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(54) **BARREL BLOCKING DEVICE**

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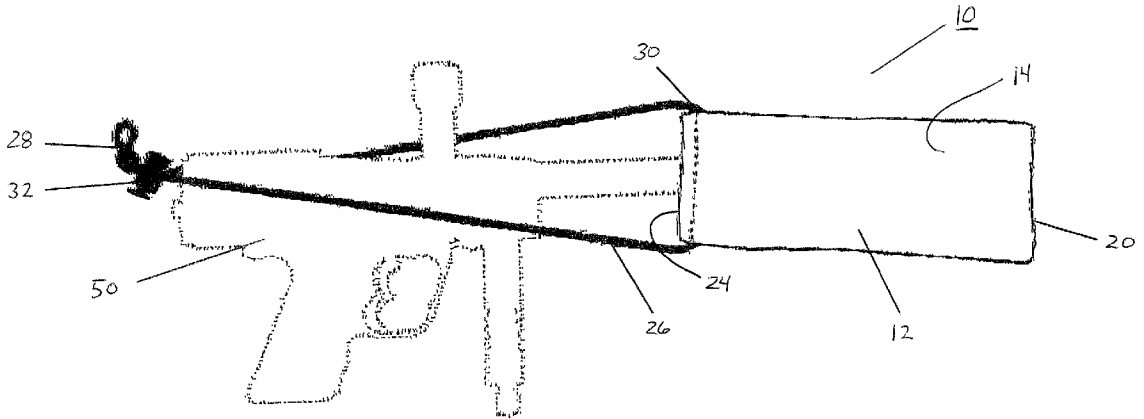
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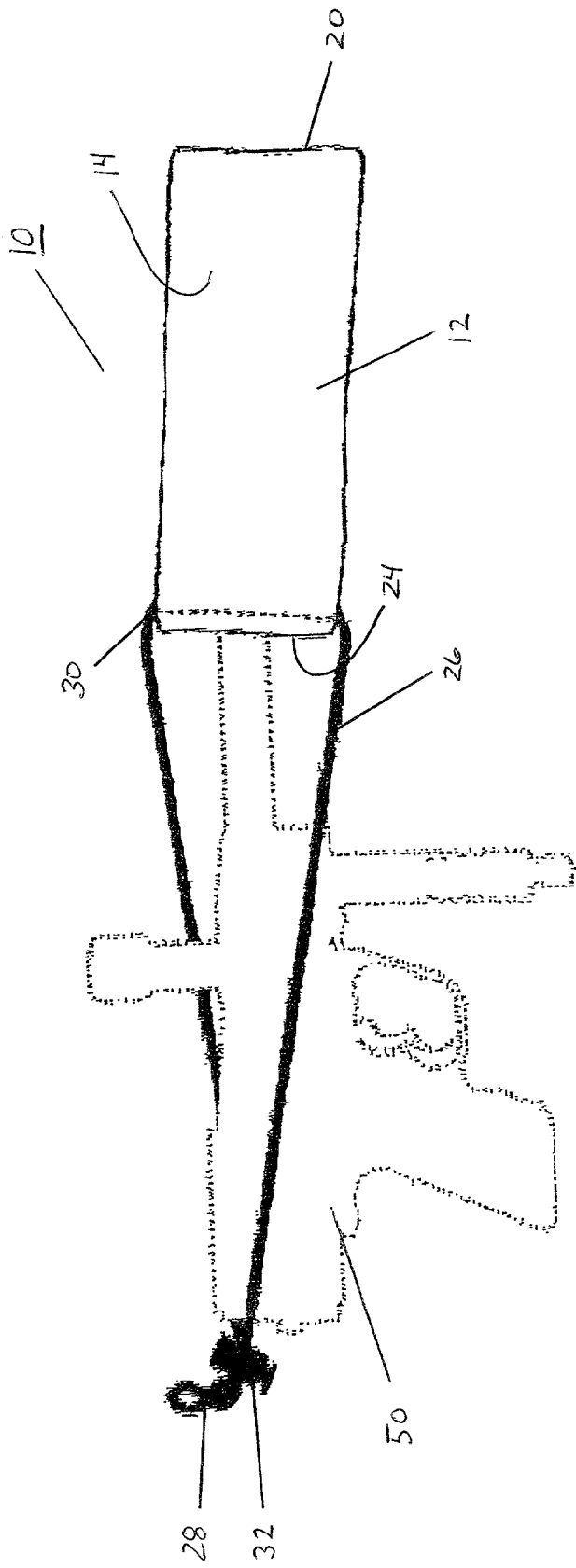
(57) **ABSTRACT**

