

June 11, 1940.

R. A. HUNTER

2,204,085

CARTRIDGE

Original Filed Aug. 21, 1936

Fig. 1

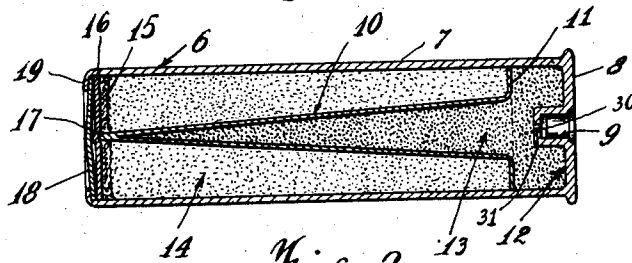


Fig. 2

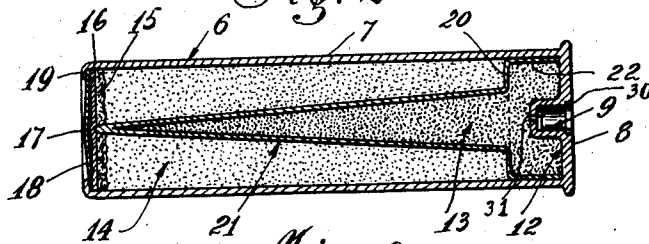


Fig. 3

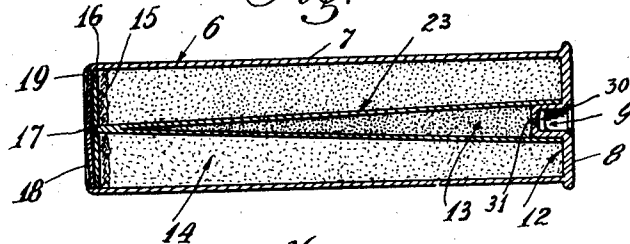


Fig. 4

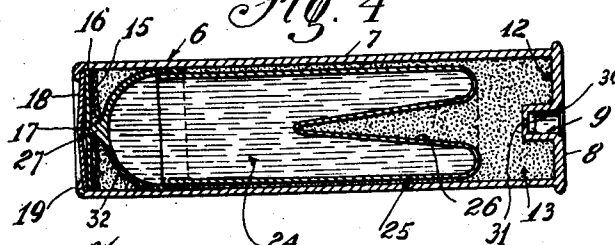
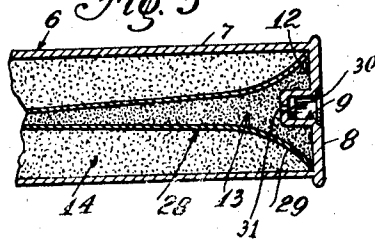


Fig. 5



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2,204,085

CARTRIDGE

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Application August 21, 1936, Serial No. 97,227

Renewed November 30, 1938

1 Claim. (Cl. 102-12)

This invention relates to cartridges, or similar devices, for use with gas generating chemicals of the kind which produce poisonous, irritating or disabling gases.

One of the objects of this invention is to expose a large area of the heat and pressure generating and igniting chemicals to the gas generating chemicals in the cartridge.

Another object of the invention is to entirely separate the heat and pressure generating chemicals from the gas producing chemicals in the cartridge.

Yet another object of this invention is to provide a cartridge with a conoidal receptacle which contains the heat and pressure generating agents.

Still another object of this invention is to provide a cartridge which rapidly produces gases, when fired.

A further object of this invention is to provide a cartridge with a conoidal container for the heat and pressure generating chemicals which is held in proper position when in loaded condition.

A still further object of this invention is to provide a cartridge in which either solid or liquid gas generating chemicals may be used and which is exposed to a large area of heat and pressure generating chemicals.

Still another object of this invention is to load cartridges with a uniform quantity of heat and pressure generating chemicals and a uniform quantity of gas generating agents without the aid of measuring devices.

To the accomplishment of these and such other objects as may hereafter appear the invention consists of the novel construction, combination and arrangement of parts herein specified and illustrated in the accompanying drawing, wherein are shown several embodiments of the invention, but it is to be understood that changes, variations and modifications may be resorted to which come within the scope of the claim hereunto appended.

