

(No Model.)

C. H. BRIGDEN.
PADLOCK.

No. 604,577.

Patented May 24, 1898.

FIG. 1.

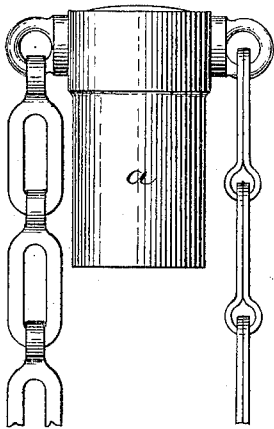


FIG. 2.

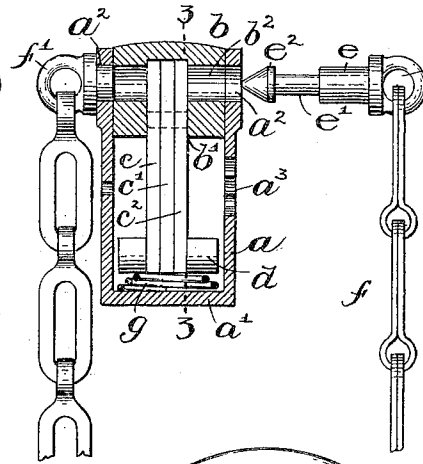


FIG. 3.

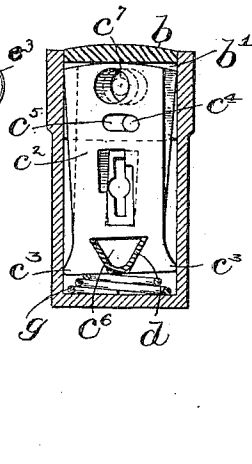


FIG. 4.

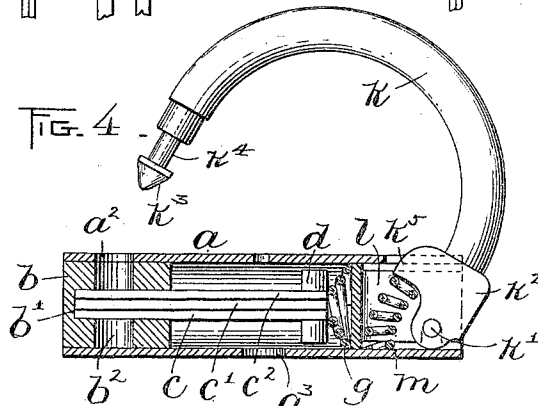


FIG. 6.

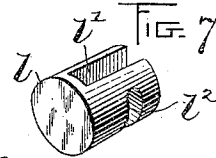
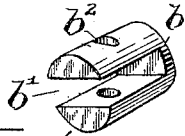


FIG. 8.

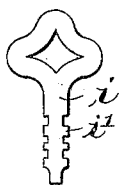
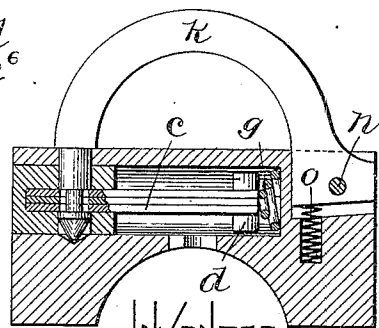


FIG. 9.



WITNESSES:
E. Batchelder
H. L. Robbins.

INVENTOR
Charles H. Brigden
by *Wm. Brown Dumb*
attys.

UNITED STATES PATENT OFFICE,

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

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 604,577, dated May 24, 1898.

Application filed September 8, 1897. Serial No. 650,904. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BRIGDEN, of Canton Junction, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention has relation to locks and latches, and particularly to that class known as "padlocks;" and it has for its object to provide a simple lock of the character described which shall be constructed of a minimum number of parts and which shall be proof against being picked or unlocked except by means of the proper key.

Another object of the invention is to provide a padlock in which the parts may be all secured in place without the employment of screws or rivets, whereby they may be assembled with great ease and with the expenditure of a small amount of time.

To these ends the invention consists of a lock possessing those features, parts, and characteristics which I shall now proceed to describe in detail and then point out in the claims hereto annexed.

