

March 6, 1962

W. E. LEEK ET AL  
FIREARM HAVING RECEIVER BEARING SURFACES  
OF SYNTHETIC RESINOUS MATERIAL

3,023,527

Original Filed Jan. 5, 1956

5 Sheets-Sheet 1

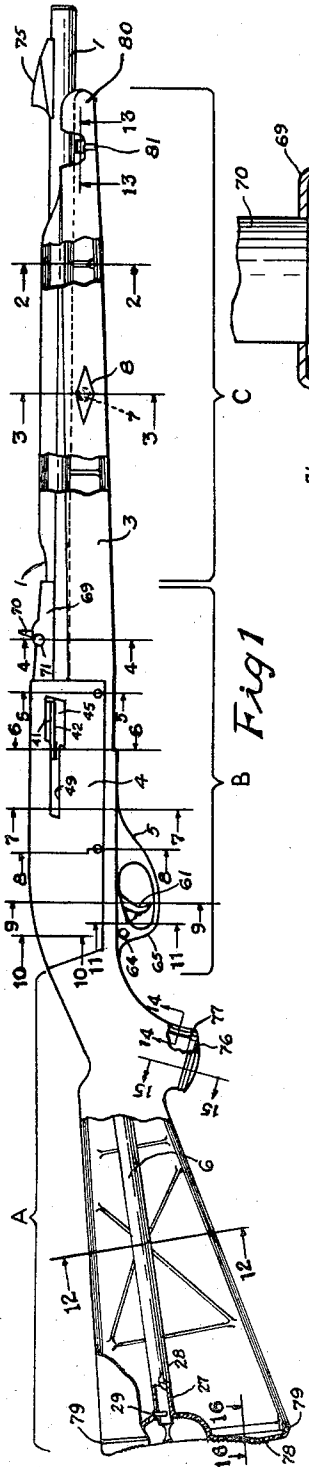


Fig. 1

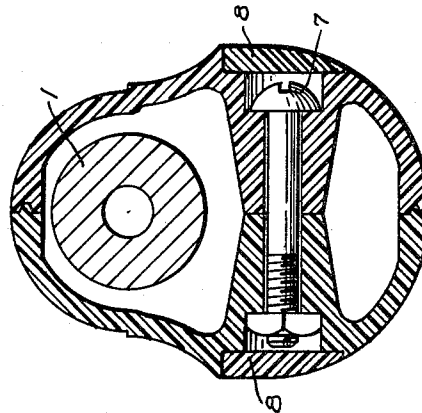


Fig. 2

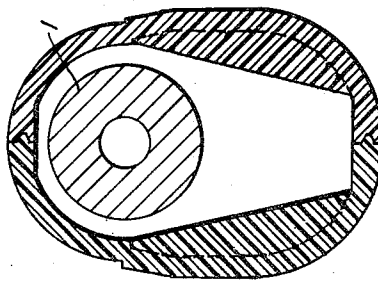


Fig. 3

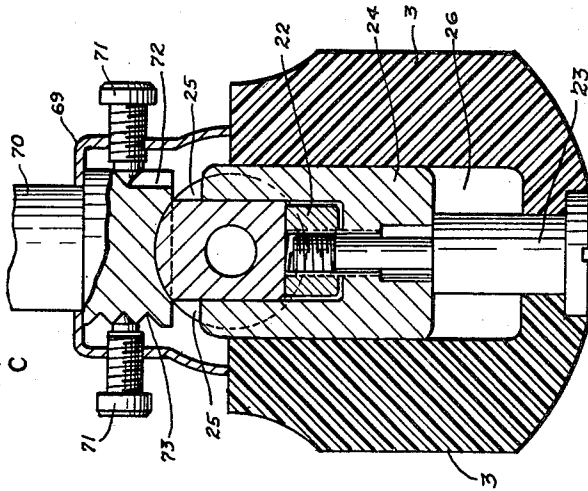


Fig. 4

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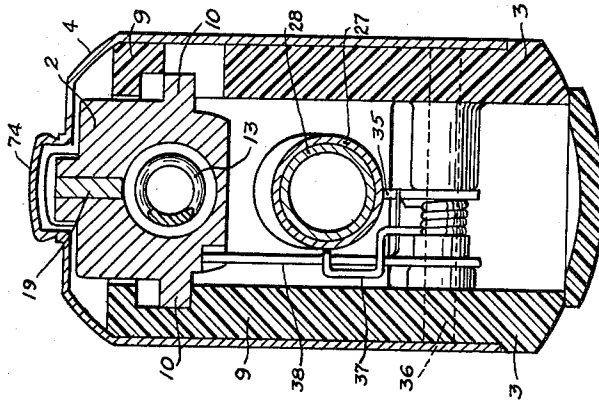


