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C. F. HACKER.

BREECH LOADING SHOTGUN.

No. 493,084. Patented Mar. 7, 1893.

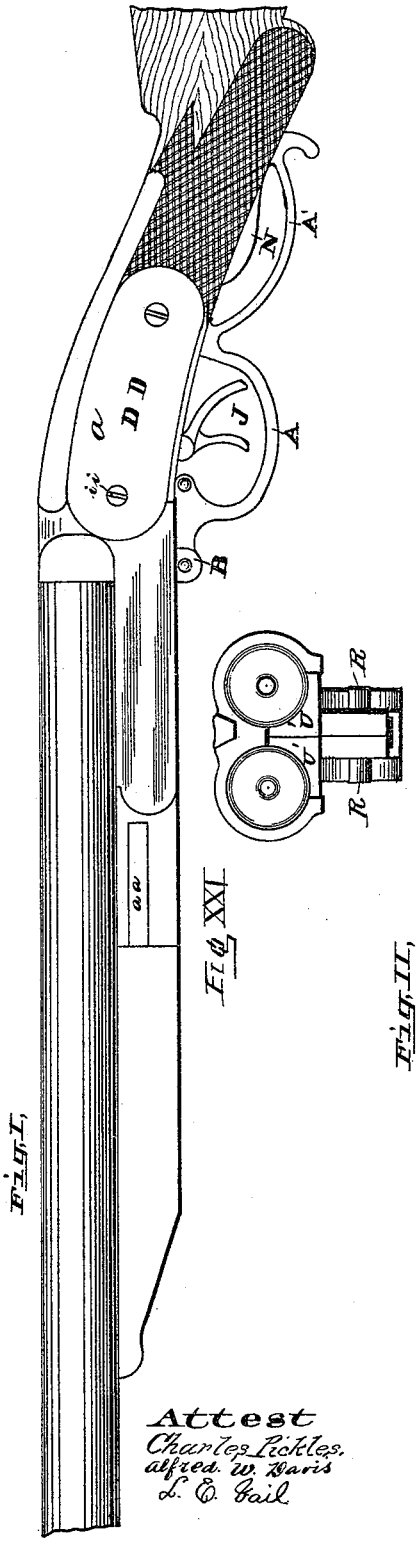

Fig. XXI.

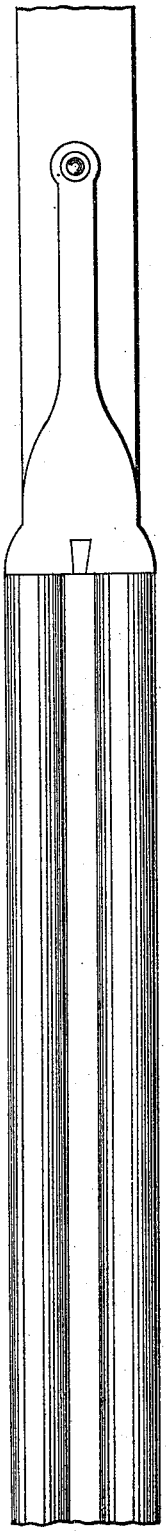

Fig. II.

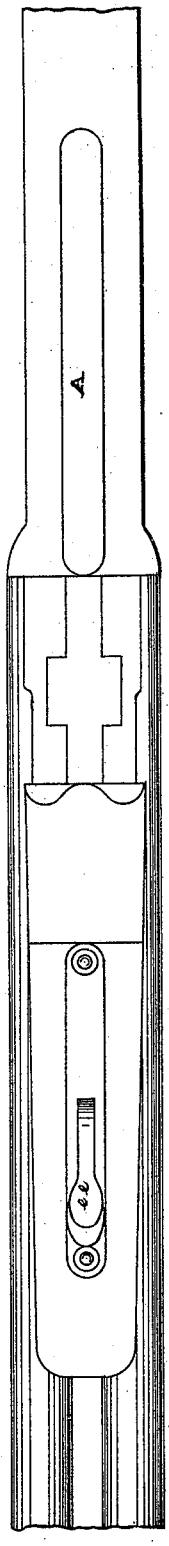

Fig. III.

Fig. I.

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atty

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C. F. HACKER.

BREECH LOADING SHOTGUN.

No. 493,084. Patented Mar. 7, 1893.

