June 26, 1928. 1,674,907

C. W. LINDSAY

FIREARM

Filed May 5, 1925

Fig.1

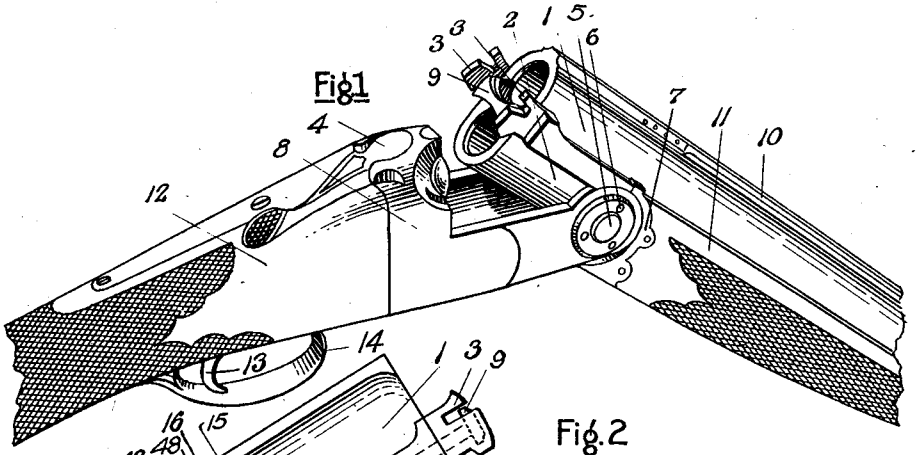


Fig.2

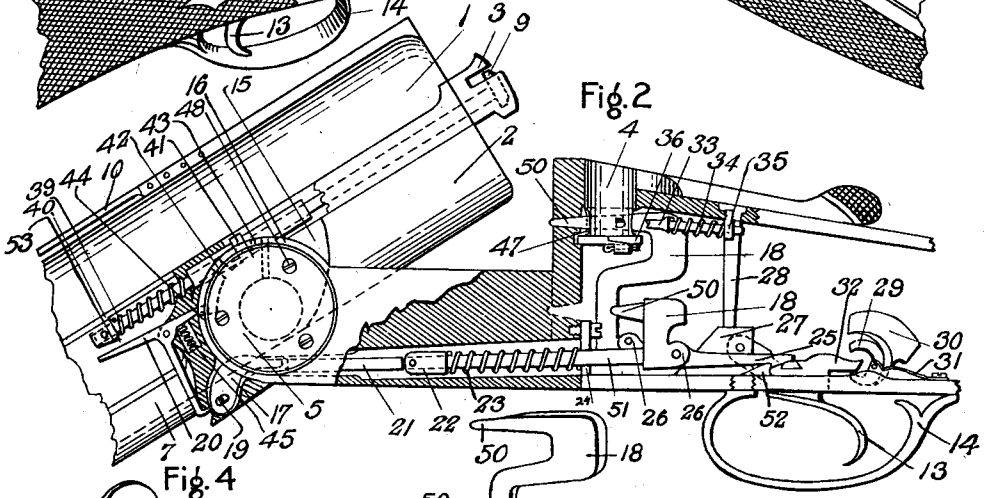


Fig.4

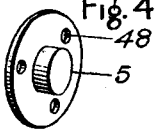


Fig.3

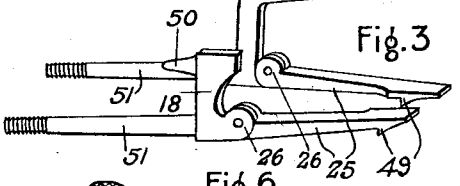


Fig.5

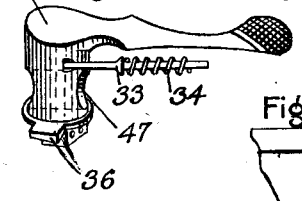


Fig.6



Fig.8

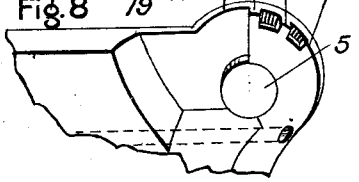
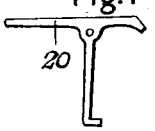


Fig.7



INVENTOR.

Charles W. Lindsay

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UNITED STATES PATENT OFFICE.

