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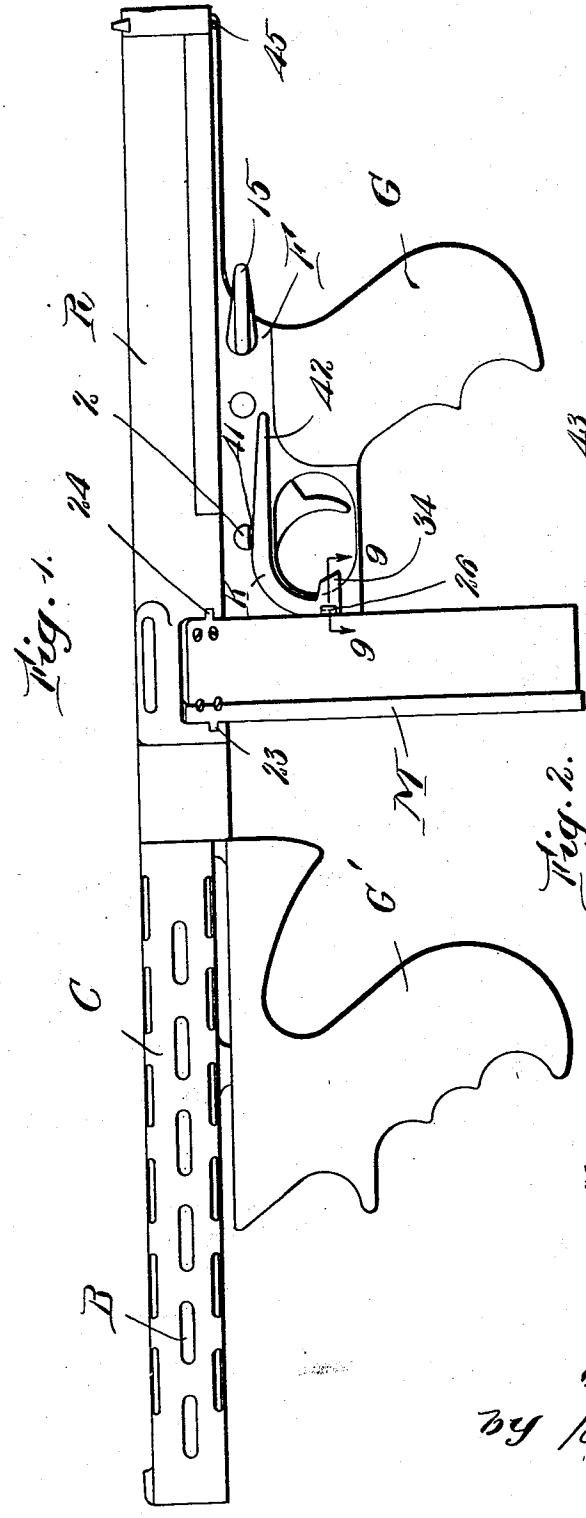
O. V. PAYNE.
FIREARM.
APPLICATION FILED MAY 15, 1919.

1,349,345.

Patented Aug. 10, 1920.
4 SHEETS—SHEET 1.



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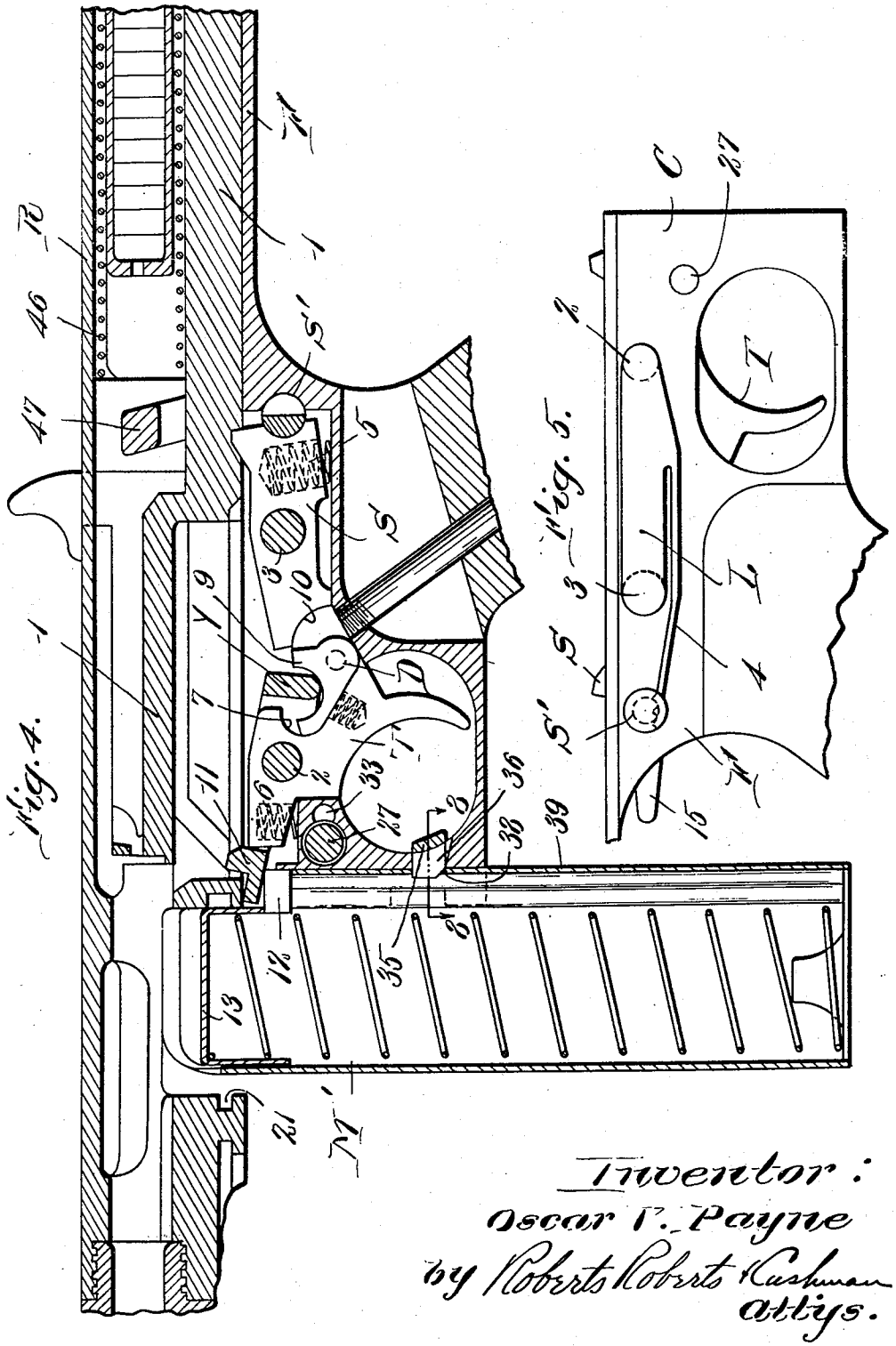

