

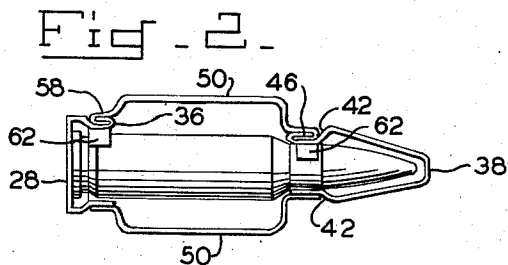
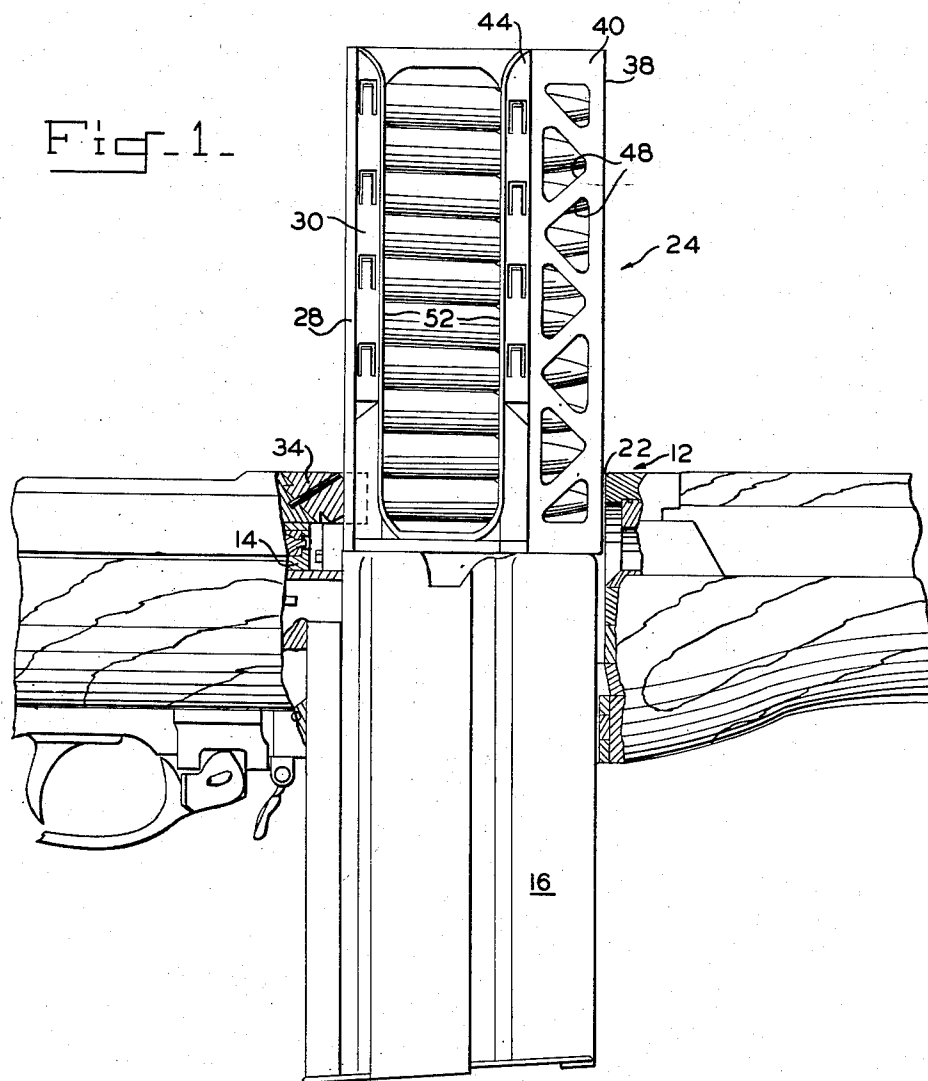
May 13, 1958

W. R. KUNZ
MAGAZINE CHARGER

2,834,137

Filed June 15, 1956

2 Sheets-Sheet 1



INVENTOR.