CHARLES W. LINDSAY, OF HOUSTON, TEXAS.

FIREARM.

Application filed May 5, 1925. Serial No. 28,247.

The objects of my improvements are:

1st. To provide adjustable journals with flanged support for fastening to the frame, bearings being carried by the sides of the barrels, the said journals protruding through the frame into the bearings, said journals and bearings constituting the hinge for opening and closing the fire-arm.

2nd. To provide curved cocking plungers which are pivoted in the fore-end, said cocking plungers operating against the cocking rods to cock the firearm and also against the triple armed ejector sears to set the ejectors.

3rd. To provide triple armed automatic ejector sears, said sears operating the ejector as the fire-arm is fired and opened.

4th. To provide a long curved hammer for firing the upper barrel, said hammer striking through an opening in the top lever post for firing the upper barrel direct.

5th. To provide a top lever post with a large opening through which a long curved hammer operates for firing the upper barrel direct.

I attain these objects by the mechanism illustrated in the accompanying drawings in which Fig. 1, represents a perspective view of a double barreled fire-arm with its barrels superimposed. Fig. 2, represents a longitudinal sectional view with the stock removed. Fig. 3, represents a perspective view of the two hammers for firing the lower and upper barrels. Fig. 4, represents a perspective view of the adjustable journal with flanged support. Fig. 5, represents a perspective view of the top lever post assembly. Fig. 6, represents a perspective view of the curved cocking plunger. Fig. 7, represents a side elevation of the triple armed ejector sear. Fig. 8, represents a fragmentary perspective of the inside of the frame, showing the ejector setting and tripping cams and the opening for the adjustable journal.

Similar numerals refer to similar parts through the several views.

The upper and lower barrels, 1 and 2 respectively, represent part of the regular break-down style of fire-arm. Lugs, 3, 3 which extend from the barrels are for securing the barrels in a closed position. The top lever post, 4 and the wedge fastener, 36 attached, secures the lugs, 3, 3 in the frame, 8.

The adjustable journals, 5, 5 have each a flange with screw holes, 6 for securing the journals to the frame, 8. The fore-end, 7 helps to maintain the hinge for opening and closing the fire-arm. There are two shell ejectors, 9, 9 one for each barrel. The trigger, 13 is for releasing the hammers. The lugs, 15, 15 high up on the sides of the lower barrel, 2 are bored to receive the adjustable journals, 5, 5 and constitute the rear support in maintaining the hinge, said hinge being thus located high upon the lower barrel, instead of at the lowest part of the fore-end as in the usual style of break down fire-arm.

The cocking plungers, 17, 17 have a curved shape to secure easy action in cocking the hammers, 18, 18 as the fire-arm is opened. The slotted openings, 19, 19 in the curved cocking plungers, 17, 17 permit a limited forward and backward movement used in setting the triple armed automatic ejector sears, 20, 20. The cocking rods, 21, 21 make connection between the curved cocking plungers, 17, 17 and the horizontal rods, 51, 51 of the hammers, 18, 18. The spiral main springs, 23, 23 surrounding the horizontal rods, 51, 51 of the hammers, 18, 18 are held in place by the retaining nuts, 22, 22 and are compressed against the retaining blocks, 24, 24. The flexible hammer sears, 25, 25 are hinged at 26, 26, to the hammers, 18, 18 and upon cocking the hammers, 18, 18 the said sears will engage their hooks, 49, 49 over the detents, 52, 52 on the trigger plate support, 27 holding hammers in a cocked position. The tang screw, 28 holds the trigger plate support, 27 in place. When the trigger, 13 is pulled it lifts the actuating cam, 32 until checked by stop hook, 29, this action releasing the first hammer sear, 25. The momentum block, 30 prevents involuntary pull of the trigger during rebound. When trigger is released the trip spring, 31 moves the stop hook, 29 out of way of the actuating cam, 32 and the parts are now in position for releasing the second hammer sear by a second pull on the trigger.

