Jan. 9, 1962 W. H. RICHARDS, JR., ETAL 3,016,167

AMMUNITION DISPENSING DEVICE

Filed Dec. 15, 1958

FIG. 1.

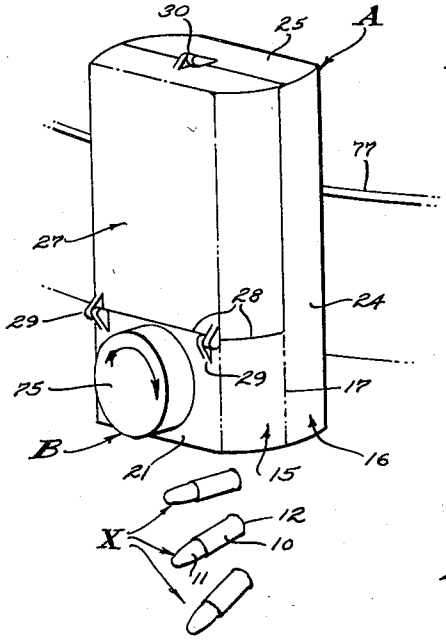


FIG. 4.

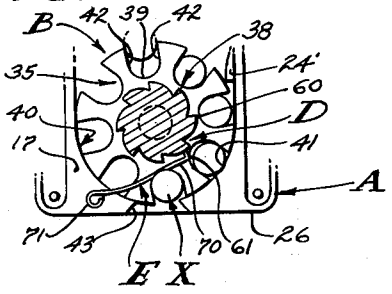


FIG. 5.

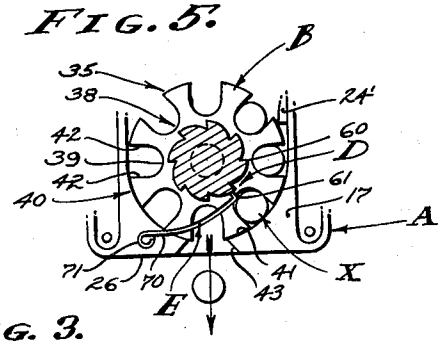


FIG. 2.

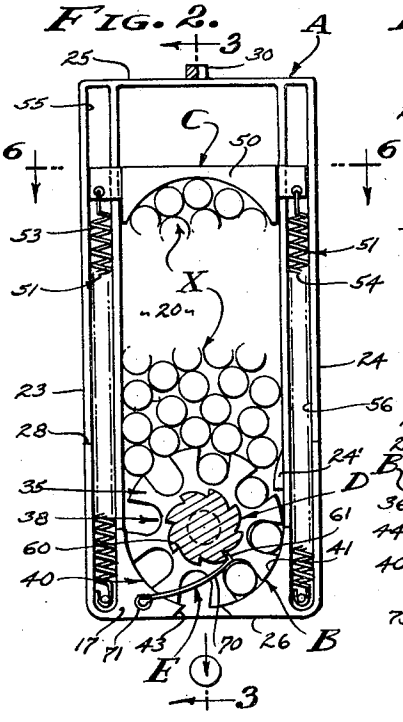


FIG. 3.

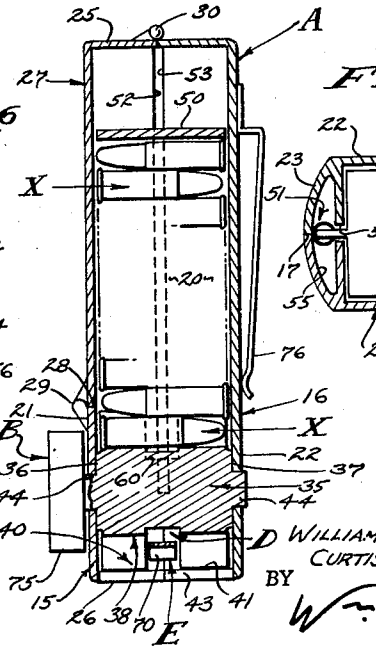
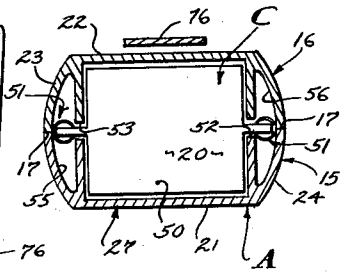


FIG. 6.



