

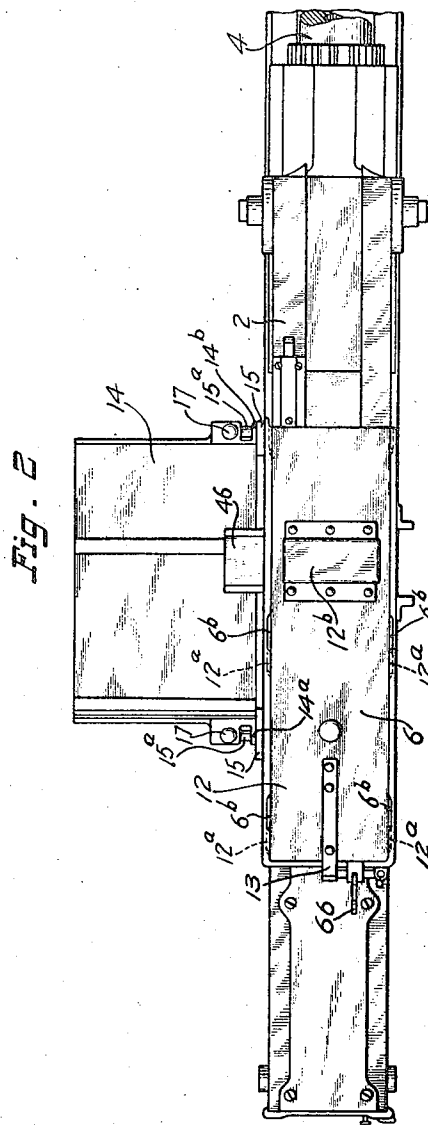
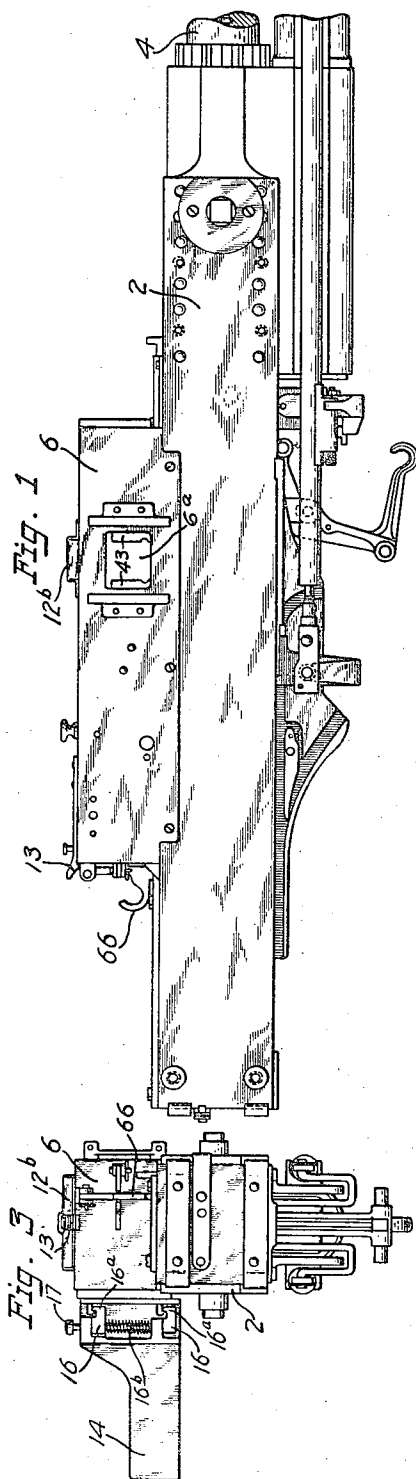
Sept. 26, 1944.

