

No. 835,426.

PATENTED NOV. 6, 1906.

F. K. HEUPEL.
AUTOMATIC LOCK.
APPLICATION FILED APR. 14, 1906.

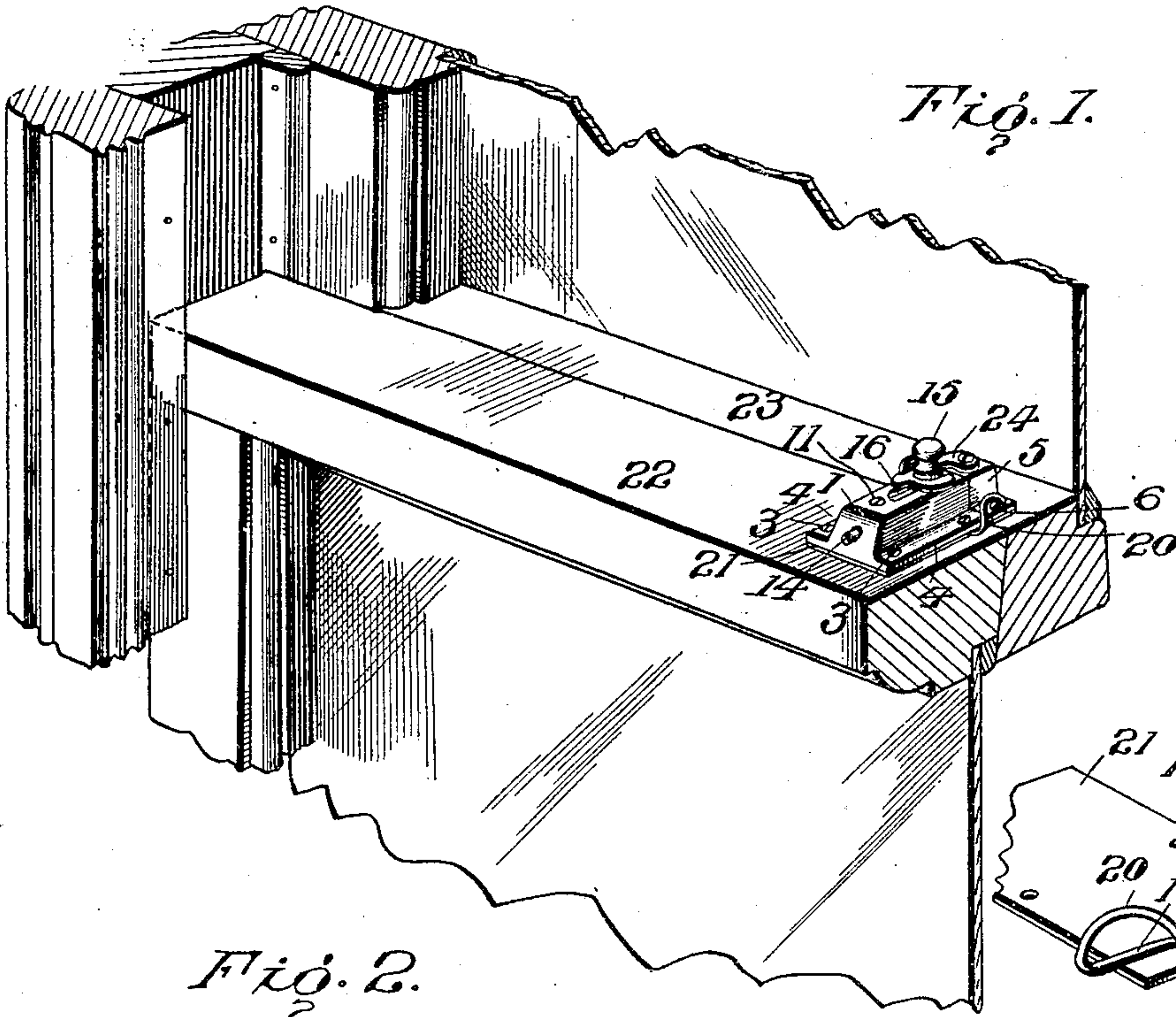


Fig. 2.

