

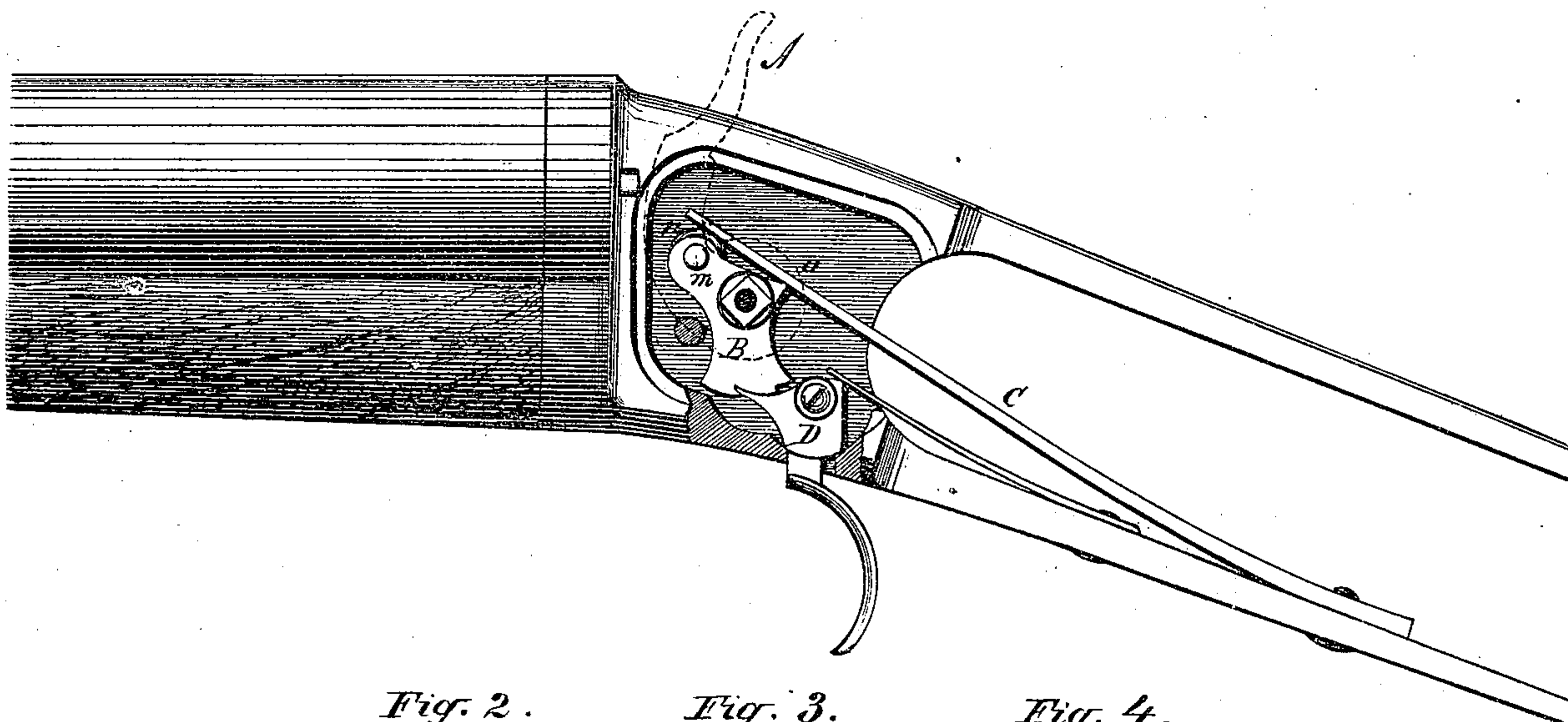
L. HAILER.

GUN LOCK.

No. 105,799.

Patented July 26, 1870.

