

(No Model.)

2 Sheets—Sheet 1.

J. RIDER.
BREAKDOWN GUN.

No. 511,362.

Patented Dec. 26, 1893.

Fig 1

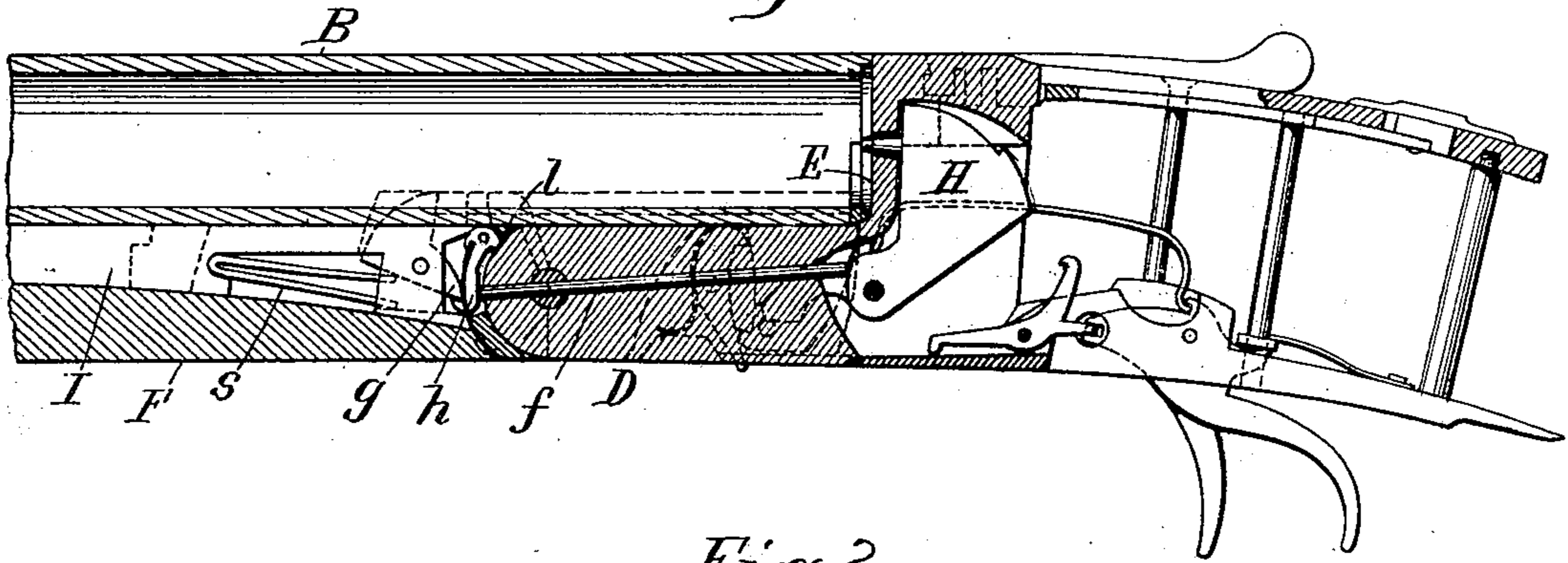


Fig 2

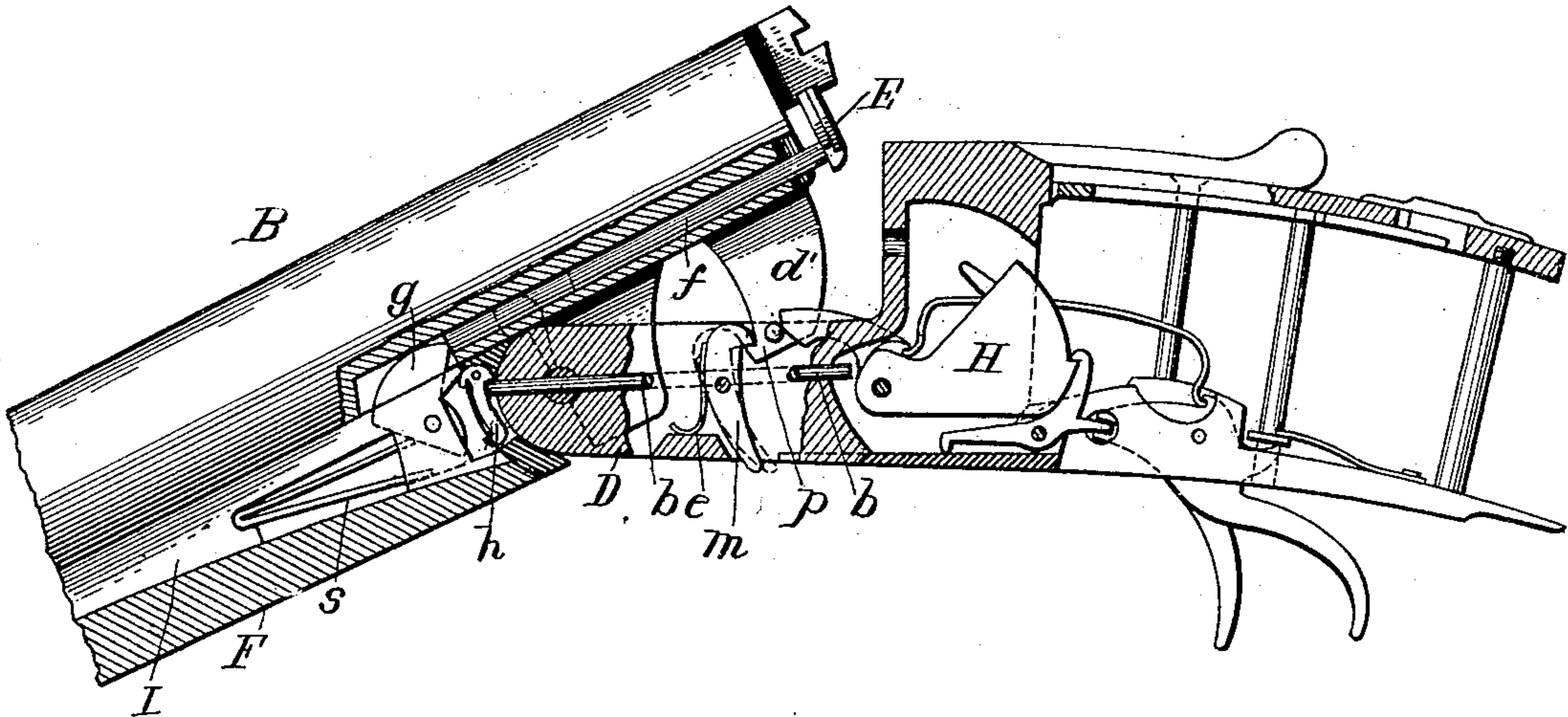
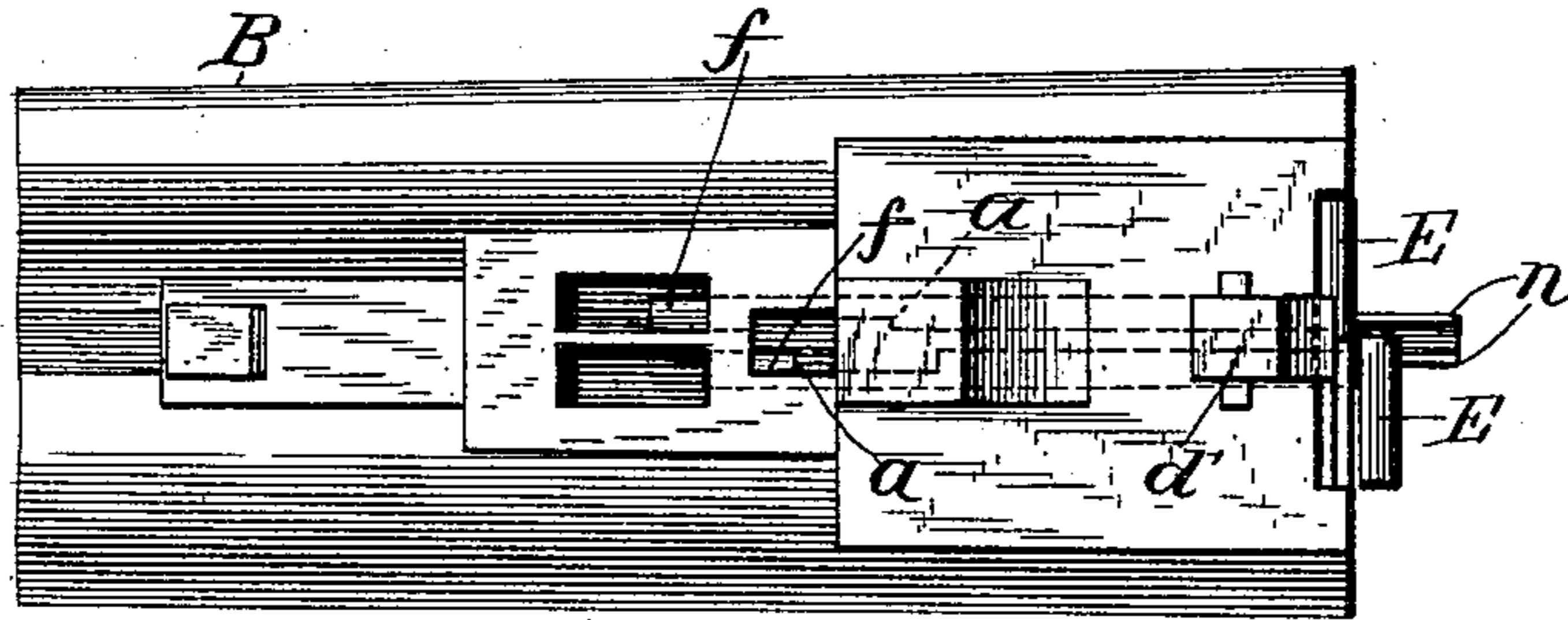


