Dec. 19, 1944. C. G. SWEBILIUS 2,365,306

SELF-LOADING TAKEDOWN FIREARM

Filed Oct. 31, 1941 3 Sheets-Sheet 1

Fig. 1.

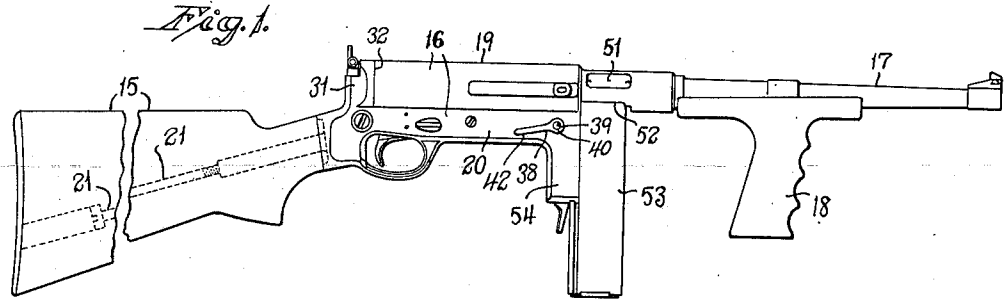


Fig. 11.

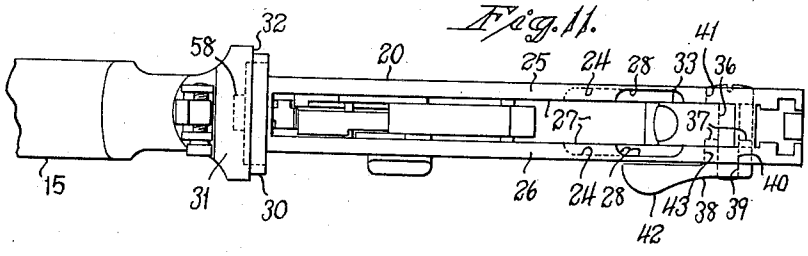


Fig. 12.

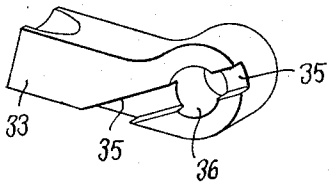
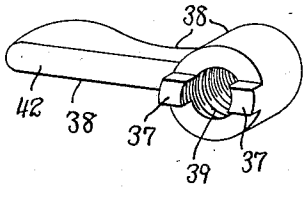


Fig. 13.



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SELF-LOADING TAKEDOWN FIREARM

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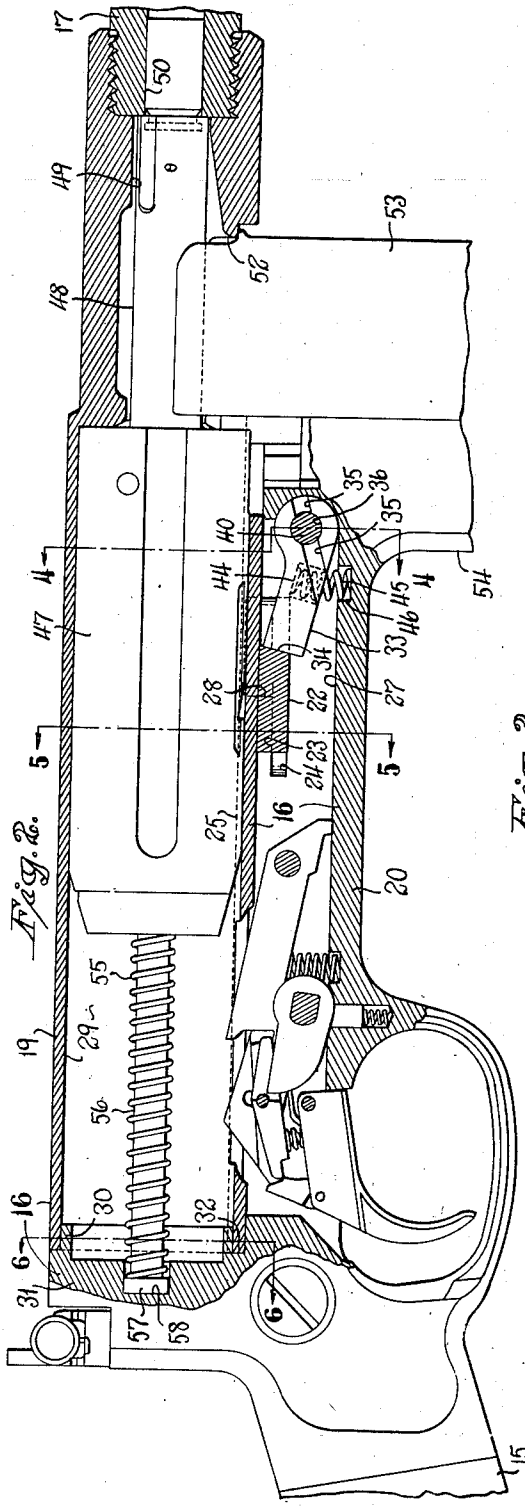