Fig. 7

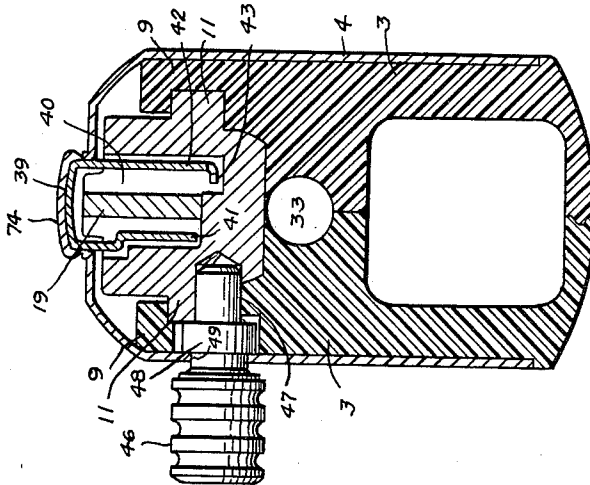


Fig. 6

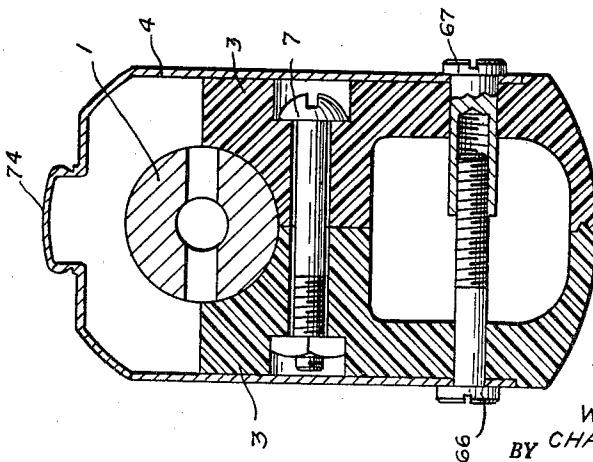


Fig. 5

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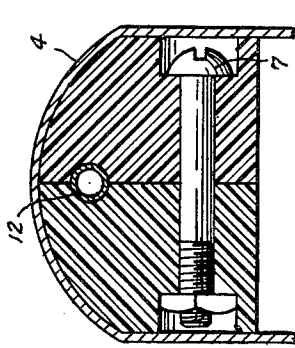


