

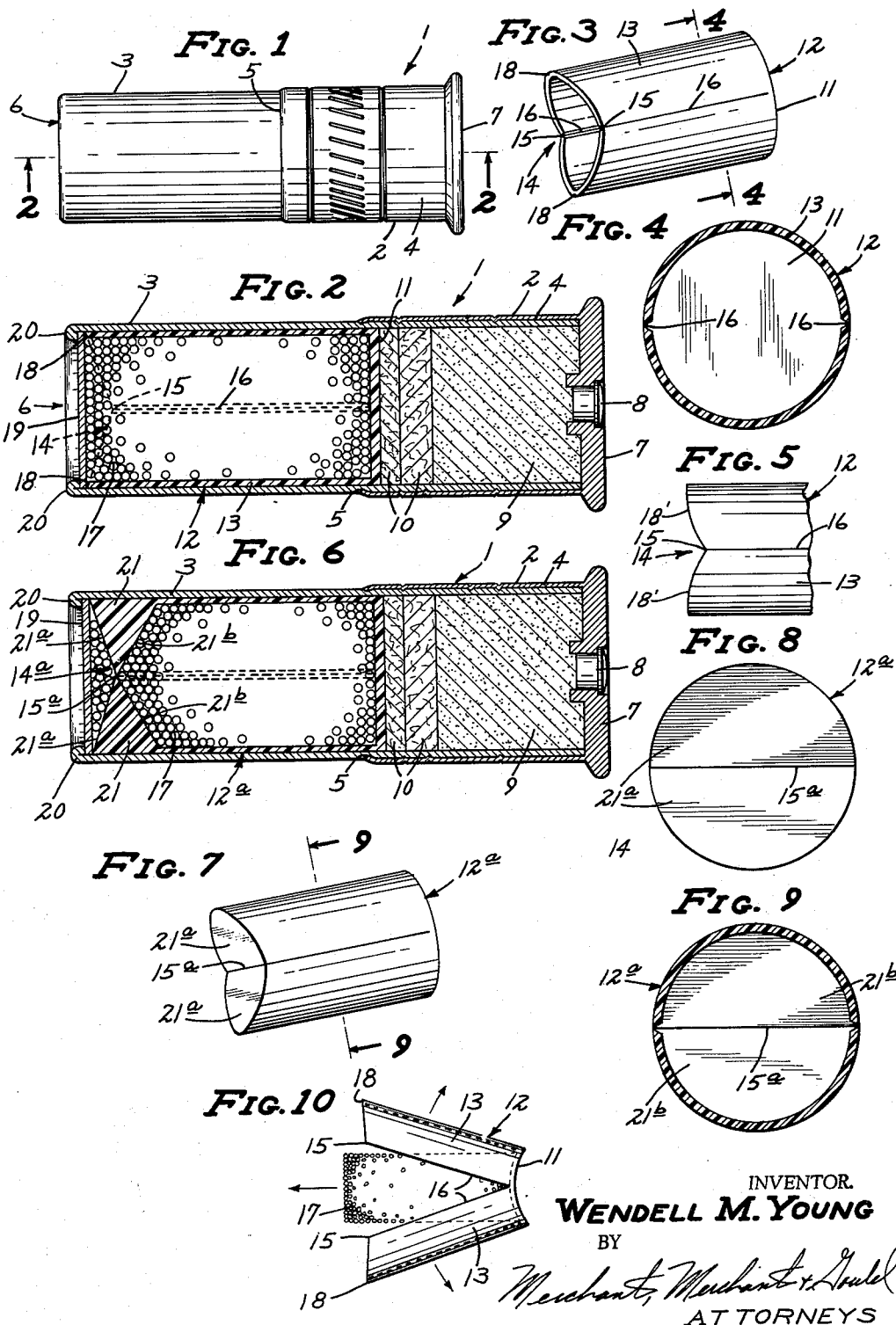
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SHOT SHELL

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SHOT SHELL

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My invention relates to shot shells and more specifically improvements designed to extend the range of the shot fired thereby.