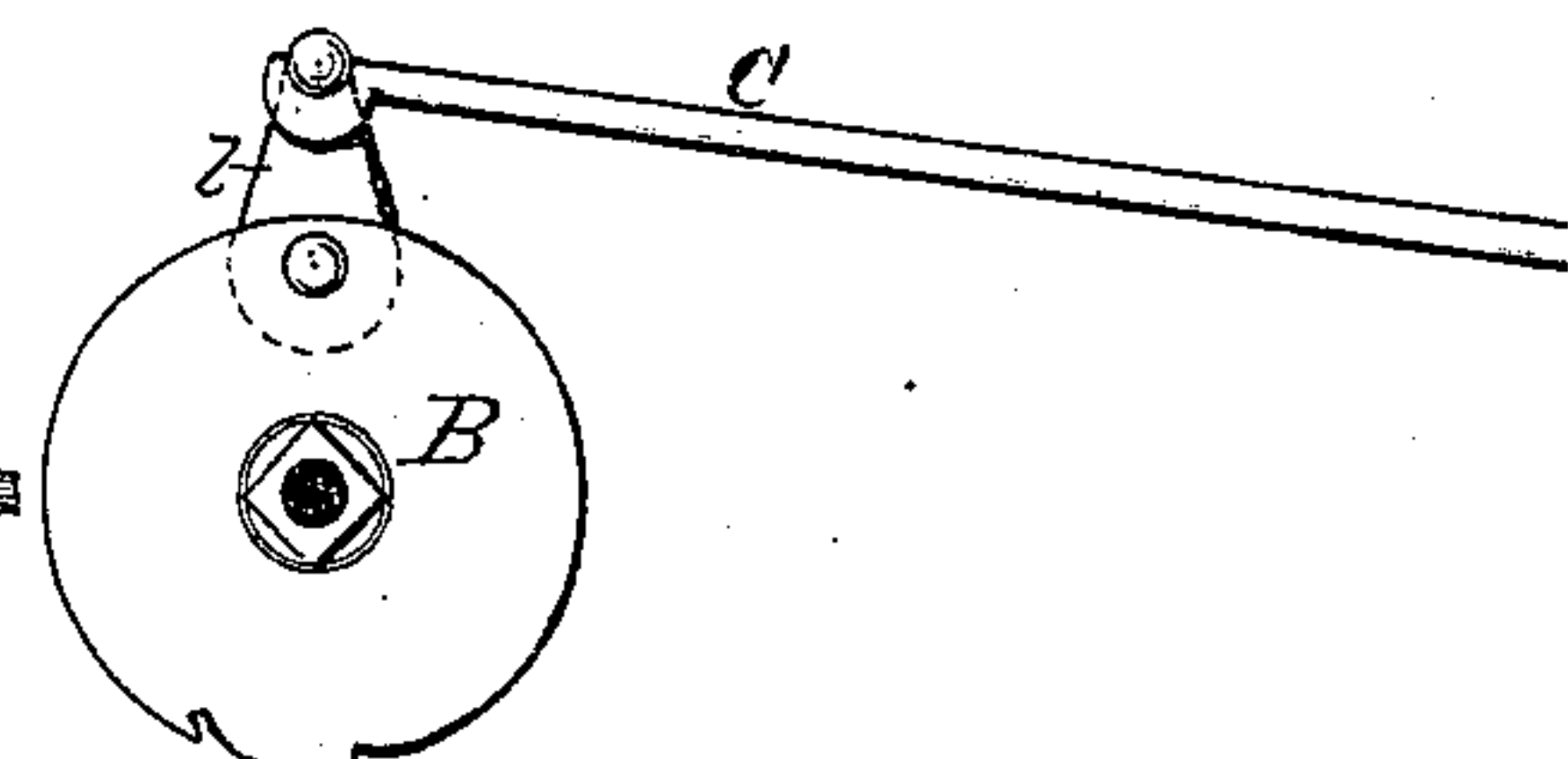
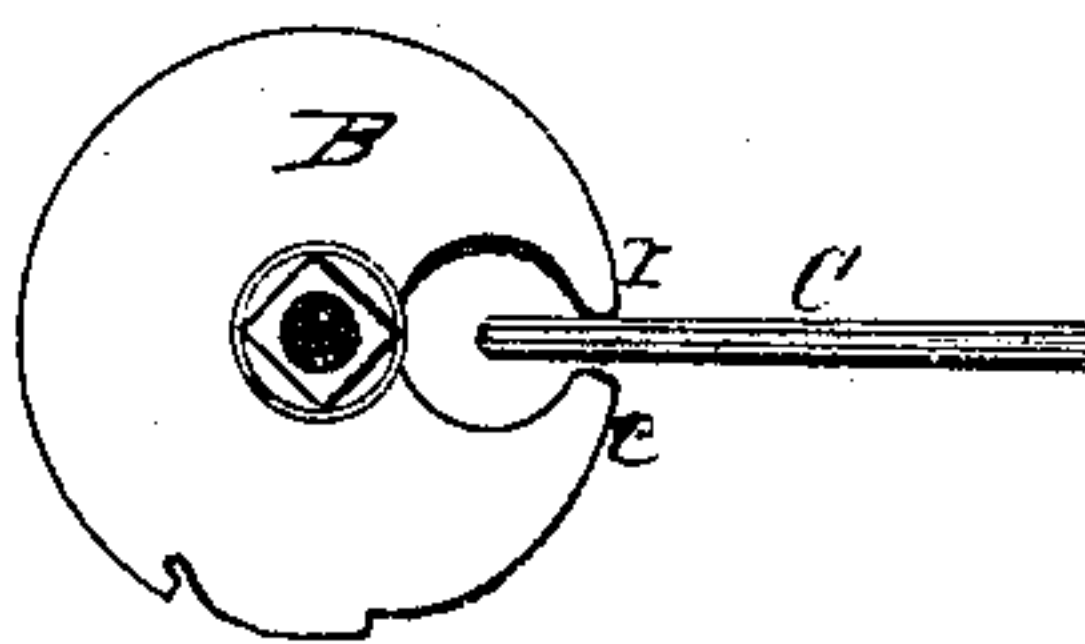
