

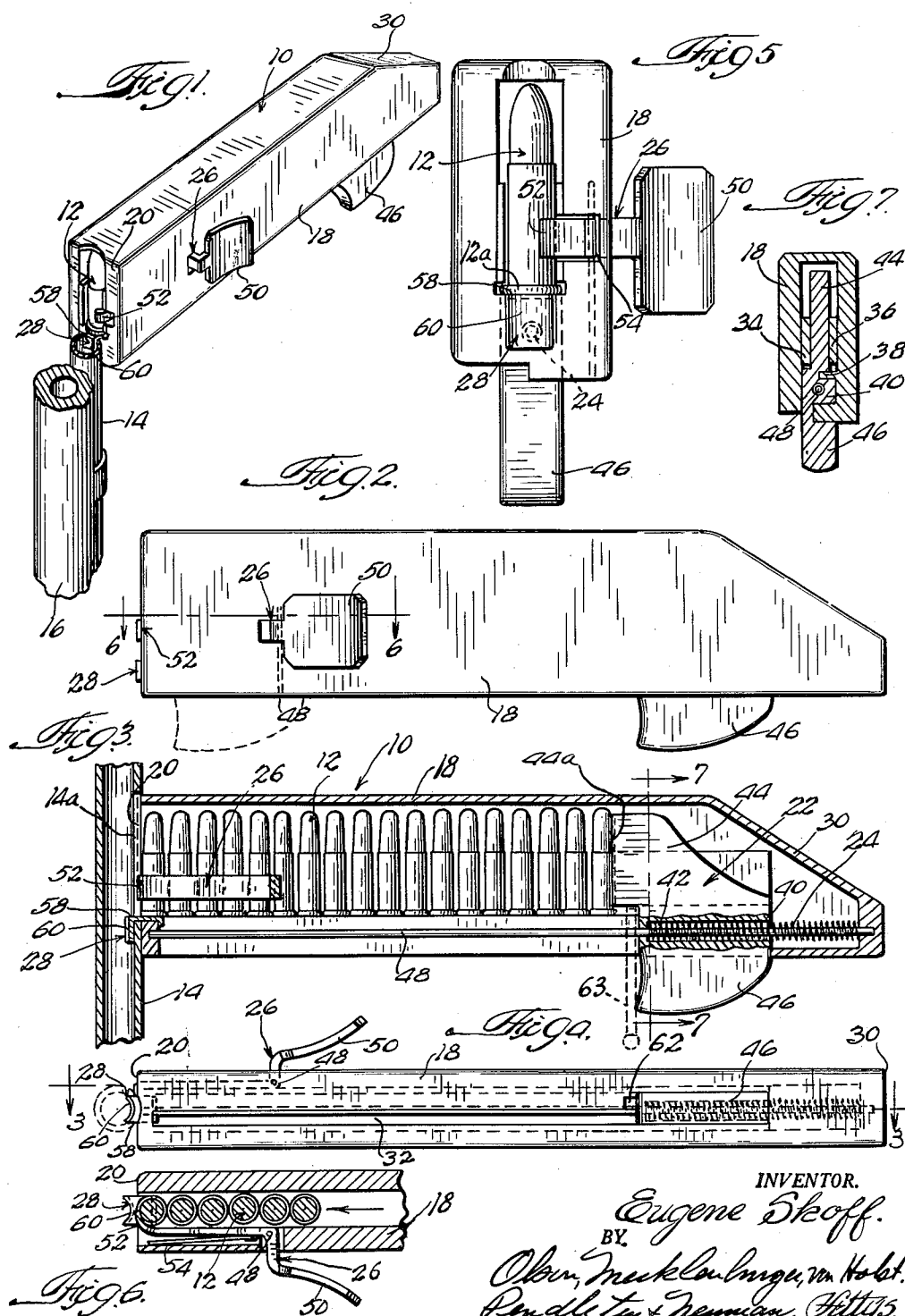
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CARTRIDGE LOADER FOR A TUBULAR MAGAZINE

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CARTRIDGE LOADER FOR A TUBULAR MAGAZINE

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This invention relates to a device for holding and storing a plurality of cartridges and for loading the cartridges automatically into a tubular gun magazine. Although this invention is particularly adapted for use with small-caliber rifle cartridges, it is to be understood that such device may be employed to store and load cartridges of all types and sizes. The term "gun" as used herein is intended to include any portable firearm including but not limited to rifles, pistols and shotguns.

