(No Model.)

C. H. BRIGDEN.

LOCK.

No. 604,576. Patented May 24, 1898.

Fig. 1.

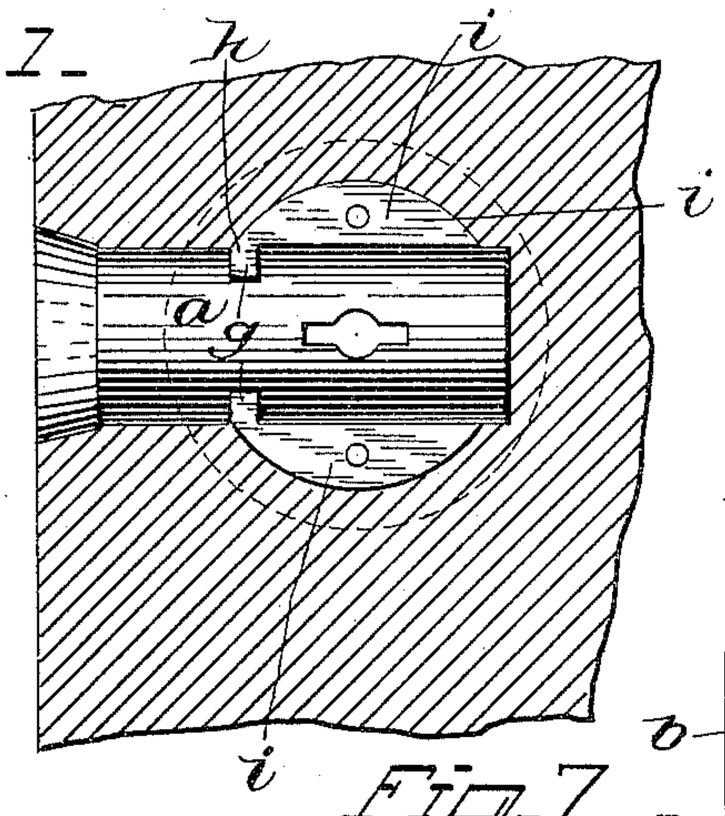


Fig. 10a.

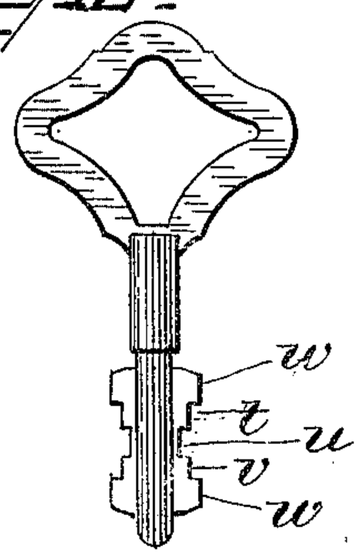


Fig. 6.

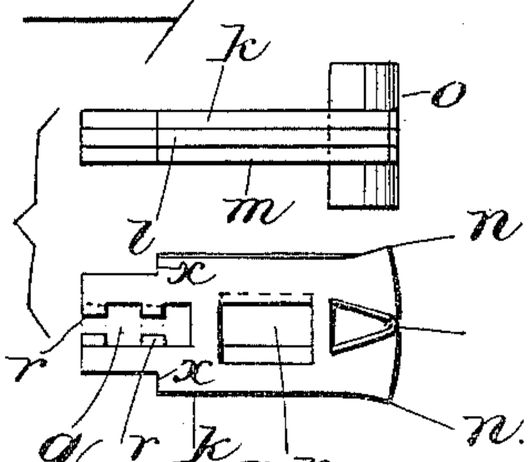


Fig. 7.

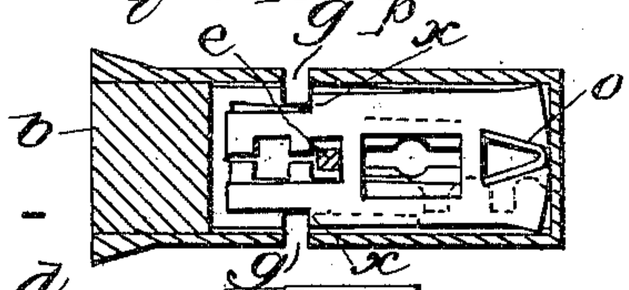


Fig. 3.