Fig. 2.

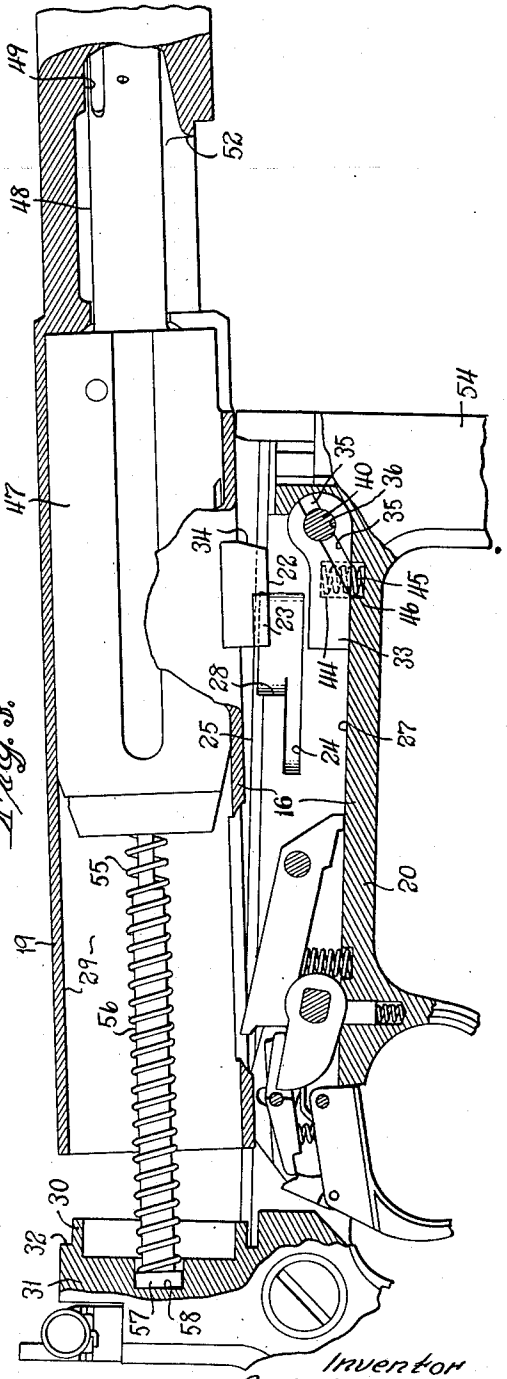


Fig. 2.

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SELF-LOADING TAKEDOWN FIREARM

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Fig. 4.

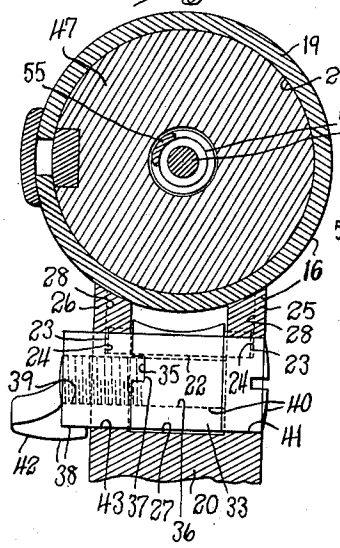


Fig. 5.