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AMMUNITION DISPENSING DEVICE

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This invention has to do with an ammunition dispensing device and is particularly concerned with the storage of a substantial supply of cartridges and the dispensing of any desired number thereof, a general object of this invention being to provide a small compact and reliable device of the type under consideration that is operable to deliver ammunition cartridges one at a time and to deliver them continuously in any desired number, as circumstances require.

The handling of fire arms requires the manipulation and installation of cartridges into the breech or magazine of the gun being loaded, and usually requires the loading of one or more of said cartridges. Some guns are loaded with but one round or cartridge of ammunition while others are loaded with as many as, for example, 17 cartridges. In practice, a wide variety of guns are used and ammunition or cartridges are purchased and/or supplied in boxes, for example, 50 rounds of ammunition per box.

An object of this invention is to provide a device that dispenses or discharges cartridges of ammunition, one at a time and in any desired number from a store of a substantial number of said cartridges.

Another object of this invention is to provide a manually operable cartridge dispensing device that selects and discharges cartridges one at a time from a store thereof, and in rapid succession when necessary.

It is an object of this invention to provide a dispensing device of the type under consideration that ejects cartridges one at a time and wherein the mechanism involved is indexed so as to assure discharge and ejection of only one cartridge at a time. More specifically, the mechanism that we provide involves a single means which acts to both index and to eject the cartridges from the device.

It is still another object of this invention to provide a dispenser of the type above referred to wherein the cartridges are not loose but are restrained from movement, to the end that the entire supply of cartridges is securely held and prevented from rattling about.

An object of this invention is to provide a dispenser of the type above referred to which is easily manufactured, easily employed and used, which is easily operated and which is also safe and dependable.

The various objects and features of our invention will be fully understood from the following detailed description of a typical preferred form and application of our invention, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a perspective view showing the preferred embodiment of the present invention and the manner in which cartridges are dispensed therefrom.

FIG. 2 is a vertical sectional view of the dispenser shown in FIG. 1.

FIG. 3 is a sectional view taken as indicated by line 3—3 on FIG. 2.

FIGS. 4 and 5 are sectional views of a portion of the structure, as shown in FIG. 3, and illustrate the basic operative positions of the mechanism.

FIG. 6 is a transverse sectional view taken as indicated by line 6—6 on FIG. 2.

The ammunition dispensing device that we have provided is particularly adapted to the handling of small calibre cartridges that are used in rather large numbers.

Therefore, in the drawings we have illustrated 22 calibre ammunition, or the like, each cartridge X of which involves a case **10** and a projectile **11** that are assembled to form an elongate cartridge X. The assembled cartridge is filled with a measure of powder that is ignited by a cap included in the manufacture of the case **10**. The case **10** is a cylindrical shell-shaped element open at the front end to receive the rear portion of the projectile **11**, and closed at its rear or base end where it accommodates a cap. As is the case in 22 calibre ammunition, the cap is accommodated at or within the rim **12** of the case and is easily set off by the percussion of a sharp blow. Thus the cartridge X is characterized by its elongate cylindrical shape, rounded at the nose and flat at the base. Such a cartridge is cylindrical and substantially longer than its diameter, as shown.

The ammunition dispensing device that we have provided is operable to store a substantially large number of cartridges X, for example, one or more boxes thereof. The device is operable to eject a single round of said ammunition, or one cartridge at a time, and involves, generally, a case A, transporting means B, a follower means C, indexing means D, and ejecting means E. The case A is provided to contain a supply of ammunition and acts as the frame of the structure. The transporting means B is provided to shift the cartridges from storage within the case A to a position where said cartridges are discharged from the structure. The follower means C is provided to yieldingly urge the cartridges toward the means B and to prevent rattling thereof within the case A. The indexing means D is provided to position the elements of the means B so as to assure discharge of each round of ammunition when the said means B is in the discharging position.

