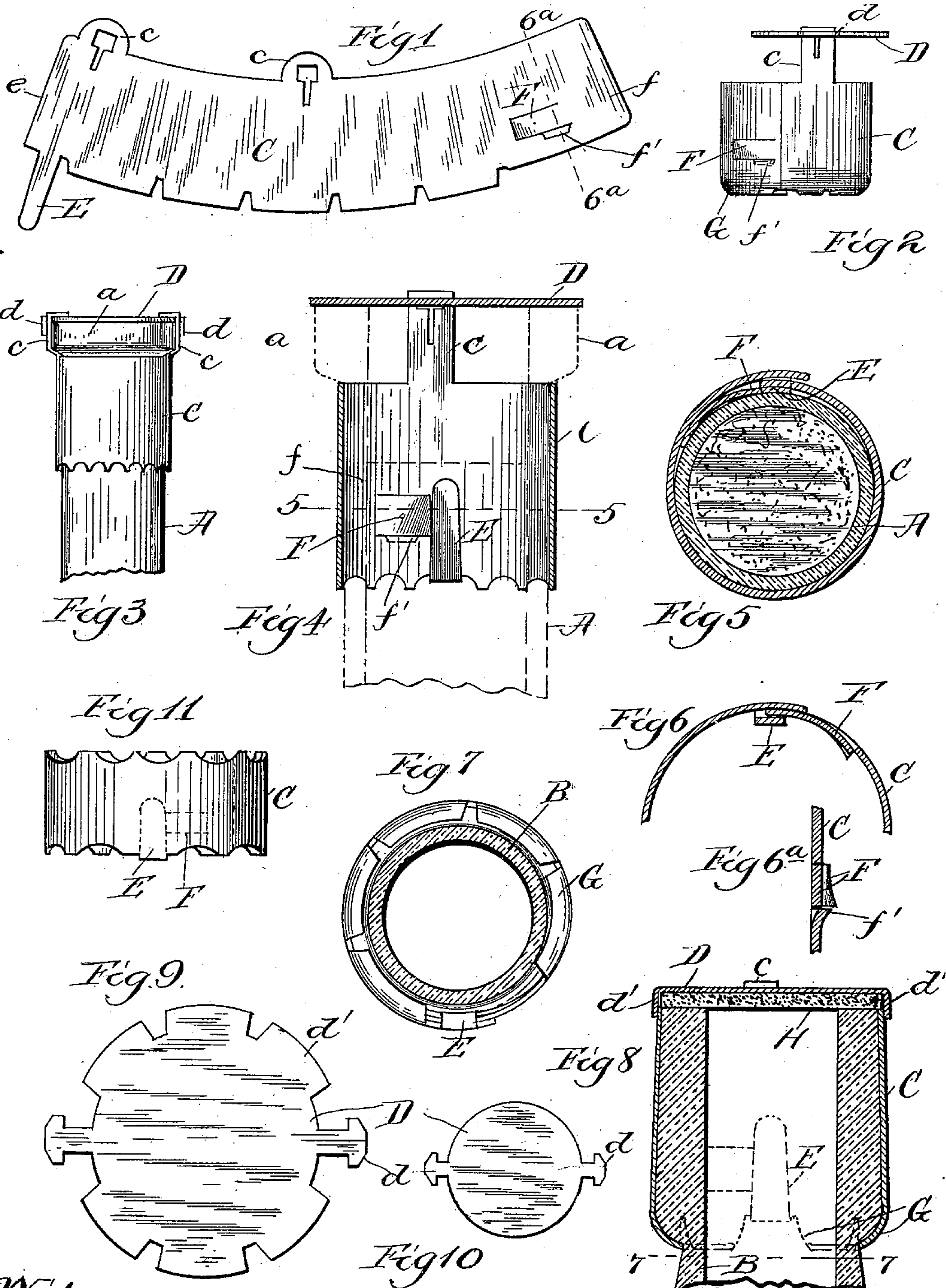
No. 631,781.

Patented Aug. 29, 1899.

S. F. ESTELL.
BOTTLE SEAL AND BAND.

(Application filed Nov. 28, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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BOTTLE SEAL AND BAND.

SPECIFICATION forming part of Letters Patent No. 631,781, dated August 29, 1899.