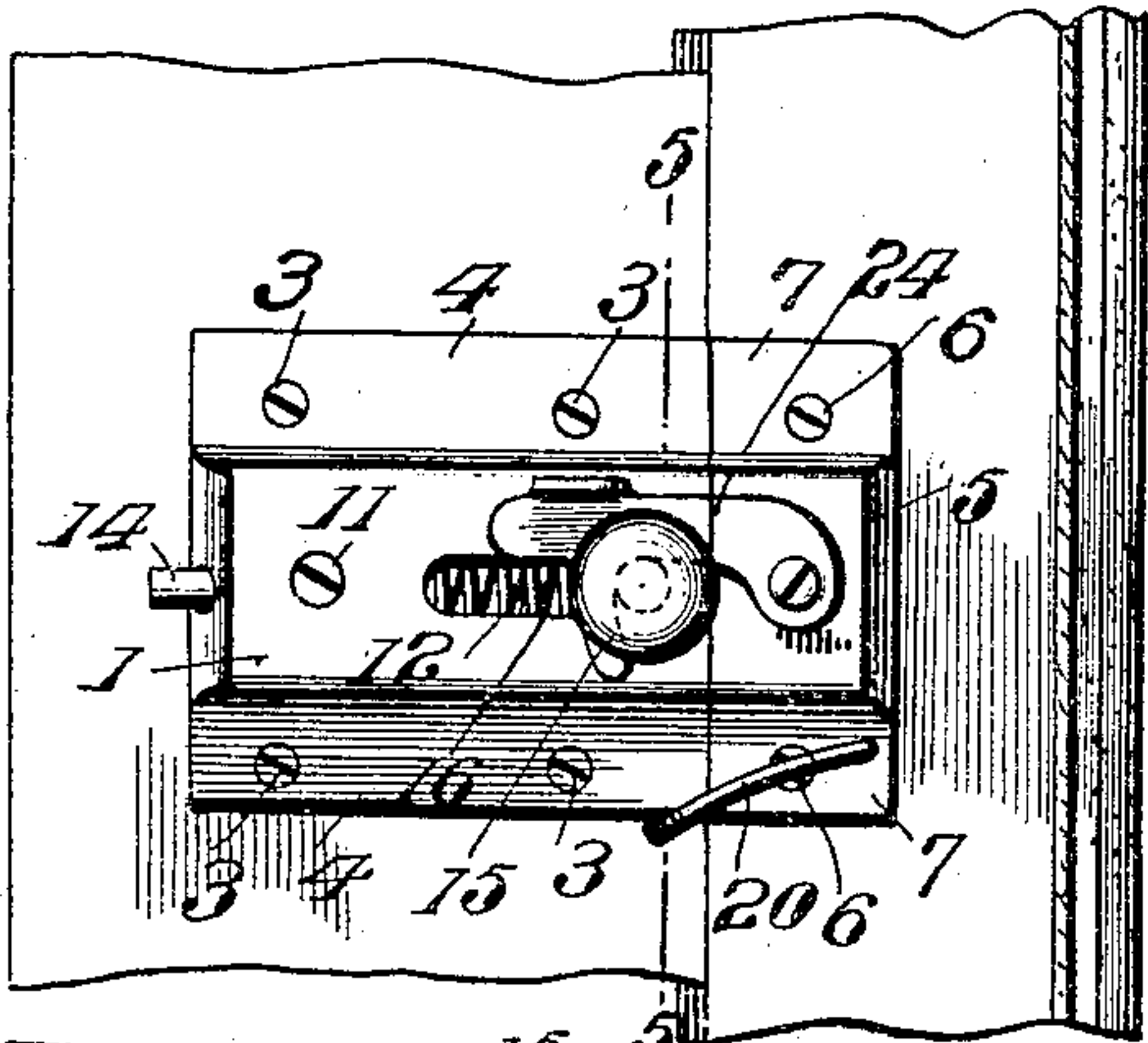
