No. 621,102. Patented Mar. 14, 1899.

P. C. KOLL.

SINGLE TRIGGER FOR DOUBLE BARREL FIREARMS.

(Application filed Feb. 11, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig 1

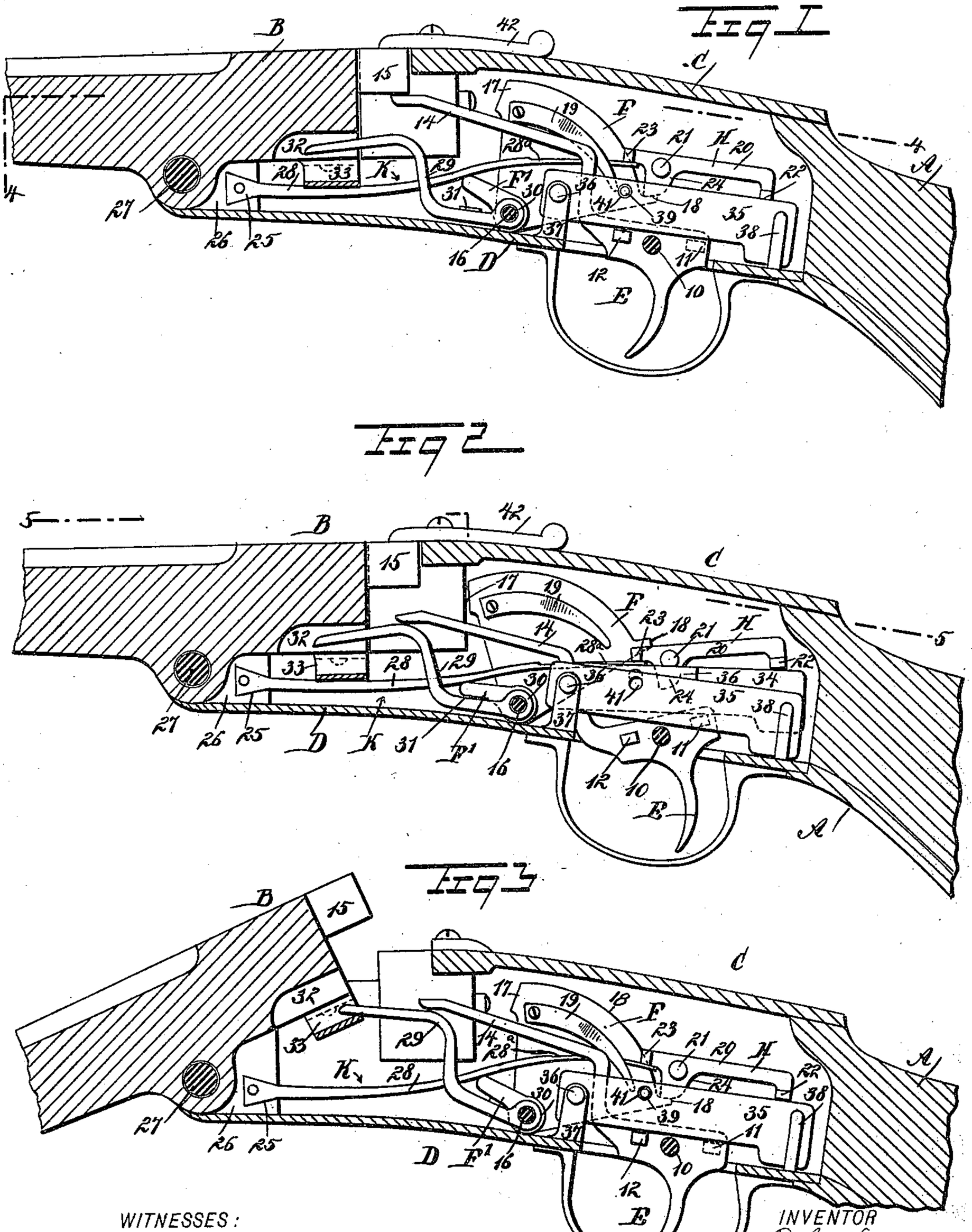

Fig 2

Fig 3

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Fig 4

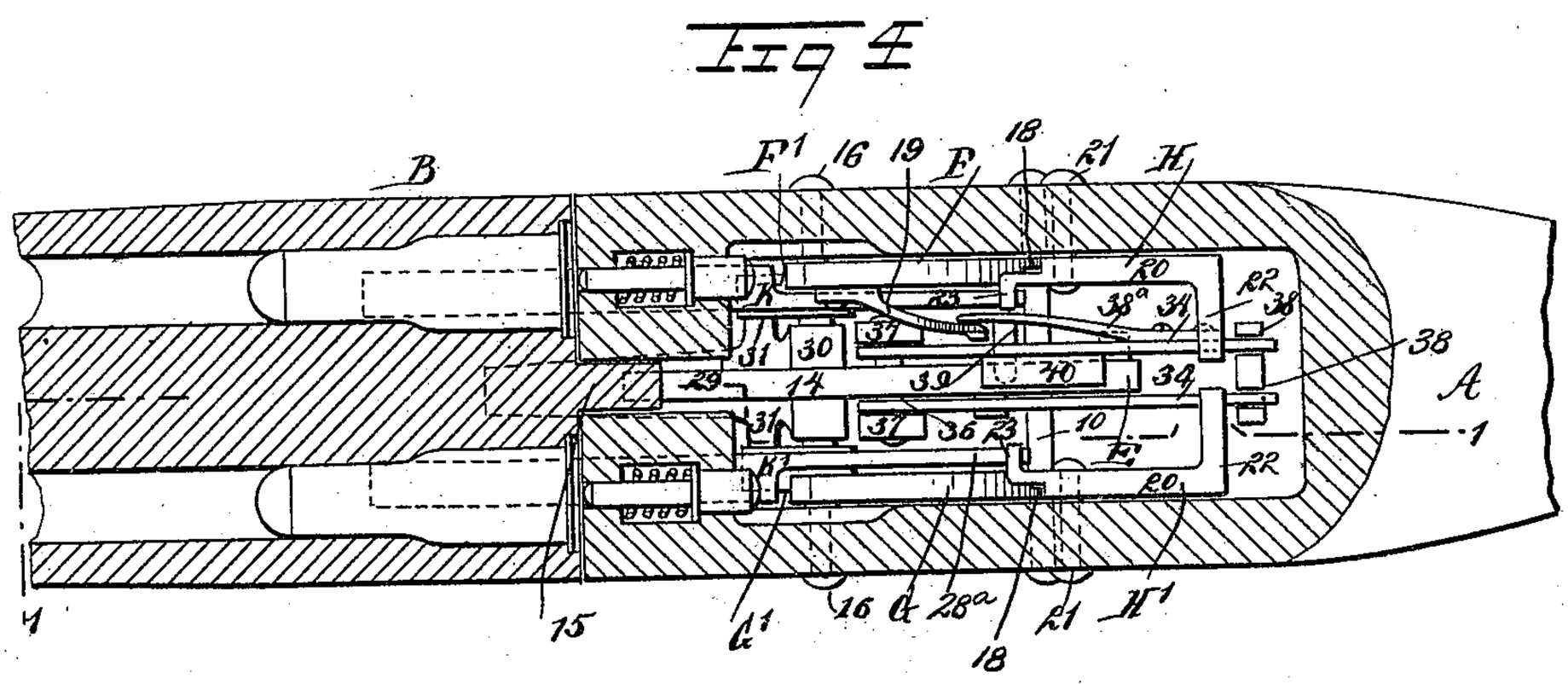


