No. 676,989. Patented June 25, 1901.

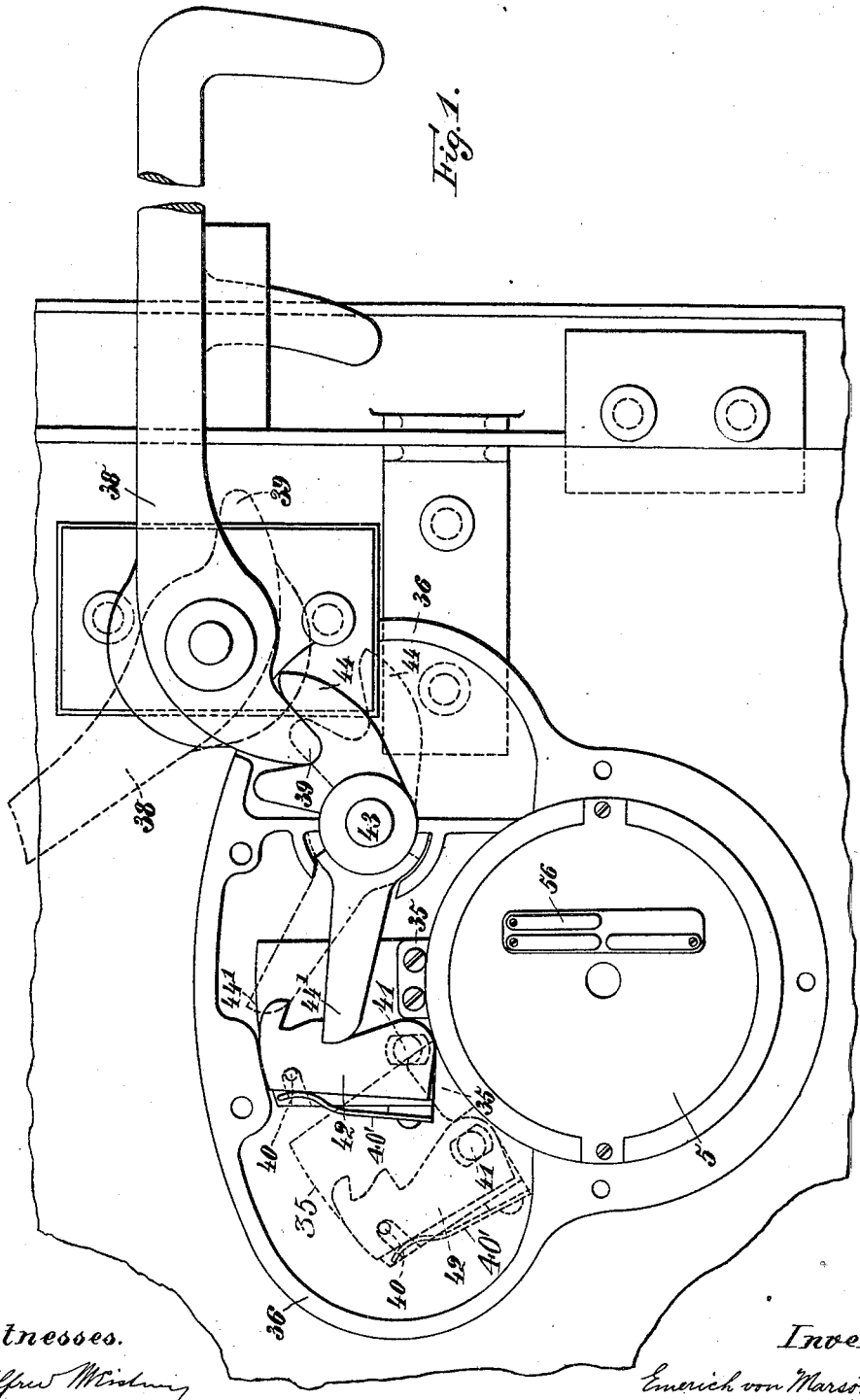
E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 1.

Fig. 1.



Witnesses.
Alfred Mistring
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eustace W. Hopkins
Atty.

No. 676,989. Patented June 25, 1901.

