April 12, 1927. 1,624,649

C. DES ALLIMES

SPORTING CARTRIDGE

Filed Oct. 27, 1925

Fig. 1.

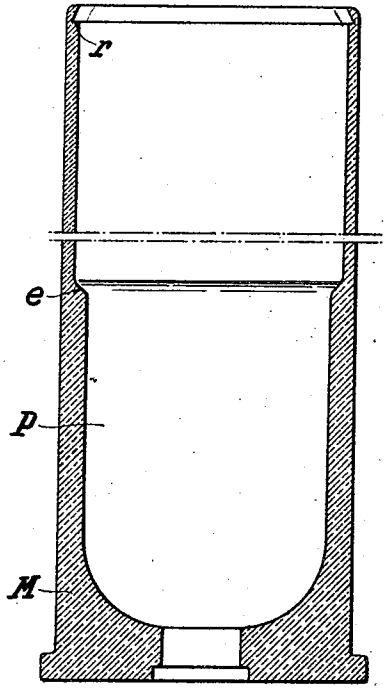


Fig. 2.

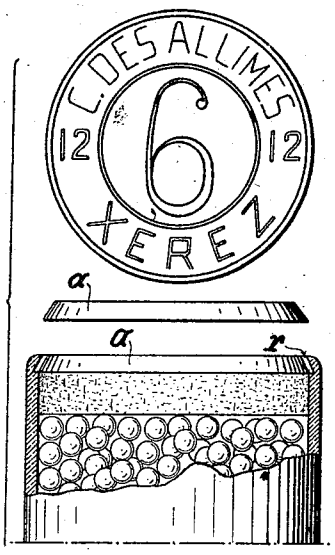
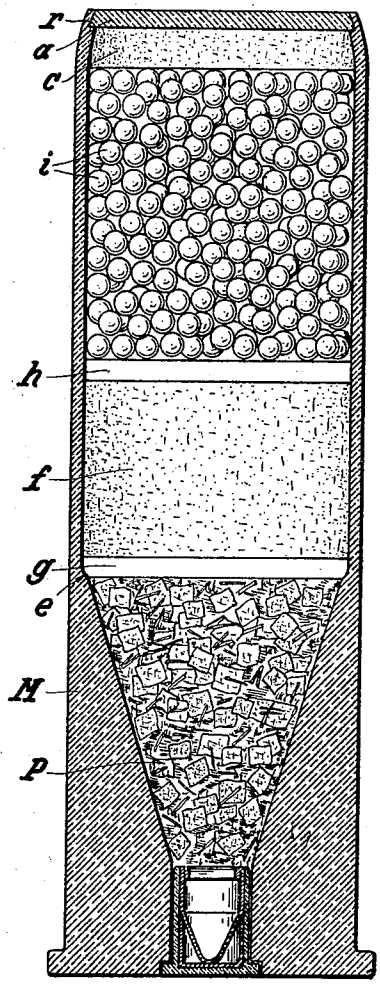


Fig. 3.



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UNITED STATES PATENT OFFICE.

CARLOS DES ALLIMES, OF JEREZ DE LA FRONTERA, SPAIN.

SPORTING CARTRIDGE.

Application filed October 27, 1925. Serial No. 65,224.

My invention relates to improvements in sporting cartridges.

The object of this invention is to obviate the disadvantages of the paper cartridge-cases at present in use.

The accompanying drawings illustrate the invention.

Fig. 1 is a vertical cross section of a hollow cartridge-case.

Fig. 2 is a metal disc or hermetically closing wad, and

Fig. 3 illustrates a vertical cross section of a filled cartridge-case.

The improvement consists not only in a considerable increase in the resistance offered by the walls M of the lower part of the cartridge case (the part subjected to the greatest pressure at the moment of the ignition of the powder), but also prevents the powder-wad from exercising any direct pressure on the powder, and also the said powder-wad from sliding downwards when the edges of the cartridge-case are folded in; it has been provided that the lower interior part of the cartridge-case shall be of less diameter than the rest of the interior of the case, and thus is obtained a powder-chamber P, very much strengthened, whose base may have the form of a semi-plane, an ovoid, or a truncated cone, and may be of a capacity suitable for the class of powder which is to be used, whether fine-grained, coarse-grained or laminated, Figs. 1 and 3 of the accompanying drawings showing two different types of the said reduced powder-chamber.