Fig. 4.

Fig. 5.

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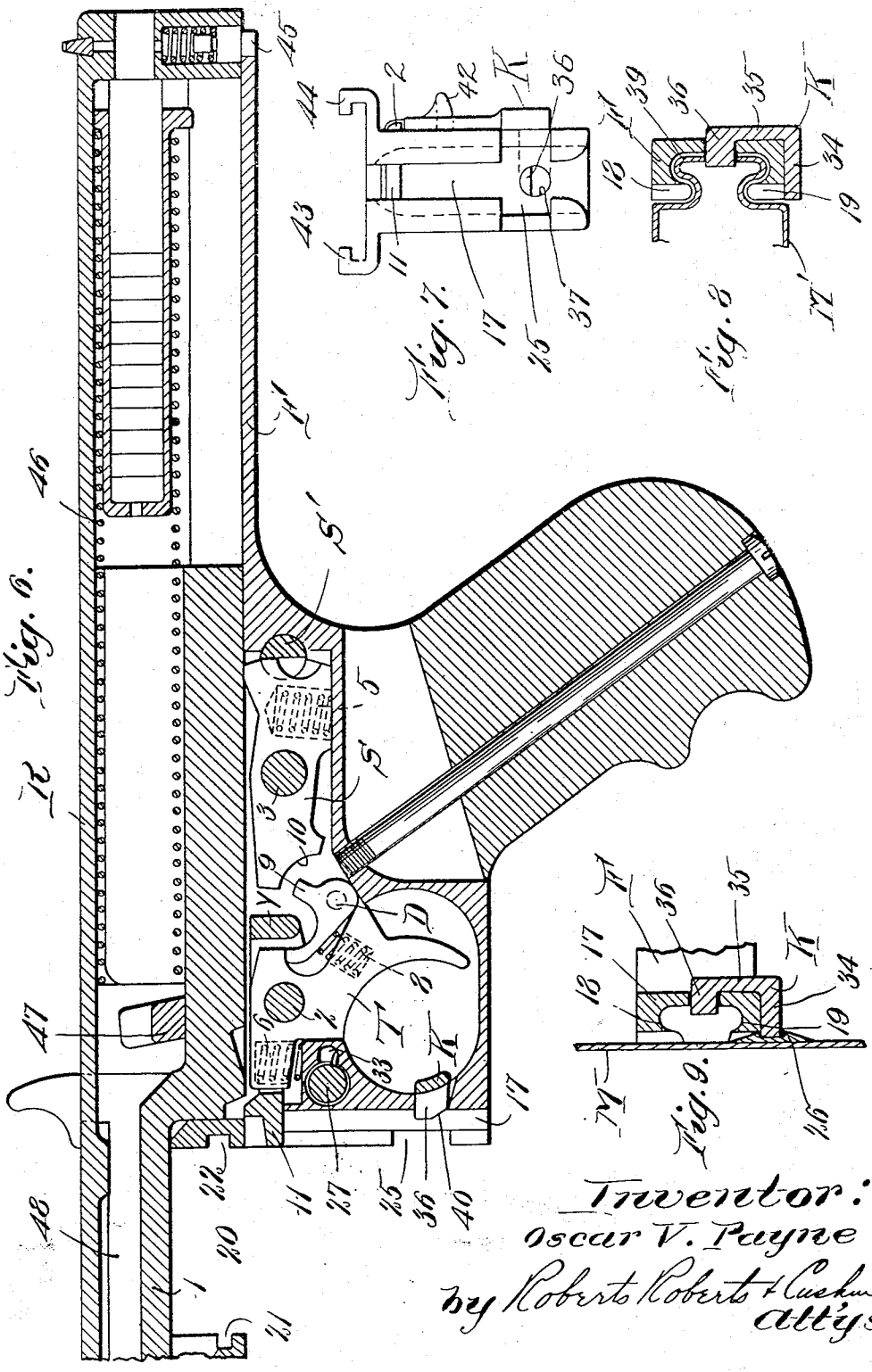

