

(No Model.)

W. T. W. CURL.  
SLIDING DOOR LOCK.

No. 516,592.

Patented Mar. 13, 1894.

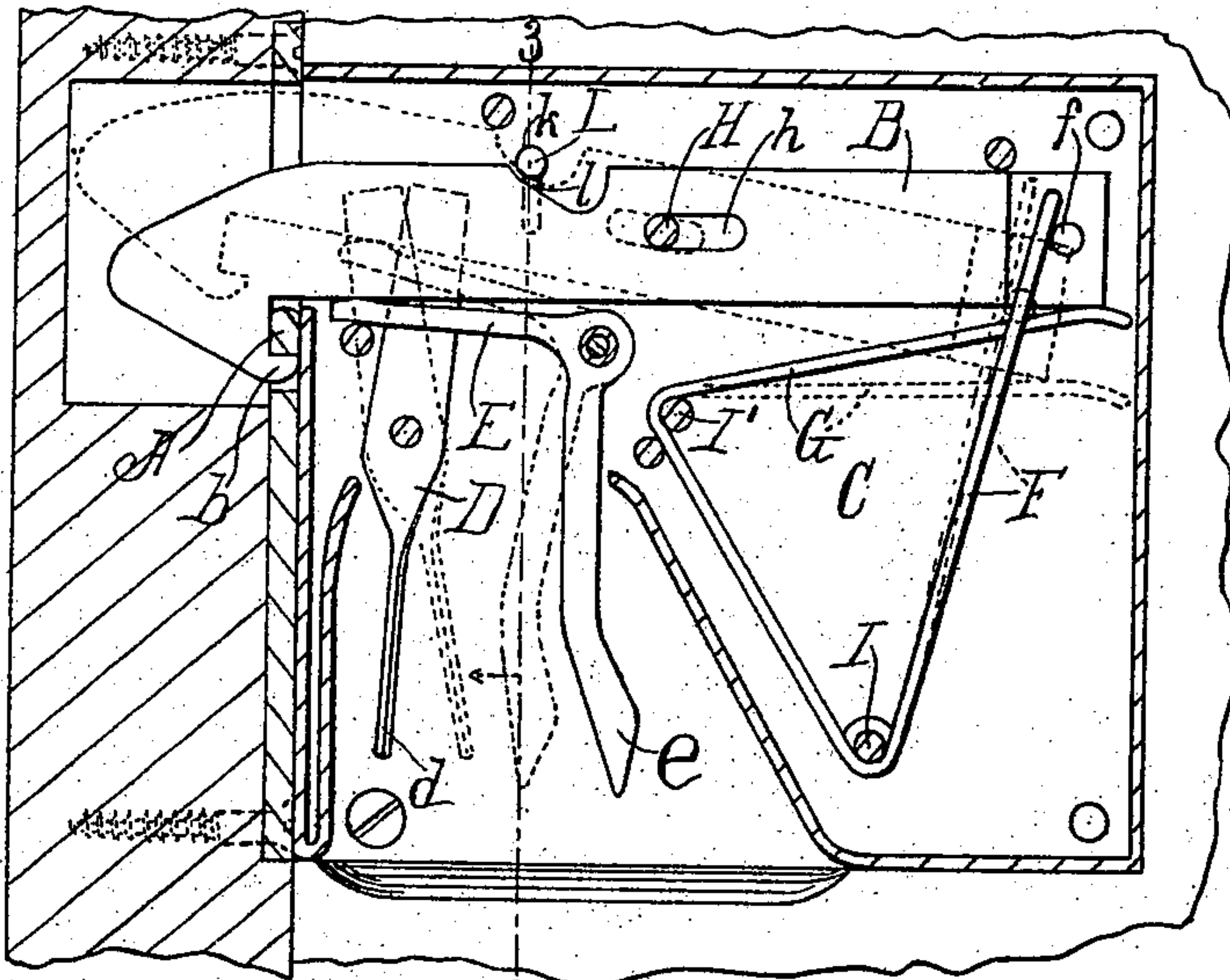


Fig. 1.

