United States Patent

Fazio

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[45] **July 25, 1972**

[54] SAFETY PLUG FOR FIREARMS

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[52] **U.S. Cl.** .....**42/1 N**
[51] **Int. Cl.** **F41c 27/00**
[58] **Field of Search** .....42/1 N

[56] **References Cited**

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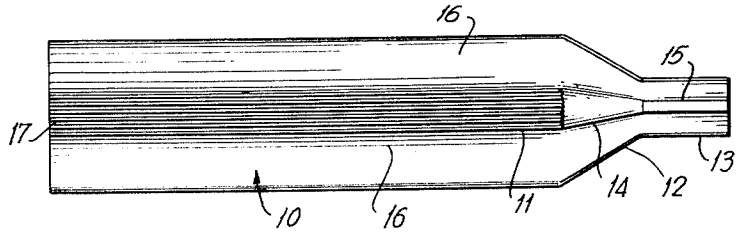
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Primary Examiner—Benjamin A. Borchelt
Assistant Examiner—C. T. Jordan
Attorney—Allison C. Collard

[57] **ABSTRACT**

A safety plug for insertion into the chamber of a firearm, such as a pistol, shotgun, or rifle, constructed from a single piece of flexible material and adapted for frictionally engaging the chamber walls of the firearm. In a preferred embodiment, the invention includes a plug having longitudinal ribs which engage the walls of the chamber while permitting the chamber and barrel to be ventilated.

6 Claims, 9 Drawing Figures



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2 Sheets-Sheet 1

FIG. 1

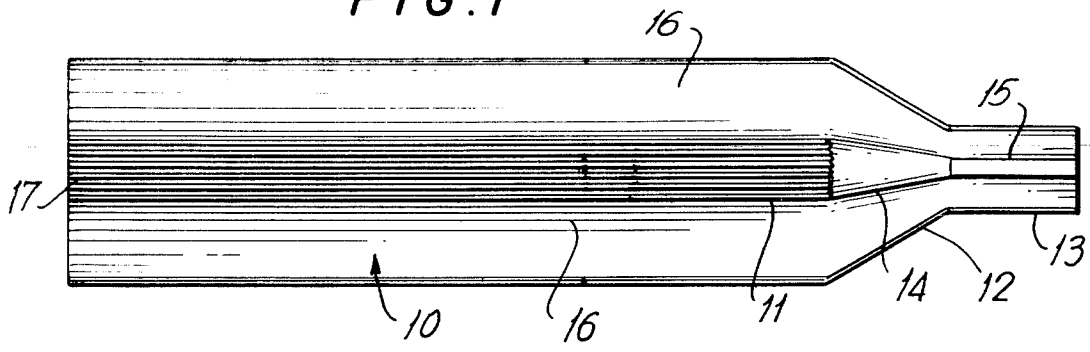


FIG. 2

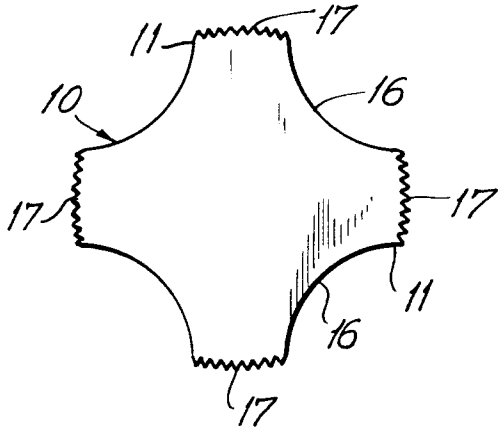


FIG. 3

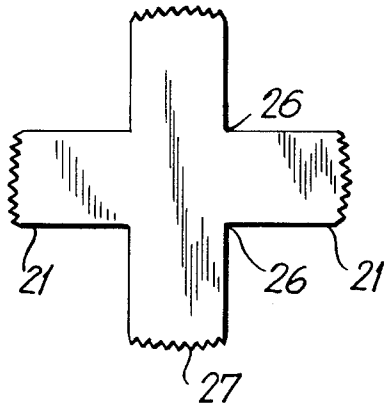


FIG. 4

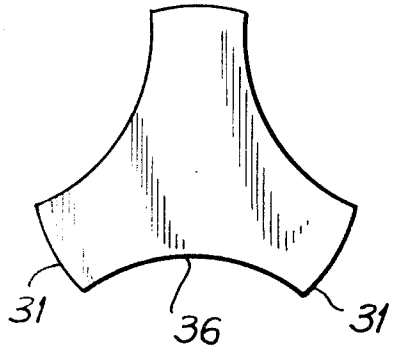
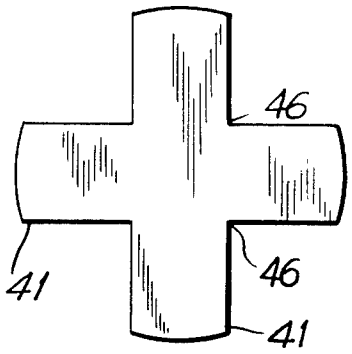


