

No. 714,458.

Patented Nov. 25, 1902.

L. DALTON & D. CROSS.

LOCK.

(Application filed Apr. 23, 1902.)

(No Model.)

Fig. 1.

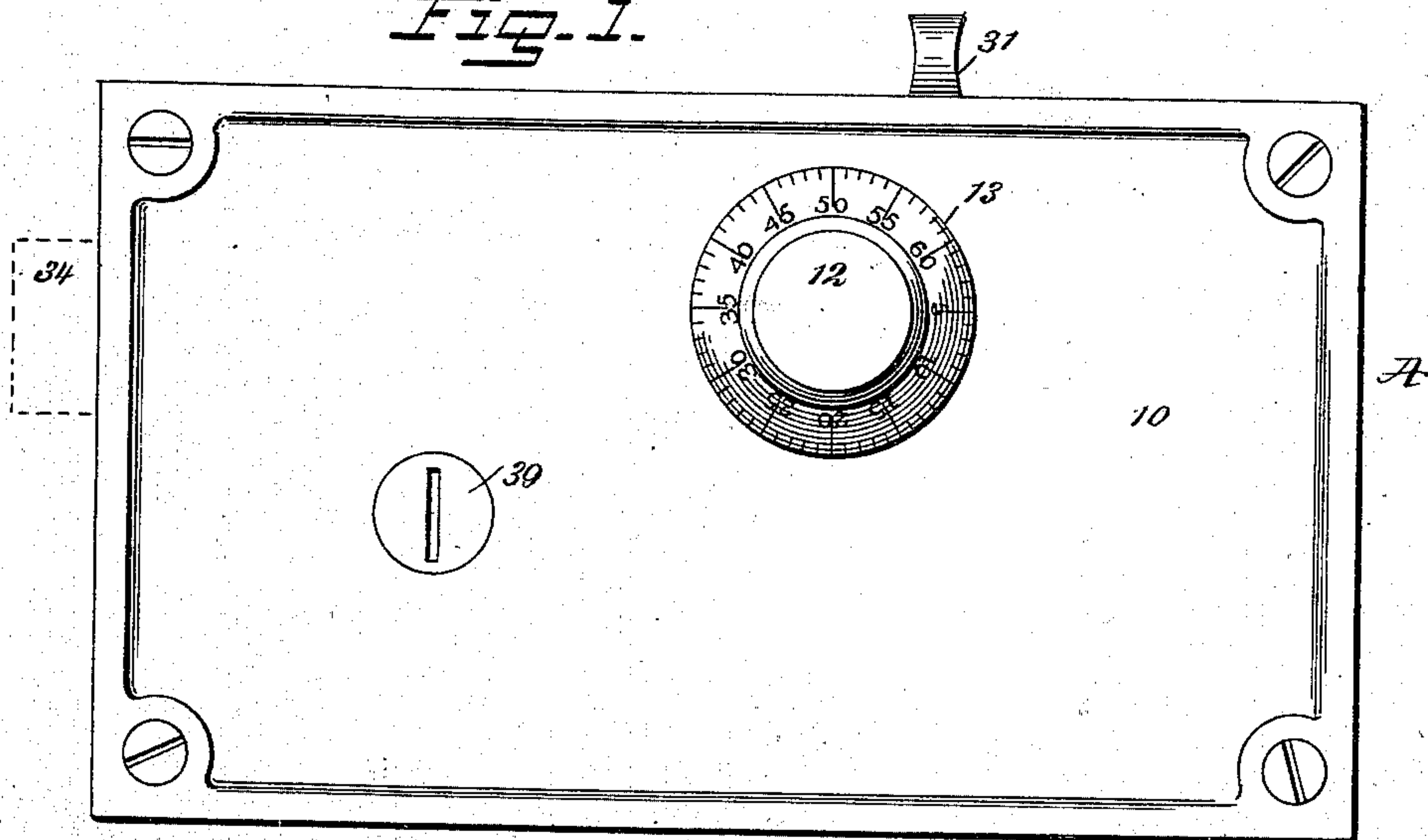


Fig. 2.

