(No Model.) 2 Sheets—Sheet 1.

M. A. KELLER.

AUTOMATIC SHELL EJECTOR FOR BREAKDOWN GUNS.

No. 513,511. Patented Jan. 30, 1894.

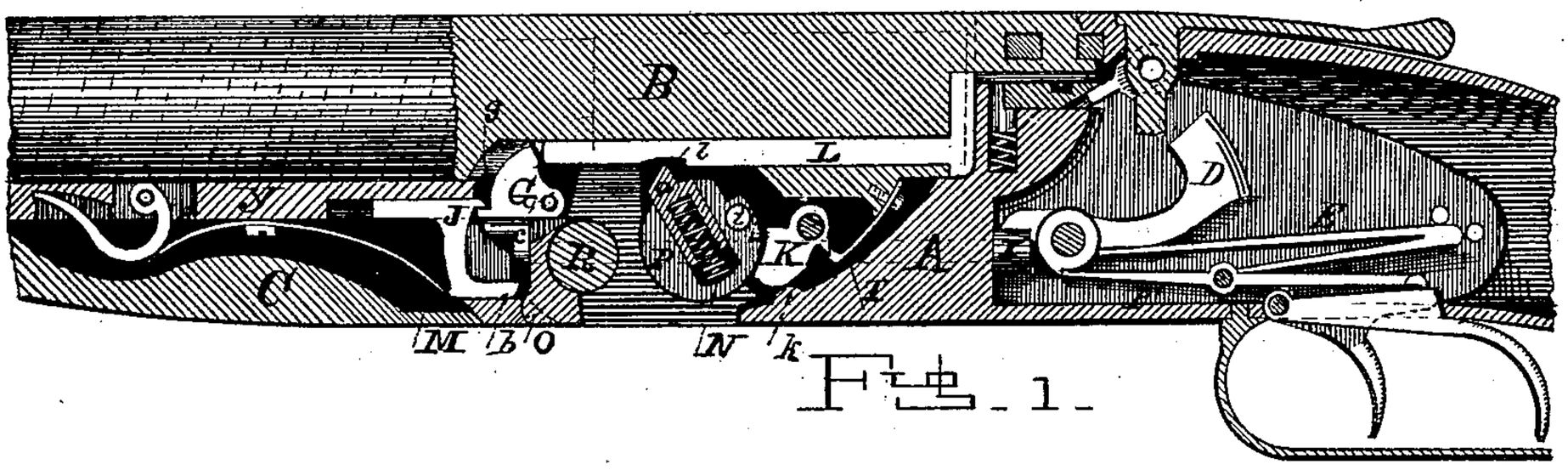

Fig. 1.