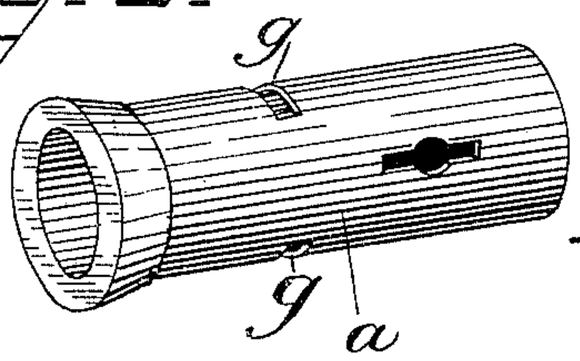


Fig. 5.

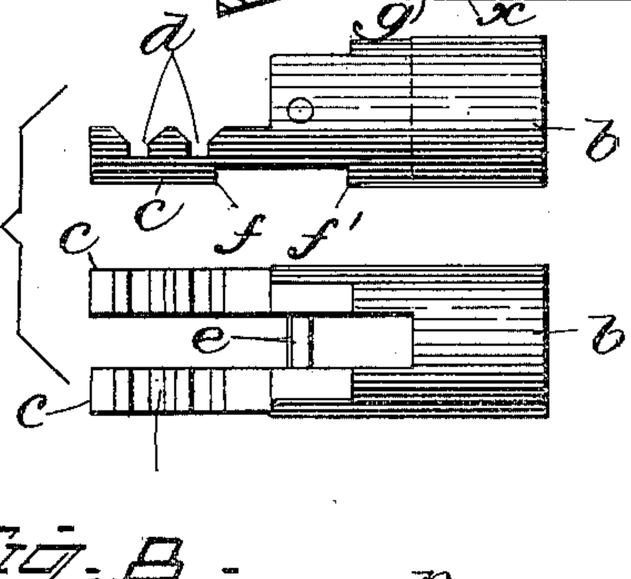


Fig. 4.

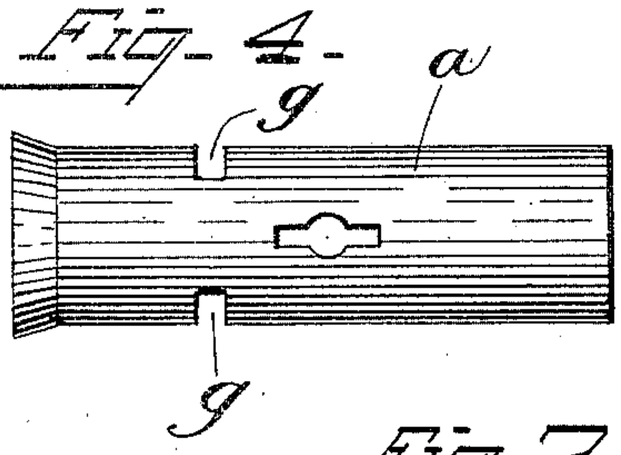


Fig. 8.

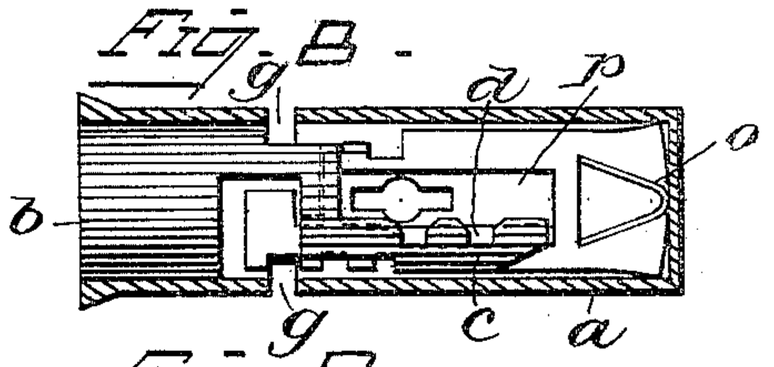


Fig. 9.

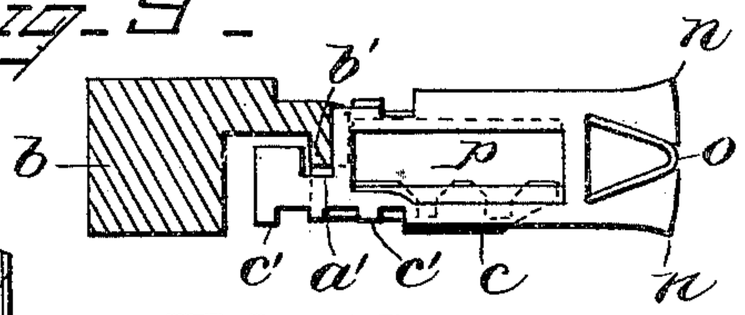


Fig. 2.

