No. 781,271. PATENTED JAN. 31, 1905.

W. H. DALRYMPLE.

LATCH AND LOCK COMBINED.

APPLICATION FILED APR. 20, 1904.

Fig. 1.

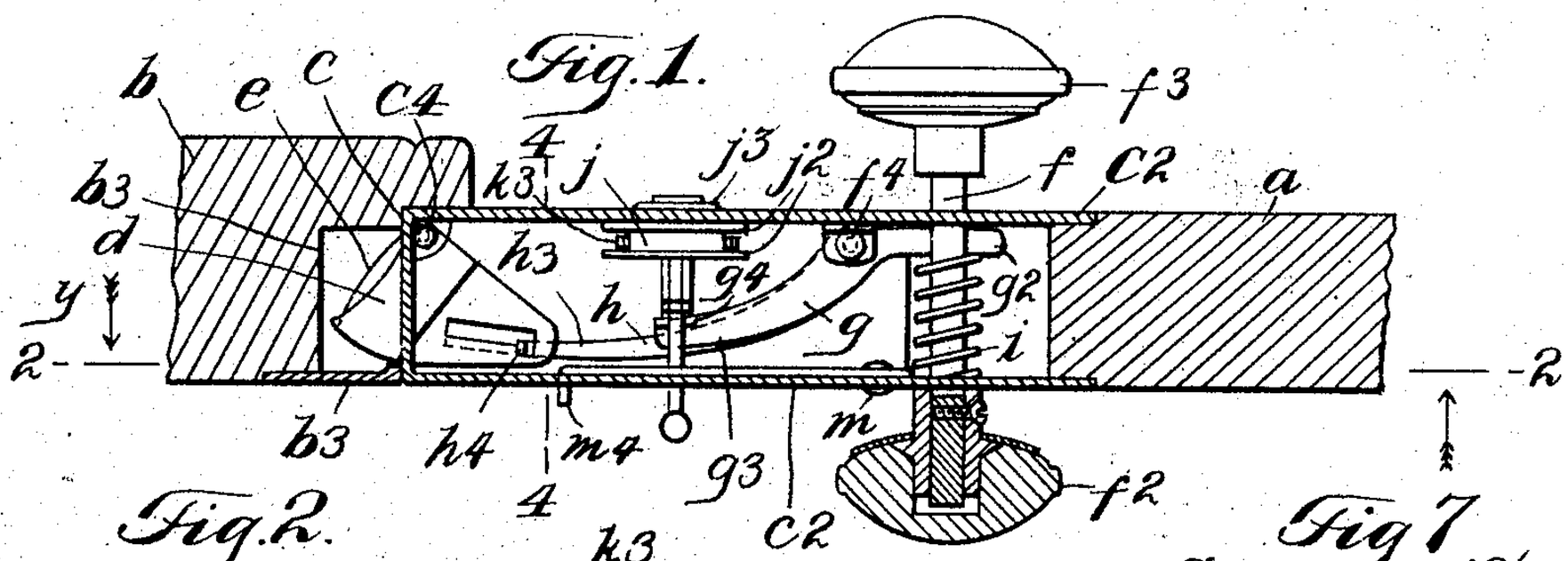

Fig. 2.