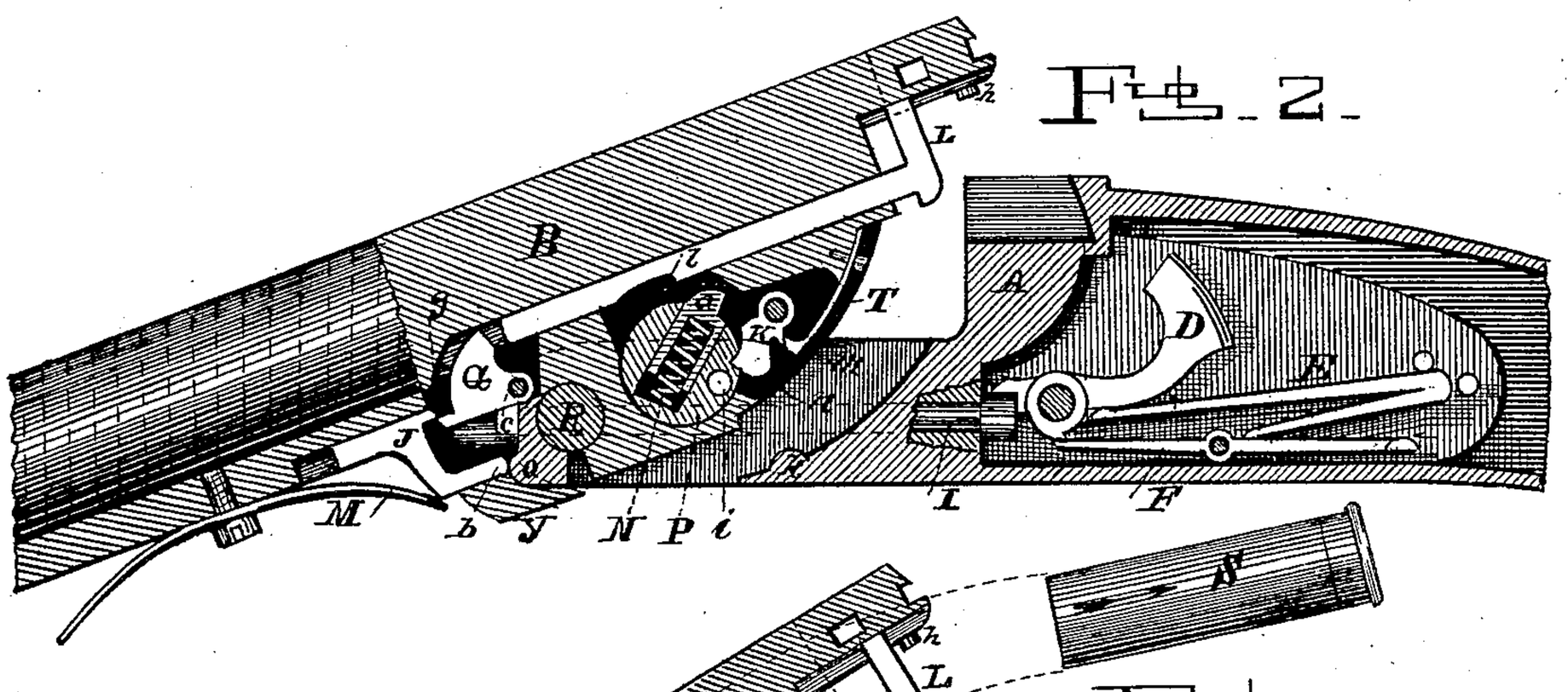

Fig. 2.

