

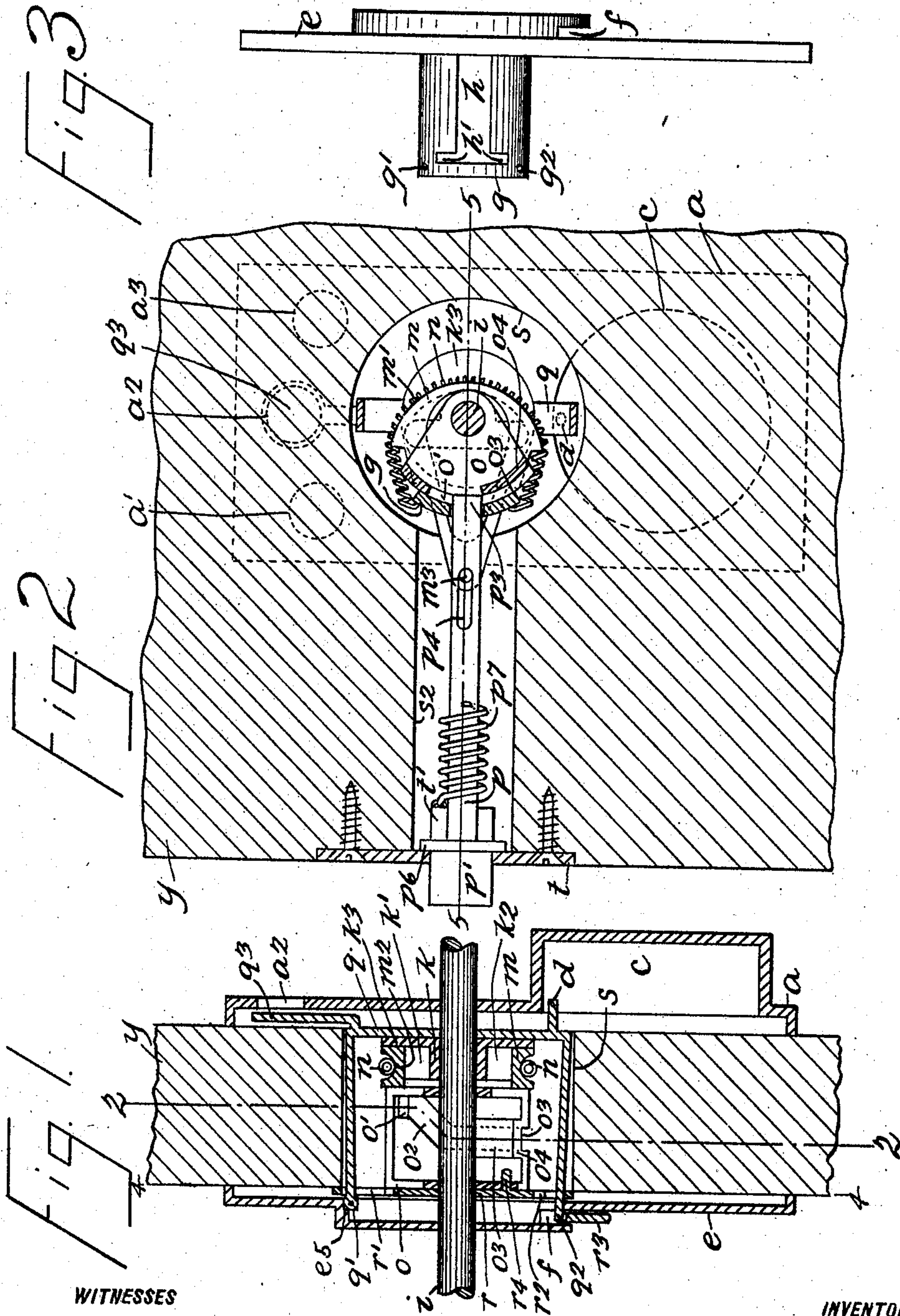
No. 815,493.

PATENTED MAR. 20, 1906.

A. B. VANES.
LATCH.

APPLICATION FILED JAN. 12, 1905.

