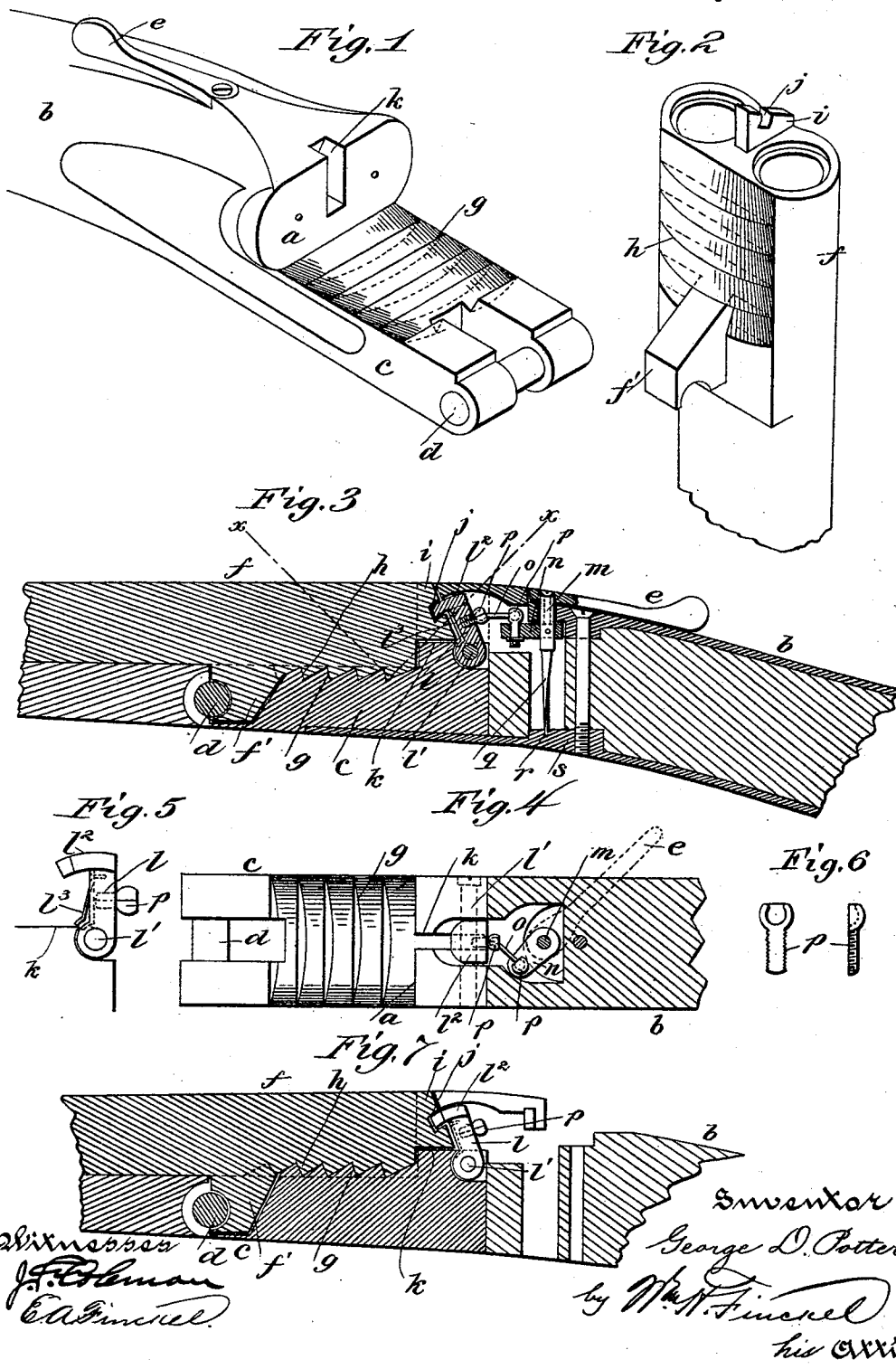


(No Model.)

G. D. POTTER.
BREAKDOWN FIREARM.

No. 539,540.

Patented May 21, 1895.



UNITED STATES PATENT OFFICE.

GEORGE D. POTTER, OF WALLACE, IDAHO.

BREAKDOWN FIREARM.

SPECIFICATION forming part of Letters Patent No. 539,540; dated May 21, 1895.

Application filed July 20, 1894. Serial No. 518,141. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. POTTER, a citizen of the United States, residing at Wallace, in the county of Shoshone and State of Idaho, have invented a certain new and useful Improvement in Breech-Loading Shotguns, of which the following is a full, clear, and exact description.