Reference is to be had to the accompanying drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 illustrates in side elevation a padlock embodying my invention in which the locking member is in the form of a pin secured upon the end of a chain, this being particularly adapted for use as a bicycle-lock. Fig. 2 represents the casing of the lock in vertical section, with the tumblers in side elevation. Fig. 3 represents a section on the line 3 3 of Fig. 2. Fig. 4 represents another embodiment of the invention, in which the locking member is pivoted in the end of the casing. Fig. 5 represents the tumblers detached. Fig. 6 represents the block which is inserted in the front end of the casing. Fig. 7 represents the block or frame inserted in the other end of the casing and in which the hasp is hinged. Fig. 8 represents the key employed for operating the tumblers to release the locking member. Fig. 9 represents another embodiment of the invention, in

which the locking member is pivoted directly to the casing.

Referring more particularly to Figs. 1 to 3, inclusive, the letter *a* indicates the casing, which is tubular in form, with the end *a'* closed. In the open end of the same is forced a cylindrical plug or block *b*, having an axial slot *b'* and a transverse recess or aperture *b²*, which when the block or plug is in place is in alinement with apertures *a²* in the sides of the casing, near the open end thereof.

The tumblers are indicated by *c*, *c'*, and *c²*, respectively, and consist of flat metallic plates placed with their faces contiguous and with their upper end fitting snugly in the slot *b'* in the block or plug *b*. In cross-diameter they are smaller than the internal diameter of the casing excepting at their rear ends, where they are laterally extended, as at *c³*, to form corners which press slightly against the inner walls of the casing. The central tumbler *c'* is provided with a pin projecting transversely therethrough into curved slots *c⁵* in the other tumblers *c* *c²*.

A V-shaped leaf-spring *d* is inserted in triangular apertures *c⁶* in the inner or rear ends of the tumblers and operates to hold the said tumblers with their median lines at an angle to each other, as shown in Fig. 3. The said tumblers are all provided with apertures *c⁷* in their upper or outer ends, which normally do not register with the apertures *a²* *b²*, but which when the tumblers are moved by the key register with each other and with the said apertures for the purpose of releasing the locking member. Said locking member is indicated by *e*, and consists of a pin having a reduced portion *e'* and a pointed conical end *e²*. It is formed on its outer end with an eye *e³*, to which one end of the chain *f* is secured and which has its other end secured to an eye *f'*, secured in one of the apertures *a²* in the casing. When the said locking member is thrust into the apertures *a²* *b²* in the casing and plug, the conical end *e²* enters the apertures *c⁷* and forces the tumblers into alinement until the said conical end passes through the last tumbler *c*, whereupon the spring *d* immediately throws them out of alinement, so that it is impossible to withdraw the said locking member without the aid of a key, the

edges of the tumblers bounding the apertures c' forming stops to engage the base of the head e^2 of the locking member. The rear or inner ends of the tumblers press against a coiled spring g , resting upon the end a' of the casing, which spring operates to normally thrust the said tumblers longitudinally, so that the apertures c' are slightly beyond the apertures $b^2 a^2$. In order to move the tumblers edge-
 10 wise relatively to each other and longitudinally of the casing to bring the apertures c' in alinement with each other and with the apertures $a^2 b^2$, the tumblers are provided with central apertures h , forming shoulders
 15 h' . Then the key i being passed through the keyhole a^3 in the casing, the wards i' engage edges in the apertures in the said tumblers and move them against the tension of the springs d and g until the said apertures c' are
 20 in position to permit of the hasp being withdrawn.

In Figs. 4 to 7, inclusive, the invention is shown as embodied in a lock in which the locking member k is semicircular in side elevation and is formed with a laterally-projecting pin k' , as shown in Fig. 4. The squared end k^2 of the said member is fitted in a slot l' in a block or frame l , which is slipped into the open rear end of the casing a , and the pin k' lies in a transverse slot l^2 in the said block, so that when the block or frame is in place the locking member may be swung about the axis of the pin. The other end of the casing is closed by the block b , which has
 35 apertures b^2 to receive the conical end k^3 and the reduced portion k^4 of the locking member. The tumblers are similar to those above described and they are operated in the same manner by a key to allow the locking member to be disengaged therefrom. A spring m is placed between the shoulder k^5 on the end k^2 of the locking member and the casing, so that when the tumblers are thrust into position by a key to release the locking member
 45 the spring forces the locking member into the position shown in Fig. 4.