Fig 5

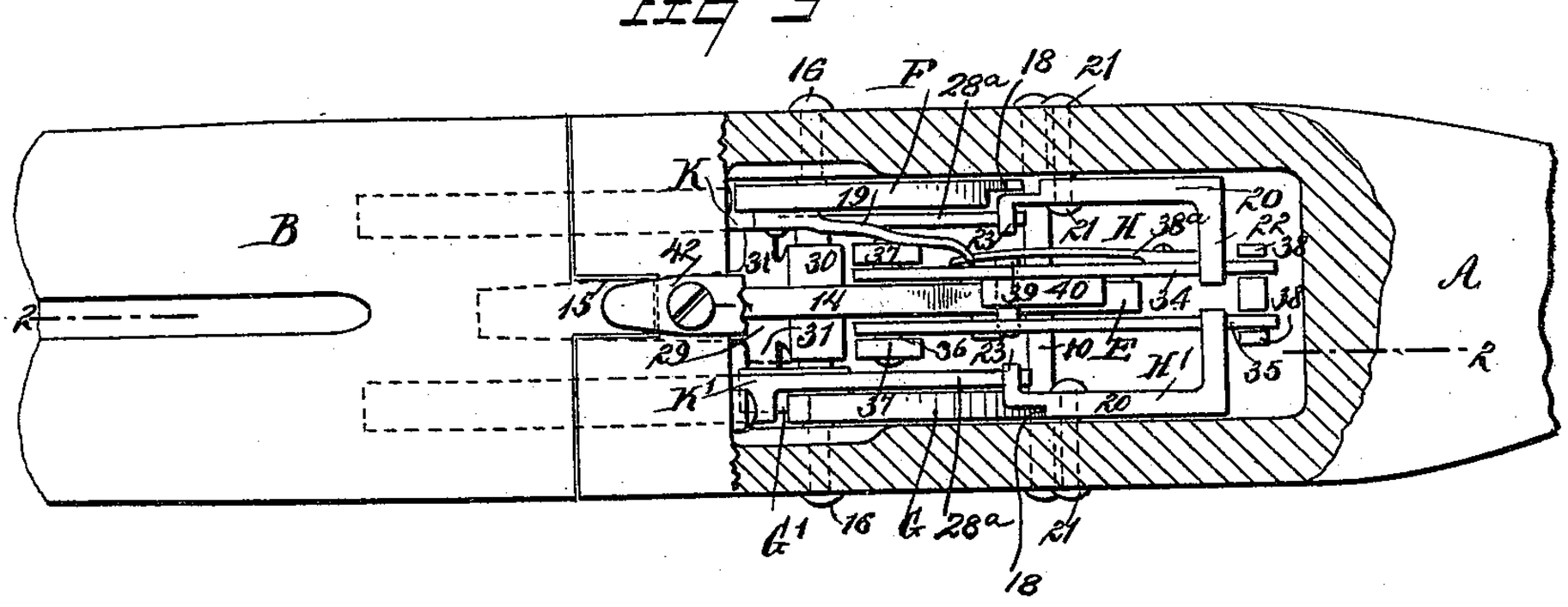


Fig 6

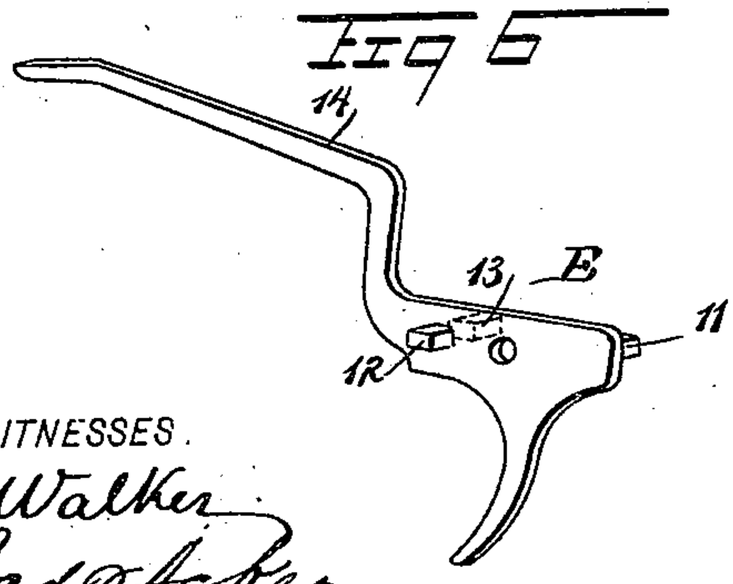
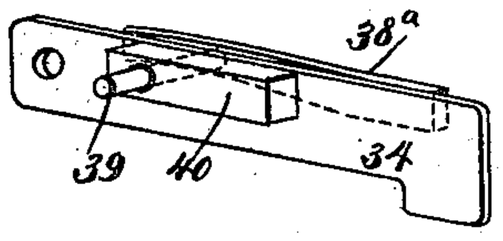