G. WEBB

2,359,263

AUTOMATIC FIREARM AND COMBINED ACCESSORIES

Original Filed March 22, 1940 3 Sheets-Sheet 1



Inventor
George Webb
By S. Jay Teller
Attorney

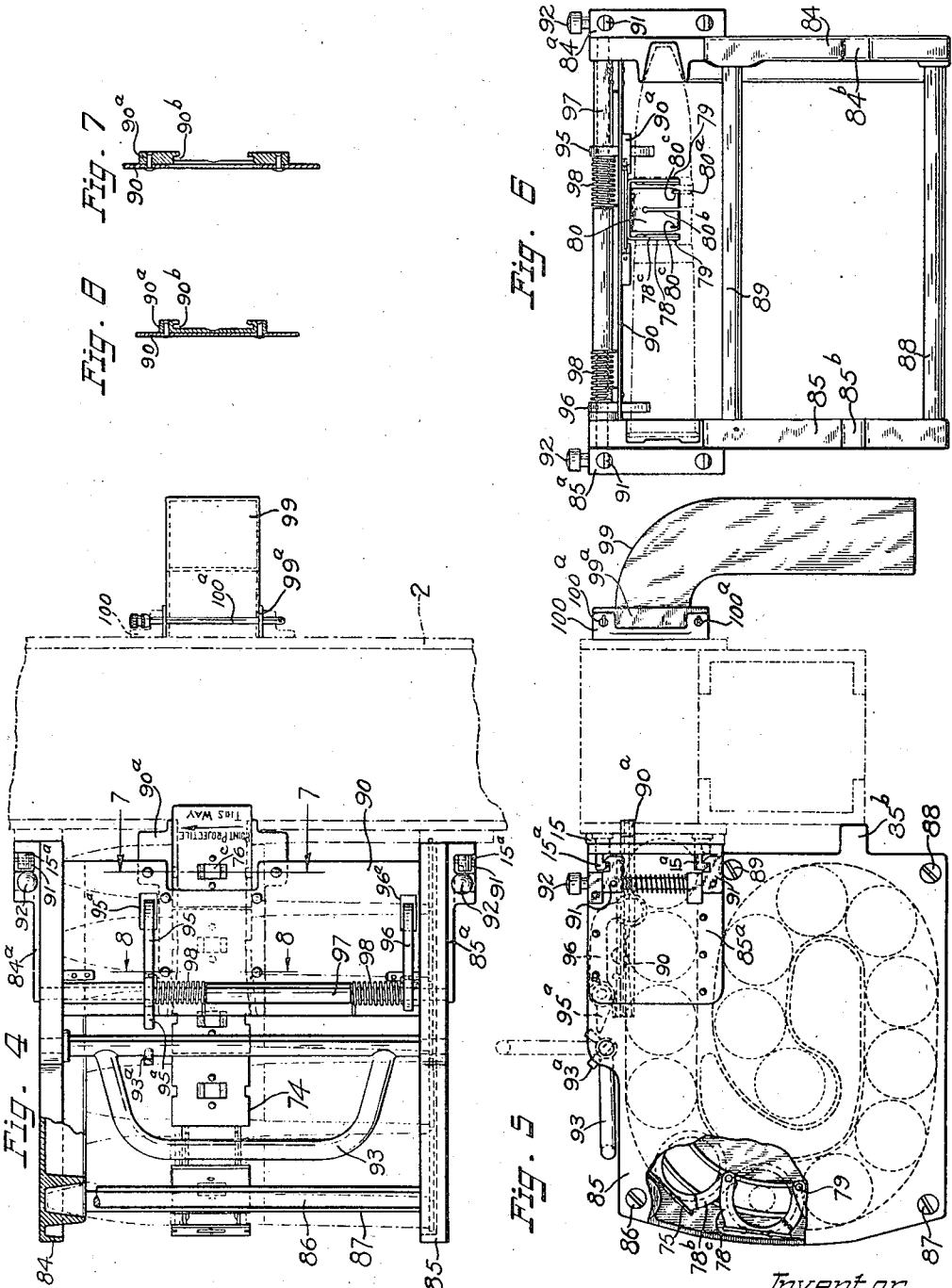
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G. WEBB

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AUTOMATIC FIREARM AND COMBINED ACCESSORIES

Original Filed March 22, 1940 3 Sheets-Sheet 2



Inventor
George Webb
By *S. Jay Teller*
Attorney

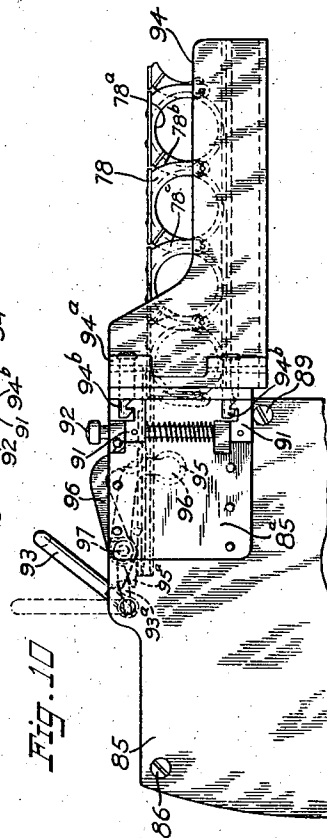
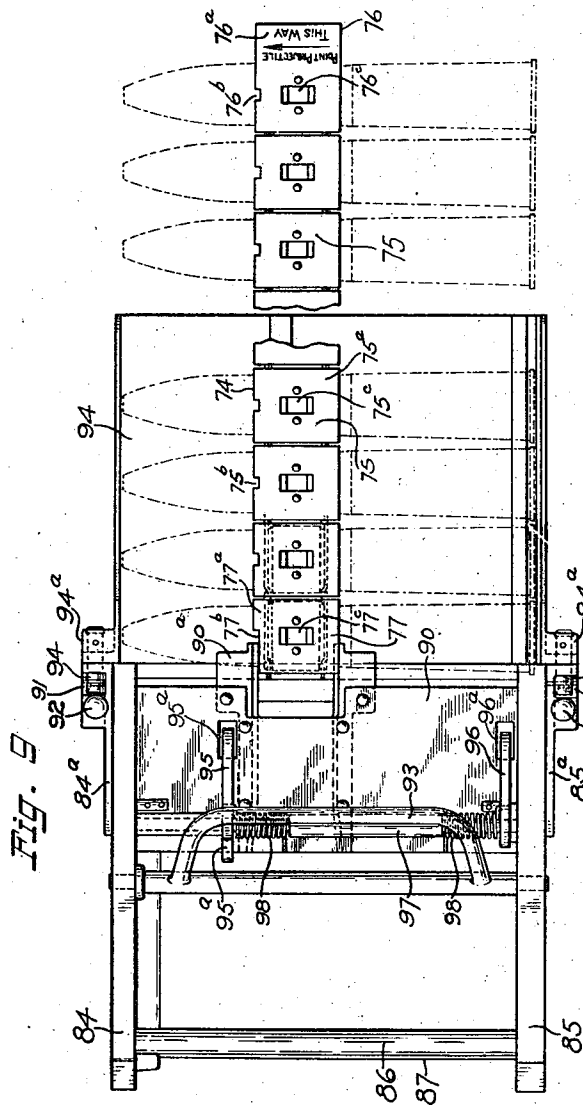
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AUTOMATIC FIREARM AND COMBINED ACCESSORIES