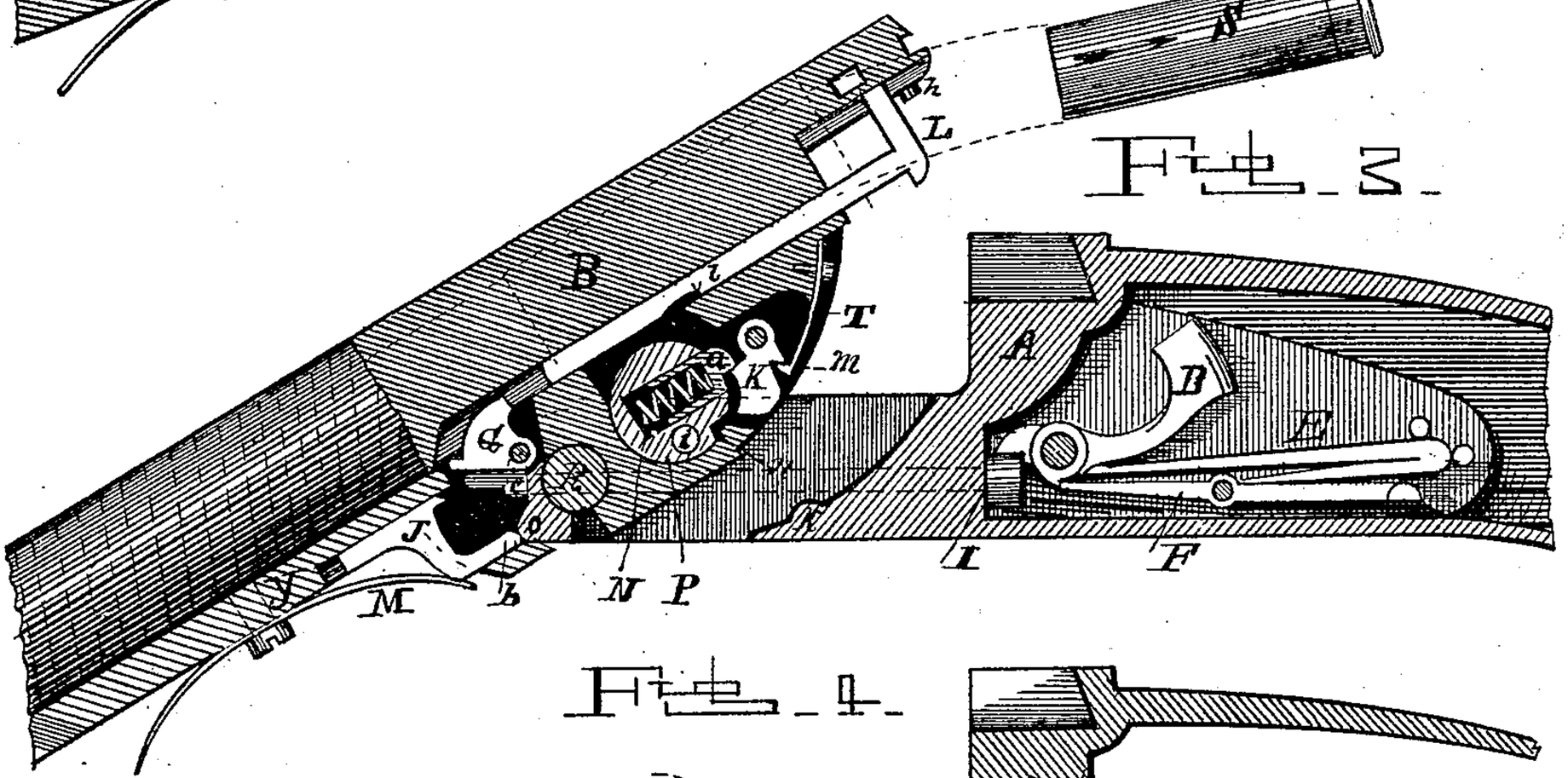

Fig. 3.

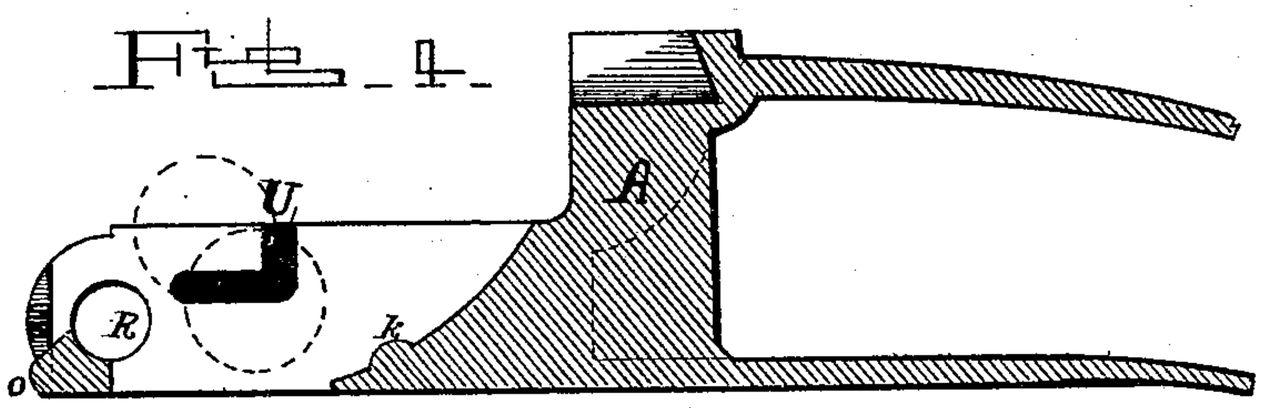

Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

M. A. KELLER.

AUTOMATIC SHELL EJECTOR FOR BREAKDOWN GUNS.

