No. 855,198. PATENTED MAY 28, 1907.

C. C. PARKER.

METAL SEALING CAP.

APPLICATION FILED JAN. 22, 1907.

Fig. 1

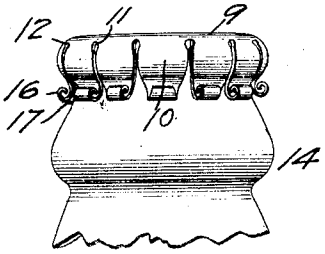


Fig. 2

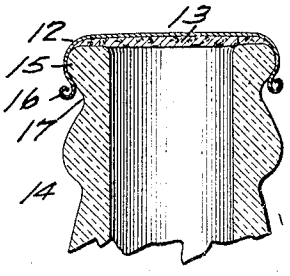


Fig. 3

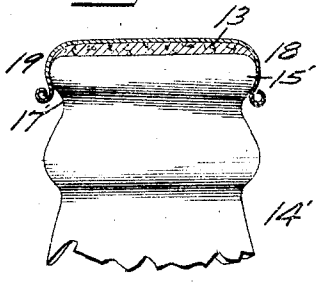


Fig. 5

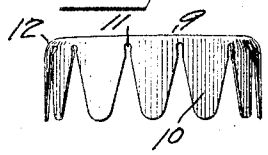


Fig. 6

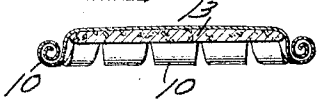


Fig. 4

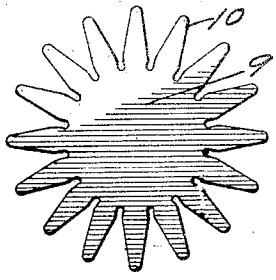


Fig. 7

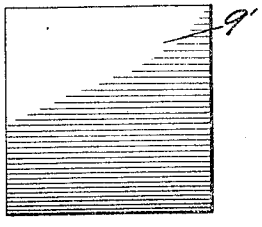
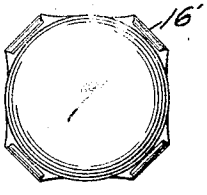


Fig. 8



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UNITED STATES PATENT OFFICE.

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METAL SEALING-CAP.

No. 855,198. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 22, 1907. Serial No. 353,459.

To all whom it may concern:

Be it known that I, CHARLES C. PARKER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a new and useful Metal Sealing-Cap, of which the following is a specification.

This invention relates to sealing caps for bottles, and especially to that class which are adapted to be clamped on bottles having an exterior locking shoulder, such as are used in connection with what are known as "crown" seals; and the object of this invention is to provide a sealing cap which will adapt itself to bottles where the locking shoulders are irregular in thickness, or to bottles having shoulders which vary in thickness.

In applying the "crown" seal to bottles, it is supposed that all bottles will have the locking shoulders uniform in thickness throughout their extent, and that the shoulders on the different bottles will not vary in thickness. As a matter of fact, however, it is almost impossible to get bottles with uniform locking shoulders owing to the way in which they are produced As a result, where caps are used with a solid, or undivided skirt, with a row of locking scallops, or crimps at the lower edge, should the locking shoulder be less in thickness than the standard size, when the capping head descends upon the seal in applying it to a bottle, the crimps or scallops will be forced down below the under side of the shoulder, and will not engage the same until pressure is removed from the seal by the lifting of the pressure block, at which time the seal will return until the scallops engage the shoulder, and hold the cap against further rising. Here, though, is the cause of serious trouble from the fact that cork disks are usually used for gaskets within the metal caps, and after these have been compressed under pressure, the cork will not readily expand, and even a slight return of the cap owing to the carrying down too far of the scallops, will be sufficient to cause a loss of some gas, although it may pass off so gradually that if the contents are used within a short time the loss will not be entire. Should, however, there be any considerable return of the cap, the gas will be entirely lost, and the contents of the bottle will be of no value. If the locking shoulder is thicker than the standard, the scallops will not carry down far enough to lock underneath the same, and the seal will blow off immediately on the return of the capping head, causing the loss of the seal, and usually causing the discarding of the bottle. Or, if the shoulder is but slightly above the standard, the scallops may catch slightly, and the contents may be lost later. Again, it often happens that the locking shoulders are less in diameter than the standard, and where the skirt of the cap is undivided, the capping head will not force the same inward against the shoulder to cause a tight seal.

It is the object of my invention to provide a metal cap which will meet all these various conditions, and adapted itself to bottles having locking shoulders which vary in thickness, whether less, or greater than the standard, or which are irregular in thickness, or where they are less in diameter than the standard.

A further object of my invention is to provide a seal which can be easily removed from the bottle and eliminate to a large extent the liability of breakage in the removal of the seal.

My invention is illustrated in the accompanying drawing, in which—

Figure 1. is a side elevation of my improved seal applied to a bottle of standard size; Fig. 2. is a central vertical section of the same; Fig. 3. is a side elevation of a bottle having a locking shoulder irregular in thickness, and a central vertical section of my seal applied thereto; Fig. 4. is a blank stamped from sheet metal from which I form my improved sealing cap; Fig. 5. is a view of the same drawn into shape preparatory to coiling the wings; Fig. 6. is a view in vertical section of the seal, with the wings coiled preparatory to mounting on a bottle; Fig. 7. is a view of a modified form of blank; and Fig. 8. is a plan view of a seal formed therefrom.

