

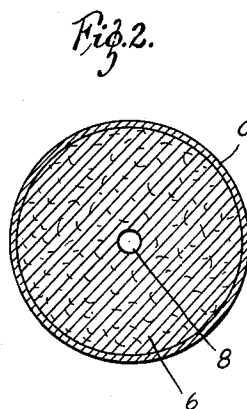
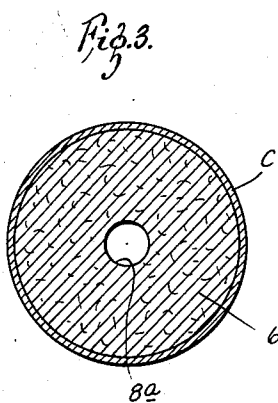
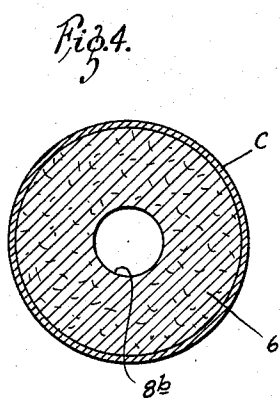
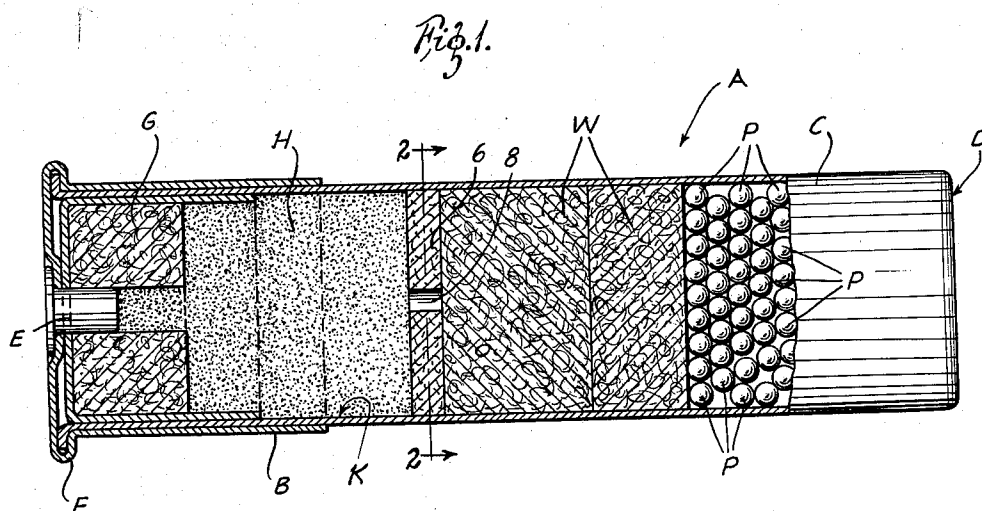
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SHOTGUN CARTRIDGE

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SHOTGUN CARTRIDGE

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3 Claims. (Cl. 102—42)

The present invention relates generally to improvements in cartridges, particularly cartridges for use in shotguns, and contains subject matter in addition to that in my abandoned application, Serial No. 73,800, filed December 5, 1960.

More particularly, this invention is directed to a simple device that can be incorporated in conventional cartridges at the time of manufacturing the same, and that is adapted to selectively vary the shot pattern in accordance with the game or target sought to be struck by the huntsman.

It is common knowledge that in the sport of hunting, the shot pattern is most important. Thus for example, assuming that the sport be quail hunting, then a less concentrated shot pattern is most desirable, whereas when the sport is duck hunting, a more concentrated shot pattern is desirable. Again, assuming that the sport be rabbit hunting, then a slightly less concentrated shot pattern than in the case of duck hunting would be desirable, and so on.

As a general rule heretofore, huntsmen who engage in all of these sports have been required to either possess two or more shotguns, or if owning but one gun, then to have available one or more modified gun barrels that may be interchangeably attached to, and detached from the gun stock.

Shotguns are generally classified as being of the full choke type, the modified choke type, or the open bore type. A conventional cartridge fired from a full choke gun will produce a more concentrated shot pattern than that produced when an identical cartridge is fired from a modified choke gun, and an identical cartridge fired from an open bore gun will produce a less concentrated shot pattern than that produced by the modified choke gun aforesaid.

Thus as hereinbefore stated, it should be apparent that in order to effectively attain such desired pattern variations, a huntsman has heretofore been required either to have three shotguns, or a set of three interchangeable barrels in order to have his single gun produce the three exemplary patterns.

In accordance with the concepts of the present invention, the ultimate shot pattern would be resultant from the construction of the cartridge, rather than from the type of barrel. That is to say, means adapted to control the velocity at which the shot column moves through the gun barrel, and consequently, the action of the pellets immediately prior to and as they pass through and from the gun muzzle, would be incorporated in the cartridge itself.