No. 513,511. Patented Jan. 30, 1894.

Fig. 5.

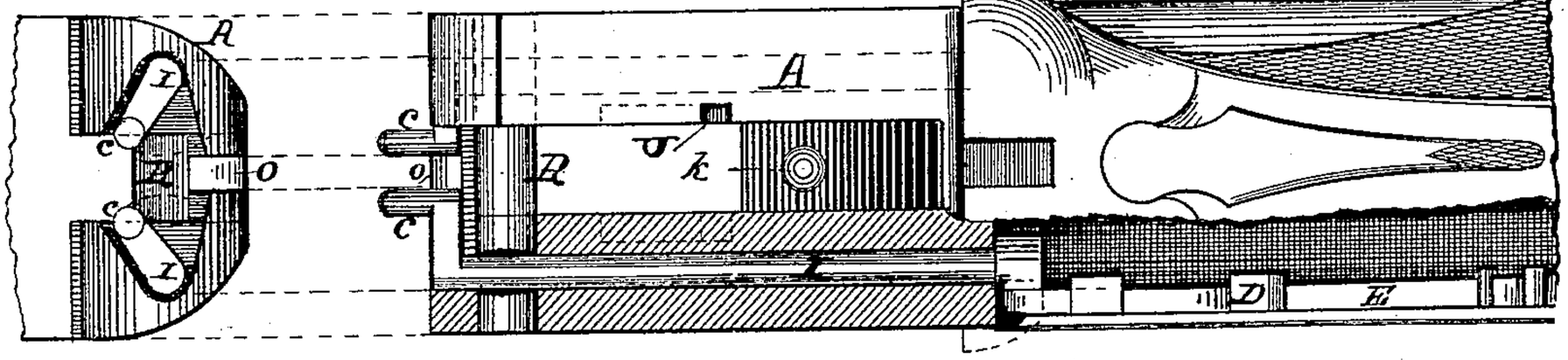


Fig. 6.

Fig. 7.

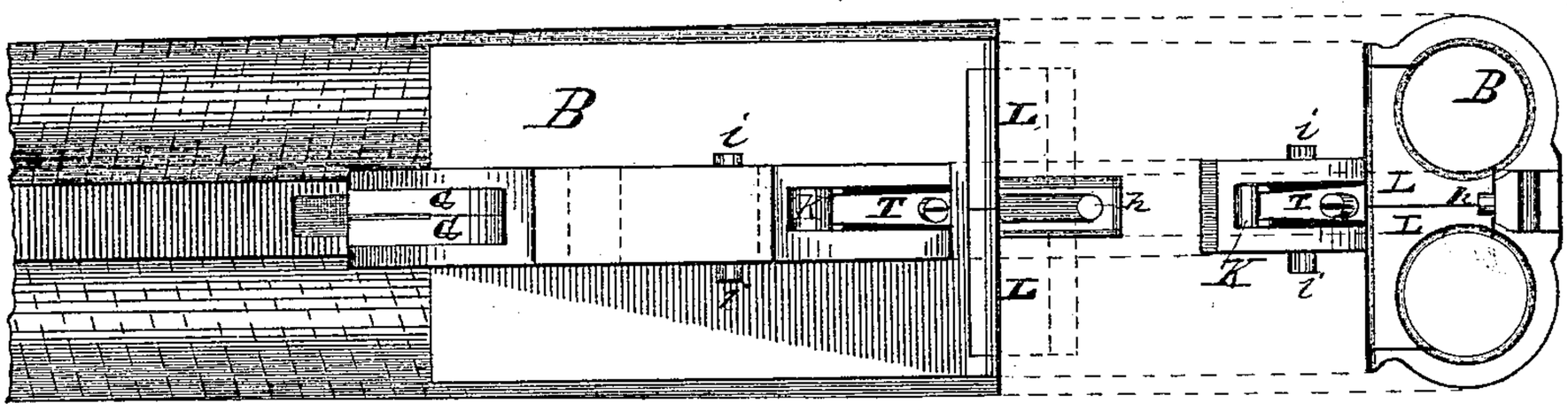


Fig. 8.