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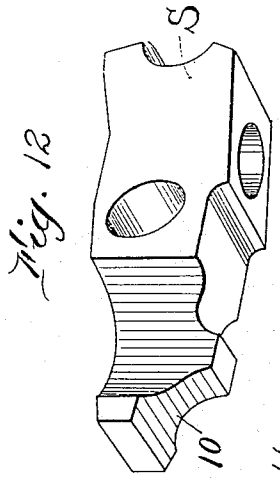

Fig. 12

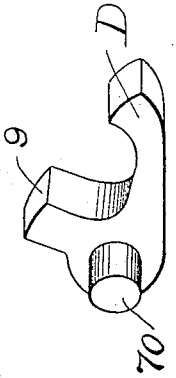

Fig. 13

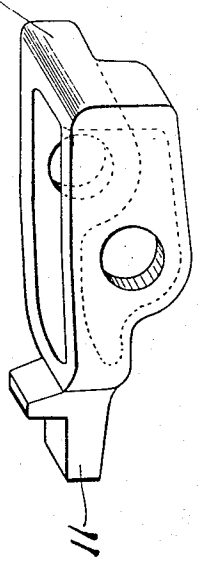

Fig. 15

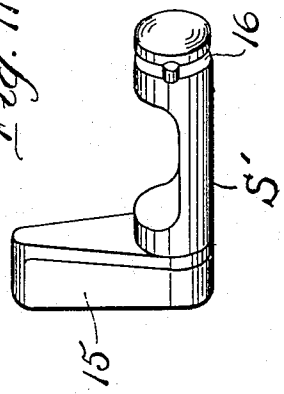

Fig. 11

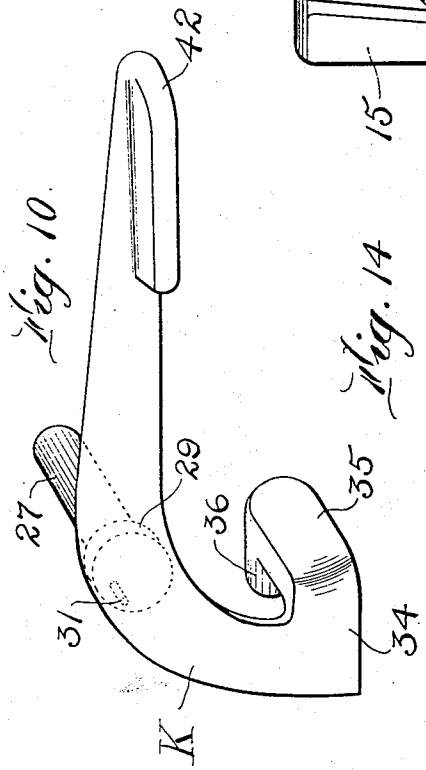

Fig. 10.

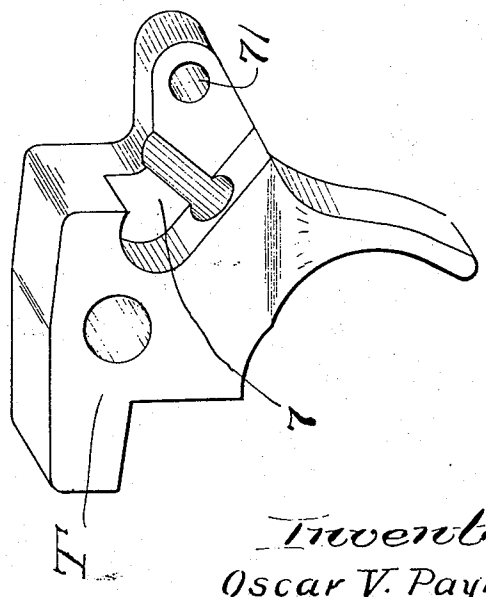

Fig. 14

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UNITED STATES PATENT OFFICE.

OSCAR V. PAYNE, OF CLEVELAND, OHIO, ASSIGNOR TO AUTO-ORDNANCE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

FIREARM.

1,349,345. Specification of Letters Patent. Patented Aug. 10, 1920.

Application filed May 15, 1919. Serial No. 297,282.

To all whom it may concern:

Be it known that I, OSCAR V. PAYNE, a citizen of the United States of America, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Firearms, of which the following is a specification.