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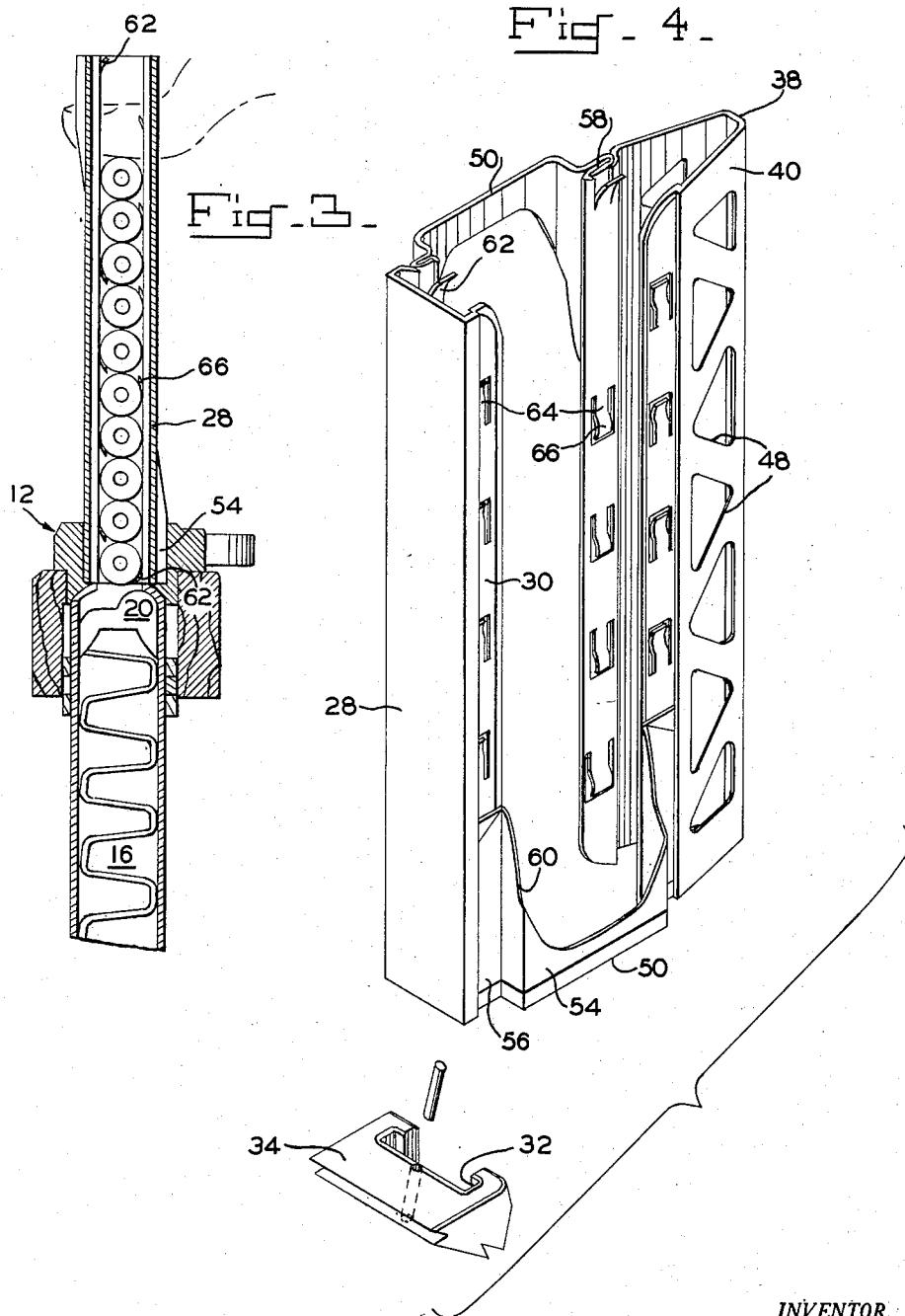
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1

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MAGAZINE CHARGER

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Application June 15, 1956, Serial No. 591,769

1 Claim. (Cl. 42—87)

(Granted under Title 35, U. S. Code (1952), sec. 266)

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

This invention relates to chargers for loading a plurality of cartridges into the magazine of a firearm while assembled thereto.

One of the problems associated with automatic-type shoulder arms is that of supplying cartridges thereto. It is important with shoulder arms that bulk and weight be kept to a minimum so that the weapon may be readily handled and transported. Therefore, it is necessary that the supply of cartridges and the magazine which holds and feeds them to the receiver be kept as small and as light as possible. Usually, the magazines are containers which are replaceably mounted to the weapon and hold twenty or less cartridges which are moved by a spring-biased follower towards the receiver and into the path of a reciprocating bolt. This amount of cartridges is inadequate when extensive firing is required and, therefore, when exhausted the magazine has to be removed and reloaded or replaced by a spare one which has been previously loaded.

Because the magazine has to be sufficiently rugged in construction to feed the cartridges under heavy spring tension without being distorted, it is necessarily heavy, which makes it inconvenient for an operator to carry many spares on his person. Then, too, an operator is inclined to throw away empty magazines rather than be bothered by their weight and bulk which adds up to a considerable loss as magazines are relatively expensive to manufacture.

Further, if it becomes necessary to fill a magazine in the field, the operator must lay aside the weapon so as to use both hands because the loading is a rather intricate and bothersome operation. The difficulties are, of course, intensified by darkness and tension, if under fire.

It is, therefore, an object of this invention to provide a magazine charger for loading a plurality of packaged cartridges to a firearm magazine while installed in the firearm.

