M. BAKST.

LOCK.

APPLICATION FILED AUG. 22, 1917.

1,277,174.

Patented Aug. 27, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

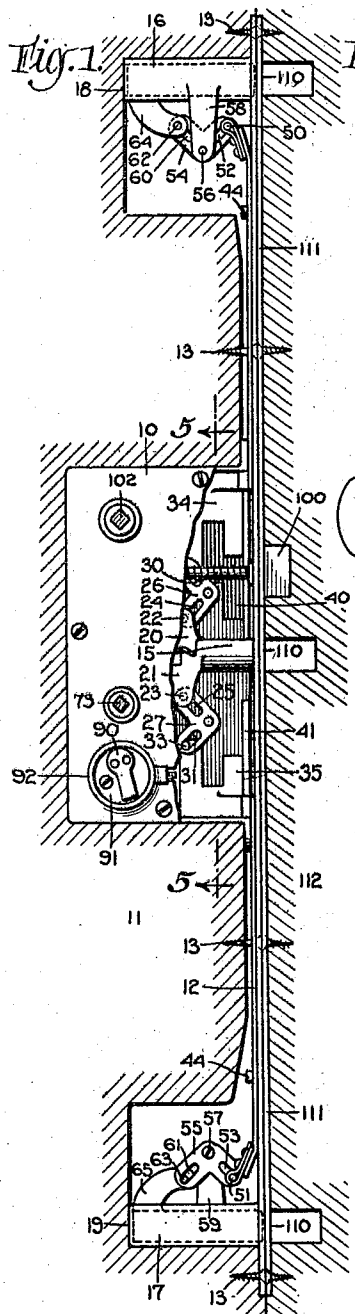


Fig. 2.

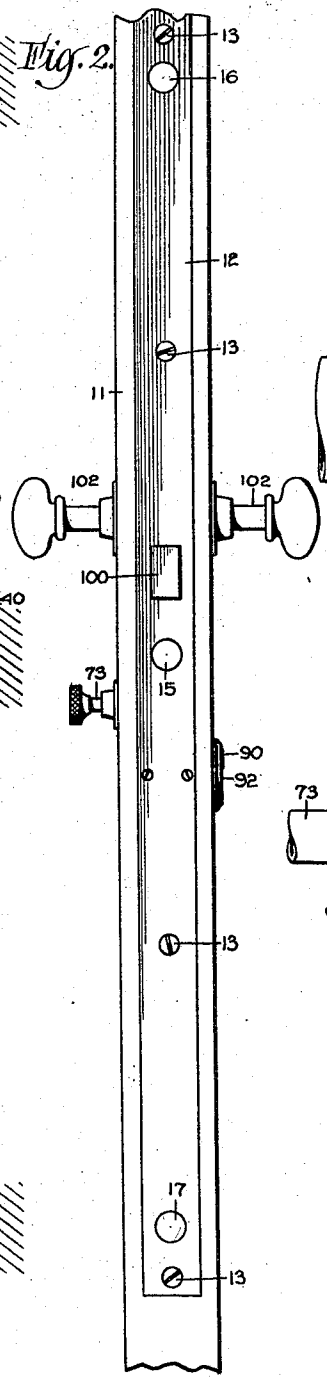
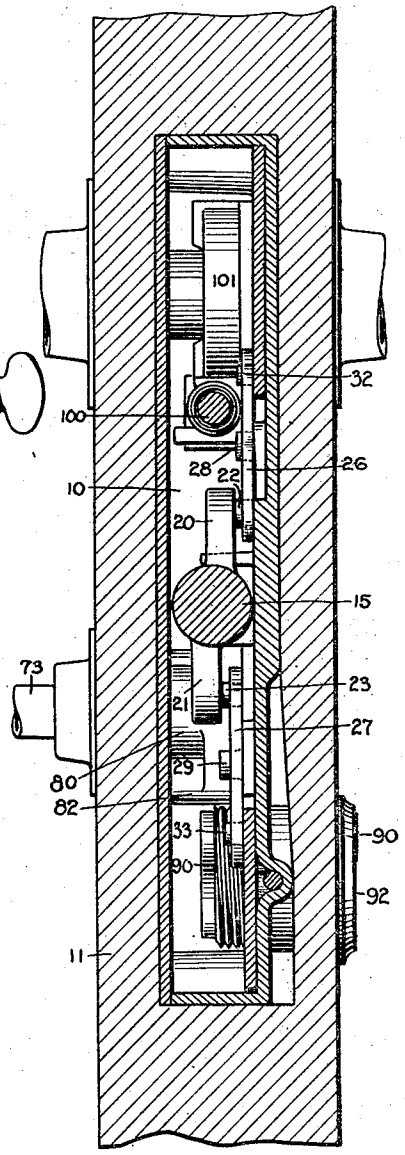


