

M. WUOLLE.

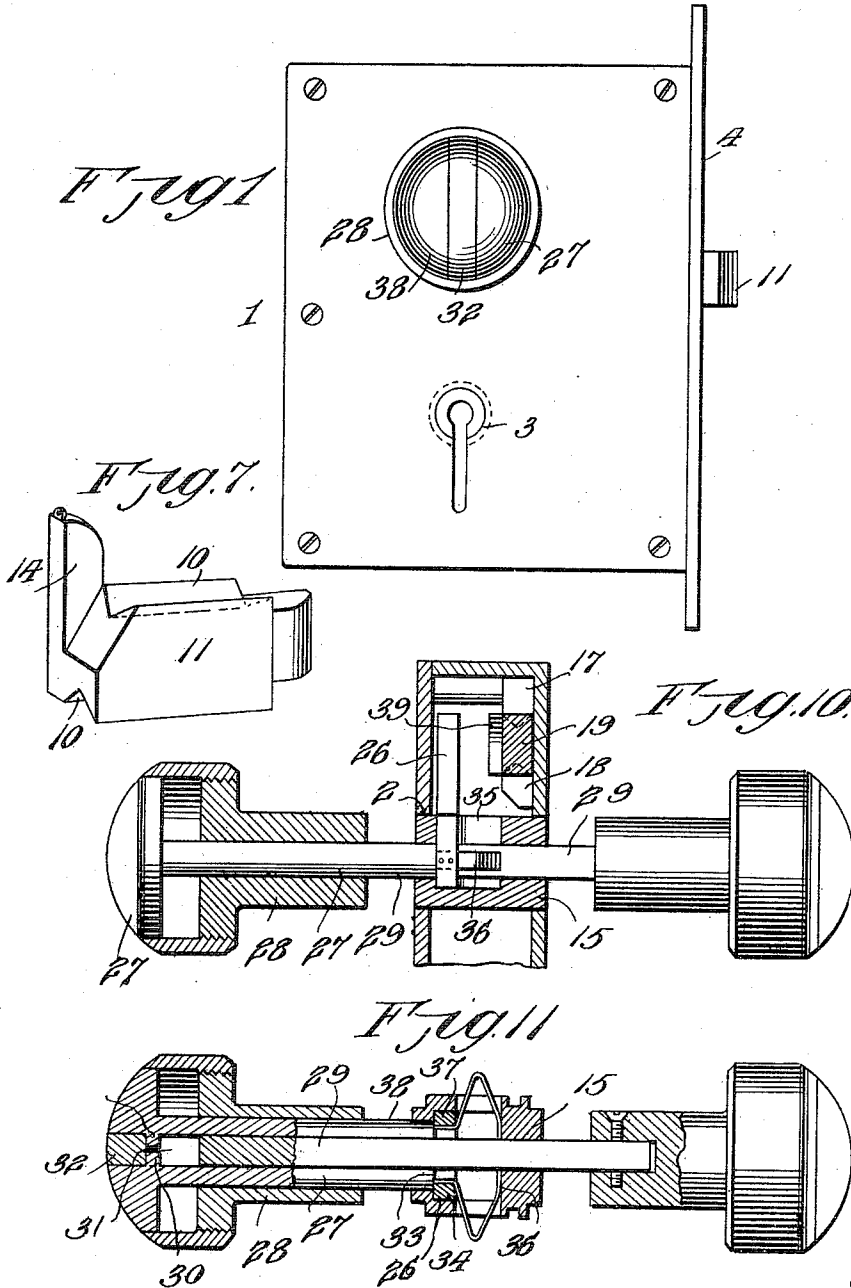
LOCK.

APPLICATION FILED AUG. 10, 1910.

994,812.

Patented June 13, 1911.