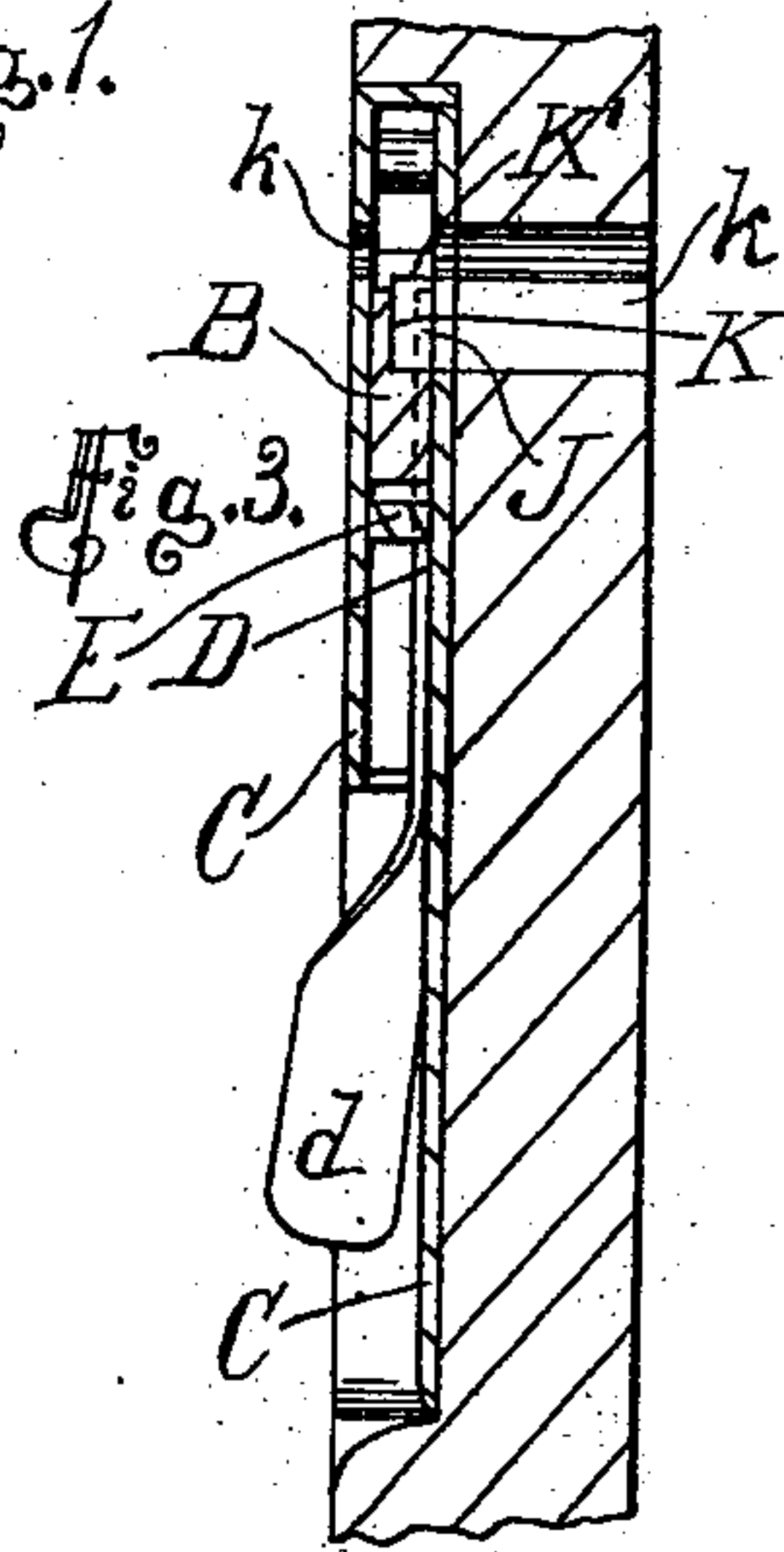


Fig. 3.

