

No. 700,227.

Patented May 20, 1902.

A. NEWELL.  
LOCK FOR SLIDING DOORS.

(Application filed Oct. 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. I.

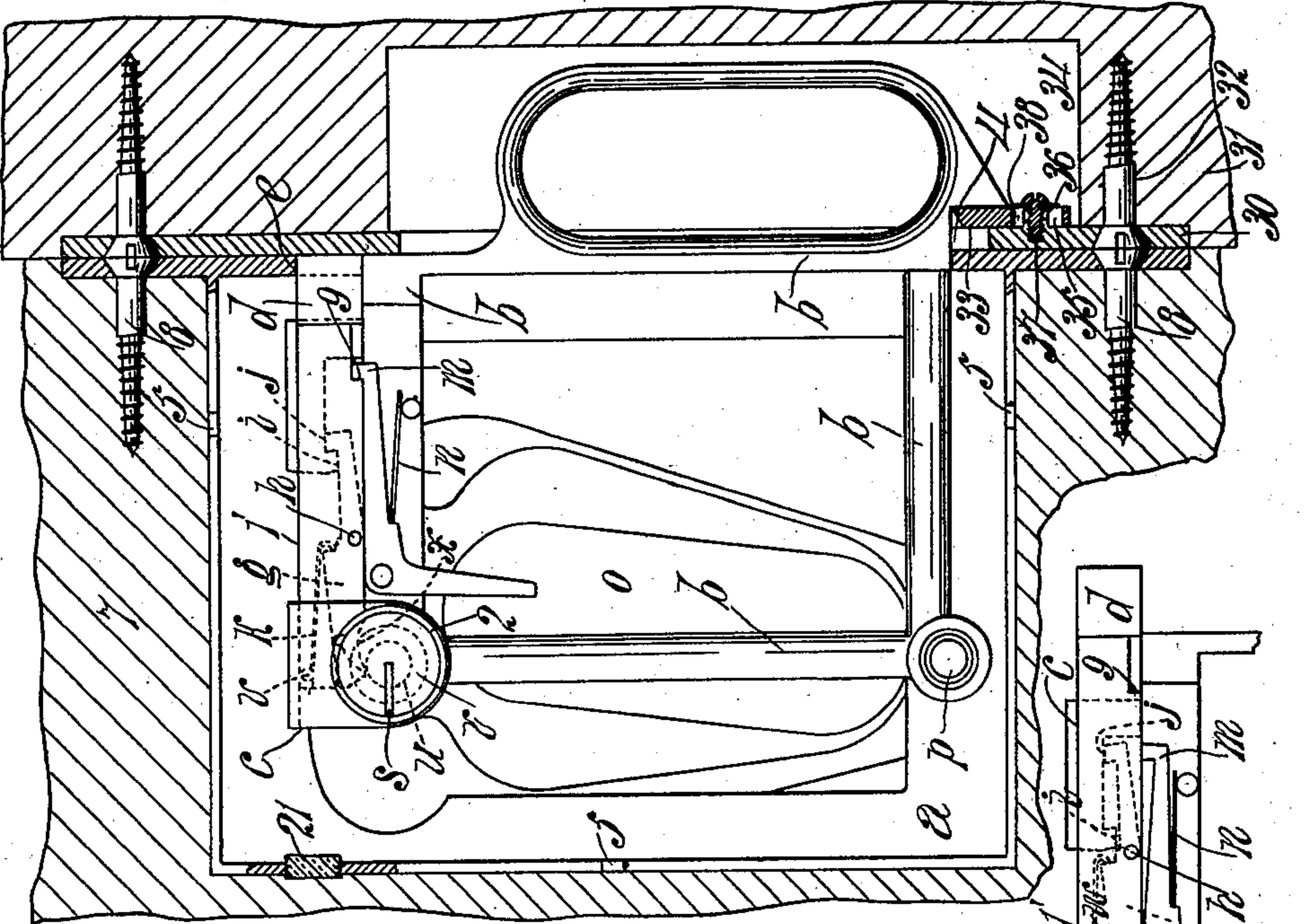


Fig. II.