A blocking device is provided for a firearm barrel. The blocking device has a cover member, which may be substantially moisture-proof and may be embroidered, embossed, or silk-screened. The cover member has a closed end and an open end, the open end receiving an end of the barrel. A retaining device is affixed to the cover member and releasably holds the end of the barrel in the closed end of the cover member.

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**Fig. 1**

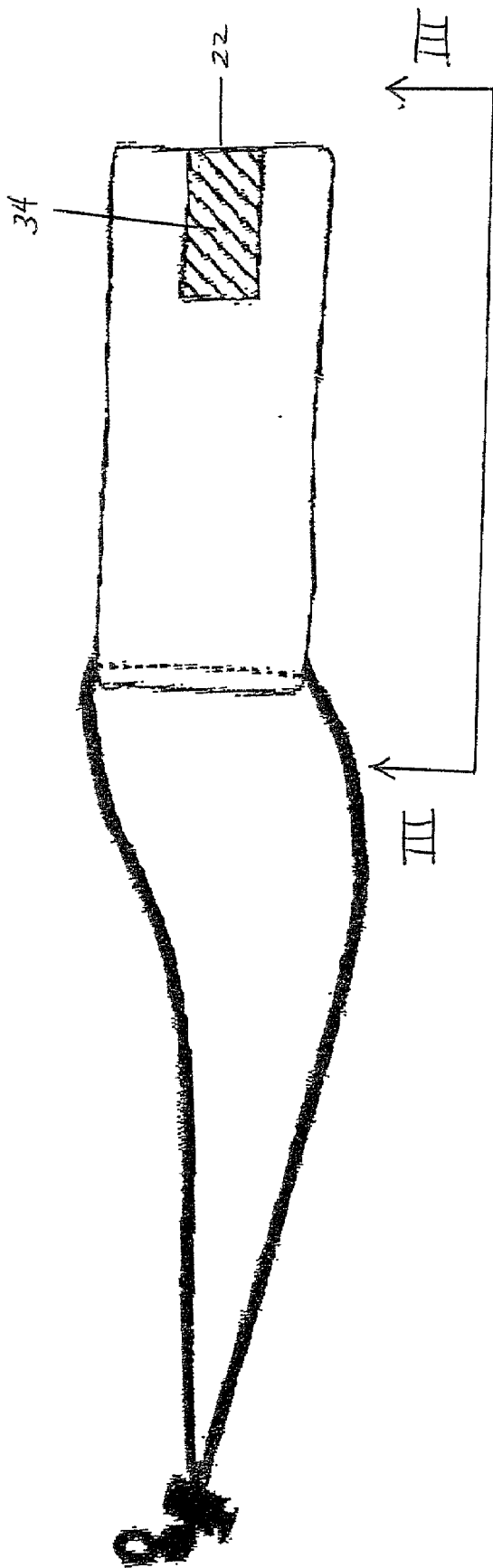
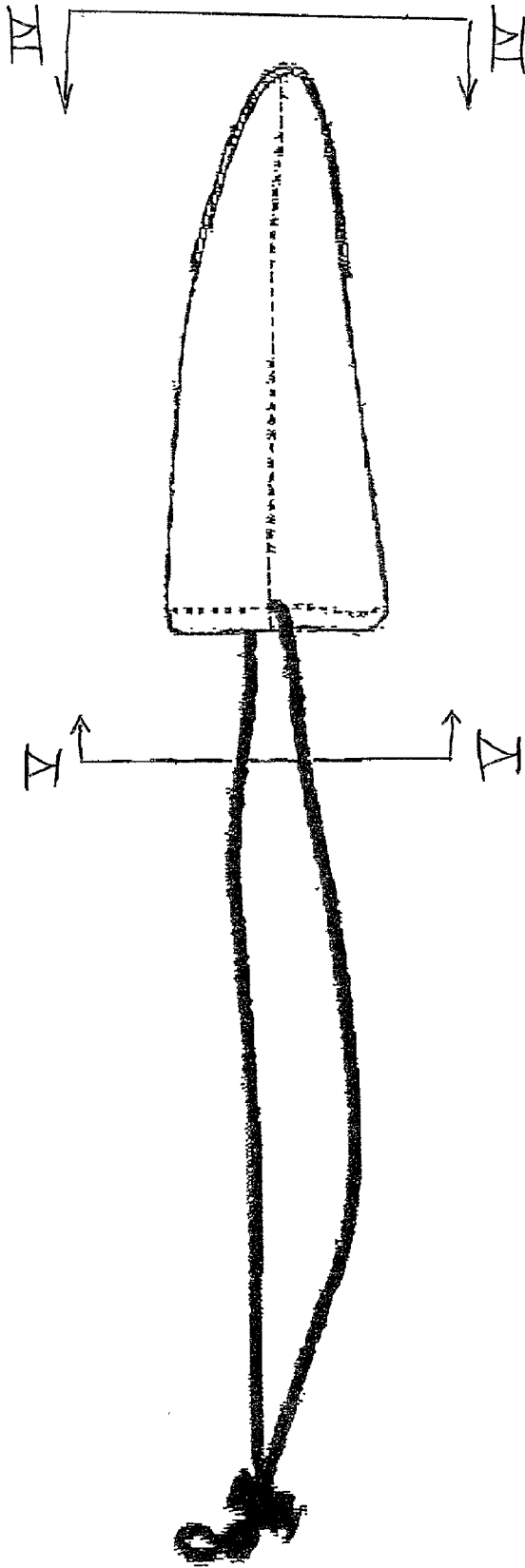
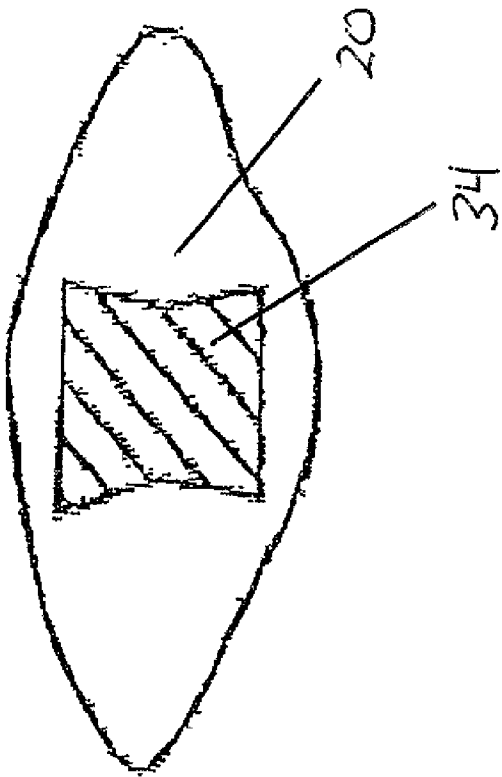


