

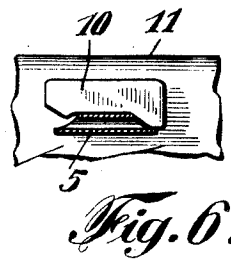
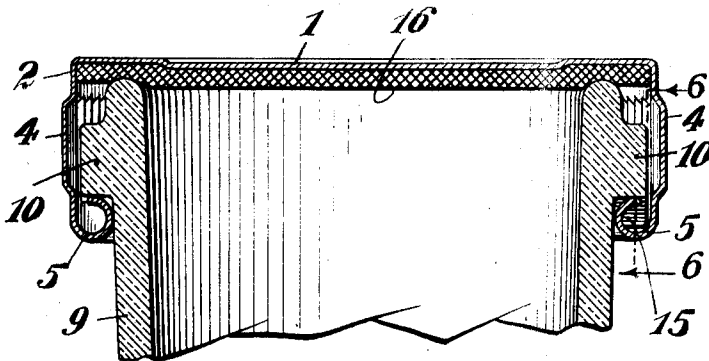
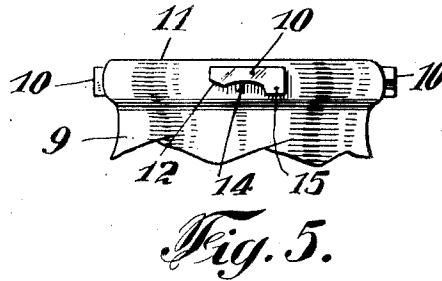
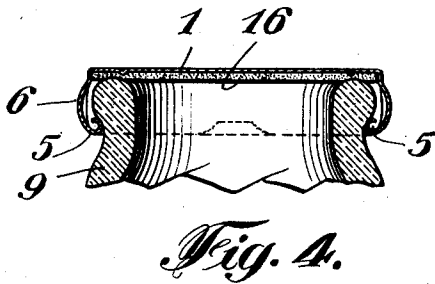
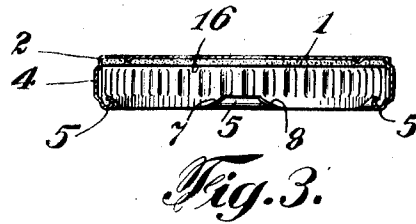
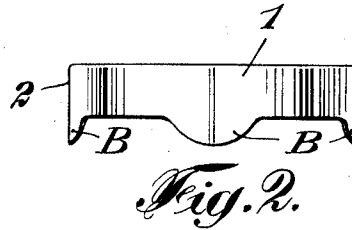
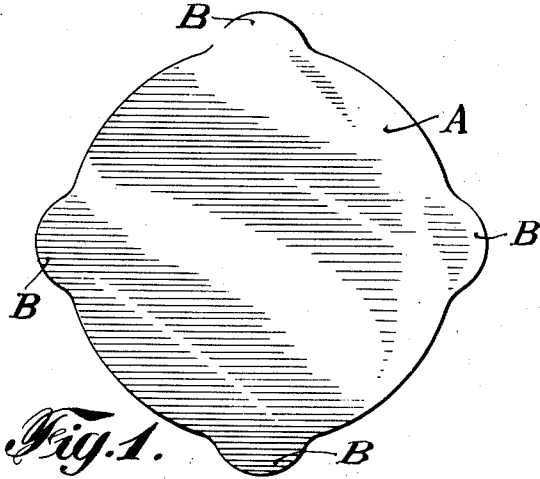
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LUG CAP

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INVENTOR

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UNITED STATES PATENT OFFICE.

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LUG CAP.

Application filed March 3, 1923. Serial No. 622,593.

This invention relates broadly to closures and more especially to a lug cap adapted to be used as a quick thread or as a friction cap, and is constructed to exert resilient sealing forces against a suitable gasket when the cap is in place.