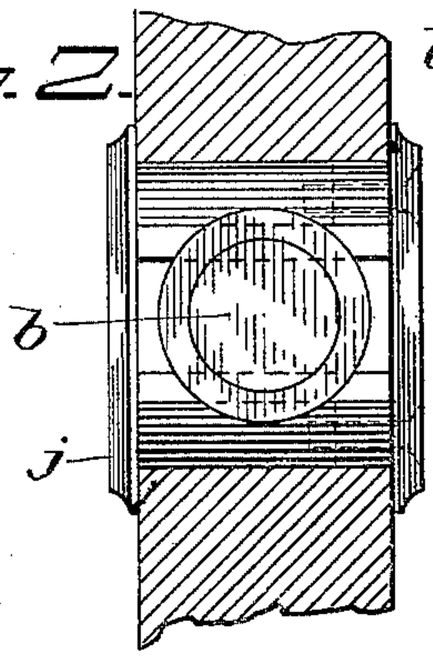
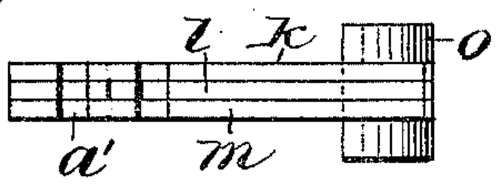


Fig. 10.



WITNESSES.
Rollin Abell
C. N. Anderson

INVENTOR.
Charles H. Brigden
by M. B. Mayo
Atty.

UNITED STATES PATENT OFFICE.

CHARLES H. BRIGDEN, OF CANTON, MASSACHUSETTS, ASSIGNOR TO S. M. HAWES, JR., OF YONKERS, NEW YORK.

LOCK.

SPECIFICATION forming part of Letters Patent No. 604,576, dated May 24, 1898.

Application filed July 17, 1896. Serial No. 599,572. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BRIGDEN, a citizen of the United States, residing at Canton Junction, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Locks, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention has relation to locks and latches, and has for its object to provide a simple lock which shall be constructed of but few parts and which shall likewise be substantially burglar-proof.

It is also the object to provide a lock or latch which shall be incased in a cylindrical casing, so that the parts thereof shall be compact, and which latch or lock may be held together without the employment of screws or rivets.

To these ends the invention consists of a lock or latch possessing those features, parts, and characteristics which I shall now proceed to describe, and point out with particularity in the claims hereto appended.

Of the drawings, Figure 1 is a side vertical section through the door, showing one form of my improved lock. Fig. 2 is a front vertical section through the door, showing the lock in front view. Figs. 3 and 4 illustrate in perspective and in side view the lock-casing. Fig. 5 illustrates the peculiar bolt which is employed in connection with the lock shown in the above-described figures. Fig. 6 illustrates the tumblers, which are held in the casing without the use of screws. Fig. 7 is a vertical section through the casing, so as to show the tumblers in position. Fig. 8 is a vertical section through a slightly-modified form of lock. Fig. 9 is a similar section through the bolt, so as to illustrate the tumblers, the casing being removed. Fig. 10 is a plan view of the tumblers employed in the lock illustrated in Figs. 8 and 9. Fig. 10^a illustrates the key employed for the lock shown in the foregoing figures.

In carrying out my invention I employ a tubular cylindrical casing *a*, as shown in Figs. 3 and 4, which is closed at the rear end and in which I mount the bolt or locking member *b*. The latter is peculiarly constructed—that is to say, it has the cylindrical head *b*, which fits closely in the cylindrical aperture in the casing *a*, and two longitudinal arms *c c*, each of which has two slots *d d*, in which the key engages. Between the two arms there extends a pin *e*, which also extends through the axial line of the bolt. There are also shoulders *f f'* on the side of the bolt for a purpose to be described.

The casing *a* is provided with two notches *g*, cut through the walls thereof to receive the webs *h* on the arms *i* of an escutcheon *j*. When the webs are slipped into the grooves, one of them extends between the shoulders *f f'*, so as to retain the bolt in the casing and also so as to prevent it from twisting.