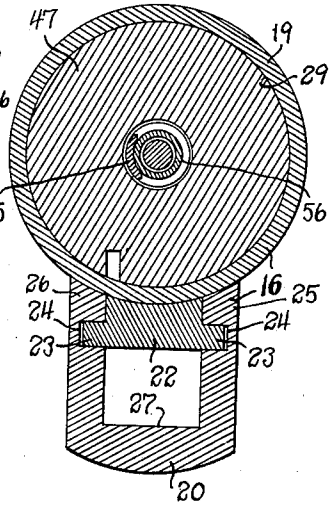


Fig. 6.

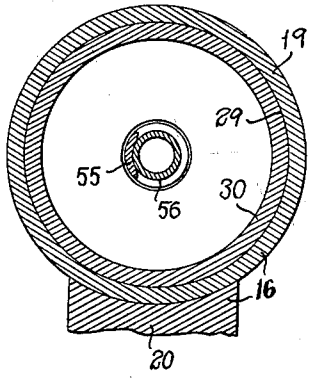


Fig. 7.

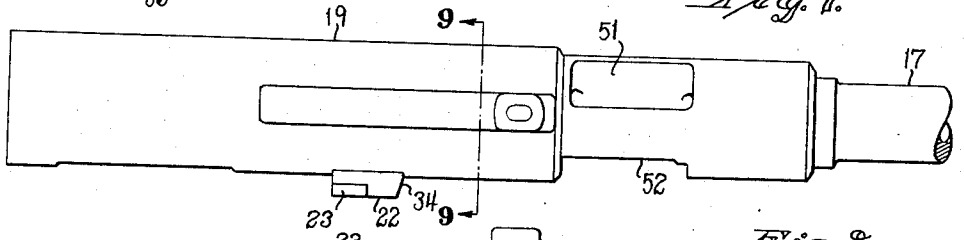


Fig. 8.

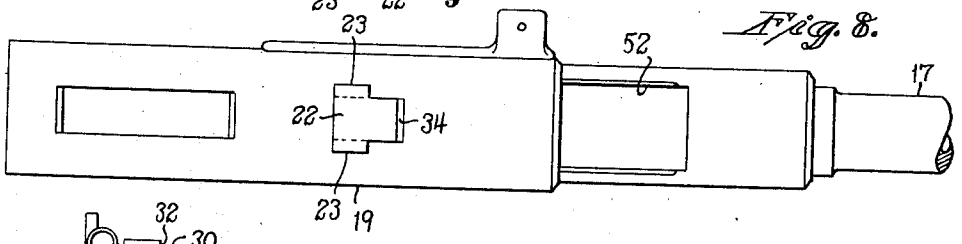


Fig. 10.

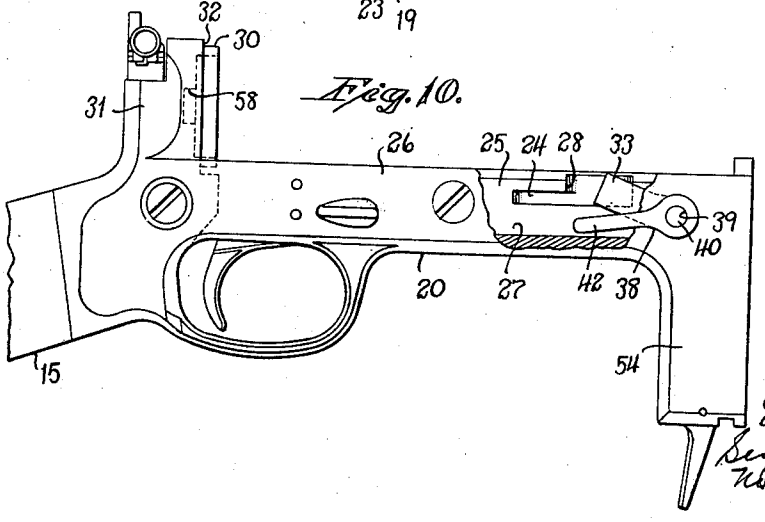
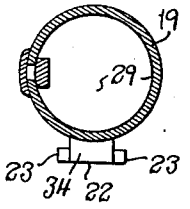


Fig. 9.



