

No. 770,404.

PATENTED SEPT. 20, 1904.

H. A. A. THORN.
SINGLE TRIGGER DOUBLE BARREL GUN.
APPLICATION FILED JULY 20, 1903.

NO MODEL.

Fig. 1.

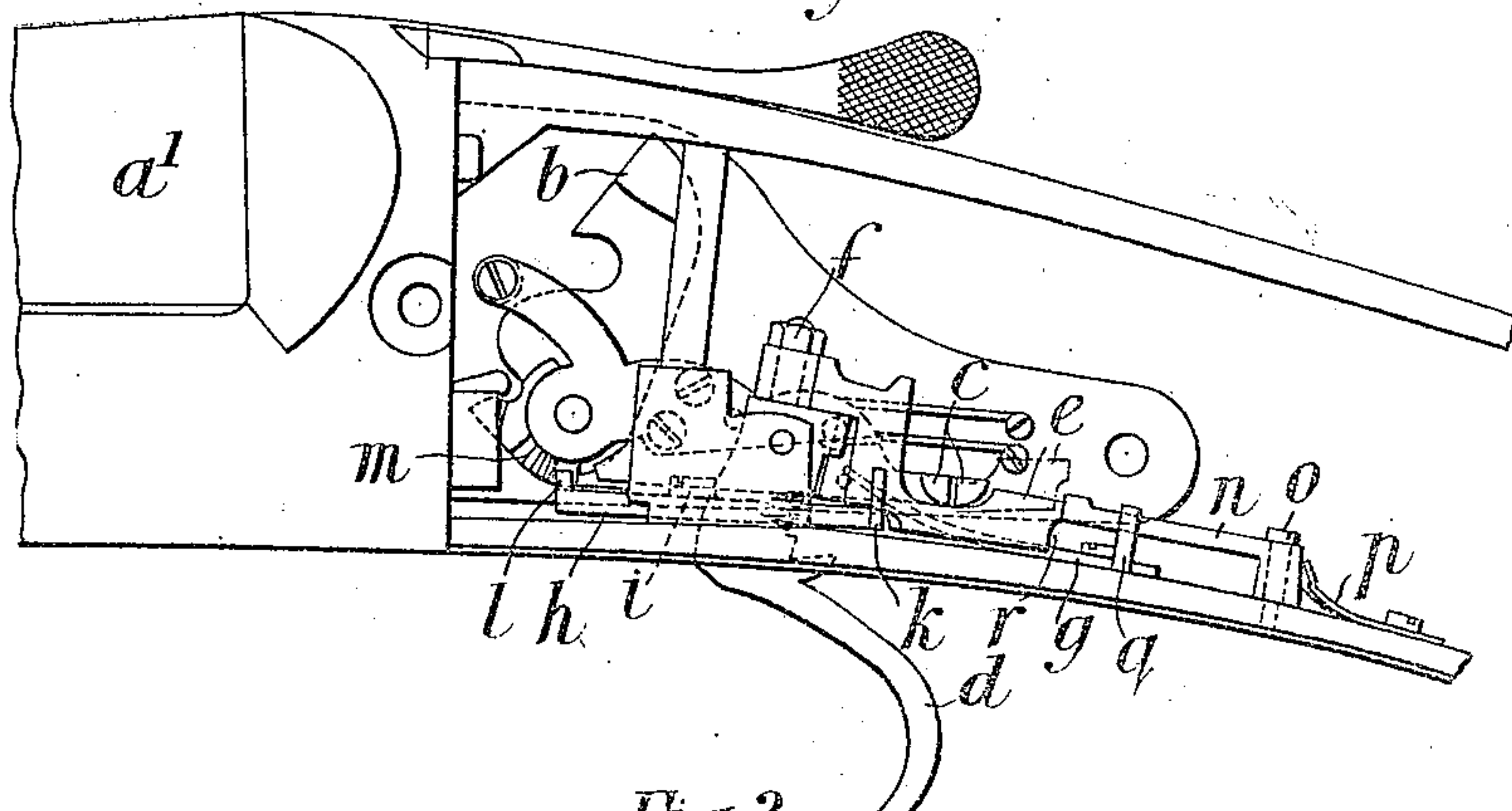


Fig. 2.

