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[54] **GUN CASE PROTECTIVE CLOSURE DEVICE**
8 Claims, 2 Drawing Figs.

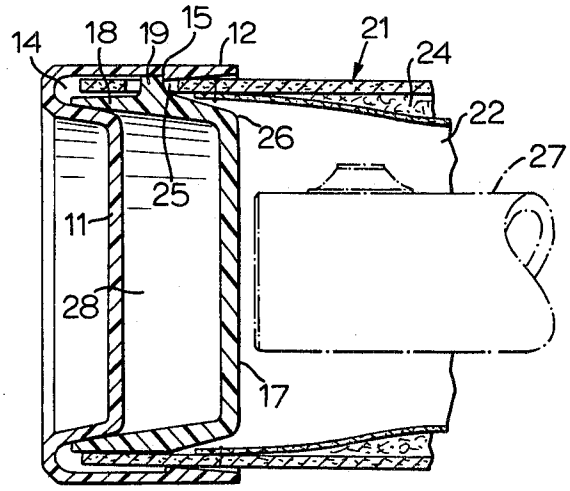
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220/60, 220/42, 150/.5, 206/16
[51] **Int. Cl.** **B65d 51/18,**
B65d 43/0
[50] **Field of Search** 220/29, 42,
60; 150/.5; 206/16

[56] **References Cited**
UNITED STATES PATENTS

2,801,741	8/1957	Harkness et al.	220/42
2,941,562	6/1960	Ripin	150/.5

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ABSTRACT: A protective closure device for fitting to the end of a gun case, to protect the muzzle and forward sight of the gun from dirt and impacts, is disclosed. The device comprises a resilient plastic cap having an internal ledge, within which is received the end of the sight guard sleeve of the gun case and a resilient plug. The plug has projections which pass through holes in the sleeve and are retained behind the ledge in the cap by interference fit and engagement with the ledge. The plug presents a closed end face to the gun muzzle, and with the cap, defines an air enclosure so that impacts of the muzzle of the plug end face are absorbed without shock by the resilient cushioning effect of the interfitted plug and cap.