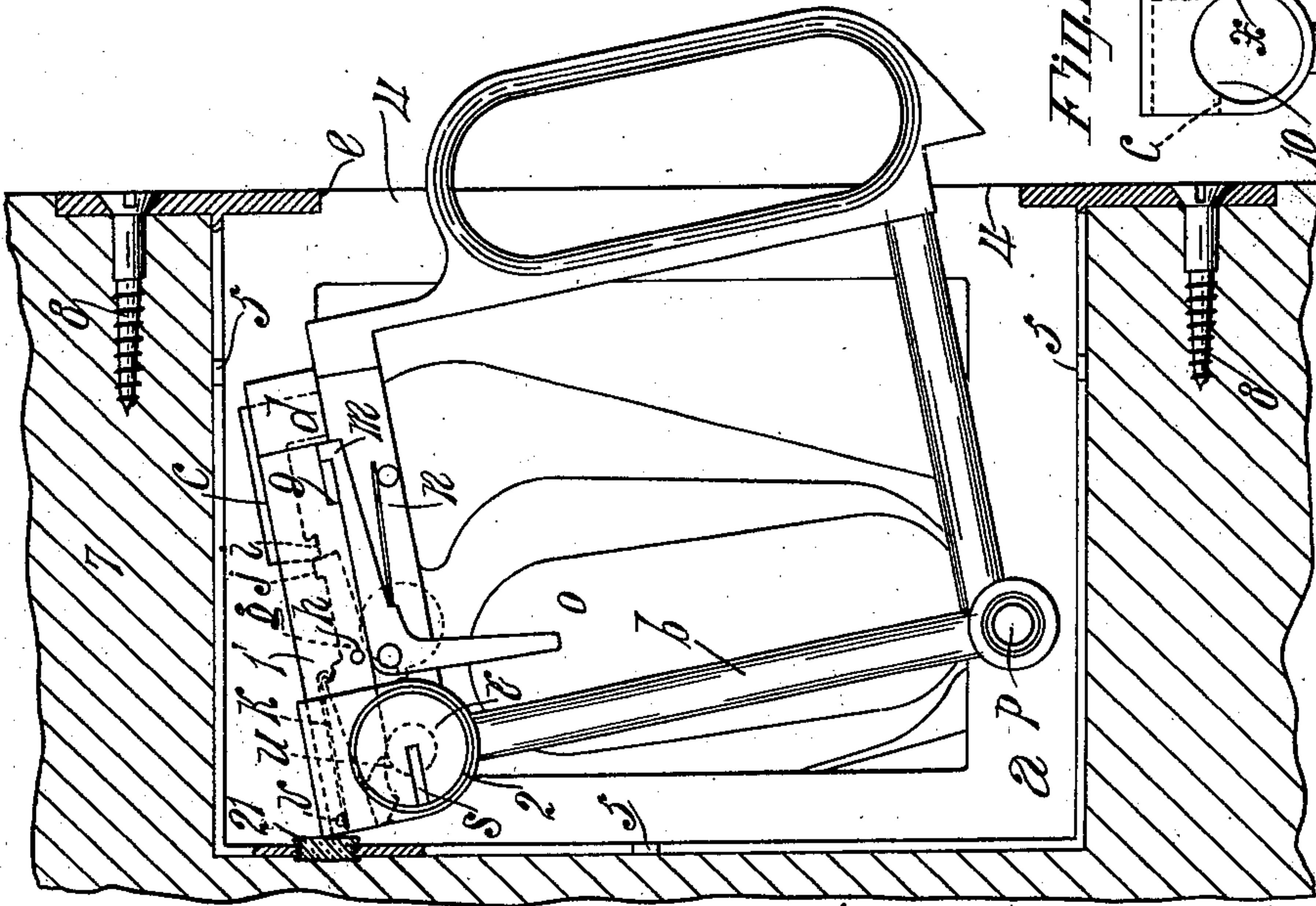
