Feb. 3, 1959 P. D. BECKER 2,871,591

PLUG BUTTON ASSEMBLY

Filed Nov. 15, 1957

FIG. 1.

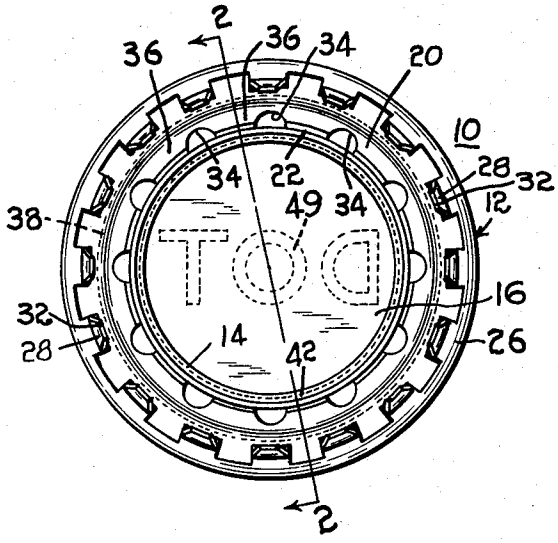


FIG. 2.

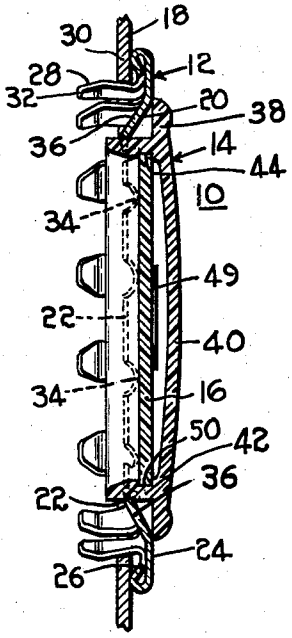


FIG. 3.

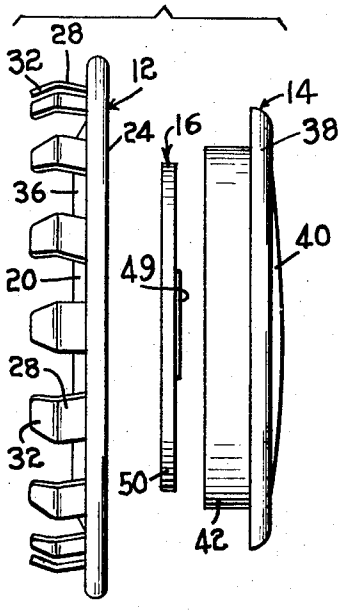


FIG. 4.

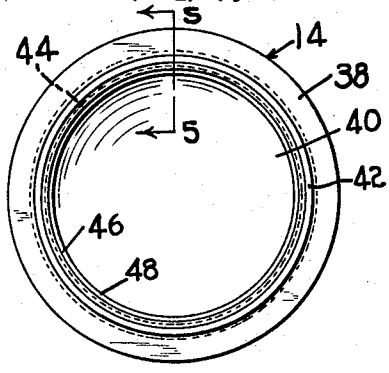
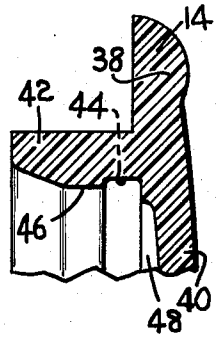


FIG. 5.



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PLUG BUTTON ASSEMBLY

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4 Claims. (Cl. 40—20)

This invention relates to a plug button assembly and like closures for apertured members and aims generally to improve existing devices of this type.

In the marine industry and industrial tractor and trucks, there has developed a need for decorative closures for the center of the boat steering wheels. The standard closures that are in everyday use have proved to be expensive to manufacture and tool as separate dies and stamps have to be made for different designs.

The primary object of this invention is to provide a plug button assembly for insertion in an apertured support having an annular ratchet plate formed integral with the plug button for retention of a plastic cap having interchangeable designs formed thereon.

Another object of this invention is the provision of a two piece plastic insert adapted for snap engagement with the plug button.

A further object of this invention is to provide a plug button assembly in which a variety of designs may be incorporated between a two piece plastic insert adapted to be attached to the plug button.

Other objects of the invention will, in part, be obvious, and will, in part, appear hereinafter.

In the drawing:

Fig. 1 is a bottom plan view of the closure assembly;

Fig. 2 is an enlarged view in section taken on line 2—2 of Fig. 1 showing the closure in assembly;

Fig. 3 is a view in elevation of the component parts of the closure disassembled;

Fig. 4 is a bottom plan view of the plastic cap;

Fig. 5 is an enlarged view in section taken on line 5—5 of Fig. 4.

Referring to the drawing, there is illustrated a closure assembly **10**, preferably of three part construction, comprising a plug button **12**, a plastic cap **14** and a retainer **16** adapted for snap engagement with an apertured support **18**.