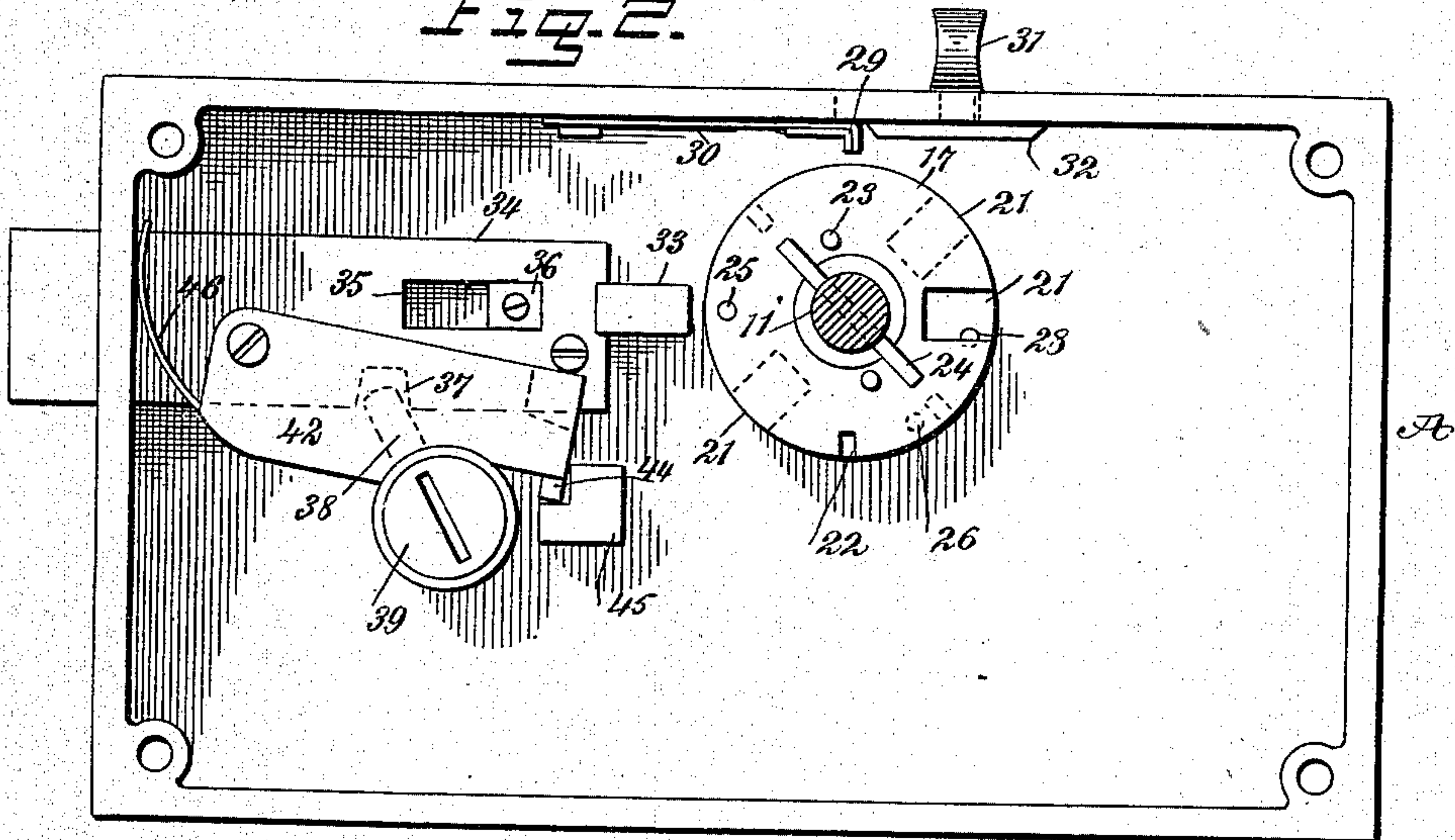
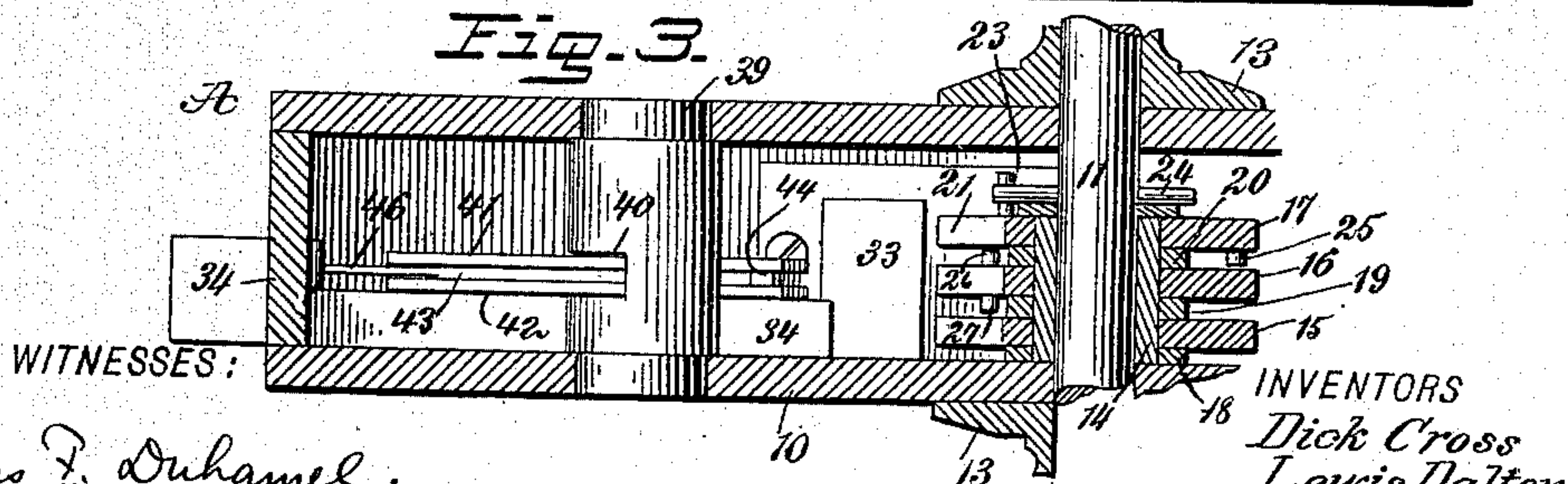