In the accompanying drawing, the several parts of my invention are indicated by numerals of reference; and in practice I provide a seal, preferably formed from a blank as shown in Fig. 4, which is stamped from sheet metal, and drawn in the press into the shape shown in Fig. 5, and then into the shape shown in Fig. 6. The blank consists of a central part 9, which in the preferred shape is

circular in form, and a plurality of radial wings 10. The disk 9 is proportioned in size so that when drawn into the shape shown in Fig. 5, the wings will be pending with the openings between them extending to the point 11, which is but slightly below the curved part 12, of the cap, so that the entire skirt is practically divided into a number of equal parts, the dividing line extending upward sufficiently to prevent any material drawing of the metal in forming the blank into the shape shown in Fig. 5, the only part of the cap requiring any drawing of the metal being simply the curved part 12, as the wings 10 being divided, are simply bent over perpendicular to the part 9.

After the wings 10 are bent perpendicular to the part 9, they are coiled outwardly and upwardly, as shown in Fig. 6, the wings being coiled until the upper tangential point is nearly on a level with the top of the cap, leaving enough of the skirt uncoiled to form a secure seat for the cork disk 13, forming the packing.

In applying the seal to a bottle, as 14, an ordinary capping head may be used, such as used in applying the crown "seals", although I prefer to use a capping head with a throat less tapered than used in applying the "crown". As the capping head descends, the coiled wings 10 will be uncoiled by the downward pressure of the throat and the back pressure of the locking shoulder 15, of the bottle, causing the wings to contact very closely with the locking shoulder and conform themselves thereto until a sufficient part of each wing is uncoiled to allow the remaining part of the coil, as 16, to enter the groove 17, in the neck of the bottle, the wings 10 being made of sufficient length so that the uncoiled part 16 will represent at least a complete turn of the metal when it is seated within the groove 17 in order to give sufficient rigidity to the wings when in locking engagement with the locking shoulder 15.

As the wings 10 are independent of each other, and the unrolling of the coils is effected by the capping head in conjunction with the shoulder 15, only so much of the coil will be unrolled as is absolutely necessary to allow the coil 16 to enter the groove 17, as it will then be impossible for the capping head to continue to unroll the coil whether the locking shoulder be less in thickness than the standard or greater in thickness; and as these wings are independent of each other, should the locking shoulder 15' be irregular in shape, as shown in Fig. 3, the side 18, being thicker than the side 19, only so much of each coil will be unrolled as is necessary to allow the remaining part to enter the groove below the locking shoulder; and when the capping head is removed, there is no danger of the cap returning to cause a leakage either of liquid or gas.

It will thus be seen that I have provided a seal in which the locking shoulder itself forms a part in adjusting the seal, and if the tension of the pressure block is sufficient to cause the proper embedding of the lip of the bottle in the gasket when the seal is applied, it will be held so embedded until the seal is removed no difference how irregular the locking shoulder, or how much it varies from the standard. Then, too, in removing the seal with the tools ordinarily used in removing the "crown", as the wings are separated from each other, the particular wings engaged by the tool will be raised outwardly, and rolled, or partially rolled upwardly, so that the seal leaves the bottle with more of a rolling motion than with the sliding motion—required where the skirt of the cap is undivided, as will be readily understood. This not only makes the removal of the seal much easier, but reduces the liability of breakage.

In Fig. 7 I have shown a square blank, and in Fig. 8, a cap formed from the same with the corners rolled up to form the coils. Cutting the blanks out in this way causes no loss of metal whatever.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is—

1. In a bottle seal, a cap having a skirt divided and formed into outwardly and upwardly extending coils, for the purpose set forth.

2. In a bottle seal, a cap having the skirt divided into a plurality of wings, each wing being coiled outwardly and upwardly, for the purpose set forth.

3. In a bottle seal, a cap having a skirt divided into a plurality of wings, each wing being coiled outwardly and upwardly, and said wings being proportioned in length to allow a portion thereof to remain uncoiled when clamped on a bottle, for the purpose set forth.

4. In a bottle seal, a cap having the skirt thereof divided into a plurality of radial wings with the opening between the wings extending to a point adjacent to the top of the cap, said wings being coiled outwardly and upwardly, and forming with the undivided part of the skirt a seat for the gasket.

5. In a bottle seal a cap formed from a blank of sheet metal consisting of a circular disk having a plurality of radial wings, said disk being dished, and said wings being coiled outwardly and upwardly, for the purpose set forth.

6. A bottle seal comprising a cap and inclosed gasket, said cap having a skirt divided into wings, and the several wings being out-

wardly and upwardly coiled, said coils being less in length than the thickness of the locking shoulder of the bottle it is adapted to engage whereby a partial uncoiling of the wings is required in applying the seal to a bottle, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES C. PARKER.

Witnesses:
G. P. VAN WYE,
HARVEY H. HERCHE.