Fig. 9.

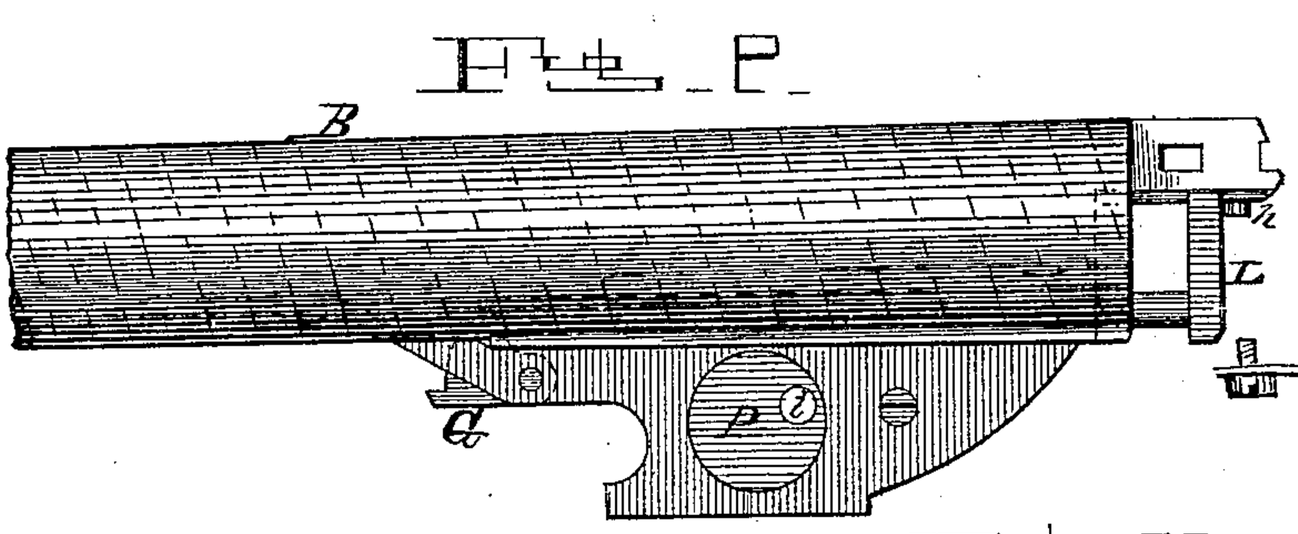


Fig. 10.

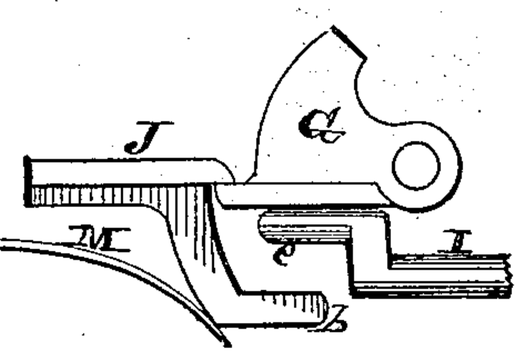


Fig. 11.