Fig. IV

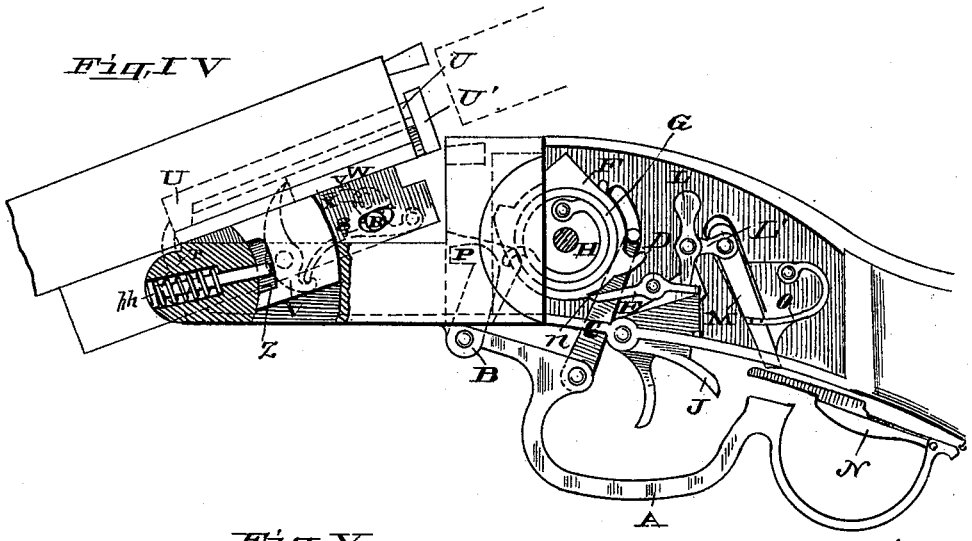


Fig. V

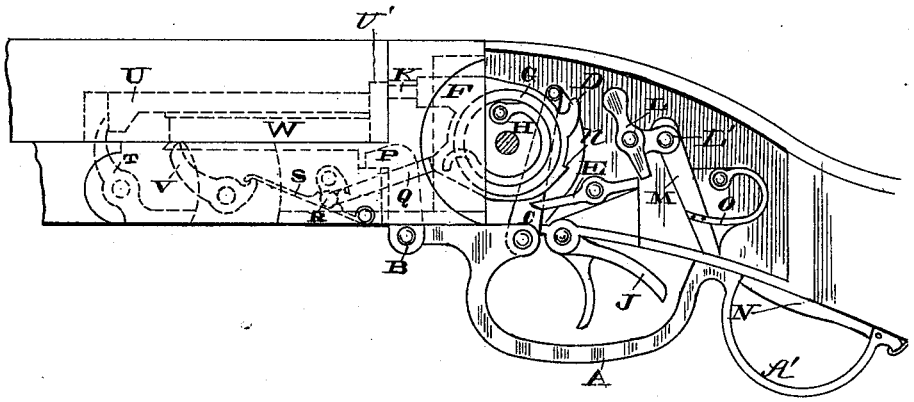


Fig. VI

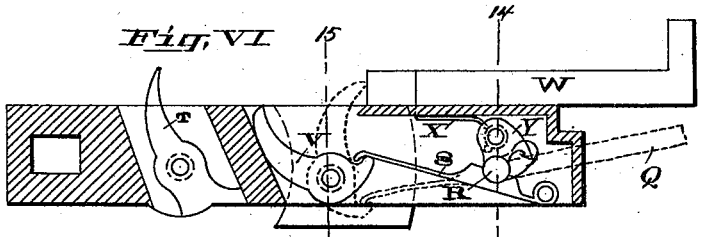
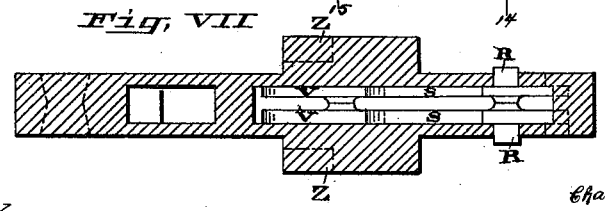


Fig. VII



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By Julian Laughlin
Atty

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C. F. HACKER.

BREECH-LOADING SHOTGUN.

No. 493,084. Patented Mar. 7, 1893.

Fig. VIII.

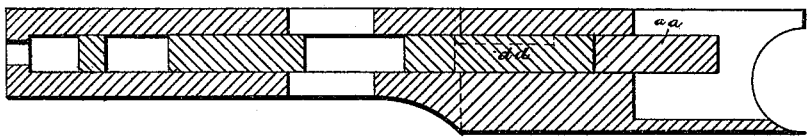


Fig. IX.