Heretofore in the art it has been customary to form lug caps with positive locking members so arranged that the seal was obtained by use of a resilient gasket. This construction demanded very close limits between the size of a style of cap and a series of containers. The containers were usually of glass and the limits in size and shape would vary considerably from a standard, and this meant either rejected glass or imperfect seals. In closures of that kind the gasket which usually was composition board, would in time harden and lose its resilience so that after a time the seal would not be good. Furthermore, the limit of resilience or elasticity of composition board is not very great and a tight seal might compress such board beyond its limits of elasticity so that it would not tend to expand, thereby rendering the cap liable to become loosened and often times it would be lost in transit or handling of goods. Naturally an unsealed package meant the loss of the contents of the package.

The present invention overcomes the difficulties of the known prior art by providing a lug cap which imposes yielding forces on the sealed package, which at all times act to seat the gasket against the end of a suitable container, thereby maintaining the gasket of the cap tightly against the end wall of the container to preserve a proper seal and to prevent the cap from accidentally being loosened. Furthermore, the resilient character of the locking devices permits the use of the cap either upon a smooth finish such as a milk bottle or upon a bottle or jar having recessed projections on the mouth of the container so that a more secure lock of the cap may be obtained and maintained on the jar or other container than is obtained by the ordinary lug cap.

The present invention, which may be embodied in several forms of constructions, comprises providing a lug on the bottom of the cap which lug may be formed from a portion of springy or resilient material which is compressed when the cap is applied. In one form of the invention

the lugs may be formed from a curled portion of metal on the inside of the skirt of the cap, with the upper part of the curl acting as the retaining member. This retaining member is adapted to be associated with suitably formed projections adjacent the mouth of the receptacle and these projections may be slightly recessed to receive the locking lugs so that positive force is required to unseat the lug from the notch and the farther side of the notch may comprise a suitable stop to prevent over-running the cap while it is being applied; or it may be sprung over the smooth finish, either curved or cylindrical, to provide a friction grip to hold the gasket tight against the end of the container. The present resilient construction also permits of the sealing of either type of glass containers or the like wherein a relatively wide range of different or variations in dimensions occur.

From the foregoing general statements it may be stated that the principal object of the present invention is a lug cap provided with a resilient portion between the active face of the lug and the gasket in the top of the cap so that the gasket is at all times under yielding pressure when the cap is in position on a receptacle.

Another object of the present invention is a cap of the character specified and wherein the resilience comprises a portion of metal within the length of the skirt of the cap.

A still further object of the present invention is a cap of the character specified and wherein the resilience of the cap comprises resilient or springy coiled locking lugs arranged adjacent the lower edge of the skirt of the cap.

Another object of this invention is a sealed package comprising a container and a cap having resilient means operating to seat the cap tight against the end of the container.

A further object of the present invention is a sealed package comprising a glass container or the like provided with locking projections arranged adjacent the mouth of the container and with the under portion of said projections slightly concaved or recessed to provide locking valleys in which the resilient locking lugs of the cap may be retained when the package is sealed.

It is realized that the present invention may be embodied in constructions other than those herein shown and described and there-

fore the disclosure is to be understood as illustrative and not in the limiting sense.

Other and further objects of the present invention will in part be obvious and will in part be pointed out hereinafter by reference to the accompanying drawings forming a part of this specification throughout which like characters are used to represent like parts.

10 Figure 1 is a plan view of a blank of a cap comprising one embodiment of the present invention.

Figure 2 illustrates one type of blank in cupped form and illustrates one shape from which the locking lugs may be made.

15 Figure 3 is a sectional view through one form of cap embodying the present invention, as applied as a friction cap on a suitable container.

20 Figure 4 illustrates a slight modification of the cap shown in Figure 3.

Figure 5 illustrates the neck of a container provided with projections adapted to cooperate with the present cap when used as a quick thread cap.

25 Figure 6 is a detail view taken on line 6-6 of Figure 7 to illustrate a detail of the locking lug and projection.

30 Figure 7 is an enlarged sectional view of a cap similar to that illustrated in Figure 3 when in position on a container similar to that illustrated in Figure 5.