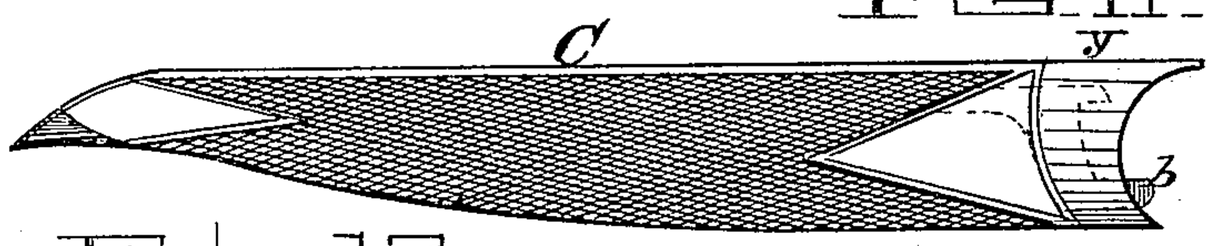


Fig. 12.

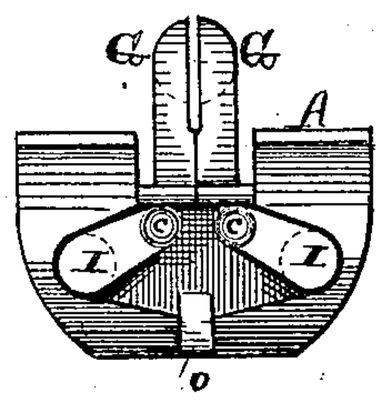
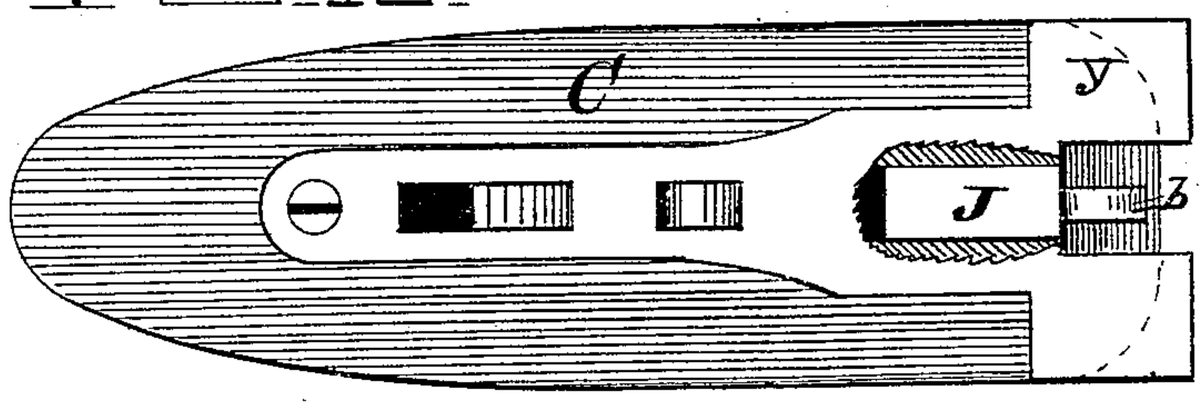


Fig. 13.



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Inventor
M. A. Keller.

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UNITED STATES PATENT OFFICE.

MOSES A. KELLER, OF BATAVIA, NEW YORK.

AUTOMATIC SHELL-EJECTOR FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 513,511, dated January 30, 1894.

Application filed April 24, 1891. Serial No. 390,355. (No model.)

To all whom it may concern:

Be it known that I, MOSES A. KELLER, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented a new and useful Improvement in Automatic Shell-Ejectors for Breech-Loading Guns, of which the following is a specification.

