Feb. 22, 1944. R. P. MAGNENAT 2,342,477

PLASTIC HINGE CAP

Filed Aug. 8, 1941

Fig. 1.

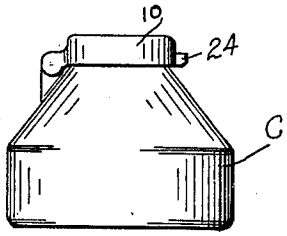
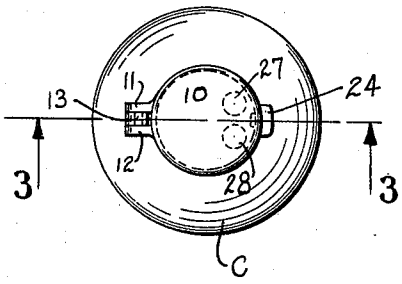


Fig. 2.



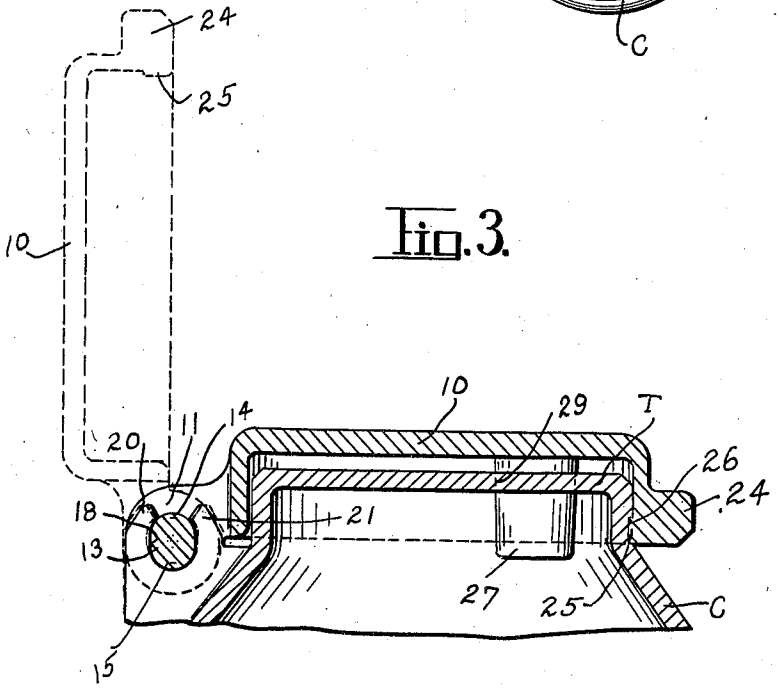
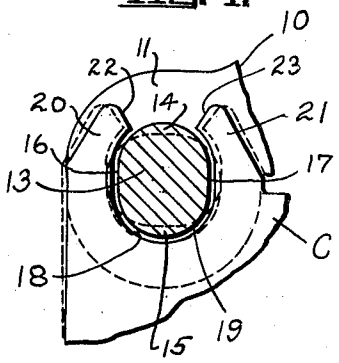


Fig. 4.



INVENTOR
René P. Magnenat.
BY H. G. Manning
ATTORNEY

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PLASTIC HINGE CAP

René P. Magnenat, Waterbury, Conn., assignor to The Waterbury Button Company, Waterbury, Conn., a corporation of Connecticut

Application August 8, 1941, Serial No. 405,979

4 Claims. (Cl. 220—31)

This invention relates to closure caps and more particularly to a plastic hinge cap for a can of cosmetics or toilet powder.

One object of this invention is to provide a plastic hinge cap of the above nature having means for positively holding the cap in open position and preventing accidental closing thereof.

Another object is to provide a plastic hinge cap of the above nature in which the hinge pin thereof is formed integral with a pair of side ears extending from the body of the cap, and which is adapted to be received with a snap action within a slot located between a pair of resilient lugs upstanding from the top of the can.

A further object is to provide a plastic hinge cap of the above nature in which the pivot pin is made substantially elliptical in shape, and the slot within which it is received is similarly shaped so that when the cap is swung to vertical open position, the resilient sides of the slot will be spread apart and will exert force upon the pin to hold the cap frictionally in such position.

A further object is to provide a plastic hinge cap of the above nature in which a substantial clearance is provided between the elliptical pin and its slot so as to avoid straining of the material in the walls of the slot when the cap is at rest in closed position—thus avoiding permanently setting or straining the plastic material by "cold flow" of the molded composition from which the parts are made.

A further object is to provide a device of the above nature which will be simple in construction, easy to install and manipulate, compact, ornamental in appearance, and very efficient and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawing, one form in which the invention may be conveniently embodied in practice.

In the drawing:

Figure 1 represents a side view in elevation of a powder can upon which the plastic hinge cap of this invention has been assembled.