In many repeating-type guns, cartridges are carried in a tubular magazine which is attached to and disposed immediately below the gun barrel. The cartridges are fed from this magazine to the firing chamber automatically upon the ejection of the previous shell from the firing chamber. Such magazines are of limited capacity and quite often have to be reloaded in the field by the hunter or marksman. Usually, the operator of the gun will carry the cartridges loose in his pocket and will manually load the magazine one cartridge at a time through an opening in the cylindrical wall of the magazine, or in some guns through an opening at the end of the magazine. This procedure is not only time-consuming and awkward, particularly in cold weather, but also the carrying of the cartridges loose in the operator's pocket is dangerous. In addition, the cartridges which have been coated with a lubricant by the manufacturer have a very great tendency to pick up dirt, lint, and other material from the operator's pockets. In some cases this lubricant is excessive and easily comes off and is transferred to the material of the pocket.

It is one particular object of this invention to provide a device in which cartridges may be easily deposited and safely stored and from which the cartridges may be easily removed.

It is another object of this invention to provide a device for storing a plurality of cartridges and for permitting the direct, rapid and automatic loading of a gun magazine.

It is a further object of this invention to provide a compact cartridge-storing device from which the cartridges can be quickly, easily and directly loaded into a magazine without the operator's having to handle the cartridges.

It is another object of this invention to provide a convenient, easily carried case which will hold a number of cartridges safely and in an arrangement and condition ready for immediate and direct loading into a tubular gun magazine.

It is still a further object of this invention to provide an inexpensive cartridge case which may be easily carried by the operator in his pocket and which will maintain the cartridges free from contact with dirt, lint, and other objects which might tend to foul the cartridge in the firing chamber.

Other objects may be seen, and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawing.

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A device constructed in accordance with this invention provides a convenient case for storing cartridges and for loading cartridges into an elongate, tubular magazine. One embodiment of this invention includes an elongate, hollow container of substantially rectangular cross-section and open at one end.

A guideway within the container is adapted to slidably accommodate a column of substantially parallel cartridges. Slidably mounted within the guideway for movement toward and away from the open end of the container is a follower having a handle portion and a cartridge engaging portion. A spring means, which is preferably mounted on a guide resiliently urges the follower toward the open end of the container such that when cartridges are disposed within the guideway, the follower will be constantly in contact with the first loaded cartridge to urge that cartridge, and those in the column ahead of it, out of the container. A manually operable means preferably in the form of a trigger lever is mounted adjacent the open end of the container and is movable into and out of the path of the cartridges within the guideway. This lever thus regulates the discharge of cartridges from the container. Means preferably in the form of a hook is provided adjacent the open end of the container for movably attaching the container to the end of the tubular gun magazine.

One of the features of this invention is the construction and cooperative arrangement of the follower, the spring guide, and the spring which permit the maximum utilization of space within the container and permit a large number of cartridges to be stored in a column within the relatively small container. The follower is of balanced construction, thus eliminating jamming due to possible twisting of the follower within the container.

Other important features are the simple and effective means for attaching the container to the tubular gun magazine, and the novel construction of the trigger lever.

With reference to the drawings:

Figure 1 is a perspective view of a device constructed in accordance with this invention, illustrating the manner in which the device may be attached to the cylindrical gun magazine;

Fig. 2 is a side-elevation view of the device illustrated in Fig. 1 showing in solid lines the position of the follower handle portion when the device is filled with cartridges and showing in dotted lines the position of this handle portion when the device is empty;

Fig. 3 is a sectional-elevation view of the device showing the interior construction thereof and the manner in which the cartridges are held therein;

Fig. 4 is a bottom-plan view of the device;

Fig. 5 is an enlarged elevation view of the device looking into the forward or open end of the container;

Fig. 6 is a sectional view of the device taken substantially along 6—6 of Fig. 2;

Fig. 7 is a sectional view of the device taken substantially along line 7—7 of Fig. 3.