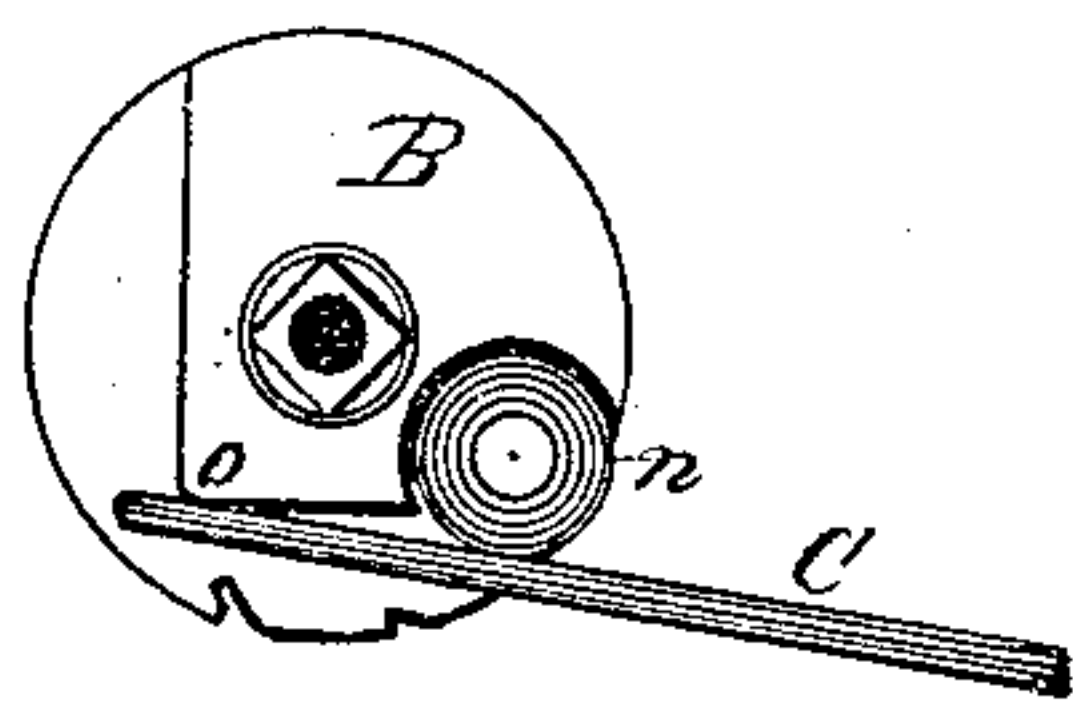
*Fig. 1.*