Thus the cartridge-case, besides being considerably strengthened in the part which is exposed to the greatest pressure, offers the advantage that in no case can the powder-wad pass the ledge (*e*) Figs. 1 and 3, formed by the difference in diameter between the powder-chamber and the rest of the interior of the cartridge-case so that in no case can the charge of shot (*i*) become loose, as it is pressed between two wads which are absolutely fixed; one of them being the powder-wad (*f*) with its corresponding card-board discs (*g*) and (*h*) whose position I describe in Fig. 3, and the other being the hermetically closing metal disc or wad (*a*) with its corresponding cork disc (*c*), which is likewise described in the same Fig. 3, and which constitutes the other improvement hereinafter described.

As is well known, the closing of sporting cartridges is at present effected by a card-board disc which, when the edge of the cartridge-case is folded in, is held at the end of the case.

This cardboard disc has the disadvantage that when it gets damp, as frequently happens on rainy days, it tends to affect the shooting, for it communicates the dampness to the rest of the cartridge, so that the powder is contaminated, or, at all events, the percussion is affected.

The improvement to which the present invention refers avoids all the disadvantages which I have mentioned, for by means of this new process there is obtained a hermetic closing, so that the effect of the discharge is always perfect, for the rain cannot affect the the powder or the cartridge-case, as the latter, after the edge has been folded in, forms one single metallic piece.

Near the upper edge or mouth of the cartridge-case, in its inner surface and at a distance of one mm. (1/25 inch) from the said extremity, there is a circular groove or channel Fig. 1 (*r*), whose form of an acute angle permits the entry of the circular bevel (with the same angle) of an aluminium disc or wad Fig. 2 (*a*) destined to form an absolutely hermetic closing of the cartridge-case as soon as the latter has been subjected to a slight exterior pressure on its extremity or mouth by means of a special closing-cone, which reduces by one mm. (1/25 inch) the diameter of the said mouth, producing the perfect fitting of the bevel of the disc (*a*) in the interior of the circular groove or channel (*r*) of the cartridge-case (Fig. 3), so that an absolutely hermetic closing is obtained, which, however, does not oppose to the egress of the charge a resistance greater than that presented by the folding in of the edge of the best quality cardboard cartridge-cases.

On the other hand, the closing wad (*a*) consisting of a sharp-edged aluminium disc, of the same diameter as the interior of the barrel, and as this metal is extremely ductile and malleable, it yields and hollows itself or curves, on passing through the choke of the barrels, just as easily as the cardboard wads.

Owing to this new process of closing, the cartridges may be exposed to the rain for an indefinite time without having the slightest damage caused by the moisture to the charge contained in them.

Another very important advantage offered

by the metallic closing is that in the shot-guns with a cartridge-chamber of 65 mm., where it can be used the same charge as in those with a cartridge-chamber of 70 mm., because this cartridge-case with metallic closing of 65 mm., has the necessary capacity to take the same charge as the card-board cartridge-cases of 70 mm., so that all good shot-guns with a short cartridge-chamber can take the same charges as are usually employed in the long cartridge.

This new system of metallic closing also permits the use of a thicker powder-wad, both in the cartridges of 70 mm., and in those of 65 mm., for the usual charges, which affects the shooting very beneficially.

Having thus described my invention, what I claim is:

1. A metal cartridge case having its mouth edge formed with an undercut channel presenting an abrupt shoulder and a metal disc seating in and conforming to said channel and bearing from the shoulder.

2. A metal cartridge case having a mouth formed with a groove the base of which forms an abrupt shoulder and the side wall of which forms an acute angle with said shoulder, and a disc adapted to seat in said channel, the peripheral edge of the disc forming an acute angle with the face thereof to accurately fit the corresponding angle of the groove.

3. A cartridge comprising a case adapted to receive a charge, a wad overlying the charge, the peripheral edge of the case beyond the wad being formed on the inner surface with a channel terminating in an abrupt shoulder, a metal disc fitting in said channel and bearing on the shoulder and on the wad, the peripheral edge of the disc being at an acute angle to the bottom surface of the disc, the wall of the groove closely embracing the inclined peripheral edge of the disc.

4. A sporting cartridge case of metal having a comparatively thin metal disc seated in a channel formed in the end of the case and sealed with the case, the outer surface of the disc being flush with the extreme edge of the case whereby to permit an interior length of case for the charge of greater capacity than the interior length of cartridges similar over all dimensions of inturned closing ends.

In testimony whereof he affixes his signature.

C. DES ALLIMES.