Fig. 10

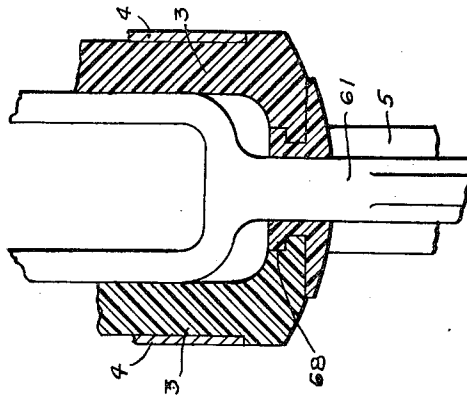


Fig. 11

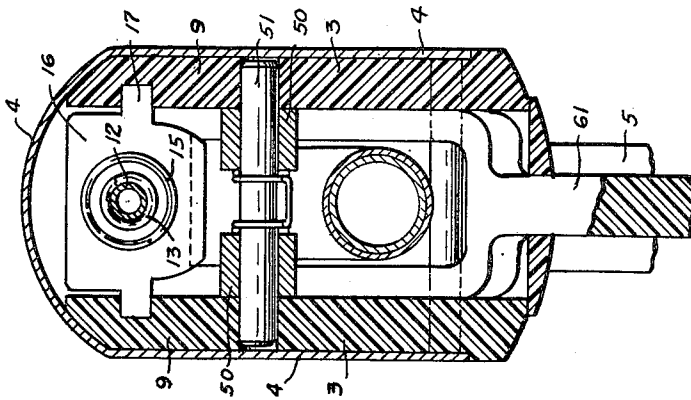


Fig. 9

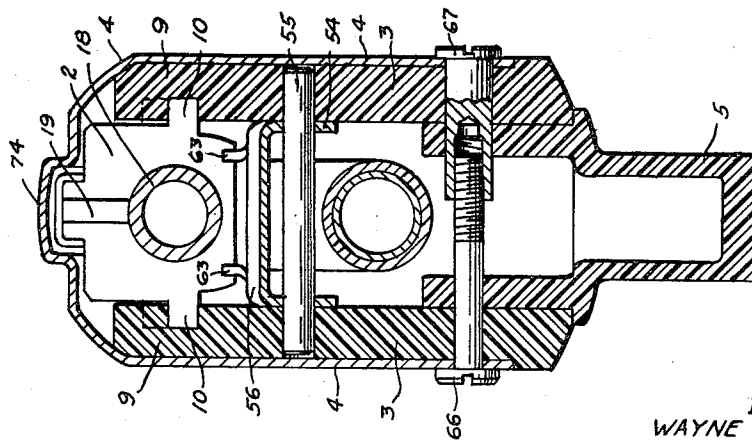


Fig. 8

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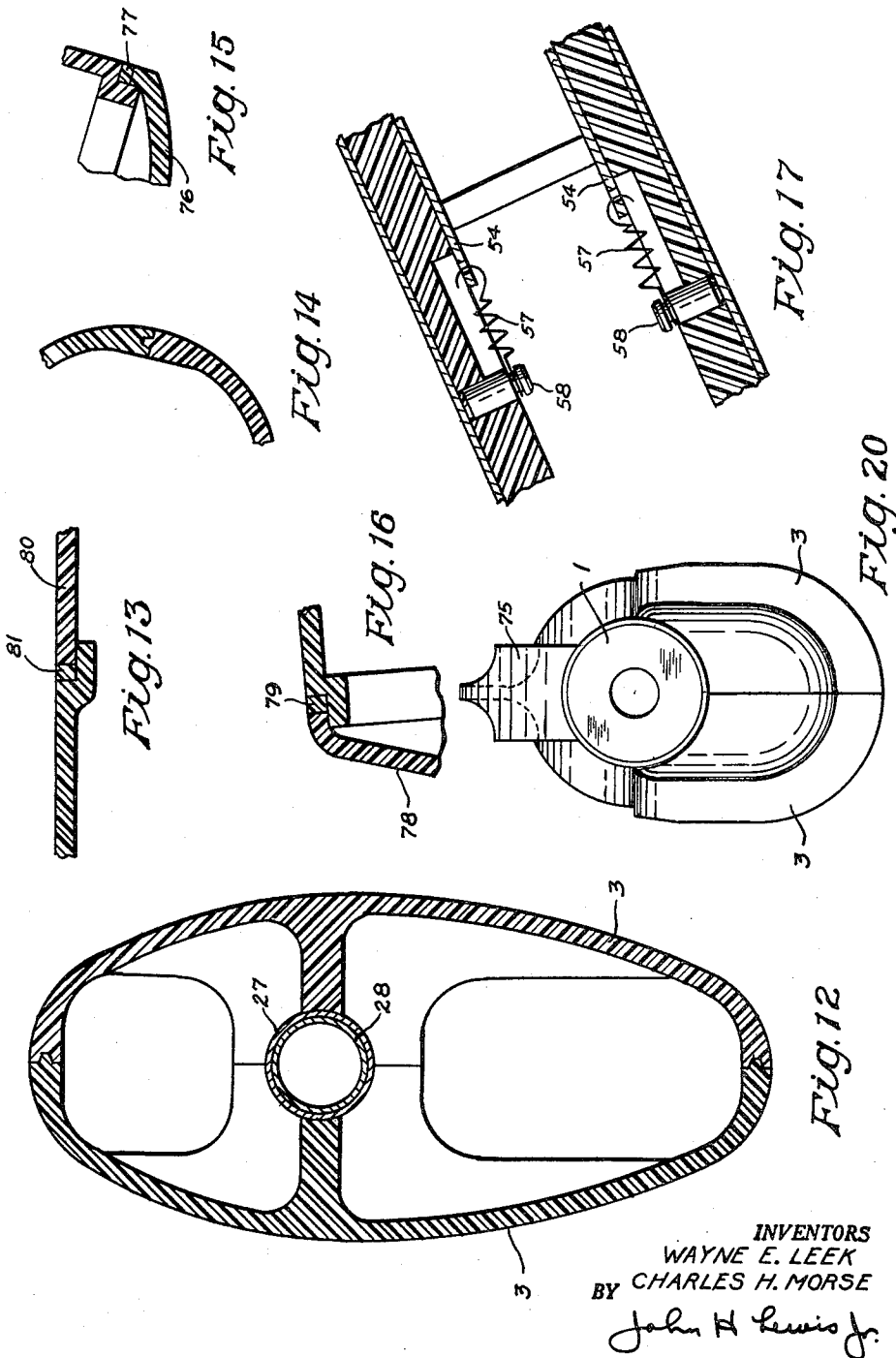
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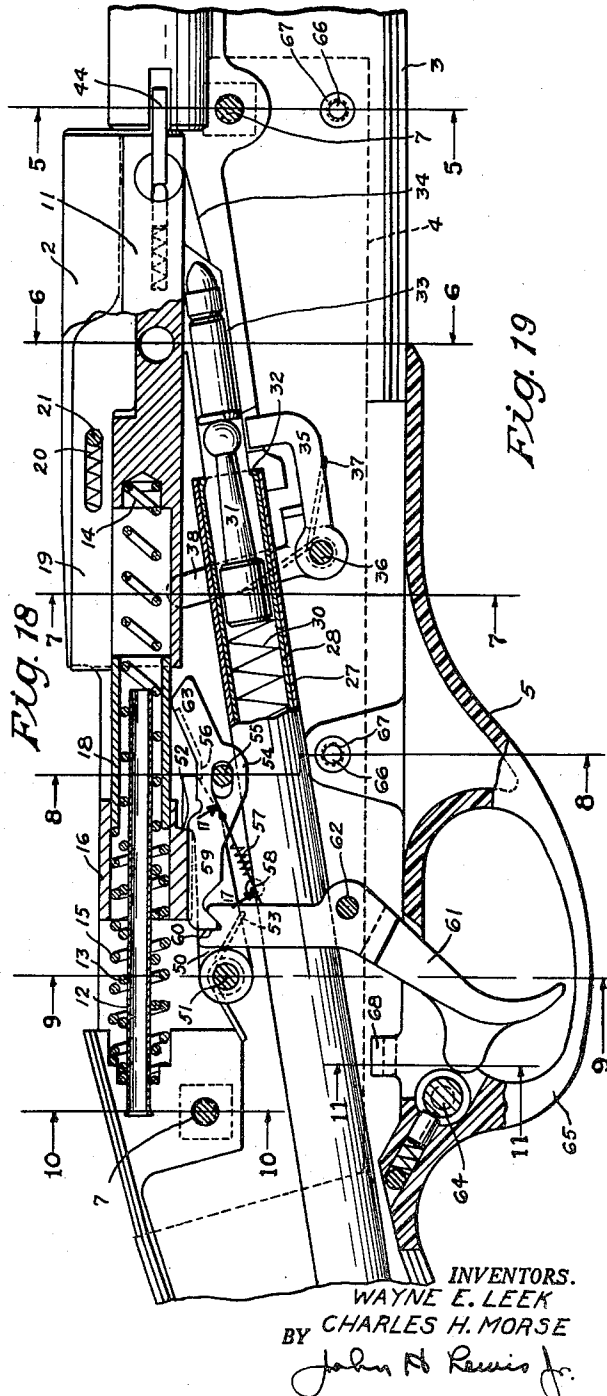
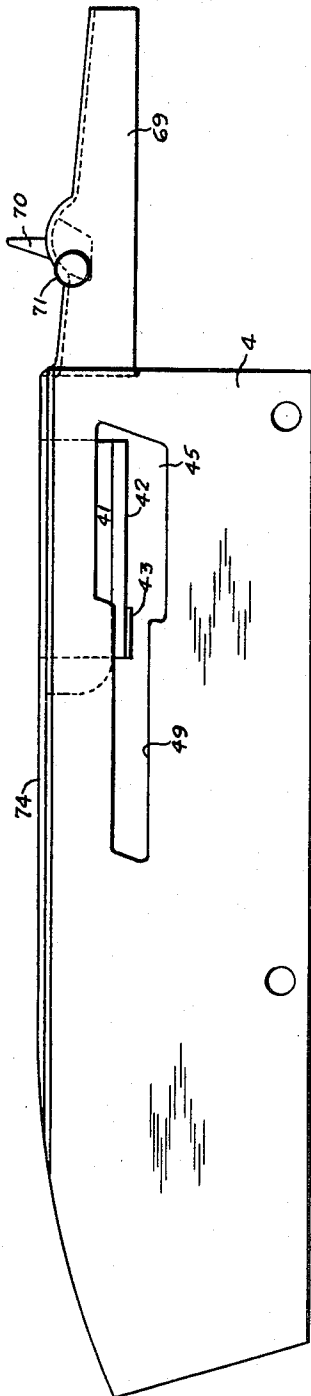
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3,023,527