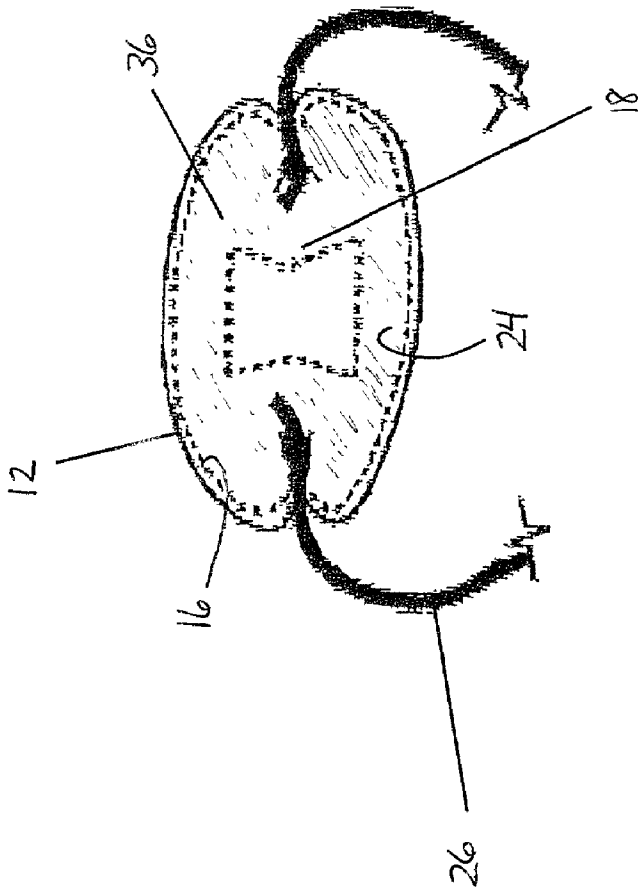
Fig. 2



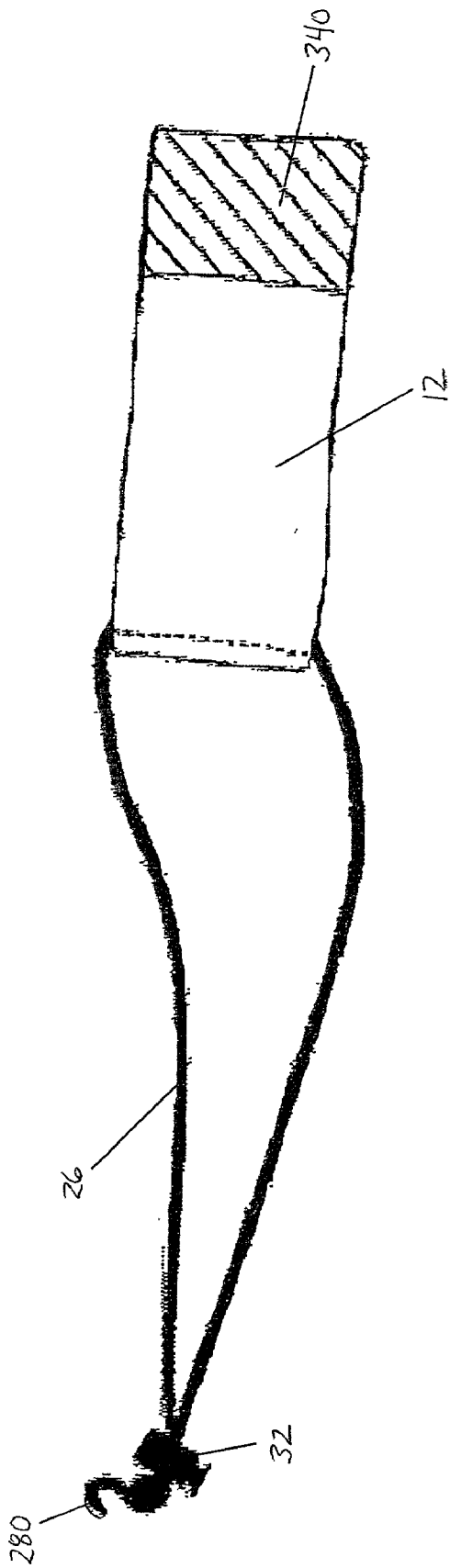
**Fig. 3**



**Fig. 4**



**Fig. 5**



**Fig. 6**

## BARREL BLOCKING DEVICE

### FIELD OF THE INVENTION

[0001] The invention relates generally to a blocking device for a barrel of a firearm. More particularly, the invention relates to a blocking device for compressed air-, gas-, or spring-powered firearms or the like (gun) to prevent accidentally discharged projectiles from striking or injuring any object or person in the line of fire and to prevent dust, debris, and other foreign objects from entering the barrel of the gun.

### BACKGROUND OF THE INVENTION

[0002] Barrel plugs that are inserted in the end of a gun barrel to prevent an accidentally discharged projectile from striking or injuring an object or person in the line of fire are known. Such barrel plugs are also used to prevent dust, debris, and other foreign objects from entering the barrel of the gun.

[0003] To provide a secure fit, thus resisting the impact and force of an accidentally discharged projectile, barrel plugs are specifically designed either to closely fit various inner diameters or calibers of different barrel types or they are manufactured with o-rings on the insertion end of the barrel plug to provide a tight fit or seal.