*Fig. 2.*

*Fig. 3.*

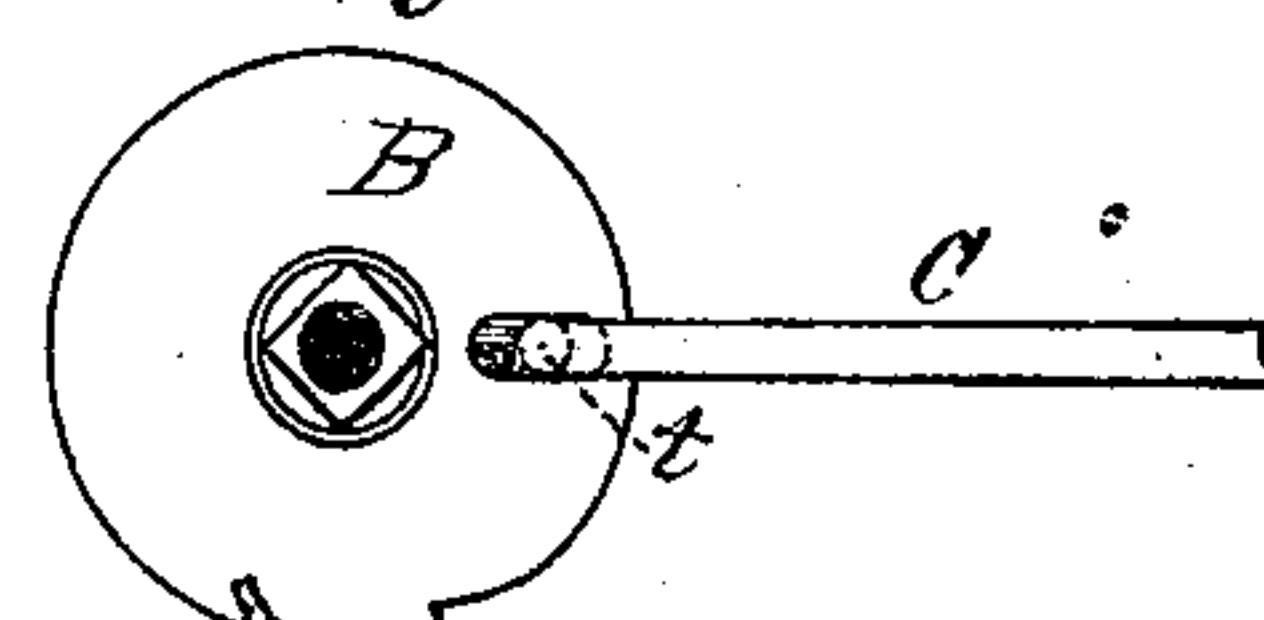