2 SHEETS—SHEET 1.



WITNESSES

J. C. Karsen
F. A. Stewart

BY

INVENTOR

Arthur Bayly Vanes

Edgar Sate & Co

ATTORNEYS

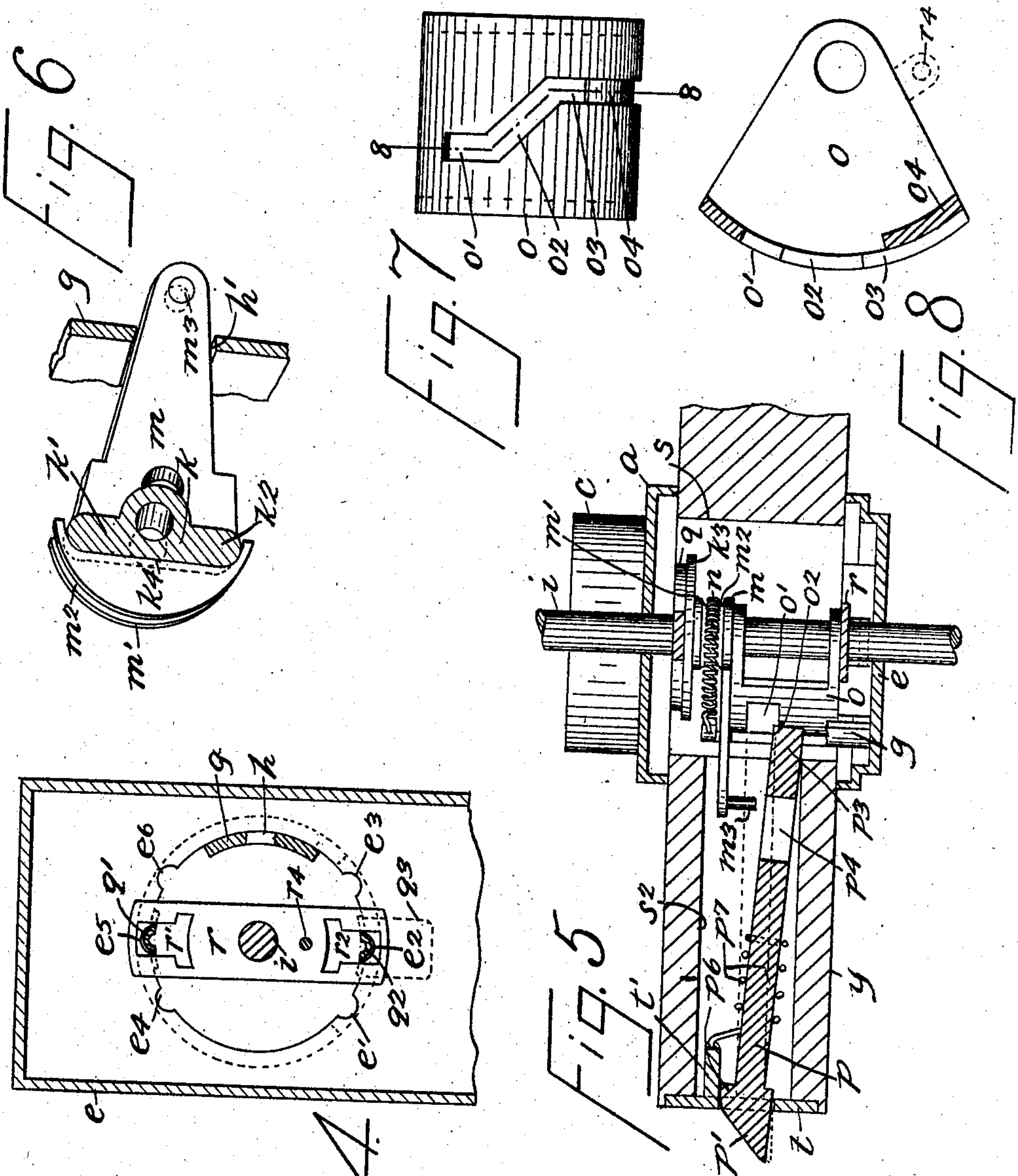
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J. E. Larkin
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UNITED STATES PATENT OFFICE.

ARTHUR BAYLY VANES, OF UITENHAGE, CAPE COLONY.

LATCH.

No. 815,493.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed January 12, 1905. Serial No. 240,677.