More specifically, my invention encompasses the use of a secondary shell, formed from plastic or the like which initially houses the shot or pelletized material, and which opens up automatically, due to resistance of the atmosphere, after leaving the muzzle of a gun barrel, and in this manner extending the effective range of the said shots or pellets.

A further object of my invention is the provision of a shot shell of the type immediately above described which may be produced at a price competitive with conventional shells presently being manufactured and sold.

A further object of my invention is the provision of a shell of the type immediately above described, the specific range of which may be varied within limitations.

The above and still further objects of my invention will become apparent from the following detailed specification, appended claims and attached drawings, wherein like reference characters indicate like parts or elements throughout the several views:

FIG. 1 is a view in side elevation of a shot shell constructed in accordance with my invention;

FIG. 2 is a view in axial section taken on the line 2—2 of FIG. 1;

FIG. 3 is a view in perspective of the secondary shell of my invention;

FIG. 4 is a view in transverse section taken on the line 4—4 of FIG. 3 on an enlarged scale;

FIG. 5 is a fragmentary view in elevation of the structure of FIG. 3, showing a slightly modified shape of the forward lead edge;

FIG. 6 is a view corresponding to FIG. 2 but illustrating a slightly modified form of my invention;

FIG. 7 is a view in perspective of the secondary shell shown in FIG. 6;

FIG. 8 is a view in elevation of the notched forward end of the structure of FIG. 7;

FIG. 9 is a view in transverse section taken on the line 9—9 of FIG. 7; and

FIG. 10 is a view in side elevation illustrating the operation of the secondary shell with respect to the shot carried therein, after said shell leaves the muzzle of a gun.

Referring with greater particularity to the drawings and initially to the FIGURES 1 to 4, inclusive, and 10, the numeral 1 indicates in its entirety a cylindrical primary shell comprised of a rear end section 2, preferably formed from copper or like metal, and a front end section 3 telescopically received within the cylindrical wall 4 of the former and projecting axially outwardly through the open front end 5 thereof. Front section 3 may be formed in a conventional manner from any conventional material such as waterproof paper stock. Primary shell 1 is formed with an open front end portion 6 and a closed rear end 7.

In the conventional manner, the closed rear end 7 of primary shell 1 is provided with a primer cap 8, shown as being axially mounted therein and extending there-through. A powder charge 9 is tightly packed in the primary shell 1 in communication with the primer cap 8. Conventional wadding 10 is received within the intermediate portion of the primary shell 1 in tight engagement with the powder charge 9. Telescopically received within the forward end portion 6 of primary shell 1 with its im-

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perforate bottom wall 11 in engagement with the wadding 10 is a cylindrical secondary shell 12, the side wall of which is identified by 13. As shown particularly in FIG. 3 and by dotted lines in FIG. 2, the leading edge of wall 13 of the secondary shell 12 is formed to define a forwardly opening V-notch 14, the apex of which is identified by 15. Extending axially from the apex 15 to points closely adjacent the rear wall 11 of the secondary shell 12 are a pair of opposed parting slits 16. Secondary shell 12 may be formed from any suitable material such as polyethylene. Lightly packed within the secondary shell 12 are conventional pellets or shots 17, which obviously may be formed of any suitable metal or other material.

As shown, the leading end portion 18 of the secondary cylindrical walls 13 of the shell 12 terminates axially inwardly of the open end 6 of the primary shell 1. Telescopically received within the open end 6 of primary shell 1 and closing the front end portion of the pellet-containing secondary shell 12 is a disc-like closure member 19 which is retained in place by the crimping of the front end portion of the primary shell 1, as indicated at 20.