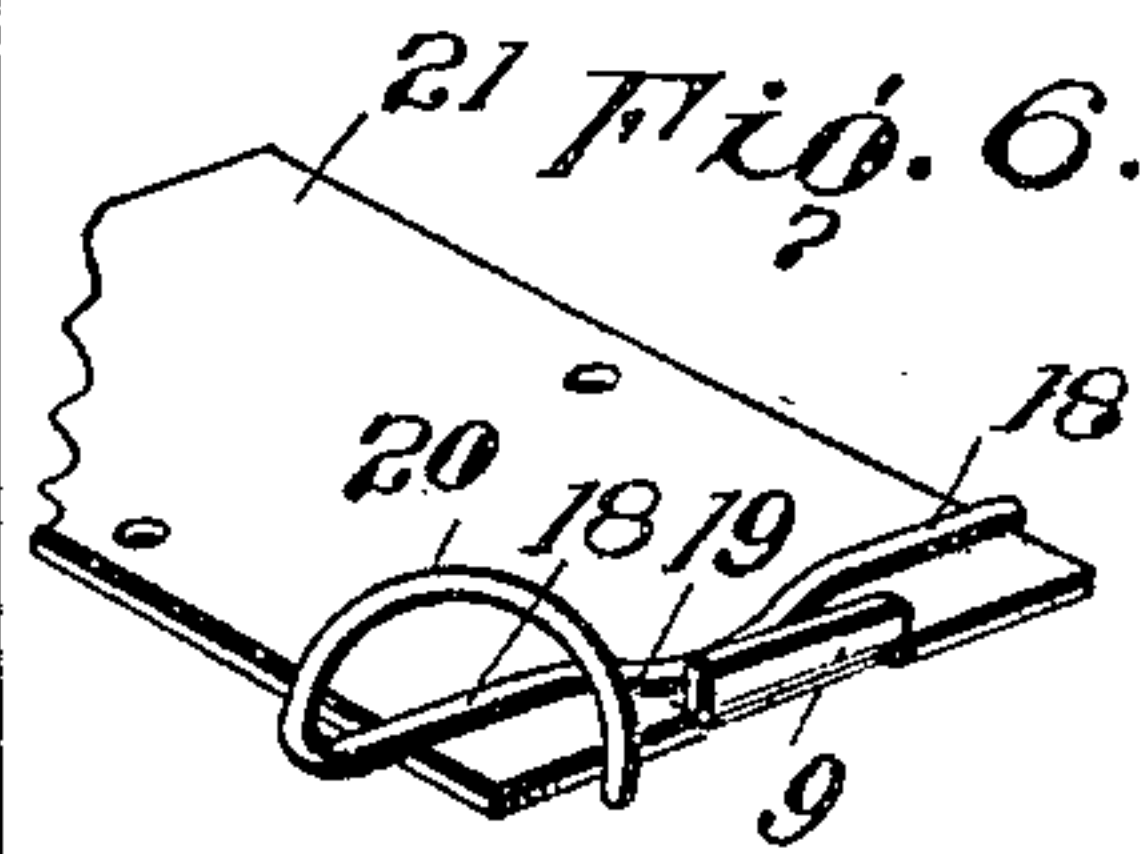