Original Filed March 22, 1940 3 Sheets-Sheet 3



Inventor
George Webb
By S. Jay Teller
Attorney

UNITED STATES PATENT OFFICE

2,359,263

AUTOMATIC FIREARM AND COMBINED ACCESSORIES

George Webb, Hartford, Conn., assignor to Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn., a corporation of Connecticut

Original application March 22, 1940, Serial No. 325,405. Divided and this application April 6, 1942, Serial No. 437,854

16 Claims. (Cl. 89—33)

The invention herein disclosed relates to an automatic firearm and accessories such as a loading tray, magazine, and a loading plate for the magazine which accessories are adapted to be either detachably connected to the firearm or to each other by quickly detachable connecting means having component parts formed in or on the various accessories and firearm whereby said accessories and the firearm may be interchanged and connected in operative relationship with each other to permit the proper functioning of the firearm and the individual accessories. This application is a division of my co-pending application, Ser. No. 325,405, filed March 22, 1940, for an Automatic firearm. While not necessarily so limited, the invention comprising the subject matter of this divisional application is particularly applicable to an automatic firearm, and/or feeder, and/or loading plate embodying some or all of the inventions disclosed in the following prior patents: 1,525,065, J. M. Browning, February 3, 1925; 1,525,066, J. M. Browning, February 3, 1925; 1,692,328, J. M. Browning, November 20, 1928; 1,692,277, C. Pfeiffer, November 20, 1928.

It is an object of the present invention to provide in an automatic firearm a readily detachable cartridge supporting device such as a loading tray adapted to be attached to an automatic firearm adjacent the feed channel thereof by novel securing means whereby a rigid feeder may be aligned with the firearm for proper feeding to the feed channel.

It is a further object of the invention to provide another form of cartridge supporting device, such as a magazine, having novel detachable securing means similar to those on the loading tray whereby the magazine may be readily attached to the firearm and substituted for the feed tray.

It is a still further object of the invention to provide a novel loading plate including attaching means similar to those on the firearm whereby the loading plate may be readily detachably secured to the magazine to facilitate the loading of the magazine with a feeder.

To the same end as the foregoing objects it is another object of the present invention to provide novel detachable securing means having certain component parts common to the various interconnectible accessories and the firearm to permit ready interchangeability of the firearm and the various accessories without sacrificing any of the advantages of the respective firearm or accessories.

The invention relates further to various other objects and details of construction and combination of parts as will be more fully apparent from the following specification.

The accompanying drawings show the embodiment of the invention which is deemed preferable, but it will be understood that the drawings are intended for illustrative purposes only and are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

In the drawings,

Fig. 1 is a side view of an automatic firearm embodying the invention, the forward portions of the firearm being broken away.

Fig. 2 is a plan view of the firearm showing the loading tray attached, the forward portion of the firearm being broken away.

Fig. 3 is a rear view of the firearm showing the loading tray attached.

Fig. 4 is a plan view showing a magazine and a discharge chute attached to the firearm and adapted to use an articulated-link feeder. In this view the firearm is indicated by dot-and-dash lines.

Fig. 5 is a rear elevational view of the magazine and discharge chute attached to the firearm illustrated as in Fig. 4.

Fig. 6 is a view showing the right side of the magazine as viewed in Figs. 4 and 5 and as the magazine appears when separated from the gun. Only the first cartridge and the front end of the feeder are shown in this view.

Fig. 7 is a fragmentary vertical sectional view taken on the line 7—7 of Fig. 4.

Fig. 8 is a fragmentary vertical sectional view taken along the line 8—8 of Fig. 4.

Fig. 9 is a plan view showing a loading plate associated with the magazine and also showing the relative position of an articulated-link feeder at the beginning of the loading.

Fig. 10 is a fragmentary rear elevational view of the parts shown in Fig. 9.

In the drawings and the following specification, only as much illustration and description is given of the details of the firearm and its component parts as is necessary to adequately describe the structures comprising the subject matter of this divisional application. For a more complete understanding of the operation of the details of the firearm, hereinafter referred to as a gun, and other associated parts or mechanism, attention is directed to the above-mentioned co-pending application Ser. No. 325,405 or the above-enum-

ated patents, among which Patent 1,525,065 is among the more important.

The particular firearm to which the instant invention is readily applicable and which has been shown in the attached drawings in illustrating the preferred embodiment of the invention, is a caliber 37 mm. automatic cannon, details of which are illustrated in said co-pending application Serial No. 325,405 but it is to be understood that the present invention is not limited in its application to this gun only since it has ready application to other types of firearms and particularly automatic firearms.

Guns of the nature illustrated and described are used for various purposes and in adapting the gun for use to certain of these purposes, it is found that various quantities of ammunition are desirable or required notwithstanding the fact that the same gun is used for all such purposes. Accordingly, the present invention provides means whereby ammunition may be fed to the gun by a plurality of suitable interchangeable means, each holding various quantities of ammunition. Said means are adapted to be interconnected by quick-detachable securing means having component parts common to the various interconnectible means to simplify the interconnectibility of said means.