This invention relates to the means for securing or uniting the barrels and frames of that class of firearms known as tilting or break-down breech-loading shot guns.

The invention comprises two main features, namely, first, matching or complemental serrations in the flats of barrels and body of frame of the gun whereby in a standing breech gun the barrels are firmly held against the standing breech and the shock of recoil is taken off the hinge-pin, and, second, a top fastening in the nature of a rearwardly and downwardly acting hook, whereby the barrels are prevented from parting or tending to part from the frame in shooting, and thus insuring also a practically gas-tight joint.

Having thus stated the principle of my invention, I will proceed now to set forth the best mode in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part or improvement which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the frame. Fig. 2 is a perspective view of the under side of the barrels at the "flats." Fig. 3 is a longitudinal vertical section through the center of the frame and barrels in firing condition. Fig. 4 is a horizontal section of the frame just above the body. Fig. 5 is a detail elevation of the extension-rib bolt. Fig. 6 is a detail of universal-joint split screw for the top fastening, and Fig. 7 is a longitudinal vertical section showing an arrangement of the serrations in the body-joint the reverse of that shown in Fig. 3.

The standing breech *a*, stock *b*, body of frame *c*, hinge-pin *d*, lever *e*, barrels *f* and the hinging lug *f'* on said barrels may be as usual, excepting in the particulars hereinafter mentioned.

The frame *c* is provided with serrations *g*, preferably five in number, extending crosswise of the frame, horizontal on the upper edges and curved at the bottom, forming segmental bearings or shoulders included in an arc at their bottom and a chord at their upper edges, and whose faces are at right angles to a tangent projected from the center of the hinge-pin to the edge or point of each serration, and having greatest depth midway across the body of the frame and running out to nothing at the opposite edges of the frame, thereby forming a joint between the barrels and the body of the frame which appears externally on opposite sides longitudinally as straight lines, (as is usual in this class of guns,) when the barrels are closed down upon the frame.

The under side of the breech end of the barrels is provided with a complemental series of projecting serrations *h* which mesh with the serrations of the frame to form the joint at the "flats," which, in the firing of the gun, will hold the barrels firmly against the standing breech and take off the shock of recoil from the hinge-pin and thereby greatly enhance the strength and durability of the gun.

Instead of having depressed serrations in the frame and projecting serrations in the body or breech end of the barrels, these may be reversed, and the frame have projecting serrations and the barrels have depressed or sunken serrations, as indicated in Fig. 7.

The top fastening is constructed as follows: The extension rib *i*, projecting rearwardly from between the barrels, is provided with the curvilinear notch *j*, and said extension rib is adapted to enter the socket *k* in the standing breech *a*, when the gun is closed. An extension-rib bolt-arm *l* is pivoted at *l'* at its inner end within the center of the frame, back of the standing breech, and is provided with a curvilinear, laterally-projecting bolt notch *j* in the extension rib *i* when the barrels are closed down upon the frame, the bolt at such time exerting a downward and rearward restraint upon the barrels and serving to effect a gas-tight joint at the breech. The arm *l* is provided with a flat spring *l²*, whose operation and function will presently appear. As indicated in Fig. 4, the laterally extended

bolt l^2 works in a correspondingly wider channel than its arm l . The top lever e is attached at its forward end to a vertical post m having a bearing in the frame, and to this post is secured a crank arm n to move with the lever. This crank-arm, in turn, is connected with the extension-rib bolt-arm l by means of a link o , having spherical knobs at its ends which are received in sockets at the ends of split screws or bolts p secured respectively to the arm l and crank-arm h , so as to make a sort of universal joint between the said bolt-arm and crank-arm. A flat torsion spring q is attached rigidly at its upper end to the inner end of the post m , and its lower end is secured in a slit or nick r in the bottom strap s .

Any other suitable form of spring may be substituted for the torsion spring q .

The flat spring l^3 is arranged in a recess in the front of the arm l and is secured at its upper end to such arm as by a screw, so as to leave its lower end free, and it is of such length that its lower free end may spring out over the bottom of the socket k when the bolt is retracted and the extension-rib withdrawn from said socket as shown in Fig. 5, so as to retain the arm l in the unlocked or retracted position.