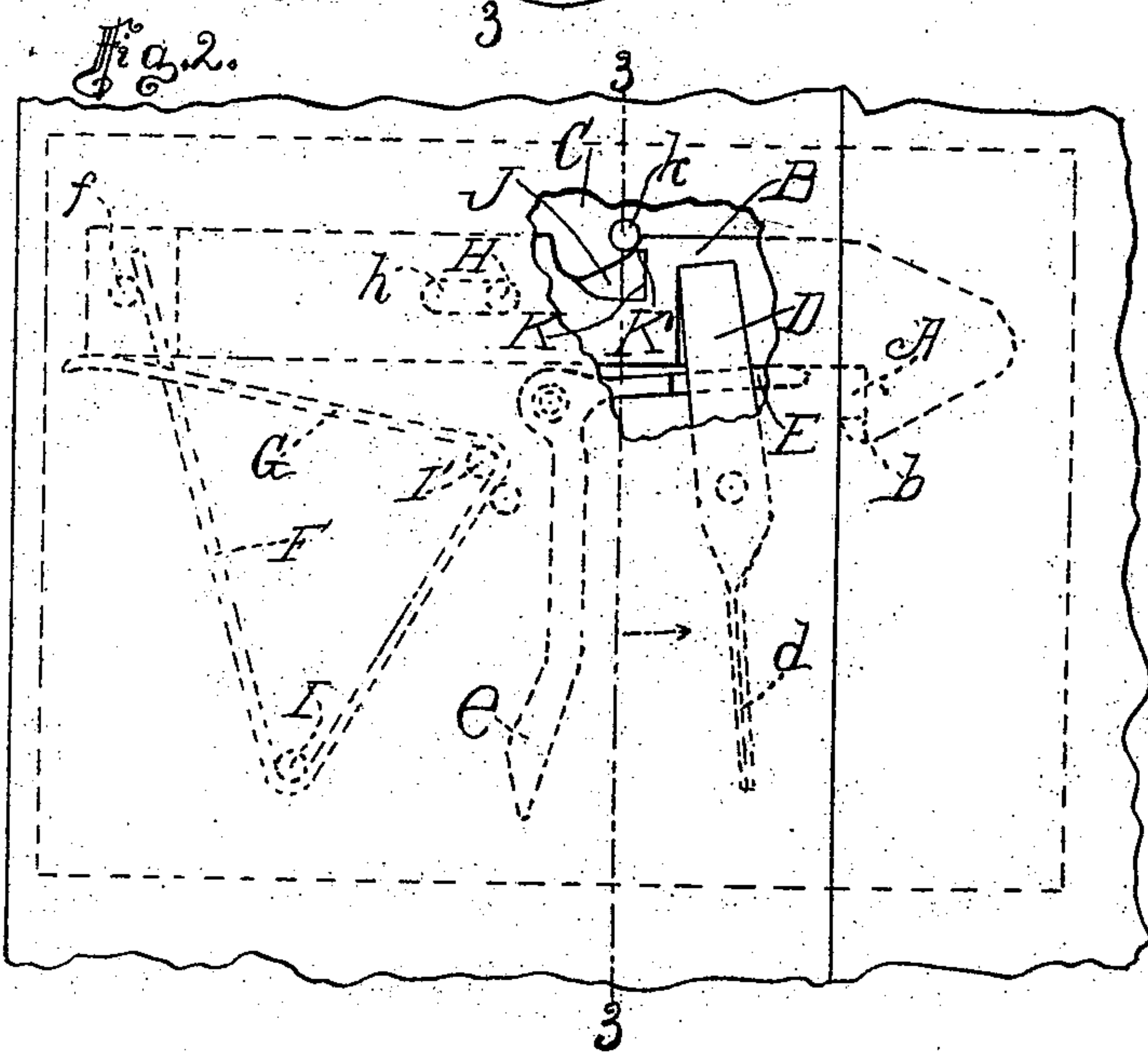


Fig. 2.