The case A that contains the supply of cartridges X also acts as the frame of the structure and can vary widely in shape and form as circumstances require. The case A is shown as a vertically disposed box-like element rectangular in form and establishing a storage chamber **20**. The case A involves two shell-like sections **15** and **16**, preferably substantially identical sections fitted together with a cement or an adhesive along a joint or seam **17**. The case A has front and back walls **21** and **22**, and side walls **23** and **24**. The chamber **20** is defined by the above mentioned walls **21–24** and is closed at its upper and lower ends by a top **25** and a bottom **26**, respectively. The walls **21** and **22** are spaced to accommodate the longitudinal dimension of the cartridges X while the remaining side walls top and bottom are spaced to establish the chamber **20** of the desired capacity. In practice, the side walls **23** and **24** are spaced to accommodate five or six cartridges X side by side, while the top and bottom **25** and **26** are spaced to accommodate a column of about ten rounds, or more, of ammunition. As shown, the front and back walls **21** and **22** and sides **23** and **24** slidably engage the cartridges X while the bottom **26** is provided with features that cooperatively engage with the transporting means B. The top **25** simply forms a closure, all to the end that the cartridges X are enclosed and protected so that they are kept clean and ready for use.

In carrying out the invention the case A is provided with a closure **27**, it being preferred to open substantially one entire side of the case. Therefore, one half-shell of the case is free from the other along the plane of joinder **17**, and above the bottom **26**. Note that the bottom **26** is of substantial vertical extent in order to accommodate the means B and that the closure **27** engages the bottom **26** along a horizontal joint **28** that is normal to the plane of the seam **17**. As shown, the closure **27** is snapped into position there being a pair of detent-type snaps **29** acting as hinges and a snap **30** acting as a lock. The

closure 27 can be released at the snap 30 and swung outwardly on the hinge snaps 29, or the closure 27 can be completely removed from the case A, as desired. In any case, the chamber 20 is readily accessible to be filled or emptied.

The transporting means B that shifts the cartridges X is adapted to receive the cartridges at the bottom of the chamber 20 and to remove each individual cartridge X to a discharge position where it is ejected either by gravity or by mechanical means, as later described. A feature of the dispensing device that we provide is the transporting means B which is a shiftable element, preferably manually shiftable, and which is a rotary element involving a drum 35 rotatably carried by the case A and operating in a cylinder 40 formed in the bottom 26 of the case. The drum 35 substantially occupies the cross section of the case A and is on an axis that extends horizontally between the front and back walls 21 and 22. The drum 35 is, therefore, of a length to extend between the walls 21 and 22 and has front and back ends 36 and 37 opposed to the said walls 21 and 22, respectively. Further, the drum 35 is of a diameter to tangentially oppose the sides 23 and 24, respectively. In accordance with the invention, the cylinder 40 has a bottom wall 41 to close the chamber 20 and to have sliding engagement with the periphery of the drum 35, said wall 41 tangentially merging with the two sides 23 and 24.

The drum, as above described, is provided with radially opening pockets 38, said pockets being shaped and proportioned to receive individual cartridges X. There is a series of equally spaced pockets 38, for example, eight such pockets, said pockets extending parallel with each other and with the axis of the drum 35. In the particular case illustrated, the pockets 38 have concave bottoms 39 and spaced opposed parallel sides 42, said pockets being adapted to freely accommodate and receive the cartridges X.

The bottom 26 of the case A is characterized by a discharge opening 43 formed therein and which aligns with a pocket 38 when the pocket is positioned by the drum 35 to discharge a cartridge X. In the case illustrated, the drum 35 is rotatably supported by end trunnions 44 that engage in bearing openings in the walls 21 and 22. As the drum 35 is rotated the upwardly faced pockets 38 receive cartridges X carrying them circumferentially to the central portion of the bottom 26 where the pockets open into the discharge opening 43. The cartridges X are confined to the pockets 38 by the wall 41 until released into the discharge opening 43, as by action of gravity, or the like.