It has been accepted practice for certain types of firing of guns of the nature illustrated to supply a small number of rounds or cartridges to the feed channel of the gun by mounting five or ten cartridges in a so-called rigid feeder. To properly support this type of feeder, the present invention provides a loading tray detachably secured to the gun at one side of the feed channel by novel securing means, the purpose of the tray being to not only align but also support the weight of the feeder assembly consisting of the feeder and cartridges while the assembly is being fed to the feed channel of the gun.

Convenience of manipulation and operation limits the capacity of a rigid feeder and, should a greater quantity of ammunition be desired for automatic feeding to the gun than is possible to supply with a rigid feeder, the present invention provides a magazine adapted to contain and support an articulated-link type feeder which may be compactly arranged in the magazine when the feeder is filled with cartridges to provide a larger number of cartridges for feeding to the gun than is afforded by a rigid feeder. The number of cartridges which may be held by the magazine may vary since the magazine may be made of such size as to hold any desired number of cartridges within reasonable limits. The invention includes attaching means for the magazine similar to those on the loading tray whereby the loading tray and magazine may be quickly and easily interchanged, the securing means on the side of the gun serving to secure either the loading tray or magazine thereto.

The invention still further provides a loading plate adapted to be detachably secured to the magazine to facilitate the insertion of a loaded feeder or feeder assembly into the magazine while loading the same prior to attaching the magazine to the gun. The loading plate is provided with securing means similar to those on the side of the gun whereby the securing means on the magazine readily co-engage with the securing means on the loading plate to detachably connect the two together.

It will thus be seen that the present invention provides mechanism which enhances the versa-

tility and range of uses of the gun described in co-pending application Serial No. 325,405 by providing means which permits various quantities of rounds of ammunition to be fed to the gun which quantities vary within a reasonably wide limit. Furthermore, means for facilitating the loading of the magazine are included. Still further, the quick-detachable interconnecting means for the various separable means described above are common to all of said means whereby the interchangeability of the same may be accomplished quickly and without requiring the use of tools or other operating mechanism other than the latches carried by certain of the means.

The gun, particularly as shown in Figs. 1 through 3, is shown in its horizontal position which may be regarded as "normal." However, the gun may be used at various angles of elevation or depression or even inverted or it may be turned laterally. The terms "horizontal" and "vertical" as herein used are to be understood as relative terms which are applicable when the firearm is in its normal position as shown. Furthermore, the terms "front" and "rear" are to be similarly considered in a relative sense with respect to the end of the gun from which the barrel projects being the "front" of the gun and the opposite end the "rear" of the gun.

Details of the invention will now be described with reference to the accompanying drawings in which the gun is shown to include a breech casing 2, a barrel 4 projecting from the front end thereof, and a feed box 6 mounted on the upper side of the breech casing. The feed box 6 contains members of the cartridge feed mechanism and is provided with a transverse feed channel 6^a into which the cartridges and the feeder, either rigid or articulated-link type, may be fed from left to right. To permit access to the parts of the feed mechanism, the feed box 6 is provided with a movable top cover 12 which is preferably entirely removable and which is also provided with projecting longitudinal tongues 12^a on its opposite edges which tongues fit correspondingly longitudinal grooves 6^b, 6^b in the side walls of the feed box, these grooves being readily shown in Fig. 2. The grooves 6^b, 6^b terminate in openings extending upward to the top edge of the feed box to permit the cover to be moved vertically downward to bring the tongues 12^a, 12^a into registry with the grooves 6^b, 6^b, and a spring latch 13 on the cover serves to hold the same in place. A supplementary cover 12^b is mounted on the cover 12 to accommodate certain moving elements in the feed box.

Detachably connected to one side of the feed box adjacent the feed channel 6^a is a cartridge supporting device which is shown in Figs. 1 and 3 as being a shelf-like loading tray 14. As will be hereinafter made clear, a magazine may be substituted for the loading tray. The loading tray 14 is primarily provided to support a cartridge feeder assembly of the rigid type preparatory to the insertion of the feeder assembly into the feed channel and into engagement with the feed mechanism. The tray 14 and the feed box 6 are provided respectively with connection devices which serve to connect them, but which permit them to be readily disconnected and separated. The connection devices may be varied as to details and as to relative arrangement of parts but, as shown, the tray 14 is provided with vertical walls 14^a and 14^b which are normally immediately adjacent the outer face of a bracket 15 on the left wall of the feed box, and the said walls are

apertured to receive two pairs of studs 15^a, 15^a projecting from the said bracket 15. The studs 15^a, 15^a are notched at their bottoms and the tray 14 is provided with two spring-pressed latches 16, 16 each having two teeth 16^a, 16^a adapted to enter the notches in the studs to hold the tray in place. The two teeth are mounted on a vertical rod 16^b which is pressed upward by the spring. The latches 16, 16 are provided with buttons 17, 17 by means of which they can be pushed downward to permit disconnection and separation of the parts.

While the loading tray 14 has primarily been described for use with a rigid feeder assembly, it is to be understood that said tray may also be used to facilitate the introduction of a flexible or articulated-link type feeder assembly into the feed channel. However, in the preferred embodiment of the invention, a magazine is provided which is particularly adapted to accommodate a flexible link type feeder assembly which magazine is illustrated with its various details in Figs. 4 through 10.