[0004] A disadvantage of the known barrel plug is that after multiple uses the o-ring or other sealing feature is often compromised such that the barrel plug may not remain in the barrel after a first, second or third accidental discharge. In this eventuality, persons or objects in the line of fire of the gun may be struck by subsequent discharges. Moreover, a partially dislodged barrel plug may not prevent an expended paint cartridge, for instance, from leaking through a muzzle break or port even if the end of the barrel remains sealed by the plug.

[0005] Standard barrel plugs are also somewhat inconvenient to transport, insert and remove from tight barrel insertions to make the gun ready for use. By design, barrel plugs are limited to the caliber or bore size of a specific gun barrel and must be carefully chosen to match the gun barrel at each use. Moreover, barrel plugs may break off in a barrel leaving the gun at least temporarily unusable and possibly requiring costly maintenance.

[0006] Users may be less apt to utilize barrel plugs since plugs must be force-fit into and out of the barrel of the gun each time and then stored in a pocket or elsewhere during use of the gun. During these times of non-use, barrel plugs are apt to be lost or to interfere with the user's comfort as they are relatively cumbersome, heavier and bulkier than preferable.

### BRIEF SUMMARY OF THE INVENTION

[0007] Accordingly, the present invention provides a blocking device for guns in which the component parts of the blocking device are simple and economical to manufacture, assemble, and use. Other advantages of the invention will be apparent from the following description and the attached drawings or can be learned through practice of the invention.

[0008] According to an aspect of the invention, a blocking device for a barrel is disclosed for releasably covering the

muzzle end of the barrel. The blocking device includes a cover member having an outer surface, an inner surface and a cavity formed within the cover member. The cover member also has a closed end and an opposing open end. The muzzle end of the barrel is inserted into the open end until it rests against the closed end.

[0009] A retaining device with a distal end and a proximal end is affixed to the cover member. The distal end releasably holds the closed end against the end of the barrel. In one embodiment, the retaining device may be an elastic cord or other stretchable material. Moreover, an adjustment member can be added to the retaining device to adjustably connect the blocking device to the barrel.

[0010] The cover member may be manufactured from any durable material such as nylon, polyester, vinyl or canvas. Such materials make the cover member pliable for easy storage in, for example, the user's pocket during non-use.

[0011] The cover member is illustratively elongated. Its greater length relative to its width ensures coverage of a substantial portion of the barrel end, muzzle brakes, or ports. However, the cover member can be manufactured in a variety of other shapes to meet the user's requirements. For instance, the cover member may even be molded from plastic.

[0012] Whether the cover member is durable material such as nylon or plastic, ideally the outer surface is substantially moisture-proof. If the selected material is canvas, for instance, the canvas can be pre-treated to be moisture-proof or moisture-resistant. Preferably, the outer surface is also embossable, susceptible to silk screening or embroidable.

[0013] A reinforcement member may be affixed to the closed end of the blocking device to reinforce the closed end against the end of the barrel to increase the cover member's durability for repeated use.

[0014] According to another aspect of the invention, a safety device for a barrel is disclosed, which includes a pliable, elongated cover member having an outer surface and a cavity therein. The cover member has a closed end and an opposing opening to receive an end of the barrel. A reinforcement member can be affixed to the outer surface at the closed end.

[0015] A flexible member such as a strap, with at least two ends attached to the cover member near the opening and which forms a loop, releasably holds the closed end against the end of the barrel. The closed end may be smaller relative to the opening but in all cases, the opening is designed to facilitate easy insertion of the barrel end.

[0016] According to another aspect of the invention, a prophylactic device for a barrel end of a firearm is disclosed. Such a device comprises a covering or casing forming a cavity. The casing has an outer surface, a closed end and an opposing open end configured to receive a barrel end of the firearm. A reinforcement member is affixed to the outer surface approximately at the closed end.

[0017] The casing ideally encases each of the barrel end, a port and a muzzle brake of the firearm. The casing may be fluorescent or a bright or reflective color to provide a readily seen visual cue and draw attention to the fact that a firearm is in the safe mode.

[0018] Optionally, an absorbent material covers a substantial majority of the inner surface of the covering to absorb moisture entering the cavity from the barrel end, for example, due to an accidental discharge. In this manner, paint, for example, can be prevented from leaking during transport of the gun.

