

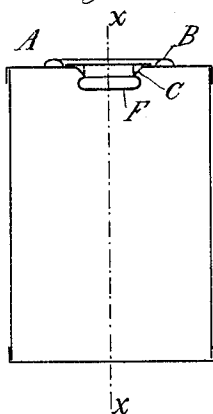
No. 788,122.

PATENTED APR. 25, 1905.

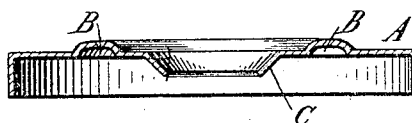
S. B. TOWNSEND.  
SEAL FOR CANS.

APPLICATION FILED MAR. 18, 1904.

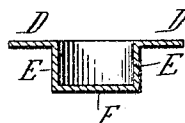
*Fig: 1,*



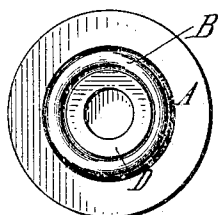
*Fig: 3,*



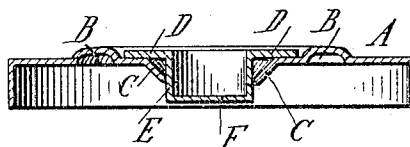
*Fig: 4,*



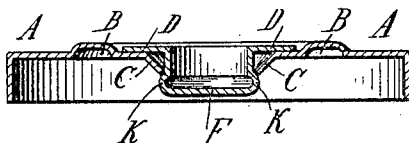
*Fig: 2,*



*Fig: 5,*



*Fig: 6.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

SAMUEL BREWSTER TOWNSEND, OF BREWSTER, NEW YORK.

## SEAL FOR CANS.

SPECIFICATION forming part of Letters Patent No. 788,122, dated April 25, 1905.

Application filed March 16, 1904. Serial No. 198,407.

*To all whom it may concern:*

Be it known that I, SAMUEL BREWSTER TOWNSEND, a citizen of the United States, and a resident of the city of Brewster, county of Putnam, and State of New York, have invented certain new and useful Improvements in Seals for Cans, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical sectional view of a can and cap sealed together as per my present invention; Fig. 2, a perspective top view of the top of the can and cap sealed together shown in Fig. 1; Fig. 3, a central vertical section, on enlarged scale, of the can-top before the application of the cap; Fig. 4, a similar view of the cap; Fig. 5, a similar view of the can-top and cap thereto applied prior to expansion of the cap; Fig. 6, a similar view of the same parts illustrated in Fig. 5, but showing the final expansion of the cap.

My present invention relates to that class of cans particularly used as containers for foods and the like—such, for instance, as condensed milk—which it is desirable to seal hermetically after filling. Such cans are constituted usually of sheet metal—as, for instance, sheet-tin—and are provided in their tops with an opening of less diameter than the latter for the introduction of their contents, which opening it is the object of my present invention to close or seal by a cap composed of the same material as the can, and also to provide means whereby said cap may be seated and sealed without causing such undue pressure upon the contents as to distort or otherwise injure the can. I attain these objects by constructing the top of the can and the lid with such parts so located, disposed, and proportioned, and by subsequently so expanding a portion of the cap as to produce the desired result as follows, viz: I so shape the can-top A as to embody therein an annular inwardly-projecting flange C completely surrounding the opening and in its preferable presentation, which is shown in the drawings, disposed so as to project inwardly directly at an oblique angle with and toward the central axis of the can, (indicated by the dotted line *xx* of Fig. 1.) The cap I shape preferably in the form shown in Figs. 4 and 5,

being essentially that of a cup having bottom F, side E at right angles to said bottom, and annular outwardly-flaring flange D parallel with said bottom. The diameter of the cup of the cap is, as shown in the drawings, substantially equal to that of the opening at the edge of the flange C, and it is preferable that the diameter of the cap should be somewhat in excess even of said diameter of said opening, since the flange C is in its said preferable disposition adapted to yield very slightly when the cap is shoved therethrough home to its seat, whereby is insured, as is most desirable, an exceptionally tight fit between the edge of flange C and side E of cap. The cap having been placed in final position, as shown in Fig. 5, I thereupon by the use of any suitable tool or agency competent to produce the desired result impart to the side E below edge of flange C a uniform continuous distortion or expansion K, Fig. 6. I have invented a suitable tool for producing this result. (See my application for Letters Patent of the United States, Serial No. 198,401, filed March 16, 1904.) It will be observed that the expansion K is so located relatively to flange C as to result in the edge of the latter being abutted and braced against the cap at an angle and in an angle of the cap which renders it substantially impossible to move the cap outwardly without actual rupture of some of the parts, while the cap is at the same time guarded effectually against inward movement both by the contents of the can and the flange D, engaging against the top of the latter.