3 SHEETS—SHEET 1.



Witnesses

Frank Hough
Edw. Gustafson

Inventor

Matti Wuolle,

By Victor J. Evans

Attorney

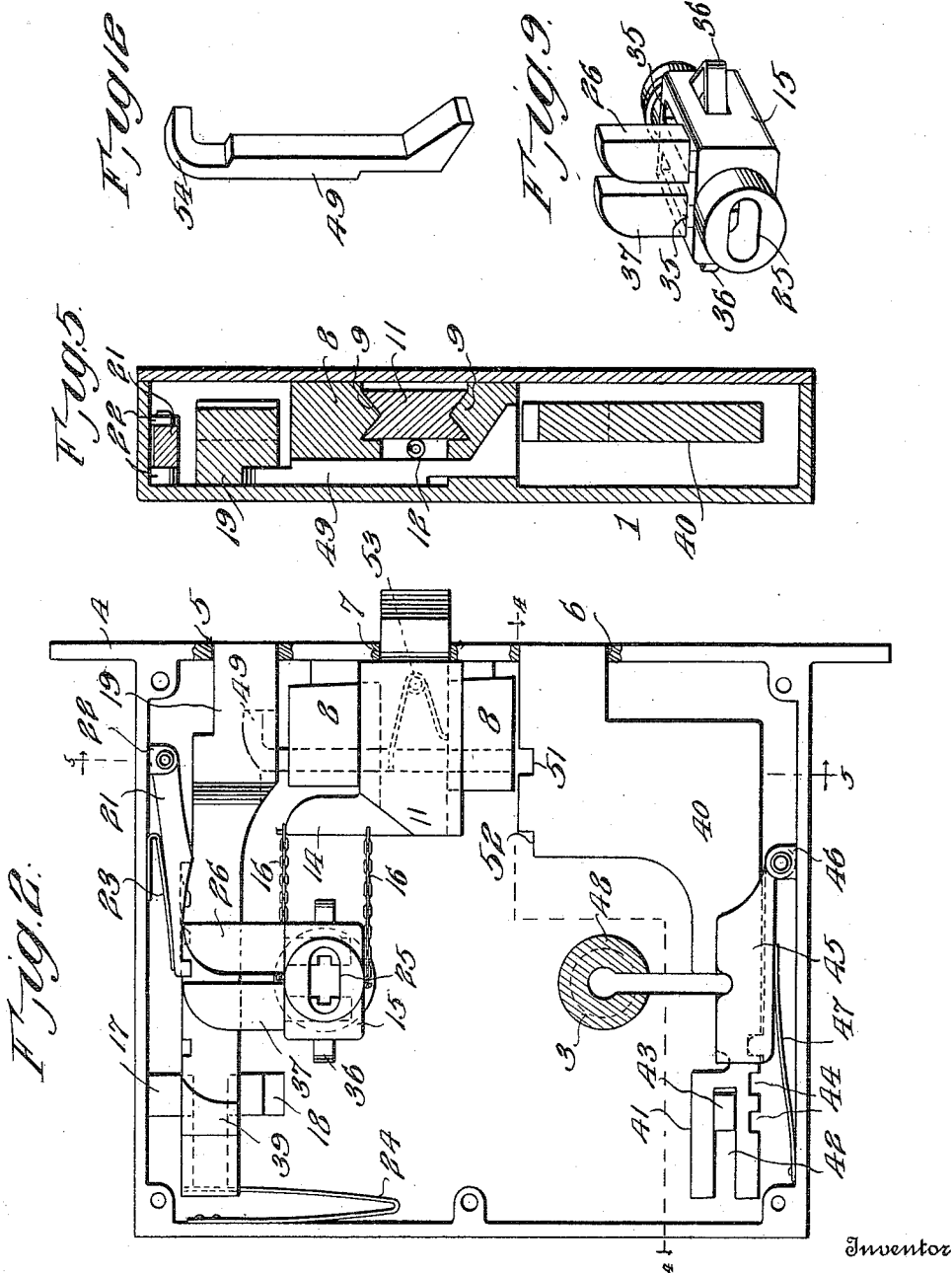