[0019] In one exemplary embodiment, the reinforcement member may be made of nylon, leather, burlap, canvas or other suitably durable material. The reinforcement member may be attached to the casing near the closed end and cover, for example, as much as a third of the cover member at its closed end. Alternatively, the reinforcement member may be smaller relative to the closed end and attached to the casing approximately at the center of the closed end.

[0020] A durable reinforcement member not only protects the cover member from internal pressures of the barrel end but can withstand external pressures from objects outside the firearm such as during transit with other gear or objects rubbing against or abutting the barrel end. In this way, the reinforcement serves the dual purpose of protecting the cover member and the barrel from damage.

[0021] The casing may be secured to the firearm in a variety of ways. For example, at least one string or lanyard having a proximal end and a distal end may be attached to the casing by the proximal end. The distal end has a clasping device, which is used to releasably attach the casing to the firearm. The clasping device may be a hook such as an S-hook, a thumb-operated clasp hook, or bolt snap.

[0022] Alternatively, the casing may be secured to the firearm by a plurality of strings each having a proximal end and a distal end. Each of the proximal ends are attached to the casing and each of the distal ends are attached to a cupping device. The cupping device can be slipped over any portion of the firearm generally opposite the barrel end. For example, the cupping device, which might be similar to a projectile holder for a slingshot, can be cupped about the hammer area of the firearm to hold the casing in place. The cupping device can be made from any material. Preferably, the cupping device is made of leather, cotton, denim, canvas or the like to prevent damage by scratching the firearm.

[0023] An adjustment mechanism may be slidably attached to the string, strings, or cords that releasably secure the casing. The adjustment mechanism, for example, a cord lock, cord stopper, or cord fastener, can be manipulated to adjust the length of the string or cord such that the prophylactic device can accommodate any barrel length. Accordingly, the adjustment mechanism provides versatility such that a single cover or casing may be used with various guns of varying dimensions.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The above and other aspects, advantages and objectives of the present invention are apparent from the detailed description below in combination with the drawings in which:

[0025] FIG. 1 is a side view of an exemplary embodiment of a barrel blocking device including a cover member, a retaining device, and an adjustment member shown in use on a gun (in phantom) according to the invention;

[0026] FIG. 2 is the side view of the FIG. 1 embodiment showing an optional reinforcement element;

[0027] FIG. 3 is a bottom view of the blocking device taken along line III-III in FIG. 2;

[0028] FIG. 4 is an end view of the closed end taken along line IV-IV in FIG. 3;

[0029] FIG. 5 is an end view of the open end taken along line V-V in FIG. 3; and

[0030] FIG. 6 is a side view of an alternative exemplary embodiment showing an alternative optional reinforcement element.

#### DETAILED DESCRIPTION OF THE DRAWINGS

[0031] Detailed reference will now be made to the drawings in which examples embodying the present invention are shown. Repeat use of reference characters in the present specification and drawings is intended to represent same or analogous features or elements of the invention.

[0032] The drawings and detailed description provide a full and detailed written description of the invention, and of the manner and process of making and using it, so as to enable one skilled in the pertinent art to make and use it, as well as the best mode of carrying out the invention. However, the examples set forth in the drawings and detailed description are provided by way of explanation of the invention and are not meant as limitations of the invention. It is intended that the present invention include modifications and variations of the following examples as come within the scope of the appended claims and their equivalents.

[0033] As broadly embodied in FIGS. 1-6, a barrel blocking device 10 for covering a barrel end (not shown) of a gun 50 is provided. Although the barrel blocking device 10 will be described herein with reference to a gun barrel, particularly a paintball gun, it should be appreciated that the present barrel blocking device 10 has utility for any type of barrel that is preferably kept covered to prevent foreign objects from entering the barrel or to give an immediate visual cue to bystanders that the gun is in safe mode. Accordingly, the present invention is suitable for use with various types of non-lethal firearms or firearms rigged for non-lethal training such as M-16s and M-60s outfitted with laser gear for military and para-military training exercises.