In Fig. 9 the locking member is pivoted in the casing by a pin n , and the spring o is inserted in a socket in the said casing. In this
 50 figure the casing is shown as being formed of a metallic block with a cylindrical aperture therein instead of a tube.

From the foregoing it will be observed that the parts of the lock are easily assembled and are simple and may be constructed with facility. The casing may be formed of a tube cut into suitable lengths, and the tumblers may be stamped out of flat or metallic sheets.

The plugs b and l are held in place by frictional engagement with the walls of the casing, and when the hasp is engaged by the tumblers said plugs cannot be withdrawn, as will be readily understood.

It is evident that the invention may be embodied in other forms, and hence I do not intend to be understood as limiting myself to

those particular locks which I have selected for the purpose of illustrating the invention.

Having thus explained the nature of the invention and described a way of constructing
 70 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, I declare that what I claim is—

1. In a lock, the combination with a casing,
 75 of two or more flat apertured tumblers arranged side by side and movable edgewise and longitudinally, and a locking member movable into and out of an aperture in the casing, and adapted to enter the aperture in
 80 said tumblers whereby it may be locked in place.

2. In a lock, the combination with a casing having a transverse aperture in the end adapted to receive a locking member, and also
 85 having a keyhole, a plug or block inserted in the said casing to close the end of the same and formed with a slot or recess, two or more flat tumblers arranged in the recess, said tumblers having apertures normally out of
 90 alinement with each other and adapted to be moved to bring the apertures into alinement with the apertures in the casing.

3. In a lock, the combination with a tubular casing, a block closing one end thereof, and
 95 a plug or frame closing the other end thereof, of a locking member arranged to have its free locking end enter an aperture in the casing and block, and locking devices in the casing adapted to engage the said locking mem-
 100 bers when it is so inserted.

4. A lock comprising in its construction a cylindrical casing, one or more flat tumblers arranged side by side in said casing and having stops to normally prevent movement of
 105 the locking member, a locking member adapted to be engaged by the tumblers, and means on the said tumblers whereby they may be engaged by a key and moved thereby longitudinally and edgewise to liberate the end of
 110 said locking member.

5. In a lock, the combination with a tubular casing, and locking-tumblers in said casing, of a frame or plug closing one end of the casing, and a locking member hinged in said
 115 frame or plug and swinging about the axis transverse thereto and adapted to have its locking end engaged by the tumblers at the other end of the casing.

6. In a lock, the combination with a cylindrical casing, locking-tumblers in the casing, and a locking member, of a removable plug or frame inserted in the end of the casing in which the said locking member is hinged, and a spring bearing against said locking
 125 member to hold it normally in its unlocked position.

7. In a lock, the combination with a casing having a straight cylindrical aperture and locking-tumblers in said aperture adapted to
 130 be moved both longitudinally and transversely edgewise, of a locking member hinged

at one end of said casing and adapted to be engaged by the tumblers at the other end of the casing.

5 8. A lock comprising in its construction an open-ended casing and tumblers in said casing free from connection therewith, a block closing one end of the casing and held therein by frictional contact with the walls of said casing, said block and casing having bolt-re-
10 ceiving apertures, a plug or frame closing the other end of the casing and held therein by frictional contact with the walls of said casing, and a locking member hinged in said frame and adapted to engage the said tum-
15 blers and the said apertures, whereby all of said parts are securely locked in and with the casing.

9. A lock comprising in its construction a seamless open-ended casing, tumblers in said casing, frictionally-retained plugs or blocks 20 closing both ends of said casing, and a locking member adapted for engagement with the tumblers, plug, and casing, whereby all of said parts may be securely locked in and with each other.

25 In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 3d day of September, A. D. 1897.

CHARLES H. BRIGDEN.

Witnesses:

MILTON S. BRADT,
JOHN J. WALSH.