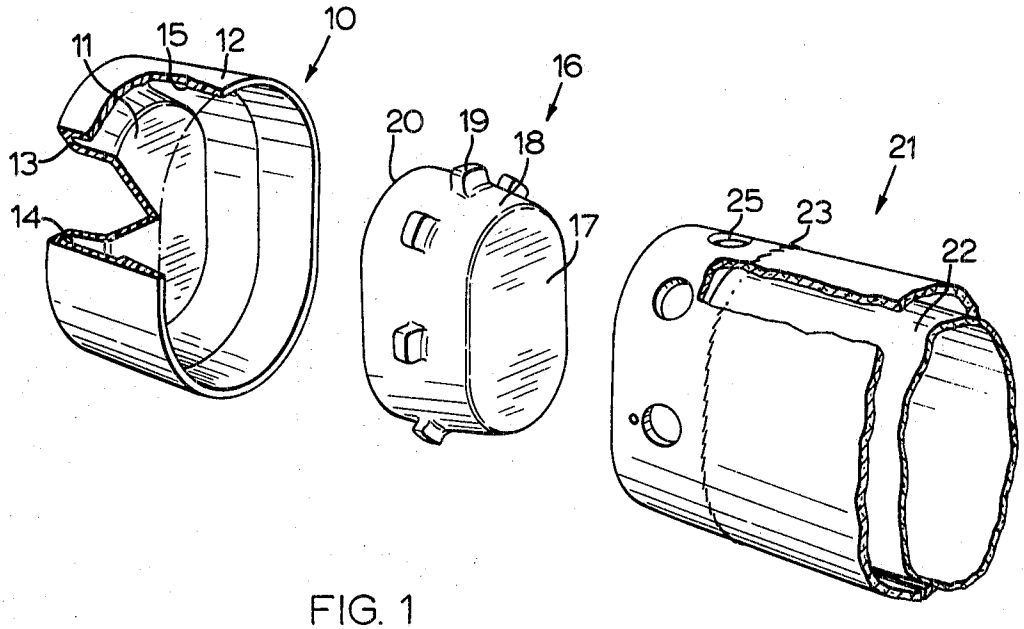


FIG. 1

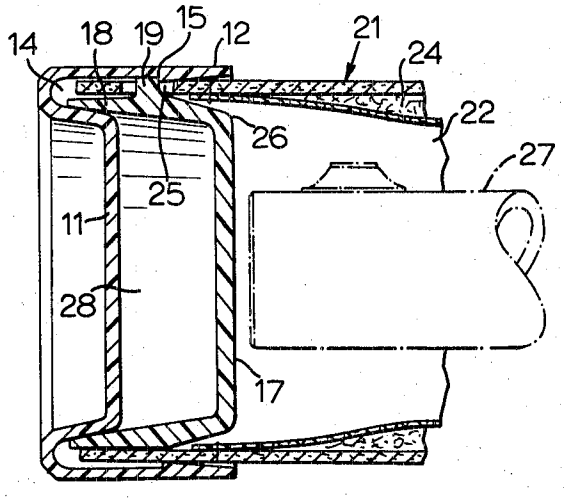


FIG. 2

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GUN CASE PROTECTIVE CLOSURE DEVICE

BACKGROUND OF THE INVENTION

This invention relates to a protective closure device, for use in closing the end of a gun case.

Gun cases for carrying and protecting guns when not in use are commonly made of leather, canvas, plastic or the like durable, flexible material, and completely enfold the gun, protecting it from water, dirt, etc., when not in use. Closing the muzzle end of the case in a neat but firm manner presents a problem. It is additionally desirable to provide protective means for the muzzle end of the gun, to protect the muzzle and sight of the gun from damage due to impact, e.g. when the gun is being carried in its case, over rough terrain. It will be appreciated that the muzzle and sight are particularly vulnerable parts of the gun to impact damage, since small amounts of damage to these parts will serve to spoil the precision of the entire gun. To provide some added protection, an additional sight guard protective sleeve is often included, which is secured to the barrel end of the gun case and envelopes the muzzle and sight of the gun. This sleeve is commonly made of strong, durable material such as leather. Even with such a protective sleeve, the muzzle of the gun is susceptible to damage by impact on the end of the sleeve. The provision of a suitable closure means for the muzzle end of the gun case which is both neat and attractive in appearance, and provides the necessary protection for the muzzle and sight of the gun has been a problem for a number of years.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a neat and attractive, permanently assembled protective closure device for the end of a gun case. A further object is to provide such a protective closure device which will cushion impacts experienced by the muzzle end of the gun and thereby protect the muzzle and sight of the gun from damage due to impacts. Other objects and advantages of the invention will become apparent from the following detailed description of a preferred embodiment.

Briefly, the gun case protective closure device of the present invention comprises a cap and a deformable plug fitted within the cap and engaging the end of a flexible sleeve forming a part of the gun case, the interfit between the cap and the plug being such as to retain these parts in a permanently assembled manner with the flexible sleeve. The cap and the plug are preferably made of resilient material, and interfit to form an air cushion, which effectively absorbs impacts on the muzzle of the gun.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, which show a preferred embodiment of the invention for illustrated purposes:

FIG. 1 is an exploded perspective view of a gun closure device of the present invention, with parts cut away;

FIG. 2 is a longitudinal cross section through the assembled gun closure device.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As illustrated, the gun closure device comprises a cap **10**, having a generally oval cross-sectional shape. In this preferred embodiment, the cap is made of a plastic, resiliently deformable material. The cap **10** has a closed forward end wall **11** and a peripheral skirt **12**. The peripheral skirt **12** projects forwardly to some extent beyond the forward end wall **11**, being integrally connected with the end wall by a neck portion **13**, and thereby defining a peripheral groove **14** extending forwardly of the forward end wall **11** between this wall an and the peripheral skirt **12**. The skirt **12** also has on its inner surface a peripheral shoulder **15** extending substantially at right angles to the skirt **12**, and the face of which is presented forwardly. The cap **10** is a one-piece unitary molding of plastic.

The gun closure device further comprises a plug **16**, having a closed rear end wall **17** and a forwardly extending skirt **18** of generally frustoconical shape, the forward end **20** being the larger end. The skirt **18** has a series of integral radially outwardly extending projections **19**. The forward end **20** of the plug **16** is open. The plug is similarly a one-piece unitary molding of plastic, and is resiliently deformable. The cap **10** and plug **16** are adapted to interfit with the forward end of a sight guard protective sleeve **21**. The sleeve **21** as in normal practice is of tough, durable but flexible leather, and has a soft textile liner **22** stitched to its inner surface at **23**. The space between the sleeve **21** and the liner **22** is filled with a soft, fibrous or foam rubber material **24** (see FIG. 2). Adjacent its open forward end, the flexible sleeve **21** is provided with a series of apertures **25** positioned around the periphery so as to register with the projections **19** on the plug **16**, when the closure device is assembled.