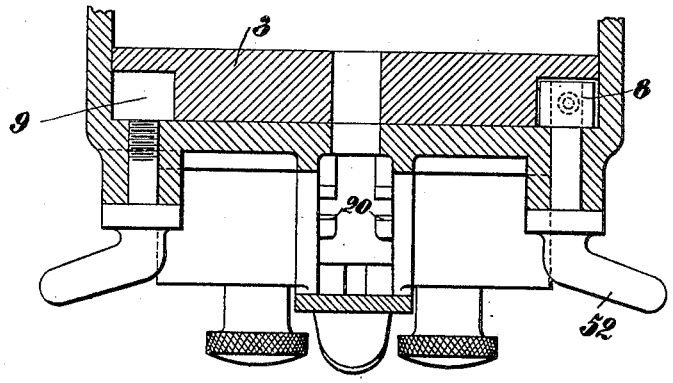
E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 2.

Fig. 1a.



Witnesses:
Alfred Whitney
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eustace W. Hopkins
Atty.

No. 676,989. Patented June 25, 1901.

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CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 3.

Fig. 2.

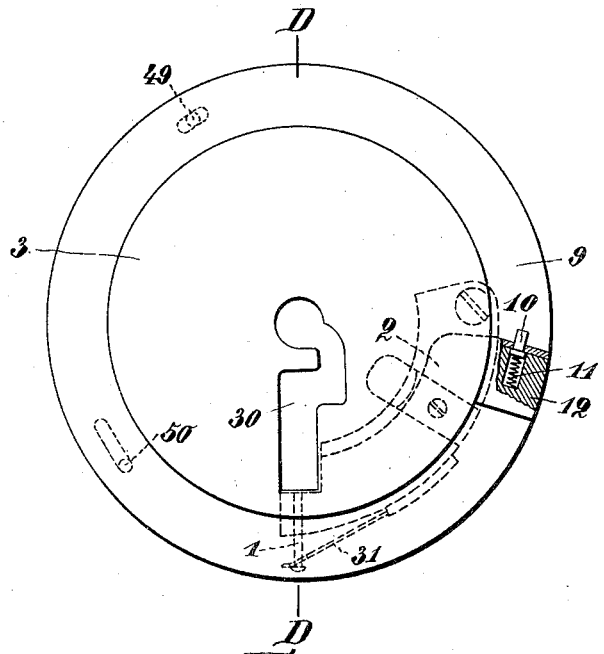


Fig. 3.

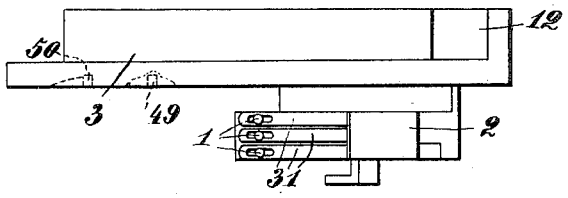
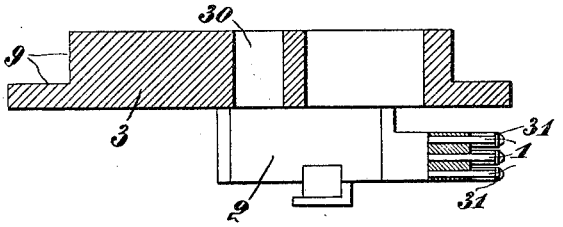


Fig. 4.



Witnesses:
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eduard W Hopkins
Atty.

No. 676,989. Patented June 25, 1901.

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CYLINDER LOCK.

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(No Model.) 9 Sheets—Sheet 4.

Fig. 5.

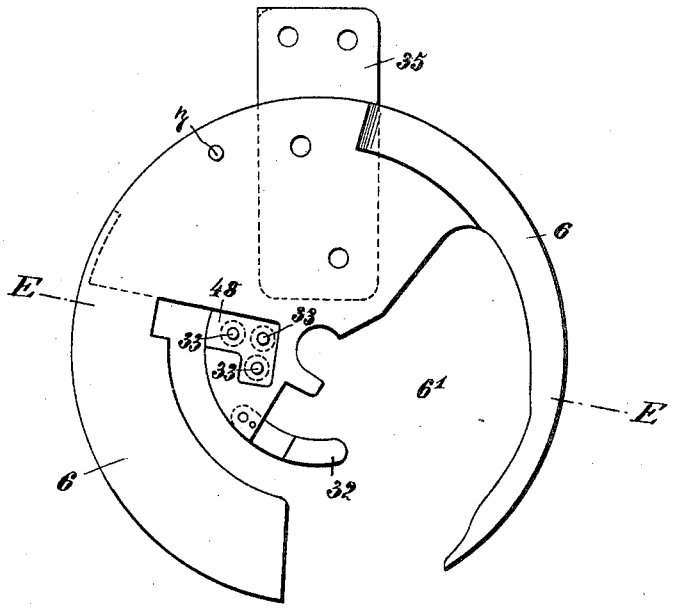


Fig. 6.