The retaining collars, 37, 37 are fastened by pins, 46, 46 on the front end of the ejector rods, 39, 39 and have detents, 53, 53 for engaging the anterior arms of the ejector sears, 20, 20 when the fire-arm is closed, this engagment being conditional upon the hammers having been released. Spiral ejector springs, 38, 38 assembled on ejector rods, 39, 39 are compressed against recessed shoulders, 40, 40 in the barrel by ejector setting cams, 43, 43 rotating against ejector collars,

41, 41 as the fire-arm is being closed. This action cocks ejectors, 9, 9 which are held in cocked position, first by the ejector setting cams, 43, 43, and secondly by the anterior arms of the ejector sears, 20, 20 engaging the ejector detents, 53, 53. This latter occurs when the hammers are released, thereby permitting the main springs, 23, 23 to exert a forward pressure on the lower arms of the ejector sears, 20, 20 through the medium of the cocking rods, 21, 21 and the curved cocking plungers, 17, 17. The cocked ejectors are released by the ejector tripping cams, 44, 44 moving upward against the posterior arms of ejector sears, 20, 20 thereby rocking downward the anterior arms of said ejector sears from ejector detents, 53, 53 as the fire-arm reaches its maximum opening. The ejector sear springs, 45, 45 hold the ejector sears, 20, 20 from engaging ejector detents, 53, 53 until the curved cocking plungers, 17, 17 contact the lower arms of ejector sears, 20, 20, said contact occurring the instant the main springs, 23, 23 are released by the hammer sears, 25, 25 and continues until the hammers are again held in cocked position by their sears.

Operation of the fire-arm can be better understood by referring to the following description.

In Figures 1 and 2, the firearm is shown standing open with the barrels placed one above the other. On closing the fire-arm the lugs, 3, 3 will enter the frame, 8 the wedge fastener assembly, 36 on the top lever post, 4 will enter the lugs, 3, 3 and secure the fire-arm in a closed position. The lugs, 15, 15 on the sides of the barrel, 2 are bored to receive the adjustable journals, 5, 5 and together constitute the main hinge for breaking down the fire-arm. These journals may be adjusted to a new wearing surface by turning the flange and screws to a different position on the sides of the frame. The journals being fitted into their bearings high up on the sides of the barrel, 2 lessons the depth of the fire-arm from top to center of the hinge, thereby providing the fore-end with a longer "cocking radius", same being the distance from the center of the hinge down to the lowest part of the fore-end where the curved cocking plungers, 17, 17 are pivoted.

Figure 2, is a sectional view of the fire-arm standing open. The hammer, 18, for firing the lower barrel, has been brought to a cocked position and the hammer sear, 25 has engaged the detent, 52 on the trigger plate. The hammer, 18, for firing the upper barrel, is shown in a fired position to illustrate how the hammer strikes through the opening, 47 in the top lever post, 4 thus firing the upper barrel direct. This is a departure from the usual method of having the hammer strike a firing pin which operates at an angle either beneath or to one side of the top lever post. When the fire-arm is held in its normal horizontal position and is opened by "breaking it down", the barrels and fore-end move downward and backward through an arc of a circle whose center is the center of the main hinge and which is composed of the adjustable journals, 5, 5 fitted into their bearings high up on the lower barrel.

The curved cocking plungers, 17, 17 are pivoted through slotted holes, 19, 19 into the lowest posterior part of the fore-end and so arranged that their larger ends are directed toward the muzzle of the barrels and their smaller ends directed toward the breech and projecting slightly beyond the posterior surface of the fore-end. When the fire-arm is assembled these smaller pointed ends of the curved cocking plungers, 17, 17 engage the mouths of two tunneled passages, one on either side of the floor of the main frame, wherein they make contact with the two cocking rods, 21, 21 and which they push backward like pistons. These cocking rods are straight and serve to transmit motion, without altering it in degree or direction, from the curved cocking plungers, 17, 17 to the horizontal bars, 51, 51 that are integral parts of the hammers, 18, 18. As these horizontal rods, 51, 51 are forced backward their spiral main springs, 23, 23 are compressed against the retaining blocks, 24, 24 and the hooks, 49, 49 on the hammer sears, 25, 25 engage the detents, 52, 52 on the trigger plate, 27 thus holding the hammers, 18, 18 in a cocked position. The distance from the curved cocking plungers, 17, 17 up to the center of the main hinge, called the "cocking radius", is long enough to give the curved cocking plungers, 17, 17 an amplitude of motion sufficient to cock the hammers, 18, 18 by direct force without having to alter or magnify this motion with any intervening device. The cocking plungers, 17, 17 are curved so they can be pivoted through their broad forward ends into the lowest portion of the fore-end, 7 thus permitting their small rear ends to impinge against the cocking rods, 21, 21 at an angle ranging from a straight line at the beginning of the cocking movement to almost a right angle at the completion of this movement. This change in the contact angle between the curved cocking plungers, 17, 17 and the cocking rods, 21, 21 serves to check the forward pressure of the compressed main springs, 23, 23 through the cocking mechanism, thus allowing the fire-arm to remain open for loading without that tendency to fly shut the moment the bread-down movement has ceased.