Fig. 4.

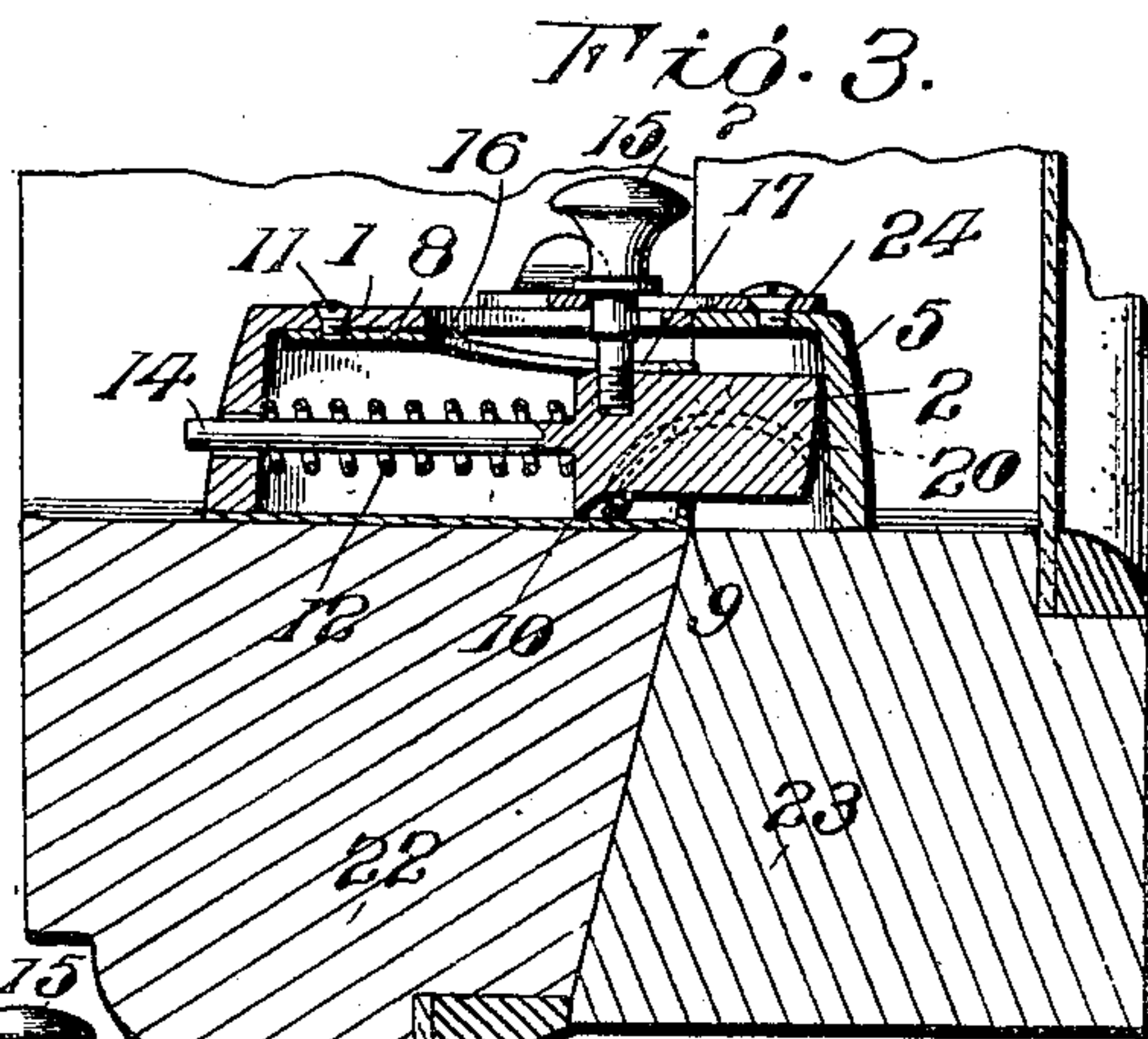


Fig. 3.

Witnesses
Jno. Smith
C. R. Wright, Jr.