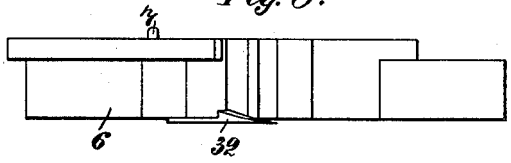
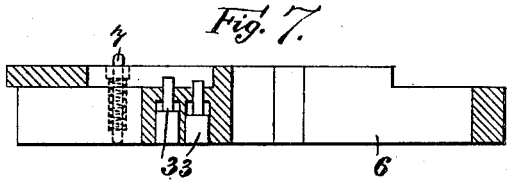


Fig. 7.



Witnesses:
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eustace W. Hopkins
Atty.

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CYLINDER LOCK.

(No Model.) (Application filed Aug. 29, 1899.)

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Fig. 8.

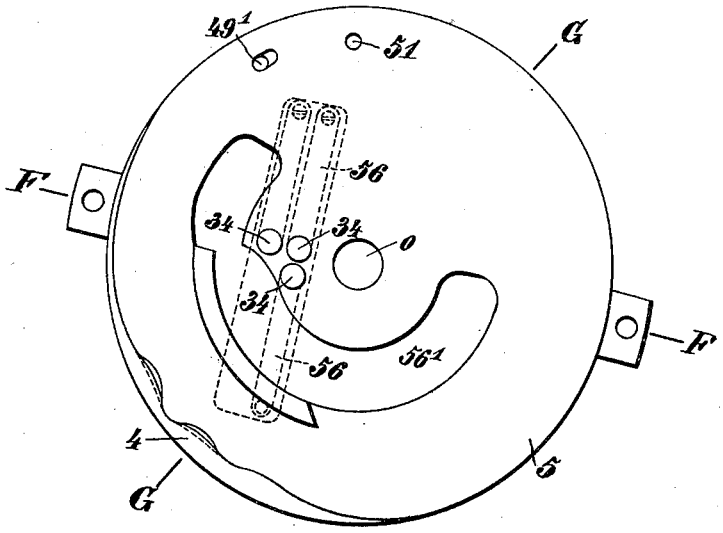


Fig. 9.

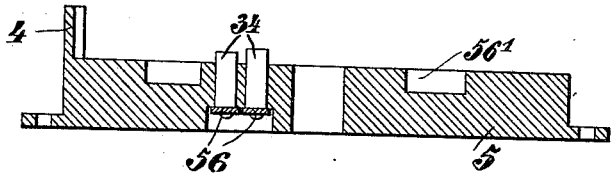
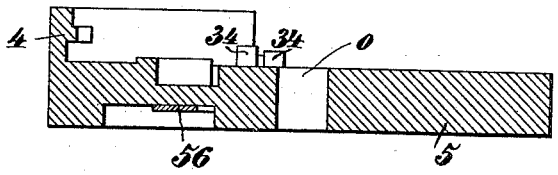


Fig. 10.



Witnesses:
Alfred Wilding
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Enoch W. Hopkins
Atty.

No. 676,989. Patented June 25, 1901.

E. VON MARSÓVSZKY.

CYLINDER LOCK.

(No Model.) (Application filed Aug. 29, 1899.)

9 Sheets—Sheet 6.

Fig. 11.

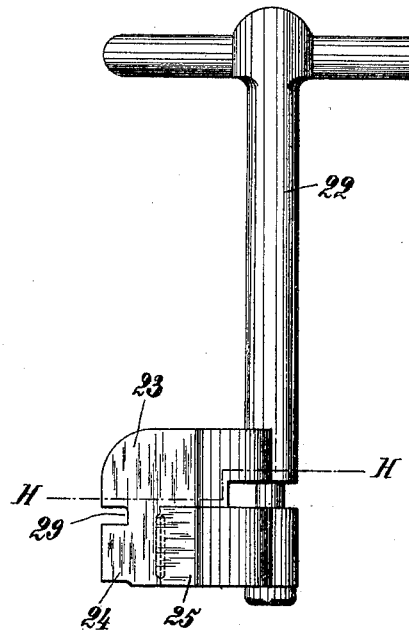


Fig. 12.