[0034] With more particular reference to the Figures, the barrel blocking device 10 is configured to receive a barrel end from gun 50 to prevent accidentally discharged projectiles such as paint charges from hitting and injuring persons or objects in the line of fire. Moreover, barrel blocking device 10 prevents foreign objects such as dirt and debris from entering the barrel end when the gun 50 is not in use. As shown generally in FIG. 1, the barrel blocking device 10 has an exemplary elongated cover member 12 having an outer surface 14, a closed end 20, an open end 24 (seen more clearly in FIG. 5), a retaining device 26, and an adjustment member 32.

[0035] FIG. 1 further shows the substantially moisture-proof cover member 12, for example, a nylon, vinyl or other moisture proof material, removably securable at the barrel end of gun 50. Preferably, the moisture-proof material of the cover member 12 can be embossed to display a company's logo, for example.

[0036] To employ the barrel blocking device 10, the barrel end of gun 50 is inserted into the open end 24 until the barrel end contacts the inner surface 16 proximate the closed end 20. The retaining device 26, which is connected by its proximal end 30 to the cover member 12 near the open end 24, is then slid over gun 50 at the end substantially opposite the barrel end. At the distal end 28 of retaining device 26, the adjustment member 32 is then adjusted to lengthen or shorten the retaining device 26 and to secure the blocking device 10 to the gun 50. To remove blocking device 10 from the gun 50, the above steps are reversed and further detail need not be given to appreciate or practice the full range of the present invention.

[0037] According to one embodiment of the invention, the center 22 of closed end 20 may be reinforced by attaching a reinforcement member 34 as shown in FIGS. 2, 3 and 4. The reinforcement member 34, which may be made of nylon, leather, burlap, canvas, rubber or other suitably durable material, can be sewn or glued or otherwise attached to the center 22. The reinforcement member 34 may alternately have other complimentary shapes, such as oblong, oval, square, rectangular and include ridges, dimples, etc., within the scope of the invention.

[0038] FIG. 5 best shows the inner surface 16 of cover member 12 as well as cavity 18 and open end 24 into which the barrel end of gun 50 (not shown) is inserted.

[0039] According to one embodiment of the invention, the inner surface 16, particularly shown in FIG. 5, may be substantially covered by absorbent material 36. The absorbent material 36 can be affixed to the inner surface 16, for example, by gluing or sewing and may be, for instance, bleached cotton, fiber, cloth, sponge or similar material.

[0040] The barrel end of gun 50 is inserted in the cavity 18 through the opening 24 to contact the inner surface 16 proximate the closed end 20. Continued insertion of the gun 50 terminates when the barrel end contacts the closed end 20. After the blocking or safety device 10 is secured to the gun 50 and in the event of an accidental paint ball discharge, the paint moisture is absorbed by the absorbent material 36. Ideally, the blocking device 10, including the casing or cover member 12 and the absorbent material 36, is washable for repeated use.

[0041] According to one embodiment of the invention and as shown in FIG. 6, to further assist with barrel protection and longevity of the casing 12, a larger reinforcement member 340 may be provided. More particularly, the reinforcement member 340 can envelope a substantial portion of the casing 12 at its closed end 20. In this illustration, no matter the orientation of the barrel end of gun 50 in the cavity 18, the barrel end of gun 50 will receive additional protection from outside wear and tear, which in turn will increase the durability of the prophylactic device 10.

[0042] A manner less preferable but also potentially suitable in some circumstances of connecting prophylactic device 10 to gun 50 is simply using one string (not shown) or lanyard with a hooking or clasp device 280 as shown in FIG. 6. Clasp device 280 can be an S-hook, a thumb-operated clasp hook, and bolt snap or other suitable connector. In this manner a hook or snap can be quickly snapped to some part of gun 50 to secure the safety device 10 in place. Also as shown by FIG. 6, an alternative

embodiment of prophylactic device 10 is to mold the casing 12 from plastic, which may be preferable under certain rugged conditions.

[0043] Those skilled in the art will recognize that other changes and modifications may be made to the embodiments of the invention described herein without departing from the scope and spirit of the invention. For example, specific shapes, materials and color schemes of the illustrated embodiments may be altered to suit particular firearm applications. It is intended to claim all such changes and modifications as fall within the scope of the appended claims and their equivalents.

That which is claimed is:

1. A blocking device for a gun barrel, the blocking device comprising:

a cover member having an outer surface, an inner surface, a closed end and an opposing open end configured to receive an end of the barrel; and

a retaining device having a distal end and a proximal end, the proximal end affixed to the cover member, the distal end configured to releasably hold the closed end proximate the end of the barrel.