Figure 2 is a top plan view of the same.

Figure 3 is a sectional view on an enlarged scale, taken on the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is a fragmentary view, on a still further enlarged scale, showing the elliptical shape of the hinge pin and open slot in the can to which the cover cap is connected.

Referring now to the drawing in which like reference numerals denote corresponding parts throughout the several views, the letter C indicates a powder can having a conical upper portion of molded plastic terminating in a reduced flat top T. The plastic hinge cap is indicated by the numeral 10 and is circular in shape and cupped, also having a flat top.

The rear of the cap 10 is provided with a pair of inclined spaced ears 11 and 12, which are connected by a horizontal pin 13 formed integral therewith, said pin being of substantially elliptical shape. The pin 13 is provided with a pair of semi-cylindrical end sections 14 and 15, and a central section provided with opposite flat sides 16 and 17 (see Figure 4). The elliptical pin 13 is adapted to be received within an elongated slot 18 of a similar elliptical shape as said pin, provision being made of an elliptical clearance space 19 substantially five-thousandths of an inch in width (.005") surrounding said pin 13. The slot 18 is open at the top where it is provided with a pair of converging resilient lugs 20 and 21 having upwardly diverging wedge faces 22 and 23 on the upper ends thereof. By means of this construction, it will be seen that when the pin 13 is pushed downwardly in the slot 18, the resilient lugs 20 and 21 will be spread apart, and the pin will pass into the slot with a snap action.

The purpose of making the pin and slot of elongated elliptical shape is that when the cover is in open position, as shown by the dotted lines of Figures 3 and 4, the pin will be frictionally engaged against the side lugs of the slot 18 which are thereby held in the spread-apart position shown by the dotted lines of Figure 4. The cap will thus be held positively in open position because a substantial force will be required to move the cap from open to closed position.

In order to facilitate the lifting and closing of the cap 10, provision is made of a finger knob 24 formed at the forward end of the cap, and said knob is provided with an interior locking nib 25 which is adapted to seat with a snap-action within a rectangular recess 26 formed in the top reduced section T of the can C.

The cap may also be provided, within the scope of this invention, with a pair of depending tapered plugs 27 and 28 which are adapted to fit within dispensing holes 29 formed on the horizontal top of the container C. The holes 29 preferably will be formed on opposite sides of a vertical central baffle, not shown, formed in said can.

One advantage of this invention is that the clearance provided between the pin and the slot prevents straining of the lugs surrounding the

slot when the cap is at rest in closed position. This will avoid any permanent set or stretching of the sides of the slot due to "cold flow" of the plastic molded material from which the parts are made.

According to the present invention, the hinge pin 13 will normally be loosely held in its slot and will exert spreading force upon the sides thereof only when the cap is raised.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent, is:

1. A container having a pair of resilient upstanding radially spaced lugs of molded plastic material defining an oval slot therebetween, a cap having a pair of spaced lugs connected together by an integral horizontal hinge pin for fitting within said slot and being detachably retained thereby, said pin having an oval cross section slightly smaller than the slot defined by said radially spaced lugs and having its major axis coinciding with the major axis of said slot when said cap is closed, whereby it will be loose in said slot when the cap is closed and hence will not produce strains which might cause "setting" due to "cold flow" of the material of said radially spaced lugs, the ends of said oval pin frictionally engaging said radially spaced lugs when the cap is in open position to prevent accidental closing thereof.

2. A container having a pair of integral resilient upstanding inwardly concave lugs of molded plastic defining an oval slot therebetween, the major axis of said slot being vertical, a cap having a horizontal hinge pin mounted thereon for location in said slot, the cross section of said pin having an oval shape similar to that of said slot but being of slightly smaller dimensions to provide a small clearance space therebetween, said pin being so positioned that the major axis of its cross section is in a vertical plane and coincides with the major axis of said slot when the cap is closed, whereby it will be loose in said slot when the cap is closed and hence will not produce strains which might cause "setting" due to "cold flow" of the material of said lugs, but will frictionally engage said lugs when the cap is in open position to prevent accidental closing thereof.

3. A container as defined in claim 2 in which the major length of the cross section of said pin is greater than the width of said slot.

4. A container having a top section of molded plastic and a detachable cap section of similar material, one of said sections having a pair of spaced inwardly concave lugs integral therewith, and defining an oval slot therebetween, the major axis of said slot being vertical, the other of said sections having a horizontal hinge pin integral therewith and detachably seated in said slot, said pin having an oval cross section similar to that of said slot but having slightly smaller dimensions to provide a clearance space therebetween, whereby said pin will be loosely retained in said slot when the cap is closed and will not strain said lugs, said oval pin being of such size as to frictionally engage said lugs when the cap is in open position to prevent it from being accidentally closed.

RENÉ P. MAGNENAT.