FIG. 5



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FIG. 6

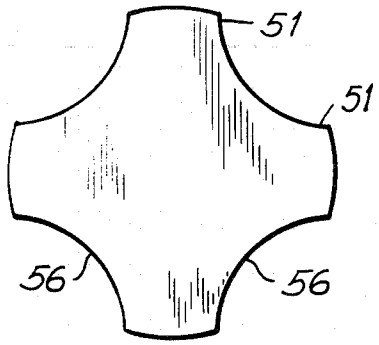


FIG. 7

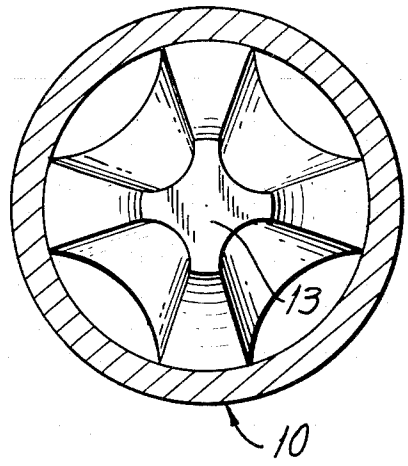


FIG. 8

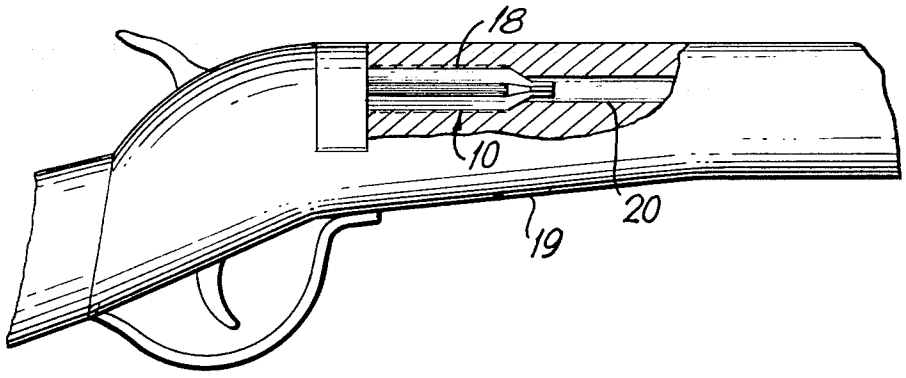
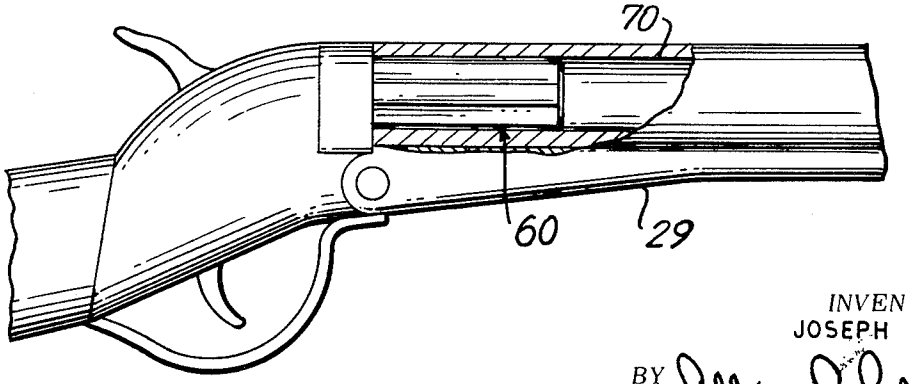


FIG. 9



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SAFETY PLUG FOR FIREARMS

This invention relates to safety device for firearms.

More specifically, this invention relates to a non-ejectable safety plug for insertion into the chamber of a firearm for temporarily preventing the firearm from being operated.