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UNITED STATES PATENT OFFICE

2,365,306

SELF-LOADING TAKEDOWN FIREARM

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Original application October 15, 1940, Serial No. 361,208. Divided and this application October 31, 1941, Serial No. 417,249

1 Claim. (Cl. 42—75)

This application constitutes a division of my co-pending application Serial No. 361,208, filed October 15, 1940, now patent No. 2,342,824, dated Feb. 29, 1944.

The present invention relates to improvements in takedown self-loading repeating firearms, that is to say, takedown firearms of the type wherein the forces developed by the discharge of a given cartridge are utilized to operate the firearm and effect the extraction and ejection of the just-fired cartridge and the insertion of a fresh cartridge, preparatory to another cycle of operation.

One of the objects of the present invention is to provide a superior self-loading takedown repeating firearm wherein the parts are organized together so that they may be readily taken down for convenience in transportation but in which provision is made for securely coupling the parts when the same are assembled.

Another object of the present invention is to provide a superior self-loading takedown firearm construction wherein releasable-means is employed for holding the separable units of the firearm together and wherein the releasable-means is of such character that wear developed as the result of long periods of use is amply compensated for.

A still further object of the present invention is to provide a superior firearm of the character referred to in which the coupling-means for retaining the separable units of the firearm in assembled relationship are of such rugged character as to effectively withstand long continued periods of use.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art and which are not claimed in any separate application.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is a view in side elevation of a self-loading takedown repeating firearm embodying the present invention;

Fig. 2 is a view of the central portion of the firearm shown mainly in vertical central-longitudinal section and partly in side elevation;

Fig. 3 is a view corresponding to Fig. 2 but showing the upper receiver-member and the lower receiver-member in partly-separated relative positions;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a similar view taken on the line 5—5 of Fig. 2;

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 2;

Fig. 7 is a view in side elevation of the upper receiver-unit detached, together with a portion of the barrel;

Fig. 8 is an underside view of the structure of Fig. 7;

Fig. 9 is a transverse sectional view taken on the line 9—9 of Fig. 7;

Fig. 10 is a view mainly in side elevation and partly in vertical section of the lower receiver-member, together with a fragment of the buttstock;

Fig. 11 is a top or plan view of the structure of Fig. 10;

Fig. 12 is a perspective view of the pivotal latching-lever detached; and

Fig. 13 is a similar view of the latch-releasing lever detached.

The particular self-loading take-down repeating firearm herein chosen for purposes of illustrating the present invention comprises in the main a buttstock 15, a two-part receiver generally designated by the reference character 16, a barrel 17, and a fore-end grip 18.

The receiver 16 above referred to includes an upper receiver-member 19 and a lower receiver-member 20 which are normally firmly and rigidly coupled together but which, as will hereinafter appear, are readily separable one from the other. The said lower receiver-member 20 is rigidly attached at its rear end to the forward end of the buttstock 15 by means of a bolt 21 shown in Fig. 1. The upper receiver-member 19 is generally of cylindrical form exteriorly and has threaded into its extreme forward end the rear end of the barrel 17, to which latter in turn is secured the fore-end grip 18. The upper receiver-member 19, together with the barrel 17 and fore-end grip 18, constitutes a unit demountable from and assemblable with a buttstock-unit which is composed, in the main, of the lower receiver-member 20 and the buttstock 15.

At about substantially midway of its length, the upper receiver-member 19 is provided with a rigid depending coupling-lug 22 which at its rear portion is of inverted T-shaped form in cross section, as is especially well shown in Fig. 9. The said coupling-lug is provided on each of its respective opposite sides with one of two oppositely-projecting coupling-ribs 23—23, the upper faces of which constitute upwardly-facing coupling-abutments, for purposes as will hereinafter

appear. The coupling-ribs 23—23 just referred to are respectively adapted to enter coupling-grooves 24—24 formed in the respective opposite side-walls 25 and 26 of a longitudinally-extending and upwardly-opening mechanism-receiving chamber 27 in the lower receiver-member 20. The respective upper walls of the coupling-grooves 24—24 constitute, in effect, downwardly-facing coupling-abutments engageable respectively by the upper faces of the coupling-ribs 23—23 of the upper receiver-member 19, in a manner as will be more fully hereinafter decribed.