This invention relates particularly to a frame associated with the receiver of a firearm for detachably supporting magazines and for housing the control mechanism of the firearm and to the control mechanism carried by the frame. The subject matter of the present application is especially intended to be employed with firearms of the character disclosed in my copending applications, Sr. No. 282,642, filed March 14, 1919, and Sr. No. 297,283, filed on even date herewith, although it is to be understood that the invention in many of its aspects may be adapted to various types of pistols, rifles, machine guns and other firearms.

The principal objects of the invention are to provide means for controlling the action of a firearm which is simple and substantial in construction, which may be manufactured at a relatively low cost, which involves a minimum number of parts, which may be readily assembled and disassembled without the use of tools, and which is safe and reliable in use.

Another object is to provide means for automatically retaining the breech mechanism of an automatic firearm in retracted position after the last cartridge contained in the magazine has been fired, and to associate this means with the trigger in such manner that the automatic operation of the firearm may be continued after a filled or partially filled magazine has been substituted for the empty magazine merely by pulling the trigger again. A corollarial object is to stop the automatic action of the firearm at any instant merely by releasing the trigger.

Another object is to provide improved safety means for locking the breech action so that the gun will not fire even though the trigger be pulled and to arrange the safety means so that it is effective under all conditions and is convenient to operate.

A further object is to correlate the parts of the control mechanism in such manner that the parts mutually coöperate to hold themselves in assembled relationship, thereby eliminating the necessity of separate holding means such as the bolts and screws ordinarily provided, and to arrange the parts so that they may be readily detached from each other and from the frame of the firearm without the use of tools.

Another object is to provide means for detachably securing to a firearm magazines of different types, as for example a drum magazine sliding into the firearm from the side or a box magazine sliding into the firearm from the bottom, and to provide a single means for latching a magazine of either type in position.

Other objects of the invention will be apparent from the following description and accompanying drawings, in which—

Figure 1 is a side elevation of the firearm completely assembled, showing a magazine of the drum type attached thereto;

Fig. 2 is a vertical central longitudinal section of the frame of the gun;

Fig. 3 is a horizontal section of the frame of the gun showing certain parts connected thereto, this section being taken on line 3—3 of Fig. 2;

Fig. 4 is a vertical central longitudinal section of the central portion of the firearm, showing the parts in inoperative position, and showing a magazine of the box type attached thereto;

Fig. 5 is a side elevation of the frame viewed from the right-hand side, parts being broken away;

Fig. 6 is a view similar to Fig. 4 showing the parts in firing position;

Fig. 7 is a front elevation of the frame of the firearm;

Fig. 8 is a horizontal section taken on line 8—8 of Fig. 4;

Fig. 9 is a similar section taken on line 9—9 of Fig. 1; and

Figs. 10 to 15 are perspective views of the magazine catch, safety catch, sear, disconnector, trigger and yoke.

The particular embodiment of the invention chosen for the purpose of illustration

comprises a receiver R, a barrel B surrounded by a cooling tube C, a rear grip G, a fore grip G', a frame F and means for mounting beneath the forward end of the receiver either a drum magazine M such as shown in Fig. 1 or a box magazine M' such as shown in Fig. 4. The general arrangement of the receiver, frame, barrel, cooling tube and grips is described and claimed in my co-pending application, Serial No. 297,283. The breech closing mechanism disposed within the receiver is described and claimed in my prior application Serial No. 282,642. The extractor and ejector mechanism associated with the bolt and receiver is described and claimed in my co-pending application Serial No. 297,284. Magazines of the types shown in Figs. 1 and 4 respectively are described and claimed in my co-pending applications Sr. No. 297,285, and Sr. No. 297,286, both filed on even date herewith. The present application is particularly directed to the frame F and the associated control mechanism which coöperates with the breech closing mechanism and the magazines.

The frame F is slidably connected to the receiver R by means of guides 43 and 44 (Fig. 7) fitting into grooves in the opposite sides of the receiver, the frame sliding on to the receiver from the rear and being retained in position by the plunger catch 45. The frame F is provided with a chamber adapted to contain the control mechanism. The bottom of the receiver and the top of the frame are provided with registering openings to permit a part of the control mechanism to extend upwardly from the frame into operative relationship with the breech closing mechanism in the receiver. In general the control mechanism comprises a trigger T, a sear S, a disconnector D, a yoke Y, a catch K, a safety catch S' and a combined supporting and locking member L.

The member L comprises an elongate plate adapted to lie along the right-hand side of the frame F and shafts 2 and 3 extending inwardly from this plate through alined openings 2' and 3' in the opposite walls of the frame. The member L also has a spring finger 4 extending rearwardly to the safety catch S'. The sear S is pivotally mounted on the shaft 3 and a spring 5 is provided normally to urge it in a counter-clockwise direction (Figs. 4 and 6) about the shaft 3. A trigger T is pivotally mounted on the shaft 2 and is normally urged in a clockwise direction about this shaft by means of a spring 6. The trigger T is provided on its left side with a recess 7 shaped to receive the disconnector D. The disconnector D has a pivot lug 70 extending into a bearing opening 71 in the trigger so as to be moved relatively to the trigger either into the inoperative position shown in Fig. 4 or into the operative position shown in Fig. 6. A spring 8 is provided normally to urge the disconnector into the position shown in Fig. 6. The disconnector is provided with a projecting lug 9 which is adapted to engage against the curved face 10 of the sear when the trigger is pulled with the disconnector in the operative position shown in Fig. 6. The yoke Y surrounds the upper portion of the trigger T and is pivotally mounted on opposite sides of the trigger on the same shaft 2 upon which the trigger is mounted. A finger 11 projects from the forward end of the yoke through an opening in the forward side of the frame F into position to be engaged by a member 12 mounted on the follower 13 of a magazine such as shown at M' in Fig. 4, the construction of this magazine being described and claimed in my co-pending application Serial No. 297,286.