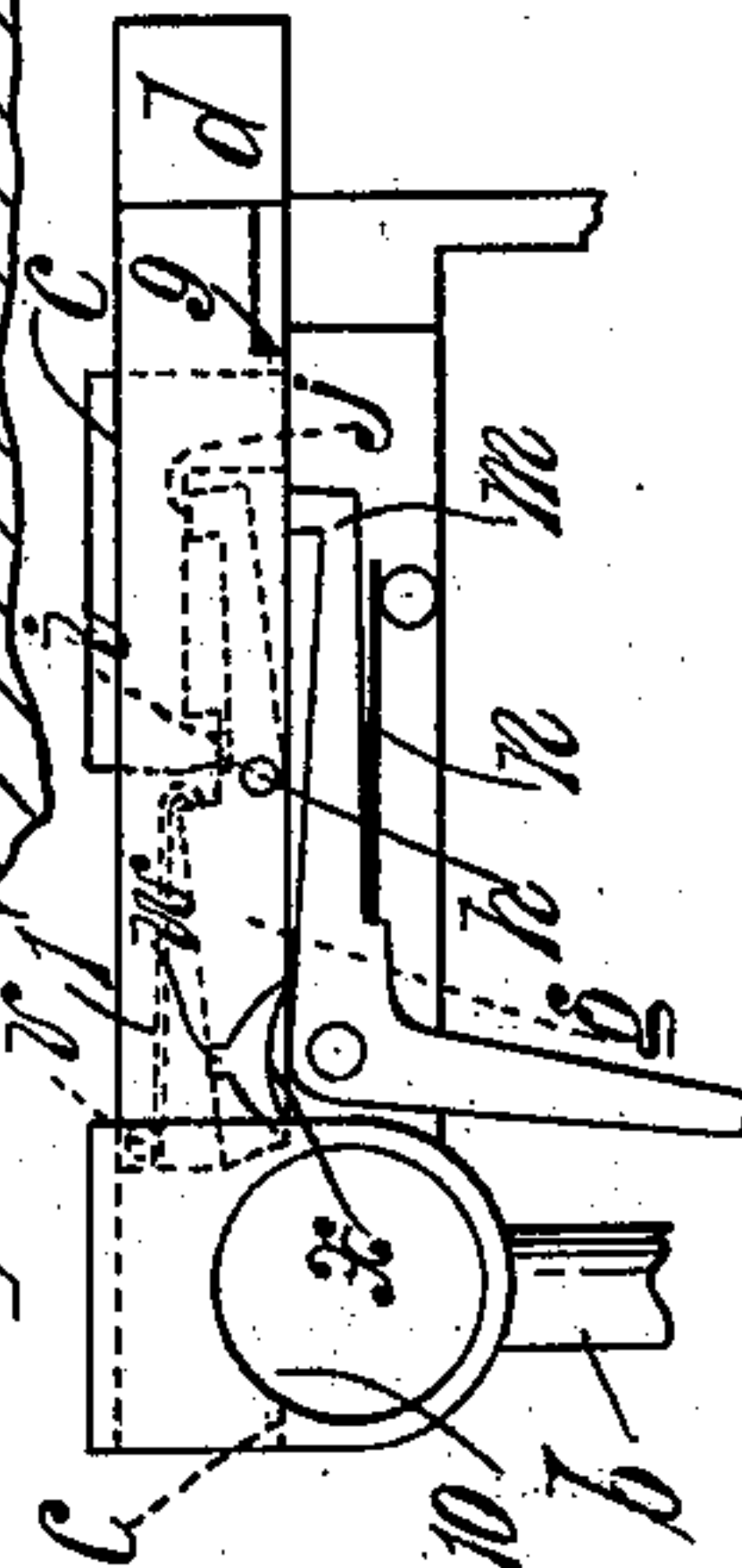