To all whom it may concern:

Be it known that I, ARTHUR BAYLY VANES, a subject of the King of Great Britain, residing at Uitenhage, Cape Colony, have invented certain new and useful Improvements in Latches, 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 for doors and the like, which may be used as a latch in the usual manner or which may be used as a lock or a bolt, a further object being to provide a latch of the class hereinafter described and claimed and which when being used as a latch may not be operative from without, but which may be so manipulated on the inner side of the door as to be operated in a manner similar to a door-latch as at present employed, a still further object being to provide a latch of this class which when used as a bolt may not be released from without even though a correct or proper key be used.

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 central vertical section of a latch constructed according to my invention; Fig. 2, a view similar to Fig. 1, taken at right angles thereto and on the line 2 2 of Fig. 1; Fig. 3, a view of a detail of the construction; Fig. 4, a partial section on the line 4 4 of Fig. 1; Fig. 5, a section on the line 5 5 of Fig. 2; Fig. 6, an enlarged view of a detail of the construction; Fig. 7, an enlarged view of another detail of the construction, and Fig. 8 a section on the line 8 8 of Fig. 7.

In the drawings forming part of this specification I have shown at *y* a portion of a door composed of wood or other suitable material, said door being bored transversely, as shown at *s*, and being provided with a supplemental opening *s*², intersecting the opening *s* and at right angles thereto and extending to the edge of the door *y*, said edge of the door being provided with a plate *t*, upon which is mounted an inwardly-directed member *t*¹, said plate *t* being provided with an opening through which passes the inclined head *p*¹ of a bolt *p*, said head *p*¹ being provided with a portion *p*², larger than the opening in the

plate *t*, through which the head *p*¹ passes, and the head *p*¹ is adapted to slide against the member *t*¹ of the plate *t*, which serves as a guide for the said bolt, and secured to the bolt *p* is a spring *p*³, which is secured at its other end to the member *t*¹ of the plate *t*, the action of the spring *p*³ being to force the bolt *p* outwardly, and, as shown at *p*⁴, the bolt *p* is provided with a longitudinal slot or opening.

On one side of the door *y* is secured a plate *e* and on the other side thereof a plate *a*, said plate *a* being provided with a plurality of openings *a*¹, *a*², and *a*³ at the upper end thereof and being provided also with an enlarged casing *c* adjacent to the bottom thereof, and the casing *c* is adapted to receive a cylinder or other lock or the tumblers thereof, said lock or tumblers not being shown in the drawings, as they form no part of this invention, and passing centrally through the opening *s* and engaged in the plates *a* and *e* is a spindle *i*, which is provided with knobs in the usual manner, said knobs, however, not being shown in the drawings, and secured to the spindle *i* is a sleeve *k*, provided with a circular plate *k*¹ and with upwardly and downwardly directed horns *k*² and *k*³, which normally rest in a recess *k*⁴ of a plate *m*, said plate being tapered toward its outer end and provided with a pin *m*¹, secured therein, said pin *m*¹ normally operating in the slot *p*⁴ of the bolt *p*, and the plate *m* being provided also with a semicircular end *m*², provided with a groove *m*³ therein.

Secured to the plate *e*, as shown in Figs. 3 and 5, is a segmental member *g*, provided with a longitudinal slot *h* therein, said slot *h* being enlarged at its outer end, as shown at *h*¹, and the plate *m* extends through and is adapted to move in the portion *h*¹ of the slot *h*, said slot operating as a guide for the plate *m*, and secured in holes *g*¹ and *g*² of the member *g* of the plate *e* is a contractile spring *n*, which passes around the segmental portion *m*² of the plate *m* and rests in the groove *m*³ thereof, and it will be seen that if the spindle *i* be rotated the horn *k*² or *k*³ operates to force the plate *m* backwardly against the action of the spring *n*, and when the pressure on the spindle *i* is released the spring *n* returns the plate *m* to its normal position.