**FIREARM HAVING RECEIVER BEARING SURFACES OF SYNTHETIC RESINOUS MATERIAL**

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Continuation of abandoned application Ser. No. 557,473, Jan. 5, 1956. This application Dec. 15, 1958, Ser. No. 780,573

19 Claims. (Cl. 42—71)

This application is a continuation of our application Serial No. 557,473, filed January 5, 1956, for a Breech Loading Firearm, now abandoned.

This invention relates to a breech loading firearm and is illustrated by reference to a small bore firearm of the type intended for use with rimfire cartridges. The principal object of this invention is the provision of a new and improved firearm which can be manufactured and assembled with great economy. At the same time, it is one of our objects to provide for improved functioning of such a firearm through the utilization of unconventional materials providing bearing surfaces of exceptional efficiency. We propose to achieve these objectives in large measure by the elimination as a separate entity of that part of the firearm commonly known as a receiver, together with all the attaching means generally needed to fasten the stock, fore-end and the barrel to such a receiver. We propose that a full length stock assembly be molded of a suitable thermoplastic or thermosetting resinous material, with recesses provided in the molded stock assembly to accommodate the barrel and to guide and support all of the necessary functional parts normally guided and supported by or secured to a conventional receiver.

The exact nature of the invention, as well as other objects and advantages thereof, will become more readily apparent from consideration of the following specification, referring to the attached drawings, in which:

FIG. 1 is a side elevational view of a firearm constructed in accordance with our invention, those portions of the drawings which are sectioned being taken in the plane of a longitudinal vertical sectional view.

FIG. 2 is a vertical cross-sectional view on the line 2—2 of FIG. 1.

FIG. 3 is a vertical cross-sectional view on the line 3—3 of FIG. 1.

FIG. 4 is a vertical cross-sectional view on the line 4—4 of FIG. 1.

FIG. 5 is a vertical cross-sectional view on the line 5—5 of FIG. 1.

FIG. 6 is a vertical cross-sectional view on the line 6—6 of FIG. 1.

FIG. 7 is a vertical cross-sectional view on the line 7—7 of FIG. 1.

FIG. 8 is a vertical cross-sectional view on the line 8—8 of FIG. 1.

FIG. 9 is a vertical cross-sectional view on the line 9—9 of FIG. 1.

FIG. 10 is a partial vertical cross-sectional view on the line 10—10 of FIG. 1.

FIG. 11 is a partial vertical cross-sectional view on the line 11—11 of FIG. 1.

FIG. 12 is a cross-sectional view on the line 12—12 of FIG. 1.

FIG. 13 is a partial horizontal sectional view on the line 13—13 of FIG. 1.

FIG. 14 is a partial cross-sectional view on the line 14—14 of FIG. 1.

FIG. 15 is a partial cross-sectional view on the line 15—15 of FIG. 1.

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FIG. 16 is a partial cross-sectional view on the line 16—16 of FIG. 1.

FIG. 17 is a partial cross-sectional view on the line 17—17 of FIG. 19.

FIG. 18 is a side elevational view of the cover for the working mechanism of the firearm.

FIG. 19 is an enlarged partial vertical, longitudinal sectional view taken through the breech portion of the mechanism.

FIG. 20 is a muzzle end elevational view.

Referring to the drawings by characters of reference, it will be seen that the firearm comprises a barrel 1 and a breech bolt 2, both supported in a molded stock assembly indicated generally by reference numeral 3. The enclosure of the breech bolt and other parts adjacent thereto in the receiver portion of the stock assembly 3 is completed by means of a sheet metal receiver cover 4, shown in more detail in FIG. 18. A trigger guard 5 is supported in the receiver portion of the stock assembly 3, and a tubular magazine 6 is mounted in the buttstock portion of the stock assembly 3.

The stock assembly 3 comprises a pair of full length components molded as mirror images of each other and provided with appropriate internal ribs and other reinforcing sections. The halves of the stock are preferably provided on their meeting surfaces with a tongue-and-groove joint which may be cemented or autogenously welded to complete the stock assembly. At appropriate points, the joining of the halves of the stock assembly may be reinforced by cross-bolts 7 which may be covered by appropriate inlays 8 or by being enclosed within the cover 4.

The stock assembly may be regarded by reference to normal firearms practice as comprising three portions which may be identified as buttstock, receiver and forestock. The extent of these portions may be identified in FIG. 1 by the brackets A, B and C, respectively applied thereto. As referred to hereinafter, these last three terms are used in the sense of their normal definitions referring to firearms, as follows:

"A"—Buttstock—That part of the stock in the rear of the breech mechanism

"B"—Receiver—In portable breech loading firearms the frame to which the breech end of the barrel is attached which receives the bolt or block, and which receives the mechanism for loading, firing, extracting and ejecting

"C"—Forestock—That part of a gunstock lying forward of the breech mechanism, beneath the barrel or barrels, and forming a hold for the forward hand of the shooter.