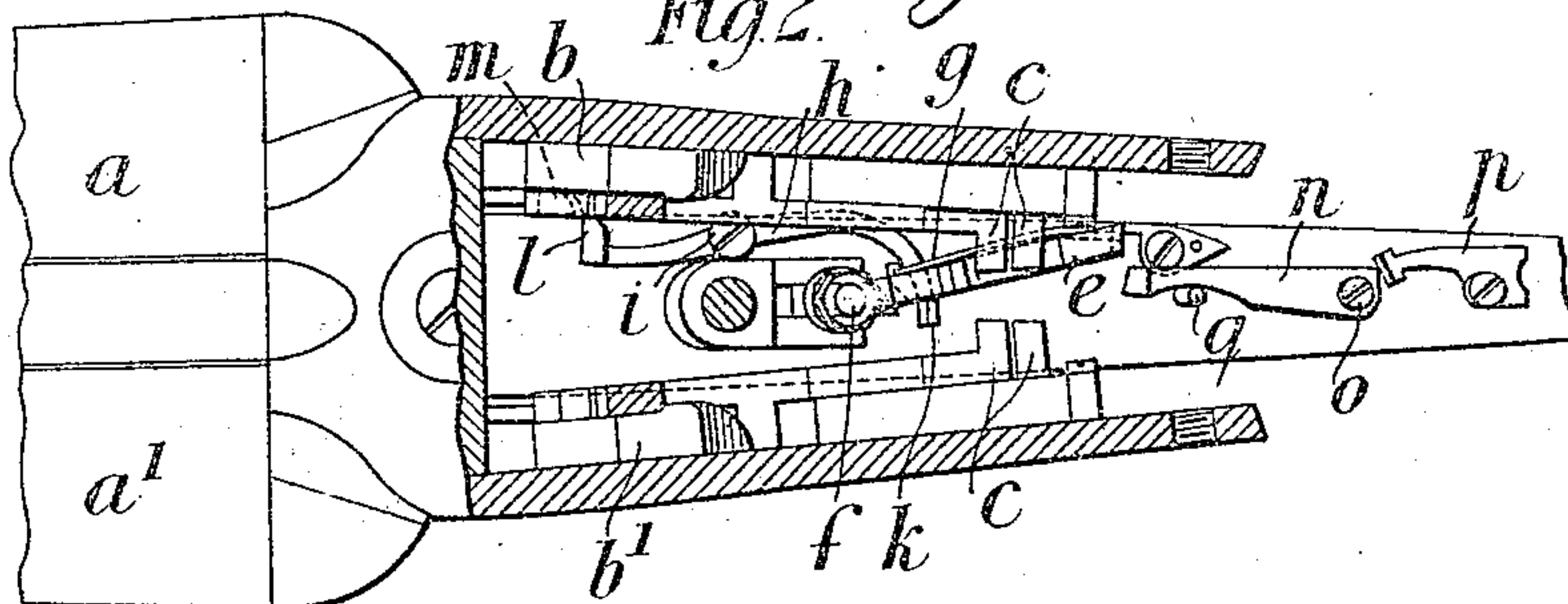


Fig. 3.