In the drawing wherein like numerals of reference designate corresponding parts throughout the several views,

Figure 1 is a horizontal sectional view of one form of a cartridge, illustrating a flanged conoidal container which holds propellant chemicals and which is constructed in accordance with the invention.

Figure 2 is a horizontal sectional view of a modified form of a cartridge, showing the conoidal receptacle provided at its bottom with a

cylindrical rim or cup in addition to the flange illustrated in Figure 1.

Figure 3 illustrates a horizontal sectional view of another modified form of a cartridge in which the conoidal container fits snugly around the primer socket.

Figure 4 shows a horizontal sectional view of a modification of a cartridge using a sealed container charged with liquid gas generating chemicals which is provided with a conoidal entrant or bottom adapted to be filled with propellant chemicals.

Figure 5 is a horizontal sectional view of a modification of a cartridge, partly broken away, in which the conoidal receptacle is provided at its bottom with a flared end.

Referring to Figure 1 of the drawing, there is shown a cartridge shell 6 comprising an elongated cylindrical casing 7 having a closed end 8 provided with an inwardly projecting primer socket 30 which has a central aperture 31 for the reception of the usual primer 9. Within said casing 7 is placed a combustible conoidal receptacle 10 which is provided with an outwardly flanged end 11 of slightly lesser diameter than the inside diameter of said casing 7, so as to permit entrance in said casing.

This conoidal container or receptacle 10 is filled to the flange 11, and the bottom 12 of the casing 7 is covered slightly over the inner end of the primer socket 30 with a propellant charge 13, so as to form an uninterrupted mass when in loaded condition.

A charge of gas generating chemicals 14 is then placed in the casing 7, as shown, thus completely surrounding the conoidal container 10 with the same and at the same time completely separating the heat and pressure generating chemicals from the gas generating chemicals in said casing 7.

Over the charge of the gas generating chemicals 14 in casing 7 is the usual wad 15 and above this wad is a disk 16 of waterproof material which is provided with a central depression 17, the latter serving as a means to centrally retain the conoidal container in said casing 7.

A cupped disc 18 serves as a seal after the edge 19 of said casing 7 has been finally turned over, as shown.

The modified form of the cartridge shown in Figure 2 is substantially similar to that of Figure 1, with the exception that the flange 20 of the conoidal container 21 is extended to form a circular rim 22, the edge of which will rest on the bottom 12 of the casing 7 when assembled,

thus avoiding double filling of the propellant charge, as is the case in the construction illustrated in Figure 1.

5 The cartridge illustrated in Figure 3 discloses a conoidal container 23 which slides over the primer socket 30 which contains the primer 9.

10 In Figure 4 there is shown a cartridge in which liquid gas generating chemicals 24 are used and the container 25 for the same is made from Celluloid or other suitable material and the same is provided with an inwardly disposed conoidal depression 26, which is intended for a purpose as the conoidal containers previously described.

15 After the said container 25 is charged with gas generating chemicals, the same is provided with a cover 32 having a tip 27 serving as a centering means when in final position. To prevent leakage the cover 32 is hermetically sealed to the container 25.

20 Figure 5 shows another modification of a cartridge, in this case the conoidal receptacle 28 is provided with a flared end 29 which rests on the bottom 12 of casing 7, when in assembled position.

25 On discharge of any one of the above described cartridges, the ignition is transmitted from the primer 9 to the propellant chemicals 13 through

aperture 31 of the primer socket and the intense heat and pressure will melt or burn the conoidal container which holds the gas generating chemicals 14 and because of the large area to which said container is exposed the gas or gases will be rapidly evolved and violently liberated.

I claim:

In a cartridge of the character described, a casing open at one end; a primer socket positioned in the other end of said casing and having an aperture leading within said casing; a primer within said primer socket; a conoidal container of combustible material in said casing having a pointed, closed apex and an open base, and filled with a propellant charge; means centrally retain the open end of said conoidal container at the bottom of said casing with its contents in direct exposure to said aperture, and means to retain the pointed end of said container centrally of said casing, said latter means comprising a circular disc snugly fitting within the open end of said casing and provided with a central dent, the pointed apex of said container fitting snugly within said dent so as to prevent accidental displacement of said container.

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