The plug button **12** comprises a base portion **20** having a central aperture **22** formed therein with a peripheral rim **24** surrounding the aperture. The outer edge of the rim **24** is bent back upon itself forming an annular inner rim **26** having outwardly extending resilient segments **28** substantially perpendicular thereto so as to collectively form a series of snap fastener members for engaging the wall **30** of the apertured support **18**. The terminal ends **32** of the segments **28** are bent inwardly to facilitate snap engagement with the wall **30**. A series of substantially circular openings **34** are formed adjacent the aperture **22** and connected thereto forming a series of inwardly extending arms **36** which are bent downwardly from the plane of the base portion for a purpose to be described hereinafter.

As shown in Fig. 4, the cap **14** is formed of a transparent plastic material such as polyvinyl chloride or acrylic resin and comprises a flanged head portion **38** extending radially from one end having a dome **40** on one lateral surface and downwardly extending wall portions **42** on the opposed lateral surface. A circumferential groove **44** as shown in the enlarged illustration of Fig. 5, is formed on the interior **46** of the wall portion and spaced from the dome **40** to provide a pocket **48** adapted to retain therein any suitable ornamental material **49**.

To complete the assembly, a circular retainer means **16** is provided preferably formed of a resilient plastic having a diameter slightly greater than the distance between the interior of the wall portions **46** and having edge portions **50** adapted to cooperate with circumferential groove **44**. To assemble the closure, decorative material **49** is placed within the pocket **48** of the cap **14**, the circular retainer **16** is then snapped into engagement with the circumferential groove **44** completely sealing the decorative material within the pocket **48**. The plastic cap **14** is inserted into the central aperture **22** with the arm **36** entering into biting engagement with the wall portions **42** preventing withdrawal. The entire closure assembly is then snapped into engagement with the apertured support **18** with the outwardly extending resilient segments **28** flexing inward providing snap fastener engagement with the support.

It is a matter of preference whether the printed material is inserted into the pocket **48** or suitable designs stamped, or impressed on the under side of the domed plastic cap **14** or on the retainer **16**. By having the decoration enclosed within the cap **14** and the retainer **16**, they are protected against dislodgment and discoloration due to adverse atmospheric conditions.

Since certain obvious modifications may be made in this device without departing from the scope of the invention, it is intended that all matters contained herein be interpreted in an illustrative and not in a limiting sense.

I claim:

1. A plug button assembly or closure adapted for attachment to an apertured support comprising in combination, an attaching member having a resilient portion extending substantially perpendicular thereto, said attaching member having a centrally apertured base portion, gripping arms connected to the base and inclined downwardly out of the plane of said base at the central aperture, a resilient plastic cap assembled with said attaching member and having a wall portion inserted through the central aperture and gripped by said arms, said cap comprising a flanged head portion and the said wall portion, and a retainer means snapped into engagement with said wall portion.

2. A plug button assembly or closure adapted for attachment to an apertured support comprising in combination, an attaching member having a resilient portion extending substantially perpendicular thereto, said attaching member having a centrally apertured base portion with a series of openings disposed about the aperture and connected therewith forming a series of inwardly extending arms, said arms being connected to the base and extending downwardly out of the plane of said base, a resilient plastic cap adapted for insertion within said aperture comprising a flanged head portion with a wall portion extending downward from one lateral surface, said wall portion having a circumferential groove formed on the inner surface, a resilient plastic retainer means having edge portions snapped into engagement with said groove.

3. A closure assembly comprising in combination, a plug button, a cap adapted for frictional engagement with said plug button, and a retainer means, said plug button comprising a one piece apertured plate with a peripheral rim, arms formed integral with said rim and extending substantially perpendicular thereto, the terminal portions of said arms being inclined downwardly, a series of openings disposed about the aperture and connected thereto forming a series of inwardly extending arms, said arms being connected to and inclined downwardly out of the plane of said plate, a plastic cap comprising a head

portion, a downwardly extending peripheral wall having a radial groove disposed on the inner surface, a plastic retainer means comprising a substantially circular lens for snap engagement with said radial groove.

4. A closure assembly comprising in combination an apertured plate, a resilient cap adapted for frictional insertion within the aperture of said plate and lens means sealing said cap, said apertured plate having resilient fingers extending substantially perpendicular to a rim portion for snap engagement with an apertured support, ratchet means formed integral with said plate adjacent the aperture having arms inclined downwardly from the plane of said plate, a resilient plastic cap having a domed flange at one end, a hollow shank portion extending from the

other end of the flange having a circumferential groove formed on an inner wall and spaced from said flange, said shank portion having an outer wall adapted for engagement with the ratchet means surrounding said plate aperture, a plastic retainer means radially cooperating with said groove to form an enclosed area between the retainer and said flange for the purposes described.

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