

(Model.)

J. BREYER.

LOCK.

No. 285,382.

Patented Sept. 25, 1883.

FIG. 1.

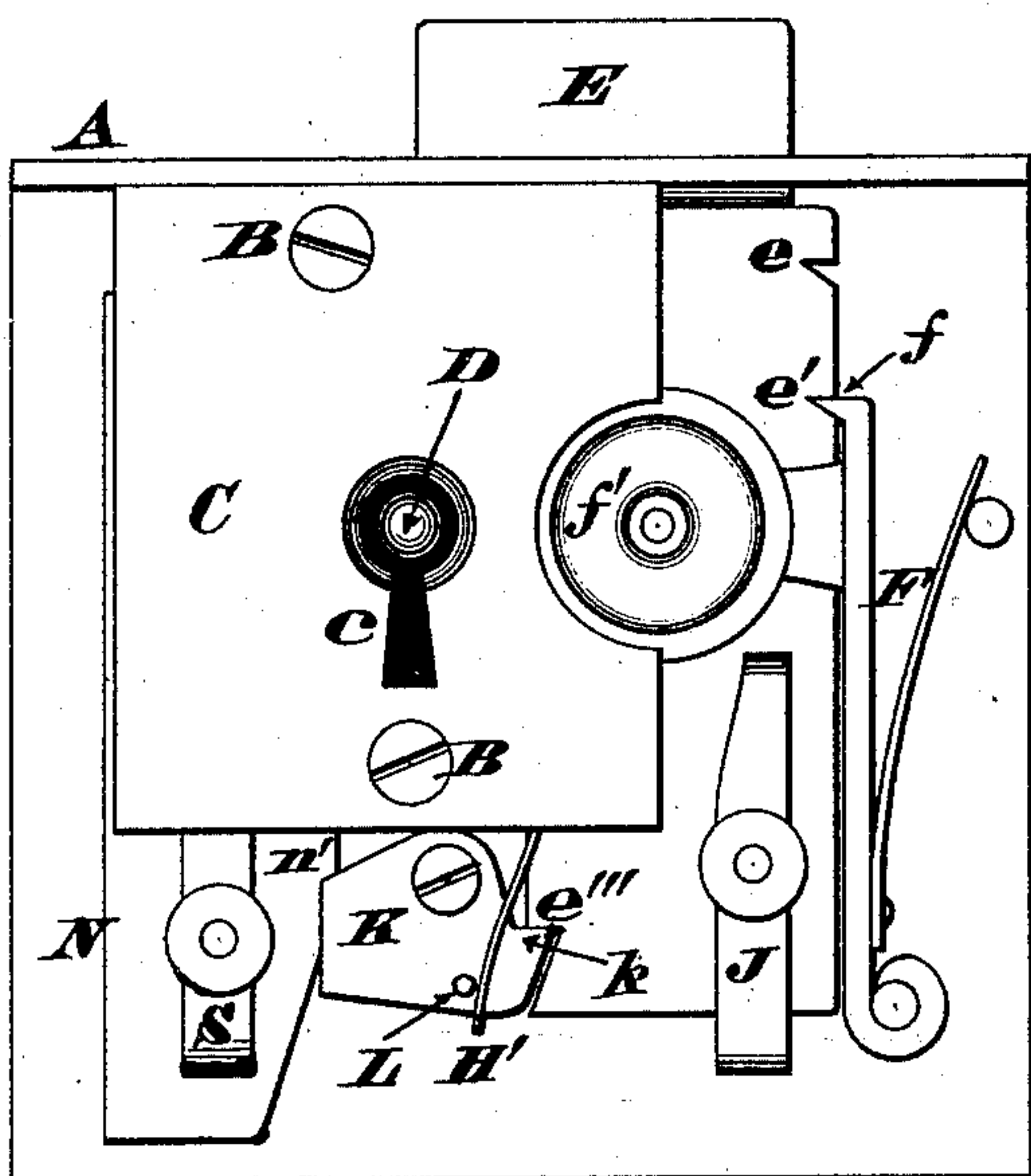


FIG. 2.

