

E. C. OSGOOD.
SINGLE TRIGGER MECHANISM.
APPLICATION FILED MAY 21, 1908.

934,009.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

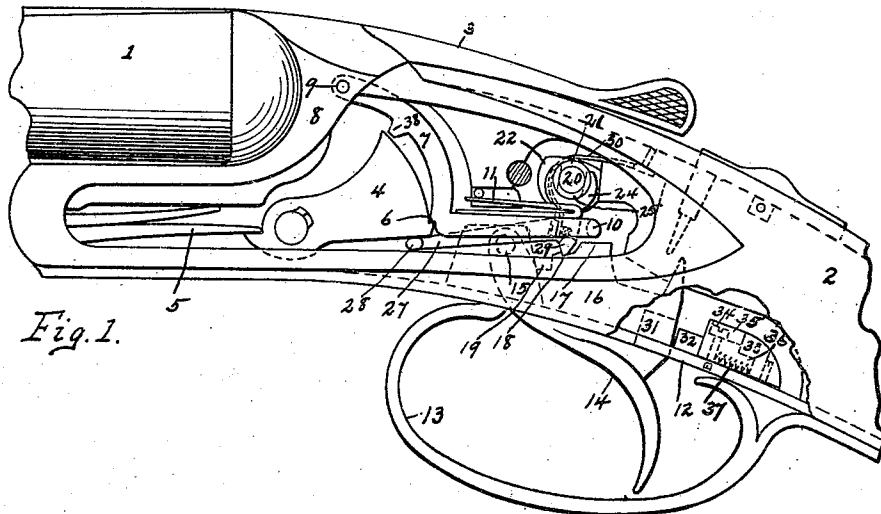


Fig. 1.

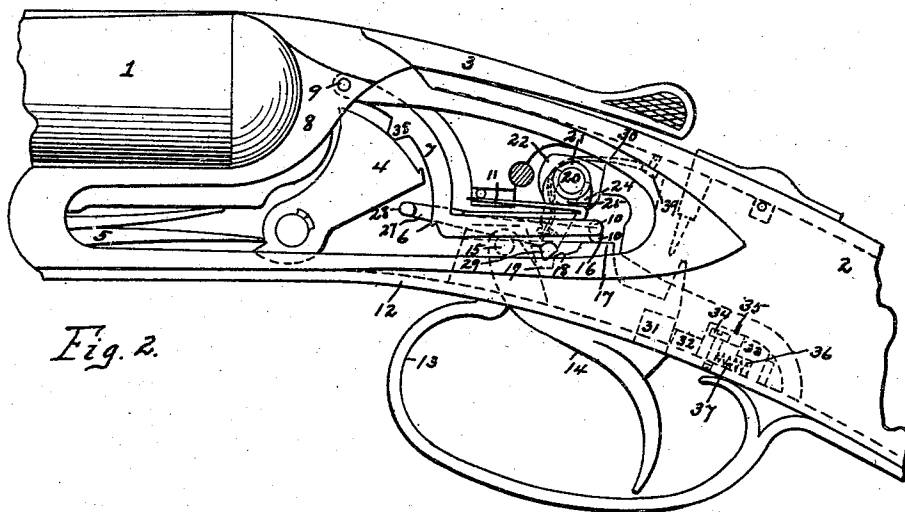


Fig. 2.

WITNESSES:

