June 9, 1936. R. D. McLEOD, JR 2,043,256

CARTRIDGE FOR PROJECTILES

Filed Oct. 25, 1935

Fig. 1.

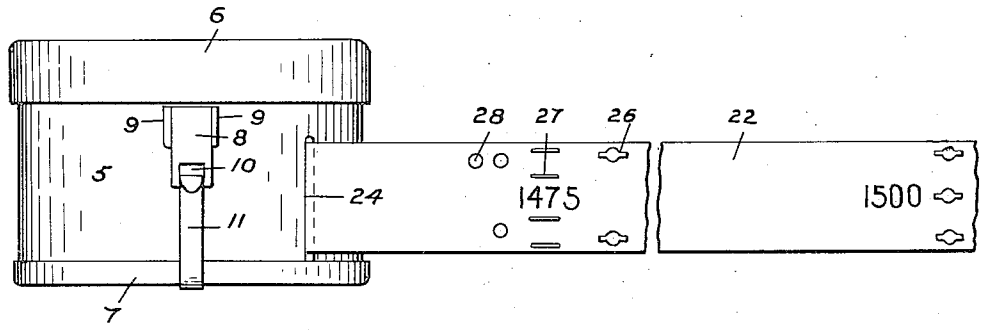


Fig. 2.

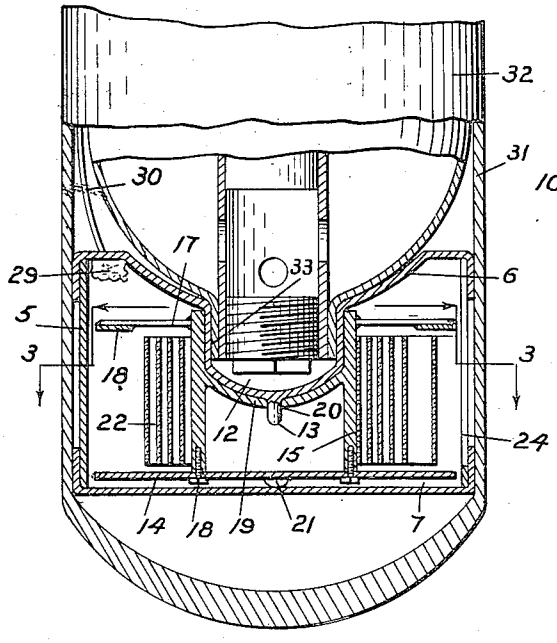
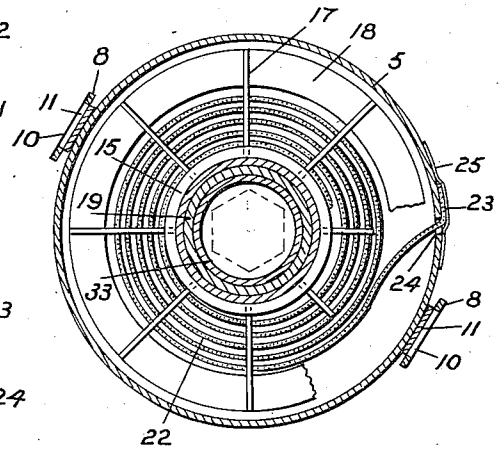


Fig. 3.



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CARTRIDGE FOR PROJECTILES

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Application October 25, 1935, Serial No. 46,708

6 Claims. (Cl. 102—12)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a cartridge for projectiles.

In firing guns of the mortar and howitzer type, it is customary to vary the range by varying the propellent powder charge. The charge is sometimes placed in a box or cartridge case having a cover which must be removed in order to withdraw that portion of the charge which is not required.

The purpose of this invention is to provide a cartridge wherein any desired portion of the charge may be withdrawn without removing the cover from the cartridge case. This is accomplished by employing strip powder wound on a reel and having its outer end extending through a slot in the cartridge case.

To these and other ends, the invention consists in the construction, arrangement and combination of elements described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a view in elevation of the improved cartridge showing a portion of the strip of powder projecting through the slot.