The device 10, constructed in accordance with this invention, is adapted to hold a plurality of cartridges 12 in a column, i.e., in parallel relationship, and to selectively, sequentially and automatically transfer these cartridges to a tubular magazine 14 of a gun. In the illustrated embodiment, the cartridges are for a small caliber rifle. Adjacent the base or cap of each cartridge is a lip 12a which is adapted for engagement to hold the cartridge case in position in the firing chamber and to implement the ejection of the case from the gun after the cartridge has been fired.

The tubular magazine 14 is attached to and is disposed under the barrel 16 of the gun, and a plurality of shell may be stored within this magazine. Magazines of this type are usually charged through an aperture 14a

in the wall thereof adjacent the outermost end. Alternatively the aperture may be in the end of the magazine. The shells are usually moved from the magazine into position for charging into the firing chamber upon the rearward movement of the bolt and the ejection of the previously charged cartridge.

As best illustrated in Fig. 3, the device 10 includes an elongate, hollow container 18 which is at least partially open at its forward end 20, a follower 22 which is slidably mounted within the container for movement toward and away from the forward end 20, means in the form of a spring 24 resiliently urging the follower toward the open end of the container, a manually operable means in the form of a trigger lever 26 (more completely illustrated in Fig. 6) mounted adjacent the container forward end 20 and movable into and out of the path of the follower 22, and a means in the form of substantially L shaped hook or flanged element 28 mounted on the container adjacent the forward end 20 for movably attaching the container to the magazine 14.

Container 18 which may be constructed of plastic is substantially rectangular in cross-section as may best be seen in Figs. 5 and 7 and is substantially hollow. The rear or closed end 30 of the container is tapered and a slot 32 in the bottom of the container 18 extends from adjacent the forward or open end 20 to adjacent the closed end 30, as best illustrated in Fig. 4. The forward end 20 of the container adjacent the opening therein is substantially concave for reasons which will be more fully hereinafter explained.

A guideway is formed within the container 18 in the shape of an inverted T. To form this guideway, two thin elongate strips 34 and 36 are disposed in the lateral or vertical interior walls of the container 18 (see Fig. 7). The width of the interior of the container and the thickness of the strips 34 and 36 are such that the spacing between the strips is sufficient to permit the passage of all portions of the cartridge 12 except the lip 12a thereof. The distance between strips 34 and 36 thus is slightly greater than the diameter of the cartridge body and yet is less than the diameter of the cartridge lip 12a.

An elongate transverse strip 38 is formed on one of the container walls and lies within a plane perpendicular to the planes of strips 34 and 36, spanning approximately one-half the width of the interior of the container 18, as best illustrated in Fig. 7. The transverse strip 38 is preferably longitudinally coextensive with strips 34 and 36 and is spaced below strip 36 a distance slightly greater than the thickness of lip 12a of the cartridge 12. It may thus be seen that cartridges may be inserted into the open end of the container 18 within the guideway, the main body of each of the cartridges extending between parallel strips 34 and 36, the base of each of the cartridges resting upon transverse strip 38, and portions of the lip 12a of each of the cartridges being disposed below the strips 34 and 36. As best seen in Fig. 3, the cartridges are aligned in generally parallel relationship within the guideway. It is not necessary for the strips 34 and 36 to extend widthwise (vertically in Fig. 7) the full height of the interior of the container above the transverse strip 38. The width of the strips need be only sufficient to maintain the alignment of the cartridges in a column. The transverse strip 38 is preferably disposed below the top of the container a sufficient distance to permit the accommodation of various lengths of the same caliber shells, such as, for example, .22 caliber longs and .22 caliber shorts. If the container 18 is formed of plastic, all portions thereof, including the guideway strips 34, 36 and 38 may be molded integrally.

The follower 22 preferably consists of three portions. An elongate block portion 40, having a counterbored aperture 42 therein, is slidably movable along the length of the container in the space between the bottom of the container and transverse guideway defining strip 38. The block portion 40 is preferably of rectangular transverse

cross-section substantially filling the space in the container below transverse strip 38 and being in sliding engagement with the sides and the slotted bottom of the container as well as with the strip 38. This minimizes any twisting motion in the follower. Extending upwardly from block portion 40 is cartridge-engaging portion 44. This portion extends into the guideway and has a concave forward face 44a. On the opposite side of block portion 40, there depends a protuberant finger-grip or handle portion 46 which extends through the slot 32 in the bottom of the container. The rear of the cartridge-engaging portion 44 slopes downwardly to meet the rear of the elongate block portion 40, as best seen in Fig. 3. This permits the follower to slide rearwardly under the tapered closed end 30 of the container.