The gun includes firing mechanism which need not be described in detail as it is similar to that illustrated in said co-pending application Serial No. 325,405 and also Browning Patent 1,525,065. For present purposes, it is sufficient to point out that the firing mechanism is operated by a trigger lever 66 adapted to effect firing when moved rearward with respect to the feed box.

The flexible type feeder comprising interconnected articulated links shown in Figs. 4 through 6, 9 and 10 and which is primarily adapted to be accommodated in the magazine, to be described in detail, is designated in its entirety by 74. It comprises a number of intermediate links 75, a leading link 76 and a trailing link 77. Details of the feeder are claimed in my divisional application Serial No. 437,853, filed on even date herewith. Each of the links has a body portion 78 which is preferably formed of sheet metal and is bent to the shape of an inverted U as shown in Fig. 6. This is of the same size and shape as the main body portion of a rigid feeder which may be substituted with equal facility for the flexible feeder, the rigid feeder being shown and described in detail in said co-pending application Serial No. 325,405. The depending side flanges of each body portion 78 are provided with notches or recesses 78^a, Fig. 10, for receiving a cartridge, each of the side flanges being thus provided with two spaced legs 78^b and 78^c, Fig. 10. Two of the legs, as for instance the two legs 78^b, are offset so as to fit between the adjacent legs 78^c of the next adjacent link. The legs that thus overlap are joined by pivot pins or rivets 79, 79. The several connecting body portions 78, 78 constitute the main body portion of the articulated-link feeder. Each of the links also has a spring clip 80 for holding a cartridge, this clip being similar to the spring clips provided on the rigid feeder described in said co-pending application Serial No. 325,405.

As illustrated in Fig. 6 particularly, each cartridge has an annular groove 80^a provided in the projectile thereof. Each spring clip 80 is generally U-shaped, and each leg of the U-shaped clip is provided with a slot or bifurcation 80^b to form a pair of resilient fingers in each leg of the spring clip. Each of said fingers is provided adjacent its outer end and near one edge with a struck-in portion or detent 80^c. When the cartridge is placed in the notches or recesses 78^a of the feeder, the spring clip 80 engages the cartridge in such a way that a pair of oppositely

disposed detents 80^c engage in the annular groove 80^a of the cartridge to not only releasably hold the cartridge within the feeder but also prevent movement of the cartridge with respect to the feeder in a direction substantially longitudinal of the cartridge. Since the detents 80^c are all mounted on separate resilient fingers and are thus independently movable, the other pair of opposed detents 80^c not engaged in the groove 80^a will engage the outer surface of the cartridge to afford positive contact between the cartridge and all of the resilient fingers provided on each spring clip 80 to prevent movement of the cartridges from the feeder except at the proper time for feeding the cartridges respectively to the breach chamber. The detents 80^c are so placed on the spring clip 80 that the cartridge may be reversed end-for-end in the feeder and one pair of oppositely disposed detents 80^c will always be in proper position to engage the annular groove 80^a of the cartridges to correctly hold each cartridge with respect to the feeder for reception in the feed channel of the feed box.

Riveted or otherwise secured to the top of each U-shaped member 78 of the feeder is a flat plate 75^a which has the same cross-sectional size and shape as the top plate of a rigid feeder such as illustrated in said co-pending application Serial No. 325,405. A somewhat similar plate 76^a is provided for the leading link 76 and a somewhat similar plate 77^a is provided for the trailing link 77. The several separate plates 75^a, 76^a and 77^a are in alignment when the articulated-link feeder is straight and they constitute the top plate or guide structure of the feeder. The top plate 76^a of the leading link differs from the others in that it is considerably longer to facilitate the entry of the feeder into the feed channel of the gun. The top plates 75^a and 76^a are notched at one side at 75^b, 76^b for purposes of being engaged by stop and positioning pawls illustrated in detail in said co-pending application Serial No. 325,405, and the details of which are not believed to be necessary for a proper understanding of the present invention. Each top plate 75^a, 76^a and 77^a together with the corresponding body portions 78, are transversely slotted at 75^c, 76^c and 77^c which slots are provided for engagement by feed pawls on the reciprocable feed slide 46, Fig. 2, the details of which are also set forth in said above referred to co-pending application Serial No. 325,405. The pivoting of the U-shaped members 78 adjacent the ends of the legs of each U-shaped portion provides a flexible feeder which, when coiled as shown in Fig. 5, occupies a minimum of space and, when so coiled, the spacing between the cartridges is only slightly greater than the spacing therebetween when the feeder is in the substantially flat position shown in Fig. 10.

Figs. 4 through 6, 9 and 10 show a cartridge supporting device in the form of a magazine adapted to carry an articulated-link feeder. Complete details of the magazine are described and claimed in divisional application Serial No. 437,850, filed on even date herewith. The magazine comprises two main front and rear plates 84 and 85 which are spaced apart and which are connected by longitudinal tie members 86, 87, 88 and 89. The two plates are also connected at the top by a horizontal flat plate 90 which is seated at its ends in slots in the plates. The front and rear plates 84 and 85 are provided respectively with brackets 84^a and 85^a which have vertical portions adapted to engage the outer face of the bracket 15 on the

feed box. The brackets 84^a and 85^a have flat walls which are apertured to receive the same studs 15^a, 15^a that are used to hold the loading tray which has already been described. Carried by the brackets 84^a and 85^a are spring-pressed latches 91, 91, which are the same in construction as the spring-pressed latches 16, 16 of the loading tray. These latches are controlled by means of buttons 92, 92 which correspond to the buttons 17, 17 of the loading tray. It will be clear that the magazine can be put in place on the gun in the same position as the loading tray, the same studs 15^a, 15^a being utilized for holding it. Preferably the plates 84 and 85 are provided with lugs 84^b and 85^b which project toward the right to engage the casing of the gun and thus more rigidly support the magazine.