As the drum 35, above described, rotates, it is assured of receiving a cartridge X in each pocket 38 by means of an agitating action. That is, the initially empty pocket 38 moves upwardly when the drum 35 is rotated, as indicated by the arrow in FIG. 1 of the drawings, and then moves across the bottom of the supply of cartridges. Since the cartridges are supported by the drum 35 they readily fall into the moving pockets to be carried circumferentially and downwardly as the drum continues to rotate. As best illustrated in FIG. 2, we provide a lug 24' that projects from the walls 24 to the periphery of the drum 35 in order to prevent wedging of cartridges X into that corner.

The follower means C that yieldingly urges the cartridges X toward the means B, above described, is provided to assure operation of the device in any position or in any attitude. It is readily apparent that gravity feed is sufficient provided the device is used upright, however, this is not likely to be the case in every instance of operation. Therefore, we provide the means C which involves a head 50 engageable with the top of the supply of ammunition and means 51 yieldingly urging the head 50 toward the bottom 26 and drum 35 that supports the supply of ammunition. As shown, the head 50 extends across the chamber 20, preferably between the sides 23 and 24 and is guided between spaced shoulders 52 and 53 on the two sections 15 and 16 of the case A. In this instance, the means 51 is a spring means and we provide springs 53 and 54, one at each side of the head 50, said springs being accommodated in vertically disposed openings 55 and 56 formed in the sides 23 and 24, respectively. The openings 55 and 56 are substantially co-extensive with the height of the device so that the springs 53 and 54 are anchored at the bottom of the structure by means of pins, one spring being engaged with an ear at each side of the head 50. It will be apparent that the entire supply of cartridges X will be yieldingly urged toward the transporting means B by operation of the head 50, thus eliminating looseness and assuring that the individual cartridges X will enter the pockets 38.

The index means D that we provide is adapted to position the drum 35 so that the pockets 38 align with the discharge opening 43. As shown, the means D is a detent means and involves a biased element that engages in peripheral notches in the drum 35. In the form of the invention illustrated, the drum 35 has a reduced portion, preferably at the center thereof, said reduced portion having a continuous series of ratchet teeth 60 with inclined forward faces and substantially radially disposed rear faces. There is one tooth 60 for each pocket 38 and the biased element has a pawl 61 adapted to be lifted by the forward faces and to engage behind the rear faces. Thus, the drum 35 can advance only and is held in a fixed position when the pawl 61 is engaged behind a tooth 60. As shown, the radial extent of the teeth 60 is substantially inward of the bottoms 39 of the pockets 38.

The ejecting means E that we provide is adapted to assure that each cartridge X is removed from the pocket 38 and discharged through the opening 43. A feature of the present invention is the incorporation of means E in the means D and involves the use of the biasing element that forms both the pawl 61 and a cam 70 of the means E. As shown, the biasing element is in the form of a leaf spring having an elongate body that is substantially arcuate in form and bowed downwardly. The biasing element is preferably made of flat spring steel, or the like, somewhat curved as above specified, and anchored to the case A at one end and free at its other end. A slot-shaped recess is provided in the case A, centrally thereof, and between the two sections thereof, to receive an enlargement 71 at the end of the biasing element, said enlargement 71 being in the form of a roll at the end of the leaf spring. The pawl 61 is carried at the free end of the cam 70 to project radially inward, while the cam 70 bows downwardly into the pockets 38 as they advance to the discharge opening 43. Since the cam 70 is formed of a spring element it will be compressed or deflected somewhat and will throw the cartridge X through the opening when the pocket 38 shifts sufficiently to release said cartridge from confinement by the wall 41. Any tendency for the cartridge X to stick or lodge in the pocket 38 is substantially eliminated by deflection and release of the cam 70.