Fig 3



Witnesses:
C. C. Bunde
C. P. Bull.

Inventor:
Joseph Rider.
per Dodge & Sons,

Attys.

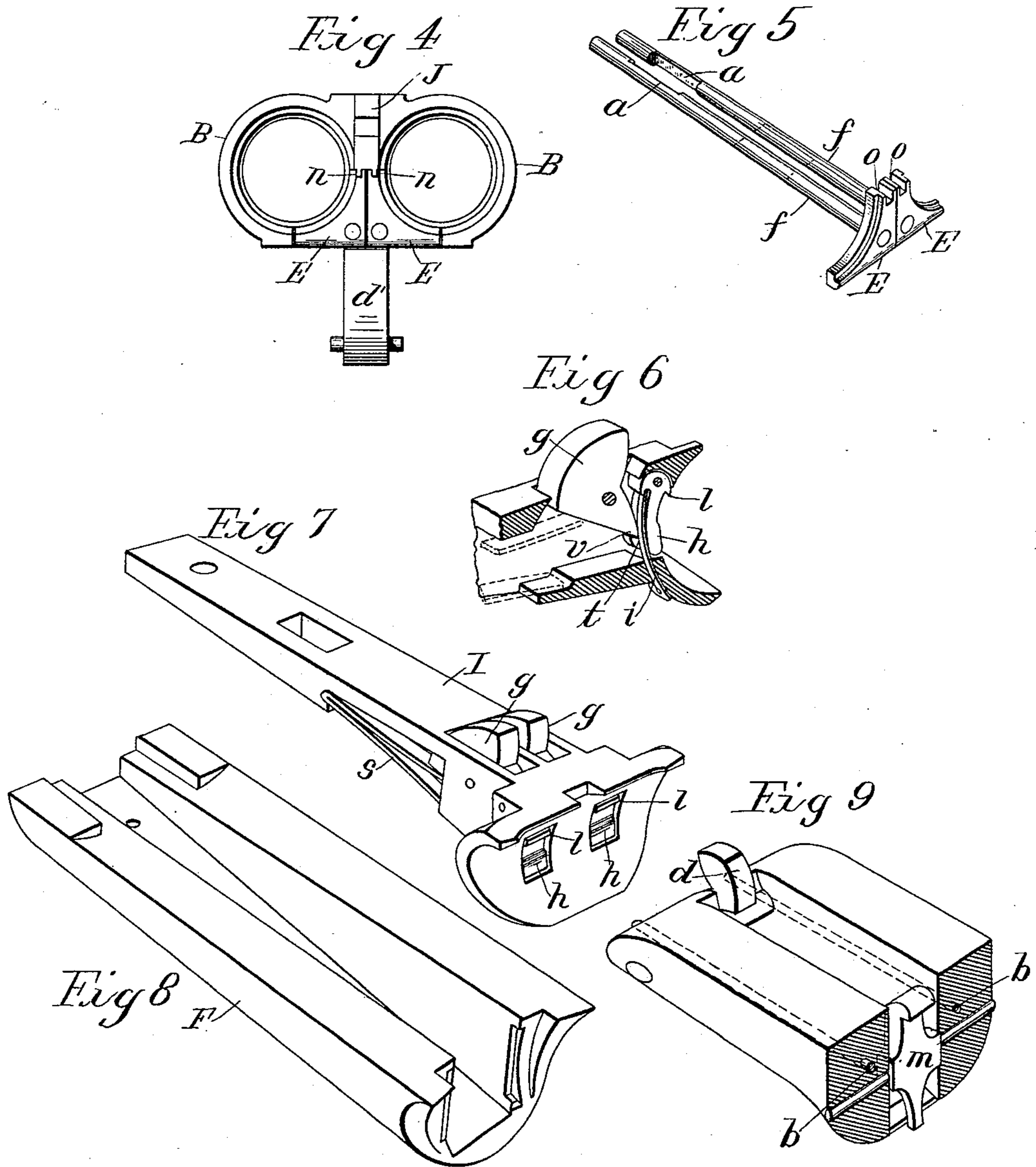
(No Model.)