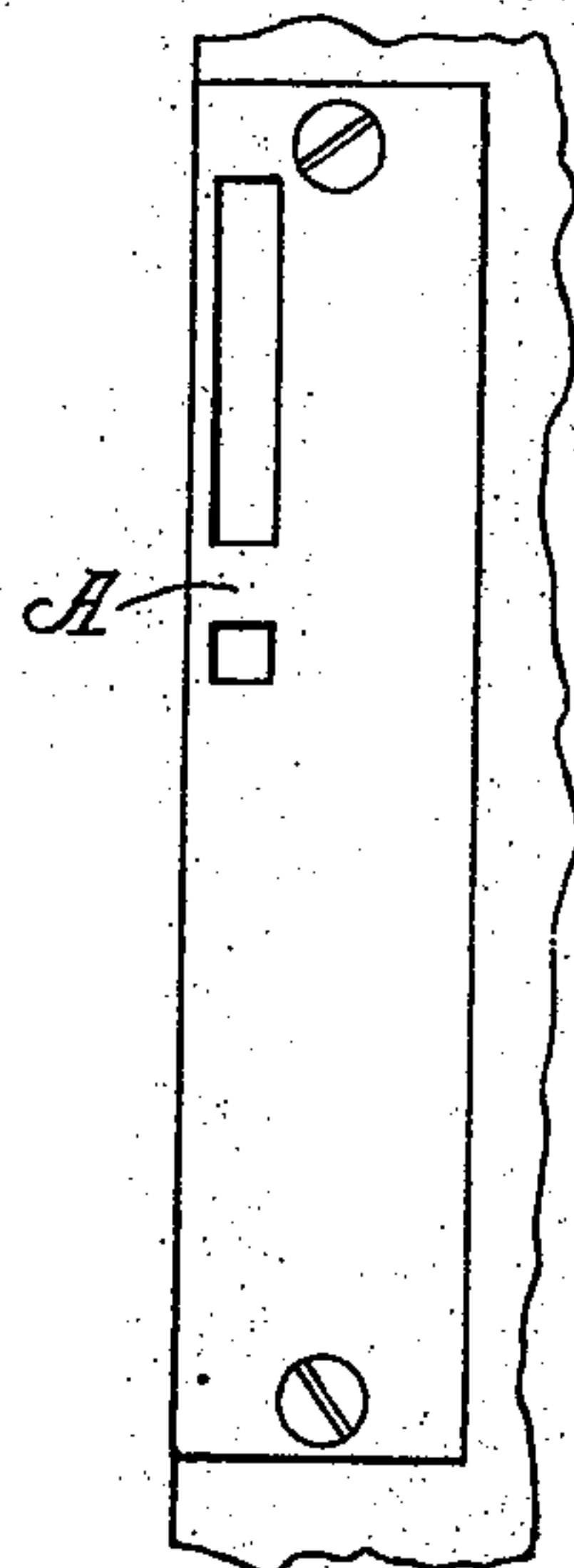


Fig. 4.

Witnesses.

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# UNITED STATES PATENT OFFICE

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## SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 516,592, dated March 13, 1894.

Application filed October 9, 1893. Serial No. 487,546. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. W. CURL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Latch and Lock for Elevator-Doors and other Sliding Doors, of which the following is a specification.

The object of my invention is to provide a latch and lock for elevator doors and other sliding doors, which, while convenient of operation, is so arranged that it locks the door against both lateral and vertical movement and thus secures the door against being unlocked by lifting the door.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of my improved latch and lock in position locking the elevator door in place. The key is shown inserted in the lock ready to unlock the door. This view is taken from the inside of the elevator and the inner plate is removed and the door jamb is sectioned to expose the operative parts of the lock. The unlocking position of the parts is shown in dotted lines. Fig. 2 is a view looking from the outside of the elevator, a portion of the door being broken away to expose the part operated on by the key. Fig. 3 is a vertical section cutting through the key-hole. 3—3 Figs. 1 and 2 show the line of section. Fig. 4 is a view of the catch plate.

My invention comprises essentially the combination in a lock provided with a suitable catch A of a sliding bolt B pivoted to the case C of the lock and provided with the recessed hook *b* adapted to hook upon, receive, and partially embrace within its recess notch *b'*, the catch A; a pivoted lever D adapted and arranged to actuate the bolt longitudinally, to slide it forward to release the hook from the catch A of the lock; means for retracting the bolt against such lever; the pivoted bolt-swinging lever E adapted and arranged to elevate or swing the hook end of the bolt, and means adapted and arranged to return or depress the hook end of the bolt against the action of the bolt-swinging lever.