Application filed November 28, 1898. Serial No. 697,616. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL F. ESTELL, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Bottle Seals and Bands, of which the following is a specification, and which are fully illustrated in the accompanying drawings, forming a part thereof, and in which—

Figure 1 is an elevation of a blank of the band. Fig. 2 is an elevation of the seal before being applied to a bottle-neck. Fig. 3 is an elevation of the bottle-neck with the seal attached thereto. Fig. 4 is a vertical central section of the same on a larger scale and from a point of view ninety degrees removed from that of Fig. 3. Fig. 5 is a plan section on the line 5 5 of Fig. 4. Fig. 6 is a detail section on the line 5 5 of Fig. 4, the ends of the band not being brought to their final position. Fig. 6^a is a sectional view on the line 6^a 6^a of Fig. 1. Fig. 7 is an inverted plan section on the line 7 7 of Fig. 8. Fig. 8 is a central vertical section of the bottle-neck with a modified form of seal attached thereto. Fig. 9 is a blank of the cap of the seal shown in Fig. 8. Fig. 10 is a plan view of the cap shown in other figures, and Fig. 11 is an elevation of the band as adapted for other uses than in connection with the sealing of bottles.

The principal object of the invention is to provide a bottle-seal which cannot be opened without mutilation.

A secondary object is to provide a sealed lock for a band adapted to encircle a bottle or like non-compressible cylinder.

These objects are attained by the construction illustrated in the accompanying drawings and which are hereinafter fully described.

The more common practice now in vogue in sealing bottles is to use a cap of foil or paper, so applied that the bottle cannot be opened without mutilating the seal. In bottling goods under pressure or which may develop a pressure it is necessary to use some form of fastening for the stopper, and if a seal is employed it is usually applied in addition to the stopper-holding device.

The invention forming the subject of this application provides for the secure holding of

the stopper against any pressure which an ordinary bottle is adapted to withstand, and in addition thereto the bottle is sealed in such manner that its contents cannot be tampered with without detection.

Bottles are ordinarily made with the end of their necks thickened, thereby forming an annular shoulder. This thickened portion or band is of various widths, and the seal herein described is adapted for use in connection with either a wide or a narrow band of this kind. In the drawings I show at A bottle-necks having narrow thickening-bands *a*, and at B a bottle-neck having a wide band.

The seal comprises two members, a band C for encircling the neck of the bottle and a plate or bar D for crossing the end of the bottle-neck, the two parts being adapted to interlock.

Fig. 1 of the drawings shows a blank of the band as adapted for use in connection with the form of bottle-neck shown at B. This band C is of such length that when applied to the bottle-neck its ends overlap, and it is provided with two upstanding ears *c*, so disposed that when the band is adjusted to the bottle-neck they are diametrically opposite. The ears *c c* are apertured, as shown, and the apertures preferably are in T form.

The cap-plate D is preferably circular, as shown in Fig. 10, though not necessarily so, and it is provided with oppositely-disposed lugs *d* in T form, these lugs being adapted to enter the apertures of the ears *c c* when the plate D is turned to a vertical position. After the lugs *d d* are inserted within the apertures of the ears *c c* and the cap D is turned to the horizontal position (the terms "vertical" and "horizontal" being of course used relatively) the heads of the lugs prevent their withdrawal from the apertures.

When the seal is intended for use in connection with such a bottle as that shown at B, the band encircles the thickening-band of the bottle-neck and is provided with an intumed flange G for engaging the shoulder of the bottle-neck. This flange G is formed by notching the lower edge of the blank C, as shown in Fig. 1, and by the same operation in which the band is given its approximately circular form the flange G is intumed. The band having been brought to the approxi-

mately circular form, as shown in Fig. 2, the cap-plate D is applied to it, and the seal is then ready to be adjusted to its place upon the neck of the bottle, and when placed thereupon the ears *c c* and the lugs *d d* are turned downwardly, the former upon the plate D and the latter against the band C.

Thus far I have described the device as being substantially identical in form, except as to the shape of the apertures in the ears *c c*, with the bottle-seal which formed the subject of Letters Patent No. 615,543, granted to me December 6, 1898.

In order to adapt the seal for use in connection with bottle-necks, such as A, having narrow thickening bands, such as *a*, it is necessary to add thereto some means for locking the band against expansion after it has been compressed upon the bottle-neck, as the interlocking of the ears of the band with the lugs of the cap-plate is no longer available for this purpose. Such a lock is herein shown and comprises a finger E, secured to and preferably formed integral with the band C, and being located near its overlapping end and folded across the inner face of the band, and a tongue F, located near the underlapping end of the band and projecting backwardly therefrom and being inclined inwardly, the finger and tongue being so disposed that as the band is compressed upon the bottle-neck the former will slide past the latter and lie in contact with its extreme end when the compression has been completed, thereby preventing any expansion of the band.

I prefer to form the finger E as a lateral extension from the band C in cutting the blank, and I locate it near the end *e* of the band. After the blank is cut this finger is folded inwardly, so as to lie across the face of the band. The tongue F is preferably formed by making a simple cut in the band C near its end *f*, this cut being approximately U-shaped. The dies are so formed that as the tongue F is cut it is inclined and slightly bent or twisted, so that when the band is bent to circular form this tongue will bear inwardly at its inner end, the inclination being most decided at its lower edge. In the operation of cutting this tongue a slight flange *f'* is thrown up inwardly along the lower side of the rear portion of the tongue, this flange not exceeding in height the thickness of the metal employed.