My invention relates to improvements in automatic shell ejectors in which two small hammers are pivoted to the main hinge lug of the barrels just forward of the hinge pin and adapted to strike on the end of the ejector rods, said hammers being actuated by the cranked cocking shafts of the locks. A sliding sear block is fitted in the hinge piece of the fore end and adapted to secure and hold said hammers cocked when in their normal position, against the resistance of the cocking shafts and the main springs when the gun is opened, after firing said sear block acting in conjunction with a cam or stop on the main frame, and thereby release the said hammers at the proper moment when the gun is opened to cause them to strike the ejector rods and force the shells out of the barrels. I attain these objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a sectional side view showing all of the parts in their normal position, while the gun is closed. Fig. 2 is a sectional side view showing the position of the parts when the gun is opened and just at the point when the ejector begins to eject the shells. Fig. 3, is another sectional view showing the position of the parts after the shells have been forced out and the locks brought to full cock and now in position ready to be closed again. Fig. 4 is a sectional view of the main frame detached from the barrels. Fig. 5 is an end view of the main frame showing the normal position of the cranked cocking shafts. Fig. 6, is a top view of the main frame with one side in sectional view showing the arrangement of the cocking shafts with the locks. Fig. 7, is a bottom plan of the breech end of the barrels with the operating parts in their normal position, and Fig. 8 is an end view of the same. Fig. 9 is a side view of the breech end of the barrels with the working parts in their normal position except the shell ejector which is drawn back. Fig. 10 are detail parts of the ejector hammers, sear and cocking shafts in their normal position. Fig. 11 is a side view of the fore end all complete. Fig. 12 is an end view of the main frame with the cranked cocking shafts and ejector hammers in their normal position, and Fig. 13 is a bottom plan of the fore end with a part broken away to show the arrangements of the sear block.

Similar letters refer to similar parts throughout the several views.

A denotes the main frame, B. the barrels C the fore end. To these parts are arranged all of the operating parts. The lock actions proper are those of the well known L. C. Smith gun, and my improvements relate to the automatic ejecting of the shells in combination with the lock action.

Referring to Figs. 7 and 9 it will be seen that two hammers G are pivoted to the main hinge lug of the barrels just forward of the hinge pin R, and the ejector rods L are in the usual place as is common with this style of gun. By referring to Fig. 1, it will be seen that the stem or ejector rods come close up to the said hammers while the gun is closed and the parts all in their normal position.

Fitted in the hinge piece Y, of the fore end, C, is a sliding sear block J, and adapted to catch over a notch or projection *g*, of said hammers, as seen in Figs. 1 and 10, and held in its place by the spring M. The cranked ends *c. c*, of the cocking shafts I. rest on the hammers G. G. loosely while the locks are at full cock, but when the locks are snapped the main springs E through the hammers D. force the cranked shafts up against the hammers G. Now when the gun is opened, and as the barrels begin to tilt the sear J. holds the hammer G. against the resistance of the main springs E. of the locks through the cranked shafts I, and main hammers D, until the end *b*, of sear J comes in contact with the cam or stop O, of the main frame A, when said sear is pushed back off the hammers G. against the resistance of the spring M. This action takes place just the moment when the barrels have been tilted far enough to allow the shells to pass out, clear of the frame A, which is about mid-

way between the two positions shown by Figs. 2 and 3, and as the sear J, releases the hammers G, the locks are at about half cock and the cranked ends of the cocking shafts I, force the hammers G, against the rods of the ejectors L, which will force the shells S, out of the barrels in the manner shown in Fig. 3 and as the barrels continue to tilt to a certain limit as will next be described, the locks are brought to full cock as shown in Fig. 3.

In a mechanism of this kind it is desirable that when the gun is opened for reloading or removing the shells either fired or not, the shells should be pushed out a little ways similar to that of a non automatic ejector and thus also start the shells for the automatic action. In this mechanism I use the rotary eccentric check P, in connection with the starting of the ejector. The name rotary eccentric check is derived from the fact that the same mechanism also performs the function of limiting the tilt of the barrels. When the gun is thrown open the eccentric pin *i* in said rotary disk P, projects from both sides of the lug or disk. See Figs. 7, and 8. These eccentric pins enter the L shaped slots U in the frame A. Shown in Figs. 4, and 6. When the barrels are connected to the frame, and in opening and closing the gun, said pins *i*, move in said slots and cause the disk P. to rotate back and forth, and the spring pawl *a*. of said disk comes in contact with the notch *l*, of the ejector rods when the gun is opened and thereby pushes the ejectors out part way as shown in Fig. 2.