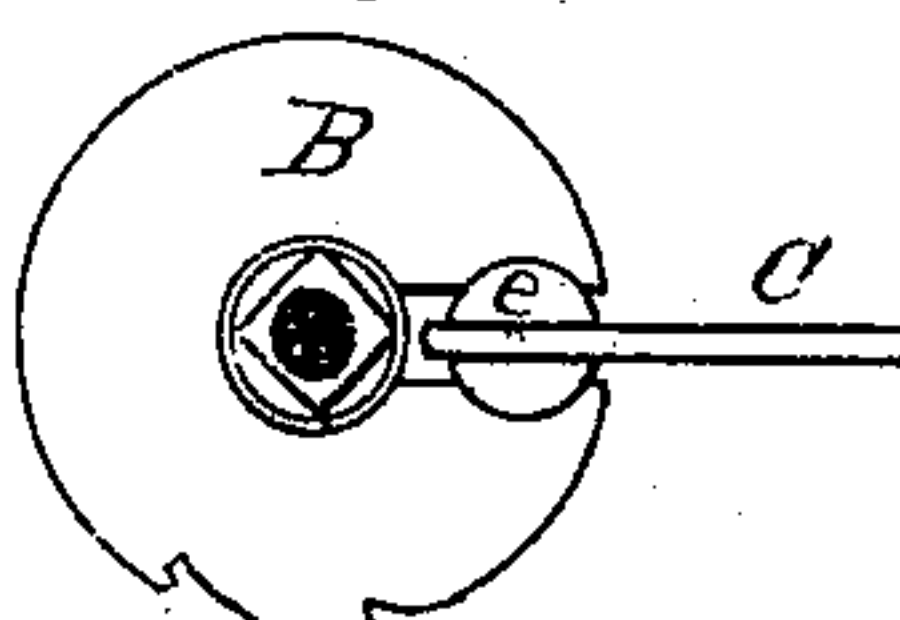
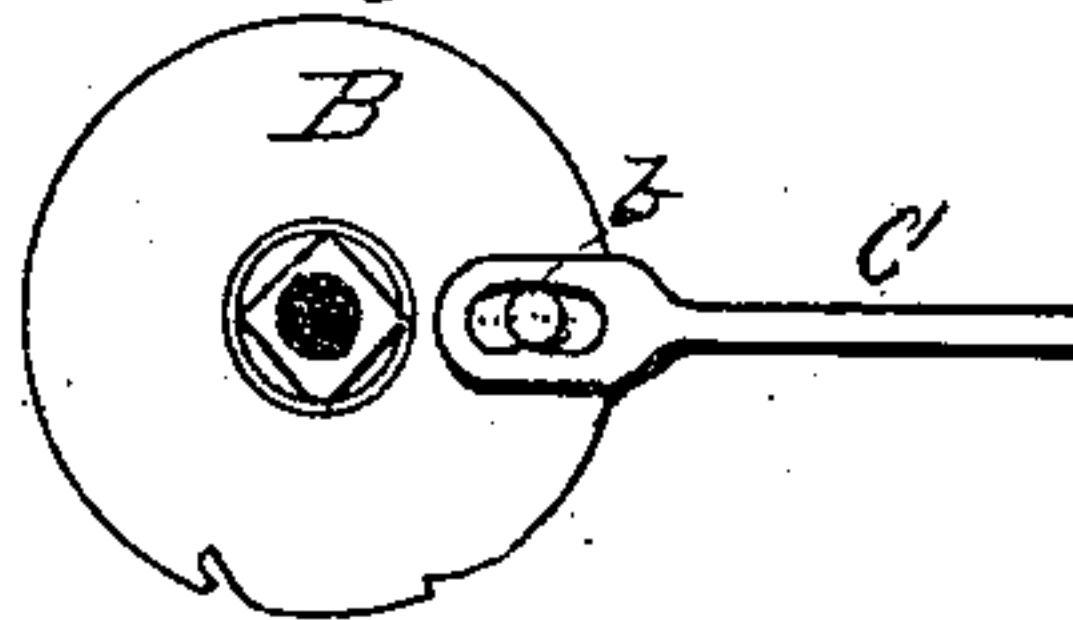
*Fig. 4.*