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INVENTOR

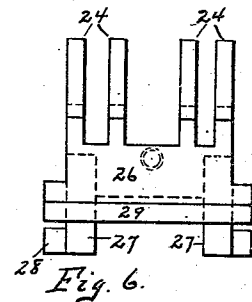
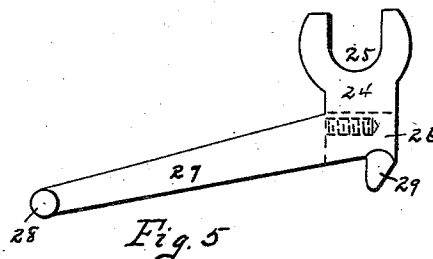
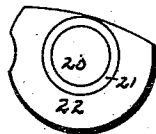
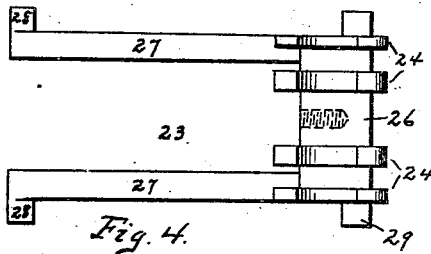
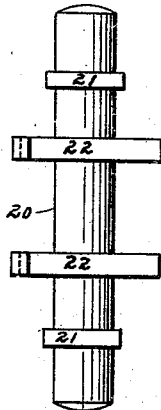
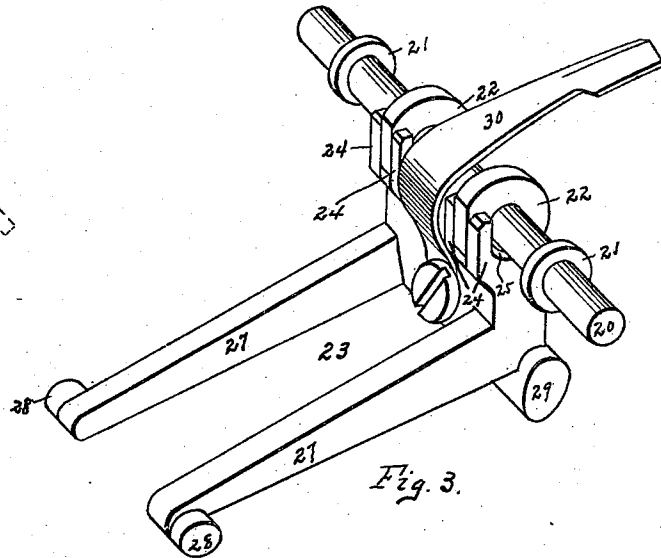
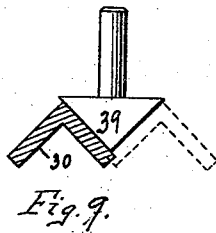
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UNITED STATES PATENT OFFICE.

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SINGLE-TRIGGER MECHANISM.

934,009.

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To all whom it may concern:

Be it known that I, EDWARD C. OSGOOD, a citizen of the United States, residing in the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Single-Trigger Mechanism for Double-Barreled Guns, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description, such as will enable others skilled in the art to which my invention relates to make, construct, and use the same.

It has been largely the custom in the manufacture of double barreled guns to provide duplicate firing devices for each of the barrels of the gun, such devices being independently operable, and each device provided with a separate and independent trigger. It has been proposed to substitute for the double trigger mechanism, a single trigger, with means whereby the operative parts connecting such trigger with the firing device for each of the barrels, may be shifted so as to permit either of the barrels to be fired at will. Many difficulties in the way of construction and operation have arisen in this method of solving the problem, and it is my object to provide a single trigger mechanism whereby either of the barrels of the gun may be fired at will, and thereafter, the other barrel may be fired by the operation of the same trigger, and I accomplish this object by providing a shifting connection between the single trigger and the sear piece of each of the firing devices, this shifting mechanism being so constructed, that it may be set in position to fire either barrel at will, and thereafter be left in a position, such that a further manipulation of the trigger will fire the other barrel. In this manner, I am able to fire the barrels of the gun in either order of sequence.

Another feature of my invention resides in mechanism for overcoming the tendency to an accidental discharge of the second barrel, due to the recoil of the gun at the firing of the first barrel. During this recoil, the operator, however firm a grip he may have upon the trigger, either cannot or does not permit his finger to recede with the recoil. This results in permitting the trigger to recede from his finger momentarily during the recoil and instantly thereafter it resumes its pressure upon the trigger, whereby the oper-

ative mechanism connected with the trigger and the other firing mechanism is actuated to accidentally discharge the other barrel. The mechanism whereby I am able to accomplish these several results is fully described in the accompanying drawings forming a part of this specification, in which—

Figure 1 is a side view of the firing mechanism of a double barreled gun, showing the interior operative parts, portions of the stock being broken away for that purpose. Fig. 2 is a similar view showing the left-hand mechanism of the gun in discharging position. Fig. 3 is a perspective view of the laterally shifting mechanism and push-pin, hereinafter described. Fig. 4 is a plan view; Fig. 5 is a side elevation; and Fig. 6 is an end elevation of the shifting device detached from the lock mechanism. Fig. 7 is a plan view; and Fig. 8 is an end view of the push pin for operating the shifting mechanism; and Fig. 9 is a sectional view of a detail.

In the accompanying drawings, I have only shown such parts of the firing mechanism as are necessary to completely disclose my invention and its objects.

1 refers to the barrels of the gun; 2 is the stock, which is secured to the barrels in any usual or desired manner; 3 is the detaching lever of the usual type; 4 is the hammer, actuated by the spring 5 and held in firing position by means of a small catch 6 upon the side of the sear 7. This sear is of the usual conformation and pivoted to the breech block 8 of the gun at 9. The opposite end of the sear 7 is provided with a laterally offset tongue 10, it being understood that the sear for the other firing mechanism is of substantially the same contour with the exception that the projection 10 is upon the opposite face of the sear. 11 is the sear spring; 12 is the trigger plate; 13 is the trigger guard; and 14 is the single trigger, located in a slot in the center of the trigger plate 12, and pivoted at 15 in a forked post or projection, rigidly secured to the trigger plate 12. This trigger has a peculiar conformation upon its upper edge, which I will now proceed to describe.