Fig. III.



Witnesses  
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his attys.



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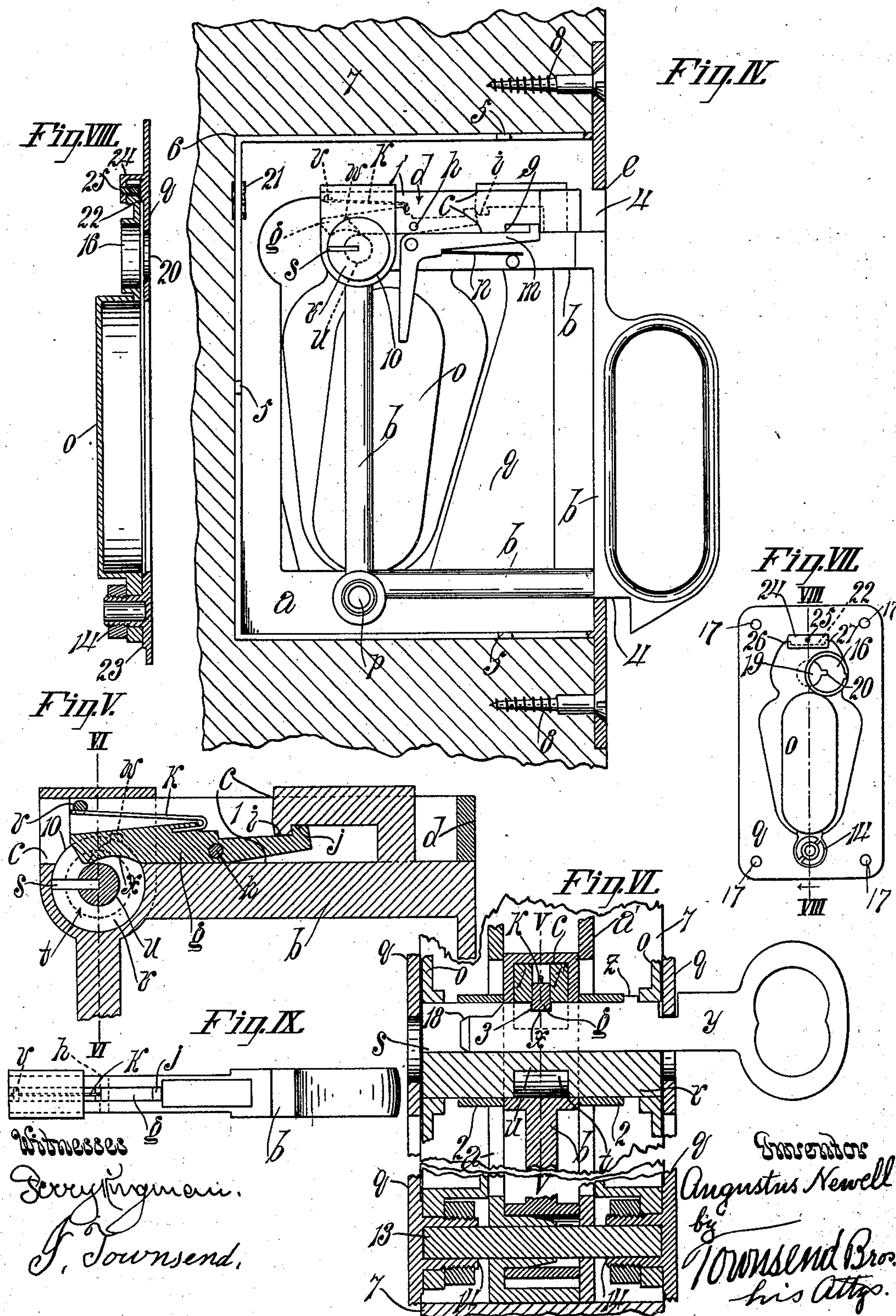
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2 Sheets—Sheet 2.





# UNITED STATES PATENT OFFICE.

AUGUSTUS NEWELL, OF PASADENA, CALIFORNIA, ASSIGNOR TO THE  
PERFECT SLIDING DOOR COMPANY, OF LOS ANGELES, CALIFORNIA,  
A CORPORATION OF CALIFORNIA.

## LOCK FOR SLIDING DOORS.

SPECIFICATION forming part of Letters Patent No. 700,227, dated May 20, 1902.

Application filed October 13, 1900. Serial No. 33,020. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS NEWELL, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented a new and useful Lock for Sliding Doors, of which the following is a specification.

The invention relates to improvements upon my sliding-door lock patented by United States patent, dated September 19, 1899, No. 633,291.

One object of this invention is superior simplicity and cheapness of construction, ease of assembling and applying to the door, and accuracy and ease of operation.