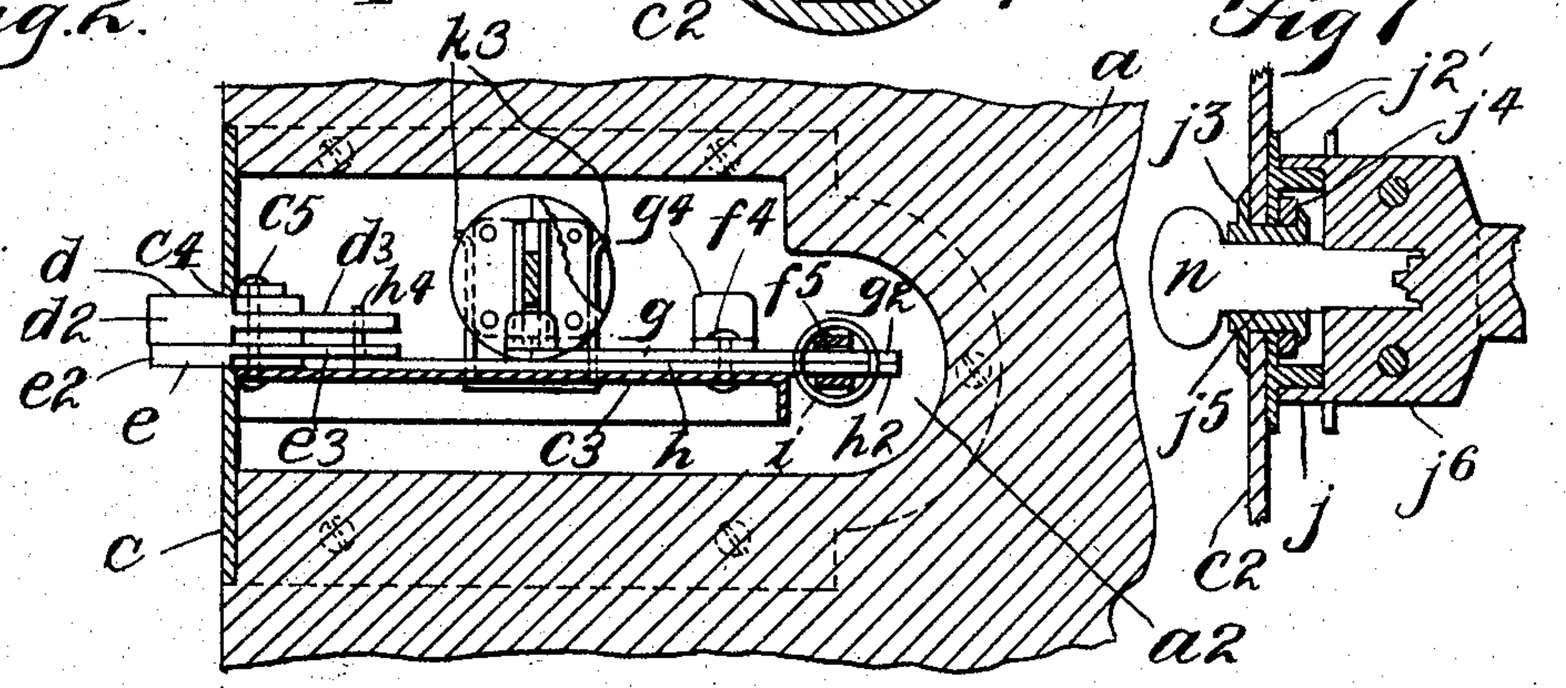

Fig 7

Fig. 3.