Fig. 5.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

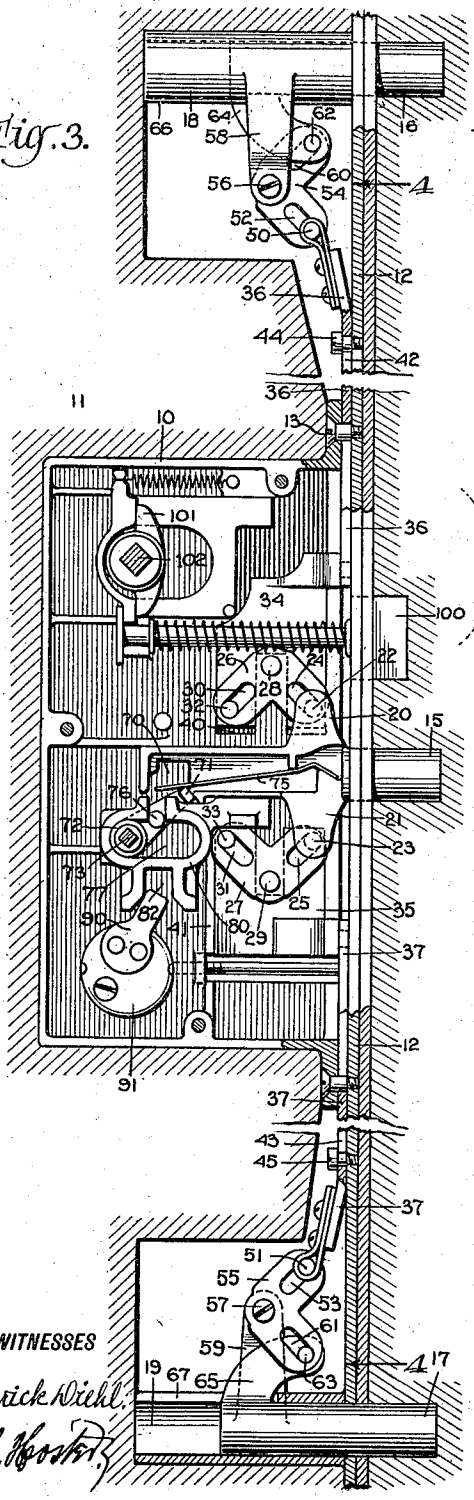
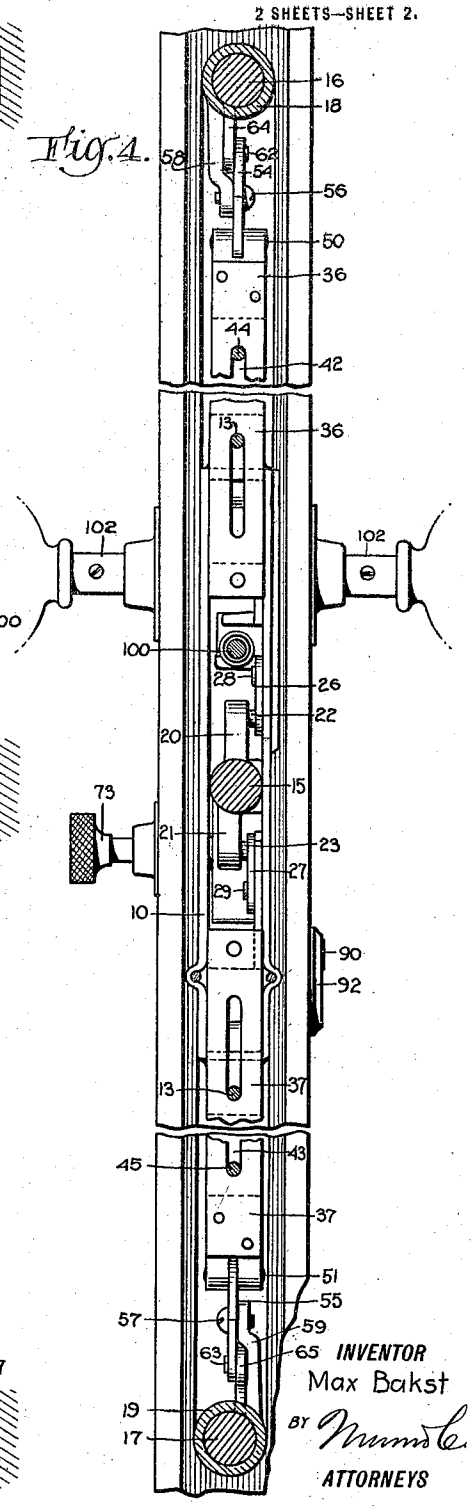


Fig. 4.