Each of the coupling-grooves 24—24 in the lower receiver-member 20 is connected at its front to the upper edge of the lower receiver-member 20 by means of one of two similar vertical clearance-passages 28—28, one of which is formed in each of the side-walls 25 and 26 and which are sufficiently wide in a direction lengthwise of the firearm-structure to permit the ready entry of the coupling-ribs 23—23 of the upper receiver-member 19 for horizontal alignment with the respective forward ends of the coupling-grooves 24—24 therein, as particularly well shown in Figs. 10 and 11.

The upper receiver-member 19, as before noted, is generally speaking of tubular form and is provided with a substantially-cylindrical interior mechanism-receiving chamber 29 in its rear portion, which mechanism-receiving chamber substantially corresponds to the external diameter of a locating-ring 30. The said locating-ring 30 is formed integral with and forwardly projects from a breech-lug 31 formed integral with and upstanding from the rear portion of the lower receiver-member 20, as is especially well shown in Fig. 10. Surrounding the integral locating-ring 30 is a forwardly-facing seat 32 against which the rear edge of the upper receiver-member 19 is normally seated.

For the purpose of releasably retaining the upper receiver-member 19 in assembled relationship with respect to the lower receiver-member 20, a latching-lever 33 is employed which is normally upwardly and rearwardly inclined, as particularly well shown in Fig. 2. The rear face of the said latching-lever 33 has camming engagement with an inclined forwardly-facing locking-abutment 34 formed on the coupling-lug 22 of the upper receiver-member 19. The said latching-lever 33, acting through the locking-abutment 34 of the upper receiver-member 19, serves to maintain the coupling-ribs 23—23 in the coupling-grooves 24—24 and also to maintain the rear edge of the upper receiver-member 19 in seated engagement with the annular forwardly-facing seat 32 on the breech-lug 31 of the lower receiver-member 20.

The latching-lever 33 above referred to is provided adjacent its forward end on one side face with two aligned coupling-grooves 35—35 (Fig. 12) extending radially with respect to a transverse passage 36 located in the forward portion of the latching-lever 33 and of cylindrical form. The said latching-lever 33 is located in the forward portion of the mechanism-receiving chamber 27 in the lower receiver-member and is of a width substantially corresponding to the width of the adjacent portion of the said chamber.

The coupling-grooves 35—35 in the latching-lever 33 respectively receive one of a pair of coupling-lugs 37—37 projecting inwardly from the inner face of a latch-releasing lever 38, as is especially well shown in Fig. 13. The coupling-lugs 37—37 are located on the inner face of the latch-releasing lever 38 in longitudinal alignment on the respective opposite sides of a threaded passage 39 formed in the said lever 38 and adapted to register with the passage 36 in the latching-lever 33.

For the purpose of holding the latching-lever 33 and the latch-releasing lever 38 against axial lateral separation, a coupling-screw 40 (Fig. 4) is employed which has its shank first extended through the passage 36 in the latching-lever 33, then into threaded engagement with the threaded passage 39 in the latch-releasing lever 38. The head-portion of the coupling-screw 40 bears in a cylindrically-contoured opening 41 in the side wall 25 of the mechanism-receiving chamber 27 of the lower receiver-member 20. Save for its offsetting finger-piece 42, the latch-releasing lever 38 is of cylindrical form and is mounted with capacity for turning movement in an opening 43 formed in the complemental side wall 26 of the mechanism-receiving chamber 27 of the lower receiver-member 20.

Substantially midway of its length, the latching-lever 33 is formed with a downwardly-opening spring-pocket 44 receiving the upper end of a helical latch-spring 45 which acts to engage the rear end of the said latching-lever 33 with the latching-abutment 34, before referred to. The lower end of the latch-spring 45 is seated in an upwardly-opening spring-pocket 46 formed in the lower receiver-member 20 in the bottom of the mechanism-receiving chamber 27 therein.

Reciprocating in the mechanism-receiving chamber 29 of the upper receiver-member 19 is a cylindrically-contoured breech-bolt 47 formed with an integral coaxial and forwardly-projecting breech-closing stem 48. The said breech-closing stem 48 is cylindrically contoured and is adapted to be entered into and retired from a longitudinal passage 49 formed in the forward portion of the upper receiver-member 19.