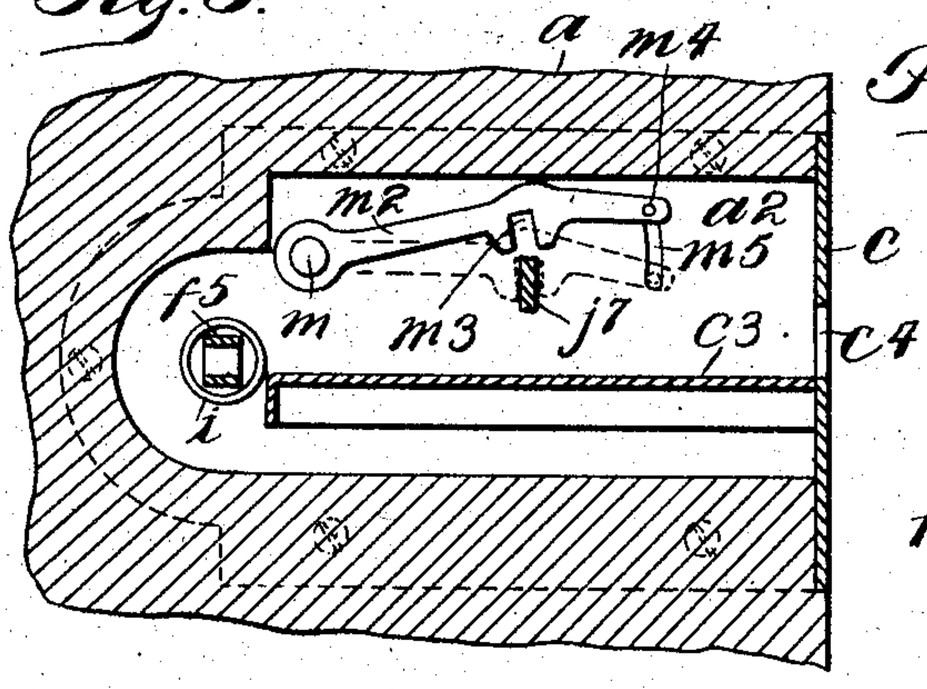

Fig. 4.

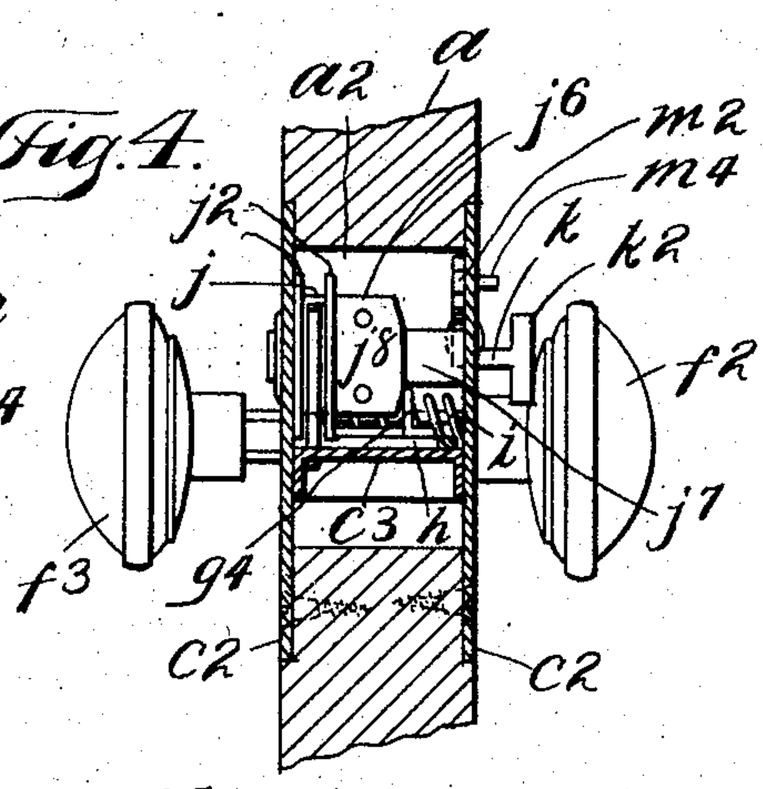

Fig. 5

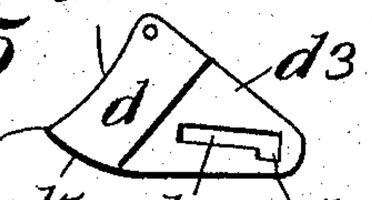

Fig. 6.

WITNESSES

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No. 781,271. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM H. DALRYMPLE, OF BRANCHVILLE, NEW JERSEY.

LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 781,271, dated January 31, 1905.

Application filed April 20, 1904. Serial No. 203,985.

To all whom it may concern:

Be it known that I, WILLIAM H. DALRYMPLE, a citizen of the United States, residing at Branchville, in the county of Sussex and State of New Jersey, have invented certain new and useful Improvements in a Latch and Lock Combined, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved latch-lock for doors, gates, and the like which may be used as an ordinary spring-latch when desired and as a lock when necessary, a further object being to provide a latch-lock of the class specified with means whereby a door may be securely locked from the inner side and cannot be opened from the outer side thereof; and with these and other objects in view the invention consists in a latch-lock for doors, gates, and the like, constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a horizontal section of a part of a door and showing my improved latch-lock connected with the door, the latch-lock being also in horizontal section; Fig. 2, a vertical section of the door and the lock on the line 2 2 of Fig. 1 and looking in the direction of the arrow *x;* Fig. 3, a similar section looking in the direction of the arrow *y;* Fig. 4, a section on the line 4 4 of Fig. 1. Figs. 5 and 6 are side views of two dogs which I employ, and Fig. 7 a sectional detail of the construction and showing also a key and on an enlarged scale.