The safety catch S' comprises a shaft extending through alined openings 14 in the opposite sides of the frame F. On the left-hand side of the frame the shaft is provided with an actuating handle 15 and on the right-hand side of the frame the shaft is provided with a groove 16 adapted to receive the end of the spring finger 4 on member L. Half of the shaft is cut away through the portion extending across the chamber in the frame F so that when the handle 15 extends rearwardly as shown in Figs. 1 and 3 the cut-away side of the shaft faces rearwardly (Figs. 3 and 4) and when the handle 15 is rotated through 180° to extend forwardly the cut-away portion faces forwardly (Fig. 6). The rear end of the sear S is provided with a transverse semi-circular groove adapted to receive the remaining half of the shaft when the sear is in its operative position as shown in Fig. 4. When the safety catch is rotated into the position shown in Fig. 6, it completely disengages the sear so that the sear may be moved into the inoperative position as shown in Fig. 6.

The forward end of the frame F, shown in elevation in Fig. 7, is provided with a vertical guideway 17, having overhanging flanges 18 and 19, adapted to receive the guide 39 of a magazine of the type shown in Figs. 4 and 8. The receiver R is provided with an opening 20 adapted to receive the upper end of a magazine either of the type shown in Fig. 1 or of the type shown in Fig. 4. This opening is provided with horizontal grooves 21 and 22 adapted to receive the guides 23 and 24 on the magazine of the type shown in Fig. 1, the grooves 21 and 22 extending entirely across the receiver so that the magazine may be inserted or removed from either side or inserted from one side and removed from the other side. The forward end of the frame F is provided with

a horizontal channel 25 near its lower end to receive a latch member 26 on the magazine M which is adapted to coöperate with the catch K to hold the magazine in position.

The catch K comprises an L-shaped lever extending along the left-hand side of the frame as shown in Figs. 1, 3 and 7. This lever is provided with an integral shaft 27 adapted to extend into an opening 28 in the frame F. As shown in Fig. 3 the opening 28 is considerably larger than the shaft 27 thereby providing an annular space between the shaft and the wall of the opening. The right-hand end of the shaft is journaled in the right-hand side of the frame F and the left-hand end of the shaft is provided with an enlargement 29 which fits into the opening 28. Disposed in the annular space between the shaft 27 and the wall of the opening 28 is a coil spring 30, one end 31 of which is anchored in the enlargement 29 and the other end 32 of which is bent outwardly to extend into a groove 33 which extends along the rear side of the opening 28. The lower end of the catch K comprises a portion 34 which extends rearwardly, a portion 35 which extends inwardly, and a portion 36 which extends forwardly through an opening 37 in the frame F. The portion 36 projects somewhat into the guideway 17 so as to hook into an opening 38 in the guide 39 of the magazine M' (Figs. 4 and 8). The spring 30 urges the catch K in a clockwise direction (Fig. 1) into engagement with the magazine, the portion 34 of the catch coöperating with the catch 26 of the magazine of the type shown in Figs. 1 and 9 to hold the magazine against horizontal movement in guideways 21 and 22 and the portion 36 of the catch hooking into the opening 38 of the magazine of the type shown in Figs. 4 and 8 to hold the magazine from sliding downwardly out of the guideway 17. The lower edge 40 of the portion 36 of the catch is beveled as shown in Figs. 4 and 6 so that the catch is automatically moved out of the path of the guide 39 of the magazine M' (Fig. 4) when the magazine is moved upwardly into position, and the catch is returned to its normal position by the spring 30 after the opening 38 in the magazine guide comes into alinement with the portion 36 of the catch. The latch 26 on the magazine M is beveled on both sides as shown in Fig. 9 so that the catch K is automatically retracted when a magazine of the type M shown in Fig. 1 is moved into position from either side, the spring 30 snapping the catch into holding position when the magazine is in place as in the case of a magazine of the type shown in Fig. 4.

As shown in Figs. 1, 3 and 7 the shaft 2 projects from the left-hand side of the frame over the catch K and the end of this shaft is provided with an under-cut recess 41 adapted to permit the catch to rotate in a counter-clockwise direction (Fig. 1) a sufficient distance to disengage the magazines but not a sufficient distance to permit the portion 36 of the catch to be withdrawn from the opening 37 in the frame. However, when the shaft 2 is removed from the frame the catch may be rotated in a counter clockwise direction a sufficient distance to permit the portion 36 to leave the opening 37 whereupon the catch K may be removed to the left from the frame together with both the shaft 27 formed integrally therewith and the spring 30 which is anchored to the enlargement 29.