Fig 7



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PETER CHARLES KOLL, OF WALNUT, IOWA.

SINGLE TRIGGER FOR DOUBLE-BARREL FIREARMS.

SPECIFICATION forming part of Letters Patent No. 621,102, dated March 14, 1899.

Application filed February 11, 1898. Serial No. 669,928. (No model.)

To all whom it may concern:

Be it known that I, PETER CHARLES KOLL, of Walnut, in the county of Pottawattamie and State of Iowa, have invented a new and useful Improvement in Firearms, of which the following is a full, clear, and exact description.

My invention relates to the firing mechanism for both exposed and concealed hammer guns, especially the latter.

The object of the invention is to provide a single trigger which may be used with perfect safety for two hammers and wherein the right-hand hammer will in every instance drop first without the slightest possibility of the left-hand hammer being brought into action and whereby upon pulling the trigger a second time immediately after the first firing or after a lapse of time the left-hand hammer will be operated. Thus it is impossible for both loads in a double-barreled gun to be fired at the same time.

A further object of the invention is to provide a means for safely lowering the hammers when cocked and when the gun is opened, this result being accomplished mainly by the forward movement of the trigger, but wherein if the hammer is cocked and the gun closed the hammers must be dropped by firing only, as the trigger will be locked against forward movement.

Another object of the invention is to provide a firing mechanism for two hammers operated by a single trigger, which mechanism will be exceedingly simple, durable, and economic and capable of application to any gun and wherein but one spring is needed in each division of the lock provided for a barrel, each spring controlling an independent hammer and its sear.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section through the stock portion of the gun having my improvement applied, the section being taken practically on the line 1 1 of Fig. 4 and the hammers being shown as cocked. Fig. 2 is a vertical longitudinal section taken on the line 2 2 of Fig. 5, the hammers being in engagement with the firing-pins. Fig. 3 is a section similar to the section shown in Fig. 1, the barrels having been opened. Fig. 4 is a horizontal section on the line 4 4 of Fig. 1. Fig. 5 is a horizontal section on the line 5 5 of Fig. 2. Fig. 6 is a detail perspective view of the trigger, and Fig. 7 is a detail perspective view of the right-hand trigger-plate.

A represents the stock of the gun; B, the barrels; C, the lock casing or frame, and D the trigger-plate of the casing. The trigger E is mounted upon a suitable pin 10, and the said trigger at the right-hand side of the heel of its body portion is provided with a laterally-projecting lug 11, while at the forward end or toe portion of the body of the trigger a lug is located at each side, (designated, respectively, as 12 and 13.) Also at the toe portion of the body of the trigger a safety-arm 14 is formed, which is usually carried upward and in a forwardly direction, being adapted when the barrels are closed to engage at its forward end with the extension-rib 15, usually provided at the breech end of the barrels between the bores, as shown in Fig. 1.

Forward of the body of the trigger a pin 16 is secured in the lock-casing, and upon the said pin two hammers F and G are independently mounted to turn. The hammers may be of any suitable form, but preferably they are of a quadrantal shape, as illustrated, being provided at the upper portion of their forward edges with a head 17, adapted for contact with the firing-pin, while at the upper portion of the rear edge of each hammer a spur 18 is formed.