The means employed for retracting the bolt consists in a spring F secured to the case of the lock and acting against the projection or lug *f* at the rear end of the bolt. The means

for returning the hook end of the bolt against the action of the bolt-swinging lever consists of the spring G arranged to press upward against the under side of the rear end of the bolt; thus, in conjunction with the pivot H, operating to force the hook end of the bolt into engagement with the catch A. The pivot H is fixed to the lock case C and passes through the slot *h* arranged lengthwise the bolt, thus allowing longitudinal play of the bolt within the lock. The springs F and G are preferably made of one piece of wire secured to the case by suitable means such as the lugs I, I'.

In order to adapt my lock to be unlocked from the outside of the door I provide the outer side of the bolt B with a key receiving recess J thereby forming on the bolt, the two key receiving shoulders K, K', which are arranged with such relation to the key hole *k* and key bit *l* that when the key L is inserted into the lock and rotated it will first engage the transverse key-receiving shoulder K (which is arranged transverse the bolt) and, operating against such shoulder, will drive the bolt forward against the action of the bolt retracting spring F and upon the further rotation of the key, the bit will engage the longitudinal key-receiving shoulder K' (which extends longitudinally the bolt) and will swing the hook end of the bolt upward out of line with the catch A, thus allowing the door to be slid back.

The bolt sliding and swinging levers are respectively provided with handles *d* and *e* which are simultaneously grasped by the thumb and finger of the operator and thus forced toward each other. The operation of unlocking thus resulting is as follows: The bolt-sliding lever D first forces the bolt forward so as to withdraw the hook *b* from the catch A and then when the hook is fully withdrawn from the catch the bolt-swinging lever E operates to swing the hook end of the bolt away from the catch thus entirely freeing the bolt from the catch. It is impossible to open the door until these two movements above specified have been accomplished for the reason that when latched the hook portion *b* extends under the catch and prevents the bolt from being elevated until it has first been slid forward to withdraw the hook portion *b* from beneath the catch; and after the hook portion



*b* has thus been withdrawn from beneath the catch, the door cannot be slid back until the further movement caused by the bolt-swinging lever raises the hook entirely above the catch into the position shown in dotted lines in Fig. 1. When the bolt has been thus raised so as to clear the catch, the door can be slid back. The key *L*, when inserted in the lock and rotated, produces this duplex action of the bolt as above specified and thus enables the one using the key to open the door from the outside of the elevator.

The front end of the bolt is beveled on its under side so as to automatically rise over the catch when the door is closed.

The pivot *H* serves as a stop to prevent the spring *F* from retracting the bolt too far.

The bolt could be made heavy enough at its hook end to operate by gravity to fall into place to hook upon the catch, thus to dispense with the spring *G* but I deem it best to provide the lock with such spring or an equivalent spring.

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

1. A lock comprising the catch; the case of the lock; the swinging and sliding bolt provided with the longitudinal slot and with the recessed hook *b* adapted to hook upon the catch and partially embrace it within its recess *b'*; the pivot secured to the case and projecting into the slot; means for sliding the bolt forward; means for retracting the bolt, and means for swinging the bolt.

2. In a lock the combination of the sliding bolt pivoted to the case of the lock and adapted and arranged to slide longitudinally and provided at one end with a hook adapted to hook upon the catch of the lock; a pivoted lever adapted and arranged to actuate the bolt longitudinally; means for retracting the bolt against such lever; a pivoted bolt-swinging lever adapted and arranged to swing the hook end of the bolt, and means adapted and arranged to return the hook end of the bolt against the action of the bolt swinging lever.

3. In a lock the combination of the sliding bolt pivoted to the case of the lock and adapted and arranged to slide longitudinally and provided with a transversely arranged key-receiving shoulder and with a longitudinally arranged key-receiving shoulder arranged in conjunction with each other; means for depressing the hook end of the bolt; means for retracting said bolt; the case of the lock provided with a key-hole arranged with relation to the key receiving shoulders and a key provided with a bit arranged with such relation to the key-hole and the shoulders that when the key is rotated in the key-hole the bit will in turn operate upon one shoulder to drive the bolt longitudinally and then upon the other shoulder to swing the bolt upon its pivot.

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Witnesses:

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