As shown in FIG. 10, when the secondary shell 12, with its shot load 17, has been projected from the muzzle of a conventional shotgun, not shown, the resistance of the notched leading edge 18 to the atmosphere will cause the said secondary shell 12 to open up along the parting slits 16. Obviously, because of the greater resistance of the secondary shell 12 in this open position, it drops away, leaving the shot charge 17 to continue along its trajectory, the same being spread in the conventional manner by resistance to the atmosphere. However, as above indicated, this spreading of the shot charge 17 takes place considerably later than in the conventional shell wherein the shot charge comes into engagement with the atmosphere immediately upon leaving the muzzle of the gun. In this manner the effective range of said pellets 17 is extended. It might here be stated that I have found that the timing of the opening up of the secondary shell 12 by atmospheric engagement may be varied somewhat by changing the contour of the notch, whereby to directly vary the resistance offered thereby. In this regard, attention is directed to FIG. 5, wherein the contour of the leading edge 18' is arcuate in shape as distinguished from straight, as in the structures of FIGS. 1 to 4, inclusive.

In the slightly modified structure of FIGS. 6 to 9, inclusive, the secondary shell 12a is formed to define a pair of complementary front wall elements 21. As shown, the elements 21 are segmental in shape when viewed in elevation, and are triangular in cross section, the front and rear walls 21a, 21b, respectively, converging at the apex 15a of the forwardly opening notch 14a formed by the surfaces 21a. It should be obvious that because of the considerably greater surface area presented by the surfaces 21a, this type of structure will open, and release its shot load, more quickly than will the structure of FIGS. 1 to 4, inclusive.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects; and while I have shown and described a preferred embodiment thereof, I wish it to be specifically understood that the same may be modified without departure from the scope and spirit of the appended claims.

What is claimed is:

1. In a device of the class described,

(a) a cylindrical primary shell of high tensile strength having an open forward end and a closed rear end,

(b) a primer cap mounted in said rear end,

(c) a powder charge in said closed rear end adjacent said primer cap,

- (d) wadding in the intermediate portion of said primary shell,
 - (e) a secondary shell having a cylindrical side wall telescopically received within said primary shell,
 - (f) said secondary shell having a closed rear wall in engagement with said wadding and a forward end which terminates adjacent the open forward end of said primary shell,
 - (g) said forward end of said secondary shell defining a forwardly opening V-shaped notch having an apex extending diametrically of said secondary shell,
 - (h) said secondary shell being formed from readily flexible material and having its side wall formed to provide axially extended diametrically opposed parting slits which extend from the apex of said notch to approximately said closed rear wall,
 - (i) pelletized shot material in said secondary shell,
 - (j) and a disc-like closure member telescopically received in the open forward end of said primary shell and seated against the forward end portion of said secondary shell,
 - (k) the forward end of said primary shell being inwardly crimped and engaging the marginal edge of said disc-like closure member.
2. The structure defined in claim 1 in which the forward end of said secondary shell is formed to define a pair of complementary segmental wall elements the front and rear wall surfaces of which converge at the apex of said notch.
3. In a device of the class described,
- (a) a cylindrical primary shell of high tensile strength having an open forward end and a closed rear end,
 - (b) a primer cap mounted in said rear end,
 - (c) a powder charge in said closed rear end adjacent said primer cap,

- (d) wadding in the intermediate portion of said primary shell,
 - (e) a secondary shell having a cylindrical side wall telescopically received within said primary shell,
 - (f) said secondary shell having a closed rear wall in engagement with said wadding and a forward end which terminates adjacent the open forward end of said primary shell,
 - (g) said forward end of said secondary shell defining a forwardly opening V-shaped notch having an apex extending diametrically of said secondary shell,
 - (h) said secondary shell being formed from readily flexible material and having its side wall formed to provide axially extended diametrically opposed parting slits which extend from the apex of said notch to approximately said closed rear wall,
 - (i) shot material in said secondary shell,
 - (j) and a disc-like closure member telescopically received in the open forward end of said primary shell and seated against the forward end of said secondary shell,
 - (k) the forward end of said primary shell being inwardly crimped and engaging the marginal edge of said disc-like closure member.
4. The structure defined in claim 3 in which the side wall of said secondary shell extends circumferentially continuously and unbroken between said parting slits.

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