The receiver portion B of the stock assembly is enclosed within the receiver cover 4 and is characterized by internally grooved side walls 9 extending vertically upward, to define between them a guideway in which the bolt 2 and members associated therewith may reciprocate. The bolt 2, it will be noted, is formed to define a pair of longitudinally extending guide ribs 10 which are received in appropriately formed tracks defined by the internal grooves in the side walls 9. It will be noted that the forward end 11 of each of the guide ribs is of heavier section than the rear portion and, accordingly, the tracks formed in the side walls 9 are correspondingly shaped. A spring guide tube 12 is secured at its rear end in the stock assembly and extends forwardly therefrom to provide a guide for a bolt return spring 13, which is seated in a counterbore 14 in the bolt body and acts to urge the bolt body to its foremost position in the receiver portion B of the stock assembly. A firing pin spring 15 is also supported by the stock assembly and surrounds the bolt return spring 13, bearing at its forward end on a shoulder formed in a firing pin striker 16. As best seen in FIG. 9,

the firing pin striker 16 is also provided with longitudinally extending guide ribs 17 which travel in the same tracks in the side walls 9 provided for the guidance of the bolt 2. The firing pin striker 16 is also provided with a forwardly extending tubular portion 18 which is guided in the counterbore in the back end of the bolt body. Fire control means, which will be later described, is provided to releasably hold the firing pin striker in a rearward position. When the firing pin striker is released by the fire control means, it will be projected forwardly under the impetus provided by the spring 15 into forceable engagement with a firing pin 19 which is supported in a longitudinally extending groove in the top face of the bolt body. A firing pin return spring 20 is provided and bears on a firing pin retaining pin 21 supported in a bore which extends laterally through the breech bolt body.

The barrel 1 is supported in the stock assembly by means which include a semi-cylindrical cradle formed in the relatively solid portion of the stock assembly 3 as best seen in FIG. 5, this solid portion constituting the front end of the receiver portion B of the stock assembly. There is also provided a cradle portion at the forward extremity of the forestock portion C of the stock assembly, as best seen by reference to FIG. 20. Additionally, or alternatively, the stock may be molded to provide a V-block support for the barrel adjacent the front end thereof, as in the section broken away between the numerals indicating the section plane 13—13. FIG. 4 illustrates a suitable means for retaining the barrel in this relationship. A barrel lug 22 may be secured by any suitable means to the lower face of the barrel and is threadably engaged by a barrel hold-down screw 23 secured in a suitable hole in the receiver portion B of the stock assembly. This screw functions to hold the barrel down into the cradles provided in the stock assembly. At the same time, the hold-down screw 23 is provided with a shoulder which acts as a means of urging upwardly the bifurcated barrel bracket 24. This barrel bracket, when in a raised position, is received in suitable opposed cuts 25 in the surface of the barrel which define recoil shoulders thereon and is vertically slidable into and out of engagement with the cuts 25. The barrel bracket all the while remains in engagement with a recess 26 formed in the solid portion of the receiver portion B of the stock assembly which provides recoil shoulders in the stock and is deep enough to permit the barrel bracket to be dropped below the surface of the cradle when the hold-down screw is disengaged from the barrel lug. The inter-engagement of the barrel bracket with the recoil shoulders provided by the recess 26 formed in the receiver portion of the stock assembly and with the cuts 25 formed in the barrel retains the barrel against longitudinal displacement relative to the receiver portion B of the stock assembly.

It will be noted, as illustrated in FIGS. 2 and 3, that the major portion of the length of the barrel is substantially fully enclosed by a portion C of the stock assembly acting as a conventional hand guard or forestock. Between the rear end of this hand guard or forestock C and the forward end of the upstanding side walls 9 of the receiver portion B however, there is a part of the receiver portion B of substantially the length of the breech closure mechanism which is not closed in above the midline of the barrel. To assemble the working mechanism, the breech closure and striker mechanism is introduced into this space and then moved rearwardly into the guide grooves in the upstanding side walls 9. The barrel may then be introduced from the muzzle end of the stock assembly and moved rearwardly into engagement with the cradle formed in the forward end of the receiver portion B of the stock assembly and secured therein by the hold-down screw and barrel bracket described above.

The tubular magazine 6, previously referred to, extends longitudinally through the buttstock portion A of the stock assembly and comprises a fixed outer tube 27 and an inner tube 28 which is telescoped therein and may

be secured thereto by means of the bayonet coupling indicated at 29. This inner tube contains the usual magazine spring 30 and magazine follower 31. The inner tube is partially crimped in at 32 to prevent accidental displacement of the magazine follower beyond the confines of the inner tube. The receiver portion B of the stock assembly is formed to define a cartridge feed passage 33 and a feed ramp 34 in substantial prolongation of the magazine tube. A cartridge stop 35 is pivotally supported on a cartridge stop pin 36 and provided with a cartridge stop spring 37 which urges the end of the cartridge stop to extend into the cartridge feed passage 33 in position to intersect the head or rim of a cartridge case and prevent the delivery of more than one cartridge to the feed ramp 34. The cartridge stop is operated by means of an arm 38 which extends upwardly into the path of the breech bolt in position to be overridden by a cam surface in the breech bolt whenever the breech bolt is displaced rearwardly from the position shown in FIG. 1. It should be apparent that whenever the breech bolt is rearwardly displaced, the cartridge stop will be raised into the feed passage 33. However, the extent of the projection into the feed passage is not enough to intercept and stop forward movement of a cartridge until the rim thereof engages solidly against the cartridge stop. Thus, a following cartridge in the tubular magazine or the magazine follower itself will remain free to push the cartridge in the feed passage, up the feed ramp, and into position to be picked up by the bolt face and pushed home into the chamber of the barrel. The following cartridge, or the magazine follower, will, however, be positively stopped by the cartridge stop 35 in such a position that the forward movement of the bolt cannot be obstructed and will not be released for further movement until such time as the bolt has substantially reached its breech closing position and the cam surface has passed forwardly of the arm 38. To assist in controlling the feeding of the cartridge, a cartridge guide member 39 is secured to the upper part of the receiver cover 4 and extends downwardly therefrom to be received in groove 40 in the top face of the bolt, where it straddles a portion of the firing pin 19. The downwardly extending flanges 41 and 42 receive the cartridge as it is pushed up the feed ramp 34 and assist in re-aligning it and pushing it directly into the chamber of the barrel as the breech bolt is closed. An inturned portion 43 near the rear extremity of the flange 42 is provided to intersect the head of a cartridge case as the bolt nears the rear extremity of its possible movement and serves as a conventional fixed ejector for discharging the cartridge from the control of the usual extractors 44 on the bolt body and flipping it laterally through the ejection port 45 formed in the receiver cover 4. A bolt operating handle 46 is provided with a stem 47 received in a hole in the side of the bolt body and is also provided with a flange portion 48 of a diameter greater than will pass through the slot 49 formed in the cover 4.