Upon the inner or left-hand face of the right-hand hammer F a releasing-finger 19 is securely fastened. This finger extends rearwardly in direction of the rear end of the stock and is more or less downwardly curved. At the rear of each hammer a sear is located between the top and bottom portions of the lock-casing, the right-hand sear being designated as H and the left-hand sear as H'. Each sear preferably and as illustrated consists of a straight body portion 20, which is pivoted at its forward end to a side of the casing by means of a suitable pin 21 and a rear arm 22,

which is at an angle to the body, extending in direction of the center of the casing, together with an inwardly-extending horizontal spur 23, formed at the forward end of the body and also at a right angle thereto.

The forward end of the body 20 is cut away to permit the passage of the spur 18 of a hammer, since the said spur is preferably of less thickness than the body of the hammer, as shown in Fig. 5. Each sear is also provided just below its pivot with a downwardly-extending lug 24, the rear and bottom edges of which are preferably curved, as illustrated.

At the pivot end of each hammer, upon its inner face, a forwardly-extending arm is secured or made integral with the hammer. These arms are designated, respectively, as F′ and G′. A single spring is used in connection with each hammer and its sear. These springs are designated, respectively, as K and K′ and extend from a point near the fore end of the stock rearwardly in engagement with the arms F′ and G′, projected from the hammers, and to an engagement with the under faces of the spurs 23 of the sears. The rear end of each spring is preferably given a dovetailed shape to fit in the corresponding recess 25, made in the wall of a chamber 26, formed in the stock and near the pivot 27 of the barrels, as shown particularly in Figs. 1, 2, and 3. Each spring is made with a thick body portion 28, which is carried over an arm F′ and G′ of a hammer, and a thinner rear end 28^a, which engages with the spur 23 on a sear.

A cocking-lever 29 is loosely mounted on the pin 16, on which the hammers are mounted, the rear end of the lever being formed into an eye 30, which is located on said pin 16 between the hammers, and adjacent to the eye or pivot portion of the cocking-lever a cross-bar 31 is secured, which cross-bar is carried beneath the arms F′ and G′ of the said hammers. The cocking-lever is usually given an upward and a forward inclination, its forward end being carried into a chamber 32, formed in the breech end of the barrel, at the center thereof, and the said chamber 32 is crossed by a loop 33, which will not permit the free end of the lever to drop from the said chamber. When the barrel is opened, as shown in Fig. 3, the loop 33 will carry the free end of the cocking-lever upward and its cross bar or plate 31 upward and rearward, forcing the arms of the hammers in the same direction and carrying the hammers to the cocked position. As the hammers are carried to their cocked position the spurs 18 of the hammers pass down through the recessed portions of the sears, engaging with the forward edges of the lugs 24 of said sears and forcing the rear ends of the sears upward and their forward ends downward slightly, compressing the rear ends of the springs K and K′; but as soon as the spurs of the hammers pass the lower ends of the lugs 24 on the sears the springs K and K′ restore the sears to their normal position, bringing the lugs 24 of the sears over the spurs 18 of the hammers and holding the hammers in their cocked position, as shown in Fig. 1. The springs K and K′ are placed under tension at their central portions by the uplifting of the arms of the hammers. Thus as soon as the lugs of the sears are disengaged from the spurs on the hammers the springs K and K′ will immediately act to force the hammers in engagement with the firing-pins and restore the sears to their normal position.

Two trigger-plates 34 and 35 are located one at each side of the body of the trigger, the right-hand trigger-plate resting upon the right-hand lugs 11 and 13 on the body of the trigger, while the left-hand trigger-plate rests upon the left-hand lug 12, projected from the body of the trigger. The trigger-plates are pivoted upon a pin 36, supported by lugs 37, the pivot-pin 36 passing through the trigger-plates near their forward ends. The rear ends of the trigger-plates enter guides 38, located at the rear end of the casing-chamber, as is particularly shown in Figs. 4 and 5. A spring 38^a is secured to the outer face of the right-hand trigger-plate, near the rear end of the said plate, as shown in Fig. 7, and the said spring carries a connecting-bolt 39, which is passed through a suitable opening in the right-hand trigger-plate and through a reinforcing-block 40, secured upon the inner face of the said trigger-plate, as is also shown in Fig. 7. The left-hand trigger-plate is provided with an opening 41, adapted to receive the connecting-bolt 39, and the barrels are held locked to the stock in their closed positions by a suitable button 42, secured to the casing and arranged to extend over the extension-rib 15 of the barrels, as shown in Figs. 1 and 2.