From the above description it will be evident that to attach the magazine of the type shown in Fig. 1 it is merely necessary to slide the magazine horizontally into place from either side until the catch K snaps into latch 26 and to attach a magazine of the type shown in Fig. 4 it is merely necessary to slide the magazine upwardly into place until the catch K snaps into the opening 38. To detach either magazine it is merely necessary to rotate the catch K by means of handle 42 a sufficient distance in a counter-clockwise direction to disengage the catch from the magazine whereupon the magazine may either be manually removed or in the case of a magazine of the type shown in Fig. 4 the magazine may slide out by gravity.

To disassemble the parts the frame F is slipped off of the receiver from the rear, the catch 45 first being pressed upwardly out of the path of the frame F. The spring finger 4 (Fig. 5) is then sprung out of the groove 16 of the safety catch S' whereupon the safety catch may be withdrawn from the left-hand side of the frame and the member L carrying the shafts 2 and 3 may be withdrawn from the right-hand side of the frame. After the shafts 2 and 3 have been removed the sear S, trigger T, disconnector D and yoke Y will drop out upon inverting the frame F. The springs 5, 6 and 8 are preferably anchored in the sear and the trigger respectively by expanding the last turn of each spring so that it will tightly engage the peripheral wall of the circular recess into which it fits. After the shaft 2 has been removed as aforesaid the catch K may be rotated in a counter-clockwise direction until the portion 36 (Figs. 4 and 9) completely clears the opening 37 in the frame whereupon the catch may be withdrawn from the left-hand side of the frame as above mentioned.

To reassemble the parts the trigger T, yoke Y, disconnector D and sear S are dropped into the frame approximately in their normal positions, and after first tensioning the spring 30 by winding the free

end 32 around the shaft 27 the catch K is applied by inserting the shaft 27 in the opening 38 with the end 32 of the spring sliding in the groove 33. After the catch has been moved inwardly against the side of the frame the catch is permitted to be rotated in a clockwise direction by means of the spring 30 until the portion 36 passes into the opening 37 and the portion 35 engages the receiver. The member L is applied by inserting the shafts 2 and 3 through the openings 2′ and 3′ in the frame and through the bearing openings in the yoke Y, trigger T and sear S respectively. The safety catch S′ is then inserted into opening 14 and when in normal position the end of spring 4 snaps into the groove 16 thereby locking all the parts together.

The operation of the control mechanism is as follows: Assuming the bolt to be held in retracted position by the sear S, as shown in Fig. 4 the firearm may be rendered absolutely safe by rotating the safety catch S′ into the position shown in Figs. 1, 3 and 4 wherein it locks the sear in engagement with the bolt. To fire the gun the handle 15 of the safety catch S′ is rotated downwardly through an arc of 180° to the position shown in Fig. 6 wherein the sear is wholly disengaged from the catch. Upon pulling the trigger T the disconnector D is moved upwardly, the projection 9 on the disconnector engages the surface 10 on the sear (Fig. 6) to move the sear out of engagement with the bolt, and the bolt is urged forwardly into firing position by the spring 46.

As fully described in my prior application Serial No. 282,642, the further operation of the gun is automatic, the bolt being locked in firing position by the lock 47, the firing member 48 being automatically advanced relatively to the bolt to fire the cartridge, the bolt being automatically retracted by the breech pressure when the pressure has decreased to a relatively low value, the spring 46 again advancing the bolt, and so on until all of the cartridges in the magazine have been fired or until the trigger T has been released. Upon releasing the trigger at any instant the sear S engages the bolt when in retracted position and stops the firing. When the magazine M′ (Fig. 4) becomes empty the projection 12 on the follower 13 engages the forward end 11 of yoke Y and rotates the yoke Y in a clockwise direction into the position shown in Fig. 4, thereby rotating the disconnector D into the position shown in Fig. 4 wherein it disengages the sear S and permits the sear to be moved, by means of spring 5, into position to engage the bolt when it is in retracted position after firing the last cartridge. Thus when the magazine becomes empty and the firing ceases the bolt stops in retracted position. Upon removing the magazine, the yoke Y moves into the position shown in Fig. 6 thereby permitting the disconnector D to move into position to engage the sear when the trigger is again pulled.

From the above description it will be evident that all of the parts of the control mechanism may be assembled or disassembled without the use of tools and without removing a single bolt or screw. It will also be evident that magazines of radically different types may be attached to the firearm without employing any special adaptor and that a single catch serves to hold a magazine of either type in position.

I claim:

1. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a magazine on the firearm in such a manner that cartridges may be automatically fed to the firing chamber, means including a sear for retaining the breech closure in retracted position, means including a trigger for disengaging said sear from the breech closure, and means for automatically rendering said trigger means inoperative to disengage the sear from the breech closure after the last cartridge has been fired, whereby the breech closure is automatically retained in retracted position after the last cartridge is fired.

2. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for feeding cartridges from a magazine to the firing chamber, means including a sear for retaining the breech closure in retracted position, means including a trigger for disengaging the sear from the breech closure, and means controlled by said first means for rendering said trigger means inoperative to disengage the sear from the breech closure when the magazine becomes empty, whereby the breech closure is automatically retained in retracted position after the last cartridge has been fired.

3. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for feeding cartridges from a magazine to the firing chamber, means including a sear for retaining the breech closure in retracted position, means including a trigger for disengaging the sear from the breech closure, and means arranged to be actuated by a moving part of the magazine to render said trigger means inoperative to disengage the sear from the breech closure when the magazine becomes empty, whereby the breech closure is automatically retained in retracted position after the last cartridge has been fired.

4. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a maga-

zine on the firearm in such manner that cartridges may be fed automatically to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger for disengaging the sear from the breech closure, a disconnector for operatively disconnecting the trigger from the sear, and means for actuating said disconnector when the last cartridge is fired.

5. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a magazine on the firearm in such manner that cartridges may be fed automatically to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated to disengage the breech closure when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and means for moving said disconnector into said inoperative position when the magazine becomes empty.

6. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a magazine on the firearm in such manner that cartridges may be fed automatically to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated to disengage the breech closure when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and means for moving said disconnector into said inoperative position when the magazine becomes empty, the parts being so arranged that the disconnector is returned to operative position when cartridges are placed in the magazine.

7. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for automatically feeding cartridges from a magazine to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and means controlled by said first means for moving said disconnector into said inoperative position when the magazine becomes empty.

8. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for automatically feeding cartridges from a magazine to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and means controlled by said first means for moving said disconnector into said inoperative position when the magazine becomes empty, the parts being so arranged that the disconnector is returned to operative position when the empty magazine is replaced by a magazine containing cartridges.

9. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a magazine on the firearm in such manner that cartridges may be fed automatically to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated to disengage the breech closure when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and a yoke arranged between the disconnector and the magazine to be engaged by a moving part of the magazine when the magazine becomes empty thereby to move the disconnector into said inoperative position.

10. A firearm comprising an automatic breech closure movable to and from the firing chamber, means for supporting a magazine on the firearm in such manner that cartridges may be fed automatically to the firing chamber, a sear for retaining the breech closure in retracted position, a trigger, a disconnector interposed between the trigger and the sear, the disconnector having an operative position in which the sear is actuated to disengage the breech closure when the trigger is pulled and having an inoperative position in which the sear is unactuated when the trigger is pulled, and a yoke arranged between the disconnector and the magazine to be engaged by a moving part of the magazine when the magazine becomes empty thereby to move the disconnector into said inoperative position, said trigger and yoke being pivotally mounted to oscillate about the same axis.

11. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, means extending into said chamber from one side of the frame for pivotally supporting a part of said mechanism, and a member extending into the frame from the other side for holding said means in position.

12. A firearm comprising a frame having

a chamber therein, control mechanism in said chamber, means for pivotally supporting a part of said mechanism, said means having a part extending on one side of the frame, and a member extending through said frame from the other side into engagement with said part to hold said means in position.

13. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a member extending along one side of said frame, said member having a pivot pin extending into said chamber pivotally to support a part of said mechanism, and a member extending through said frame from the other side into engagement with said first member for holding the first member in position.

14. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a member on one side of said frame having a spring finger extending along the frame and having a pivot pin extending into said chamber pivotally to support a part of said mechanism, and a member extending through said frame from the other side into engagement with said finger for holding the first member in position.

15. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a plate lying along one side of said frame, said plate having an integral spring finger extending in the plane of the plate and having an integral pivot pin extending into said chamber pivotally to support a part of said mechanism, and a member extending through said frame from the other side into engagement with said finger for holding the first member in position.

16. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, means extending into said chamber from one side of the frame for pivotally supporting a part of said mechanism, and a safety catch for locking said mechanism in safe position, said safety catch extending into said chamber from the other side of said frame and interlocking with said means so that said means and safety catch mutually hold each other in position.

17. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, means for pivotally supporting a part of said mechanism, said means having a part extending on one side of the frame, and a safety catch for locking said mechanism in safe position, said safety catch extending through said chamber from the other side of the frame and interlocking with said part, whereby said means and safety catch mutually hold each other in position.

18. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a member extending along one side of said frame, said member having a pivot pin extending into said chamber pivotally to support a part of said mechanism, and a safety catch for holding said mechanism in safe position, said safety catch extending through said chamber from the other side of the frame and interlocking with said member so that said member and safety catch mutually hold each other in position.

19. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a member on one side of said frame having a spring finger extending along the frame and having a pivot pin extending into said chamber pivotally to support a part of said mechanism, and a safety catch for holding said mechanism in safe position, said safety catch extending through said chamber from the other side of the frame and interlocking with said spring finger, whereby said member and safety catch mutually hold each other in position.

20. A firearm comprising a frame having a chamber therein, control mechanism in said chamber, a plate lying along one side of said frame, said plate having an integral spring finger extending in the plane of the plate and having an integral pivot pin extending into said chamber, and a safety catch for holding said mechanism in safe position, said safety catch having a shaft extending through said chamber, and said shaft having a groove therein adapted to receive said finger, whereby said plate and safety catch mutually hold each other in position.