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LOCK.

1,277,174. Specification of Letters Patent. Patented Aug. 27, 1918.

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To all whom it may concern:

Be it known that I, MAX BAKST, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved lock more especially designed as a mortise lock for use on house doors and the like and arranged with a number of simultaneously actuated bolts to permit of securely locking the door against opening by burglars and other unauthorized persons. Another object is to provide a lock which is simple and durable in construction and not liable to get out of order easily.

With these and other objects in view, the invention consists of certain novel features of construction, as hereinafter shown and described and thence specifically pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the lock as applied to a door and with the bolts in retracted position, part of the lock casing being shown broken out and the door and door jamb being shown in section;

Fig. 2 is a front end view of the lock on the door;

Fig. 3 is an enlarged sectional side elevation of the lock as applied and with the bolts in shot out position;

Fig. 4 is a cross section of the same on the line 4—4 of Fig. 3; and

Fig. 5 is an enlarged cross section on the line 5—5 of Fig. 1.

The casing 10 of the lock is shown mortised in a door 11, and the casing is provided at its front edge with an attaching bar 12 fastened by screws or other suitable fastening devices 13 to the edge of the door 11, as plainly indicated in Fig. 1. Within the casing 10 is mounted to slide a main controlling bolt 15 which is key controlled, as hereinafter more fully explained, and which controls auxiliary bolts 16 and 17 spaced from the main bolt 15 above and below the same, and mounted to slide in bearings 18 and 19 attached to or forming part of the attaching bar 12 and projecting from the back thereof into the mortise in the door 11, as plainly indicated in Figs. 1 and 3.

In order to connect the main controlling bolt 15 with the auxiliary bolts 16 and 17 for the latter to move in unison with the said main controlling bolt 15, the following arrangement is made: The controlling bolt 15 is provided within the casing 10 with lugs 20 and 21 extending in opposite directions and provided with transverse pins 22 and 23 engaging slots 24, 25 in bell crank levers 26, 27, fulcrumed at 28 and 29 within the casing 10. The bell crank levers 26 and 27 are further provided with slots 30 and 31 engaging transverse pins 32 and 33 attached to the inner ends or heads 34, 35 of connecting members 36, 37. The connecting members 36, 37 are in the form of bars mounted to slide on the back of the attaching bar 12 and having their heads or ends 34 and 35 mounted to slide in guideways 40 and 41 formed within the casing 10. The outer portions of the connecting members 36, 37 are provided with slots 42, 43 engaging pins 44, 45 projecting from the back of the attaching bar 12. The ends of the connecting members 36 and 37 are provided with transversely extending pins 50, 51 engaging slots 52, 53 formed in bell crank levers 54, 55 fulcrumed at 56, 57 on brackets 58, 59 integral with the bearings 18 and 19. The bell crank levers 54, 55 are provided with slots 60, 61 engaged by pins 62, 63 held on brackets 64, 65 integral with the auxiliary bolts 16, 17 and extending through slots 66, 67 formed in the bearings 18 and 19. By the use of the brackets 64, 65, the auxiliary bolts 16 and 17 are held against turning.

It will be noticed that when the main controlling bolt 15 is moved outward from retracted into shot out locking position then its pins 22, 23 impart a swinging motion to the bell crank levers 26, 27, which in turn impart a sliding movement to the connecting members 36, 37 by the pins 32, 33, the connecting member 36 moving downward and the connecting member 37 moving upward. This movement of the connecting members 36, 37 causes a swinging of the bell crank levers 54, 55 which by the pins 62, 63 impart a simultaneous outward movement to the auxiliary bolts 16 and 17. Thus the three bolts 15, 16 and 17 are simultaneously shot out on moving the main control-

ling bolt 15 into shot-out position. On moving the main controlling bolt 15 inward, the movement of the bell crank levers 26, 27, 54, 55 and that of the connecting members 36, 37 is reversed, whereby the auxiliary bolts 16 and 17 slide inward simultaneously with the main bolt 15.