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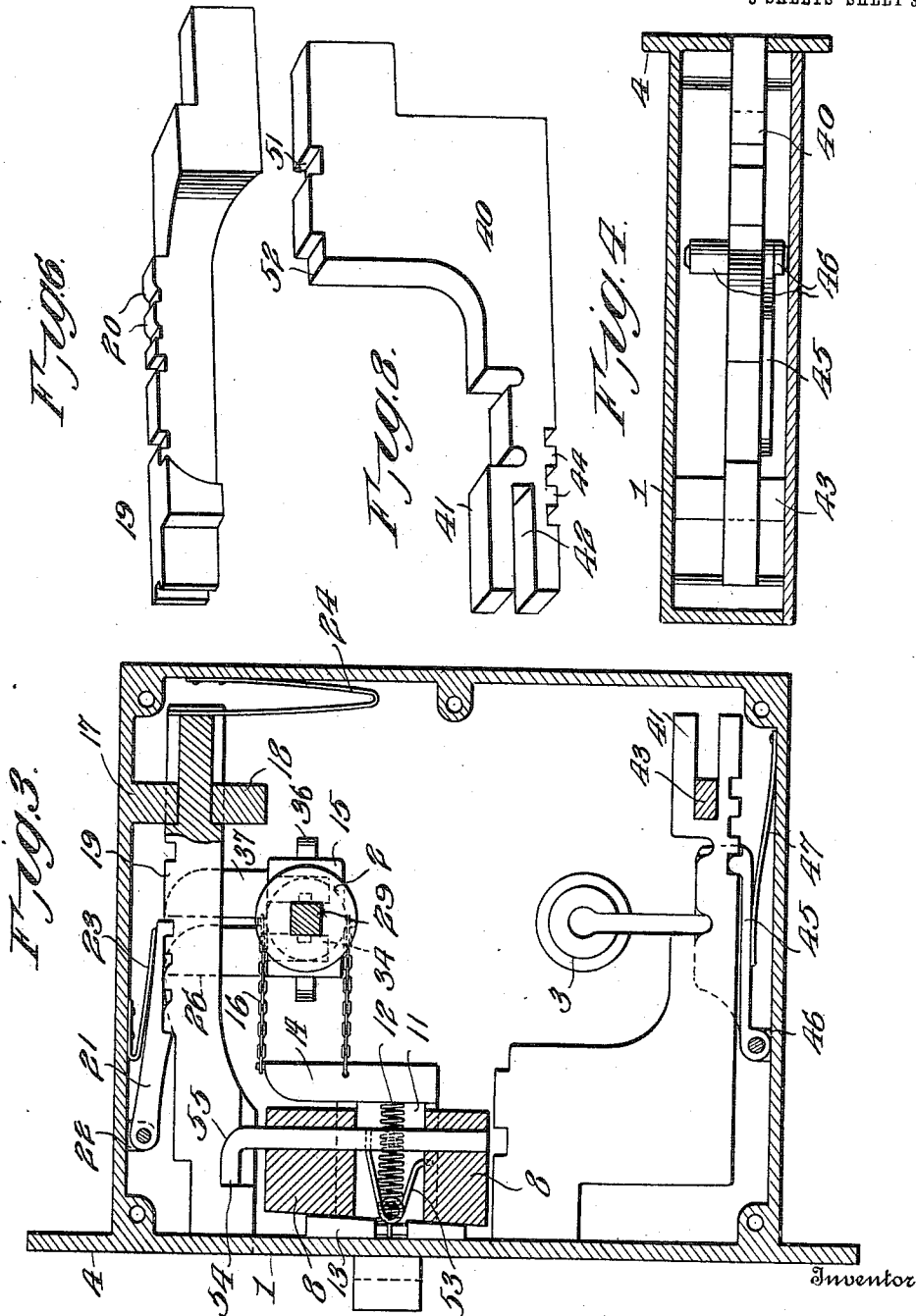
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Edw. W. W. W.

