

W. E. B. BAKER.
BOTTLE CAP.
APPLICATION FILED APR. 4, 1917.

1,269,773.

Patented June 18, 1918.

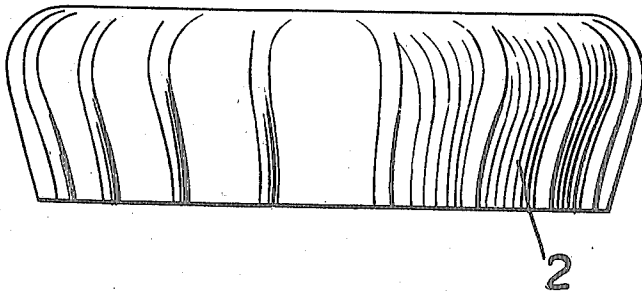


FIG. 1.

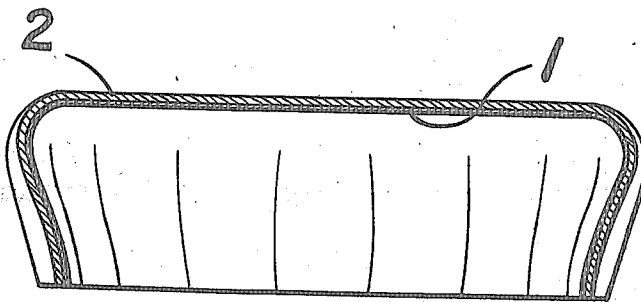


FIG. 2.

WITNESS:

Robert R. Kitchel

INVENTOR

Webster E. Byron Baker

BY

Cyrillus B. Straighton
ATTORNEY.

UNITED STATES PATENT OFFICE.

WEBSTER E. BYRON BAKER, OF YORK, PENNSYLVANIA, ASSIGNOR TO HENRY W. STOKES, OF PHILADELPHIA, PENNSYLVANIA.

BOTTLE-CAP.

1,269,773.

Specification of Letters Patent. Patented June 18, 1918.

Application filed April 4, 1917. Serial No. 159,639.

To all whom it may concern:

Be it known that I, WEBSTER E. BYRON BAKER, a citizen of the United States, and a resident of York, in the county of York and State of Pennsylvania, have invented a certain new and useful Bottle-Cap, of which the following is a specification.

The principal object of the present invention is to provide a sanitary or hygienic, attractive, durable and comparatively inexpensive bottle cap, of permanent color, which will show printing, make a tight seal and resist abrasion, which softens without change of color under a sterilizing heat and can be readily molded or crimped, and which quickly cools and firmly sets in molded or crimped form.

The invention will be claimed at the end hereof, but will be first described in connection with its embodiment in one form of bottle cap selected from among other forms for the purpose of illustration in the accompanying drawings forming part hereof, and in which:

Figure 1, is an elevational view, and Fig. 2, is a cross-sectional view.

In the drawings 1 is a fairly heavy sheet of paper, for example, a sheet of paper of such a weight that a ream of four hundred and eighty sheets, twenty-four by thirty-six inches, weighs about sixty pounds. The thickness of this sheet should be about 0.0075 inch, more or less, so as to produce a very pliable sheet which easily conforms to any molding process. This sheet constitutes a backing for a sheet 2, of celluloid, pyralin, cellit, or any cellulose ester plastic. The thickness of this sheet of celluloid 2 should be about 0.015-0.020 inch, more or less and it may consist entirely of celluloid or celluloid formed around a paper matrix and it may contain suitable pigments. The celluloid or cellulose ester plastic sheet is applied to the sheet of paper by a pressing process under the application of heat or autogenously. This process may be accomplished by any of the well known methods, the resulting product being a sheet of celluloid or cellulose ester plastic, which eventually serves as the top of the disk from which the cap is formed, backed by a sheet of pure clean paper, which eventually forms the bottom of the disk from which the cap is formed, and comes in contact with the milk or food in the bottle. The paper referred to should be prepared

in a manner which will render it waterproof, that is, it should be thoroughly sized.

Disks are punched from the described compound sheet and the tops consisting of a celluloid or cellulose ester plastic surface, may be printed in one or more colors, by the usual well known methods for printing on celluloid.

The described disks are placed in a suitable heating apparatus, regulated and set to a temperature that will bring the temperature of the celluloid or cellulose ester plastic to a point which will render it readily moldable. The heated disk is then quickly transferred to a capping die or tool, the formative element of which crimps the cap into place about the bottle, leaving it there until cool, which requires a few seconds, and then returns, leaving the molded cap rigidly intact and crimped around the lip of the bottle, forming a perfect air-tight seal, which is at the same time sterile by reason of the heat to which it was subjected, for example 110° C.

Wherever I use the words "celluloid or similar plastics," these terms are intended to embrace all cellulose ester plastics. In fact, plastics such as pyralin may in some cases, in practice, be more satisfactory than celluloid, but the term celluloid is understood to embrace all plastic substances formed by the union of any cellulose ester or mixture of cellulose esters with substances suitable for rendering the resulting mass plastic.

If desirable another sheet of paper may be added to the top, making a disk composed of two sheets of paper and an intermediate layer of celluloid or ester plastic material. Likewise, if desirable, extra sheets of paper and celluloid or ester plastic material may be added.

The sheet 2 of cellulose ester plastic serves as a molding agent for the paper, and imparts great rigidity to the crimped or molded cap. At the same time the sheet 2, presents an attractive appearance, is not discolored by subjection to a sterilizing temperature, and is not roughened by contact with ice, or the like. The paper is pliable enough to be readily crimped or folded and its contact with milk or food is unobjectionable. The fact that the two sheets may be united autogenously is beneficial, for it is unnecessary to introduce into the combina-

tion any solvent or cement, the use of which might be, in some cases, undesirable, however the described product is not brittle and is resilient and therefore remains intact, and after the bottle has been opened the cap can be repeatedly replaced until the contents has been used.

In using the term bottle cap, I intend to include seals and closures for containers in general, whether made of glass or other material.

What I claim is:

1. A non-metallic self-supporting bottle cap moldable by heat and pressure into permanent crimped form and comprising the combination of a pliable sheet of paper and an agent moldable by heat and pressure and

which when cool imparts rigidity and permanency of form to the cap and which consists of a sheet or coating of cellulose ester plastic adherent to the paper.

2. A non-metallic self-supporting bottle cap moldable by heat and pressure into permanent crimped form and comprising the combination of a pliable sheet of paper exposed on the inside of the cap, and an agent exposed on the outside of the cap and moldable by heat and pressure and which when cool imparts rigidity and permanency of form to the cap and which consists of a sheet or coating of cellulose ester plastic adherent to the paper.

WEBSTER E. BYRON BAKER.