Jan. 30, 1962 T. R. GRIFFIN 3,018,535

CLOSURE MEMBER

Filed Feb. 10, 1959

Fig. 1.

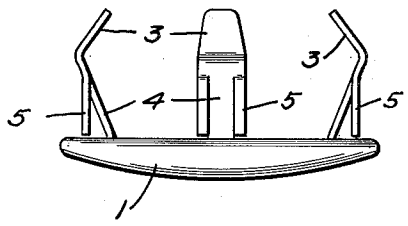


Fig. 2.

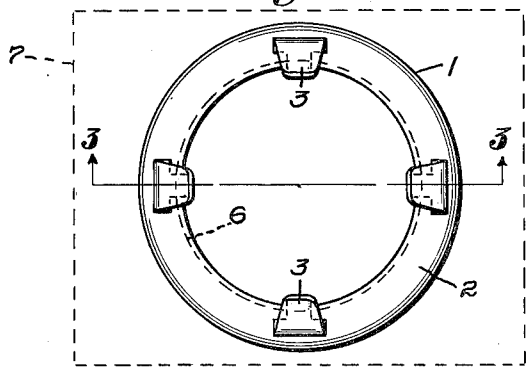


Fig. 3.

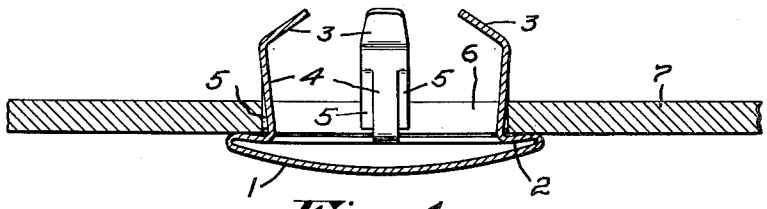


Fig. 4.

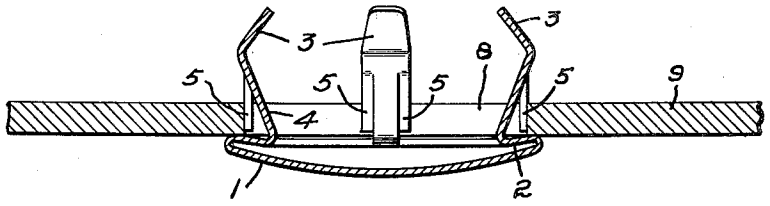
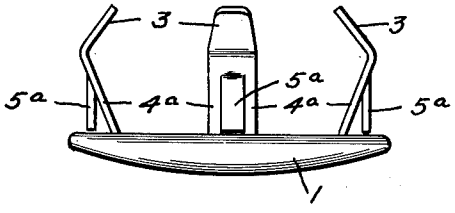


Fig. 5.



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3,018,535

CLOSURE MEMBER

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3 Claims. (Cl. 24—213)

My invention aims to provide improvements in the attaching means for various articles of manufacture such, for instance, as so-called plug buttons.

An object of my invention is to provide an article of manufacture with attaching arms so constructed and arranged as to cooperate to permit the article to be attached to various supports with a wide range of hole sizes and variations in thicknesses.

So-called plug buttons have been in use for many years and there have been attempts to provide them with means for attaching a given plug button to supports of varying thicknesses and with varying sized apertures, but these have either been too complicated or did not have a particularly large range. My improved device is simple, inexpensive and will adapt itself to ranges of hole sizes and thicknesses of supports not heretofore possible with a given device of simple construction. Therefore, I have provided a more universal means for attaching various types of articles to supports.

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

In the drawing:

FIG. 1 is an edge view of one form of a plug button embodying my invention;

FIG. 2 is a plan view of the plug button shown in FIG. 1 with a portion of an apertured support in dotted lines;

FIG. 3 is a section taken on the line 3—3 of FIG. 2, the support being shown in cross section;

FIG. 4 is a section similar to FIG. 3, the support having a larger hole; and

FIG. 5 is an edge view of a modified form of a plug button.

The embodiment of my invention illustrated in FIGS. 1 through 4 provides a one piece plug button having a cap portion 1 with an inturned rear flange 2 and yieldable attaching arms 3. The yieldable attaching arms 3 are divided into main support engaging portions 4 and other yieldable support engaging portions 5, the latter being formed by shearing portions of the sides of the arms and bending them so that they are normally substantially parallel with the axis of the plug button as shown in FIG. 1.

The plug button may be made in two pieces if desired and the shape of the arms and the number of the arms may vary without departing from the spirit of the invention.

In FIGS. 3 and 4, I have illustrated the fact that a plug button with arms formed as described may adapt itself to a minimum size hole 6 in a support 7 as shown in FIG. 3. In this instance the other yieldable portions 5 have moved into substantial alignment with the portions 4 and each of the entire arms has been brought into a position where the arms are substantially parallel to the axis of the plug button.

In FIG. 4 the plug button is shown as snapped into a maximum size hole 8 in a support 9. In this instance the other yieldable arm portions 5 engaging the wall surrounding the aperture 8 and hold the button in place.

Another form of plug button arm is shown in FIG. 5 and in this instance, the other yieldable portion 5*a* is formed from the central portion of the yieldable arm and the main portion 4*a* is divided so that there is a portion at each side of the other portion 5*a*. In any event, the

operation of the legs of the device shown in FIG. 5 is substantially the same as described in connection with the construction of the legs shown in FIGS. 3 and 4.

While I have not illustrated different thicknesses of supports, a glance at FIGS. 3 and 4 will indicate to anyone skilled in the art that thinner and thicker supports 7 and 9 may easily receive the arms of the plug button, thus indicating the universal nature of my improved constructions. My devices also adapt themselves readily to irregular shaped apertures.

While I have illustrated and described preferred embodiments of my invention, the scope of my invention is best defined by the following claims.

I claim:

1. An article of manufacture having a number of yieldable attaching arms cooperating with each other to permit attachment of said article to supports having substantial variations in arm receiving aperture diameters, each of said arms having a main support engaging portion extending away from said article, and having at least one other yieldable support engaging portion formed from the main support engaging portion, having one end secured thereto, said yieldable support engaging portions extending in other planes than the planes of the main portions to receive the initial yielding movement when pressed into an aperture in a support and to remain in frictional engagement therewith, the said other yieldable support engaging arms providing the holding means in supports with large apertures and the said main support engaging portions providing the holding means in supports with minimum size apertures, said arms entering into frictional engagement with the walls of said aperture to retain the closure in assembly.

2. A closure member having a plurality of yieldable attaching arms cooperating to allow snap engagement with an apertured support, said member comprising a base portion, a first series of arms extending substantially normal to said base portion with the distal ends inclined toward the central axis of said base portion, and a second series of arms formed from said first arms each having a free end extending upwardly in the direction of said base but spaced therefrom, said second series of arms adapted for lateral flexing by frictional engagement with the aperture walls to compensate for variations in aperture diameters, each of said second series of arms having one end joined to a portion of one of said first arms.

3. A closure member for universal application to a support having a maximum and minimum range of aperture diameters, said member including a first series of attaching arms extending substantially normal to a base portion having their distal ends inclined toward a central axis, and a second series of arms formed from said first arms and each of said second series having one end joined to an arm of said first series, the free ends of said second series of arms extending in the direction of the base substantially parallel to the plane of the central axis, whereby said second arms will flex inwardly upon insertion of the member within the aperture to compensate for variations in aperture diameters.

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