It is another object of this invention to provide a magazine charger whereby the operator may load the firearm magazine easily and quickly without losing visual contact with the target or physical contact with the weapon.

It is a further object of this invention to provide a means for supplying cartridges to a fire arm whereby only a single magazine is necessary.

It is a still further object of this invention to provide a magazine charger which is light in weight, rugged in construction, and inexpensive to manufacture.

2

It is another and still further object of this invention to provide a magazine charger from which the supply of cartridges therein may be injected into the magazine from either end.

It is still another and further object of this invention to provide a magazine charger which may be partially unloaded into the magazine and which will maintain the remainder of the load in alignment.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is an elevational partially cross-sectioned view showing the charger assembled to the firearm;

Fig. 2 is a top view of the charger;

Fig. 3 is a cross-sectioned end view showing the cartridges in the charger in position to be pressed into the magazine; and

Fig. 4 is an enlarged exploded view of the charger and adaptor.

Shown in the figures is a firearm having a receiver 12 with a bolt 14 slidably mounted therein and a cartridge magazine 16 separably mounted to the receiver. Magazine 16 is of conventional, two-column type holding twenty cartridges and is loaded by the insertion of the cartridges through the top against a spring-loaded member 20. Provided in receiver 12, immediately above magazine 16, is an ejection port 22 which provides free access of a magazine charger 24 to the top of such magazine when bolt 14 is in recoil position.

Charger 24 is a hollow, open-end container fabricated of lightweight material and adapted to hold a column of ten cartridges which is one-half the load of magazine 16. Such charger 24 has a transverse cross-section similar to the longitudinal profile of the cartridges whereby the cartridges are held against longitudinal displacement but may be slid through the charger from either end.

Charger 24 is fabricated from four sections which are interlocked together and unitarily fixed under extreme pressure. A butt section, noted at 28, is pressed to form a T-shape and has a pair of forwardly extending leg portions 30 which are parallelly spaced so as to resiliently receive the base portions of the cartridges and permit the slidable passage thereof into magazine 16.

Butt section 28 is receivable by a mating T-slot 32 which is vertically disposed relative to the firearm in an adapter 34 mounted to receiver 12 at the rear end of ejection port 22. Whereby, charger 24 is firmly held to the firearm while magazine 16 is being charged. The T-shaped cross-section of butt section 28 also adds rigidity to charger 24. Provided on each leg portion 30 at the opposite ends thereof is an extending flap portion 36 which, when folded back, forms a portion of an interlock to be described hereinafter.

A nose section 38 houses the front portions of the cartridges and includes a portion 40 of triangular cross-section which protectively covers the projectile portions. Shoulders 42 extend inwardly from portion 40 and are terminated by parallel side portions 44 which are spaced to resiliently receive the neck portions of the cartridges therebetween and are similar in width to leg portions 30. Flaps 46, similar to flaps 36, extend from the lower end of the right one of the side portions 44 and the upper

end of the left one. Triangular openings 48 are cut out of portion 40 for lightening purposes.

Butt section 28 and nose section 38 are fixed together in parallel relationship by a pair of connecting bridge sections 50 which provide a slot 52 between such butt and nose sections sufficiently wide enough to admit the thumb of the operator. Each of the bridge sections 50 is comprised of a substantially U-shaped, crossover portion 54, which extends laterally from the charger, and foot portions 56 which extend away from each other at right angles from both the front and the rear sides of such crossover portion to engage the leg portions 30 and side portions 44. The foot portions 56 are provided with flap portions 58 which cooperate with flap portions 36 and 46 to form interlocks for securing the sections of the charger into a rigid unit. Such interlocks are fixed against disassembly by being pressed together under extreme pressure.

Because of the locations of the flaps 46 on nose section 38, the bridge sections 50 are so disposed that when the charger is assembled to the firearm the top one of such bridge sections is always located on the left side of the charger regardless of which end thereof is inserted into receiver 12. Whereby, the operator may readily place the thumb of his right hand against the top one of the cartridges in the charger and press the column of cartridges in the charger downwardly therethrough without interruption. The crossover portions 54 are bent out into a U-shape so that sufficient space is provided for the operator to engage the ball of his thumb against such top cartridge in the charger for a firm downwardly thrust, and so that the bottom one of such crossover portions will be out of the way against the side of ejection port 22 so as not to interfere with the removal of the last cartridge from the charger into the magazine.

Extending from slot 52 into each of the cross portions 54 is a cutout portion 60 which permits the operator to extend his thumb through charger 24 and over the top one of the cartridges therein when the column of the cartridges is moved downwardly to where the bottom one of the cartridges is engaged with member 20 in magazine 16 or the uppermost cartridge therein. The cutout portions 60 also assure room for the operator to press the last one of the cartridges in the charger into the magazine.

