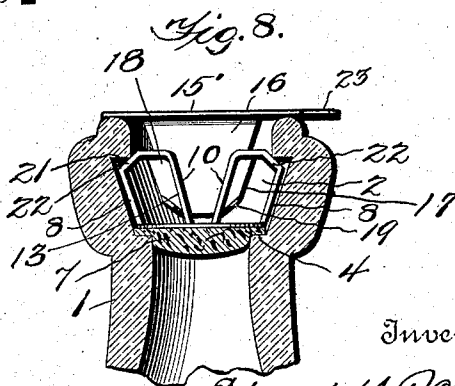
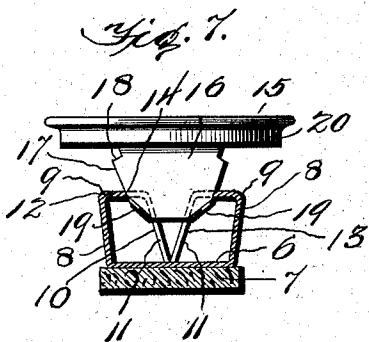
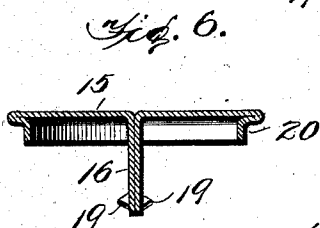
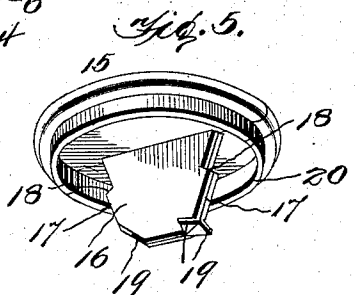
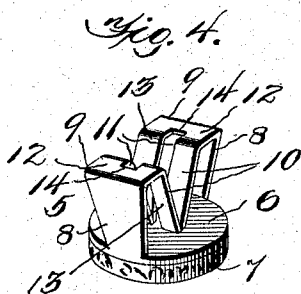
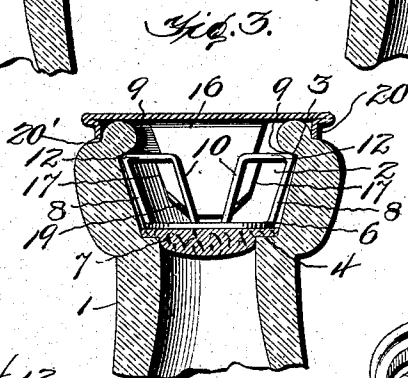
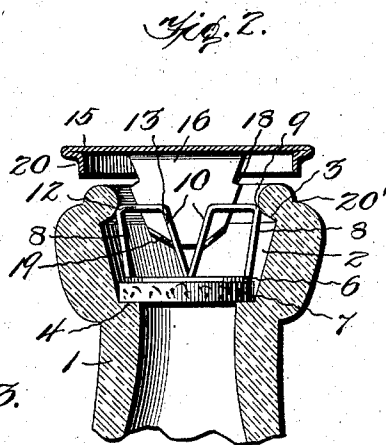
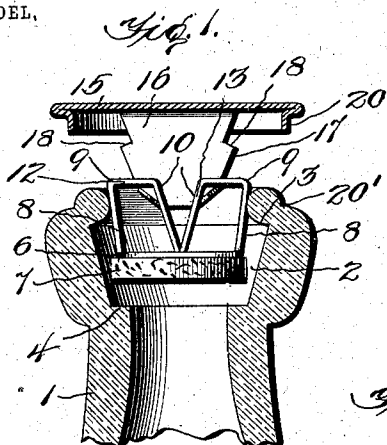


E. D. SCHMITT.
BOTTLE OR JAR SEALING DEVICE.

APPLICATION FILED SEPT. 16, 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 AND STOPPER COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

BOTTLE OR JAR SEALING DEVICE.

SPECIFICATION forming part of Letters Patent No. 741,843, dated October 20, 1903.

Application filed September 16, 1902. Serial No. 123,618. (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; and it has for its object, among others, to produce a seal that can be readily removed without a special tool and replaced to keep fresh the contents of the bottle or jar if it is not desired to use the same at once.

It is my object, further, to overcome the objections to seals of the cap variety, in which the seal is made between a sealing member and the upper edge of the bottle, the chief of these objections being the liability or likelihood of the bottle to become chipped in handling, thus rendering it impossible to effect a perfect lasting seal, and the further objection of having to remove the seal by a special tool, which seal when once removed cannot be reused to reseal the bottle.