A thin guide rod or bar 48 is disposed longitudinally within the space below the guideway. One end of this rod is mounted in the forward end 20 of the container below the opening therein, and the opposite end of the rod is mounted in the closed end 30 of the container. The guide rod 48 extends through the counterbored aperture 42 in the block portion of the follower, and the follower is slidably movable along this guide rod. The compression coil spring 24 is coiled about guide rod 48 and acts between the closed end 30 of the container and the bottom of the counterbore in the aperture 42 of the follower, and this spring thus urges the follower forwardly toward the forward end 20 of the container. As best illustrated in Fig. 3, the counterbore of aperture 42 extends a substantial distance inwardly from the rear of block portion 40. The counterbore is of sufficient diameter to accommodate spring 24 when the latter is fully compressed. The substantial depth and the close fit of the counterbore thus tend to guide the follower as it moves rearwardly, and any twisting motion from the force of the spring acting against the follower is further minimized.

The disposition of the cartridge-engaging portion 44 on one side of the spring and the protuberant finger-grip portion of the follower 46 on the opposite side of the spring provides a balanced movement of the follower within the container. When the follower is moved to the rear of the container by finger-applied pressure to portion 46, the pressure is transmitted directly to the adjacent block portion 40 and thence to the spring 24. With the cartridges in position within the guideway and the guideway blocked, as will be more fully hereinafter described, the compressive force of the spring against the block portion 40 is transmitted directly to the adjacent cartridge-engaging portion 44.

The trigger lever 26 is mounted adjacent the forward end 20 of the container on a pin 48. On one end of this lever is formed a finger plate 50. At the opposite end of the lever is a curved tip 52, best seen in Fig. 6. The lever is pivotally movable about pin 48 between a first position in which curved tip 52 is disposed within the guideway in the path of cartridges 12 and the cartridge-engaging portion 44 of the follower, and a second position to one side of or out of the guideway, wherein it no longer is disposed in the path of the cartridges 12 and the follower portion 44. As best seen in Fig. 5 in its first position, the curved tip 52 of the lever extends across approximately one-third of the width of the guideway. In the second position of the lever 26 the cartridges are free to move out of the container through the open end 20, the force moving the cartridges being that applied by spring 24 acting upon the follower. A flat spring 54 attached to trigger lever 26 urges the lever in a direction about pin 48 toward the first-mentioned position in which the curved tip 52 extends into the guideway and blocks the path of the cartridges 12 and the portion 44 of the follower. Thus, in its normal position, the trigger lever 26 blocks the movement of cartridges from the guideway in the container 18. Spring 54 is relatively stiff and a substantial force must be applied to finger plate 50 in order to pivot the lever to its discharge position.

In order to attach the device to the end of the tubular gun magazine, adjacent the aperture 14a therein, a metal hook-like projection 28 is provided adjacent the forward end 20 of the container. This projection is substantially L-shaped, having a flat portion 58 which is attached to and extends outwardly from the open end of the container and lies approximately in the same plane as the transverse strip 38. Integral with and extending downwardly from flat portion 58 is curved end portion 60. This portion 60 is uniformly spaced outwardly from the concave portion of the container forward end 20 below the opening therein, the spacing being slightly greater than the wall thickness of the cylindrical magazine 14. As may best be seen in Fig. 3, when the curved portion 60 is inserted within the aperture in the cylindrical magazine 14, the forward end 20 of the container will engage the exterior magazine and the flat portion 58 of the projection will rest upon the aperture defining portions of the magazine. The device may thus be removably mounted on the magazine with the opening therein opposite the magazine aperture so that as the cartridges exit from the device, they are immediately deposited within the magazine.