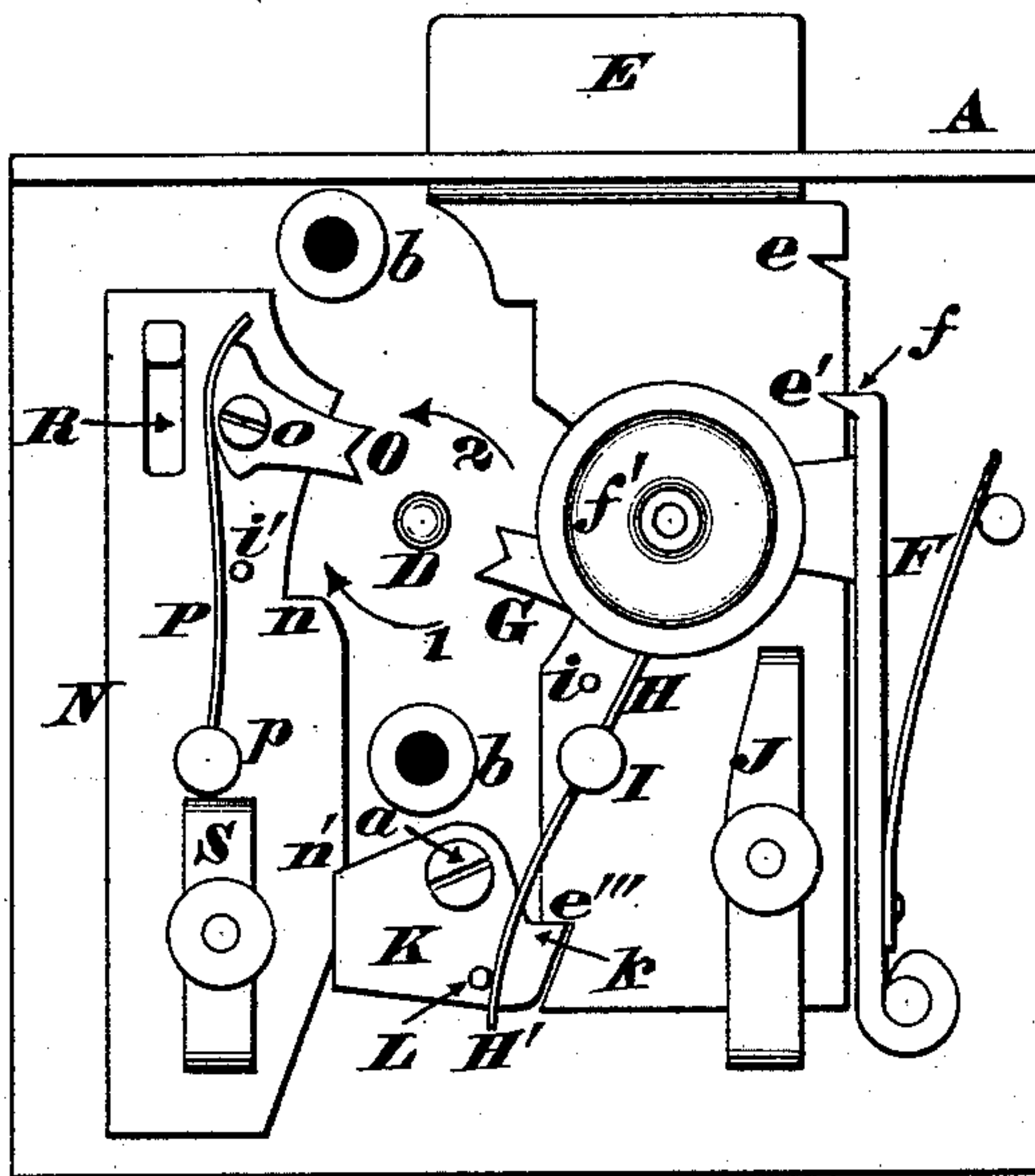


FIG. 3.