In the operation of the gun, the parts being in the position shown in Fig. 2, when the barrel is broken or dropped, as shown in Fig. 3, during the act of breaking or dropping the barrel the cocking-lever is carried upward at its forward end, forcing the hammers rearward by reason of the contact of the cross-bar 31 on the said cocking-lever engaging with the under surfaces of the arms F′ and G′, attached to the hammers. As the barrels are opened the hammers are carried rearward until their spurs 18 are caught beneath the lugs 24 on the sears. The barrels are then closed, the hammers remaining in their cocked position, and the button 42 is carried over the barrels, the parts being in the position shown in Fig. 1. When the right-hand hammer is brought to a cocked position, the releasing-finger 19 passes between the free end of the spring 38^a and the trigger-plate 34, drawing the connecting-bolt 39 from out of engagement with the left-hand trigger-plate 35. When it is desired to fire the piece, by drawing the finger-piece of the trigger rearward the body of the trigger at the rear will be rocked upward, causing the right-hand lug 11 to engage with the right-hand trigger-plate and carry the same upward at its free end.

The upward movement of the right-hand trigger-plate by engagement with the rear arm 22 of the right-hand sear will raise the said sear at its rear, depressing its front portion, and as the rear portion of the right-hand sear rises the lug 24 belonging to that sear will be carried out of engagement with the spur 18 of the right-hand hammer, releasing the said hammer and permitting the right-hand spring K to act and force the right-hand hammer to firing position or in contact with the right-hand firing-pin, leaving the left-hand trigger-plate inactive, and consequently not affecting the left-hand hammer. When the right-hand hammer has been carried to firing position and while the finger is still on the finger-piece of the trigger, the connecting-bolt 39, the spring 38ª of which was released by the finger 19 of the right-hand hammer, will be in engagement with the surface of the left-hand trigger-plate, immediately above the opening 41 therein. Therefore the moment that the trigger is released from pressure and the right-hand spring K acts to force the right-hand sear, and consequently the right-hand trigger-plate, downward the connecting-bolt 39 will enter the opening 41 in the left-hand trigger-plate, tying the two plates together. Therefore when the finger-piece of the trigger is again drawn rearward and its right-hand lug at the heel of the body of the trigger raises the right-hand trigger-plate the left-hand trigger-plate will be raised also, and consequently the left-hand sear will be elevated at its rear, releasing the left-hand hammer and permitting the said hammer to be carried forward by its spring K′ to an engagement with the left-hand firing-pin. It is therefore evident that it will be utterly impossible with the single trigger to fire both barrels of this double-barreled gun at one time, but that the two barrels may be fired almost simultaneously or very quickly one after the other. When both of the hammers are cocked, the connection is only between the trigger and the right-hand hammer, and it is only after the right-hand hammer has been dropped from the cocked position that the left-hand hammer can be carried to a like position.

In a gun in which the hammers are concealed when it is desired to trip the hammers without firing the charge the gun is opened, and while the gun is in an open position the finger-piece of the trigger is rocked in a forwardly direction, thereby elevating the forward end of the body of the trigger and releasing both of the sears from engagement with the hammers, and the hammers cannot drop until the barrels are closed. By slowly closing the barrels the hammers will be equally slowly dropped and will not engage with the firing-pins in a manner to produce an explosion of the charge, since when the gun is opened far enough to permit the trigger to release the hammers the primers will be above the firing-pin holes. When the barrels are closed and locked, as shown in Fig. 1, while the finger-piece of the trigger may be drawn rearward without interruption it cannot be canted forward to drop the hammers, because the safety-arm 14 from the trigger will be in engagement with the extension-rib of the barrels, blocking the forward movement of the trigger.