Fig. 2 is a longitudinal sectional view of a mortar with the cartridge and projectile loaded therein.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Referring to the drawing by characters of reference there is shown a cartridge case comprising a cylindrical body 5, a top cover 6 forming a gas check and a bottom cover 7. The top cover 6 has a close detachable fit on the body and the body is provided with a pair of lugs 8—8 soldered or otherwise connected thereto as indicated at 9—9. The lugs are each formed with an aperture 10 for receiving one of a pair of straps 11—11 on the bottom cover. The top cover is formed with a central downwardly extending boss 12 which carries a pin 13.

A reel housed in the cartridge case comprises a disc 14, a hub 15 secured to the disc by means of screws 16, spokes 17 fixed in the upper end of the hub, and a rim 18 carried by the spokes. A diaphragm 19 in the hub is shaped to receive the boss 12 of the top cover and it is provided with an aperture 20 to receive the pin 13. A stud 21 on the outer side of the disc serves to space the disc from the bottom cover 7.

The propellent charge is in the form of a continuous strip 22 and it is wound on the reel. The outer end 23 of the strip is passed through a slot 24 in the body and is normally held in place by a piece of adhesive tape 25 which closes the ends of the slot.

The strip of powder is marked at intervals of 25 yards in numerical terms of range, the values increasing towards the outer end of the strip. In order to select a charge for a given range, the strip is pulled out of the cartridge case until the desired range appears, and the protruding end of the strip is then torn off.

In order to enable an operator to identify the range value by the sense of touch, a system of distinguishing markings are provided on the strip. As illustrated in Fig. 1, a large paper fastener or clip 26 designates 500 yards, a small clip 27 designates 100 yards, and a hole 28 designates 25 yards. In the example shown in the drawing, two large clips, four small clips and three holes designate 1475. The strip is so thin that as fine an adjustment as desired may be made either by the use of additional markings or by estimation between markings.

The propellent charge is ignited by a squib 29 having an electrical connection 30 passing through the top cover 6. Since the adjustment of the propellent charge may be made without removing the cover there is no risk of breaking the electrical connection or permitting moisture to enter the case.

In Fig. 2 the cartridge case is shown inserted in the barrel 31 of a muzzle-loading mortar which is of a special type adapted for a projectile 32 containing a chemical. The projectile seats on the top cover 6 of the cartridge case and has a projecting end 33 which is received in the socket of the boss 12.

When the propellent charge is ignited the top cover 6 follows the projectile and serves as a gas check.

I claim:

1. A cartridge comprising a case having a body formed with a slot, a bottom cover on the body, a top cover on the body detachably connected to the body, an inwardly extending boss on the top cover, a pin on the boss, a reel within the case and including a hub, a diaphragm receiving the boss of the top cover in the hub and having an aperture receiving the pin on the boss, a strip of powder wound on the reel and having its

outer end protruding through the slot in the body, and range identifications on the strip.

2. A cartridge comprising a case having a body formed with a slot, a bottom cover on the body, a top cover on the body, an inwardly extending boss on the top cover, a pin on the boss, a reel within the case and including a hub, a diaphragm receiving the boss of the top cover in the hub and having an aperture receiving the pin on the boss, a strip of powder wound on the reel and having its outer end protruding through the slot in the body, and range identifications on the strip.

3. A cartridge comprising a case having a body formed with a slot, covers on opposite ends of the body, a boss on one end cover, a pin on the boss, a reel within the case and including a hub receiving the boss, a diaphragm in the hub and mounted on the pin, and a strip of powder wound on the reel and having its outer end protruding through the slot in the body.

4. A cartridge comprising a case having a body formed with a slot, end covers on the body, a reel rotatably mounted on one of the end covers, and a strip of powder wound on the reel and having its outer end protruding through the slot in the body.

5. A cartridge comprising a closed case having a slot, a roll of strip powder within the case and having its outer end protruding through the slot in the body, and range identifications on the strip.

6. A cartridge comprising a closed case having a slot, a roll of strip powder within the case and having its outer end protruding through the slot in the body.

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