2 Sheets—Sheet 2.

J. RIDER.
BREAKDOWN GUN.

No. 511,362.

Patented Dec. 26, 1893.



Witnesses:
 C. B. Rudine
 C. P. Bull.

Inventor:
 Joseph Rider,
 per Dodger & Sons,

Attys.

UNITED STATES PATENT OFFICE.

JOSEPH RIDER, OF NEWARK, OHIO.

BREAKDOWN GUN.

SPECIFICATION forming part of Letters Patent No. 511,362, dated December 26, 1893.

Application filed June 26, 1893. Serial No. 478,878. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RIDER, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have
5 invented certain new and useful Improvements in Breech-Loading Guns, of which the following is a specification.

My present invention relates to breech loading guns of that class in which the barrels are pivoted to tip, usually termed break
10 down guns, and the invention consists in an automatic ejector for ejecting the empty shells, and in a device for limiting the tip of the barrels, and relieving the joint of undue
15 strain, all as hereinafter more fully set forth.

Figure 1 is a side elevation, mostly in section, showing the position of the parts when the gun is closed. Fig. 2 is a similar view
20 showing the position of the parts when the breech is open and the shell or shells ejected. Fig. 3 is a bottom face view of the rear portion of the barrels, showing the ejectors and their stems. Fig. 4 is a rear face view of the
25 barrels and the ejectors, and Fig. 5 is a perspective view of the ejectors and their stems, shown detached. Figs. 6 and 7 are perspective views showing the construction of the ejecting mechanism, and Fig. 8 is a perspective
30 view of the fore-end in which the mechanism is mounted. Fig. 9 is a perspective view of the front portion of the frame to which the barrels are attached, showing the fixed stud which serves to start the ejectors, and also the sliding rods which serve to re-
35 lease the ejector strikers or hammers.

My present invention is an improvement on the gun described in my Patent No. 500,909, dated July 4, 1893, and which therefore need
40 not be described except so far as is necessary to a complete understanding of my present invention.

The main frame and the breech mechanism, locks, hammers, &c., are constructed the same as in my former patent, and as shown
45 in Figs. 1 and 2. The stud *d* at the front end of the frame D is however modified in form and set farther back, so that instead of coming opposite the ends of the extractor stems *f*, it will project upward between the
50 stems into a recess formed by cutting away a portion of the stems as shown at *a a* Fig. 5, so that when the barrels are dropped this

stud *d* coming in contact with the rear shoulders of the stems *f*, will start the ejectors and thereby the shells, thus loosening the shells
55 in their chambers, ready for the ejecting mechanism to throw them entirely out. The ejecting mechanism is located in the fore-end F, and it consists of duplicate devices arranged to operate on the same general plan as an ordinary
60 gun lock. To construct this ejecting mechanism, I provide a metal frame I of the form shown in Fig. 7, and which is set in a central recess cut in the upper face of the fore-end, said recess being shown in Fig. 8. This metal
65 frame I consists of a metal strap or plate carrying at its rear end an enlargement curved on its rear face as usual, to form a bearing against the front rounded end of the main
70 frame D to which the barrels are hinged; and in this rear curved enlargement two openings are formed so that the faces of the sears *h* of the ejector mechanism may be operated upon
75 by the rods *b* mounted in the main frame D as hereinafter explained, and as shown in Figs. 1, 2 and 6. This frame I is provided with suitable chambers or openings, in which
80 are pivoted two strikers or hammers *g*, with springs *s* for operating them separately, and two sears *h*, the form and relative arrangement of these parts being clearly shown in
85 Figs. 1, 2 and 6. Each sear *h* is provided with a shoulder *t* at its lower end to engage with the lower pointed end *v* of the striker *g*, and with a projection *l* on its opposite face near
90 its upper end, all as shown in Fig. 6. A small flat spring *i* is secured to the frame as shown, with its upper end engaged under a lip on the sear so as to throw its lower end forward and
95 cause its shoulder *t* to engage with the point *v* of the striker, when the latter is forced back by the extractor stem *f* in the act of closing the barrels.