The fire control mechanism referred to herein is one of the forms shown in the co-pending application of H. W. Young, Serial No. 731,881, filed April 29, 1958, and is not therefore claimed herein. To minimize the need for reference to that specification, however, it will be described herein as one which comprises a sear 50 pivotally mounted on a pin 51 and engageable at 52 with the firing pin striker 16 on such an angle that a component of striker spring force acts to urge the sear to swing clockwise about the pivot 51 against the relatively light force applied by the sear spring 53. Such movement of the sear is blocked by a sear block 54 supported for swinging and sliding movement on a pin 55. The sear block is provided, as may be seen in FIGS. 19 and 8, with a web 56 which engages beneath the front corner of the sear 50. Sear block springs 57 are engaged between the sear block 54 and appropriate pins 58 engaged in the stock assembly. As may be seen in FIG. 1, these springs act

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to move the sear block rearwardly on the pivot 55 and, at the same time, urge it to swing counter-clockwise about that pivot. The rearwardly extending arms 59 of the sear block are formed for engagement with surfaces 60 formed on an upwardly extending arm of the trigger 61, which is supported for pivotal movement about the pin 62. It will be noted that both the sear block and the trigger arms are, for mounting purposes, bifurcated members which substantially straddle the magazine tube 6; however, preferably only one arm of the trigger is carried upwardly and the engagement with the sear block is therefore limited to one side. When the trigger is pulled in the normal manner, the upwardly extending arm is urged forwardly and, by its inter-engagement with the rearwardly extending arm 59 on the sear block, urges the sear block to move forwardly and out from beneath the sear 50, releasing the sear to be swung down by the component of striker spring force and permitting the firing pin striker 16 to impact upon the rear end of the firing pin 19. Since the illustrative embodiment of our invention is a blow-back operated autoloader, the firing of the chambered cartridge will cause the breech bolt to be driven rearwardly, and as it does so it will over-ride the forwardly extending disconnector arms 63 formed integrally with the sear block, thus rotating the sear block in a clockwise direction about the pivot pin 55 and disengaging the arm 59 of the sear block from the trigger. Assuming that the trigger finger has not been relaxed, this disconnection from the trigger will permit the springs 57 to move the sear block rearwardly into position beneath the sear so that the sear will intercept the firing pin striker when the breech bolt is again closed. The trigger, however, will not be able to act upon the sear block until such time as the trigger finger has been completely relaxed and the trigger permitted to return to its normal position, in which position the surfaces 60 may again engage the rearwardly extending arm 59 on the sear block. The usual type of cross-bolt safety 64 is provided in a trigger guard 65 and functions to prevent movement of the trigger whenever set to perform that function.

The assembly of the firearm is completed by the application to the receiver portion B of the stock and barrel assembly of the receiver cover 4, previously referred to. As will be noted, this cover is a sheet metal stamping adapted to be slipped over the top part of the receiver portion of the stock assembly, to enclose within it all of the working parts and to mask the joint between the rear end of the barrel and the stock assembly. This cover is retained in place by means of a pair of cover retaining screws 66 threadably engaging headed sleeves 67. The rearmost of the cover retaining screws 66 has the additional function of retaining the trigger guard 5, which, as noted in FIG. 11, is provided with a T-shaped portion 68 engaging with the stock assembly and which, as shown in FIGS. 7, 8 and 9, engages the bottom face of the stock assembly, to complete the enclosure of those working parts housed therein.

The forward extension 69 on the receiver cover 4 encloses the rear end of the barrel and the means by which the barrel is connected to the receiver portion of the stock assembly. Extension 69 is shaped to provide a slotted arcuate portion for the reception of a rear sight leaf 70 which may be rocked between the slotted arcuate portion of the cover and arcuate cuts on the upper surface of the barrel 1, to provide varying degrees of elevation for the sight leaf. A pair of opposed adjusting screws 71 are provided and engage either arcuate grooves 72 or spaced indentations such as 73 to insure that the sight leaf remains at any desired elevation. To the extent that lateral clearance is provided in the arcuate portion surrounding the sight leaf 70, the adjusting screws 71 may also serve to provide for windage or lateral adjustment of the sight leaf 70. As a matter of convenience, the upper portion of the receiver cover 4 is formed to define a longitudinally extending dovetailed

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rib 74 adapted to receive one of the several types of inexpensive sighting telescope mounts recently made available. A front sight 75, preferably of the ramp type, may be brazed or otherwise suitably secured to the barrel.