It will be observed that where liquid or semiliquid contents are involved the can is usually filled full to the under side of the top in each case. So tight is the fit on insertion between my cap and flange C that undesirable pressure upon the contents, and thus upon other portions of the can, sufficient in some instances to distort the sides or particularly the bottom, is frequently occasioned on pressing the cap home to its final seat. To relieve said pressure, I provide the top of the can with an inwardly-disposed preferably annular (as shown) expansion-chamber B, the interior of which is located above the general level of said top, which chamber affords space

for the contents when compressed by the forcing down of the cap to its seat. The capacity of the chamber B should be proportioned to accommodate not less than the same bulk of contents displaced by the lower end of the cap when forced below flange C, and it will be observed that said chamber is disposed outwardly and at a distance from the opening of the can, whereby any contents forced into said chamber can escape therefrom only by returning into the can.

It will be understood that though I have in the foregoing described in detail a particular construction and arrangement of my invention I do not thereby intend to limit myself thereto beyond the terms of my several claims hereinafter made or the requirements of the prior art. For instance, while it is preferable, as shown in the drawings, that flange C should project inwardly from the top of the can at a certain oblique angle toward the central axis of the can, the said flange might be disposed to project inwardly at any other angle from the top and away from instead of toward said axis, the principal, and one of the distinguishing advantages of my invention being retained so long as the expanded portion K of the cap is caused to abut and brace directly against the edge of flange C in a direction directly opposite to that of the inward projection of said flange, so as to positively prevent without rupture of the parts any outward movement of the cap after expansion.

It will be observed that the construction described results in a permanently-locked and hermetically-closed union between can and lid without assistance of rubber gaskets or other means previously required to render the joint between those members air-tight.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is the following, viz:

1. A sheet-metal can having a top provided with an opening surrounded by a continuous inwardly-projecting flange, in combination with a cap provided with a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange in a direction directly opposite to that of its said inward projection.

2. A sheet-metal can having a top provided with an opening surrounded by a continuous inwardly-projecting flange, in combination with a cap having a flange disposed to bear against said top outside said can, and inside said can, a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange of the top in a direction directly opposite to that of its said inward projection.

3. A sheet-metal can having a top provided with an opening surrounded by a continuous

flange disposed to project into the can toward, and at an oblique angle with, its central longitudinal axis, in combination with a cap provided with a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange in a direction directly opposite to that of its said inward projection.

4. A sheet-metal can having a top provided with an opening surrounded by a continuous flange disposed to project into the can toward, and at an oblique angle with, its central longitudinal axis, in combination with a cap having a flange disposed to bear against said top outside said can, and, inside said can, a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange of the top in a direction directly opposite to that of its said inward projection.

5. A sheet-metal can having a top provided with an opening surrounded by a continuous angular bend in the constituent metal and by a continuous flange disposed to project into the can toward and at an angle with its central longitudinal axis, in combination with a cap surrounded, outside the can, by a continuous flange opposed to, and bearing toward the apex of said angular bend, and, inside the can, by a continuous expanded portion abutted and bearing directly against the edge of said flange of the top in a direction directly opposite to that of its inward projection, whereby the cap is positively prohibited from outward movement, strain on said flange of the top forces said apex of said angular bend against said outside flange of said cap and thus a double seal is provided between the respective metals of the two members.

6. A sheet-metal can having a top provided with a closed inwardly-communicating expansion-chamber and with an opening surrounded by a continuously inwardly projecting flange, in combination with a cap provided with a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange in a direction directly opposite to that of its said inward projection.

7. A sheet-metal can having a top provided with a closed inwardly-communicating expansion-chamber and with an opening surrounded by a continuous inwardly-projecting flange, in combination with a cap having a flange disposed to bear directly against said top outside said can, and having inside said can a continuously-surrounding expanded portion abutted and bearing directly against the edge of said flange of the top in a direction directly opposite to that of its said inward projection.

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