*Fig. 5.*

*Fig. 6.*

*Fig. 7.*



Witnesses,

Phil. T. Dodge  
Thomas Taylor

Inventor,

L. Hailer.



# UNITED STATES PATENT OFFICE.

LEWIS HAILER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO  
WILLIAM C. DODGE, OF SAME PLACE.

## IMPROVEMENT IN GUN-LOCKS.

Specification forming part of Letters Patent No. 105,799, dated July 26, 1870.

*To all whom it may concern:*

Be it known that I, LEWIS HAILER, of Washington, in the county of Washington and District of Columbia, have invented certain Improvements in Gun-Locks, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to gun-locks; and the invention consists in so constructing the lock that a single spring will serve as a mainspring, to strike the blow necessary to ignite the charge, and also serve to throw the hammer back to the half-cock or safety notch, as hereinafter explained.

Figure 1 is a side elevation of a portion of a gun with my improved lock applied thereto. Figs. 2, 3, 4, 5, 6, and 7 represent the same style of lock with modified plans of attaching the spring to the tumbler.

In breech-loading guns it is necessary in most cases to half-cock the hammers before the breech can be opened, and this with locks of the ordinary construction requires a motion for that special purpose, thus consuming time that might otherwise be utilized in reloading the gun. Besides, it is safer to handle a gun in which the hammer naturally stands at half-cock, and for that reason, also, this style of locks is desirable, especially in sporting-arms.

Locks having a rebounding hammer have heretofore been made either with two separate springs or with one spring having two arms, one serving to impel the hammer forward, causing it to deliver its blow, and the other then exerting its force to throw the hammer back to the half-cock or safety notch.

In constructing my improved lock I use a single spring for these two purposes, the invention having for its object to dispense with the second spring heretofore used by so constructing and arranging the tumbler and spring that the mainspring alone shall both cause the hammer to deliver its blow and then throw it back to the half-cock or safety notch.

The mainspring C may consist of a single straight piece, or it may be bent in the old style or elbow form.

In Fig. 1 the tumbler B is shown having a shoulder, *m*, projecting upward and forward, with a friction-roller, *n*, for the spring to rest

upon to force the hammer forward, and another shoulder, *o*, just in rear and a little above the journal, to strike against the spring C just before the hammer has completed its forward movement, and thus cause it to rebound to the first or half-cock notch.

When thus constructed and arranged, the spring, when the hammer is placed at full-cock, will first exert its full force on the arm *m*, thus impelling the hammer forward with sufficient force to explode the cap or cartridge, the shoulder *o* then coming in contact with the spring C on the rear side of the journal, and tending to throw the hammer back. The front arm, being much the longer of the two, will exert much more force during the first part of the hammer's movement, and thus the momentum imparted to the hammer will be sufficient to carry it forward and complete its blow, even after the shoulder *o* comes into action; but after the hammer has reached a certain point in its forward movement the front shoulder, *m*, will be relieved from the pressure of the spring, which will then press on the shoulder *o*, and thus bring it back to the required position.

Fig. 2 represents the same plan with the parts reversed, the spring in this case being applied below instead of above the journal.

Fig. 3 represents the tumbler with two rearwardly-projecting shoulders, *r* and *e*, on which the spring C will act alternately in a similar manner, the spring first acting on shoulder *r* to impel the hammer forward, and then on *e* to throw it back.

Fig. 4 represents the same idea, the spring in this case being connected to the tumbler B by a stirrup, *l*, which is so arranged as to first throw the hammer forward and then pull it back, as before.

Fig. 5 represents the end of the spring as being slotted and connected to the tumbler by a pin, *b*, the spring being so arranged in this as in all the other modifications as to act first in one and then in the other direction on the tumbler.

In Fig. 6 the spring is shown connected to the tumbler by a roller, *e*, fitted in a suitable bearing in the rear side of the tumbler, there being a slot or mortise through this roller *e*

for the end of the spring to rest in, and in which it will play back and forth as the tumbler turns on its axis.

Fig. 7 shows still another modification, the spring C in this case having a laterally-projecting pin or wrist, *t*, engaging in a slot in the tumbler, and serving to connect it thereto.

In all those cases where the spring is simply connected to the tumbler, as in Figs. 3, 4, 5, 6, and 7, the spring must be so set in relation to the tumbler as to exert much more force on the hammer during its forward movement than during its return movement.

The location of the shoulders on which the spring acts must always be in relation to the position of the spring, and either may, obviously, be varied at will, provided care be taken to vary the other to correspond therewith, as illustrated in Figs. 1 and 2.

By these means I make a lock that is exceedingly simple and cheap, and in which a single spring performs the twofold functions

of propelling the hammer to ignite the charge, and also of causing it to rebound to the first notch.

Having thus described my invention, what I claim is—

1. The construction and arrangement relatively to each other of the single mainspring and the tumbler in the lock of a fire-arm, whereby the spring is caused to impel the hammer to deliver its blow for igniting the charge, and then reacts upon the tumbler to throw the hammer back from the nipple, firing-pin, or cartridge, substantially as described.

2. The tumbler B, provided with two shoulders, in combination with the spring C, arranged to operate alternately upon said shoulders, substantially as and for the purpose set forth.

L. HAILER.

Witnesses:

PHIL. T. DODGE,  
H. B. MUNN.