June 12, 1923. 1,458,535

A. MELDRUM

BOTTLE CAP

Filed July 19, 1921

FIG. 1.

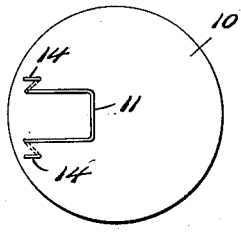


FIG. 2.

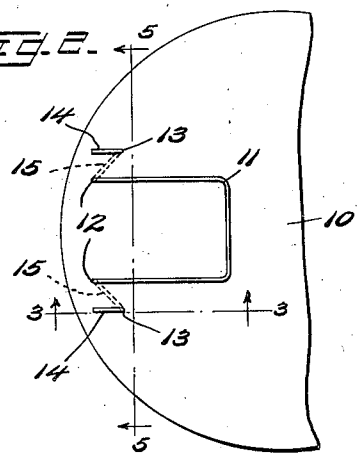


FIG. 3.

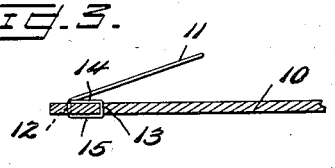


FIG. 4.

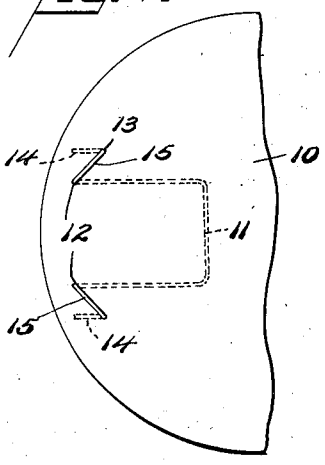


FIG. 5.

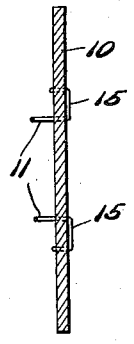


FIG. 6.

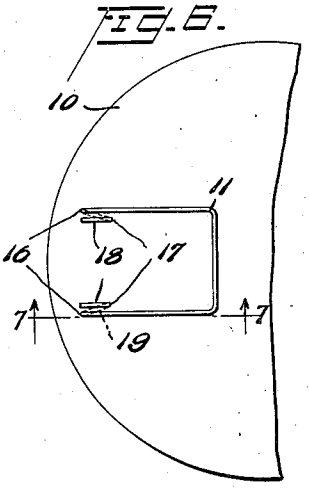
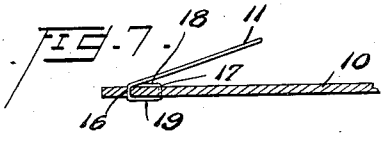


FIG. 7.



Inventor

Alexander Meldrum,

By Watson, Cole, Moore & Grindle,

Attorney

Patented June 12, 1923. 1,458,535

UNITED STATES PATENT OFFICE.

ALEXANDER MELDRUM, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE SMITH-LEE COMPANY, OF ONEIDA, NEW YORK, A PARTNERSHIP COMPOSED OF WILBERT L. SMITH, HURLBUT W. SMITH, AND THE ESTATE OF M. C. SMITH.

BOTTLE CAP.

Application filed July 19, 1921. Serial No. 485,853.

To all whom it may concern:

Be it known that I, ALEXANDER MELDRUM, a citizen of the United States, and residing at Syracuse, Onondaga county, State of New York, have invented certain new and useful Improvements in Bottle Caps, of which the following is a specification.

The present invention relates to bottle caps of the type commonly used in sealing milk bottles. Such bottle caps are made of paper board and many devices have been proposed for lifting or extracting the caps from the bottles without mutilating them so that they may be replaced to protect the remaining contents. Among such devices there are various forms of wire loops. Some of these loops have been passed around the edge of the bottle cap, but this results in imperfect sealing of the bottle as the wire usually projects beyond the margin of the cap. After the cap has been removed and replaced it is frequently found that the wire has cut into the edge of the cardboard permitting air to enter and permitting leakage of the contents if the bottle is tipped over.

