

Aug. 10, 1937.

S. G. MARTINELLI

2,089,392

LEVER OPENING SCREW CAP

Filed Oct. 14, 1936

2 Sheets-Sheet 1

Fig. 1.

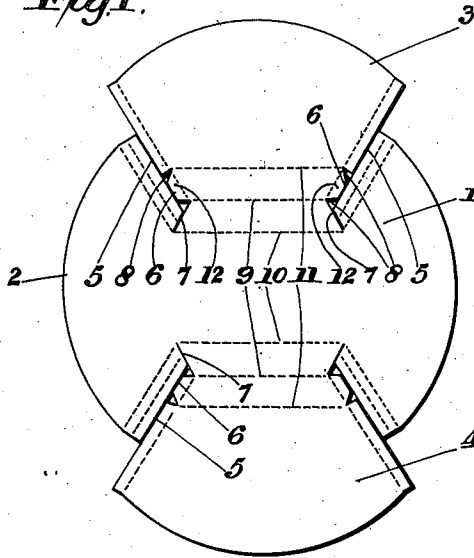


Fig. 7.

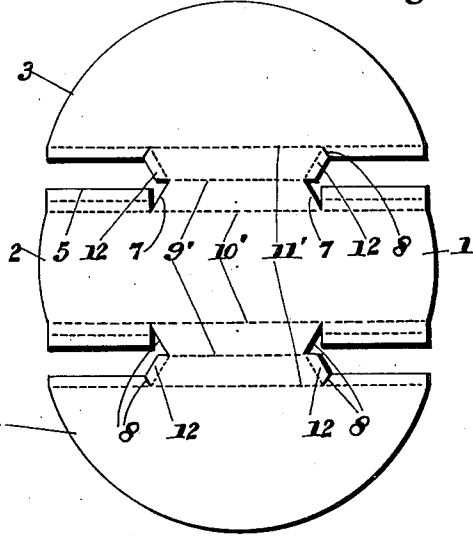


Fig. 2.

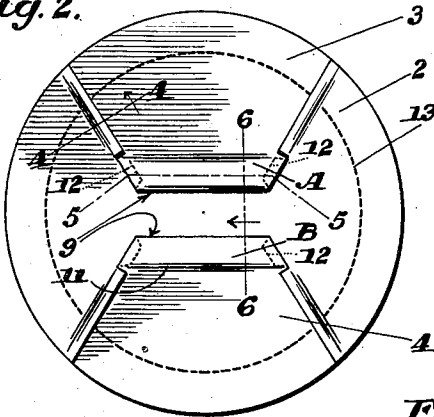


Fig. 8.

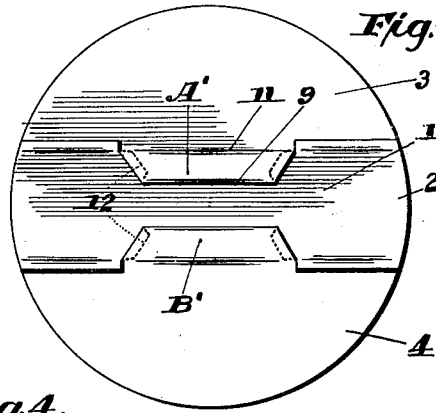


Fig. 3.

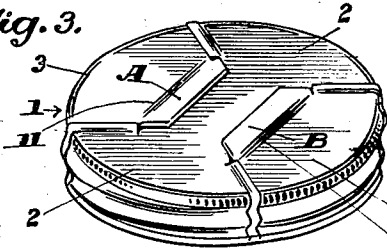


Fig. 4.



Fig. 5.



Fig. 6.



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Fig. 9.

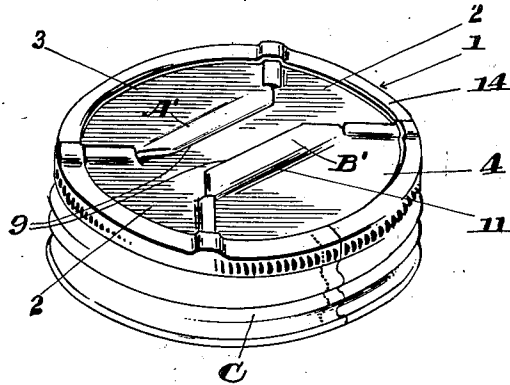


Fig. 10.