The rear face of the plate 84 and the front face of the plate 85 are provided with helicoidal grooves which are of the same shape and are in longitudinal register with each other, these grooves being adapted to receive respectively the points and the heads of cartridges mounted in an articulated-link feeder such as the feeder 74 already described. In the particular magazine shown, the grooves in the plates are of sufficient length to accommodate 15 cartridges but it will be understood that the invention is not in any way limited to the particular number of cartridges shown.

Secured to the plate 90, at the bottom thereof, is a guide member 90^a having a T-slot 90^b therein adapted to receive and guide the plates 77^a, 75^a and 76^a constituting the guide structure of the feeder. The guide member 90^a projects at the right beyond the edge of the plate 90, as clearly shown in Fig. 4, and the slot 90^b is open at the top in this right hand projecting portion of the guide member. With the magazine in place, the guide means 90^a in the magazine and the guide means provided in the feed channel for the feeder are in register with each other.

For carrying the magazine when it is separated from the gun, there is provided a handle 93 having pintles at its ends which are seated in bearing apertures in the plates 84 and 85. When the magazine is in place on the gun, the handle may be in the position shown by the full lines in Fig. 5 but, when the handle is to be used for carrying the magazine, it is swung upward to the position shown in dot-and-dash lines in Fig. 5.

For convenience in loading the magazine, there is preferably provided a magazine loading plate 94 which is shown in Figs. 9 and 10. The plate 94 has upstanding end portions 94^a, 94^a which carry pins 94^b, 94^b which are similar to the pins 15^a, 15^a of the gun. This enables the loading plate 94 to be attached to the magazine and to be held by the same latches 91, 91 which normally serve to hold the magazine on the gun. The bottom of the loading plate 94 is so positioned that the loaded feeder is supported in exactly the proper position to enable the top plates of the feeder to readily enter the T-slot 90^b in the guide member 90^a of the magazine. In order to conveniently start the loading operation, the top plate of the trailing link of the feeder is placed in the open portion of the slot 90^b as shown in Fig. 9. The entire articulated-link feeder assembly is then pushed into the magazine, assuming a coiled position determined by the helicoidal grooves in the plates 84 and 85.

In order that the cartridges and the feeder may be accurately positioned in the magazine, there are provided two movable fingers 95 and 96 which

are rigidly connected with a longitudinal pivot pin 97 seated at its ends in bearing apertures in the plates 84 and 85. The free ends of the fingers 95 and 96 project through suitable apertures 95^a and 96^a provided in the plate 90, Figs. 4 and 9. Springs 98, 98 serve to bias the pivot pin and the fingers for movement in clockwise direction so as to tend to hold their end portions between the first two cartridges as shown in Fig. 5. This serves to accurately position the entire feeder assembly, that is the feeder and the cartridges, with the foremost engageable portion thereof in predetermined relationship with the magazine. With the construction shown the foremost engageable portion of the feeder assembly is the foremost feed slot, that is the slot 76^c in the leading link. This definite positioning of the feeder assembly is important for the reason that the slot 76^c must be in proper position to be engaged by a pawl on the feed slide 46 when the magazine is attached to the gun, details of which are shown in said co-pending application, Serial No. 325,405.

The fingers 95 and 96 would interfere with the loading of the magazine if allowed to remain in their normal positions. In order that the fingers 95 and 96 may be conveniently withdrawn to permit loading, one of the fingers, as for instance 95, is provided with a tail portion 95^a which is adapted to be engaged by a pin 93^a on the handle 93. By moving the handle toward the right to the position shown by full lines in Figs. 9 and 10, the pin 93^a is brought into engagement with the tail portion 95^a of the finger so as to elevate both the fingers to the position shown by full lines in Fig. 10. This makes it possible for the entire feeder, with the cartridges therein, to be pushed into the magazine without any interference by the fingers 95 and 96. As soon as the feeder and the cartridges are in place, the handle is released and the fingers then move to the position shown by dotted lines in Figs. 5 and 10 so as to accurately position the cartridges and the feeder. The fingers 95 and 96 do not prevent withdrawal of the feeder and the cartridges from the magazine, but they do resist such withdrawal and they thus prevent any accidental movement of the feeder and cartridges out of the magazine during such handling as may be necessary prior to the placement of the magazine on the gun.

When a magazine and an articulated-link feeder are used, it is necessary or at least desirable, to provide a chute at the right side of the gun for receiving and guiding the empty portion of the feeder. A suitable chute for this purpose is shown at 99 in Figs. 4 and 5. For holding the chute in place the right side of the feed box is provided with brackets 100, 100 which are apertured to receive pins 100^a adapted to extend through suitable holes in plates 99^a of the chute.

