

F. O. HOAGLAND.
CARTRIDGE.
APPLICATION FILED JUNE 18, 1914.

1,109,840.

Patented Sept. 8, 1914.

Fig. 1

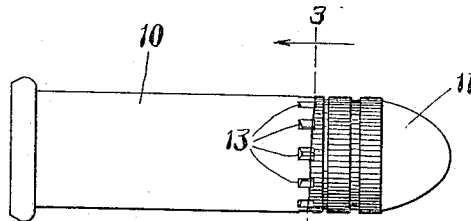


Fig. 2

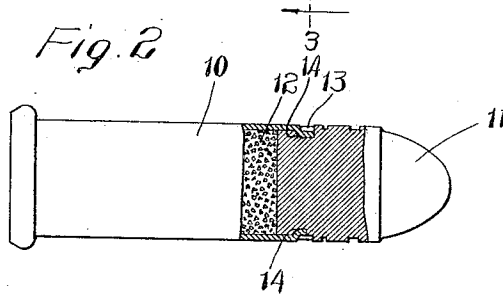
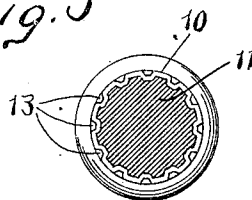


Fig. 3



WITNESSES:

L. W. Meade
E. M. Culver.

INVENTOR

Frank O. Hoagland
BY
A. M. Wooster
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK O. HOAGLAND, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO UNION METALLIC CARTRIDGE COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

CARTRIDGE.

1,109,840.

Specification of Letters Patent.

Patented Sept. 8, 1914.

Application filed June 18, 1914. Serial No. 845,775.

To all whom it may concern:

Be it known that I, FRANK O. HOAGLAND, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Cartridges, of which the following is a specification.

This invention relates to rim fire cartridges which require relatively light metallic shells, and is a carrying forward of the invention of my Patent No. 1,094,565, granted April 28, 1914. My said former patent provided for locking the bullet in the shell "by a plurality of indentations of the metal of the shell into the bullet back of the mouth of the shell." The previous mode of locking the bullets was by crimping the mouths of the shells. In practice, it is practically impossible to prevent a slight difference in the lengths of the shells as a whole and likewise practically impossible to make all portions of the wall of the same shell of the same length. In carrying out my said former invention, I found that under certain conditions it was desirable instead of making the indentations back of the mouth of the shell to make them at the mouth of the shell, but without crimping the mouth of the shell, it being understood that the term "crimping," as used in this art, means rolling the mouth of the shell into the bullet. As stated in my said former patent, this crimping operation must take place at exactly the same place without regard to the length of the shells and furthermore if the crimp is made deep enough to hold the bullet securely it tends to deform the relatively soft bullet and if made light enough to avoid deformation of the bullet the bullet is not held securely. The objection to the crimping operation is that irrespective of the deformation of the bullet, the amount of metal at the mouth of the shell that is forced into the bullet by the crimping operation varies slightly, the result being that some of the bullets are locked in the shells more tightly than others so that a greater pressure is required in some instances than in others to force the bullet out of the shell when the explosion takes place, thereby affecting to a greater or less extent, the velocity of the bullet and tending to prevent extreme accuracy in shooting. In the present instance I overcome this objection and secure relative

accuracy in shooting by locking the bullets 55 to the shells by means of a plurality of indentations at the ends of the shells which cross the ends thereof and extend into the bullet more or less, the exact amount that the indentations extend beyond the end of the 60 shell being immaterial as the bullet is locked to the shell by the shoulders at the rear ends of the indentations. This circumferential line of indentations is necessarily always made at the same place and is so located 65 relatively to the mouth of the shell that at the longest portions of the shell the indentations will extend slightly beyond the shell and into the bullet, and in the shorter portions of the shell the indentations will extend a less distance back into the shell and 70 a greater distance forward into the bullet from the end of the shell. By this means I wholly overcome not only differences in the lengths of different shells but differences in 75 the length of the wall of the same shell, it being wholly immaterial so long as the locking of the bullet to the shell is effected by means of the shoulders at the rear ends of the indentations how far, within reasonable 80 limits, the indentations extend forward into the bullet. The result is that in irregular shells, that is, shells of slightly different lengths and having portions of the wall of the same shell of different lengths, I am en- 85 abled to secure practically uniform results in shooting.

In the accompanying drawing forming a portion of this specification, Figure 1 is an elevation of my novel cartridge; Fig. 2 a 90 partial longitudinal section thereof, and Fig. 3 is a transverse section on the line 3-3 in Fig. 1, looking in the direction of the arrows.

10 denotes the shell, 11 the bullet and 12 95 the powder. The length of the shell and the length and contour of the bullet are wholly immaterial so far as the present invention is concerned. The powder is placed in the shell and the bullet is seated thereon in the 100 usual manner. The open end of the shell is left perfectly straight without regard to differences in the lengths of the shells and differences in the length of the wall of different portions of the same shell. The bul- 105 let is locked in place by making a plurality of indentations 13 circumferentially of the shell and forcing the indented metal of the

shell into the bullet and locking the bullet to the shell by means of shoulders 14 at the inner ends of the indentations.

The invention is not limited to any special number or size of the indentations, the special feature of the invention being that these indentations cross the exterior line of separation between the shell and the bullet more or less, as clearly indicated in Fig. 1. By crossing this line I mean that the line must be fully reached so as to insure that there will be no bur or roughness of the metal of the shell at the forward end of the indentation. So long as the forward end of an indentation fully reaches or crosses this line it is wholly immaterial what portion of the indentation is intersected by the line, for the reason that the bullet is locked in place by the shoulders and it makes no difference within the reasonable limits how

far the indentations extend into the soft metal of the bullet.

Having thus described my invention I claim:

A cartridge of the character described comprising a relatively light metallic shell and a bullet locked therein by a plurality of circumferentially placed indentations of the metal of the shell into the bullet, said indentations beginning back of the exterior line of separation between the shell and the bullet and crossing said line, irrespective of the lengths of shells or the length of different portions of the wall of the same shell.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK O. HOAGLAND.

Witnesses:

CHARLES F. LINDSAY,
MARY S. BURROUGHS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."