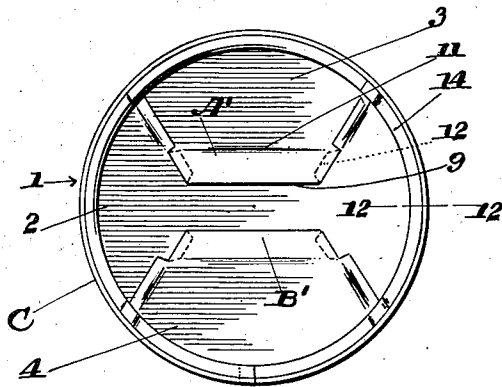


Fig. 11.

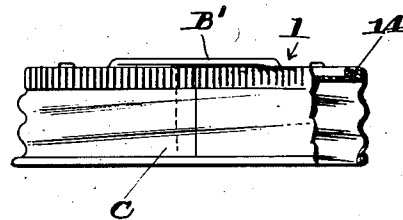
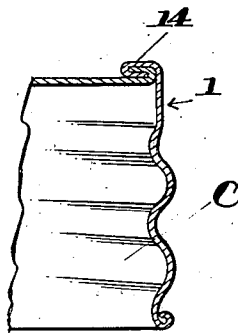


Fig. 12.



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UNITED STATES PATENT OFFICE

2,089,392

LEVER OPENING SCREW CAP

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Application October 14, 1936, Serial No. 105,601

3 Claims. (Cl. 215-46)

My invention relates to improvements in lever-opening screw caps, and it consists in the combinations, constructions and arrangements herein described and claimed.

5 An object of my invention is to provide a screw cap having abutments or flanges thereon by means of which the cap can be turned to detach it from a jar, bottle, or other similar container having a threaded neck, and in which the cap and the abutments or flanges are stamped from a single piece of metal.

10 A further object is to provide a device of the type described which does not weaken the cap by the use of struck-up portions, but which on the contrary provides double or even triple thicknesses of metal for those parts that bear the strain.

15 A further object of the invention is to provide a device of the type described which may be operated by the insertion of an ordinary table knife blade between the flanges, and in which the parts that receive the greatest force from the tool or knife blade used in detaching the cap are so designed as to afford a greater resistance to strain.

20 A further object of the invention is to provide the screw top with flanges or abutting members which can be used to unscrew the top or to screw it on, and which is made in such a manner that a comparatively thin metal blank can be used in stamping out the top, as distinguished from those tops which necessarily must be of heavier material to hold the lugs, flanges or other means, and to withstand the strain which is imparted.

25 A further object of the invention is to provide a screw cap having detaching means which can be operated by an ordinary case knife, and which, being a stamped article, can be made at a relatively small cost.

30 Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

35 My invention is illustrated in the accompanying drawings forming part of this application, in which:—

40 Figure 1 shows a plan view of a stamped blank from which the cap is made.

45 Figure 2 is a similar view showing the parts folded.

50 Figure 3 is a perspective view showing the complete cap which forms the preferred embodiment of my invention.

Figure 4 is a section on the line 4-4 of Fig. 2.

55 Figure 5 is a section on the line 5-5 of Fig. 2.

Figure 6 is a section on the line 6-6 of Fig. 2.

Figure 7 is a plan view of a blank for constructing a modified form of the cap.

Figure 8 is a plan view showing the cap in bended condition after the first operation of 5 bending.

Figure 9 is a perspective view of a cap having a deep or wide skirt.