A still further object in the present instance is to so form the locking device that it will cover and effectually exclude dust or other undesirable foreign matter from the bottle or jar neck above the point where the seal is made and at the same time present a smooth surface that will permit the bottles or jars to be conveniently packed for storage or shipment and also present a surface admirably adapted for the reception of advertising or other matter usually placed upon the closures of receptacles of this character.

Other objects and advantages resulting from the construction about to be described will become apparent in the following description.

In the drawings, Figure 1 is a section of a

bottle, showing the seal in one of the first positions it occupies in the neck thereof in the sealing operation. Fig. 2 is a similar view showing the seal in the bottle-neck in the position it occupies just before the final movement in the sealing operation takes place. Fig. 3 shows the seal in the bottle and locked. Fig. 4 is a perspective view of the securing member separated from the locking member. Fig. 5 is a perspective view of the locking member looking at the under side thereof. Fig. 6 is a central section of the locking device of the seal, more clearly showing the means for connecting the securing and locking members. Fig. 7 is a central section of the locking and securing members, showing the means for connecting the securing and locking members; and Fig. 8 is a view showing a slightly-modified form of bottle and seal.

In the accompanying drawings the seal is shown applied to a bottle and will be referred to hereinafter as so applied; but it will be understood that it may be equally well adapted for sealing jars or other receptacles having large mouths, the change necessary being merely one of proportion.

Referring to the drawings, the numeral 1 indicates the bottle embodying the internal neck formation to which my seal is adapted—that is to say, a bottle having a chamber or recess 2 and an upper shoulder 3, preferably inclined, and a lower shoulder or sealing-seat 4.

The numeral 5 designates what I term the “securing” member, made, preferably, of a single piece of spring metal so formed as to present a circular bearing portion 6, to which is attached, by any suitable means, but preferably cement, a sealing member or disk 7, of cork or other material suitable for making close sealing contact with the lower shoulder. Integral with the circular portion are arms 8, having shoulders 9, adapted to engage the inclined shoulder 3 in the bottle when the seal is applied, and terminals 10, each having a narrow slot 11 therein for a purpose that will presently become apparent. These terminals are preferably bent first at about

right angles to the arms 8, as at 12, and then inclined downwardly toward the top of the central bearing portion, as shown at 13. These slots may extend entirely throughout the length of the inclined portions 13 of terminals 10 and extend for a short distance in the horizontal portions 12, the metal at the end of the slots forming shoulders 14, adapted to act in conjunction with the expanding and locking member, about to be described. This locking member consists of a cap or disk 15, preferably of metal, provided centrally with a depending expanding-wedge 16, whose inclined side edges 17 abut against the material at the ends of the slots in the horizontal portions 12 of the securing member. The expanding-wedge is provided just below the plate 15 on both sides of said wedge with a shoulder 18, adapted to engage the shoulders 14 or under side of the portion 12 of the securing member when the seal is applied and whereby the securing member is locked in sealing position.

The locking member and the securing member are prevented from becoming separated by bending the lower corners of the expanding-wedge 16 into short tangs 19, which overlap the material at the sides of the slots in the portions 13 of the terminals. The tangs 19 perform the double function of connecting the securing and locking members, so that the whole seal will leave the bottle-neck at once, and as a means working against the inclined portions 13 of the terminals 10 to contract or draw the arms 8 together, and consequently the shoulders 9 out of engagement with the upper shoulder in the bottle in the unsealing operation, as will appear in the description of the operation.

The locking member or cap, as shown in the main figures, is provided with a short depending flange 20, which rests upon an annular shoulder 20' near the upper edge of the bottle-neck and prevents the cap from being moved laterally and at the same time prevents dust or other undesirable matter from entering the bottle-neck above the sealing-point.

Referring to the modification Fig. 8 the formation of the bottle as well as the seal is slightly varied from that shown in the main figures in that the upper shoulder in the bottle is square, as shown at 21, and the shoulder on each arm of the securing member is inclined, as shown at 22, the wedging action or tendency to seat the seal in the sealing operation in this instance being due to the inclination of the shoulder of the securing member. In this form the flange 20 is dispensed with, and the upper portion of the locking device rests upon the upper edge of the bottle and is provided with a short laterally-extending arm 23 of sufficient width and extending a sufficient distance beyond the top plate 15' to be conveniently engaged by the end to remove the seal.