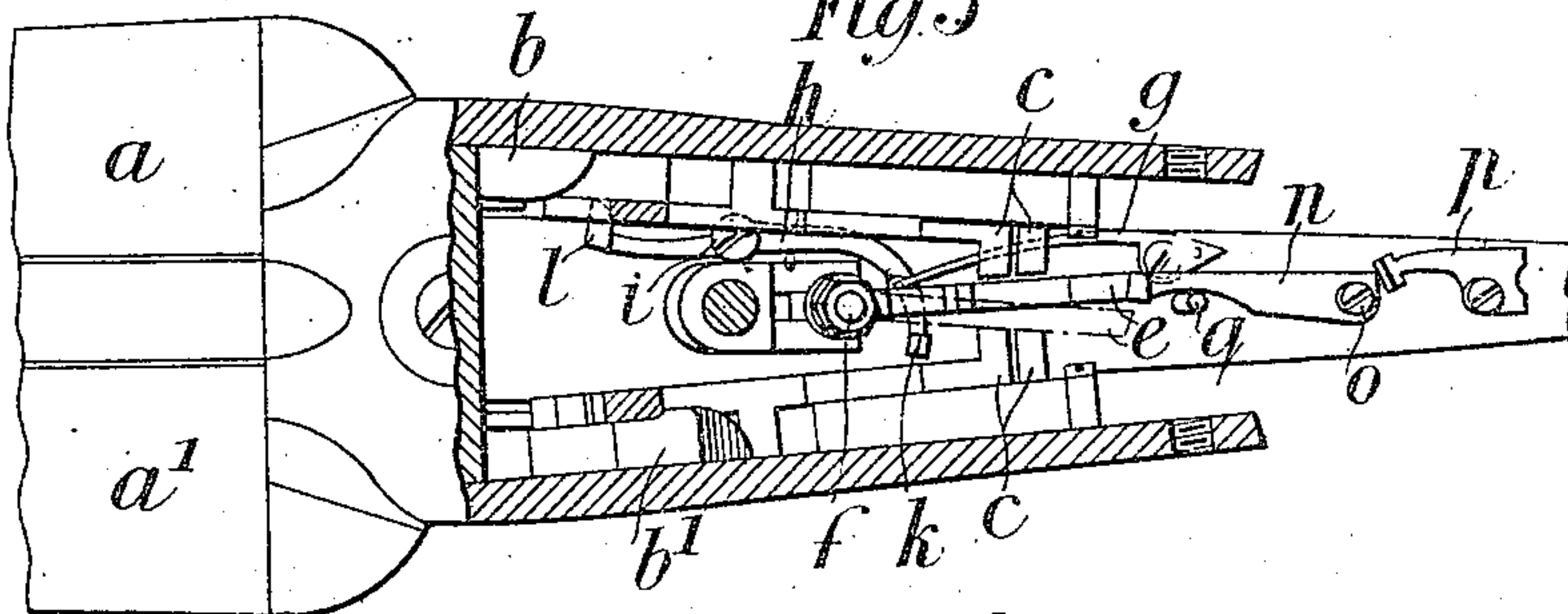
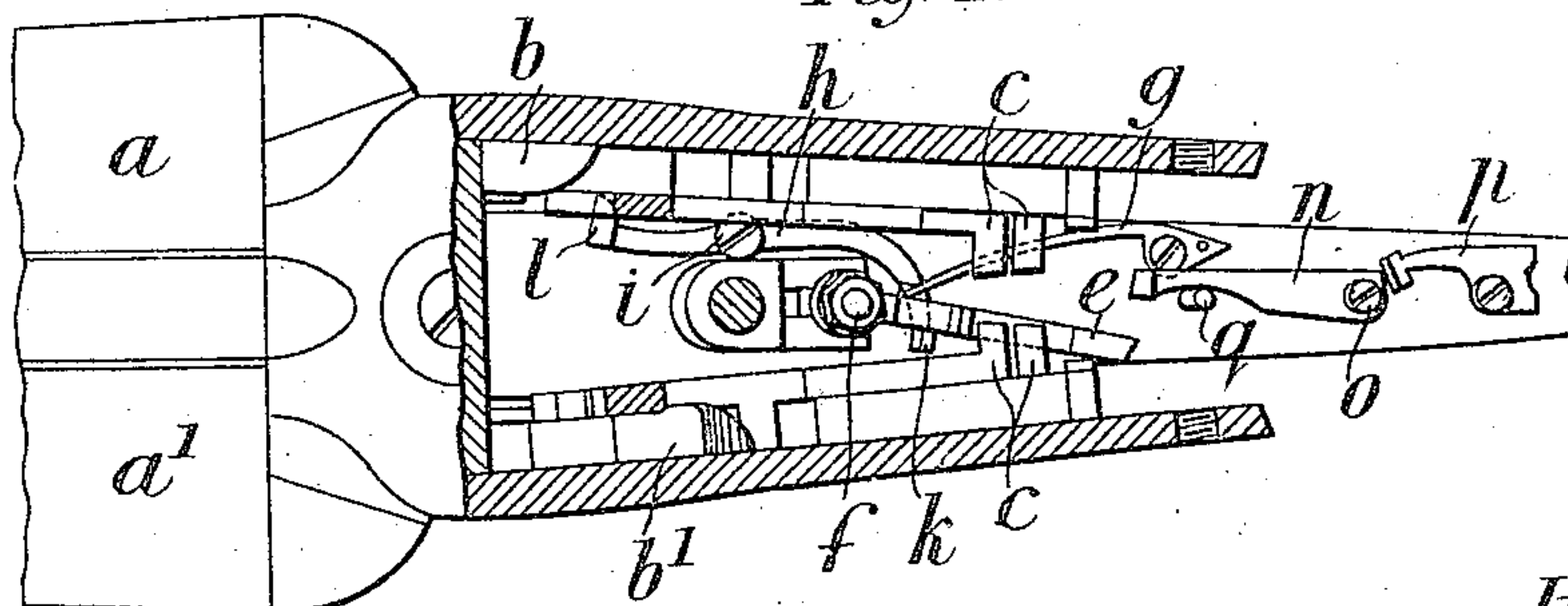