Matti Wuolle,

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

MATTI WUOLLE, OF CALUMET, MICHIGAN.

LOCK.

994,812.

Specification of Letters Patent. Patented June 13, 1911.

Application filed August 10, 1910. Serial No. 576,445.

To all whom it may concern:

Be it known that I, MATTI WUOLLE, a citizen of the United States, residing at Calumet, in the county of Houghton and State of Michigan, have invented new and useful Improvements in Locks, of which the following is a specification.

This invention relates to locks and the object of the invention is the provision of a lock wherein the operation of the knob cylinder will control the latch bolt and under the guidance of the operator will control the action of the night bolt whereby said night bolt may be either projected or retracted.

A further object of the invention is the provision of means controlled by the knob cylinder for releasing the night bolt and means for retracting the same together with means controlled in the projection and retraction of the night bolt for locking the key bolt in projected or retracted positions.

Further objects of the invention will appear as the following specific description is read in connection with the accompanying drawings which form a part of this application, and in which:

Figure 1 is a side elevation of the lock removed from the door. Fig. 2 is an elevation of the same with the top plate of the casing removed. Fig. 3 is a similar elevation with the bottom plate of the casing removed. Fig. 4 is a section taken on the line 4-4 of Fig. 2 and showing the position and operation of the key bolt latch. Fig. 5 is a section taken at right angles to the section of Fig. 4 looking in the direction of the arrow and showing the position of the latch bolt with relation to the key bolt latch and also the springs for retracting and projecting these parts. Fig. 6 is a detail perspective view of the night bolt. Fig. 7 is a similar view of the latch bolt. Fig. 8 is a similar view of the key bolt. Fig. 9 is a perspective view of the knob cylinder. Fig. 10 is a sectional view through one side of the knob cylinder. Fig. 11 is a section through the knob and knob cylinder removed from the lock casing. Fig. 12 is a perspective view of the key bolt latch.

Referring more particularly to the drawings 1 represents the casing which is apertured as at 2 and 3 to receive the knob and key cylinders respectively. The forward portion of the casing or the attaching plate 4 is apertured as at 5 to receive the night

bolt, at 6 to receive the key bolt and at 7 to receive the passage of the latch bolt. Immediately behind the latch bolt opening and secured to the bottom plate of the casing are upstanding lugs 8 which are provided with oppositely extending V-shaped projections 9 adapted to enter the V-shaped channel 10 formed in the side of the latch bolt 11. This latch bolt is normally projected by a spring 12 which is connected to the underside of said bolt and to a removable brace 13 which extends across the opening between the lugs and bears against said lugs 8, preferably wedging into position between the lugs and the attaching plate. The rear end of the latching bolt 11 is provided with a lateral arm 14 which is connected at different points to opposite sides of the knob cylinder 15 by means of flexible cords or chains 16 which are adapted to wind upon the drum portion of the cylinder so that a movement of the drum cylinder in either direction will retract the latching bolt against the tension of the spring 12.

Slidably mounted upon the bottom plate between lugs 17 and 18 is the night bolt 19 which is provided along one face thereof with a plurality of notches 20 adapted to be engaged by the pawl 21 which is pivoted to one of the side plates of the casing in lugs 22 and has its engaging end projecting in the path of the notches by a spring 23. The night bolt is projected by a spring 24 which is under tension at all times when the pawl 21 is in engagement with any one of the notches so that upon release of the pawl the bolt will be partially or fully projected.

In order to release the pawl and permit the projection of the night bolt 19 by the spring 24, the knob cylinder 15 has slidably mounted therein upon one side of the knob opening 25 a cam faced arm 26 which operates in the path of the contacting end of the pawl 21 when depressed. This arm is normally held raised above the top of the contacting end of the pawl 21 and when the knob cylinder is turned is elevated above the pawl. To depress the arm there is a slidable rod 27 mounted to slide in the outside knob 28 alongside of the knob spindle 29 to which the knob is secured. A suitable projection 30 on the rod engages a slot 31 formed in a web 32 bridged across the outer side of the knob and limits the outward and

inward movement of the rod. A suitable shoulder 33 is formed on the end of the rod which engages an overhanging portion 34 on the arm 26 which projects in the shank opening 25 of the cylinder 15. By pressing inwardly upon the rod 27 the arm 26 is moved against the tension of the spring and thereby brought into the path of the pawl 21 against which it wipes to carry it out of engagement with the teeth on the night bolt 19. The opposite side of the knob cylinder is also slotted as at 35 and slidably mounted therein against the tension of a spring 36 is a similar cam-faced arm 37 which is adapted to be depressed by a rod 38 slidably mounted on the opposite side of the web 32 and adapted to engage a projection 39 carried upon the rear end of the bolt 19. When this arm is depressed the cam face thereof will wipe into engagement with the projection 39 upon turning the knob cylinder and will cause the retraction of the bolt 19, the pawl riding idly over the teeth 20. The key bolt is shown at 40 and is provided with a rearward extension 41 which is slotted at 42 to receive a standard 43 which guides the rear end of said bolt. Upon one side of the extension 41 there is provided a plurality of teeth 44 which are adapted to be engaged by a pawl 45 pivoted upon lugs 46 secured to the upper end of the casing. This pawl is normally held projected so as to engage the teeth by a spring 47 so that the bolt 40 is locked in projected or retracted positions until operated by the key which is inserted into the key cylinder 48. The opposite side of the extension from the teeth 44 is provided with notches to receive the key and the key is also constructed so as to engage said notches and the projections formed thereby and also to displace the operating end of the pawl.