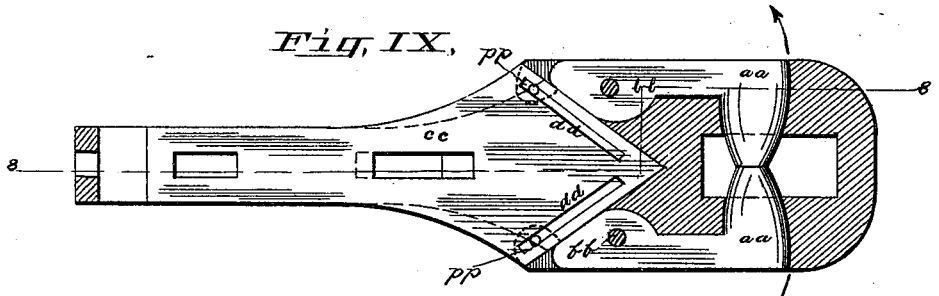


Fig. X.

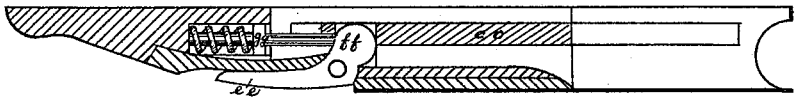


Fig. XI.

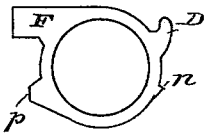


Fig. XII.

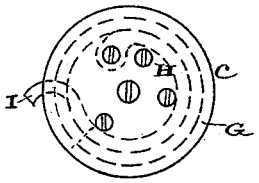


Fig. XIII.

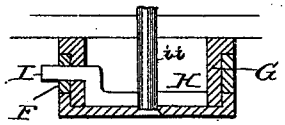


Fig. XIV.

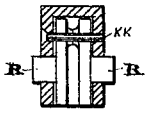


Fig. XV.

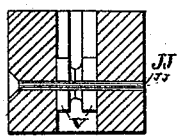


Fig. XVI.

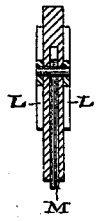


Fig. XIX.

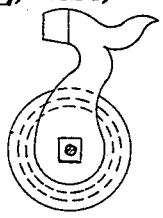


Fig. XVII.

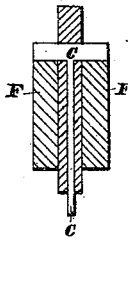


Fig. XX.

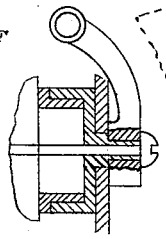
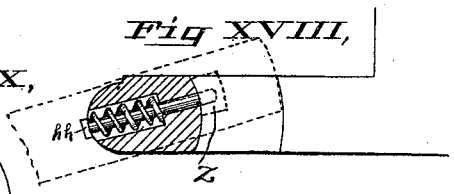


Fig. XVIII.



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L. E. Gail

Inventor
Charles. F. Hacker
By Julian Laughlin
atty

UNITED STATES PATENT OFFICE.

CHARLES FREDRICK HACKER, OF PARSONS, KANSAS, ASSIGNOR OF FIVE-EIGHTHS TO JAMES A. SCOTT, OF MUSCOGEE, INDIAN TERRITORY, AND BEN BOGY AND FRANK SHAPLEIGH, OF ST. LOUIS, MISSOURI.

BREECH-LOADING SHOTGUN.

SPECIFICATION forming part of Letters Patent No. 493,084, dated March 7, 1893.

Application filed October 22, 1891. Serial No. 409,542. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FREDRICK HACKER, a citizen of the United States, residing at Parsons, in the county of Labette, State of Kansas, have invented a new and useful Improvement in Breech-Loading Shotguns, of which the following is a specification.

My invention relates to improvements in breech loading shot guns to be used either with external hammers, or internal hammers (hammerless guns), and the objects of my improvements are greater simplicity, strength, and durability in the construction of locks, ejectors, and fore-ends, together with a more perfect balance of the gun itself; also greater safety in the hammerless gun. I attain these objects by the mechanism illustrated in the accompanying drawings, in which