Fig. 4.



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HENRY ALFRED ALEXANDER THORN, OF LONDON, ENGLAND.

SINGLE-TRIGGER DOUBLE-BARREL GUN.

SPECIFICATION forming part of Letters Patent No. 770,404, dated September 20, 1904.

Application filed July 20, 1903. Serial No. 166,367. (No model.)

To all whom it may concern:

Be it known that I, HENRY ALFRED ALEXANDER THORN, a subject of the King of Great Britain, residing at 151 New Bond street, London, England, have invented new and useful Improvements in Single-Trigger Double-Barrel Guns, of which the following is a specification.

My invention relates to double-barrel guns of the kind wherein the charges of both barrels are designed to be fired by a single trigger. As is well known, there is liability when using guns of this class of firing the charge of the second barrel involuntarily immediately after the firing of the first barrel. Hitherto the involuntary discharge of the second barrel was considered to be due to the fact that the recoil of the gun against the shoulder on firing the first barrel momentarily moved the gun away from the trigger-finger and that upon the person operating the gun instinctively following the trigger up the reaction from the shoulder pressed the trigger against the finger, and so caused the second or involuntary discharge. In order to overcome this liability of second discharge, a "timer" or other mechanical device has been used which allowed for a certain amount of the inoperative or idle movement of the trigger after the discharge of the first barrel and before the trigger-blade moved into firing position relatively with the sear of the second barrel. As the result of experiments recently carried out it is believed that the involuntary discharge of the second barrel is due to the elasticity of the hand, which, notwithstanding the fact that the gun is firmly held, yields under the sudden backward leap of the gun, and that instantly under an involuntary convulsive clutch the trigger-finger is again pressed onto the trigger and causes the second discharge in an incredibly short space of time after the first discharge and while the gun is still moving backward toward the shoulder under the recoil.

The object of my invention is to provide means whereby the convulsive clutch before referred to shall only have the effect of releasing the swinging trigger lever or blade from a stop against which it impinges when the trigger is released after the first discharge,

and then only in such a manner that upon this second pull the swinging blade does not assume its firing position relatively with the sear of the second barrel, this only taking place when the trigger is released after the second pull, so that practically the swinging blade in moving over from right to left meets with two stops.

In a suitable arrangement for carrying out my invention I combine with a swinging blade an arrangement of stop mechanism somewhat of the kind used twenty years ago, wherein a stop-arm pivoted to move in a vertical plane is arranged to cooperate with a spring-actuated slide working on a blade fixed to the trigger and designed to be successively brought into position relatively with the sears of the right and left hand firing mechanisms. The stop-arm, however, which I use according to my invention is pivoted upon a vertical axis so that it is capable of moving in a horizontal plane and is combined with a spring.

To enable my invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is an elevation of a portion of the lock and breech mechanism of a gun having my improvements applied to it, and Fig. 2 is a sectional plan of the same wherein the trigger-blade is shown in position for discharging the right-hand barrel. Figs. 3 and 4 are views similar to Fig. 2, but showing different positions of the trigger-blade.

a a' are the right and left hand barrels, respectively, and *b b'* the respective tumblers, each of which has arranged in connection with it double sears *c c* in a well-known manner.

d is the trigger, and *e* is the trigger-blade, which is mounted on a pivot *f* on the said trigger, so that the said blade is free to swing laterally.

g is a spring which bears against the blade *e* and tends to move it from the right-hand to the left-hand position.

h is a lever pivoted upon a screw or pin *i* and which at one end is provided with a finger *k*, engaging with the trigger-blade, and at the other end with a cam projection *l*, which works in conjunction with a cam-surface *m*, formed upon the right-hand tumbler *b*; the said lever

serving after the firing of the gun and when acted upon by the cam-surface *m* to return the trigger-blade to its position beneath the right-hand sears.