Another object is to provide for ready adjustment to cause the lock to latch readily in case the elevation of the door should become changed by any settling of the timbers.

In the present invention the sliding bolt which is carried by the latch is arranged to slide horizontally on the latch, whereby it is made possible to lock the latch by sliding the bolt beneath a stop which is directly above the catch, thereby avoiding any possibility of raising the latch when locked by breaking or bending portions thereof.

The accompanying drawings illustrate my invention.

Figure I is an elevation showing my newly-invented lock applied to a door and locked. Fragments of the door and door-casing are shown in section, and the side of the frame of the lock is omitted for clearness of illustration. A portion of the frame is shown in section. Fig. II shows the lock with latch unlocked and thrown back and released from the catch to open the door. One side of the frame is removed, as in Fig. I. Fig. III is a fragmental detail showing the position of the parts when the bolt is thrown outward to allow the key-shaft to be inserted or removed. Fig. IV is a view showing the latch at rest and unlocked. The side of the frame of the lock is removed for clearness of illustration, and the lock is shown attached to a fragment of the door, which is shown in section. Fig. V is an enlarged sectional detail on the line indicated by V V, Fig. VI. Fig. VI is a section on line indicated by VI VI, Fig. V. A

fragment of the door is shown. Fig. VII is a view of the handhold-plate removed, with handhold partly swung over the keyhole of the plate. Fig. VIII is a section on line VIII VIII, Fig. VII, with the handhold in position for allowing the key to be inserted. Fig. IX is a plan of the bolt and latch.

*a* indicates the frame of the lock. *b* indicates a latch pivoted in said frame and provided with a substantially horizontal way *c*. *d* indicates a sliding bolt carried in said way. This bolt is preferably forked.

*l l'* indicate the forks of the bolt.

*e* indicates a stop to intercept the bolt to prevent the latch from rising when the bolt is in working position. This stop is preferably formed by the face-plate of the frame *a* of the lock. The bolt *d* is arranged to be retracted to escape the stop to allow the latch to be lifted for unlocking. By means of the sliding bolt in a horizontal way to enter between the latch and the stop, which is above it, I am able to do away with the vertically-moving bolt shown in my former patent, and I do away with any liability of disarrangement of the lock by the action of gravity.

*g* indicates a ward pivoted to the bolt by a pivot *h*.

*i* indicates a catch above the way *c*, and *j* indicates a catch on the ward *g* to engage the latch-carried catch *i*.

*k* indicates a spring to normally hold the ward in catching position.

*m* indicates a dog to normally engage the bolt *d* and to intercept the stop thereof.

*n* indicates a spring to hold the dog normally in position to intercept the stop. The dog is spring-pressed by the spring *n* to hold the bolt friction-tight in its way, thus to avoid any disturbing of the bolt by any jarring from opening and closing the door and sudden turning of the key.

As in my said former patent, the lock can be opened by a key inserted from either side of the door, and the key is carried inside the lock by a key-shaft which is grooved longitudinally from end to end and has a peripheral groove at the middle to accommodate the bolt and its ward or wards. It will be understood that any desired number of wards



may be employed, for the purpose of adding to the difficulty of picking the lock; but in ordinary doors sufficient variation of the key can be produced with a single ward by varying the ward and key or either of them with relation to width and thickness. With a lock of this type the key-shaft is to be made nearly but not quite equal in length to the thickness of the door and is inserted after the lock is in place.

*o* indicates the handholds for operating the latch. The handholds, as in my former patent, are pivoted at one end coaxially of the latch-pivot *p*, and the other ends of the handholds respectively seat the ends of the key-shaft. The ends of the key-shaft are substantially flush with the outer faces of the handholds, respectively, which are inside the finishing-plates *q*, to which the handholds are pivoted, respectively. The faces of the handholds respectively come close to but do not touch the inside faces of the finishing-plates *q* and are just inside the planes of the opposite faces of the door. The purpose of this arrangement is to prevent any marring of the exposed portions of the handhold.

*r* indicates the key-shaft, and *s* the longitudinal groove extending from end to end of the shaft.

*t* indicates the peripheral groove.