In order to prevent the closing of the gun before the locks are cocked I have pivoted a spring pawl K. in the lug to operate in conjunction with the rotary check disk P. A notch *n*, is formed on the periphery of said disk P, and after the gun has opened far enough only to eject the shells, said pawl K, drops into the notch *n*, through the action of the spring T, as shown in Fig. 2, and thus prevents the disk P. to turn backward in case of any attempt to close the gun before the locks are again cocked, but when the barrels are tilted down to their full limit as seen in Fig. 3, at that point and not till then can the gun be closed. It will be seen by reference to Fig. 3, that at that point the pawl *a*, of disk P, comes in collision with the pawl K. and lifts said pawl K. from the disk P, until the spring T, drops in the notch *m*, thus holding the pawl K, back while the disk rotates backward when closing the gun. The cartridges can be inserted and pushed home at any point before the gun is closed, and the spring N, of pawl *a*, will allow the said pawl to yield as the same comes in contact with the ejector rods when closing the gun. As the barrels come home to their normal position in closing the gun, the pawl K, comes in contact with the projection *k*, on frame A, and thus forces the spring T from the notch *m*, but only to bear against said pawl and hold the same against the periphery of the disk P, all plainly shown in Fig. 1. The closing of the gun brings all of the ejector operating parts to their normal position as seen in Fig. 1.

It will be seen from the drawings and the foregoing description that when the locks are at full cock the gun can be opened, and the automatic action of the ejectors remain inactive. The ejectors are two in number, or in other words the ejector is double, for a double barreled gun, and one ejector hammer for each ejector. By this arrangement it will be seen that the automatic action of the ejector operates only on the shells that have been fired, as the automatic action is produced only when the locks are snapped. Thus each barrel is independent of the other. If both locks are snapped before the gun is opened, then both shells will be thrown out simultaneously.

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

1. In a breech-loading fire-arm in which the barrels are adapted to be broken down, an eccentrically rotated disk, rotated by the opening of the gun, and means to lock it to prevent the closing of the gun when only partially opened, a spring pawl mounted in said disk, and an extractor with which said pawl engages, in combination.

2. The combination substantially as herein set forth, of the barrels B, provided with the double shell ejectors L, the hammers G, also pivoted to said barrels and adapted to actuate the shell ejectors, the sear J, mounted in the hinge piece of the fore end and provided with a spring M, and adapted to lock said hammers in a cocked position when the gun is closed, and operating in conjunction with a cam or stop O, on main frame to release said hammers when the gun is opened after firing, the oscillating cocking shafts I, journaled in the main frame and having the cranked ends at or near the hinge, upon which the barrels tilt, and adapted to engage with the ejector hammers G, whereby said cocking shafts are rotated against the resistances of the main springs E, when the gun is opened, when at the proper time said ejector hammers are released by the sear J, coming in collision with the cam O, and the hammers G, forced against the ends of the shell ejectors, and as the barrels continue to tilt the hammer G, press down the cranked ends of the cocking shafts against the resistance of the main springs E, until the hammers D, are brought to full cock, the rotary check P, journaled in the main lug of the barrels and having the pin *i* adapted to engage the slot U, of the main frame A, and cause the check P, to rotate as the gun is opened and closed, a spring pawl *a* journaled in the rotary check transversely to its axis engages with the notch *l*, of the ejector rod L, when the gun is opened and thereby start the shells before the hammers G, strike the ejectors, the spring pawl K, pivoted in the main lug of the bar-

rels and operating in conjunction with the notch *n*, of the rotary check and prevent the closing of the gun until the hammers D, are cocked, when said pawl K, is lifted out of action with the check P, by the pawl *a*, and check P, is then free to turn backward as the gun is closed, these members being combined and arranged for operation, substantially as and for the purpose specified.

M. A. KELLER.

Witnesses:
J. R. KELLER,
M. E. KELLER.