5 All the foregoing parts are of ordinary construction, and therefore require no further description.

n is the stop-arm, arranged in accordance with my invention, the said stop-arm being
10 pivoted upon a vertical stud or screw *o* and being acted upon by a spring *p*, which normally holds it against a stud *q*, the free end of the stop-arm *n* forming an abutment against which the free end of the trigger-
15 blade will come into contact, as hereinafter described. In practice the relative lengths of the trigger-blade and of the arm *n* are such that when their free ends are in contact they will form a kind of toggle—that is to say, the
20 point of contact between the said blade and arm will be on one side of a line passing through their pivots, or, in other words, the combined lengths of the trigger-blade and arm end is greater than the distance between their
25 points of pivoting, and therefore the swinging blade will be stopped when its end is in contact with the end of the arm *n*. It will be noticed that the ends of the said arm and trigger-blade are slightly beveled, so that they
30 will fit together when in their locked position.

The operation of the apparatus hereinbefore described is as follows—that is to say, when the gun is cocked and the blade *e* is in position for the discharge of the right-
35 hand barrel the end of the said blade is at some distance from the end of the stop-arm *n*, as clearly shown in Fig. 2. When the trigger is pulled, it lifts the trigger-blade to the position indicated by the dotted lines in Fig.
40 1 to discharge the right-hand barrel. As the gun recoils the elasticity of the hand allows the pressure upon the trigger being momentarily released, so that the trigger-blade *e* escapes from the sears under the action of the spring *g*,
45 the end of the said blade coming into contact with the end of the stop-arm *n*, as shown in Fig. 3. The involuntary clutch pull which now takes place causes the upward movement of the trigger-blade, so that the end of the latter,
50 which is cut away, as shown at *r*, Fig. 1, is disengaged from the stop-arm and moves over under the action of the spring *g* to the position indicated by the dotted lines in Fig. 3—that is to say, against the sears of the left-
55 hand barrel *a'*. Upon the release of the trigger after the second or involuntary clutch pull the blade swings beneath the sears of the second barrel, as indicated in Fig. 4. Upon the opening of the gun the swinging blade is
60 pulled over to the right, owing to the cocking of the right-hand tumbler, the end thereof during its movement striking the end of the

pivoted stop-arm *n* and moving the latter against the pressure of the spring *p* sufficiently to pass, whereupon the said pivoted
65 stop-arm will assume a position in which it will engage with the swinging blade when the latter is next operated, as hereinbefore described.

Having now particularly described and as-
70 certained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a single-trigger double-barrel gun, the combination with the trigger and sears of a
75 swinging trigger-blade pivoted upon said trigger by a substantially vertical pivot and adapted to engage with the sears of both barrels, of a stop-arm pivoted upon a substantially vertical pivot and extending therefrom in a direc-
80 tion toward the trigger-blade the combined length of said trigger-blade and stop-arm being slightly greater than the distance between their points of pivoting and said arm having
85 a trigger-blade-engaging portion lying normally at one side of a line connecting said points of pivoting whereby the swinging trigger-blade will be stopped by said arm, when
90 moving in one direction and will be held against further movement in such direction until the trigger-blade is raised out of engage-
ment with said arm, substantially as described.

2. In a single-trigger double-barrel gun, the combination with the trigger and sears of a
95 swinging trigger-blade pivoted upon said trigger by a substantially vertical pivot and adapted to engage with the sears of both barrels, of a stop-arm pivoted upon a substantially vertical pivot and extending therefrom in a di-
100 rection toward the trigger-blade the combined length of said trigger-blade and stop-arm being slightly greater than the distance between their points of pivoting and said arm having
105 a trigger-blade-engaging portion lying normally at one side of a line connecting said points of pivoting, a stop for said swinging arm limiting it from movement in a direction toward a line connecting said arm normally
110 against said stop, said trigger-blade being provided at its free end with a cut-away portion, whereby in swinging from the sears of the first barrel discharged to those of the other barrel, said trigger-blade will strike the end
115 of said stop-arm and be arrested until said blade is elevated to permit the cut-away portion thereof to pass said arm and whereby on the return movement of said blade said arm will yield against the spring to permit said blade to pass, substantially as described.

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