Attention being now called to the main fig-

ures, the operation of sealing is as follows: The seal is placed in the bottle-neck—say in the position shown in Fig. 1—with the arms of the securing member pressed slightly toward each other, in which position they will remain until the seal has been passed sufficiently into the bottle to permit the arms to expand, bringing the shoulders 9 into engagement with the upper inclined shoulder of the bottle, as clearly shown in Fig. 2. In this position the sealing member will be in engagement with the lower shoulder or sealing-seat, but not compressed to its full extent. Now a still further pressure exerted upon the locking member will cause the expanding-wedge 16 to further descend and expand the arms 8, and consequently the shoulders 9, outwardly against the upper shoulder in the bottle with very considerable force, and the tendency of the shoulders 9 to ride down the incline will obviously cause a downward movement of the securing member and the consequent compression of the sealing member against the sealing-seat. This downward movement of the securing member and compression of the disk or sealing member continue until the shoulders 18 on the wedge clip under the shoulders 14 of portions 12 of the securing member, at which point the flange of the locking-cap will be brought into engagement with the outer shoulder of the bottle-neck, locking the seal, and the decided compression of the sealing member that has taken place in the operation produces a perfect lasting seal.

To unlock and remove the seal, it is only necessary to apply sufficient force to the locking member, lifting it by hand or some handy instrument until the shoulders 18 of the expanding-wedge become disengaged from the portion 12 of the securing member, when a further upward movement of the cap will cause the tangs 19, sliding against the terminals 10, to contract said terminals, or rather draw them toward each other, until they approximate the position shown in Figs. 1 and 2. This action of the tangs against the terminals causes the shoulders 9 of the securing member to be disengaged from the upper shoulder in the bottle-neck, when the whole seal is readily removable. The operation of locking and unlocking the seal shown in the modification, Fig. 8, is the same as the operation just described, and therefore needs no further description.

It will be understood that minor modifications involving merely mechanical skill may be made without departing from the spirit of the invention.

I do not desire it to be understood that I limit myself to the feature of inclining the shoulder in the upper part of the bottle or jar neck, for obviously this may be differently formed—as, for instance, square, as shown in Fig. 8—and still work admirably in conjunction with the securing member shown in the main figures of the drawings, nor is it nec-

essary that the plate of the locking member entirely cover the top of the bottle or jar, as this may be a plate or strip of any desired width, as at 15', Fig. 8. With this construction a space will be left on either side of the plate, through which the sealing-plungers of a seal-applying device may pass to engage the plate 6 of the securing member.

I claim—

1. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof, an inclined shoulder or contact-surface and a shoulder or sealing-seat below said shoulder or contact-surface, a sealing member, a securing member adapted to bear upon the sealing member and engage the upper shoulder, a locking device provided with a spreading portion adapted to engage the securing member and lock the same in sealing position in the bottle or jar, said locking device being also formed with a portion adapted to cover the top of the receptacle.

2. In a bottle or jar seal, the combination with a bottle or jar having formed in the neck thereof, a shoulder and a sealing-seat below said shoulder, of a sealing member, a securing member, adapted to bear upon the sealing member and provided with shoulders adapted to engage the upper shoulder, a locking device having a wedge-shaped spreading portion adapted to engage the securing member and lock the same in sealing position in the bottle-neck, substantially as described.

3. In a bottle or jar seal, the combination with a bottle or jar having a shoulder in the neck thereof, and a shoulder or sealing-seat below said shoulder, a sealing member, a securing member having arms provided with shoulders adapted to engage the upper shoulder in the bottle-neck, a locking device having a wedge-shaped spreading portion adapted to operate upon the securing member to spread the arms thereof into locking engagement with the upper shoulder, said locking device being also formed with a portion adapted to cover the top of the receptacle when in final sealing position.

4. In a bottle or jar seal, the combination with a bottle or jar having an inclined shoulder 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 and engage the upper shoulder in the bottle-neck, and a locking member adapted to operate upon the securing member to lock the same in sealing position in the bottle-neck, said locking device being also formed with a portion adapted to cover the top of the receptacle.

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 or surface, a sealing member, a spring-metal securing member adapted to bear upon the sealing member and engage said upper shoulder, and a locking device adapted to lock the securing

member in the bottle-neck, and also formed with a part 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 in the neck thereof, an upper shoulder or contact-surface, and a sealing-seat below said shoulder, a sealing member, a securing member adapted to bear upon the sealing member, and a locking device adapted to operate upon the securing member in its downward movement to lock said member and also formed with a part adapted to cover the top of the receptacle, substantially as described.

7. In a bottle or jar seal, the combination with a bottle or jar having in the neck thereof, an upper shoulder or contact-surface, and a shoulder or sealing-seat below said shoulder or contact-surface, a sealing member, a securing member adapted to bear upon the sealing member to cause the same to make sealing-contact with the lower shoulder, said securing member being provided with engaging arms adapted to engage the upper shoulder, and a locking device adapted to lock the securing member in sealing position, in the bottle-neck and also formed with a part adapted to cover the bottle, substantially as described.