The blade portion 16 of the trigger is provided with a projection 17, for engagement with the projections 10 upon the sears 7, when the trigger is operated, as hereinafter described. Forward of the projection 17 is a notch 18 in the blade 16, of comparatively

shallow depth, and farther forward of the notch 18 is a still deeper notch 19.

Projecting laterally through each face plate of the gun, is a reciprocating pin 20, which is guided by apertures in the face plate, the length of such pin 20 being such that it may be projected from either side of the gun, a short distance, and manipulated back and forth by the fingers.

21, 21 are two collars located upon the reciprocating pin 20, a short distance from its ends, and designed to act as stops to limit the reciprocating movement of the pin 20 by contacting with the inner side of the face plate.

22, 22 are two larger collars located nearer the center of the pin 20, for a purpose hereinafter to be described. Loosely mounted upon this pin 20, is an irregularly shaped shifting device 23, having the upwardly projecting forked arms 24, all of the same contour, and when in operative position, the slotted or forked portion 25 is permitted to take on either side of the pin 20 with the forks 24 straddling the collars 22 of said pin. The four forks 24 project upwardly from and are integral with a cross-head 26. Projecting forwardly at an angle from the cross-head 26 are the two arms 27, which reach forward to a position such that the lateral projections 28 at the forward ends of said arms 27 will lie in the path of the lower side of the hammers 4.

Extending completely across the lower side of the cross-head 26 is a V-shaped projection 29, the lower edge of which is designed to cooperate with the notches 18 and 19 in a manner hereinafter to be described. The distance between the lower edges of the hammers 4, where they contact with the projections 28 of the arms 27, is somewhat greater than the extreme distance over all between the outer ends of the projections 28, so that when one of the projections 28 is in position beneath one of the hammers 4, the other will be out of engagement with the lower side of the other hammer, and vice-versa, when the device 23 is shifted for engagement with the other hammer.

Upon the forward side of the cross-head 26, I secure a spring 30, said spring when in position extending upwardly, and its upper end bent rearwardly over the reciprocating pin 20, and bearing at its free end upon the inner side of the cavity formed in the stock 2. The tendency of this spring when in position, is not only to tilt the forward ends of the arms 27 upwardly, but also to force the forks 24 downwardly, and hold the V-shaped projection 29 in engagement with the shallow notch 18.

The rear end of the trigger plate 16 is provided with a rectangular notch 31 to receive the projecting end 32 of the momentum block 33. This block 33 is slidably se-

cured to the trigger plate 12, as illustrated, by means of a headed screw 34, which takes into a slot 35 in the block 33. I also provide a cavity 36 in the lower side of said block, in which I have located a spring 37, which bears upon the lower end of the screw 34 and upon the end of the cavity 36, in such a manner as to yieldably retain the block 33 in its rearward position.

It will be noticed that the V-shaped projection 29 projects laterally at each end from the cross-head 26, to such a distance as to bring the upper sides thereof beneath the rear ends of the sears 7. The outside dimension over all between the outer ends of the projection 29, is such that when the shifting device 28 is in position for engagement with one of the hammers 4, the end of the projection 29 will also be in position to engage the sear of that hammer, and when shifted to its opposite position, the opposite end of the projection 29 will be in position for engagement with the other sear.

I will now proceed to describe the operation of the mechanism. It must be understood at the beginning that both hammers are cocked in the usual manner, by breaking down the barrels of the gun. When this is done, the rear side of one of the hammers 4 will come in contact with one of the projections 28 of the shifting device 23, and inasmuch as all of the parts of this device 23 are rigid, this action must result in putting the shifting device 23 into the position illustrated in Fig. 1, in which the spring 30 has pressed the rear end of the shifting device downwardly, with the middle portion of the V-shaped projection 29 in engagement with the notch 18. If now, it is desired to fire the right-hand barrel first, the pin 20 with the projection from the left hand lock plate will be pushed inwardly, thereby shifting the device 23 to the right-hand position in which the projection 28 on the right-hand side will be in position beneath the right-hand hammer 4. At the same time, the right-hand end of the V-shaped projection 29 will extend beneath the rear end of the right-hand sear. A pull upon the trigger 14 now will elevate the rear end of the shifting device 23, carrying with it, the right-hand sear through the projecting end of the projection 29, thereby releasing the projection 6 of the sear 7 from the right-hand hammer 4, upon which the spring 5 will actuate the hammer 4 of the right-hand barrel. Upon the explosion of the charge as heretofore described, there is a recoil, and usually the finger of the operator and the trigger 14 will become momentarily separated, after which the pressure of the finger is again put upon the trigger. If some means were not provided, this second pressure would result in firing the other barrel. Under these conditions, at the very instant