The functioning of the rifle described herein is, in practically every respect, identical with that of the usual blowback autoloading small bore firearm. Briefly, the firing of a cartridge chambered in the barrel causes the cartridge case to blow back out of the barrel and thereby impels the breech bolt rearwardly against the force of the breech bolt return spring 13. In the course of the rearward movement of the bolt, the fired cartridge is ejected through the port 45 and the cartridge stop is actuated to prevent more than one cartridge from being pushed forwardly onto the feed ramp 34. Also, in the course of rearward movement of the bolt, the disconnector arms 63 are over-ridden and disconnect the trigger from the sear block 54. Upon completion of the rearward movement of the breech bolt, the bolt is returned forwardly by its return spring and during its forward movement picks up from the feed ramp a cartridge thereon and chambers it in the barrel. During this forward movement, the firing pin striker is stopped by the sear and will be held thereby until such time as the trigger finger has been relaxed to permit the trigger to reassume control of the sear block. As soon as the breech bolt reaches its substantially fully closed position, the cartridge stop will again be released, to permit a following cartridge to be fed onto the feed ramp. So long as a supply of cartridges remain in the magazine, the cycle described above may be repeated each time the trigger is pulled. The operation of the magazine and the release of cartridges therefrom is substantially conventional and forms the subject of expired patents.

As has been previously noted herein, the stock assembly 3 comprises a pair of opposed halves which are mirror images of each other and are joined at their longitudinal margins by a cemented or welded tongue-and-groove joint. This joint may conveniently be cemented without marring the exterior surfaces of the molded components by the application of a suitable cement or solvent either to the tongue or to the groove, or both, following which the sections may be pressed together and held for a time sufficient to permit the cement or partially dissolved plastic to solidify. Several means are available to permit the autogenous welding of such a joint in the thermoplastic materials. Among these means we may employ one which comprises the steps of placing a small, preferably ferromagnetic, wire throughout the extremity of the groove, then assembling the tongued section thereto and subjecting the entire assembly to the influence of an induction heating unit which causes a degree of localized heating immediately adjacent the wire sufficient to cause localized melting of a thermoplastic material. Such localized heating while the sections are held assembled under pressure produces an extremely effective welded joint without flash or other disturbance tending to mar the exterior portion of the molded component. Where the joining has been by means which produce some flash or unevenness in the joint, a suitable degree of matching may be achieved by milling in the jointed surface a shallow, longitudinally striated groove overlying the parting line.

As may be noted from FIGS. 16 and 15, such components as a grip cap 76, grip cap spacer 77, butt plate 78, butt plate spacer 79, fore-end tip 80 and fore-end tip spacer 81, may be similarly assembled and cemented or welded in place. Should it be desirable to alter the design, by adding or omitting spacers, the changes required should be obvious.

For molding the stock assembly, substantially conventional injection molding methods are entirely suitable. It is preferable, however, that to the greatest extent possible the feed points for the injection molding operation shall be in those sections of the receiver portion of

the stock assembly which are covered in use by the cover 4, thereby insuring that any surface imperfections resulting from the presence of the feed point will not disturb the exterior appearance of the stock assembly.

The stock assembly may be molded of any thermoplastic or thermosetting plastic material which is dimensionally stable when subjected to varying temperature and weather conditions. We prefer, however, to utilize one of the thermoplastic synthetic long-chain polyamide materials known as nylon—for example, that identified by the trademark "Zytel" manufactured by the Du Pont Company which is available in a wide variety of stable colors. The nylon materials are particularly desirable for this application by reason of their strength, dimensional stability, and the excellent bearing surfaces which they provide for the guidance and control of the breech bolt and other working parts of the mechanism. The low friction, anti-galling characteristics of nylon, working in contact with metal particularly under adverse temperature and weather conditions, are especially desirable in regard to the tracks in the receiver section which support and guide the bolt and striker for the firing pin.

There are other plastic materials capable of producing a satisfactory product but which to some degree fall short of the desirable characteristics possessed by the nylon materials. Some functionally satisfactory materials, such as "Teflon", tetrafluoroethylene resin, are still too expensive and/or difficult to mold. The frictional and galling characteristics of some of the otherwise suitable materials, for example, are such as to require the incorporation of metallic bearing surfaces in such locations as the guide tracks, where nylon functions so well by itself. Among the materials which may, with such design changes, be considered as alternatives, the following may be cited as examples:

Cycolac—Marban Chemical Division of Borg-Warner Corporation, 1926 W. 10th Avenue, Gary, Indiana  
Modified polystyrene molding compound.

High impact strength, high heat distortion resistances, low brittle point, dimensional stability, chemical resistance, light weight, bright colors and hi gloss.

Kralastic—Naugatuck Chemical, Division of U.S. Rubber Co., 203 Elm Street, Naugatuck, Connecticut  
Acrylonitrile resin - rubber molding compound (styrene-butadiene resins).

Excellent resistance to acids, alkalis, water, cold and fungus. Good resistance to solvents and heat. Excellent for coating metal, good for wood. Dimensionally stable over wide temperature range, high impact resistance, easily machined. Can be solvent-welded. Lightweight, wide range of opaque colors.

Tenite II—Eastman Chemical Products, Inc., Kingsport, Tennessee

Cellulose acetate butyrate molding compound.

High toughness and impact strength. Resilient, lightweight, weather resistant, dimensional stability, lustrous surface. Unlimited range of colors. Adapted to fastest injection molding or extrusion.

Styron 475—Dow Chemical Company, Midland, Michigan

Rigid, tough thermo-plastic properties similar to polystyrene except for higher impact strength and greater elongation.

In reconsideration of the foregoing specification, it will be noted that the receiver portion B of the stock assembly provided in this invention takes care of all of the functional requirements of the receiver of a conventional firearm, without requiring the complicated and difficult internal machining operations and without requiring the complications in conventional designs entailed by the necessity for securing stock, barrel, fore-end, etc., to the conventional receiver and/or stock. At the same

time, the precision molded bolt guide tracks, cartridge feed ramp, etc., provide highly efficient lubrication and improved overall functioning of the firearm. The use of such precision molded components makes possible the mass production of inexpensive but high quality firearms which can be assembled from identical components without the requirement for any fitting or selective assembly of any part.