In the drawings forming part of this specification I have shown at *a* part of a door and at *b* a part of a frame thereof, and in the practice of my invention, as shown in the drawings, I form in the door *a* a mortise or recess a^2, in which the lock is secured.

In the practice of my invention I provide a frame or case comprising a face-plate *c* and parallel side plates c^2, and this frame or case forms a support for the operative parts of the lock, which are mounted therein, and said frame or case is secured to the door, so as to inclose the recess or mortise a^2, and placed in the frame or case and forming a part thereof is a horizontal support or plate c^3.

The face-plate *c* is provided with an opening c^4, which communicates when the door is closed with a recess b^2 in the frame *b*, and said recess is closed at the inner side of said frame by a plate b^4, which is secured thereto.

Pivoted in the frame or case and just within the face-plate *c* and at the outer corner of the frame or case, as shown at c^5, are two dogs *d* and *e*, which rest on the plate c^3 and are provided, respectively, with noses d^2 and e^2, which normally project through the opening c^4 in the face-plate. The dog *d* is placed on the dog *e*, and each is provided with an inwardly-directed extension d^3 and e^3, respectively, said dogs being approximately triangular in general form, the longer ends thereof forming the extensions d^3 and e^3. The extension e^3 of the dog *e* is provided with a longitudinal slot e^4, and the extension d^3 of the dog *d* is provided with a similar slot d^4, having an angular extension d^5 at its inner end and which extends in the direction of the inner side of the door.

Passing transversely through the inner end portion of the frame or case is a spindle *f*, which is longer than the transverse thickness of said frame or case and which is provided at its inner end with a knob or handle f^2 and at its outer end with a similar knob or handle f^3. Pivoted in the frame or case, as shown at f^4, and resting on the plate e^3 are two levers *g* and *h*. The lever *g* rests on the lever *h*, and the levers *g* and *h* at their shorter ends are formed into short straight arms g^2 and h^2, which pass through a longitudinal slot or opening f^5 in the spindle *f*, and said levers *g* and *h* at their opposite ends are formed into curved arms g^3 and h^3, respectively, which range diagonally of the frame or case, and the arms g^3 and h^3 are longer than the arms g^2 and h^2, and the arm h^3 of the lever *h* is longer than the arm g^3 of the lever *g* and is provided at its end with a pin or finger h^4, which passes through and is adapted to move in the slots d^4 and e^4 in the dogs *d* and *e* and to enter the extension d^5 of

the slot d^4 of the door d, while the end g^3 of the lever g is provided with an upwardly-directed lug or projection g^4, which may be formed integrally therewith or which may be secured thereto, as shown in Fig. 2.

Mounted on the spindle f within the frame or case is a spring i, one end of which bears on the inner side of said frame or case and the other on the arms g^2 and h^2 of the levers g and h, and said spring normally serves to hold the spindle f, the levers g and h, and the dogs d and e in the position shown in Fig. 1.

In the form of construction shown the lever-arm g^3 of the lever g terminates about midway between the spindle f and the outer end of the frame or case, and mounted on the inner side of the outer plate c^2 of the frame or case is a drum j, having side flanges j^2 and the outer side of which is provided with a journal j^3, which passes through the outer side c^2 of the frame or case and is provided with a collar j^4, having a keyhole j^5, and the inner side of said drum is provided with a diametric plate j^6, having a reduced extension j^7, whereby shoulders j^8 are formed on the plate j^6, and the reduced extension j^7 of said plate is provided with a shank k, which passes through the inner plate c^2 of the frame or case and is provided with a handle k^2. The drum j, between the side flanges j^2 thereof, has parallel sides and is normally held in the position shown in Figs. 1 and 2 by springs k^3, secured to the plate c^3 and which bear on said sides, and the shoulders j^8 of the plate j^6, or one of said shoulders, as the case may be, is adapted to operate in connection with the lug or projection g^4 on the end of the arm g^3 of the lever g, so as to form a lock, as hereinafter described.