of the recoil, the momentum block 33 is projected forward against the pressure of the spring 37, to extend the projection 32 into the notch 31 in the trigger plate 16. By these means, I am enabled to prevent a reverse movement of the trigger at the instant of recoil. When the effects of the recoil have passed, the momentum block 33 will resume its normal position, and the trigger 14 can be released. It will be understood that when this release does take place, the spring 30 will actuate the shifting device 23 to elevate the forward end of the same, bringing the projection 28 up into the position illustrated in dotted lines, inasmuch as the right-hand projection 28 will tend to follow the right-hand hammer. This rising of the forward end of the arm 27 will result in pivoting the shifting device around the pin 20 and carrying the V-shaped projection 29 out of the shallow notch 18 and into the deeper notch 19. The projection 17, upon the plate 16 is of sufficient lateral dimension to extend beneath both of the rear projections 10 of the sears 7. It will be further noted that upon the first operation of the trigger 14, the forks 24 of the shifting device 23 will rise, being guided in their upward movement by the pin 20, until the bottom of the notches 25 engage the circumference of the pin 20. Thus, the rearward movement of the trigger 14 is limited by the depth of the notch 25, and this limit is such that when the first barrel is fired, the projection 17 will not rise sufficiently to contact with the inward projections 10 on the sears. Now when the first barrel has been fired, and the V-shaped projection 29 has been tilted forward into the notch 19, there is nothing to limit the movement of the trigger and the projection 17 against the other sear projection 10. A further manipulation of the trigger will now actuate the other sear and thus discharge the other barrel of the gun. The same order of operation will take place when the pin 20 is shifted and with it, the shifting devices 23, to fire the left-hand barrel first. It will thus be seen that I am able to discharge the barrels of the gun in which ever order I may desire, by simply reciprocating the pin 20 prior to the manipulation of the trigger.

When the sears 7 have been released from the hammers through the disengagement of the catch 6, and the hammers actuated through the springs 5, if some precaution were not taken against it, the projections 10 on the rear of the sears would drop downwardly and would bear upon the projection 17 of the trigger 14, so that at the firing of the second barrel, the operator would have to press the trigger 14 against both the sear springs 11. In order to relieve this pressure upon the trigger, I have provided each of the sears with a projection 38, which bears

upon the outer edge of the hammers 4, so that the sear projection 10 is held away from the projection 17. In this manner, the trigger 14 is relieved from the pressure of the sear spring of the discharged barrel. It will thus be seen that with the construction of mechanism as above described, I am able to discharge either barrel of the gun in either order, at will, by the manipulation of the push pin 20 from the sides of the lock plate, this discharging being done by means of a single trigger. When the push pin is permitted to remain in a single position, the two barrels are always fired in the same order, but as above described, this order may be reversed by changing the position of the push pin.

In order to insure the position of the shifting device 23 against accidental displacement through jar or otherwise, I have provided the free end of the spring 30 with a V-shaped contour in cross-section. For cooperation with this V-shaped end of the spring 30, I have located for contact therewith, a V-shaped stud located in the interior of the cavity, which carries the lock mechanism, as at 39. It will be seen with this construction, that when the push pin 20 is reciprocated from side to side, the spring 30 with its V-shaped end will snap from side to side of the stud 39, the resiliency of the spring 30 holding the entire mechanism in its shifted position.

I claim:

1. In a lock for firearms, the combination of two hammers, a sear for each hammer, a single trigger having a projection thereon for engagement with each of the sears, a manually shiftable device located between the trigger and the sears and held in position by one of the hammers and adapted to engage only one of said sears and the corresponding hammer at a time, whereby the initial movement of the trigger will cause said shiftable device to actuate one of said sears and permit a second movement of the trigger to directly actuate the other sear through the projection on the trigger.

2. In a lock for firearms, the combination of the two hammers, sears for operating said hammers, a single trigger having a projection thereon for actuating either of said sears, a laterally shiftable device alternately located in the respective paths of said sears and the corresponding hammer, whereby the initial movement of said trigger will cause said shiftable device to actuate one of said sears and permit a second movement of said trigger to directly actuate the other sear.