Fig. 3.



WITNESSES:

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LEWIS DALTON AND DICK CROSS, OF SANTO, TEXAS.

LOCK.

SPECIFICATION forming part of Letters Patent No. 714,458, dated November 25, 1902.

Application filed April 23, 1902. Serial No. 104,276. (No model.)

To all whom it may concern:

Be it known that we, LEWIS DALTON and DICK CROSS, citizens of the United States, and residents of Santo, in the county of Palo Pinto and State of Texas, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in combination-locks for doors, safes, bureaus, and the like which is simple in construction and provided with readily-operated means for holding the combination-disks inactive and in position to permit a locking-bolt to be freely operated by a key when so desired, which means will also permit the combination to be set so that the bolt cannot be moved by a key until the disks of the combination have been brought to proper position to permit of an unlocking movement of the bolt, whereby the lock can be used as a combination-lock or as an ordinary lock and will perform both functions in a perfect manner.

The invention consists in the novel construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved lock. Fig. 2 is a side elevation of the lock with the front plate removed and the combination-knob spindle in section, and Fig. 3 is a longitudinal section through a portion of the lock and through the combination-disks therefor.

The casing A of the lock is provided with the usual removable side plate 10, and a spindle 11 is passed through the lock from side to side, turning loosely in the casing. This spindle is shown located at one side or center of the casing near one side edge and is provided at one or both ends with a knob 12. Said spindle also passes through circular face-plates 13, secured upon the exterior side surfaces of the casing A, having the usual scale or combination numbers produced thereon. The spindle 11 also passes through a sleeve 14, located in the casing and fixed to one side of the same, as is shown in Fig. 3, and around said sleeve any desired number of combina-