It is evident that the improvement may be applied to any gun, as all the mechanism is applied to the trigger-plate except the releasing-finger, which is applied to the right-hand hammer in hammerless or concealed-hammer guns and to the tumbler in exposed-hammer guns. The safety-arm 14 is not necessary in guns having exposed hammers, and the two forward lugs 12 and 13 are not necessary in such character of gun.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In firearms, the combination, with two independent hammers, a cocking device which simultaneously operates both hammers, an independent sear for each hammer and a spring for each sear, the springs being placed under tension by the cocking movement of the hammers, of a single trigger, plates pivoted at each side of the trigger, projections from the trigger which engage with the said plates, one plate being below each sear, and means, substantially as described, for operating said plates from said trigger, singly or together, as specified.

2. In a drop-down firearm, the combination, with two independent hammers, a cocking-arm which acts upon both hammers, said arm being operated by the drop of the barrels, and a single trigger provided with a safety-arm engaging with the cocking-arm, of a sear for each hammer, a single spring for each hammer and its sear, and a dual trip mechanism operated by the said trigger, the members of the dual trip mechanism acting alternately on the sears, substantially as shown and described.

3. In firearms, the combination, with independent hammers, independent sears for the hammers, and a spring for each hammer and its sear, of plates pivoted at each side of the trigger, projections from the trigger engaging with the said plates, one plate being below each of the said sears, the trigger being capable of a forward as well as a rearward rocking movement, and means, substantially as described, for operating the said plates singly and together, from the said trigger, for the purpose set forth.

4. In firearms, the combination, with independent hammers and an independent sear for each hammer, of a single trigger capable of a forward as well as a rearward rocking movement, a safety-arm connected directly with the trigger, trip-plates at the sides of the trigger, one beneath each sear, the plates having vertical movement, a connecting-bolt passed from one plate through the other, a

releasing-finger carried by one of the hammers, which withdraws the connecting-bolt from one of the plates when the hammer is cocked, and projections from the trigger, engaging the rear end of one plate and the forward ends of both plates, for the purpose specified.

5. In firearms, the combination, with independent hammers and an independent sear for each hammer, of a single trigger, trip-plates arranged at the sides of the trigger, one beneath each sear, the plates being capable of vertical movement, a connecting-bolt passed from one plate to the other, a release-finger carried by one of the hammers, adapted to withdraw the connecting-bolt from one of the plates when the hammer is cocked, and a projection from the trigger engaging with one of the said plates, the said trigger being capable of movement in a forward and in a rearward direction, and projections from the front and rear portions of the body of the trigger, the said projections serving as supports for the said plates, for the purpose set forth.

6. In a firearm, the combination, with two hammers, their springs and sears, of a trigger capable of a forward as well as a rearward rocking movement, a safety-arm attached to the trigger, the said safety-arm being carried from safety position by the forward movement of the trigger, a dual trip mechanism, a member whereof is below each of the sears, and projections from the trigger, said projections engaging with the heel of one member of the trip mechanism and the forward portion of both members of said trip mechanism, substantially as described.

7. In a firearm, the combination, with the casing and the barrels, the barrels being provided with an extension-rib at the breech, of hammers independently mounted within the casing, independent sears for the said hammers, the sears and hammers being spring-controlled, trip-plates located one beneath each of the sears, a connecting-bolt for the plates, a releasing device carried by one of the hammers, adapted to withdraw the said bolt from one of the plates, a single trigger provided with forward and rearward projections upon which the plates rest, the trigger being capable of rocking forwardly and rearwardly, and a safety-arm extended from the said trigger and adapted to engage with the extension-rib of the barrels when the barrels are closed, for the purpose specified.

PETER CHARLES KOLL.

Witnesses:
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ED D. BURKE.