8. In a bottle or jar seal, the combination with a bottle or jar having a shoulder in the neck thereof, and a shoulder or sealing-seat below said shoulder, a sealing member, a securing member having spring-arms formed with engaging shoulders adapted to engage the upper shoulder, and a locking device adapted to operate upon the securing member to lock the same in the bottle-neck upon the downward movement of said locking device, said locking device being also formed with a part adapted to cover the top of the receptacle.

9. 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 or surface, a sealing member, a securing member adapted to bear upon the sealing member, said securing member being formed with arms having engaging shoulders and having slots therein, a locking device provided with a spreading-wedge adapted to enter said slots to expand the arms into engagement with the upper shoulder in the sealing operation, substantially as described.

10. In a bottle or jar seal, the combination with a bottle or jar having a shoulder or contact-surface in the neck thereof, of a shoulder or sealing-seat below said shoulder or surface, a sealing member, a securing member adapted to bear upon the sealing member and formed with arms having engaging shoulders adapted to engage the upper shoulder in the bottle or jar neck, said arms being also provided with slots, a locking device having a spreading-wedge adapted to enter the slots in the arms, and means for maintaining the

sealing-wedge in locked engagement with the securing member, substantially as described.

11. 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 shoulder or sealing-seat below the first-mentioned shoulder or surface, a sealing member, a securing member adapted to bear upon the sealing member, and formed with arms having shoulders adapted to engage the upper shoulder, said arms being provided with slots, a locking device having a spreading-wedge adapted to enter the slots, and adapted to spread the securing member into engagement with the upper shoulder, said wedge being provided with shoulders adapted to engage the securing member when in final locking position, and suitable connections between the locking device and the securing member whereby the securing member is removed with the locking device, substantially as described.

12. In a bottle or jar seal, the combination with a bottle or jar having a shoulder or contact-surface formed in the neck thereof, a sealing-seat below said shoulder or surface, a sealing member, a securing member adapted to bear upon the sealing member and cause the same to make close sealing contact with the sealing-seat, said securing member being formed with arms having engaging shoulders adapted to engage the upper shoulder or contact-surface, in the bottle or jar neck, the terminals of said arms being provided each with a slot, a locking device having a spreading-wedge adapted to enter the slots, said wedge being provided with shoulders adapted to engage the terminals of the securing member, and maintain the seal in locked position, and also a means engaging the terminals whereby the locking device is connected with the securing member and the arms of said securing member are contracted in the unsealing operation.

13. In a bottle or jar seal, the combination with a bottle or jar having formed in the neck thereof an upper and lower shoulder, a sealing member adapted to make contact with the lower shoulder, a securing member bearing upon the sealing member, and provided with spring-arms having engaging shoulders to engage the upper shoulder, and terminals having slots therein, a locking device being provided with shoulders adapted to engage the terminals to maintain the seal in locked position, means carried by the locking device whereby the said device and securing member are connected together, and the arms of the

securing member are contracted in the unsealing operation, substantially as described.

14. 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 or surface, a sealing member, a securing member adapted to bear upon the sealing member and engage the upper shoulder and a locking device adapted to lock the securing member in sealing position in the bottle or jar neck, and also to rest upon the top of the receptacle when in final locked position, substantially as described.

15. A bottle-seal comprising a sealing member, a securing member having engaging arms, and a device adapted to lock the securing member, said device being formed with flat upper surface, substantially as and for the purpose set forth.

16. A bottle-seal comprising a sealing member, a securing member formed with engaging arms, and a flat-top locking device carried by said member and adapted to lock the same.

17. A bottle-seal, comprising a sealing member, a securing member formed with arms having engaging shoulders and slotted terminals, a locking device carried by the securing member and adapted to spread arms thereof, and means for locking the securing member and locking device together, and contracting the engaging arms in the unsealing operation.

18. A bottle-seal comprising a sealing member, a securing member formed with arms having engaging shoulders, and a device adapted to lock the securing member, said device being formed with flat upper surface, substantially as and for the purpose set forth.

19. A bottle-seal comprising a sealing member, a securing member having engaging arms and a locking device having a wedge-shaped spreading portion adapted to lock the securing member, substantially as described.

20. A bottle-seal comprising a sealing member, a securing member formed with engaging arms, a locking device having a wedge-shaped spreading portion adapted to lock the securing member, means for connecting the locking device and the securing member, and means for maintaining the arms of the securing member in locking position, substantially as described.

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

EDWARD D. SCHMITT.

Witnesses:

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FLORA PIERCE.