June 5, 1962 W. M. YOUNG 3,037,454

LIVESTOCK MARKING BULLET

Filed April 19, 1961

FIG. 1

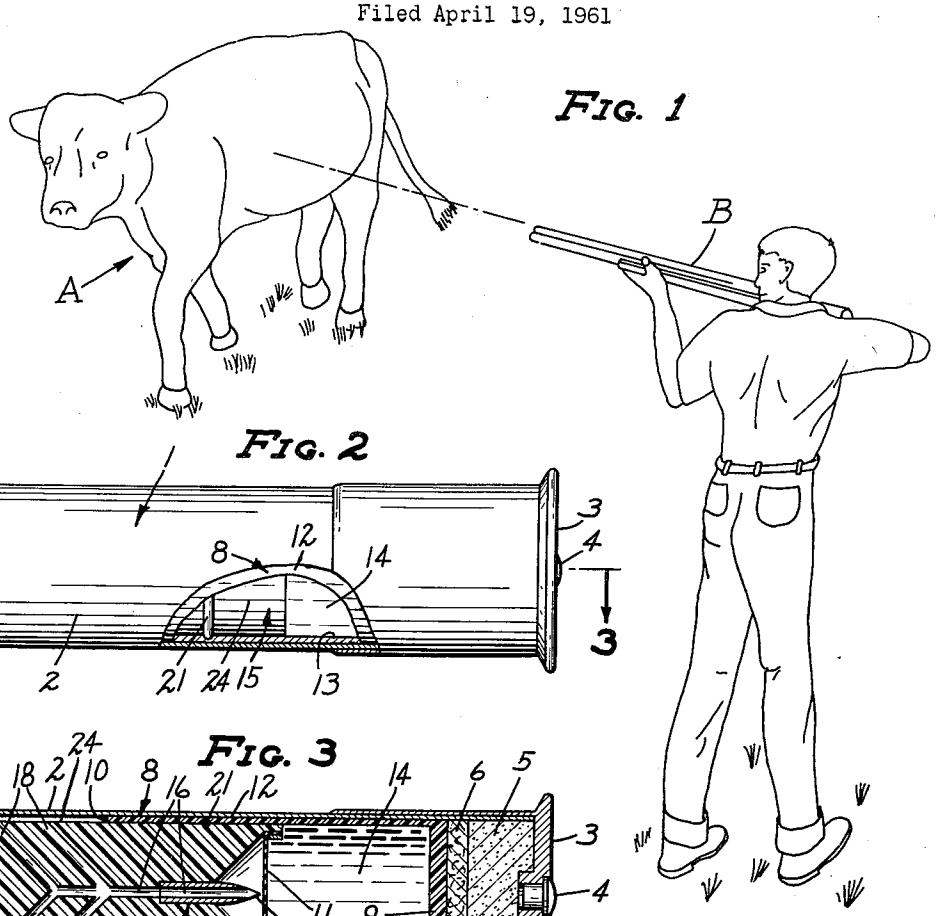
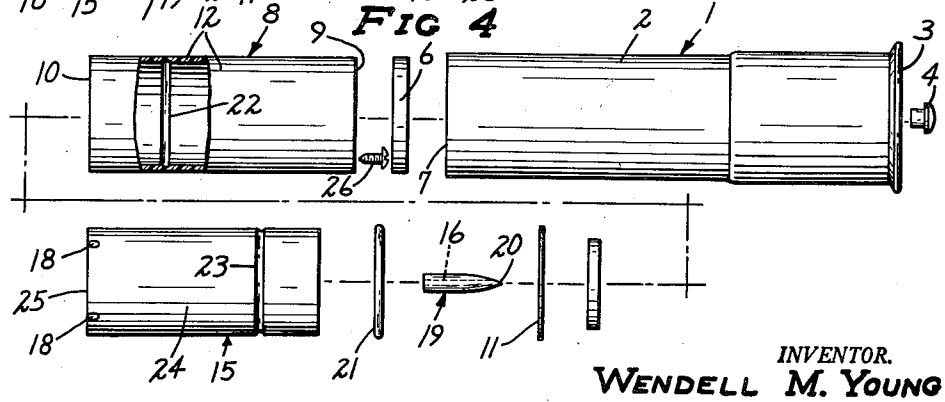


FIG. 2

FIG. 3

FIG 4



INVENTOR.
WENDELL M. YOUNG
BY
Merchant, Merchant & Gould
ATTORNEYS

United States Patent Office 3,037,454 Patented June 5, 1962

3,037,454

LIVESTOCK MARKING BULLET

Wendell M. Young, Berlin, N. Dak.

Filed Apr. 19, 1961, Ser. No. 104,091
1 Claim. (Cl. 102—38)

My invention relates to improvements in animal marking devices and more particularly to improvements in marking bullets which may be fired from a conventional barrel-equipped firearm.

An important object of my invention is the provision of a device of the class above described which may be used to accurately mark livestock from a considerable distance for subsequent identification and/or segregation, and which may be used without danger of fracturing the hide of the animal being marked or otherwise injuring same.

Devices of this general character are not new. However, in many of those developed and in use today, the marking dye carried by the projectile is ejected radially outwardly with respect to the direction of travel of the projectile, thus making identification difficult, if not impossible.

A further and highly important object of my invention is the provision of a dye-carrying projectile which, by virtue of a novel combination and arrangement of parts must, of necessity discharge die directly onto the target.

A still further object of my invention is the provision of a device of the class described which may be manufactured relatively inexpensively from readily available material.

The above and still further objects of my invention will become readily apparent from the following specification, appended claim and attached drawings.