Figure 10 is a plan view of the cap shown in Fig. 9. 10

Figure 11 is a side view of the cap shown in Fig. 9, a portion being cut away to show the parts in section, and,

Figure 12 is an enlarged sectional view through a portion of the cap shown in Fig. 9. 15

Referring now particularly to Figure 1, I have shown therein a blank consisting of a body portion 1, having edges 2, formed on the arc of a circle. This body portion has a pair of extensions 3 and 4 respectively, the outer edges of which are curved on an arc to conform to the curvature of the arcs 2. As will be seen from the drawings, there are side cuts 5, 6, and 7 respectively which sever the extensions on the sides from the body portion. There are also cut-away portions 8 at the sides of the extensions. The purpose of these cut-away portions will be explained later. The lines 9, 10 and 11 indicate where the metal is bent. 20

Each of the extensions 3 and 4 is bent in such a manner as to form opposed flanges or abutments. Thus in Fig. 6 it will be seen that the extensions are bent on the central line 9, on the line 10 and on the line 11 to form the abutments A and B. This draws the extensions inwardly so that the outer ends form a continuous circle with the arcs 2. 25

The sides of the extensions and the adjacent sides of the body portion are brought together and lapped around each other so as to form an interlocking joint like that indicated in Fig. 4. The cuts 8 form tabs 12 which are bent around the bent edge of the body portion 1, as shown in Fig. 5. It will be understood that Figs. 4 and 5 are enlarged for the sake of clearness. As a matter of fact, the metal is very thin and the joints thus formed are pressed down tightly. These joints, if desired, may be soldered. In Fig. 2 I have shown the device as it appears after the parts have been bent and the joints made. 30

The outer edge of the blank is now bent downwardly at about the line 13, in Fig. 2, to form the skirt of the cap which is threaded in any suitable manner. 35

In Figs. 7 and 8 I have shown a modified form 55

of the device which is very similar to that form shown in Figs. 1, 2 and 3, except that the seams or joints are in parallel relation in Fig. 7 instead of being radially disposed, as in the first form described. In this form of the device the metal is bent along the lines 9', 10', 11', which correspond to the lines 9, 10 and 11 in Fig. 1 and the joints or seams running toward the outer periphery are made in the manner already described. In Fig. 8, however, it will be seen that the blank which now has the flanges A' and B' is provided with seams or joints which are parallel to each other instead of being radially disposed.

In Figures 9 to 12 inclusive I have shown a modified form of the device, including a wide or deep threaded skirt, and in which the top portion is made precisely like that already described in connection with Figure 1. The skirt portion C is made of a single strip of metal which is joined at its ends with overlapping joints, such as that shown in Fig. 4, and is connected with the top by a similar joint or bead, as is shown at 14.

In each of the forms shown opposed abutments or flanges are provided between which a tool such as a case knife, may be thrust to use as a lever in either unscrewing or screwing the cap into place, thus avoiding the necessity of the use of a can opener or wrench.

It will be noted that the flanges are of metal which is double thick, as shown in Fig. 6, and that furthermore, the ends of these flanges are reinforced by the tabs 12 so that additional strength is given at the ends where the engagement or bearing of the knife will take place. When the knife is thrust in between the flanges and turned, the bearing will come largely at the end of one flange, and at the opposite end of the opposed flange, depending upon which way the knife is moved. Since these corners are strengthened, lighter metal may be used in making the top.

Since the screw top including the flanges is readily done by stamping, it can be made very cheaply. I have stated that the seams could be soldered but in many instances it is entirely sufficient to make use of a liner of cork or pulp board faced with non-pervious paper, or a liner of rubber faced metal, thus obviating the chance of leakage even if the joints are not soldered. Of course the cap could be used with the ordinary rubber sealing ring, which is generally done when vacuum sealing is desired.

I claim:

1. A screw cap for containers including a circular sheet metal top provided with opposed flanges disposed inwardly from the outer edge of the top, each of said flanges consisting of two layers of the sheet metal, and interlocking seams extending from the corners of the flanges to the edge of the top.

2. A screw cap for containers consisting of a single piece of sheet metal and including a top and an integral threaded skirt, said top being provided with opposed flanges disposed inwardly from the outer edge of the top, each of said flanges consisting of two layers of the sheet metal and interlocking seams extending from the corners of the flanges across the top and to the edge of the threaded skirt.

3. A screw cap for containers including a circular sheet metal top provided with opposed flanges disposed inwardly from the outer edge of the top, each of said flanges consisting of two layers of sheet metal, interlocking seams extending from the corners of the flanges to the edge of the top, and a threaded skirt having an interlocking connection with said top at the outer edge of the top.

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