Provided along leg portion 30 and side portions 44 is a series of tabs which have been cut therein as hereinafter described. These tabs include end tabs 62 which are formed by a pair of parallel cuts made into leg portions 30 and side portions 44 from the ends thereof which are in engagement with the bridge sections 50. The tabs 62 are bent inwardly to resiliently restrain the cartridges from leaving charger 24 whichever end thereof is inserted into receiver 12. Provided in leg portions 30 and side portions 44 between end tabs 62 is a series of holding tabs 64 which are formed by substantially U-shaped cuts. The ends of the holding tabs 64 are terminated by semicylindrical portions 66 which extend into charger 24 to cammingly and resiliently engage the cases of the cartridges. The holding tabs 64 are located along the leg and side portions so that the semicylindrical portions 66 are positioned to resiliently restrain the column of cartridges in the charger, or any portion thereof even to a single one, against movement and to retain the cartridges in the charger in engaged alignment. This is accomplished by having the semicylindrical portions 66 on one side of the charger engage alternate cartridges on one side to restrain movement thereof in one direction and the semicylindrical portions on the opposite side of the charger engage the other cartridge to restrain the movement thereof in the other direction.

Space is provided for one cartridge between the last one of the holding tabs 64 and the adjacent one of the end tabs 62 at both ends of charger 24, whereby, the

column of cartridges may be moved the distance of one cartridge diameter before the engagement of the bottom cartridge with member 20. Thereby, as hereinbefore explained, the top one of the cartridges is moved downwardly so that the operator may insert his thumb through the charger before extra pressure is required to load the cartridges from charger 24 into magazine 16 against the strong bias applied against member 20. All of the exposed edges around slot 52 and cutout portion 60 are bent back and pressed flat to prevent accidental cutting on sharp edges and to increase the rigidity of the charger.

Operation

When an operator wishes to charge magazine 16, which may be either completely or partially empty, without removing it from the firearm, bolt 14 is retracted to recoil position and a loaded charger 24 inserted downwardly through T-slot 32 in adapter 34 into communication with such magazine. The shape of charger 24 assures proper assembly as to the direction of the cartridges and, as hereinbefore explained, either end of the charger is insertable into receiver 12 so that time and handling is saved in the assembly operation. The assembly operation may be easily accomplished through the use of the operator's right hand alone, whereby, the other hand may still maintain the firearm in position ready to fire and does not require the operator to take his eyes away from the target area.

After assembling the charger to the firearm, the operator uses the ball of his right thumb to move the column of cartridges downwardly the distance of one cartridge until the bottom one thereof is engaged with the lower ones of the end tabs 62. There is then sufficient space between the top one of the cartridges and crossover portion 54 for the operator to insert his thumb all the way through the charger for firmly pressing the cartridges into magazine 16 against the bias of member 20.

If there is space in magazine 16 for only a portion of the column of cartridges in charger 24, the charger may be removed when the magazine is fully charged and the bottom ones of the end tabs 62 assure that those cartridges which have not gone thereby into the magazine are retained in the charger so that when such charger is disassembled from the firearm there will not be a loose cartridge left in the receiver to cause trouble.

From the foregoing it is clearly apparent that there is herein provided a charger for loading the magazine of a firearm without the removal thereof and without the operator having to lose visual contact with the target or physical contact with the firearm, and which is easily and rapidly unloaded from either end, is light in weight, rugged in construction, and inexpensive to manufacture.

Although a particular embodiment of the invention has been described in detail herein, it is evident that many variations may be devised within the spirit and scope thereof and the following claim is intended to include such variations.

I claim:

For a firearm having a magazine and a port aligned therewith, a charger comprising a butt section having a pair of forwardly projecting leg portions for slidably holding the base portions of a column of cartridges, a nose section for protecting the projectile portions of the column of cartridges and having a pair of side portions extending rearwardly for sliding engagement with the necks of the cartridges in the column, a pair of bridge sections joining said base and nose sections at opposite sides and opposite ends thereof to form a rigid unit insertable at either end through the port into communication with the magazine and to provide a clearance for facilitating the manual transfer of the column of cartridges in part or in toto to the magazine from either end of said charger, a plurality of first tabs means extending into one side of said charger from said leg and side portions for resilient and camming engagement with one side of the cartridge cases in the

column, a plurality of second tab means extending into the opposite side of said charger from said leg and side portions for resilient and camming engagement with the opposite sides of the cartridge cases in the column to resiliently support and maintain each of the cartridges in the column in aligned position whichever end of said charger is inserted into the port, and end tabs disposed at opposite ends of said butt and nose sections for resiliently holding in said charger those cartridges which have not been transferred therefrom into the magazine during the loading thereof.

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