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A. B. MCGINNIS

2,440,149

CLOSURE CAP

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Fig. 1.

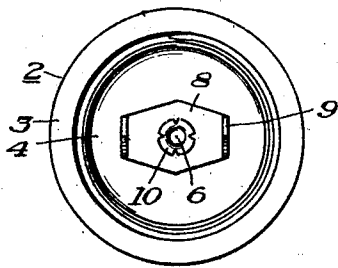


Fig. 3.

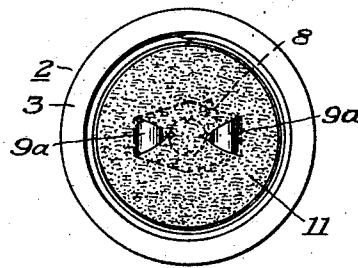


Fig. 2.

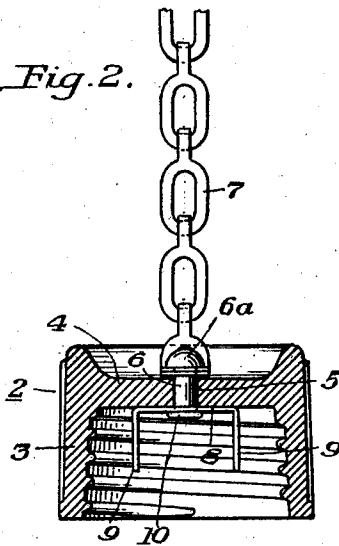
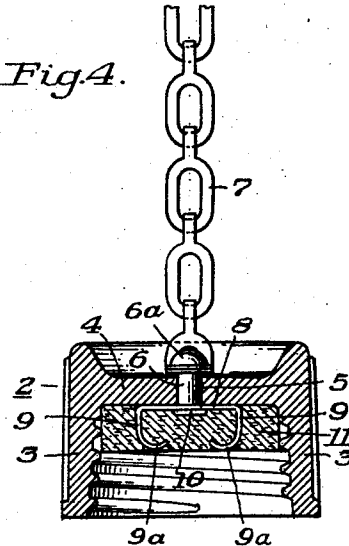


Fig. 4.



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## UNITED STATES PATENT OFFICE

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## CLOSURE CAP

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3 Claims. (Cl. 215—43)

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This invention relates to closure caps, and is for an improved cap having means for securing a liner therein.

Many caps are provided on the interior thereof with a relatively large cork or other compressible liner which, in the case of plastic caps especially, are difficult to keep permanently in place. Among caps of the type referred to are canteen caps, jug closures, fuel tank and radiator closures and the like. The difficulty of retaining a liner in a canteen cap increases from the fact that adhesives which may be used in other caps may have a slight odor which is objectionable where drinking water is involved.

The present invention has for its object to provide a simple, effective, and inexpensive way of securing the lining in place.

My invention may be readily understood by reference to the accompanying drawing in which:

Fig. 1 is a bottom plan view of a cap embodying my invention before application of the liner;

Fig. 2 is a transverse section through the cap shown in Fig. 1;

Fig. 3 is a view similar to Fig. 1 with the liner in place; and

Fig. 4 is a view similar to Fig. 2 with the liner in place.

In the drawings I have shown a closure intended for use as a canteen cap or closure, but it will be understood that this is merely typical of my invention.

In the drawings, 2 designates a plastic closure having an integral skirt portion 3 and end portion 4, the cap being internally threaded in the usual manner and being otherwise of conventional construction.

The cap is molded with a central hole 5 in the end wall, and after the cap is molded, a pin 6 is inserted in the hole, the pin passing through the end link of a chain 7 and having a head 6a for confining the chain against the exterior of the end portion 4 of the cap. The inner end of the pin is pressed or riveted over, the pin being just tight enough so that the chain may swivel around under the head 6a of the pin.

According to the present invention a metal staple-like member having a flat bridge or base portion 8 and upstanding prongs 9 is secured in the cap. This is conveniently done by passing the inner end of the pin 6 through the bridge 8 of the fastener and then riveting or upsetting the end of the pin, this upset being designated 10. The cap as thus assembled is shown in Figs. 1 and 2.

After this assembly has been completed, a thick

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liner 11 of cork or other appropriate material is pressed into the cap. The prongs 9 of the fastener penetrate the liner, passing entirely through it. When the liner is seated against the inner end surface of the cap, the projecting terminals of the prongs are clinched over, as indicated at 9a in Figs. 3 and 4. This effectively holds the liner in place, without adhesive being necessary, and since the rivet or pin 6 does not pass through the liner, the pins 6 are firmly set, and leakage cannot occur, whereas if the pins did pass through the liners, it would be difficult to rivet them over against the liner and have them uniformly set.

The fastener herein described offers no complication to the molding of the cap, and its cost is insignificant. It may be formed of aluminum, stainless steel or other metal which will not rust or be corroded by the contents of the vessel on which the cap is used.

While I have shown a fastener having two prongs, the number of prongs may be varied, a minimum of two being preferable. It is of course not necessary with my invention that the chain 7 be employed, but since caps of this character are commonly used in "captive" relation to the vessel, so as not to become lost, the chain is commonly provided.

Various changes and modifications of course may be made in the invention which is not limited to the present preferred embodiment herein illustrated.

I claim:

1. A cap having an integral end wall and a skirt and having a pin through the end wall thereof, a metal member inside the cap through which the pin passes, the cap having an opening therethrough of a size just sufficient to accommodate the pin, the pin having an abutment at each end thereof to restrain it against free endwise movement, a liner in the cap, and prongs on the metal member for holding the liner in place.

2. A cap having an integral end wall and a skirt and having a pin through the end wall thereof, a metal member inside the cap through which the pin passes, the cap having an opening therethrough of a size just sufficient to accommodate the pin, the pin having an abutment at each end thereof to restrain it against free endwise movement, a liner in the cap, and prongs on the metal member for holding the liner in place, the prongs passing through the liner and being clinched over against the liner.

3. The combination with a closure cap having

an integral end wall and a skirt and having a swivel pin passing through the end wall thereof and having a chain through which the pin also passes, the cap having an opening therethrough of a size just sufficient to accommodate the pin, the cap having a lining disk therein, of a fastener inside the cap having a base portion through which the pin passes and against which an end of the pin is confined, the fastener having a prong means thereon passing through the lining disk and clinched against it.

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