tion-disks are mounted to loosely turn, three of said disks being illustrated, (designated, respectively, as 15, 16, and 17.) The outer disk 15 of the one nearest the side of the casing is separated from the casing by a washer 18, and similar washers 19 and 20 separate the disks 15 and 16 and the disks 16 and 17. Each disk 15, 16, and 17 is provided with a peripheral recess 21, of any desired depth and size, and a peripheral slot 22, about a quarter of the circle distant from the said recess, as is shown in Fig. 2. The inner disk 17 is provided at its face removed from the other disks with two opposing pins 23, and projections 24 from the spindle 11 extend between the pins 23 and engage therewith as the spindle 11 is turned to revolve the said disk 17. A stud 25 extends from the opposite side of the disk 17 to within a short distance of the opposing disk 16, as is shown in Figs. 2 and 3, and this stud 25 is located opposite the recess 21 in the said disk 17. An outwardly-extending stud 26 is formed upon the face of the disk 16 opposite the disk 17, and the stud 26 is located, as shown in Fig. 2, between the recess 21 in the disk 16 and the slot 22, nearer the said slot than to the said recess. A second stud 27 extends from the opposite face of the disk 16 in alinement with the stud 26, as is shown in Fig. 3, and the stud 27 somewhat closely approaches the inner face of the disk 15, which disk 15 is provided with an outwardly-extending stud 28 between the slot 22 and recess 21 in said disk, but nearer the said recess than the slot. The studs at opposing faces of the disks are so arranged that as the disks are revolved one is brought in the path of the other, and when an engagement is effected between the studs of opposing disks the recesses 21 of the disks will be in alinement and likewise the slots 22.

In the form of the combination shown the spindle 11 is turned a certain distance in one direction, which will move the disk 17, and when the stud 25 of said disk is brought to an engagement with the stud 26 on the disk 16 the recesses 21 of the two disks will be brought in alinement, and when turning the spindle 11, for example, in another direction or in the same direction to a given extent the stud 27 of the disk 16 will be brought in engage-

ment with the stud 28 of the disk 15, and the recess 21 of the disk 15 will then be brought in registry with the recesses of the other disks, and the slots 22 of all of the disks will also be in registry. These slots 22 will be immediately beneath the head 29 of a spring-latch 30, secured to the inner wall of the casing A above the disks, the said head 29 of the latch being adapted to enter the slots 22 in the disks, and thus prevent the disks from turning. The head 29 of the latch 30 is thus brought in engagement with the disks when the lock is to be operated solely by a key.

The spring-latch 30 is operated from the exterior of the casing usually through the medium of a thumb-piece 31, having sliding movement in the casing and connected with a slide 32, located within the casing, which slide when forced between the wall of the casing and the head 29 of the spring-latch 30 will carry the said head of the latch downward to enter the slots 22 in the combination-disks.

When the slots 22 in the combination-disks are in position to receive the head 29 of the latch 30, the alining recesses 21 in the combination-disks will be immediately opposite an extension 33 from the rear end of a locking-bolt 34, which locking-bolt is held to slide in the casing and to project out beyond the same when the bolt is in locking position, and the rear extension 33 of the locking-bolt is of such dimensions that it will freely enter the recesses 21 in the combination-disks. When the extension 33 of the locking-bolt thus enters the recesses 21, the bolt can be drawn inward to unlocking position; but when the unrecessed portions of the combination-disks are presented to the rear extension 33 of the locking-bolt 34 said bolt cannot be drawn inward, but must remain in its outer or locking position. (Shown in Fig. 2.) The locking-bolt 34 may be guided in its movement in any suitable or approved manner. As shown, the bolt is provided with a longitudinal slot 35, in which slot a block 36 extends, said block being secured to the casing of the lock, as is illustrated in Fig. 2, and in the lower edge of the locking-bolt 34 a recess 37 is made.

The recess 37 in the lower edge of the locking-bolt 34 receives a tongue 38 from an end portion of a key-sleeve 39, mounted to turn at its ends in the side plates of the casing, which sleeve will receive a key at either end, and this key-sleeve is provided with a circumferential recess 40, which extends nearly around the same and is in communication with the key-bore of the sleeve.