To this end, the present invention teaches the interpolation in the cartridge casing of a semi-rigid disc between the powder charge and the filler wads. Such disc would be diamatered to having a sliding fit within the cartridge casing, and would be provided with a central hole or aperture adapted to control the velocity of the shot column in consequence of the powder explosion, as will appear and be more fully explained hereinafter.

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Accordingly the primary object of the present invention is to provide cartridges that incorporate novel means adapted to produce the shot patterns desired, without requiring a huntsman to change guns or barrels.

It is a feature of the invention, that incorporation of the novel means aforesaid in the cartridges, requires only the interpolation of a centrally apertured disc between the powder charge and the filler wads. In all other respects, present day manufacturing operations could be followed, so that cartridges embodying the pattern control means of the present invention would be assembled in the customary manner, and would correspond dimensionwise with conventional cartridges.

A further object of this invention is to produce the three shot patterns by the insertion of identical powder charges into the cartridges, the velocity of the shot column following the explosion being dependent on the diameter of the central opening formed in the interpolated disc of the present invention, as will appear.

Inasmuch as the external appearance of cartridges incorporating the present invention would be similar, specific color identification is contemplated. Thus for example, cartridges designed for quail hunting could have red colored casings; cartridges designed for rabbit hunting could have white colored casings; and cartridges designed for duck hunting could have blue colored casings. It is therefore another object to provide color or other appropriate identification marks on the casings of cartridges incorporating the present invention in order to guide the huntsman in his selection.

The invention is illustrated on a sheet of drawings that accompanies this specification, and a more comprehensive understanding of said invention and its novel features may be had from the detailed description that follows with reference to said drawings, wherein:

FIGURE 1 is a central longitudinal sectional view, on an enlarged scale and partly in elevation, of a typical conventional shotgun cartridge incorporating a pattern control disc having a central aperture in accordance with the concepts of the present invention, said aperture being approximately one sixteenth of an inch in diameter;

FIGURE 2 is a transverse sectional view taken on the line 2—2 of FIGURE 1;

FIGURE 3 is a view similar to FIGURE 2, illustrating a pattern control disc having a central aperture that is approximately one eighth of an inch in diameter; and

FIGURE 4 is a view similar to FIGURES 2 and 3, illustrating a pattern control disc having a central aperture that is approximately three sixteenths of an inch in diameter.

The exemplary shotgun shell or cartridge that appears in FIGURE 1 is generally designated A, and includes the following conventional elements: a metallic head or cap member B; an elongated cylindrical casing C that is supported at one end from the cap member B, and is appropriately closed at its opposite end D so as to confine within the casing C, a plurality or body of shot pellets P between said closed end and a pair of filler wads W; and a primer or percussion cap E extending into the central bore of a base wad G in detonating relationship relatively to a powder charge H.

Shotgun cartridges of the character illustrated and described are well known, and it is not deemed necessary to elaborate on the construction and assembly of them, it

being remembered that when such shells incorporate the present invention to be described immediately below, they would be assembled in the customary manner.

In accordance with the present invention, a disc 6 having a central hole or aperture 8 therein would be interposed in the casing C between the powder charge H and the compressed filler wads W. As shown in FIGURES 1 and 2, the peripheral diameter of the disc 6 corresponds with the internal diameter of the casing C, so that said disc is slidably disposed within said casing. Whereas the filler wads W are comprised of compressible and expandible material, the disc 6 is formed of semi-rigid material, being composed of cardboard, fibreboard or similar material.

As will be more fully explained, the diameters of the central holes or apertures provided in the discs 6 are determined, so that the resultant shot pattern that would be produced when the powder charge H explodes, will vary in consequence of the sizes of said apertures.

The invention contemplates three such apertures, each being illustrated in the drawings. Remembering that the views are drawn to a greatly enlarged scale, the aperture 8 appearing in FIGURES 1 and 2 has a diameter of approximately one sixteenth of an inch. The aperture 8a appearing in FIGURE 3 has a diameter of approximately one eighth of an inch, whereas the aperture 8b appearing in FIGURE 4 has a diameter of approximately three thirty-seconds of an inch.

As previously observed, it is a feature of the present invention that its objectives are attained with the employment of identical powder charges H, thus facilitating manufacture. In all cases, the powder charges will be confined within an explosion chamber generally designated K, that is defined as clearly illustrated in FIGURE 1, and includes the central aperture 8 of the disc 6. From a comparison of FIGURES 2 and 3, it should be apparent that when a disc 6 provided with a central aperture 8a is incorporated in a cartridge, then the area of the explosion chamber K will be increased. With attention directed to FIGURE 4, it should be apparent that when a disc 6 provided with a central aperture 8b is incorporated in a cartridge, then the area of the explosion chamber K will be additionally increased.