Rotatably mounted on the spindle *i* is a yoke-shaped plate *q*, the ends of which, as clearly shown in Fig. 1, are designated by *q*¹ and *q*², and hinged to the end *q*² of the yoke-

shaped plate q is a downwardly-directed handle member r^3 , which extends through an opening f in the plate e , and permanently connected with the vertical portion of the yoke-shaped plate q is an upwardly-directed member q^3 , which, as shown in dotted lines in Fig. 2, is provided with a circular head adapted to show at one of three openings a' , a^2 , and a^3 the plate a , thereby indicating the position of the yoke-shaped plate q , and, as shown in Fig. 4, the plate e is provided with three recesses e' , e^2 , and e^3 adjacent to the end q^2 and three recesses e^4 , e^5 , and e^6 adjacent to the end q' of the yoke-shaped plate q , said yoke-shaped plate being composed of spring metal and the ends q' and q^2 thereof being forced upwardly and downwardly, each being adapted to engage one of the recesses e' , e^2 , e^3 , e^4 , e^5 , and e^6 in the plate e , said recesses serving to hold the yoke-shaped plate q in any one of three positions and said positions being indicated at the opening a' , a^2 , and a^3 in the plate a . The ends q' and q^2 of the yoke-shaped plate q operate in openings r' and r^2 of a vertical plate r , said plate r being provided with an inwardly-directed pin r^4 , and said pin r^4 extends into and engages a segmental drum o , which is rotatably mounted on the spindle i , and the segmental portion of the drum o is provided on its outer face with an irregular groove or slot consisting of a top vertical portion o' , an inclined portion o^2 , and a bottom vertical portion o^3 , said groove or slot passing entirely through the segmental drum o , and at the bottom of the segmental portion of the drum o is a plate o^4 , which extends for a suitable distance to the rear of the portion o^3 of the said groove or slot. The inner end p^3 of the bolt p is always engaged by the said groove or slot in the segmental drum o , and if the handle r^3 be moved to the right or left the pin r^4 on the vertical plate r moves the segmental drum o correspondingly, and the end p^3 of the bolt p is also moved from its normal position by means of the inclined portion o^2 of the slot in the drum o , as plainly shown in Fig. 5, said movement of the bolt p serving to move the same away from the pin m^3 on the plate m , and when the handle r^3 is moved in the opposite direction the bolt p is again engaged with the pin m^3 , and secured to the yoke-shaped plate q and extending into the casing c is a pin d , which is normally adapted to engage the lock or system of tumblers which may be arranged therein.

If it is desired to use my invention as a latch in the usual manner, the handle r^3 is moved to the right, thereby moving the member q^3 of the plate q to a position visible at the opening a' in the plate a , and this movement of the handle r^3 forces the end p^3 of the bolt p into the portion o' of the slot in the segmental drum o , and the pin m^3 on the plate m enters the slot p^4 in the said bolt, and if the

spindle i be rotated the plate m is drawn backwardly, as previously described, thereby withdrawing the head p' of the bolt p out of engagement with the door-frame, and upon releasing the pressure on the spindle i the spring n returns the plate m to its normal position, and the spring p^7 returns the bolt p to its normal position, and it will be seen when the parts are in this position that the door may be opened from either side, and if the door be opened and it is desired to close the same the inclined head p' of the bolt p forces the same inwardly, this movement of the bolt being permitted by reason of the slot p^4 therein.

When it is desired to use my invention as a lock, the handle r^3 is moved to its central position, or that shown in the drawings, at which time the end p^3 of the bolt p has been moved to the right by means of the slot o^2 in the segmental drum o , and the pin m^3 is entirely removed from the slot p^4 of the bolt p , and if at this time the spindle i be rotated the plate m will be drawn backwardly as before, but the bolt p will not be moved, although if the door be open it may be closed, as previously described, for the reason that the end p^3 extends entirely through the slot o^2 of the drum o , and if at this time a person on the outer side of the door desires to open the same he inserts a proper key into the arrangement of tumblers in the casing c , and upon operating the said tumblers the pin d moves the yoke-shaped plate q to the first position in which the pin m^3 engages the bolt p , at which time the spindle i may be operated to withdraw the bolt p . When it is desired to use my invention as a bolt, the handle r^3 is moved to the left of its central position, this movement carrying the end p^3 of the bolt p out of engagement with the pin m^3 and also rotating the drum o to a position where the backward movement of the bolt p is prevented because of the plate o^4 in the said drum, and this rotation of the handle r^3 also carries the pin d out of engagement with the arrangement of tumblers in the casing c , and even though a person have the proper key and the tumblers in the casing c be operated the parts of my invention are not affected thereby, because of the fact that the pin d is out of engagement with the said tumblers, and at which time the spindle i , though rotated, will not affect the bolt p , and the door cannot be opened from within or without until the handle r^3 is returned to its first position, and, as previously stated, all of these positions are indicated because of the member q^3 and the openings a' , a^2 , and a^3 , and a person outside of the door can see thereby whether or not the insertion of a key into the casing c would open the door.