*u* indicates the stem of the key-shaft, upon which the end of the ward *g* normally rests.

*v* indicates a stop formed by a pin inserted through the forks *l'l'* of the bolt *d*. The pressure of the spring *k* holds the ward *g* down in the groove *t* and against the stem *u*. The bolt *d* is provided with a notch *w* to receive the key and to enable the key to throw the bolt. The ward *g* may be plain where it is to be engaged by the key, or it may be notched, as indicated at *x*.

*y* indicates the key, which is flat and is provided with a stop *z*.

2 2 indicate rings around the cylindrical key-shaft *r* on opposite sides, respectively, of the latch *b*.

The ability of the key inserted in the key-shaft to throw the bolt depends upon the relative widths of key and ward, and the key is preferably notched, as at 3, to admit the ward when the key is in the right position. The use of the rings 2 2 enables the user to invariably insert the key to the right position for throwing the bolt. When the stop *z* engages the ring 2, the notch 3 will be in position to receive the ward *g* and to raise it appropriately when the key is turned.

The arms *l'l'* of the forked bolt *d* embrace the ward *g* and the catch *i*, which is fixed to the latch *b*, and the bolt slides freely within the limits allowed; but when the catch *j* of the ward *g* engages the catch *i* of the latch the bolt cannot be withdrawn from its locking position. When the bolt is thrown into its locking position and projects between the stop *e* and the latch *b*, the latch cannot be raised, and therefore the door is positively

locked. When the bolt is withdrawn, the latch is free to rise.

In order to assemble the parts of the lock, one side of the frame *a* being removed, the latch, with the bolt in its unlocked position, will be inserted and passed through the front opening 4 of the frame, and the latch will then be seated upon its pivot *p*. Then the side *a'* of the frame will be brought into place and fastened by the rivets 5. Then the lock without the key-shaft will be inserted into a mortise which is in the door 7 and will be secured by the screws 8. Then the operator will throw the dog *m* out of the way of the catch 9, with which the bolt *d* is furnished, and then the ward *g* will be thrown up by the straight edge of the key or by any other suitable means to allow the bolt to be thrown fully forward out of the circular way or key-shaft bearing 10 in the frame *b*. This position of the bolt *d* is indicated at Fig. III. Then the key-shaft *r* will be inserted into the bearing 10 to bring the peripheral groove *t* into line with the boltway *c*. Then the bolt is pushed back into position to allow the dog *m* to come into the path of the catch 9. Then the pivot-pin 13 will be inserted through the hollow latch-pivot *p*, and the rings 2 2 will be placed in position on the key-shaft on opposite sides of the latch, respectively. Then the finishing-plates, with the handholds pivoted thereto by the socketed pivots 14, will be brought into position to seat the ends of the pivot-pin 13 in the sockets of the pivots 14, respectively, and to seat the ends of the key-shaft in the sockets 16 of said handholds. The finishing-plates *q* will then be fastened to the door by screws (not shown) passed through holes 17 in the finishing-plates.

The key *y* is preferably provided with a narrow end 18. The finishing-plates *q* are respectively provided with an opening 19, which is smaller than the key-shaft, and is provided with a notch 20, as in my former patent.

21 indicates a cork cushion screwed through the frame of the lock to cushion the latch, as shown in Fig. II.

22 23 indicate raised portions on the inner face of the finishing-plate to hold the handhold just free from rubbing on the finishing-plate.

24 indicates a guard to prevent the swinging end of the handhold from becoming displaced.

25 indicates a stop on the finishing-plate, and 26 27 indicate lugs on the handhold to engage the stop 25 to limit the swing of the handhold.

In order to provide for ready adjustment in case the lock should be thrown out of alignment by the settling of the timbers, I have provided an adjustable catch, which is clearly illustrated in Fig. 1.

30 indicates the main catch-plate, which is fastened to the door-jamb 31 by screws 32.

33 indicates a sliding latch-plate fastened



to the inside of the catch-plate within the recess 34 in the door-jamb, which receives the handle of the latch *b*. The sliding latch-plate 33 is furnished with a slot 35, which fits on a stud 36 and is held by a screw 37, which passes through the slot, being screwed into the stud 36 and onto a washer 38 to hold the sliding latch-plate 33 in position.