Firearms which are on display for sale to the general public such as in gun shops or in sporting departments of department stores are likely to be handled frequently by irresponsible persons who may load the firearm with live ammunition so as to create a hazard and possible risk of injury to persons in the vicinity. In stores where firearms are on display for sale, prospective customers often handle the firearms in order to examine their operation. Several conventional safety devices which are designed to inhibit the operation of the firearm have been found to be disadvantageous in use since they interfere with the prospective purchaser's testing of the mechanical action of the firearm. These conventional devices include trigger guard locks and rods which lock into the barrel of the firearm. Several recent conventional devices have been designed to be inserted into the chamber of the firearm while leaving the mechanical action of the firearm undisturbed. These conventional chamber devices are generally constructed from two or more elements having, for example, a front expandable portion, and a rear portion consisting of a latch or bolt for expanding the front portion against the walls of the firearm. These conventional chamber devices, however, have been found to be difficult to insert and remove from the chamber of the firearm when desired, and further have the disadvantage of a high cost of manufacture. As a result, few of these conventional safety devices have ever been made available to gun shops and sporting departments.

The present invention, accordingly, provides an improved safety plug for insertion into the chamber of a firearm constructed from a single piece of resilient deformable material such as plastic or nylon, and which includes no extractor groove or rim normally found on the end of such plugs, so that the safety plug of the invention cannot be removed by the mechanical action of the firearm. The safety plug of the invention is constructed in different sizes to fit different sizes and types of firearms so that in any given size, the outer diameter of the plug is slightly larger than the chamber of the firearm so that the plug will frictionally engage the chamber walls when fully inserted. The safety plug of the invention requires no additional element or member such as a wedge or screw for expanding the plug since the enlarged diameter of the resilient deformable material of which the plug is constructed enable it to be frictionally retained within the firearm chamber without the possibility of it becoming dislodged during the handling of the firearm. In a further embodiment of the invention, the safety plug may include longitudinal grooves or spines which tightly engage the walls of the chamber while permitting the chamber and the barrel to be adequately ventilated to prevent condensation from collecting within the barrel. The inventive safety plug may be removed from the chamber by means of inserting a cleaning rod into the front of the barrel and knocking the plug out of the chamber.

It is therefore an object according to the present invention to provide a safety plug for firearms which cannot be ejected by the mechanical action of the firearm.

It is another object according to the present invention to provide a safety plug for frictional insertion into the chamber of a firearm constructed from a single piece of resilient material.

It is still a further object according to the present invention to provide a safety plug for the chamber of a firearm which is simple in design, inexpensive in cost, and reliable in operation.

Other objects and features of the present invention will become apparent from the following detailed description considered in connection with the accompanying drawing which discloses the embodiments of the invention. It is to be understood, however, that the drawing is designed for the purpose of illustration only, and not as a definition of the limits of the invention.

In the drawing, wherein similar reference characters denote similar elements throughout the several views:

FIG. 1 is a plan view of one embodiment of the safety plug according to the invention;

FIG. 2 is a cross-sectional view of a safety plug of the invention;

FIG. 3 is a cross-sectional view of another embodiment of a safety plug of the invention;

FIG. 4 is a cross-sectional view of another embodiment of a safety plug of the invention;

FIG. 5 is a cross-sectional view of still another embodiment of a safety plug of the invention;

FIG. 6 is a cross-sectional view of still another embodiment of the invention;

FIG. 7 is a front view of the plug of the embodiment of FIG. 1;

FIG. 8 is a plan view partly in cross section of a firearm including the safety plug of the invention inserted in the chamber; and,

FIG. 9 is a plan view of a shotgun showing another version of the safety plug inserted in the chamber.

Referring to FIG. 1, there is shown a plan view of a safety plug according to the invention generally designated as **10** having a plurality of arm or rib portions **11** longitudinally disposed on the body of the plug and preferably parallel to the axis thereof, which converge at the front end of the plug by means of tapered portion **12**, and nose rib portion **13**. Ribs **11** also converge into nose portion **13** by means of tapered portion **14**, and longitudinal portion **15**. Between ribs **11** and their extended portions **14** and **15** are open channels **16** which permit the flow of air to take place when the safety plug is inserted in the chamber so as to prevent an accumulation of moisture within the barrel of the firearm.

FIG. 2 discloses in detail a cross-sectional view of the safety plug of FIG. 1 showing four rib portions **11** and four circularly concave channels **16** on the circumference of the plug. The external surfaces of rib portions **11** are provided, in this embodiment, with grooves **17** which extend longitudinally along the length of ribs **11**. Grooves **17** provide a snug contact with the cylindrically shaped chamber walls of the firearm so as to prevent accidental removal of the safety plug.

FIG. 3 discloses another embodiment of the invention wherein the cross section of the safety plug resembles a cross having four ribs **21** extending out from intersections **26** which form hollow rectangularly shaped channels, and including grooves **27** similar to grooves **17** of FIG. 2. Grooves **17** and **27** are slightly rounded on the ends of ribs **11** and **21** in order to accommodate the circumference of the firearm chamber.