The assembled closure device is shown in cross section in FIG. 2. The plug **16** is located inside the sleeve **21**, with the projections **19** on the plug passing through the apertures **25** on the sleeve. The plug and sleeve thus assembled are received within the peripheral skirt **12** of the cap **10**, the ends of the projections **19** being received forwardly of the shoulder **15** on the plug, thereby retaining the device as assembled. The outer periphery of the projections **19** is substantially the same as the inner periphery of the skirt **12** of the cap rearwardly of the shoulder **15**, so that the parts are a force fit at this location. Once the projections **19** are received forwardly of the shoulder **15**, therefore, the parts are permanently assembled.

The open forward end **20** of the plug **16** and the open forward end of the sleeve **21** are received within the groove **14** of the cap **10**, in a snug manner to ensure an irreversibly interfitting device. The frustoconical shape of the skirt **18** of the plug **15** ensures that an annular space **26** is left between the sleeve **21** and the plug **16** at the rear end thereof, to accommodate the liner **22** and stitching **23** of the sleeve **21**.

The muzzle end of the gun barrel **27** is shown in its approximate position in FIG. 2. It will be seen from FIG. 2 that any impacts on the forward end of the device will cause the gun barrel **27** to move forwardly relative to the device, until the muzzle end encounters the rear wall **17** of the plug **16**. Any shock of such encounter will be absorbed by the resilient nature of the plug **16** and cap **10**, and by the air pocket **28** defined between the plug **16** and the forward end wall **11** of the cap **10**. Any impact of the barrel **27** on the end wall **17** of the plug will, in fact, cause the end wall **17** to buckle resiliently forwardly. Such buckling will tend to cause the projections **19** to move radially outwardly, thereby providing even firmer securing means of the plug **16** to the cap **10**.

Polyethylene is the preferred material from which to make the cap and plug, since it is durable, substantially completely resistant to moisture and will withstand the necessary temperatures to which the gun case may be subjected, without serious distortion. In addition, the closure device as illustrated is self-aerating so as to allow release of any harmful moisture. Further, and as noted above, the plug and cap can be made as one-piece unitary moldings from plastic, thereby making the parts of the device simple and inexpensive to manufacture.

The cap and the plug may if desired be made of a nonresilient material. A gun case end cap constructed in accordance with the preferred embodiment of this invention but made of nonresilient material is an attractive, neat and efficient type of nonseparable, self-aerating end cap. Whilst such a cap will not provide an impact cushioning feature to the same extent as a device made of resilient material, it is nevertheless a useful and desirable novel article.

While a preferred embodiment of the present invention has been described in detail above, it will be appreciated that this is by way of illustration and not limitation. There are other ways of putting into practice the present invention, the scope of which is limited only by the following claims.

I claim:

1. A gun case protective closure device comprising:

a cap having a closed forward end and a peripheral skirt having at least one inwardly extending projection; a flexible sleeve integral with or attachable to the gun case, the forward end of which has peripherally spaced apertures adjacent thereto and is adapted to be snugly received within the skirt of said cap;

a plug having a closed rear end and radially outwardly extending projections, the plug having a cross-sectional shape and size to be an interference fit within the sleeve received within the skirt of said cap; and

the radially outwardly extending projections on the plug and the inwardly extending projection on the cap being adapted to interfit and to cooperate with the apertures in the sleeve on assembly of the closure device, thereby to retain the closure device in assembled relationship.

2. The closure device of claim 1 wherein the inwardly extending projection on the peripheral skirt of the cap comprises a peripheral shoulder extending substantially at right angles to the skirt and the face of which shoulder is presented toward the forward end, and the radially outwardly extending projections on the plug are adapted to be received through the apertures in the sleeve and forwardly of the shoulder of the cap, thereby to retain the closure device irreversibly in assembled relationship.

3. The closure device of claim 2, in which the plug has a forwardly extending peripheral skirt carrying said projections, and an open forward end.

4. The closure device of claim 3 in which the cap has a peripheral groove between the forward end wall and the peripheral skirt and extending forwardly of the forward end wall, the groove having a radial dimension to provide a snug fit for the forward end of the skirt of the plug and the forward end of the sleeve.

5. The closure device of claim 4 in which the cap and the plug are made of resiliently deformable material.

6. The closure device of claim 5 in which the cap and the plug are made of polyethylene.

7. The closure device of claim 6, in which the peripheral skirt of the plug is generally frustoconical in shape, the closed rear end being the small end thereof.

8. The closure device of claim 7, wherein the flexible sleeve comprises the sight guard element of the gun case.