Slidably mounted in grooves formed in the lugs 8 beneath the bolt 11 is a latching bar 49 which is adapted to engage notches 51 and 52 formed in the side of the key bolt 40. This latching bar is normally retracted by a spring 53 and has formed on its rear end a cam face 54 which is engaged by a similar cam face 55 upon the under side of the bolt 19. Upon the projection of the bolt 19 to its full extent the latching bar will be forced into engagement with either of the notches 51 or 52 so as to lock the bolt 40 in retracted or projected positions. If however, the latch bar 19 is moved outwardly only a partial distance of its extreme travel, the latching bar will not be operated because when the guide bolt is fully retracted the cam surfaces of the bar and bolt do not engage each other. Upon the full projection of the bolt 19, however, the bar will be projected and will engage either of the notches as before stated. In this connection it may be well to note that the night bolt when

fully projected will prevent the use of the key bolt and when operated after the key bolt had been projected will prevent the return of the key bolt until the night bolt has been partially or fully retracted. It will therefore be seen that unless a person is familiar with the condition, and knows that it is necessary to retract the night bolt, he will be unable to operate the key bolt.

Having thus described the invention, what is claimed is—

1. In a lock, a casing, a key bolt slidably mounted therein, a night bolt slidably mounted in the casing, means tending to normally project the night bolt, means to prevent the projection of the night bolt, a knob controlled cylinder, manually controlled means actuated in the operation of the knob cylinder for rendering said preventing means inoperative and means operated by the night bolt for locking the key bolt in projected or retracted positions.

2. In a lock, a casing, a night bolt slidably mounted in the casing, a knob controlled cylinder and knob carried by the casing, means for normally projecting the night bolt, means for holding said bolt against projection, means carried by the knob and knob cylinder for rendering said holding means inoperative and independent means for retracting said bolt.

3. In a lock, a casing, a spring-pressed latching bolt slidably mounted therein, a spring-pressed night bolt slidably mounted in the casing, a knob cylinder, an operating connection between the knob cylinder and the latch bolt, a pawl for holding the night bolt against projection, and means carried by the knob cylinder for throwing the pawl out of engagement with the night bolt.

4. In a lock, a casing, a knob cylinder journaled therein, a knob shank connected to said cylinder, a spring projected night bolt slidably mounted in the casing, a pawl for holding said night bolt against projection, a spring-pressed arm slidably carried by the knob cylinder, means slidably mounted upon the knob shank for operating said arm to bring it in the path of the pawl and thereby disengage the same from the night bolt, a second spring-pressed arm, and means slidably mounted upon the shank adapted to throw said second arm into the path of a part of the night bolt whereby the same may be retracted against the tension of the spring.

5. In a lock, a casing, a notched key bolt slidably mounted therein, a spring-pressed night bolt slidably mounted therein, means to hold the night bolt against projection, means to operate the key bolt, means to release the night bolt, and means operated in the projection of the night bolt to engage the key bolt to lock the same against movement.

6. In a lock, a casing, a spring pressed
latching bolt slidably mounted therein, a
spring pressed night bolt also slidably
mounted therein, a knob cylinder, an oper-
5 ating connection between the knob cylinder
and the night bolt, a pawl for holding the
night bolt against projection, and means
controlled by the operator in the operation
of retracting the latch bolt for throwing the
pawl out of engagement with the night bolt. 10
In testimony whereof I affix my signature
in presence of two witnesses.

MATTI WUOLLE.

Witnesses:

THEODORE B. CATLIN,
A. WEST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