In Figure 2, it will be understood that the ejector mechanism for one side only need be described inasmuch as it is duplicated for the other side. As the fire-arm is start-

ing to close the ejector setting cam, 43 will rotate against the ejector collar, 41, carrying the ejector parts ahead compressing the ejector spring, 38 against the recess shoulder, 40 and at the same time the ejector detent, 53 will pass forward of, but not engage the anterior arm of the ejector sear, 20. When the hammer has been released the curved cocking plunger, 17 will be pushed ahead on its slotted pivot hole, 19 through the action of the main spring, 23 thereby making close working contact between the curved cocking plunger, 17 and the lower arm of the ejector sear 20. As the lower arm of the sear is pushed forward the posterior arm is forced downward until it overcomes the weak ejector sear spring, 45 and the anterior arm is rocked upward into the path of the ejector detent, 53 which it will engage the moment a little slack is given by the ejector setting cam, 43 as firearm starts to open; thus holding the ejector parts in a cocked position. On further opening the fire-arm, the ejector tripping cam, 44 will rotate in contact with the posterior arm of the ejector sear, 20 thereby lifting this posterior arm and at the same time rocking downward the anterior arm of the same ejector sear, 20 out of its engagement with the ejector detent, 53 thus releasing the ejector parts to suddenly eject the fired cartridge. If the fire-arm is closed while it is in a cocked position, the curved cocking plunger, 17 is free on its slotted pivot hole, 19 and will not exert pressure on the lower arm of the ejector sear, 20. While in this free position the ejector sear spring, 45 will lift the posterior arm of the ejector sear, 20 and at the same time rock downward and hold the anterior arm of the ejector sear, 20 out of the path of the ejector rod, 39 so that it can not engage the ejector detent, 53. On further opening the fire-arm, while in this free position, the ejector spring, 38 will cause the ejector collar, 41 and parts to follow the rotation of the ejector setting cam, 43, causing the ejector, 9 to extract slowly.

The operation of the single trigger can be better understood by referring to Patent No. 1,375,710.

I am aware that prior to my invention there are fire-arms, of a similar construction. I, therefore, do not claim such combination broadly: but,

What I claim is:

1. The combination in a superimposed double barreled fire-arm, of adjustable journals carried by the main frame and bearings on the sides of the barrel, the said journals having flanged supports for fastening to the frame, and adapted to protrude therethrough into the said bearings, substantially as described.

2. The combination in a super-imposed double barreled fire-arm, of curved cocking plungers which are pivoted in the fore-end, said curved cocking plungers impinging against the cocking rods at a varying angle while cocking the hammers as the fire-arm is opened: also, said curved cocking plungers impinging against the ejector sears, setting the ejectors as the fire-arm is opened, substantially as described.

3. The combination in a superimposed double barreled fire-arm, of triple armed automatic ejector sears which are pivoted in the fore-end, said sears being contacted at their lower arms by the curved cocking plungers when setting the ejectors, by engaging with their anterior arms the ejector rod detents for holding the ejectors in cocked position, and being contacted at their posterior arms by the ejector tripping cams when tripping the ejectors, substantially as described.

4. The combination in a superimposed double barreled fire-arm, of a long curved hammer for firing the upper barrel, said hammer reaching through an opening in the top lever post for striking the cartridge direct, substantially as described.

5. In a superimposed double barreled fire-arm the combination of a large top lever post having a large opening in its vertical shaft for the passage of the hammer in firing the upper barrel direct, and a long curved hammer that strikes through a large opening in the large top lever post as it fires the upper barrel by striking the cartridge direct; said large top lever post also carrying on its lower end an assembly for locking the barrels into the frame when firearm is closed, substantially as described.

CHARLES W. LINDSAY.