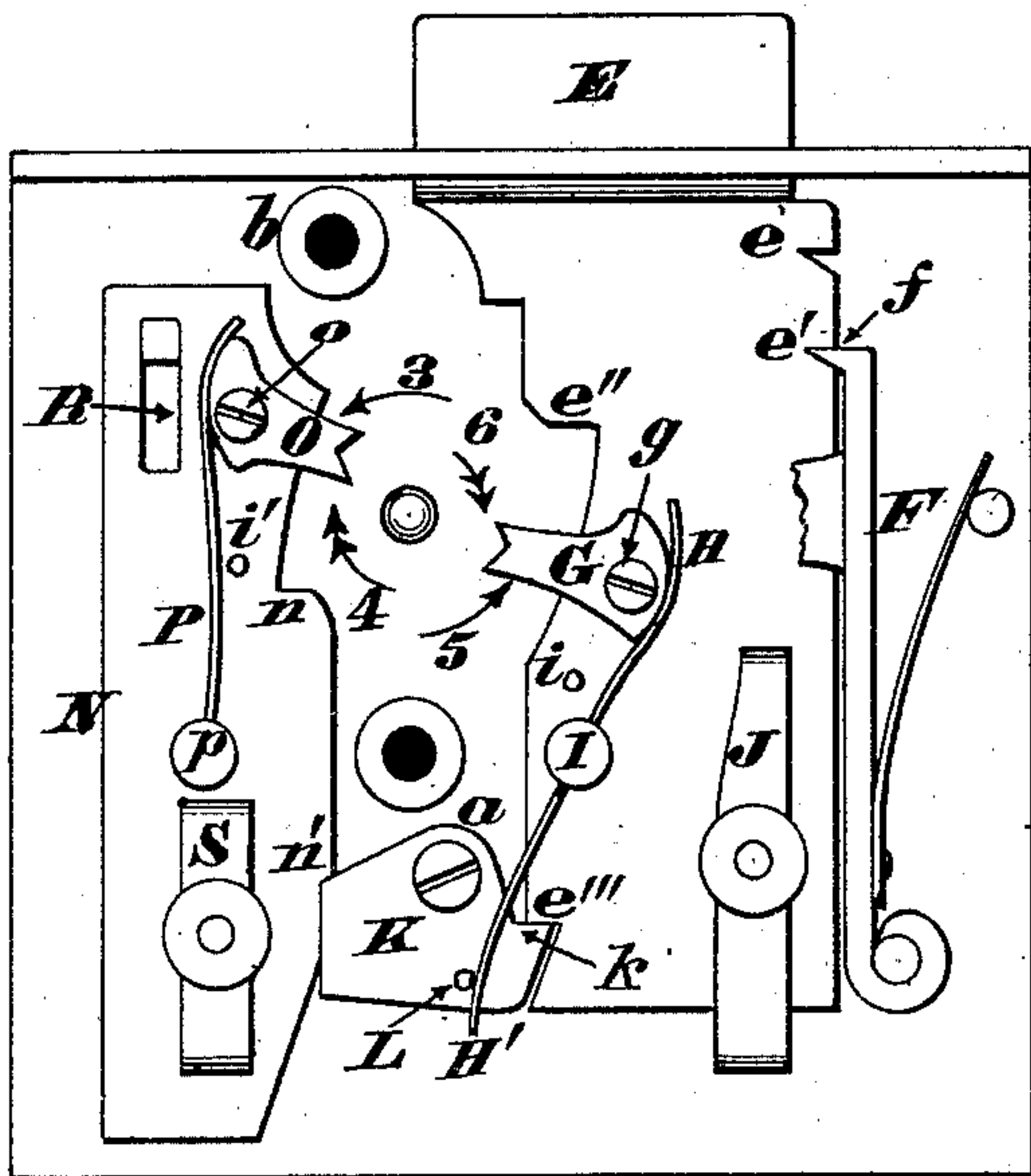
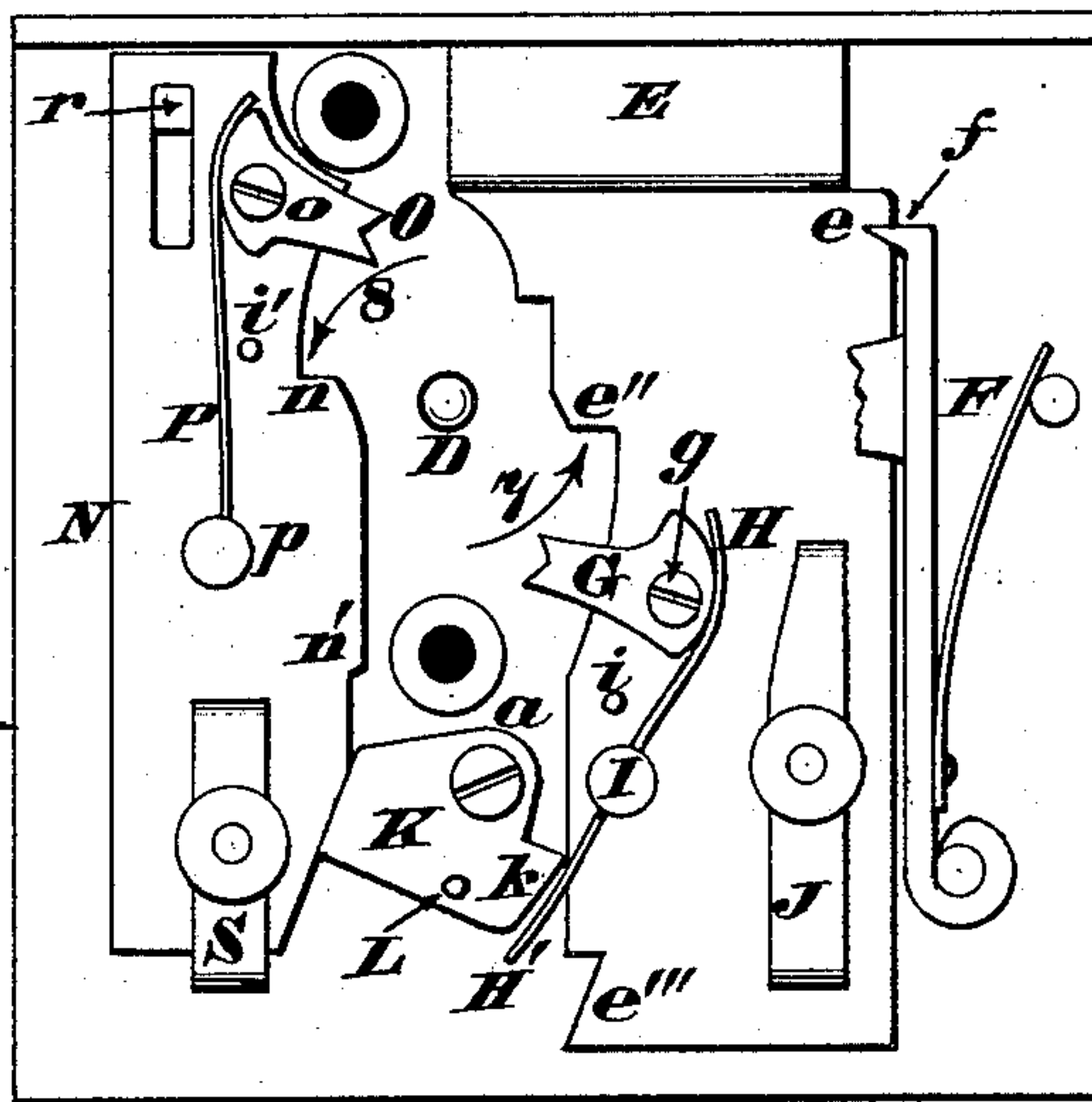