3. In a lock for firearms, the combination of two sears, a laterally shiftable sear actuating device arranged to actuate either one of said sears, a single trigger having a shallow notch therein for engagement with said sear actuating device, and a projection for en-

gement with the other sear, whereby the initial movement of said trigger will cause said sear actuating device to actuate one of said sears and become released from said shallow notch and permit a second movement of said trigger to cause the projection thereon to actuate the other sear.

4. In a single trigger mechanism for firearms, the combination of a single trigger having a projection thereon and a shallow notch therein, a pair of sears and a vertically movable laterally shiftable sear actuating device arranged for alternate engagement with said sears, said device having a V-shaped projection thereon for engagement with the notch in the trigger, whereby the initial movement of the trigger will actuate said actuating device to operate one of said sears and a second movement will cause the projection on the trigger to actuate the other sear.

5. In a lock for firearms, the combination of two hammers, a sear for each hammer, a single trigger having a projection thereon for engagement with each of the sears, a manually shiftable device located between the trigger and the sears and held in position by one of the hammers and adapted to engage only one of said sears and the corresponding hammer at a time, whereby the initial movement of the trigger will cause said shiftable device to actuate one of said sears and permit a second movement of the trigger to directly actuate the other sear through the projection on the trigger and a momentum block actuated by the recoil of the firearm for engagement with the trigger to prevent accidental operation of the second sear.

6. In a lock for firearms, the combination of the two hammers, sears for operating said hammers, a single trigger having a projection thereon for actuating either of said sears, a laterally shiftable device alternately located in the respective paths of said sears and the corresponding hammer, whereby the initial movement of said trigger will cause said shiftable device to actuate one of said sears and permit a second movement of said trigger to directly actuate the other sear and a momentum block actuated by the recoil of the firearm for engagement with the trigger to prevent accidental operation of the second sear.

7. In a lock for firearms, the combination of two sears, a laterally shiftable sear actuating device arranged to actuate either one of said sears, a single trigger having a shallow notch therein for engagement with said sear actuating device, and a projection for engagement with the other sear, whereby the initial movement of said trigger will cause said sear actuating device to actuate one of said sears and become released from said shallow notch and permit a second movement

of said trigger to cause the projection thereon to actuate the other sear and a momentum block actuated by the recoil of the firearm for engagement with the trigger to prevent accidental operation of the second sear.

8. In a single trigger mechanism for firearms, the combination of a single trigger having a projection thereon and a shallow notch therein, a pair of sears and a vertically movable laterally shiftable sear actuating device arranged for alternate engagement with said sears, said device having a V-shaped projection thereon for engagement with the notch in the trigger, whereby the initial movement of the trigger will actuate said actuating device to operate one of said sears and a second movement will cause the projection on the trigger to actuate the other sear, and a momentum block actuated by the recoil of the firearm for engagement with the trigger to prevent accidental operation of the second sear.

9. In a lock action for single trigger guns, the combination of a laterally reciprocable push pin, a shifting device pivotally mounted on said push pin to move laterally therewith and vertically thereon, said device having forwardly projecting arms thereon for direct engagement with either one or the other of the hammers of the gun, a downward integral projection for engagement with the trigger and lateral integral projections for engagement with either one or the other of the sears.

10. In a lock action for single trigger guns, the combination of a laterally shifting device provided with projections thereon for engagement respectively with the hammers, with the sears, and with the trigger, and a reciprocable pin upon which said device has both pivotal and vertical movement, whereby, when said pin is set in one position, one set of said projections will engage one of the hammers and its sear and the trigger and when set in its other position, the other set of projections will engage the other hammer and its sear and the trigger.

11. In a lock action for single trigger double barreled guns, a single integral laterally shiftable vertically movable pivoted device having normal engagement with one of the hammers and the corresponding sear and means for shifting said device into engagement with the other hammer and sear.

12. In a lock action for single trigger double barreled guns, a single integral laterally shiftable vertically movable pivoted device having normal engagement with one of the hammers and the corresponding sear of the gun, and means for laterally shifting said device into engagement with the other hammer and sear, said device having a projection thereon for engagement with the gun trigger when said device is in either of its positions.

13. In a lock action for single trigger
double barreled guns, a laterally shiftable
pivoted device having normal engagement
with one of the hammers and its sear, a lat-
5 erally reciprocable pin in engagement with
said device for shifting it into engagement
with the other hammer and sear and a spring
for both maintaining said device in either
of its shifted positions and for holding it

under tension against the corresponding 10
hammer and sear.

This specification signed and witnessed
this 18th day of May 1908.

EDWARD C. OSGOOD.

Witnesses:

LOUIS M. SANDERS,

JOHN J. LYNN.