From the foregoing it will be apparent that we have provided a practical and reliable cartridge dispensing device that releases or dispenses one cartridge at a time and continuously. As best illustrated in FIGS. 1 and 3 of the drawings, the drum 35 is rotatably advanced as controlled by the indexing means E through operation of a control knob 75. The knob 75 is accessible at the front of the device and at the exterior thereof, it being a simple matter to manually operate the knob 75 to advance the drum 35 thereby discharging or ejecting any desired number of cartridges. In order to support and carry the dispensing device, we prefer to provide a clip 76 suitable for fastening the case A to a belt 77, or the like. As shown, the clip 76 is a spring clip that overlies the back wall 22 of the case and passes the belt 77.

Having described only a typical preferred form and application of our invention, we do not wish to be limited

or restricted to the specific details herein set forth, but wish to reserve to ourselves any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claims.

Having described our invention, we claim:

1. A dispensing device for storing and for discharging cartridges one at a time and including, a case with a chamber therein and a discharge opening in the bottom thereof, a transporting means to receive cartridges from the chamber and to shift them into alignment with the discharge opening and comprising a drum rotatably carried on an axis extending across the case and disposed over the bottom, the drum having a reduced peripheral portion and having a series of peripherally spaced pockets each adapted to receive a cartridge when faced upwardly and to carry said cartridges to said discharge opening, and a cam on the case and entering the reduced portion of the drum to engage and discharge the cartridges from each pocket as it is brought into alignment with the discharge opening.

2. A dispensing device for storing and for discharging cartridges one at a time and including, a case with a chamber therein and a discharge opening in the bottom thereof, a transporting means to receive cartridges from the chamber and to shift them into alignment with the discharge opening and comprising a drum rotatably carried on an axis extending across the case and disposed over the bottom, the drum having a reduced peripheral portion and having a series of peripherally spaced pockets each adapted to receive a cartridge when faced upwardly and to carry said cartridges to said discharge opening, and ejecting means comprising an involute formed cam on the case and entering the reduced portion of the drum and engageable with each cartridge as it is brought into alignment with the discharge opening.

3. A dispensing device for storing and for discharging cartridges one at a time and including, a case with a chamber therein and a discharge opening in the bottom thereof, a transporting means to receive cartridges from the chamber and to shift them into alignment with the discharge opening and comprising a drum rotatably carried on an axis extending across the case and disposed over the bottom and with a series of peripherally spaced pockets each adapted to receive a cartridge when faced upwardly and to carry said cartridges to said discharge opening, and an indexing and ejecting means comprising a member on the case and engageable with the drum to position the drum with each successive pocket in alignment with said discharge opening and engageable with each cartridge as it is brought into alignment with said discharge opening.

4. A dispensing device for storing and for discharging cartridges one at a time and including, a case with a chamber therein and a discharge opening in the bottom thereof, a transporting means to receive cartridges from the chamber and to shift them into alignment with the discharge opening and comprising a drum rotatably carried on an axis extending across the case and disposed over the bottom and with a series of peripherally spaced pockets each adapted to receive a cartridge when faced upwardly and to carry said cartridges to said discharge opening, and an indexing and ejecting means comprising an elongate spring member projecting from the case and engageable with teeth on the drum to position the drum with each successive pocket in alignment with said discharge opening and engageable with and depressed by each cartridge as it is brought into alignment with said discharge opening.

5. A dispensing device for storing and for discharging cartridges one at a time and including, a case with a chamber therein and a discharge opening in the bottom thereof, a transporting means to receive cartridges from the chamber and to shift them into alignment with the discharge opening and comprising a drum rotatably carried on an axis extending across the case and disposed over the bottom and with a reduced central portion and a series of peripherally spaced pockets each adapted to receive a cartridge when faced upwardly and to carry said cartridges to said discharge opening, and an indexing and ejecting means comprising an elongate spring member projecting from the case and operable in the central portion of the drum and engageable with teeth on the drum to position the drum with each successive pocket in alignment with said discharge opening and engageable with and depressed by each cartridge as it is brought into alignment with said discharge opening.

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