It has also been proposed to insert the prongs of a wire loop through the body of the cap, leaving the prongs exposed on the under side. This construction requires heavy wire, otherwise the prongs will straighten out and the lifting device will pull away from the cap. Heavy wire is objectionable and practically prohibitive, partly on account of the expense but chiefly because the caps must be capable of being assembled compactly for shipment and also for use in the capping machines.

The present invention comprises a lifting device for a cap which device is in the form of a loop having its ends anchored in the cap by passing them from the top to the bottom and then to the top, the ends of the loop being folded flat upon the cap. By securely anchoring the wire "pull" in this manner very thin wire can be used which will permit of the caps being closely assembled in cylindrical packages. In the accompanying drawing the wire is shown exaggerated in thickness for purposes of illustration, but it will be understood that in practice the thickness of the wire used is not sufficient to materially separate the caps in a package. In fact the wire can be pressed into the body of the cap without materially weakening the latter.

Referring to the accompanying drawings:

Fig. 1 is a plan view of the preferred form of cap;

Fig. 2 is an enlarged view of a portion of Figure 1;

Fig. 3 is a section on the line 3—3 of Figure 2;

Fig. 4 is a view of the reverse side of Figure 2;

Fig. 5 is a section on the line 5—5 of Figure 2;

Fig. 6 illustrates a slightly different modification of the invention; and

Fig. 7 is a section on line 7—7 of Figure 6.

Referring to the drawings 10 indicates the paper board disk or cap which may be of any suitable quality and 11 indicates a wire "pull." The wire 11 is preferably U-shaped and has its ends passed through the cap at 12, then folded back and again passed through to the top of the cap at 13 and turned down against the top of the cap as at 14. Portions 14 are preferably directed outwardly toward the adjacent margin of the cap. As shown in Figures 1 to 5, the portions 15 of the wire exposed on the under side of the cap are arranged diagonally, that is, they extend rearwardly from the adjacent margin and laterally outward from the U-shaped body of the "pull." This construction prevents the ends 14 from interfering with the pressing of the loop 11 against the cap and it also anchors the loop to considerable portions of the body of the cap between the points 12 and 13. The points 12 may be rather close to the margin of the cap thus making the strain on the loop most effective in removing the cap. It is found that caps provided with wire loops anchored as described may be repeatedly removed and replaced without tearing the loops from the disks or mutilating the disks so as to cause leakage.

In the form shown in Figures 6 and 7 the branches of the loop 11 enter the cap at 16, are folded rearward and inward and pass through to the upper side of the cap at 17, the extreme ends being directed forward to the top of the cap as shown at 18. The portions 19 of the wire on the under side of the cap are directed rearwardly and diagonally

toward each other, as shown in Figure 6. The operation of this form of the device is substantally the same as that of the form shown in the preceding figures.

It will be evident that my invention may be embodied in a number of different forms. It is preferred that the portions of wire exposed on the under side of the cap be arranged at an angle to the axial line of the loop, as shown in Figures 4 and 6, although it would not be impractical to have them parallel with the legs of the loop as the ends which lie on the upper surface of the cap might be directed inward or outward so as not to interfere with folding the loop closely upon the upper surface of the cap.

Having thus described the invention what I claim and desire to secure by Letters Patent is:

1. A bottle cap comprising a disk of paper board having a wire "pull," said wire being in the form of a loop having its ends passing through the disk within and near the margin thereof from the upper side to the lower side and again passing through from the lower side to the upper side, the extreme ends being folded against the upper face of the cap.

2. A bottle cap comprising a disk of paper board having a wire "pull," said wire being in the form of a loop having its ends passing through the disk within and near the margin thereof from the upper side to the lower side and again passing through from the lower side to the upper side the extreme ends being folded against the upper face of the cap and the portions of the wire exposed on the under side of the cap being arranged at an angle to the axial line of the loop.

3. A bottle cap comprising a disk of paper board having a wire "pull," said wire being in the form of a loop having its ends passing through the disk within and near the margin thereof from the upper side to the lower side and again passing through from the lower side to the upper side the extreme ends being folded against the upper face of the cap and the portions of the wire exposed on the under side of the cap being arranged at an angle to the axial line of the loop and extending laterally outwardly from the legs of the loop.

In testimony whereof I hereunto affix my signature.

ALEXANDER MELDRUM.