Two guide-plates 41 and 42 are secured to one face of the locking-bolt 34, as is shown in Figs. 2 and 3, and these plates enter the circumferential recess or slot 40 in the key-sleeve 39. Between these two plates 41 and 42 a locking-plate 43 is located, pivoted at its outer end and provided with an extension 44 at its inner end, which extension is normally held

in engagement with an angular post 45 (shown in Fig. 2) through the medium of a spring 46, attached to the outer end of the locking-plate 43 and exerting downward tension upon the extension or head 44 of the said plate at its opposite end. When the head 44 of the locking-plate is in engagement with the post 45, the locking-bolt will be held in its outer or locking position, as is shown in Fig. 2; but if the combination-disks be set to permit the inward movement of the bolt 34 and a proper key is introduced into the key-sleeve 39 and turned a bit of the said key will engage with the locking-plate 43 and force the said plate away from the post 45 to such an extent that the head 44 of the locking-plate will clear the said post, and at the same time as the key is turned the locking-sleeve 39 will be turned also, and its tongue 38 being in the recess 37 of the locking-bolt 34 will move the said bolt inward or outward, as may be required. Thus it will be observed that the lock, although simple in its construction, may be used as a combined combination and key lock or may be used for any length of time as a key-lock only. It will also be understood that the construction of the combination mechanism may be changed without departing from the spirit of the invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a lock, the combination with a casing, a series of combination-disks and means for turning the same, each disk having a peripheral recess, said recesses being adapted to register with each other at one point in the revolution of the disks, of a sliding locking-bolt having a rear extension adapted to enter the recesses in the combination-disks when said recesses are in registry, a key-sleeve mounted to revolve and provided with a tongue entering a recess in the bolt, guard-plates secured to the bolt and extending beyond its recessed portion, a spring-controlled locking-plate pivoted between the guard-plates and provided with a downwardly-projecting head extension at its free end, and a stud with which the head of the locking-plate normally engages, which contact prevents the inward movement of the locking-bolt, said locking-plate being carried out of engagement with said stud when a proper key is introduced and turned in the key-sleeve, as set forth.

2. A lock, comprising a casing, a series of combination-disks, means for turning the same, each disk having a peripheral recess and a peripheral slot, which recesses and which slots are adapted to respectively register with each other at one point in the revolution of the disks, a spring-latch adapted to enter the slots in the combination-disks and hold them from turning, a slide extending out beyond the casing for operating the spring-latch, a sliding locking-bolt having a rear ex-

tension adapted to enter the recesses in the combination-disks when said recesses are in registry, a key-sleeve mounted to revolve and provided with a tongue entering a recess in the bolt, guard-plates secured to the bolt and extending beyond its recessed portion, a spring-controlled locking-plate pivoted between the guard-plates and provided with a head extension at its rear or free end, and a stud with which the head of the locking-plate normally engages, said contact preventing the forward movement of the locking-bolt, said locking-plate being carried out of engagement with said stud when a proper key is introduced and turned in the key-sleeve, as described.

3. In a lock, the combination with a sliding bolt having an extension, and means for operating the said bolt, of a spindle, a plurality of combination-disks mounted upon the spindle, and each provided with a recess and a slot in its periphery, means for operating one of the disks from the spindle, means for operating the disks one from the other, a spring-latch for engaging the slots of the disks, and a sliding thumb-piece for operating the latch, as set forth.

4. In a lock, the combination with a sliding bolt, a plurality of disks having recesses with which one end of the bolt is adapted to engage, and means for turning the disks to bring their recesses into register, of a recessed key-sleeve having a tongue for engaging the bolt and entering the recess of the key-sleeve to operate it, a key-operated locking-plate car-

ried by the bolt, and a stop with which the locking-plate engages, as set forth.

5. In a lock, the combination of a sliding bolt having an extension, a plurality of combination-disks each provided with a recess, means for turning the disks to bring the recesses of the disk into register and opposite the extension of the bolt, means for locking the disks in position, a key-sleeve having a circumferential recess and provided with a tongue for engaging the bolt to operate it, a pivoted and spring-pressed locking-plate carried by the bolt and entering the recess of the key-sleeve, and a stop with which the free end of the locking-plate engages, as set forth.

6. In a lock, the combination with a sliding bolt having a recess in its lower edge, of a key-sleeve having a tongue for entering the recess of the bolt, and provided with a circumferential recess, guide-plates secured to one face of the bolt and entering the circumferential recess of the key-sleeve, a pivoted and spring-pressed locking-plate mounted between the guide-plates and provided with a downwardly-projecting extension at its free end, and a post with which the extension of the locking-plate engages, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEWIS DALTON.
DICK CROSS.

Witnesses:

W. S. LANHAM,
T. M. STUART.