On the inner side of the inner plate c^2 of the frame or case is pivoted, as shown at m, an arm m^2, the pivotal connection of which at m in the form of construction shown is adjacent to the spindle f, and this arm ranges longitudinally of the frame or case transversely of the extension j^7 and over said extension and is provided in its under side with a recess m^3, adapted to receive the extension j^7 of the plate j^6, and the end of said arm is provided with a pin or finger m^4, which passes inwardly through a vertically-arranged slot m^5 in the inner plate c^2 of the frame or case.

The drum j may be turned from the inner side of the door by means of the handle k^2 and from the outer side of the door by means of a key inserted into the keyhole j^5, as shown at n in Fig. 7, and when said drum is turned so that the plate j^6 will be in a horizontal position the device will operate as an ordinary door-latch, and the door may be opened by pulling on the inner knob f^2 or pushing on the outer knob f^3, and in this operation the arms g^2 and h^2 of the levers g and h are moved inwardly, while the arms g^3 and h^3 of said levers are moved outwardly and the dogs d and e are drawn within the frame or case. When the knob or knobs are released, the dogs d and e are thrown outwardly into the position shown in Figs. 1 and 2 and remain in this position, and when the door is closed the dogs d and e are worked automatically and the door closes automatically. It will be observed that the outer bearing-surface of the nose e^2 of the dog e is convex in form, as shown at e^5, while the corresponding bearing-surface of the dog d is concave in form, as shown at d^6, and when the door is closed the bearing-surface e^5 of the dog e strikes on the plate b^3, and this throws the finger or pin h^4 out of the recess d^5 in the dog d and allows both of said dogs to turn into the frame or case, the arm h^3 of the lever h moving outwardly, and as soon as the door is fully closed the dogs d and e assume the position shown in Figs. 1 and 2, and the door remains closed until the spindle f is again operated. If the door be closed and the drum j be turned, by means of the handle k^2, so that the plate j^6 on said drum will be in a vertical position, as shown in Figs. 1, 2, and 4, one of the shoulders j^8 on said plate will abut against the inner side of the lug or projection g^4 at the inner end of the lever g, and the dogs d and e cannot be operated by means of the knobs f^2 and f^3, and the door in this position of the parts is locked, and if at the same time the arm m^2 be moved downwardly into the position shown in dotted lines in Fig. 3 the extension j^7 of the plate j will enter the recess m^3 in said arm, and the drum j cannot be turned by a key from the outer side of the door, and said drum can also not be turned by means of the handle k^2 until the arm m^2 is again raised. It will therefore be seen that my improvement may be used as an ordinary latch or as a latch-lock which may be operated from the outer side of the door by a key or from the inner side thereof by a handle k^2, and when a party within a room or within a building the door of which is provided with my improved latch-lock desires to do so the arm m^2 may be moved downwardly, as shown in dotted lines in Fig. 3, and even a party with a key on the outer side of the door cannot open it.

It will be observed that the noses d^2 and e^2 of the dogs d and e, opposite the bearing-surfaces d^6 and e^5 thereof, are beveled, as shown at d^7 and e^6, and the dog d operates as a latch and a locking-dog, while the dog e when the door is closed at the beginning of its movement operates to throw the pin or finger h^4 of the arm h^3 of the lever h out of the extension d^5 of the slot d^4 in the dog d and permits both of said dogs or the noses thereof to be thrown into the frame or case, so that the door will automatically close, and the operation of these parts is the same when an attempt is made to open the door by pulling or pushing on the rod or bar f.

It will be apparent that by leaving out the

lever *g* and the drum *j* and the parts connected therewith and which operate in connection therewith the device will operate simply as an ordinary spring-latch, the only object in using the parts above specified being to adapt the device to serve as a lock of the kind and class herein described. It will also be observed that the spindle *f* has only a longitudinal movement and is movable transversely of the frame or case, but the knobs or handles may turn thereon if desired. The lever *g* constitutes a supplemental lever, which forms a part of the locking mechanism only and is intended for use only when the latch is intended to operate as a lock.