Although we have shown and described herein only one specified embodiment of this invention, it should be obvious that the principles enunciated herein may be readily applied to the production of other types of firearms. For example, the magazine, cartridge stops and feed ramp, utilized in the design illustrated, may readily be eliminated, with material simplification of the design and without substantial modification of any other component we may produce an autoejecting single shot rifle. Similarly, the application of any suitable means for locking the breech bolt directly to the rear end of the barrel will permit the production of positively locked breech loading firearms of either single shot or magazine fed types.

Accordingly, we do not consider that our invention is limited by the details of the specific embodiment shown and described herein. For an exact definition of the limits which we consider applicable to our invention, reference should be made to the appended claims.

What is claimed is:

1. A firearm having a stock assembly, a barrel, a breech closure, and a fire control mechanism, said stock assembly comprising a unitary structure of moldable, synthetic resinous, dimensionally stable material and including in said unitary structure a buttstock portion, a receiver portion and a forestock portion, said receiver portion having molded integrally therein guideways for said breech closure, means on said breech closure in engagement in said guideways mounting said breech closure in said receiver portion, said breech closure being mounted in said receiver portion for reciprocation in said guideways longitudinal of said receiver portion between a first position adjacent said buttstock portion and a second position adjacent said forestock portion, means for securing said barrel to said stock and means molded in said forestock portion for supporting said barrel.

2. A firearm as defined in claim 1, said receiver portion having an aperture molded therein, said fire control mechanism being mounted in said aperture and means for securing said fire control mechanism in said aperture.

3. A firearm as defined in claim 2, said means for securing said barrel to said stock comprising a molded semi-circular cradle in the front end of the receiver portion and means for pulling a barrel down into said cradle, a recess in said cradle, and means interengaging said barrel and said recess for resisting longitudinal displacement of said barrel.

4. A firearm as defined in claim 3, said means molded in said forestock portion for supporting said barrel including a self-centering cradle in the front end of the forestock portion, said barrel resting in said cradle.

5. A firearm as defined in claim 3, said means on said breech closure comprising laterally projecting, longitudinally extending guide ribs, said receiver portion having a pair of spaced-apart upstanding side walls at opposite sides of said breech closure, said guideways for said breech closure comprising longitudinally extending grooves formed in the opposed inner faces of said side walls, said guide ribs extending into said guideways and supporting said breech closure for reciprocation in said receiver portion.

6. A firearm as defined in claim 5, said forestock portion comprising a circumferential enclosure for the major part of the length of said barrel, said enclosure terminating forward of the receiver portion to permit the insertion of the reciprocating breech closure into the space between the circumferential enclosure and the upstanding

side walls of the receiver portion prior to insertion of the barrel into the forestock, said supporting guideways in the receiver portion opening into said space to receive said guide ribs.

7. A firearm as defined in claim 6, including a sheet metal receiver cover completing the enclosure of the receiver portion of said stock, said receiver cover extending over said breech closure and being connected on opposite sides of said breech closure to said stock, and means passing through said cover and the receiver portion of said stock connecting the opposite sides of said cover to reinforce said receiver portion.

8. A firearm as defined in claim 7, said means for pulling said barrel down into said cradle in the receiver portion comprising a lug on said barrel, a hold down screw passing through said stock into engagement with said barrel lug, recoil shoulder formed on said barrel by opposed recesses in the outer surface thereof and extending transversely to the axis of the barrel, said means for resisting longitudinal displacement of said barrel comprising a bifurcated barrel bracket received on said hold down screw and simultaneously engaging with said opposed recesses in the barrel and with said recess in the cradle section of the forestock portion of said stock.

9. A firearm as defined in claim 1, said dimensionally stable material being characterized by low friction, anti-galling and self-lubrication.

10. In a firearm as defined in claim 9, said synthetic linear polyamide being known as nylon.

11. A firearm as defined in claim 1, said dimensionally stable material being a long chain synthetic linear polyamide characterized by low friction, anti-galling and self-lubrication.

12. In a firearm, a receiver portion of moldable, synthetic resinous, dimensionally stable material having molded integrally therein guideways, a breech closure, and means on said breech closure in engagement with said guideways and mounting said breech closure in said receiver portion, said breech closure being mounted in said receiver portion for reciprocation on said guideways longitudinal of said receiver portion between a first position adjacent one end of said receiver portion and a second position adjacent the opposite end of said receiver portion.

13. In a firearm as recited in claim 12, said dimensionally stable material being characterized by low friction, anti-galling and self-lubrication.

14. In a firearm as recited in claim 13, said dimensionally stable material being known as nylon.

15. In a firearm as recited in claim 12, said dimensionally stable material being a long chain synthetic linear polyamide characterized by low friction, anti-galling and self-lubrication.

16. In a firearm, a receiver portion and a breech closure, said receiver portion having guideways for said breech closure, means on said breech closure in engagement in said guideways mounting said breech closure in said receiver portion, said breech closure being mounted in said receiver portion for reciprocation in said guideways longitudinal of said receiver portion between a first position adjacent one end of said receiver portion and a second position adjacent the opposite end of said receiver portion, and bearing means intermediate said breech closure and said guideways of moldable, synthetic resinous, dimensionally stable material.

17. In a firearm as recited in claim 16, said guideways having a bearing surface characterized by low friction, anti-galling and self-lubrication.

18. In a firearm as recited in claim 17, said synthetic linear polyamide being known as nylon.

19. In a firearm as recited in claim 16, said guideways having a bearing surface of long chain synthetic linear polyamide characterized by low friction, anti-galling and self-lubrication.

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