2. The blocking device of claim 1, wherein the cover member is selected from the group consisting of nylon, polyester, vinyl, and canvas.

3. The blocking device of claim 1, wherein the cover member is made of pliable material.

4. The blocking device of claim 1, wherein the cover member defines a length greater than a width such that the cover member is elongated.

5. The blocking device of claim 1, wherein the cover member is molded plastic.

6. The blocking device of claim 1, wherein the outer surface is substantially moisture-proof.

7. The blocking device of claim 1, wherein the outer surface is embossable.

8. The blocking device of claim 1, wherein the outer surface is susceptible to silk screening.

9. The blocking device of claim 1, wherein the outer surface is embroidable.

10. The blocking device of claim 1, wherein the retaining device is an elastic cord.

11. The blocking device of claim 1, further comprising an adjustment member configured to adjustably alter the length of the retaining device.

12. The blocking device of claim 1, further comprising a reinforcement member affixed to the closed end such that the inner surface proximate the closed end is reinforced against the end of the barrel.

13. A safety device for a gun barrel, the safety device comprising:

an elongated cover member having an outer surface, a closed end, and an opposing opening configured to receive an end of the barrel;

a reinforcement member affixed to the outer surface proximate the closed end; and

a flexible member having at least two ends, the at least two ends attached to the cover member proximate the opening and forming a loop, the flexible member configured to releasably hold the closed end proximate the end of the barrel.

14. The safety device of claim 13, wherein the opening is configured to aid insertion and removal of the barrel from the cover member.

15. The safety device of claim 13, wherein the closed end is smaller relative to the opening.

16. A prophylactic device for a barrel end of a firearm, the prophylactic device comprising:

a casing having an outer surface and an inner surface that defines a cavity therein, the casing having a closed end and an opposing open end configured to receive the barrel end;

a reinforcement member affixed to the outer surface proximate the closed end; and

means for releasably securing the casing to the firearm such that the barrel end is substantially immersed in the cavity proximate the closed end, the means for releasably securing attached to the casing proximate the open end.

17. The prophylactic device of claim 16, wherein the casing is configured to substantially encase the barrel end, a port and a muzzle break of the firearm.

18. The prophylactic device of claim 16, wherein the casing is fluorescent.

19. The prophylactic device of claim 16, wherein the reinforcement member is selected from the group consisting of nylon, leather, burlap, rubber and canvas.

20. The prophylactic device of claim 16, wherein the reinforcement member is disposed around and secured to the casing proximate the closed end.

21. The prophylactic device of claim 16, wherein the reinforcement member is smaller relative to the closed end, the reinforcement member secured to the casing proximate a center of the closed end.

22. The prophylactic device of claim 16, wherein the means for releasably securing the casing has at least one

flexible member, the at least one flexible member having a proximal end and a distal end, the proximal end secured to the casing, the distal end having a clasp device to releasably attach the casing to the firearm.

23. The prophylactic device of claim 22, wherein the clasp device is selected from the group consisting of an S-hook, a thumb-operated clasp hook, and bolt snap.

24. The prophylactic device of claim 21, wherein the means for releasably securing the casing has a plurality of strings each having a proximal end and a distal end, each of the proximal ends attached to the casing and each of the distal ends attached to a cupping device, the cupping device configured to selectively contact a portion of the firearm substantially opposite the barrel end.

25. The prophylactic device of claim 24, wherein the cupping device is selected from the group consisting of leather, cotton, denim, and canvas.

26. The prophylactic device of claim 16, further comprising an adjustment mechanism slidably attached to the means for releasably securing the casing, the adjustment mechanism configured to adjust a length of the means for releasably securing such that the prophylactic device accommodates a plurality of barrel lengths.

27. The prophylactic device of claim 26, wherein the adjustment mechanism is a cord stopper.

28. The prophylactic device of claim 16, further comprising an absorbent material defining a substantial majority of the inner surface, the absorbent material configured for absorbing moisture entering the cavity from the barrel end.

29. The prophylactic device of claim 28, wherein the absorbent material is selected from the group consisting of cotton, fiber, cloth and sponge.

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