Between the arms *c c* of the bolt I place three tumblers *k*, *l*, and *m*, all of the same general shape, and the end of each being extended laterally or diverging, so as to have the corners *n* fit closely within and engage the walls of the casing. Each is provided in the end with a triangular slot, in which is mounted a single V-shaped spring *o*, formed of sheet metal, and also of a width equal to the internal diameter of the casing.

Each tumbler is provided with a central aperture *p* to receive the key and with an end slot *q*, through which the pin *e* extends when the tumblers are in place.

Referring particularly to Figs. 1 to 7, inclusive, the tumblers are all formed differently, so that when they are side by side the apertures *p* in each are not in alinement, or, in other words, the said apertures are arranged in different positions vertically in said tumblers, so that the edges of the same project above each other. The ends of the tumblers are likewise provided with stops *r*, which when the tumblers are in their normal positions, which they assume under pressure of the spring *o*, will prevent the bolt from moving longitudinally of the casing, inasmuch as the pin *e* will be held stationary by the said stops, as will be understood by referring to Fig. 7. The tumblers therefore are capable of an edgewise movement relative to each other, so that when the key is inserted and is turned the wards of the key are so shaped as to engage the edges of the apertures *p* in the tumblers and move the tumblers edgewise, the stops *r* being thus thrust out of the way

of the pin *e*, so as to allow the bolt to be moved forward by the wards on the key. The wards for the tumblers on the key are designated by *t u v*, respectively, while the wards which engage the notches *d* in the bolt are designated by *w*, as shown in Fig. 10ª.

The tumblers in Fig. 7 are held from longitudinal movement in the casing by means of the webs *h* on the escutcheon, which project through notches in the casing, the said webs engaging shoulders *x* on the tumblers in such way as not to prevent them from moving in an edgewise position.

In Figs. 8, 9, and 10 I have illustrated a slightly different form of lock, in which the tumblers move longitudinally with the bolt. In this case the tumblers *k l m* have recesses *a'* to receive a web or flange *b'* in the bolt, so as to hold the said tumblers and said bolt in connection with each other and so that when the bolt is moved forward the tumblers are moved with it. Instead of the tumblers being provided with stops which engage the pin on the bolt they are provided with stops *c'* to engage the web *h* of the escutcheon. Therefore when the key is inserted in the casing and is turned the wards engage the tumblers to free the stops from the webs *h* and allow the further turning of the key to move the bolt and the tumblers forward, as will be readily understood.

From the foregoing it will be observed that I have provided peculiarly-acting tumblers which may be employed in connection with locks and latches of various kinds.

I do not limit myself to the exact forms which I have shown, as the tumblers may be employed in other ways than those which I have illustrated and described.

By providing the tumblers, which are movable edgewise, in order to bring their stops into position to allow the movement of the bolt, I insure the bolt against being removed by simple means, which may be easily duplicated or repaired.

The flat tumblers may be stamped out of sheet metal, and the casing may be struck out by dies, so that the whole lock may be quickly and at the same time cheaply constructed.

Having thus explained the nature of the invention and those ways now best known to me for constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A lock comprising a cylindrical casing, a bolt movable longitudinally in said casing, and two or more flat key-actuated tumblers placed longitudinally of the casing, and a stop for said tumblers, said tumblers having laterally-extended rear ends to loosely engage the opposing inner walls of the casing, whereby the said rear ends are held against edgewise movement, and the forward ends are free to move edgewise to permit the bolt to be shot.

2. A lock comprising a casing, two or more flat tumblers arranged side by side to engage and hold the locking member against movement, said tumblers having laterally-extended ends to engage the opposing inner walls of the casing, a stop for said tumblers and a V-shaped spring inserted in notches in the said laterally-extended ends of the tumblers for holding them in locking position.

3. A lock comprising a seamless casing having a cylindrical aperture with unobstructed sides for the insertion of the operative parts, two or more flat tumblers arranged side by side independently of the bolt and having stops to limit the movements of the bolt, a stop for said tumblers, and a bolt normally held against movement by the tumblers, said tumblers being free from positive connection with the casing but having rear corners resting upon a wall of the casing whereon they may oscillate and having means with which a key may be engaged in such way that the stops thereon will permit the bolt to be moved by the key.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 23d day of June, A. D. 1896.

CHARLES H. BRIGDEN.

Witnesses:
MARCUS B. MAY,
F. P. DAVIS.