21. A firearm comprising a frame having a chamber therein, control mechanism including a trigger and a sear in said chamber, and a member lying along one side of said frame said member having pivot pins extending into said chamber pivotally to support said trigger and sear.

22. A firearm comprising a frame having a chamber therein, control mechanism including a trigger and a sear in said chamber, and a plate lying along one side of said frame, said plate having integral pivot pins extending into said chamber pivotally to support said trigger and sear.

23. A firearm comprising a frame having a chamber therein, control mechanism including a trigger and a sear in said chamber, a member lying along one side of said frame, said member having pivot pins extending into said chamber pivotally to support said trigger and sear, and a safety catch for locking said sear in safe position, said safety catch extending through said chamber from the other side of the frame and interlocking with said member.

24. A firearm comprising a frame having

a chamber therein, control mechanism including a trigger and a sear in said chamber, a member lying along one side of said frame, said member having a spring finger extending therefrom along the side of the frame and having pivot pins extending into said chamber pivotally to support said trigger and sear, and a safety catch for preventing said sear from being moved from safe position, said safety catch extending through said chamber from the other side of said frame and interlocking with said spring finger.

25. A firearm comprising a frame having a chamber adapted to house control mechanism and having a guide adapted to receive a magazine, a catch for holding a magazine in position on said guide, said catch being pivotally mounted on said frame so as to be moved into and out of holding position, and a member for pivotally mounting a part of said control mechanism in said chamber, said member having a portion projecting into the path of said catch to restrict its movement.

26. A firearm comprising a frame having a chamber adapted to house control mechanism and having a guide adapted to receive a magazine, a catch for holding a magazine in position on said guide, said catch being pivotally mounted on said frame so as to be detached from the frame when swung about its pivot a sufficient distance in one direction, and a member for pivotally mounting a part of said control mechanism in said chamber, said member having a portion projecting into the path of said catch to prevent the catch from being swung into a position wherein it may be detached.

27. A firearm comprising a frame, a catch for holding a magazine in position on the firearm, said catch having a pivot pin extending into a bearing in said frame and having a portion adapted to swing into an opening in said frame so that the catch cannot be withdrawn from the frame so long as said portion extends into said opening, and a stop on the frame for preventing said portion of the catch from being swung out of said opening.

28. A firearm comprising a frame, and a catch for holding a magazine in position on the firearm, said catch lying along one side of the frame and having a pivot pin extending into a bearing in the frame and having a portion adapted to swing into an opening in said frame, said portion and opening being disposed transversely of said pivot pin so that the pivot pin cannot normally be withdrawn from said opening and said catch being arranged to be swung clear of said opening to detach the catch from the frame.

29. A firearm comprising a frame, and a catch for holding a magazine in position on the firearm, said catch lying along one side of the frame and having a pivot pin extending into a bearing in the frame, and said catch having a portion extending inwardly and thence forwardly through an opening in the frame to engage a magazine, the catch being held alongside the frame by said portion extending into said opening and being detachable by swinging said portion clear of the opening.

30. A firearm comprising a frame having a bearing opening therein and having a groove along one side of said opening, a member having a pivot pin extending into said opening, and a spring surrounding said pin in said opening, one end of the spring extending into said groove and the other end being anchored to said member, said groove extending to the end of said opening so that said spring may be removed with said pin.

31. A firearm comprising a frame having a bearing opening therein and having a groove along one side thereof, a magazine catch lying along one side of the frame and having a pivot pin extending into said opening, and a catch actuating spring in said opening, said spring having one end extending into said groove and having the other end anchored to said catch, said groove extending to the end of said opening so that said spring may be removed with said pin.

32. A firearm comprising a frame having a bearing opening therein, the inner end of said opening having a reduced diameter, a member having a pivot pin extending into said opening, the inner end of said pin fitting into the reduced end of said opening, and the outer end of said pin having a collar fitting into said opening, and a coil spring surrounding said pin within said opening between said two ends of the pin.

33. A firearm comprising a frame arranged to receive a magazine either from the bottom or from the side and a single catch on the frame for holding the magazine in position when received either way.

34. A firearm comprising a frame arranged to receive magazines either from the bottom or from the side, and a catch for holding the magazines in place, said catch having one portion to engage magazines received from the bottom and having another portion to engage magazines received from the side.

35. A firearm comprising a frame having separate guides adapted to receive either a drum magazine or a box magazine, and a spring catch for holding either magazine in place.

36. A firearm comprising a frame arranged to receive magazines either from the bottom or from the side, and a catch for holding the magazines in place, said catch

extending along the side of said frame and having an end hooking through an opening in the frame.

37. A firearm comprising a frame adapted to receive either a drum magazine or a box magazine, and a catch for holding either magazine in place, said catch being pivotally mounted on one side of the frame and having an end hooked into an opening in the frame, said end being adapted to hold one magazine and another portion of said catch being arranged to hold the other magazine.

38. A firearm comprising a frame arranged to receive a magazine either from the bottom or from the side.

Signed by me at Cleveland, Ohio, this 29th day of April, 1919.

OSCAR V. PAYNE.