Figure 1 represents a partial side view of the hammerless gun complete. Fig. 2 is a top view. Fig. 3 a bottom view of the same. Fig. 4 is an enlarged view of the breech portion of the gun with the outside lock plate removed and the gun opened. Fig. 5 is a similar view with the gun closed. Fig. 6 is an enlarged central longitudinal section of the devices carried in the lug of the gun barrel for operating the shell ejectors. Fig. 7 is a section of the same parts taken in a plane at right angles to Fig. 6. Fig. 8 is an enlarged longitudinal section on line 8, 8 of Fig. 9 of the metal part of the fore-end and Fig. 9 is a section of the same at right angles taken through the plane of the locking hooks. Fig. 10 is a longitudinal section of the fore-end complete shown on a smaller scale. Fig. 11 is a side view of the annular hammer. Figs. 12 and 13 are respectively a side and sectional view showing the application of the main spring to the annular hammer. Fig. 14 is a transverse section through lines 14—14 of Fig. 6. Fig. 15 is a transverse section through lines 15—15 of Fig. 6. Fig. 16 is a sectional detail of the push bar of the safety lock. Fig. 17 is a sectional detail of the cocking devices. Fig. 18 is a sectional view of the spring stop-pin at the articulated joint of the gun and Figs. 19 and 20 are side and sectional views showing the application of outside hammers to the annular hub within. Fig. 21 is an end view of the breech-end of the barrels.

A, Figs. 4 and 5, represents the trigger guard pivoted at B to the gun and also to the cocking bar C. When the guard A is pushed down as in Fig. 4, the bar C cocks the gun by pulling down on the catch or projection D of the annular hammer F. When in this position the dog E drops into the notch *n* of the hammer and prevents the annular hammer from moving forward, leaving the gun cocked. The trigger guard is then lifted to place again. The annular hammer F works around the cylinder or hub G which is stationary and rigid. The tension is put on the annular hammer F by means of a coiled spring H working inside of the cylinder G with the point of said spring projecting through the same at I, Figs. 12 and 13, and catching on a suitable projection or passing through a slot in the annular hammer. When the trigger J is pressed with the finger it releases the dog E from the notch *n* in the annular hammer, and the tension of the cylinder spring H causes the annular hammer F to revolve around the cylinder G, and the projecting hammer head strikes against the firing pin K as shown by dotted lines in Fig. 5.

The safety lock consists of a bar L pivoted on the center and locking the dog by standing vertically on it as in Fig. 4. This bar is released by the endwise upward movement of the slide bar M which is pivoted to the arm L′ of bar L and rocks the latter as in Fig. 5. The slide bar M is returned to place (Fig. 4) by a curled spring O.

For effecting the upward movement of the push bar M the trigger guard A has a loop A′ at its rear end, and to the rear end of this loop is loosely pivoted a press plate N which lies within a recess of the stock and bears with its upper surface against the lower end of the push bar M. When the gun is to be fired, one finger is inserted in the rear loop A′, and the plate N is pressed upwardly to move bar M and release locking bar L simultaneously with the act of pulling the trigger. The bar M acts upon the locking bar L on each side for each barrel as in Fig. 16 and

although the safety lock is removed in firing for both barrels, yet if but one barrel is fired the spring O restores the push bar M and instantly locks again the mechanism of the barrel that is not fired.

When the trigger guard O is pushed down as in Fig. 4 the locking hook P which moves with the guard is drawn back and releases the barrel which is hinged on the fore-end; the muzzle is depressed; and the breech raised, thereby opening the breech or "breaking the gun."

I will now describe the shell ejecting mechanism. When the hammer F is thrown forward as in Fig. 5 a projection *p* on the forward part (see Fig. 11) pushes forward a slide pin Q, (see dotted lines Fig. 5) and the slide pin Q thrusting against an arm R of tumbler Y (Figs. 6 and 7) pushes the same downward and forward and puts a tension on the spring S that serves when the gun is broken to throw catch V upwardly and rearwardly as shown in dotted lines in Figs. 4 and 6. When the gun breaks, as in Fig. 4, the shell ejector U′ is operated by a double movement, the first a starting movement for the shells of both barrels, and the other an ejecting movement for the shell that has been fired. That this may be better understood, I would state that there is a separate ejector U′ for each barrel see Fig. 21. Each ejector U′ Figs. 4 and 5 is attached to a slide bar W moving in guides in the lower part of the barrel. Just above the slide bars W is another longer slide bar U which is arranged parallel to W and just above it. This at its rear end abuts against the catch T at the hinge joint, and at its other end bears against both ejectors U′ but is not attached to them. Now when the gun is fired and is broken down to discharge the shell or shells, the initial movement causes catch T to throw forward bar U and ejectors U′ about one eighth of an inch, and then following this movement the catch V responding to the tension of the spring S moves quickly forward against the end of bar or bars W carrying ejector or ejectors U′, and causes one or both of the ejectors to discharge its shell, as shown in dotted lines in Fig. 4. The spring X working on the axis of tumbler Y carrying pins R throws the slide pin Q back into place. The fore-end Figs. 8, 9, and 10 is fastened by means of the double hooks *a a* Fig. 9 pivoted at *b b* and driven home by the wedge shaped slide *c c* which is attached to the double catch by the pins *p p* working in the inclined slots *d d*. The fore-end is removed by inserting the thumb under the point of the lever *e e*, Fig. 10, and pressing down, when the projection *f f* pulls back the wedge shaped slide *c c* and opens the double hooks *a a* as indicated by arrows, Fig. 9, and releases the lug on the barrel. The lever *f f* is pushed back into place by the spiral spring and pin *g g*. When the fore-end is removed, the pin *h h* is pressed out by the spiral spring around the same, see Fig. 18. When the fore-end is attached the pin *h h* is thrust forward into a slot in the hinged projections L, as shown by dotted lines Fig. 18 and full lines in Fig. 4, and prevents the gun opening too far when broken. The inside mechanism of the lock and safety device is covered by the plate D D Fig. 1.