When the band is compressed upon the bottle-neck, the end *f* slides between the finger E and the overlapping end *e*. The finger E readily passes the flange *f'*, the band not being then sufficiently compressed to cause the finger and flange to engage. As the compression is completed the finger E passes the tongue F by forcing it into the aperture in the band C, from which it was cut, the end of the tongue springing back into the path of the finger when released and by reason of its twisted form crossing the edge of the finger obliquely, thereby more securely engaging

the two parts. The band is made of such size that when it has been thus compressed upon the bottle neck it fits very closely thereto. The finger E separates the band from the surface of the bottle-neck by the thickness of the metal; but the closeness of the fit causes the end *f* to bend inwardly from the point at which the finger E crosses it, thus contracting the space within which it might be possible to insert a blade for the purpose of throwing the tongue F out of engagement with the finger E. The entrance of such a blade is further prevented by the flange *f'* and by the outwardly-turned lower edge of the tongue F between the end of the flange *f'* and the free end of the tongue. This lock may be and preferably is used in connection with seals mounted upon bottle-necks, such as B, having the wide thickening-band, and when so applied the intumed flange G still further guards it against tampering, as it is impossible to turn outwardly the flange G, formed as it is with a curve, without such mutilation that it cannot possibly be returned to its original form.

In applying the seal to bottle-necks, such as A, having the narrow thickening-bands *a*, the band C is placed below the shoulder formed by the thickening of the bottle-neck, and its ears *c c* are lengthened, so as to pass over the band *a* for engagement with the lugs *d d*.

In either form of construction the seal when made of thin sheet-steel will hold the stopper in place against a pressure far in excess of that safely developed within an ordinary bottle, so that no wiring or other supplemental stopper-securing mechanism need be employed.

If desired, the cap D may be provided with a downturned flange *d'* and lined with a cork disk H, thereby providing a stopper, as well as a seal. This construction is found serviceable in bottling such goods as olives, pickles, and the like.

The lock described may be applied also to bands for bottles or similar cylinders when not forming a part of a seal—as, for example, a band upon which may be engraved a label—and being particularly useful in connection with shelf bottles or jars, such as those used by druggists. Such a band is illustrated in Fig. 11 and will serve as a cheap and attractive substitute for the expensive gilded labels ordinarily applied to the shelf bottles and jars of the druggist.

I claim as my invention—

1. In combination, a metal band adapted to encircle a non-compressible cylinder and to have one of its ends overlap its other end, and an automatic spring-lock for securing the overlapping ends together when the band is compressed upon a cylinder, such lock being covered by the overlapping end of the band.

2. In combination, a metal band adapted to encircle a non-compressible cylinder and to have one of its ends overlap its other end,

the underlapping end having a backwardly-projecting inwardly-inclined tongue; and a finger secured to the overlapping end and loosely crossing its inner surface, and being adapted to lie within the underlapping end and engage the free end of its tongue.

3. A metal band adapted to encircle a non-compressible cylinder and to have one of its ends overlap the other, the underlapping end being cut to form a backwardly-directed tongue, and such tongue being inwardly inclined and twisted, the overlapping end being provided with an integral lateral finger and such finger being folded across the inner face of such end.

4. A metal band adapted to encircle a non-compressible cylinder and to have one of its ends overlap the other, the underlapping end being provided with a backwardly-directed inwardly-inclined tongue and an instanding abutment flanking the rearward portion of one side of the tongue, the overlapping end having a finger lying loosely across its inner surface and adapted to engage the tongue.

5. A metal band adapted to encircle a non-compressible cylinder and to have one of its ends overlap the other, the underlapping end being cut to form a backwardly-directed tongue, and such tongue being inwardly in-

clined, and an instanding flange being formed along the side of the tongue at its base, the overlapping end being provided with an integral lateral finger and such finger being folded across the inner face of such end.

6. In a bottle-seal, the combination with a band adapted to encircle the bottle-neck and have one of its ends overlap the other, and having an automatic spring-lock for securing its ends together and being covered by its overlapping end, upstanding apertured ears on the band, and a bar or plate having ends or lugs adapted to enter the apertures of such ears, and to be folded downwardly against the band, the ears being then turned down upon the end of the bottle-neck.

7. In combination, a metal band for encircling a bottle-neck having an annular shoulder, such band having an inturned flange for engaging the shoulder of the bottle-neck, and being adapted to have one of its ends overlap the other, and an automatic spring-lock for securing such ends together and being covered by the overlapping end of the band.

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