My improved latch-lock is simple in construction and operation and comparatively inexpensive and may be employed whenever devices of this kind are required, and changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A latch for doors and the like, comprising a frame or case, a spindle passing through the inner end thereof and movable transversely therethrough, a lever pivoted in said case and ranging diagonally thereof, a spring to hold said spindle and lever in their normal position, and triangular dogs pivoted in the opposite end of the case and projecting therethrough and the inner ends of which are provided with longitudinal slots, and said lever being provided with a pin which operates in said slots, the slot in one of said dogs being provided at its inner end with a laterally-directed extension, substantially as shown and described.

2. A latch for doors and the like, comprising a frame or case, a spindle passing through the inner end thereof and movable transversely therethrough, a lever pivoted in said case and ranging diagonally thereof, a spring operating in connection with said spindle and the inner end of said lever to hold said parts in their normal position, and triangular dogs pivoted in the opposite end of the case and projecting therethrough and the inner ends of which are provided with longitudinal slots, and said lever being provided with a pin which operates in said slots, the slot in one of said dogs being provided at its inner end with a laterally-directed extension, and the outer bearing-surface of the nose of one of said dogs being convex and of the other being concave, substantially as shown and described.

3. A latch, comprising a casing, a spindle movable through one end thereof, a latch-lever pivoted in said casing and curved so that one end bears on one side thereof and the other on the opposite side thereof, a spring which holds the spindle and lever in their normal position, and a dog pivoted in the end of the casing opposite the spindle, said dog being substantially triangular in form and the wider end thereof being formed into a nose beveled on both edges and the narrower edge thereof being projected in the direction of said spindle and provided with a longitudinal slot and the longer end of said lever being provided with a pin which operates in said slot, substantially as shown and described.

4. A latch-lock, comprising a frame or case, a spindle passing through the inner end thereof and movable transversely thereof, a lever pivoted in said frame or case and ranging diagonally thereof, a spring operating in connection with said spindle and in connection with one end of said lever for holding said parts in their normal positions, triangular dogs pivoted in the opposite end of the frame or case and projecting therethrough and the inner ends of which are provided with longitudinal slots one of which is provided at its inner end with a lateral extension, a pin connected with the outer end of said lever and movable in said slots, and devices for locking said parts against movement, substantially as shown and described.

5. A latch-lock, comprising a frame or case, a spindle passing through the inner end thereof and movable transversely thereof, a lever pivoted in said frame or case and ranging diagonally thereof, a spring operating in connection with said spindle and in connection with one end of said lever for holding said parts in their normal positions, triangular dogs pivoted in the opposite end of the frame or case and projecting therethrough and the inner ends of which are provided with longitudinal slots one of which is provided at its inner end with a lateral extension, a pin connected with the outer end of said lever and movable in said slots, and devices for locking said parts against movement, consisting of another lever pivoted over the first-named lever and also held in normal position by said spring, a drum mounted within said frame or case and adapted to be operated from the outer side of the door by a key and from the inner side thereof by a handle, and means connected with said drum and handle and with said lever to prevent the operation of the latter, substantially as shown and described.

6. A latch-lock for doors, comprising a frame or case, a spindle passing through the inner end thereof and movable transversely thereof, two levers pivoted in said frame or case and ranging diagonally thereof, a spring operating in connection with said spindle and the shorter arms of said levers for holding said parts in their normal position, two dogs pivoted in the opposite end of said frame or case and normally projected therethrough and provided in their inner ends with longitudinal slots, the slot in one of said dogs being pro-

vided at its inner end with a laterally-directed extension, the outer arm of one of said levers being longer than the other and provided with a pin or finger movable in said slots, and locking devices mounted in the frame or case and operating to prevent the movement of one of said levers, and adapted to be operated from the outer side of the door by a key and from the inner side thereof by a handle, and means for preventing the locking devices from being operated by the key when in engagement with said lever, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 19th day of April, 1904.

WILLIAM H. DALRYMPLE.

Witnesses:
F. A. STEWART,
C. J. KLEIN.