In order to fill the magazine, the device 10 is mounted thereon as described. Pressure is then applied to finger plate 50 against the resistance of flat spring 54, and the tip 52 of the trigger lever 26 is moved out of the guideway. The cartridges are permitted to move forwardly through the open end of the container and across the flat portion 58 of the hook-like projection 28 under the force of spring 24 acting against the follower 22. The cartridges sequentially drop from the flat portion 58 into the magazine 14. Pressure is maintained on the finger plate of the trigger lever 26 until the magazine 14 is filled or until the desired number of cartridges are deposited in the magazine, whereupon the finger plate is released and the curved tip of the trigger lever 26 is again returned by flat spring 54 to its normal or blocking position in the way of the oncoming cartridges. In order to refill the device, the follower is moved to its rearward position against the resistance of coil spring 24 by finger-applied pressure to the finger grip portion 46. The follower is held in this position and pressure is applied to the finger plate 50 of the trigger lever 26 moving the tip 52 out of the guideway. The cartridges are then placed individually into the container with the lip 12a of each cartridge disposed downwardly. When the desired number of cartridges are loaded into the device 10, the trigger lever 26 is released as is the finger-grip portion 46 of the follower. As an alternative method of loading, the cartridges may be forced into the device through the opening in the end 20. The finger lever 26, because of the curvature of its tip 52, may be forced open against the resistance of the flat spring 54. This method thus requires that the forces of both springs 54 and 24 be overcome as the cartridges are individually forced into the device.

It may be desirable to lock the follower 22 in its rearward position for the loading operation. For this purpose a lateral recess 62 is provided in the slot 32 in the bottom of the container 18 as illustrated in Figs. 3 and 4. This recess should be sufficiently large to permit the insertion of a match stick or other small rod 63. The stick or rod if inserted within this recess ahead of the handle portion of the follower will prevent the forward movement of the follower under the urging of the compressed spring 24. When the device has been loaded, the stick or rod may be removed. Of course, many other well-known and more complex locking arrangements may be employed if desired.

The cartridges may be stored in the container until they are loaded into the magazine, and the container will keep them adequately free from contact with dust, dirt, lint, or other contaminants which might tend to foul the firing chamber. The cartridges not only are conven-

iently stored in this very easily carried package, but they are ready for immediate loading into the magazine of the gun. It will be apparent that a number of these devices may be loaded in leisure in the warmth of the operator's house and the loading of the magazine in the field may be done quickly and without the operator's having to remove his gloves.

Although the invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that many modifications and changes in various details may be resorted to without departing from the spirit and scope of the invention, as hereinafter claimed.

What is claimed is:

1. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a guideway therein adapted to slidably accommodate a column of generally parallel cartridges, a guide rod mounted within said container and extending substantially the length of the container parallel to said guideway, a cartridge-engaging follower mounted for longitudinal movement within said guideway toward and away from said open end, a compression spring coiled about said guide rod and acting between a portion of said container opposite said open end and said follower to urge said follower toward said open end, manually operable means mounted adjacent the open end of said container and movable into and out of the path of said follower to regulate the discharge of cartridges from said container, and means on said container adjacent said open end for removably attaching said container to the magazine, whereby the cartridges may be sequentially discharged from the container into the magazine.

2. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges, a guide bar mounted within said container and extending substantially parallel to said guideway, between said guideway and one side of said container, a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending within said guideway and a block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, a compression spring coiled about said guide bar and acting between a portion of said container opposite said open end and the block portion of said follower to urge said follower toward said open end, manually operable means mounted adjacent the open one end of said container and movable into and out of the path of said follower to regulate the discharge of cartridges from said container, and means on said container adjacent the open end thereof for removably attaching said container to the magazine, whereby the cartridges may be sequentially discharged from the container into the magazine.

3. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges, a guide bar mounted within said container and extending substantially parallel to said guideway, between said guideway and one side of said container, a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending with said guideway and a block portion having a counterbored aperture therein, said block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, a compression spring coiled about said guide bar and acting between a por-

tion of said container opposite said open end and the bottom of the counterbore in the block portion of said follower to urge said follower toward said open end, manually operable means mounted adjacent said open end of said container and movable into and out of the path of said follower to regulate the discharge of cartridges from said container, and means on said container adjacent said open end for removably attaching said container to the magazine, whereby the cartridges may be sequentially discharged from the container into the magazine.

4. The structure recited in claim 3 wherein the depth of the counterbore in the block portion of said follower is greater than half the length of the coil spring when fully compressed, whereby the follower is permitted to move a maximum longitudinal distance within said container.

5. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a longitudinally extending slot therein, said container having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges; a guide bar mounted within said container and extending substantially parallel to said guideway between said guideway and one side of said container; a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending within said guideway, a block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, and a protuberant portion extending outwardly through the slot in said container, whereby said follower may be manually moved away from the open end of said container; a compression spring coiled about said guide bar and acting between a portion opposite the open one end of said container and the block portion of said follower to urge said follower toward said open end, manually operable means mounted adjacent said open end of said container and movable into and out of the path of said follower to regulate the discharge of cartridges from said container, and means on said container adjacent said open end for removably attaching said container to the magazine, whereby the cartridges may be sequentially discharged from the container into the magazine.

6. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a longitudinally extending slot therein along one side, said container having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges; a guide rod mounted within said container and extending substantially parallel to said guideway between said guideway and the one side of said container; a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending within said guideway, an apertured counterbored block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, and a protuberant portion extending outwardly from said block portion through the slot in said container, whereby said follower may be manually moved away from the open end of said container; a compression spring coiled about said guide bar and acting between a portion of said container opposite said open end and the bottom of the counterbore in the block portion of said follower to urge said follower toward said open end; manually operable means mounted adjacent said open end of said container and movable into and out of the path of said follower to regulate the discharge of cartridges from said container, and means on said container adjacent said open end for removably attaching said container to the magazine, whereby the

cartridges may be sequentially discharged from the container into the magazine.

7. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a longitudinally extending slot therein along one side, said container having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges; a guide rod mounted within said container and extending substantially parallel to said guideway between said guideway and the one side of said container; a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending within said guideway, an apertured counterbored block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, and a protuberant portion extending outwardly from said enlarged portion through the slot in said container, whereby said follower may be manually moved away from the open end of said container; a compression spring coiled about said guide bar and acting between a portion of said container opposite said open end and the bottom of the counterbore in the block portion of said follower to urge said follower toward said open end; trigger means for selectively and sequentially discharging the cartridges from said guideway, said trigger means including a manually operable lever member mounted on said container adjacent said open end, said lever member having a first portion extending outwardly from said container and a second portion extending within said container and movable within said guideway into and out of the path of the cartridge-engaging portion of said follower, and a spring member urging the second portion of said lever member into the path of said follower to prevent the discharge of cartridges from said guideway, and means on said container adjacent said open end for removably attaching said container to the magazine, whereby the cartridges may be sequentially discharged from the container into the magazine.

8. A device for loading cartridges into an elongate tubular magazine, said device comprising an elongate hollow container having an open end and having a longitudinally extending slot therein along one side, said container having a substantially T-shaped guideway adapted to slidably accommodate a column of generally parallel cartridges; a guide rod mounted within said container and extending substantially parallel to said guideway between said guideway and the one side of said container; a follower slidably mounted for longitudinal movement within said container toward and away from said open end, said follower having a cartridge-engaging portion extending within said guideway, an apertured counterbored block portion disposed between said guideway and the one side of said container and slidably mounted on said guide bar, and a protuberant portion extending outwardly from said block portion through the slot in said container, whereby said follower may be manually moved away from the open end of said container; a compression spring coiled about said guide bar and acting between a portion of said container opposite the open end thereof and the bottom of the counterbore in the block portion of said follower to urge said follower toward said open end; trigger means for selectively and sequentially discharging the cartridges from said guideway, said trigger means including a manually operable lever member mounted on said container adjacent said open end, said lever member having a first portion extending outwardly from said container and a second portion extending within said container and movable within said guideway into and out of the path of the cartridge-engaging portion of said follower, and a spring member urging the second portion of said lever member into the path of said follower to prevent the dis-

charge of cartridges from said guideway and a hook member having a first portion attached to and extending outwardly from the open end of said container in approximately the same plane as the base of said T-shaped guideway and a second portion extending transversely away from said guideway, whereby when said second portion is inserted within the magazine the open end of the container will abut the exterior of the magazine and the container will be mounted for the discharge of cartridges therefrom into the magazine.

9. The structure of claim 8 wherein locking means

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is provided to selectively maintain said follower in position spaced from the open end of said container.

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