Referring to the drawings wherein like characters indicate like parts throughout the several views:

FIG. 1 is a view in perspective illustrating the method of use of my invention in the marking of livestock;

FIG. 2 is a view in side elevation, some parts being broken away;

FIG. 3 is a view in axial section as seen from the line 3—3 of FIG. 2; and

FIG. 4 is an exploded view some parts being broken away.

Referring with greater particularity to the drawings, my novel device comprises a cylindrical primary shell 1, of conventional design and formed of suitable metal or the like having a relatively high tensile strength, the cylindrical wall of which is identified by the numeral 2 and the closed end wall by the numeral 3. Mounted in the end wall 3 is a conventional primer cap 4 which, upon engagement by the hammer of a conventional rifle B, ignites the explosive charge of gun powder or the like 5 in the rear end portion of the primary shell 1. Conventional wadding 6 overlies the explosive charge 5.

Telescopically received within the primary shell 1, through the open forward end 7 thereof, is a secondary shell 8 formed from a suitable flexible plastic material, also shown as being cylindrical in cross-section and having a closed rear end 9 in abutting relationship with the wadding 6. Intermediate the closed rear end 9 of the secondary shell 8 and its open forward end 10 is a transverse thin readily puncturable diaphragm 11 formed from rubber or the like and defining, together with said rear wall 9 and the cylindrical side wall 12 of said secondary shell 8, a chamber 13 for the reception of liquid marking dye 14. It will be noted that the secondary shell 8 is totally received within the primary shell 1, and that the open end 10 of the former is rearwardly spaced with respect to the open forward end 7 of the latter.

Snugly telescopically received within the open end 10 of the secondary shell 8 is an impact tip 15 which may be formed from any suitable material such as lightweight relatively strong plastic. As shown, the impact tip 15 is of axial dimensions whereby it extends substantially from the diaphragm 11, projects out of the open end 10 of the secondary shell 8, and terminates approximately flush with the open end 7 of the primary shell 1.

As shown, the impact tip 15 is provided with an axial bore 16 which, at its rear end, opens into a concavity 17 formed in the extreme rear end of the tip 15. At its forward end the bore 16 terminates in a plurality of circumferentially spaced forwardly and radially outwardly extending discharge passages 18, for a purpose which will hereinafter be explained in detail. A tubular penetration tube 19 extends from the rear end portion of the bore 16 into the concavity 17 and terminates in a relatively pointed rear end 20 in closely spaced relationship to the diaphragm 11.

For the purpose of preventing relative axial movements of the impact tip 15 with respect to the secondary shell 8 in which it is mounted during firing, I provide a rubber-like O-ring 21 which is snugly seated in opposed annular grooves 22 and 23 respectively in the cylindrical side wall 12 of the secondary shell 8 and the cylindrical side wall 24 of the impact tip 15. Obviously, when the primary shell 1 is in engagement with the barrel of the rifle B, during firing, there can be no radial outward expansion of the cylindrical wall 2 of the primary shell 1 and, consequently, no radial expansion of the cylindrical wall 12 of the secondary shell 8 which is in direct engagement therewith. However, when the secondary shell 8 has been projected from the barrel of the rifle B, with the impact tip 15 projecting forwardly therefrom, the flexible side wall 12 of the secondary shell 8 is no longer restrained and consequently the means, formerly preventing axial movements of the tip 15 with respect to the secondary shell 8, has been substantially reduced, if not eliminated. Thus, when the extreme forward end 25 of the impact tip 15 comes into engagement with a target, such as a cow A, the tip 15 is caused to move axially in the direction of the closed rear wall 9 of the secondary shell 8. This movement causes the penetrating tip 20 to break the diaphragm 11 and further relative rearward movement of the impact tube forces the liquid dye within the chamber 13 through the axial bore 16 and finally out of the forwardly and outwardly projecting passages 18 and directly onto the hide of the cow A.

It might here be noted that during assembly of the impact tip 15, rubber O-ring and secondary shell 8, air pressure may cause accidental rupture of the diaphragm 11. Therefore, I provide a venting screw 26 which, when removed facilitates insertion of the fluid dye 14 into the chamber 13 after assemblage of said parts.

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

What I claim is:

In a device of the class described, a cylindrical primary shell having a closed rear end and an open front end and formed from a material having a relatively high tensile strength, a primer cap mounted in the rear end of said primary shell, an explosive charge in the rear end portion of said primary shell ignitable by said primer cap, wadding overlying said explosive charge, a secondary cylindrical shell formed from flexible plastic material telescopically received within said primary shell and having a closed rear end seated against said wadding and an open front end rearwardly spaced with respect to the open front end of said primary shell, a cylindrical impact tip frictionally received in said secondary shell with its rear end spaced from the closed rear end of said secondary

shell and its front end projecting outwardly from the open front end of said secondary shell, said rear end of said impact tip being fromed to define a concavity, a readily puncturable normally fluid-tight diaphragm spanning said concavity and defining with the rear end portion of said secondary shell a chamber for fluid die material, said impact tip having an axial bore which extends from said concavity and terminates at its front end in a plurality of circumferentially spaced forward and outward extending discharge passages, a penetration tube extending from the rear end of said bore to a point immediately forward of said diaphragm, and a means preventing relative axial

movements of said impact tip with respect to said secondary shell only when said secondary shell is received within said primary shell, said means comprising an elastic ring seated in opposed annular channels formed in the inner and outer walls respectively of said secondary shell and said impact tip.

References Cited in the file of this patent

UNITED STATES PATENTS

1,671,364 Gangnes ..... May 29, 1928
1,819,415 Harris ..... Aug. 18, 1931