At its rear end, the said passage 49 opens into the mechanism-receiving chamber 29 and at its forward end communicates with the rear end of a cartridge-chamber 50 formed in the rear end of the barrel 17. Leading upwardly and outwardly from the passage 49 which receives the breech-closing stem 48, is an ejection-opening 51, as is shown especially well in Figs. 1 and 7. Extending downwardly from the said passage 49 is a vertical magazine-receiving passage 52 which normally receives the upper end of a box-magazine 53 which may be of any convenient or usual construction and not requiring detailed description herein other than to point out that it is normally engaged with the forward portion of an integral lug 54 depending from the forward portion of the lower receiver-member 20.

The breech-bolt 47 above referred to is urged forwardly into its breech-closing position by means of a helical breech-closing spring 55 encircling a plunger 56 which is provided at its rear end with a head 57. The rear end of the breech-closing spring 55 seats against the forward face of the head 57 of the plunger 56, which head is seated in a forwardly-opening pocket 58 formed in the front face of the upstanding breech-lug 31 of the lower receiver-member 20.

Any suitable firing mechanism may be employed for the firearm and such firing mechanism does not require detailed description herein.

To separate the upper receiver-member 19 and the parts carried thereby from the lower receiver-member 20 and the parts carried thereby, the magazine 53 is first removed and the finger-piece

42 of the latch-releasing lever 38 should be depressed to thereby correspondingly depress the rear end of the latching-lever 33 to thus shift the said latching-lever from the position in which it is shown in Fig. 2 into the position in which it is shown in Fig. 3. By the movement just referred to, the rear end or face of the latching-lever 33 is disengaged from the latching-abutment 34 of the coupling-lug 22 of the upper receiver-member 19.

When the latching-lever is depressed as above described, the upper receiver-member 19 and the parts organized therewith may be moved forwardly relative to the lower receiver-member 20 and the parts organized with the latter, until the rear portion of the upper receiver-member 19 is free of the locating-ring 30 and the coupling-ribs 23—23 are forwardly retired out of the coupling-grooves 24—24 and brought into registry with the vertical clearance-passages 28—28. The upper receiver-member 19 together with the parts organized therewith (including the breech-bolt 47) may be now lifted upwardly clear of the lower receiver-member 20, as indicated in Fig. 3. The upper receiver-member 19 together with the barrel 17 and other parts organized with the said upper member, may be completely removed from the lower receiver-member 20.

When the upper receiver-member 19 is reinstalled upon the lower receiver-member 20, the latching-lever 33 will again swing up into the position in which it is shown in Fig. 2 to thereby engage its rear face with the forwardly-facing latching-abutment 34 of the coupling-lug 22 of the upper receiver-member 19. Owing to the inclination of both the rear face of the latching-lever 33 and the latching-abutment 34, the interengagement of the said features will exert a slight camming action to firmly seat the rear end of the upper receiver-member 19 against the seat 32 of the lower receiver-member 20.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

A self-loading repeating firearm including in combination: a lower receiver-member having at its rear an upstanding breech-lug and formed forwardly of the said breech-lug with an upwardly-opening recess between its respective opposite side walls and provided in each of the said side walls with one of two longitudinally-extending downwardly-facing coupling-abutments and with one of two vertical clearance-passages located forwardly of and intersecting both the adjacent one of the said coupling-abutments and the upper edge of the side wall of the said recess; an upper receiver-member having a depending coupling-lug downwardly entering the recess in the said lower receiver-member and provided on each of its respective opposite sides with one of two longitudinally-extending coupling-ribs also extending laterally from the coupling-lug and sufficiently short to enter one of the vertical clearance-passages in the said lower receiver-member, each of the said coupling-ribs having its upper face engageable with the adjacent one of the downwardly-facing longitudinally-extending coupling-abutments in the adjacent side wall of the said lower receiver-member by a relative rearward longitudinal movement of the said upper receiver-member; and a manually-releasable pivotal latching-lever pivoted in the upwardly-opening recess in the said lower receiver-member about an axis extending crosswise thereof and having a rearwardly-extending camming portion engaging directly with the depending coupling-lug of the said upper receiver-member to positively force the same rearwardly to hold in engagement the coupling-ribs of the upper receiver-member and the coupling-abutments of the lower receiver-member.

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