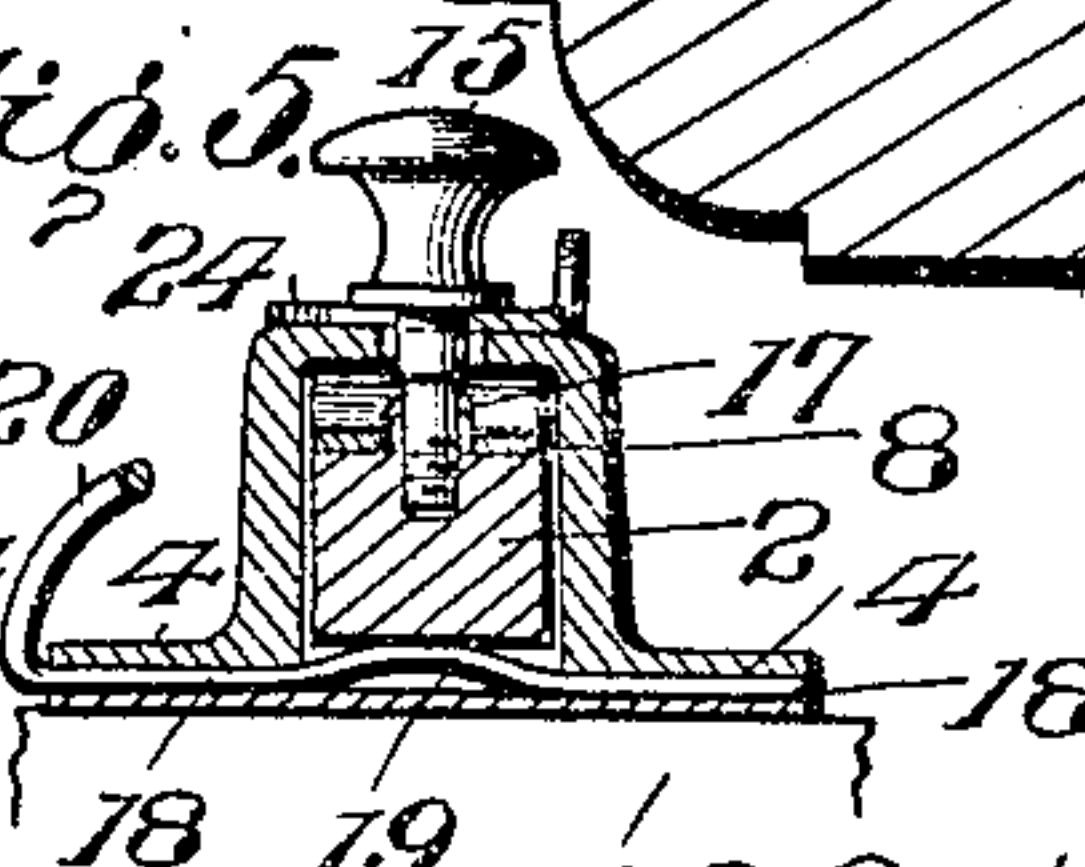


Fig. 5.

Inventor

F. K. Heupel,
Attorney

Attorney

UNITED STATES PATENT OFFICE.

FREDERICK K. HEUPEL, OF WASHINGTON, DISTRICT OF COLUMBIA,
ASSIGNOR TO HEUPEL, HOLLORAN & WINSHIP, INCORPORATED,
OF ALEXANDRIA, VIRGINIA, A CORPORATION OF VIRGINIA.

AUTOMATIC LOCK.

No. 835,426.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed April 14, 1906. Serial No. 311,797.

To all whom it may concern:

Be it known that I, FREDERICK K. HEUPEL, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Automatic Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in automatic locks, and is more particularly intended as a window-sash lock, though it is adapted for use as a cupboard-door lock and as a lock in similar or analogous places.

My present improvement pertains to means for automatically tripping a retained spring-actuated bolt when the bolt has reached a point opposite its keeper, as when the window or door to which it is attached is closed.

In the accompanying drawings, Figure 1 is a perspective view of my improved lock, showing it applied to a window meeting-rail. Fig. 2 is a top plan view of the same. Fig. 3 is a central longitudinal sectional view of my lock, showing its position when the bolt is extended to enter its keeper, and therefore act as a lock. Fig. 4 is a central longitudinal sectional view of my improved lock, the bolt being shown in its retracted and retained position and at a point just above or beyond its keeper. Fig. 5 is a cross-sectional view on the line 5 5 of Fig. 2. Fig. 6 is a detached perspective view showing the tripping device for the bolt.

In carrying out my invention a casing 1 is provided for the bolt 2, and this casing is adapted to be secured in position by means of screws 3, which pass through lateral flanges 4. A keeper 5 is provided, and this keeper is likewise secured by means of screws 6, which pass through lateral flanges 7. Thus far I have described a construction which is common to the usual sliding-bolt lock.

As shown in Figs. 3 and 4, the casing 1 is considerably deeper than the bolt 2, so that the bolt may have a vertical movement. A suitable spring 8 is located within the casing 1 and serves to hold the bolt downward in the position shown in Fig. 4, with the lower front corner of the bolt in engagement with the shoulder 9, located at the bottom of the casing 1. For the purpose of insuring the engagement of the forward front corner of the bolt with the shoulder 9 I preferably provide the rear end of the bolt with a projection 10, which serves to hold the bolt normally in the inclined position (shown in Fig. 4) when under the tension of the spring 8. Preferably this

spring 8 is formed from a piece of sheet metal and has its rear end suitably attached to the inner rear end of the casing at 11. A spring 12 serves to normally force the bolt 2 outward, and preferably the bolt has a rearwardly-extending rod or projection 14, which passes through the rear end of the casing, and around this bolt the said expanding-spring 12 is placed.