FIG. 4.



Attest.

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UNITED STATES PATENT OFFICE.

JOSEPH BREYER, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO JOHN KAUFFMAN, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 285,382, dated September 25, 1883.

Application filed May 19, 1883. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH BREYER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bolt-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide a lock that will allow the key to be turned uninterruptedly in either direction after the bolt has been shot, and without affecting the latter or injuring the key, or giving any indication of the proper method of retracting said bolt. These results are obtained by combining with the bolt a reciprocating slide, a pair of pivoted and notched gabs, and a pivoted dog, said devices being used in conjunction with an ordinary tumbler, as hereinafter more fully described.

In the annexed drawings, Figure 1 is an elevation of my improved lock, the bolt thereof being shot. Fig. 2 is a similar elevation, but with the cap of the lock-case removed. Fig. 3 is another similar elevation, but with the anti-friction roller of the tumbler detached. Fig. 4 is an elevation showing the positions the various members of the lock assume when the bolt is retracted.

The lock-case A has secured to it with screws B the cap C, the latter having a customary hole, *c*, to enable a key to enter the lock and turn on the pipe-shaft D. *b* are threaded stumps, with which engage said screws B.

E represents the bolt, having on its back two notches, *e e'*, with either one of which engages the tooth *f* of tumbler F, said tumbler being provided with an anti-friction roller, *f'*. Furthermore, the front edge of bolt E has a shoulder, *e''*, (seen in Figs. 3 and 4,) this shoulder being arranged to receive the thrust of the key-bit when the latter advances said bolt. Pivoted to this bolt at *g* is a gab, G, notched at its free end, as shown, and maintained in its normal position by the portion H of a spring, H H', said spring being secured in a lug, I, projecting from bolt E.

i is a stop-pin that limits the swing of gab G.