It will thus be seen from the foregoing that the present invention provides accessories, certain of which are adapted to be detachably secured to either the gun or another accessory to render the gun useful with a plurality of different sizes and types of feeders whereby the gun is rendered useful for a wider range of firing conditions depending upon whether a short burst or a longer interval of sustained automatic firing is desired. For short bursts, a rigid type feeder of five or ten rounds capacity may be fed to the gun by means of the loading tray. If a larger number of rounds is desired, the magazine may be used for the loading tray and detachably secured to the gun by the same means as the loading tray.

To facilitate the loading of the magazine, a

loading plate is provided to support and guide the flexible feeder assembly to the magazine, the loading plate being adapted for detachable engagement with the magazine by means identical in construction with those for securing the magazine to the gun. The novel detachable securing means are common to all of the various interconnectible accessories and the gun to permit the ready interchangeability of said gun and various accessories to render the gun adaptable for the wider range of uses described in the foregoing.

What I claim is:

1. The combination of means having a guideway adapted to contain cartridges and also having a surface extending outward from opposite sides of said guideway, a second means adapted to be detachably connected to said first means and having a channel adapted to receive cartridges and also having a surface extending outward from opposite sides of said channel, said surfaces of said means being complementary in shape whereby when said means are connected together with the guideway and channel thereof in alignment said surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said means together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs and latches being respectively mounted on one of said means and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said means when connected.

2. The combination of means having a guideway adapted to contain cartridges and also members extending outward from opposite sides of said guideway, a second means adapted to be detachably connected to said first means and having a channel adapted to receive cartridges and also having members extending outward from opposite sides of said channel, said members of one of said means having a plurality of apertures therethrough and said members of both of said means having surfaces respectively complementary in shape whereby when said means are connected together with the guideway and channel thereof in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said means together in the aforesaid manner and comprising two pairs of spaced notched studs carried by one of said means and adapted to respectively extend through the apertures in said members of the other of said means and also comprising two spring-pressed latches movably carried by said other means and each latch having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said means when connected.

3. The combination of means having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said means extending outward from opposite

sides of said opening, a second means adapted to be detachably connected to said first means and having a channel adapted to receive cartridges and a wall having an opening defining one end of said channel, one surface of each of said members of said first means being complementary in shape to one surface of said wall of said second member whereby when said means are connected together with the respective openings of said means disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said means together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs and latches being respectively mounted on one of said means and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said means when connected.

4. The combination of means having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said means extending outward from opposite sides of said guideway, each of said members having a plurality of spaced apertures there-through, a second means adapted to be detachably connected to said first means and having a channel adapted to receive cartridges and a wall having an opening defining one end of said channel, one surface of each of said members of said first means being complementary in shape to one surface of said wall of said second member whereby when said means are connected together with the respective openings of said means disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said means together in the aforesaid manner and comprising two pairs of spaced notched studs carried by said second means and adapted to respectively extend through the apertures in said members of said first means and also comprising two spring-pressed latches movably carried by said first means and each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned openings of said means when connected.

5. The combination of a magazine having a guideway adapted to contain cartridges and also having a surface extending outward from opposite sides of said guideway, a firearm adapted to be detachably connected to said magazine and having a feed channel adapted to receive cartridges and also having a surface extending outward from opposite sides of said feed channel, said surfaces of said magazine and firearm being respectively complementary in shape whereby when said magazine and firearm are connected together with the guideway and feed channel thereof in alignment said surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and

firearm together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being mounted on one of either the magazine or firearm and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said magazine and firearm when connected.

6. The combination of a magazine having a guideway adapted to contain cartridges and also members extending outward from opposite sides of said guideway, a firearm adapted to be detachably connected to said magazine and having a feed channel adapted to receive cartridges and also having members extending outward from opposite sides of said feed channel, said members of one having a plurality of apertures therethrough and said members of both said magazine and firearm having surfaces respectively complementary in shape whereby when said magazine and firearm are connected together with the guideway and feed channel thereof in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs carried by the one other than that having the apertured members and adapted to respectively extend through said apertures in said members of the other and said mechanism also comprising two spring-pressed latches movably carried by said other and each latch having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said magazine and firearm when connected.

7. The combination of a magazine having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said magazine extending outward from opposite sides of said opening, a firearm adapted to be detachably connected to said magazine and having a breech casing provided with a feed channel adapted to receive cartridges and an opening in a wall of said breech casing defining one end of said feed channel, one surface of each of said members of said magazine being complementary in shape to one surface of said wall of said breech casing whereby when said magazine and firearm are connected together with the respective openings therein disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being

mounted on one of either the magazine or firearm and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said magazine and firearm when connected.

8. The combination of a magazine having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said magazine extending outward from opposite sides of said guideway, each of said members having a plurality of spaced apertures therethrough, a firearm adapted to be detachably connected to said magazine and having a breech casing provided with a feed channel adapted to receive cartridges and an opening in a wall of said breech casing defining one end of said feed channel, one surface of each of said members of said magazine being complementary in shape to one surface of said wall of said breech casing whereby when said magazine and firearm are connected together with the respective openings therein disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs carried by said firearm and adapted to respectively extend through the apertures in said members of said magazine and said mechanism also comprising two spring-pressed latches movably carried by said magazine and each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned openings of said magazine and firearm when connected.

9. The combination of a loading tray having a guideway adapted to contain cartridges and also having a surface extending outward from opposite sides of said guideway, a firearm adapted to be detachably connected to said loading tray and having a feed channel adapted to receive cartridges and also having a surface extending outward from opposite sides of said feed channel, said surfaces of said loading tray and firearm being respectively complementary in shape whereby when said loading tray and firearm are connected together with the guideway and feed channel thereof in alignment said surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said loading tray and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being mounted on one of either the loading tray or firearm and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said loading tray and firearm when connected.