FIG. 4 discloses another embodiment of a safety plug which is triangularly shaped and includes three ribs **31** and three circularly concave channels **36**. The ends of ribs **31** are slightly rounded to also accommodate the circumference of the firearm chamber.

FIG. 5 discloses another embodiment of the invention similar to that with respect to FIG. 3 having four ribs **41** with rounded ends joining the body of the slug to form channels **46**. The embodiment of FIG. 5, however, does not include the grooves shown in the embodiment of FIG. 3.

FIG. 6 shows another embodiment of the invention similar to that shown in FIG. 2 having four ribs **51** which form concave channels **56** therebetween. The grooves of FIG. 2 have also been eliminated in the embodiment of FIG. 6.

FIG. 7 is a front end view of the plug of FIG. 1 showing the convergence of ribs **11** to nose portion **13** of the slug.

FIG. 8 discloses a partial cross-sectional view of the firearm showing the safety plug **10** of the invention inserted into chamber **18** of a firearm. Nose portion **13** of the safety plug also extends into barrel **20** of the firearm. Plug **10** may be any of the embodiments shown in FIGS. **2–6**. For certain calibers of firearms, such as 22 caliber, and for shotguns, the chamber of the firearm does not taper to its barrel so that a cylindrically shaped slug may be used which does not include tapered portion **12** and nose portion **13**. Thus, as shown in FIG. **9**, a cylin-

drical slug 60 similar to the plugs of FIGS. 1–6 without a tapered or nose portion is inserted into barrel 70 of shotgun 29.

The safety plugs of the present invention are preferably integrally formed from a single piece of a resilient material, such as plastic, nylon, neoprene or rubber, and have a rib diameter slightly larger than the chamber of the firearm for which they are adapted. In the embodiments of FIGS. 2 and 3, grooves 17 and 27 will frictionally engage the walls of the chamber and barrel when the safety plug is pressed in place. In the embodiments of FIGS. 4, 5, and 6, the sloped walls of the ribs will frictionally engage the chamber walls of the firearm. The channels which are disposed between the arms of the slug permit complete ventilation of the barrel even for firearms which utilize tapered cartridges, such as those resembling the device of FIG. 8.

The safety plug of the present invention is constructed in different sizes and shapes to conform to all standard sizes of ammunition for pistols, rifles, shotguns and the like. The plugs can be easily inserted into the chamber of the firearm. Since the plugs do not include any extractor grooves or rims normally found at the end of cartridges, they will not be removed by the mechanical action of the firearm. The safety plug can be pushed out of the chamber of the firearm by inserting a cleaning rod into the barrel and pushing against the nose of the plug.

The safety plug of the present invention is expected to reduce many of the hazards which occur during the handling of conventional firearms. Moreover, since the safety plug of the invention is constructed from a single piece of material, it is inexpensive in manufacture and can be quickly inserted into a firearm without the use of external tools. Because of its simplicity and inexpensive cost, it is expected to find broad application among the users of firearms.

While only a few embodiments of the present invention have been shown and described, it will be obvious that many modifications and changes may be made thereunto without departing from the spirit and scope of the invention.

What is claimed is:

1. A safety plug for insertion into the chamber of a firearm, comprising:

a body portion; and

a plurality of longitudinally extending rib means, integrally formed on said body portion, for frictional engagement with the chamber wall of said firearm, and having grooves formed on the ends of said rib means and extending longitudinally with respect to said body portion of the safety plug, said body portion also including open channels between said extending rib means for permitting ventilation of the firearm.

2. The safety plug as recited in claim 1 wherein said channels are circularly concave surfaces disposed between said rib means.

3. The safety plug as recited in claim 1 wherein said ventilation channels are rectangularly shaped passageways between said extending rib means.

4. A safety plug for insertion into the chamber of a firearm, comprising:

a body portion;

a plurality of longitudinally extending rib means, integrally formed on said body portion, for frictional engagement with the chamber wall of said firearm, said body portion including open channels between said extending rib means for permitting ventilation of the firearm;

a tapered rib portion, integrally formed on one end of said body portion; and

a nose rib portion, integrally formed on said tapered rib portion, for extending into the barrel of the firearm, said tapered rib portion and said nose rib portion including grooves formed on the ends thereof and extending longitudinally along said tapered rib and nose rib portions.

5. The safety plug as recited in claim 4 wherein said open channels extend longitudinally between said tapered rib and nose rib portions.

6. The safety plug as recited in claim 5 wherein the ends of said rib means include rounded surfaces conforming to the chamber of the firearm.

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