It is to be understood that the sliding latch-plate 33 may be adjustably secured to the main catch-plate 30 by any suitable means, the object being to furnish the main catch-plate 30 with a latch-holding part which may be raised and lowered to the appropriate height for catching the latch *b*.

In practice when the door is first mounted the sliding latch-plate 33 will be fastened to the rear side of the main catch-plate 30 midway of its adjustment, so that the latch-plate may be raised or lowered, as occasion may demand. In case the timbers should settle, so that the door is brought lower than originally intended, the main catch-plate 30 may be removed, thus giving access to the screw 37, which is then loosened and the sliding plate 33 lowered to the appropriate height. Then the screw 37 will be tightened and the main catch-plate fastened in place.

In case the catch requires to be raised this can be readily accomplished by moving the sliding plate 33 upward.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a lock, the combination of a frame; a latch pivoted in said frame and provided with a substantially horizontal way; a sliding bolt carried in said way; a stop to intercept the bolt to prevent the latch from rising when the bolt is in locking position; said bolt being arranged to be retracted to escape the stop to allow the latch to be lifted for unlocking.

2. In a lock, the combination of a frame; a latch pivoted in the frame and furnished with a horizontal way and with a catch; a sliding bolt to slide along said way; a stop on said frame above said way to intercept the bolt to prevent the latch from rising when the bolt is in locking position; a ward pivoted to said bolt under the catch carried by said latch and furnished with a catch to engage the latch-carried catch; and a spring to normally hold the ward in catching position.

3. In a lock, the combination of a frame; a latch pivoted in said frame and furnished with a horizontal way and with a catch; a sliding bolt to slide along said way and provided with a stop; a stop on said frame above the way to intercept the bolt to prevent the latch from rising when the bolt is in locking position; a ward pivoted to the bolt under the catch carried by said latch, and furnished with a catch to engage said latch-carried catch; a spring to normally hold the ward in catching

position; and a dog to normally engage the bolt to intercept the stop thereof.

4. In a lock, the combination of a pivoted latch furnished with a way; a bolt to slide in said way and furnished with a stop; and a spring-pressed dog pivoted to said latch to normally engage said bolt and intercept the said bolt-stop.

5. In a lock, the combination of a latch furnished with a boltway and with a circular key-shaft way; a cylindrical key-shaft fitted in the key-shaft way and slotted longitudinally from end to end, and furnished with a peripheral groove to correspond with the boltway; a bolt sliding in said boltway and peripheral groove; a key to enter the longitudinal slot to throw the bolt, and furnished with a stop to project outside the slot; and a key-stopping ring on the key-shaft and fitting against the latch to intercept the stop of the key, to stop the key in position for appropriately engaging the bolt.

6. The combination with a latch and a bolt sliding in said latch, of a cylindrical key-shaft to rotate in said latch, and furnished with a peripheral groove to receive said bolt; and a ring around the key-shaft to form a stop to limit the insertion of the key substantially as set forth.

7. The combination of a latch; a bolt sliding on said latch; a key-shaft slotted longitudinally and furnished with a peripheral groove to receive the bolt; a key for the longitudinal slot of the key-shaft to engage the bolt to withdraw it when turned in one direction, and to engage the bolt to expel it from the key-shaft when turned in the other direction; and a catch to normally hold the end of the bolt in the path of the key and release said bolt to allow its expulsion.

8. In a lock furnished with a gravity-latch; a main catch-plate adapted for attachment to the door-post and furnished with a sliding latch-plate.

9. In a lock, the combination of a catch-plate furnished on its side with a stud; a latch-plate furnished with a slot fitted on said stud; and a screw in the stud to hold the latch-plate in position.

10. In a lock, the combination of a catch-plate; a latch-plate at the rear of said catch-plate and furnished with a slot; and a screw inserted through the slot for adjustably securing the latch-plate on the catch-plate.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, in the State of California, this 8th day of October, 1900.

AUGUSTUS NEWELL.

Witnesses:

JAMES R. TOWNSEND,  
FRANCIS M. TOWNSEND.