10. The combination of a loading tray having a guideway adapted to contain cartridges and also members extending outward from opposite sides

of said guideway, a firearm adapted to be detachably connected to said loading tray and having a feed channel adapted to receive cartridges and also having members extending outward from opposite sides of said feed channel, said members of one having a plurality of apertures therethrough and said members of both said loading tray and firearm having surfaces respectively complementary in shape whereby when said loading tray and firearm are connected together with the guideway and feed channel thereof in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said loading tray and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs carried by the one other than that having the apertured members and adapted to respectively extend through said apertures in said members of the other and said mechanism also comprising two spring-pressed latches movably carried by said other and each latch having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said loading tray and firearm when connected.

11. The combination of a loading tray having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said loading tray extending outward from opposite sides of said opening, a firearm adapted to be detachably connected to said loading tray and having a breech casing provided with a feed channel adapted to receive cartridges and an opening in a wall of said breech casing defining one end of said feed channel, one surface of each of said members of said loading tray being complementary in shape to one surface of said wall of said breech casing whereby when said loading tray and firearm are connected together with the respective openings therein disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said loading tray and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being mounted on one of either the loading tray or firearm and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and feed channel of said loading tray and firearm when connected.

12. The combination of a loading tray having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said loading tray extending outward from opposite sides of said guideway, each of said members having a plurality of spaced apertures therethrough, a firearm adapted to be detachably connected to said loading tray and having a breech casing provided with a feed channel adapted to receive cartridges and an opening in

a wall of said breech casing defining one end of said feed channel, one surface of each of said members of said loading tray being complementary in shape to one surface of said wall of said breech casing whereby when said loading tray and firearm are connected together with the respective openings therein disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said loading tray and firearm together in the aforesaid manner and comprising two pairs of spaced notched studs carried by said firearm and adapted to respectively extend through the apertures in said members of said loading tray and said mechanism also comprising two spring-pressed latches movably carried by said loading tray and each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned openings of said loading tray and firearm when connected.

13. The combination of a magazine having a guideway adapted to contain cartridges and also having a surface extending outward from opposite sides of said guideway, a loading plate adapted to be detachably connected to said magazine and having a channel adapted to receive cartridges and also having a surface extending outward from opposite sides of said channel, said surfaces of said magazine and loading plate being respectively complementary in shape whereby when said magazine and loading plate are connected together with the guideway and channel thereof in alignment said surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and loading plate together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being mounted on one of either the magazine or loading plate and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said magazine and loading plate when connected.

14. The combination of a magazine having a guideway adapted to contain cartridges and also members extending outward from opposite sides of said guideway, a loading plate adapted to be detachably connected to said magazine and having a channel adapted to receive cartridges and also having members extending outward from opposite sides of said channel, said members of one having a plurality of apertures therethrough and said members of both said magazine and loading plate having surfaces respectively complementary in shape whereby when said magazine and loading plate are connected together with the guideway and channel thereof in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and loading plate

together in the aforesaid manner and comprising two pairs of spaced notched studs carried by the one other than that having apertured members and adapted to respectively extend through said apertures in said members of the other and said mechanism also comprising two spring-pressed latches movably carried by said other and each latch having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said magazine and loading plate when connected.

15. The combination of a magazine having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said magazine extending outward from opposite sides of said opening, a loading plate adapted to be detachably connected to said magazine and having a channel adapted to receive cartridges and an opening defining one end of said channel and also having members extending outward from opposite sides of said channel, one surface of each of said members of said magazine being respectively complementary in shape to one surface of said members of said loading plate whereby when said magazine and loading plate are connected together with the respective openings therein disposed in alignment said complementary surfaces are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and loading plate together in the aforesaid manner and comprising two pairs of spaced notched studs and two spring-pressed latches each having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each also having a manually operable member for effecting disengagement of said latches from said stud notches, said pairs of studs being mounted on one

of either the magazine or loading plate and said latches being mounted on the other and one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned guideway and channel of said magazine and loading plate when connected.

16. The combination of a magazine having a guideway adapted to contain cartridges and an opening defining one end of said guideway, members on said magazine extending outward from opposite sides of said guideway, each of said members having a plurality of spaced apertures there-through, a loading plate adapted to be detachably connected to said magazine and provided with a channel adapted to receive cartridges and having an opening defining one end of said channel, members extending outward from opposite sides of said channel of said loading plate, one surface of each of said members of said magazine being respectively complementary in shape to one surface of said members of said loading plate whereby when said magazine and loading plate are connected together with the respective openings therein disposed in alignment said complementary surfaces of said member are at least partially coextensive and in abutting engagement to render the connection firm, and mechanism adapted to detachably connect said magazine and loading plate together in the aforesaid manner and comprising two pairs of spaced notched studs carried by said loading plate and adapted to respectively extend through the apertures in said members of said magazine and also comprising two spring-pressed latches movably carried by said magazine and each latch having a pair of teeth adapted to respectively automatically enter the notches of one pair of said studs and each latch also having a manually operable member for effecting disengagement of said latches from said stud notches, one of said pairs of spaced studs and one of said latches being disposed on each side of said aligned openings of said magazine and loading plate when connected.

GEORGE WEBB.