The inner end of the main bolt 15 is provided with a notch 70 into which projects an arm 71 having a hub 72 mounted to turn in suitable bearings in the casing 10. A latch spindle 73 is preferably connected with the hub 72 to permit of imparting a swinging motion to this arm 71 from the inside of the door whenever it is desired to actuate the bolts 15, 16 and 17. The arm 71 is pressed on by a spring 75 held on the main controlling bolt 15 and the said arm is provided intermediate its free end and the hub 72 with a pin 76 extending into a slot 77 formed in a slide 80 mounted to slide sidewise on a suitable guideway formed in the casing 10. The slide 80 is provided with a fork 82 into which is adapted to pass a cam 90 held on the inner end of a plug 91 of a key controlled lock 92, of the Yale or other type, secured to the casing 10 and having the keyhole end of its plug extending to the outer face of the door. Thus when the proper key is inserted in the plug 91 and turned then the cam 90 imparts a swinging motion to the slide 80 which in turn imparts a swinging motion by the pin 76 to the arm 70, and the latter imparts a sliding movement to the main controlling bolt 15 either outward into locking position or inward into retracted position according to the direction in which the key is turned.

The door lock is provided with the usual spring-pressed latch bolt 100 controlled by a roll back 101 engaged by the knob spindle 102 carrying the usual knobs for turning the spindle to cause the roll back to actuate the latch bolt 100. As this latch bolt and its mechanism forms no part of the present invention further detailed description of the same is not deemed necessary.

When the door 11 is closed and the bolts 15, 16 and 17 are shot out they engage keepers 110 formed in a keeper bar 111 secured to the door jamb 112 to securely hold the door locked in closed position and against being opened by burglars or other unauthorized persons.

By providing the slotted bell crank levers in the connection between the main controlling bolt 15 and the auxiliary bolts 16 and 17, it requires but little physical force to turn the key with a view to move the said bolts into locking or unlocking position.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. In a lock, a casing, bearings one above and the other below the casing, a main bolt in the casing, an auxiliary bolt in each bearing, bell crank levers pivoted to the casing and each having a pivotal and sliding connection with the main bolt, sliding members having their inner ends loosely pivoted to the bell crank levers, bell crank levers pivoted to the bearings and pivotally and slidably connected with the auxiliary bolts and the outer ends of the sliding members.

2. In a lock, a casing provided with an attaching bar for securing the lock to a door, said bar projecting beyond the casing and provided with bearings at its ends, spaced bolts, of which one is the controlling bolt and is mounted to slide in the casing and through the said bar, the other bolts being auxiliary bolts and being mounted to slide in the said bearings, key controlled means mounted on the casing and engaging the said controlling bolt, bell crank levers connected with the said controlling bolt, bell crank levers fulcrumed on the said bearings and connected with the said auxiliary bolts, and connecting members slidably mounted on the said casing and its attaching bar and connecting the bell crank levers of the controlling bolt with the bell crank levers of the auxiliary bolts.

3. In a lock, a casing provided with an attaching bar for securing the lock to a door and provided outside of the casing with bearings, spaced bolts, of which one is the controlling bolt and is mounted to slide in the casing and through the said bar, the other bolts being auxiliary bolts and being mounted to slide in the said outside bearings, key controlled means mounted on the said casing and engaging the said controlling bolt, pins on opposite sides of the said controlling bolt, inner bell crank levers having slotted arms and fulcrumed in the said casing, one of the slotted arms of each bell crank lever being engaged by the said pins, sliding members mounted to slide on the casing and its attaching bar, outer bell crank levers having slotted arms and fulcrumed on the said bearings, pins on the ends of the said sliding members, the pins on the said ends within the casing engaging the other slotted arms of the said inner bell crank levers connected with the controlling bolt, and the pins on the outer ends of the sliding members engaging each one of the slotted arms of the bell crank levers mounted on the bearings, and pins on the said auxiliary bolts and each engaging the other slotted arm of the corresponding outer bell crank lever.

4. In a lock, a casing provided with an attaching bar for attaching the lock to a door, the ends of the said bar being provided with bearings having slots, a main controlling bolt mounted to slide in the said casing and through the said attaching bar, the said main bolt having brackets extend-

ing in opposite directions and provided with pins, auxiliary bolts mounted to slide in the said bearings and having brackets slidably engaging the slots thereof, each bracket having a pin, inner bell crank levers fulcrumed in the casing and engaged by the pins of the said main bolt, outer bell crank levers fulcrumed on the said bearings and engaging the pins on the auxiliary bolts, and connecting members slidable in the said casing and on the back of its attaching bar, the inner ends of the said connecting members being connected with the bell crank levers in the casing and the outer ends of the said connecting members being connected with the bell crank levers on the said bearings.

5. In a lock of the character described, a casing, a bolt in the casing and having a notch in its end, a slide having a slot and a fork, a latch spindle, a hub on the spindle and provided with a spring pressed arm adapted to engage the notch of the bolt and having a pin working in the slot of the slide, and a key controlled plug having a cam working in the fork of said slide.

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