The screw *i i* fastens the two plates D D on opposite sides of the gun and passes through the cylinder G see Fig. 13. On the hammered gun (external hammer) the parts are all the same as above described except that the hammer is attached to a square projection on the cylinder cap as in Figs. 19 and 20. The hammers are made to rebound after striking the firing pin by checking tension on main spring H about an eighth of an inch before the hammer strikes the firing pin, the rebound being assisted by the pressure of the firing pin spring.

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

1. The combination with the triggers of the gun, and the dogs E; of an independent locking mechanism consisting of the rocking bar L arranged vertically over the dog, the longitudinally moving push bar M connected to the rocking bar at the top, the spring O for holding this bar down, and a rear loop A′ with a press plate N pivoted to the same and arranged to operate against the end of the push bar substantially as shown and described.

2. In a gun lock, the combination with an annular hammer, a stationary hub or cylinder arranged within the hammer, and a coil spring arranged within the cylinder substantially as shown and described.

3. The combination of the annular hammer F with notch *n* and projection D, the cylinder G arranged within the hammer and carrying the main spring, the trigger guard A pivoted at its forward end and having a freely swinging cocking bar C attached thereto and adapted to engage the projections D on the hammer substantially as shown and described.

4. The combination with the barrels having locking lug; of the trigger guard A having locking hook P at its forward end adapted to secure the barrels by directly engaging its lug, the circular hammer F, and cocking bar C pivoted to the guard and arranged to cock the hammers by the same movement that unlocks the gun substantially as shown and described.

5. The combination with the gun barrels having independent ejectors, of a separate spring mechanism for throwing out the ejectors, and push pins connected with the spring mechanism and operated upon by the hammers to put the springs under tension to independently throw out the shells substantially as shown and described.

6. The combination of the hammers F with projections *p*, the push pins Q arranged to bear thereagainst, the tumblers Y with pins R receiving the pressure of the push pins, the

springs S bearing against the pins R, and the catches V bearing against the forward end of the springs S and adapted to operate upon the ejectors substantially as shown and described.

7. The ejectors U′ having shanks or bars W made fast to the same, and a slide bar U arranged beside the shank of the ejector but disconnected from it, and a catch or abutment for operating against the bar W by the act of opening the gun, and an independent ejecting mechanism arranged to act upon the ejector shanks W substantially as shown and described.

8. The combination with the fore-end; of two hook shaped locking bars *a a* pivoted to lock by coming together in the middle of the fore-end, and a longitudinally moving slide plate *c c* with wedge shaped end and inclined slots connected to the ends of the locking bars by pins working in the slots and adapted to operate the locking bars substantially as shown and described.

9. The combination, in the fore-end, of the two hook shaped locking bars *a a*, the slide *c c* with wedge shaped ends and inclined slots connected to the ends of the locking bars by pins working in the slots, the lever *e e* having a projection *f f* bearing against the slide, and a spring bolt *g g* arranged on the fore-end and bearing against the opposite side of the projection *f f* substantially as and for the purpose described.

10. The combination with the fore-end, and the barrel lug having recesses Z in its sides; of a spring bolt *h h* arranged in the metal of the stock and having one end bearing against the fore-end and the other end adapted to be projected into or withdrawn from the recess Z to act as a stop for the gun barrels when the gun is simply broken, and to permit the parts to be disconnected when the fore-end is removed substantially as shown and described.

CHARLES FREDRICK HACKER.

Witnesses:
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F. A. SIEFERT.