Although it is believed that the manner wherein the present invention achieves its objectives will be evident to those skilled in the art, a brief explanation will be given. Thus it will be assumed that a huntsman possesses but one gun, that his gun is of the open bore type, that he contemplates duck hunting, and that therefore he desires a concentrated shot pattern. Accordingly, he would supply himself with cartridges of the character illustrated in FIGURES 1 and 2. Assuming now that the cartridge had been properly placed in position, then when the gun is fired, the explosion of the powder charge H will direct its primary force against the shot column, said shot column being comprised of the disc 6, the filler wads W, and the pellets P. Inasmuch as the entire area of the explosion chamber K is filled with the powder charge H, the explosive gases will propel said shot column forwardly through the gun barrel, and thereupon expel it from the muzzle thereof at such velocity as to effectively obviate dispersal of the body of pellets P until said body is in proximity to the target. In this connection, it is to be noted that the snug fit of the disc 6 against the internal periphery of the casing C will prevent leakage of the explosive gases about the periphery of said disc, so that the entire explosive force is directed against the shot column and the gases will not reach the pellets P.

Assuming next that said huntsman should contemplate rabbit hunting, and that therefore he would desire a less concentrated shot pattern, then he would supply himself with cartridges incorporating discs 6 having the greater diametered central apertures 8a illustrated in FIGURE 3. In such cartridges, the entire area of the explosive chamber K would not be filled with the powder charge H

inasmuch as said chamber area is increased in consequence of the larger diameter of said aperture 8a in comparison with that of the aperture 8. Consequently when the gun is fired, the explosive forces and gas pressure directed against the shot column would be diminished to such a degree that said column would be propelled forwardly through the gun barrel and thereupon expelled from the muzzle thereof at a reduced velocity. As a result, dispersal of the body of pellets P will occur earlier during its flight toward the target, thus automatically producing the less concentrated shot pattern desired.

Assuming now that the huntsman were contemplating quail hunting, and that therefore he would desire a still lesser concentrated shot pattern, then he would supply himself with cartridges incorporating discs 6 having the largest diametered central apertures 8b illustrated in FIGURE 4. In such cartridges, a still lesser area of the explosive chamber K would be filled with the powder charge H inasmuch as said chamber area is increased in consequence of the larger diameter of the aperture 8b in comparison with that of the aperture 8a. Consequently when the shotgun is fired, the explosive forces and gas pressures directed against the shot column would be propelled forwardly through the gun barrel and thereupon expelled from the muzzle thereof, at a further reduced velocity. As a result, dispersal of the body of pellets P will occur still earlier during its flight toward the target, thus producing the desired least concentrated shot pattern contemplated by the present invention.

In view of the foregoing description and the drawings, it should be manifest that the present invention provides simple though novel means for achieving its objectives, said means being defined in the claims hereunto appended.

What I claim is:

1. In combination with a shotgun cartridge including an elongated cylindrical casing having a percussion cap, a powder chamber, and a shot column comprised of imperforate circular filler wads and a body of shot pellets, the peripheries of said filler wads being in correspondence with the internal periphery of said casing, means for controlling the velocity of said shot column whereby to produce a shot pattern particularly desirable for duck hunting, said means comprising:

a determined powder charge in said chamber;

a circular disc of cardboard or like material interposed in said casing between said powder charge and the innermost filler wad of the shot column, the periphery of said disc being in correspondence with the internal periphery of said casing;

and an aperture having a diameter of one sixteenth of an inch formed centrally in said disc.

2. In combination with a shotgun cartridge including an elongated cylindrical casing having a percussion cap, a powder chamber, and a shot column comprised of imperforate circular filler wads and a body of shot pellets, the peripheries of said filler wads being in correspondence with the internal periphery of said casing, means for controlling the velocity of said shot column whereby to produce a shot pattern particularly desirable for rabbit hunting, said means comprising:

a determined powder charge in said chamber;

a circular disc of cardboard or like material interposed in said casing between said powder charge and the innermost filler wad of the shot column, the periphery of said disc being in correspondence with the internal periphery of said casing;

and an aperture having a diameter of one eighth of an inch formed centrally in said disc.

3. In combination with a shotgun cartridge including an elongate cylindrical casing having a percussion cap, a powder chamber, and a shot column comprised of imperforate circular filler wads and a body of shot pellets, the peripheries of said filler wads being in correspondence with the internal periphery of said casing, means for con-

trolling the velocity of said shot column whereby to produce a shot pattern particularly desirable for quail hunting, said means comprising:

- a determined powder charge in said chamber;
- a circular disc of cardboard or like material interposed 5 in said casing between said powder charge and the innermost filler wad of the shot column, the periphery of said disc being in correspondence with the internal periphery of said casing;

and an aperture having a diameter of three sixteenths of an inch formed centrally in said disc.

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