A suitable operating-handle 15 passes through an opening 16 in the casing 1 and an opening 17 in the spring 8, and these openings are elongated in a direction longitudinal the casing, whereby the bolt may be moved to the unlocked position (shown in Fig. 4) through the medium of the said handle for the purpose of disengaging the bolt from its keeper.

When the bolt is withdrawn, as shown in Fig. 4, the spring 8, which rests on its forward end, causes the lower front corner of the bolt to fall behind the shoulder 9, and thus lock the bolt in its retracted position.

I provide means for automatically disengaging the bolt from its holding-shoulder 9 when the parts to be locked are brought to their closed position, and the primary feature of my present invention pertains to this automatic bolt-releasing device. It consists of a tripping member located below the front end of the bolt and extending to the outside of the casing 1 and provided with an extending arm adapted to be engaged by that portion of the window or door to be locked which carries the keeper 5 or, preferably, by the keeper itself. The specific form of this releasing device here shown consists of an oscillating cam member 18, which extends under and transverse the forward end of the bolt, and, as here shown, consists of a wire with a slight intermediate lateral bend 19, and the extended-arm portion 20 is formed by bending the wire, preferably as here shown, so that the end of the arm is at a point in the path of the keeper or of that part of upper sash which carries the keeper. This member 18 is journaled in the casing just below the front end of the bolt 2. To facilitate the placing of this member 18 in position, the bottom of the casing is preferably made separate and will be held in place by the securing of the casing in position, as will be readily understood.

The operation of my invention is as follows: Referring now particularly to Fig. 4, which shows the bolt 2 in its retracted position,

when either the member which carries the keeper or the member which carries the casing is moved in the direction indicated by arrow the end of the arm 20 will engage the keeper, and thus oscillate the member 18 and cause its bent portion 19 to lift the forward end of the bolt 2 above the retaining-shoulder 9 when the bolt is opposite its keeper, and the spring 12 then forces the bolt into the said keeper and into its locking position.

While I have here shown and described a specific form of releasing device, yet I desire it to be understood that other forms may be used for lifting the bolt without departing from the spirit of my invention, the main feature being a device constructed to be actuated by the engagement of the parts to be locked for releasing the bolt from its retracted position.

When the invention is applied as a sash-lock, to insure the tight meeting of the rails 22 and 23 I provide a cam-lever 24, which is pivoted to the keeper and adapted to engage the handle 15 in a manner to draw the meeting-rails of the window-sash together, and this member further serves as a lock.

Attention is directed to the fact that the keeper 5 is considerably deeper than the bolt 2, which provides some latitude in the working of the automatic device, whereby the latter does not need to be so accurately adjusted. Attention is also directed to the fact that the arm 20, in the form of a wire, is preferably capable of being bent in a direction transverse its oscillating movement, which thus provides for an adjustment in the work-

ing of the automatic device, which any one can make when applying the lock. This adjustment, through the bending of the arm 20, is facilitated by forming the arm of the arc of a circle. The contracting or expanding of the circle will serve to adjust the horizontal plane of the outer end of the arm 20.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An automatic lock comprising a casing, a spring-actuated sliding bolt in the casing, a keeper, the bolt and casing having interlocking portions to hold the bolt within the casing, and an oscillating releasing device extending through the casing and having an outside arm extending beyond the end of the casing for the purpose described, said releasing device having a laterally-extending portion under the bolt for raising it when the releasing device is oscillated.

2. An automatic lock comprising a casing, a keeper, a spring-actuated sliding bolt in the casing, the casing and bolt having interlocking portions for holding the bolt in the casing, and a releasing device consisting of a wire passing through the casing and having a lateral bend below the bolt and an arm outside of and extending beyond the end of the casing for the purpose described.

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

FREDERICK K. HEUPEL.

Witnesses:

ROBERT L. MIDDLETON,
FRANK P. LEETCH.