

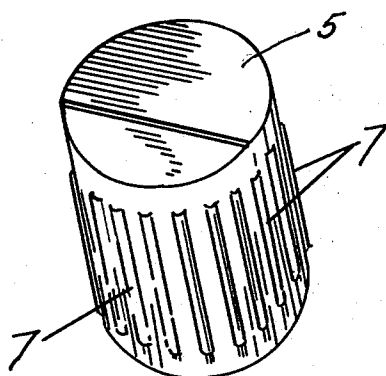
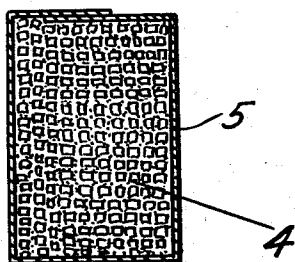
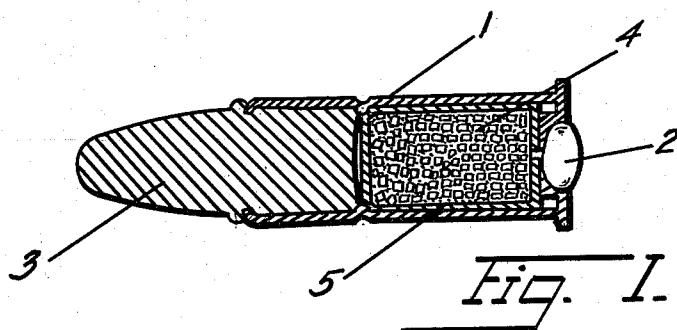
July 18, 1944.

J. SCHREIB

2,353,934

CARTRIDGE

Filed Dec. 18, 1940



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UNITED STATES PATENT OFFICE

2,353,934

CARTRIDGE

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Application December 18, 1940, Serial No. 370,570

1 Claim. (Cl. 102—38)

This invention refers to munitions and more particularly to cartridges, and has among its objects to provide a device of this kind that will have its powder or explosive protected against the ingress of moisture; that will lessen the deteriorating effects customary to same, which will be easier to handle during assembly and filling; that may be applied as a coating to the interior of the shell, and which will provide a means for preventing the frictional movement of the powder or explosive in the shell. Another object is to provide an arrangement that will permit the introduction and use of several types of ingredients in the shell without danger of their unauthorized intermixture. Another object is to provide against moisture contacting the explosive or ignition medium in mines, torpedoes, dynamite caps etc.

Other objects will be come apparent as the invention is more fully described.

In its conventional form the cartridge is filled with loose powder between the portion and the bullet. If the cartridge is left stored for a considerable period, its powder or explosive ingredients become moisture affected through condensation and deteriorate and the containing shell to corrode to an extent that materially affects its operation. In this invention the cartridge shell is of the conventional form, but its powder or explosive is wrapped in a container of Cellophane or the like to keep it waterproof before insertion as a package therein, and away from direct contact with the wall of the shell. This protects the explosive, keeps it from adhering to the shell wall and corroding. The powder does not pack hard; does not become moist even if the cartridge is covered with water, and the cartridge is ready at all times to work efficiently and effectively.

There are also advantages in the use of this method of packaging powder, which will enable the filling of the shell to be done more accurately and with speedier results. The material, such as Cellophane also acts as a lubricant to the explosive gases, and as a barrier retardant to the burning or melting of the shell during firing. It preserves the form of the powder and allows sufficient displacement of the particles to prevent their sticking to one another and yet not enough to allow frictional movements. Other incidental advantages are obtainable due to the adaptability of the material to the many and varied conditions which cartridges or the like are made or used.

In the drawing which illustrates an example of this invention:

Figure 1 is a sectional view through a cartridge embodying this invention;

Figure 2 is a detail of the powder containing package used in the cartridge;

Figure 3 indicates a modified form of explosive container.

Similar reference characters refer to similar parts throughout the drawing.

In the drawing, 1 represents the conventional metal shell used in a cartridge. The firing cap is shown at 2, in the rear of the shell, while the bullet 3 is inserted in the front. The powder or explosive mixture 4 is contained in a Cellophane bag 5 with its mouth portion wrapped, closed and stuck together. In its simplest form, the container is a simple bag, but in the modified form can be shaped into a corrugated shape and in plural form as indicated in Figure 3.

The container is held between the bullet 3 and the firing cap portion 2. The operation of the cartridge follows the conventional method. The cap is struck, explodes and sets fire to the explosive mixture as it pierces the Cellophane bag and causes it to burn explosively and propel the bullet out of the shell.

The same arrangement may be used for cartridges of dynamite and the like that do not have bullets in them. The use of Cellophane has been specially advantageous because its combustible qualities enable it to burn uniformly and slowly in a regular straight line manner with relatively little ash. It is waterproof and tough and will withstand considerable hard treatment. Its flexibility enables it to adapt itself to particular shapes and forms without tendency to tearing, yet with limits that allow the shapes to become reasonably permanent and form resilient edges to take up shocks against the projections developed by the shapes. This feature enables the mouth of the package to be closed tightly when twisted or bent over. The transparency of the substance affords a means for checking up on the contents by superficial observation. Other materials of similar qualities could be used in place of the specific Cellophane, but the latter is preferable under existing circumstances because it is of such common commercial availability at a moderate cost, and for that reason this specific material is mentioned.

While the forms of the invention indicated in the drawing and described in the specifications are limited in number, it is not desired to limit this application for patent to such forms or in any other way, otherwise than limited by the information afforded, as it is appreciated that

other forms could be constructed that would use the same principles and come within the scope of the appended claim.

Having thus described the invention, what is claimed is:

A cartridge comprising in combination a cartridge casing of conventional form arranged to hold a bullet in its forward end portion and have capacity for an explosive charge in the after portion and a cap attached at the back thereof, an explosive charge fitted into the cap for setting off a preliminary explosion in the cartridge casing when fired in a gun, said cap having a flat surface area forming the rear wall surface of the after portion and with a central orifice therein for the preliminary explosion to flow the explosive gases thereof into the central area of the after portion towards the forward end of the said casing, a bullet having grooves peripherally arranged near its middle portion for the casing wall to grip in for holding same, the rear end portion of the bullet facing the said after portion being slightly concaved, a main exploding charge of explosive for propelling the bullet from the cas-

ing out of the forward end when the preliminary explosion is set off and lights same, a container of waterproof and combustible Cellophane material formed to fit closely in the cartridge with the rear end wall flat against the flat surface of the cap aforesaid and its front portion against the rear end of the bullet arranged flat so as to allow an open space between it and the concave surface aforesaid, the front portion of the container being overlapped on itself to increase its thickness and render it more obstructive to entrance of moisture through that portion of the container, said container having its walls formed with longitudinal ribs adapted to keep the container wall in general spaced from the inside wall surface of the said casing, said ribs being relatively small and extending up and down the container wall for a greater proportion of its length, so as to facilitate the combustion of the material in the casing and the passage of gases between the ribs, and provide a space for the main explosive charge to resiliently expand as the preliminary charge passes into same, substantially as described.

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