J is a customary plate-spring that holds the bolt E snugly against the lock-case, said bolt

being notched at its lower end; at *e'''*, to admit the tooth *k* of a dog, K, the latter being pivoted at *a* to said case. Dog K has a pin, L, against which bears the portion H' of spring H H'. Located on the opposite side of the lock-case with reference to the bolt E is a reciprocating slide, N, having a shoulder, *n*, to receive the thrust of the key-bit when the latter retracts said slide. This slide has another shoulder, *n'*, that bears against the upper edge of dog K, while bolt E remains in its protruded position. Furthermore, this slide N has pivoted to it at *o* a gab, O, notched at its free end, and maintained in its normal position by a spring, P, fastened to a lug, *p*, projecting from said slide. *i'* is a stop-pin that limits the swing of this gab O.

R is a slot and *r* a stump, that assist in guiding the slide N in a proper path.

S is a plate-spring that holds the slide N snugly against case A.

The manner of operating this lock is as follows: Presuming the bolt E to be shot, as represented in Figs. 1, 2, and 3, it will be seen that the tooth *f* of tumbler F is snapped into the notch *e'* of said bolt, while the tooth *k* of dog K engages with notch *e'''*. It will also be noticed that said dog bears against the shoulder *n'* of slide N, which latter is now retracted. Such being the disposition of the various members of the lock, let it be supposed that either the proper key or a false one has been applied to the pipe-shaft D, and is naturally turned in the direction of the arrow 1, (seen in Fig. 2,) with the intention of retracting the bolt E. As the key is thus turned the end of its bit first comes in contact with the gab O, which simply swings on its pivot *o*, and allows the bit to pass without in the least affecting the slide N. As the bit continues to travel around in the lock-case, it next comes in contact with the periphery of roller *f'*, thereby forcing the tumbler-tooth *f* out of notch *e'*; but the bolt does not recede at this moment, because it is held in its advanced position by shoulder *e'''*, resting on tooth *k* of dog K, which latter is locked against the shoulder *n'* of slide N. The still further travel of the key-bit causes it to strike against the gab G, thereby swinging the latter on its pivot *g*, but produc-

ing no effect whatever on bolt E. Hence it follows that the key may be turned uninterruptedly in the direction of arrow 1 without unlocking said bolt. If, however, the key should
 5 be turned in an opposite direction, as indicated by the arrow 2 in Fig. 2, the bit will then come successively in contact with gab G, roller f' , and gab O, but without moving either the bolt E or slide N. It will thus be
 10 seen that it makes no difference in what direction or how frequently the key may be turned, the lock cannot be opened in this manner; but a person familiar with its construction will proceed as follows: He turns the key re-
 15 versely of the usual manner, ignoring its action against the gab G for the time being, and notices the moment he feels the bit come in contact with the edge of gab O, as indicated by the arrow 3 in Fig. 3. He then turns
 20 cautiously, so as to swing this gab on its pivot o, and as soon as he hears a slight clicking sound, caused by the end of the bit engaging with the notch of said gab, the key is instantly turned in an opposite direction, as indicated
 25 by the double-headed arrow 4, thereby advancing the slide N and shifting its shoulder n' , so as to be free from the dog K. This slide being advanced, the key is turned so as to come in contact with the edge of gab G, as in-
 30 dicated by arrow 5, and as soon as the notched end of this gab is heard to click against the end of the key-bit the latter is instantly turned in an opposite direction, as indicated by the double-headed arrow 6, thereby retracting the
 35 bolt E. This retraction of the bolt is permit-

ted, because the advancement of slide N allows the dog K to swing on its pivot a , and thereby disengage the tooth k from notch e''' , as seen in Fig. 4. When the key is turned to again shoot the bolt, the bit just clears the end of
 40 gab G, as indicated by the arrow 7 in Fig. 4, and, coming in contact with shoulder e'' of said bolt, the latter is advanced in the usual manner. The further turning of said key causes it to clear the other gab, O, as indi-
 45 cated by the arrow 8, and, coming in contact with shoulder n , the slide N is instantly retracted and the bolt securely locked, as shown in Figs. 1, 2, and 3.

For the purpose of rendering the drawings
 50 clear and distinct the wards have been omitted; but it is evident the lock may be furnished with as many of such devices as may be desired.

I claim as my invention—

55 A tumbler-lock consisting of the notched and shouldered bolt E $e e' e'' e'''$, carrying a pivoted gab, G g , and spring H H' I, in combination with the tumbler F f , pivoted dog K k L, and shouldered slide N $n n'$, which slide
 60 is furnished with a pivoted gab, O o , and spring P, all arranged and adapted to operate as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH BREYER.

Witnesses:

JAMES H. LAYMAN,
 SAML. S. CARPENTER.