In order to trip the sear *h* and release the striker *g*, I arrange a small rod *b* loosely in a
95 hole drilled lengthwise in the frame D, as shown in Figs. 1, 2 and 9, there being one for each barrel, and they being located directly in line between the front edge of the hammer H of the gun, and the rear face of the sear *h*
100 of the ejecting mechanism, as shown clearly in Figs. 1 and 2. These rods lie loose in their seats, and are of such a length that when forced forward by the hammer H when the

gun is fired, as represented in Fig. 1, their front ends will be caused to project slightly from the front end of frame D, so that when the barrels are dropped this projecting end of the rod *b* will engage with the shoulder or projection *l* of the sear *h* and trip the same thereby releasing the striker *g*, which will strike against the end of the ejector stem *f*, and impart to the ejector a sudden movement which will throw the shell clear of the gun. As the barrels are closed again the hammers H having been forced back, permit the rods *b* to be shoved back so their front ends will be flush with the end of frame D, a slight swell on the face of the sears *h* serving to shove them back as the barrels are closed.

The ejectors E are made in duplicate, one for each barrel, and to prevent their being turned when thrown out, and to help guide them in their movements, each is provided with a groove *o* on its upper edge as shown clearly in Fig. 5, and on the under side of the locking rib or projection J there are two small ribs *n* which engage in these grooves *o*, as shown in Fig. 4. As each ejector and the mechanism that operates it are separate and distinct from the other, and as the strikers will not be released unless the gun has been fired, it follows that only the shell in the barrel that has been fired will be ejected, and that whenever either the right or left barrel is fired the shell of that barrel will be ejected.

From the foregoing description the operation of the ejecting devices will be readily understood.

By seating the sliding trip bolts *b* separately in a round hole, I am enabled to make them much smaller in diameter, as being supported from end to end they cannot bend or buckle, and they are much simpler and cheaper to manufacture as they can be made of a piece of steel wire simply cut to the required length, without any projections, and avoiding the use of all springs, detents or other devices used in other constructions, all of which greatly simplifies and cheapens the construction of the gun, and renders the parts less liable to get out of order.

Referring now to the other feature of my invention, by examining Fig. 2 it will be seen that on the rear of the lug *d'* under the barrels, I have formed a shoulder *p*, and in the frame just in front of this lug I pivot a catch *m*, which is more fully shown in Fig. 9, this catch having a hook shaped projection at its upper end to engage with the projection *p* of the lug *d'* when the barrels are dropped, as shown in Fig. 2, a small spring *e* secured to catch and bearing against the frame, serving to force its upper end toward the lug. It will thus be seen that this pivoted catch acting in conjunction with the shoulder on the lug, serves to limit the movement of the barrels

when dropped, and takes the strain caused by the weight of the barrels, thereby relieving the hinge joint from the strain.

In order to be able to disengage the catch *m* from the lug, as is necessary when it is desired to dismount the barrels, the lower end of the catch, which is reduced in width, is made to project slightly through a small slot in the frame, so that by means of the thumb nail its lower end can be shoved back far enough to disengage its upper end from the lug, when the barrels can be lifted off. It will be observed that the abutting faces of the catch and the lug at their ends are beveled, so that in replacing the barrels the lug will automatically shove the catch back far enough to permit their projections to pass by each other, and then when that is done the spring will cause the catch to swing forward so as to engage with the shoulder on the lug. The device is very simple and efficient.

I am aware that the automatic ejectors have before been applied to guns, but I am not aware of any constructed like mine, and therefore

What I claim is—

1. The combination in a break down gun, of the ejecting mechanism consisting of the striker *g* and its spring *s*, the sear *h* provided with the shoulders *t* and *l* and having on its face a swell or projection to shove back the tripping rod, and the tripping rod *b* held loosely in a hole in the frame in a direct line between the face of the hammer H and the sear *h*, substantially as shown and described.

2. The combination in a break down gun, of the ejectors E each provided with a separate stem, both of said stems being provided on their abutting faces with a recess *a* in rear of their front ends, and the stud *d* rigidly attached to the frame D in a position to fit in said recesses, whereby the stud is caused to start the shells when the barrels are dropped, and the front ends of the ejector stems are left in a position to be struck by the strikers *g* of the ejector mechanism, substantially as shown and described.

3. The combination in a break down gun, of the lug *d'* provided with a locking shoulder secured to the barrels, and the spring operated hook *m* pivoted in the frame D, with its lower end projecting through an opening in the frame, the abutting faces of said lug and hook being beveled as shown, whereby they are caused to automatically engage when the barrels are placed in position on the frame, as set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOSEPH RIDER.

Witnesses:

JAMES E. LAWHEAD,
JOHN F. HARTSHORN.