Referring now to the drawings, the present invention may be embodied in several different forms which will require appropriate blanks, but for purpose of illustration the blank may comprise a substantially circular member A provided with a plurality of extensions B. This blank may be shaped by extensions B extending from the edge of the skirt. In the more completed form, such as illustrated in Figures 3 and 6, the cap may comprise a cover portion 1 having the skirt 2 thereof provided with a knurled zone 4 through the middle portion of the cap and with locking lugs 5 formed by partly rolling the extensions B. In the preferred form it will be noted that these locking lugs are arranged by bending the extensions B and preferably by rolling up the metal in such manner as to leave the edge thereof free so that a spring effect is obtained when the pressure is applied at or adjacent the free edge.

55 In the form of cap shown in Figure 4 the side wall or skirt of the cap is curved, as at 6, which curved portion may be knurled if desired, but it will be noted that the curved portion of itself comprises a spring portion which will yield when forces are applied longitudinally of the skirt. In Figure 4 this cap is shown as operating as a friction cap on a suitable container 9.

65 Figure 5 illustrates a suitable container such as a glass bottle or jar which is pro-

vided with quick thread projections 10 adjacent the mouth or finish 11 of the glass, and another important feature of the locking lug is that the edges thereof are inclined as at 7 and 8 so as to provide for an easy sliding action between the lug and the projections 10 on the container with which the lugs 5 are adapted to cooperate. Preferably these projections 10 are provided with an inclined forward end 12 with a slightly recessed valley 14 and a locking stop 15. The inclined forward end 12 acts in conjunction with the forward portion of the lug 5 as at 7 to facilitate wedging the cap in position on the jar. The valley 14 comprises a recess for receiving the lug and the stop 15 prevents the lug from overrunning the projection. When the lug is seated in the projection as is illustrated in Figure 6, it will be obvious that a positive force will be necessary to rotate the cap to unseat the lug from the valley. In the preferred form these caps are provided with a gasket 16 which may comprise a disk of composition board or the like placed adjacent the cover portion of the cap and adapted to be seated against the end 11 of the mouth of a suitable container. When the cap is in position on such container as shown in Figure 7 it will be noted that the resilient lugs tend to exert a force to hold the cap down so that the gasket is compressed tightly against the end of the container.

Having thus described my invention, what I claim is:

1. As an article of manufacture, a sheet metal screw cap comprising a cover portion, a skirt of substantially uniform length depending from said cover portion having a substantially uniform diameter throughout and having rolled lugs forming substantially flat locking surfaces with the ends of the said lugs cut to form inclined edges leading to the upper resilient locking surfaces of the lugs and strengthening corrugations above said lugs.

2. As an article of manufacture, a sheet metal cap comprising a cover portion, a skirt of substantially uniform length depending from said cover portion having rolled lugs forming substantially flat resilient locking surfaces with the ends of said lugs cut to form inclined edges leading to the upper resilient locking surfaces of the lugs.

3. As an article of manufacture, a sheet metal screw cap comprising a cover portion, a skirt of substantially uniform length depending from said cover portion, a plurality of internal rolled lugs forming substantially flat locking surfaces, the ends of said lugs being cut to form inclined edges leading to said locking surfaces.

4. As an article of manufacture, a sheet metal cap comprising a cover portion, a skirt of substantially uniform length depending

from said cover portion having rolled lugs forming substantially flat horizontal surfaces with the ends of said lugs cut to form inclined surfaces leading to the upper surface thereof, said rolled lugs being open to furnish an upper resilient surface adapted to yield a maximum amount in a vertical direction.

5. A sealed package comprising a container having a plurality of projections thereon, said projections having depressions on the lower side thereof, a sheet metal screw cap having a cover portion, a corrugated skirt of substantially uniform length, a plurality of resilient rolled lugs adapted to yield upon engagement with the projections on said container, and to snap into the depressions therein, thereby locking said cap in position.

GEORGE RAMSEY.