The operation is as follows: With the gun held in position for opening, the top lever is pressed to the right, to overcome the dead centers formed by the alignment of the connections between the post m and the extension-rib bolt arm l and to move said parts so as to withdraw the extension-rib bolt from the extension-rib, whereby the barrels are released. As soon as the barrels have been tilted enough to raise the extension-rib out of its socket, the arm l being retracted, its spring l^3 flies out of the recess and its free end rests upon the bottom of the socket, as in Fig. 5, and so positively retains the extension-rib bolt out of the path of movement of such extension rib, and also locks the whole top-fastening until the barrels are closed down again. In the act of so closing the barrels, the extension-rib enters its socket and its leading end coming into contact with the spring l^3 forces it rearwardly off the bottom of the socket into its recess in the arm l , thereby releasing the said arm and its connected members of the top fastening, and so permits the torsion spring to exert its force to throw the extension-rib bolt into engagement with the extension-rib, the connections between the arm l and crank arm again coming into the dead center of their movement and so firmly locking the top fastening. Thus it will be seen, that the torsion spring q has its power stored in the act of opening the gun and is ready to act automatically upon the closing of the gun.

Some of the advantages of my invention, aside from its apparent simplicity and durability, are: By the use of the shallow serrated bearings there is obtained in the aggregate a large bearing surface to hold the barrels

against the standing breech, without cutting away the frame for lugs, at the point of greatest strain, namely, directly under the standing breech. The faces of these serrations at the angles adopted come together without rubbing upon each other and thus wear is avoided. Inasmuch as the barrels are held by the top-fastening from flying up at the breech, these serrated bearings take off the strain of recoil from the hinge-pin and save the latter from the shock of recoil with its incidents of pounding and injury. By virtue of the fact that these serrations extend entirely across the joint of the barrels and frame, they counteract any tendency of the barrels to swing to one side or the other as the right or left barrel is fired. The active element of the top-fastening stands at an angle of about forty-five degrees to the point of maximum breaking strain on the frame, as indicated by the dotted lines $x-x$, Fig. 3, and in the best position to resist the parting of the barrels from the standing breech. The link motion in the top fastening holding the parts locked on a dead center, precludes the unfastening of the breech by recoil, escaping gases or other and adventitious surroundings.

What I claim is—

1. In a break-down gun, the combination with the frame and the breech end of the barrel, of a series of intermeshing or interlocking curved serrations having their abutting upright surfaces arranged substantially at right angles to a line tangential to the center of the hinge-pin deepest at the middle and running out to nothing at opposite sides, substantially as described.

2. In a break-down gun, the body of the frame provided with a series of forwardly inclined curved serrations extending transversely of the frame and occupying the body from the standing breech forwardly to or near the hinge-pin and deepest at the middle and running out to nothing at opposite sides, and the breech-end of the barrels having a complementary series of reversely inclined serrations, substantially as described.

3. In a break-down gun, the body of the frame provided with a series of forwardly inclined curved serrations extending transversely of the frame and occupying the body from the standing breech forwardly to or near the hinge-pin and deepest at the middle and running out to nothing at the sides, and the breech end of the barrels having a complementary series of reversely inclined serrations, combined with a top-fastening engaging the extension-rib of the barrels and exerting thereupon a rearward and downward restraint, substantially as described.

4. In a break-down gun, the frame, the standing breech having an extension-rib socket, a hinged extension-rib-locking bolt pivoted in said frame, a spring-actuated rotary post and a jointed connection between the post and bolt having a dead center action, combined with the barrels and an extension-

rib on such barrels adapted to enter said socket and be engaged by the said bolt, substantially as described.

5 In a break-down gun, the barrels having an extension rib provided with a curvilinear transverse notch, combined with a standing breech constructed with a socket to receive such extension-rib, an extension-rib-locking device comprising an arm pivoted behind the
10 standing breech and having a curved bolt at its free end to engage the notched extension-rib, a spring fitted to said arm and within a recess in same and having a free end to engage the bottom of the extension-rib socket
15 when the breech is opened thereby to hold the extension-rib-locking device stationary and in unlocked position till released by action of the extension-rib on the spring in closing the

breech, and a bolt-actuator, substantially as described.

20 6. In a break-down gun, the body of the frame and the rear end of the barrels fitted together in any suitable manner, combined with a top-fastening comprising a curvilinear notched extension-rib on the barrels, a piv-
25 oted extension-rib bolt, a rotary post, a torsion spring applied to such post, and an articulated link connection between said post and bolt operating upon a dead center, substantially as described.

30 In testimony whereof I have hereunto set my hand this 12th day of July, A. D. 1894.

GEORGE D. POTTER.

Witnesses:

A. G. KERNS,
WM. W. WOODS.