My invention is simple in construction and operation and well adapted for the purpose specified, and because of the simplicity of

construction the parts thereof cannot readily get out of order, and it will be apparent that various changes in and modifications of the construction herein shown and 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, comprising a spring-operated bolt provided with an inclined head, a spindle, a sleeve secured to said spindle and provided with upwardly and downwardly directed horns, a spring-operated plate provided with a recess in which said horns operate a pin on said plate normally in engagement with said bolt, and means for removing said pin and said bolt out of engagement with each other substantially as shown and described.

2. A latch, comprising a spring-operated bolt provided with an inclined head, and with a slot adjacent to the opposite end thereof, a spindle, upwardly and downwardly directed horns secured to said spindle, a plate provided with a recess in which said horns operate, a pin on said plate normally engaging the slot in said bolt, a spring externally secured and bearing against said plate, and means for removing said pin out of engagement with said bolt substantially as shown and described.

3. A latch for doors or similar purposes, comprising a plate on each side of said door, a spindle rotatable therein, upwardly and downwardly directed horns secured to said spindle, an inwardly-directed slotted member secured to one of said plates, a supplemental plate slidable on said spindle and in the slot of said inwardly-directed member, a spring-operated bolt provided with an inclined head and with a slot adjacent to the inner end thereof, a pin on said supplemental plate, normally entering said slot in said bolt, a spring forcing said supplemental plate outwardly, and means for moving said bolt out of engagement with said supplemental plate, substantially as shown and described.

4. A latch, comprising a spring-operated bolt provided with an inclined head, and a slot adjacent to the inner end thereof, a spindle provided with upwardly and downwardly directed lugs, a plate in operative connection with said lugs and with said bolt, a yoke-shaped plate, a supplemental plate engaging the ends of said yoke-shaped plate, a segmental drum provided with an irregular slot in which said bolt operates, said supplemental plate being provided with a pin in operative connection with said segmental drum, and devices for holding said yoke-shaped plate in

any one of a plurality of positions, substantially as shown and described.

5. In a latch of the class described, a bolt, a segmental drum provided with a slot therein and passing therethrough and in which said bolt operates, said slot comprising two vertical portions in different vertical planes and an inclined portion joining said vertical portions, and the lower end of said slot being closed by a plate to the rear thereof and devices for operating said bolt, substantially as shown and described.

6. In a latch of the class described, a spindle, a bolt, a plate provided with a segmental member, and a groove therein, the other end of said plate being inclined and a pin mounted therein and adapted to engage said bolt, said plate being also provided with a recess in one side thereof and devices connected with said spindle and said plate for moving the latter, substantially as shown and described.

7. In a latch of the class described, a bolt, a spindle provided with upwardly and downwardly directed horns, a plate provided at one end, with a segmental head having a groove therein, and the other end of said plate being tapered, a pin in the tapered end of said plate and adapted to engage said bolt, said plate being also provided with a recess in one side thereof in which said horns normally rest and a spring externally secured and resting in said groove, substantially as shown and described.

8. In a latch of the class described, a yoke-shaped plate composed of spring metal, a supplemental plate provided with openings engaging the ends of said yoke-shaped plate and a face-plate provided with a plurality of recesses engaging the ends of said yoke-shaped plate, substantially as shown and described.

9. In a latch of the class described, a bolt, a spindle, a face-plate provided with a plurality of recesses on the inner side thereof and with an inwardly-directed segmental member, said segmental member being provided with a horizontal slot in which said bolt operates and said horizontal slot being intersected by a vertical slot, a plate in said vertical slot normally in engagement with said bolt and in operative connection with said spindle 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 28th day of November, 1904.

ARTHUR BAYLY VANES.

Witnesses:

WILLIAM DIN,
EMILY BLANCHE VANES.