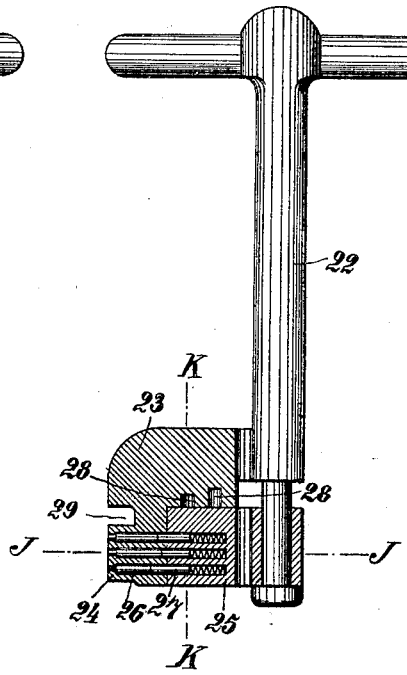


Fig. 13.

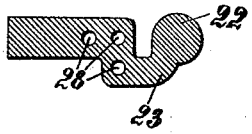


Fig. 14.

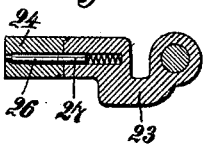
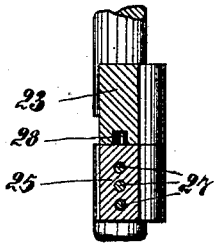


Fig. 15.



Witnesses:
Hugo Bohme.

Inventor:
Emerich von Marsóvszky
by: Lutke & Kopmeyer
Atty.

No. 676,989. Patented June 25, 1901.

E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 7.

Fig. 16.

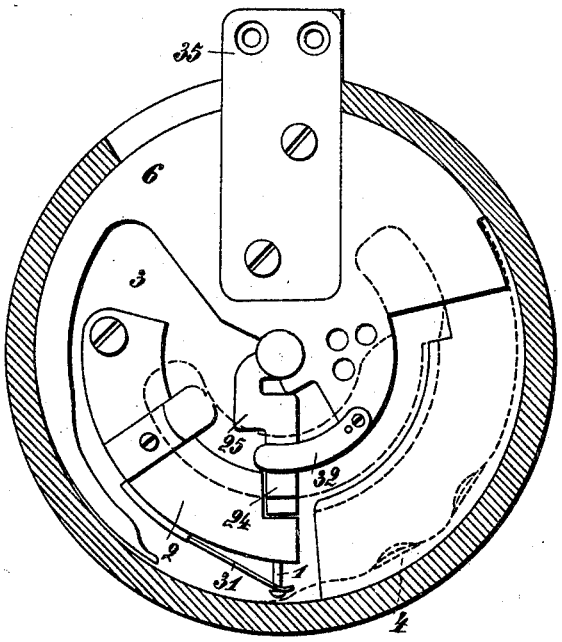
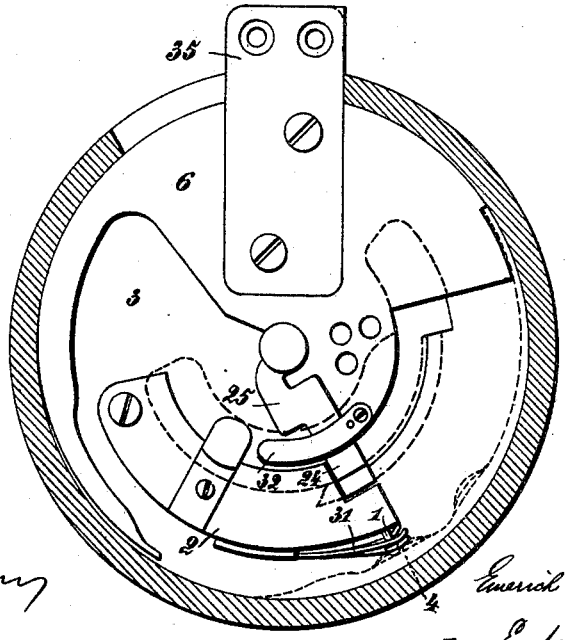


Fig. 17.



Witnesses:
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eustace W. Hopkins
Atty.

No. 676,989. Patented June 25, 1901.

E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 8.

Fig. 18.

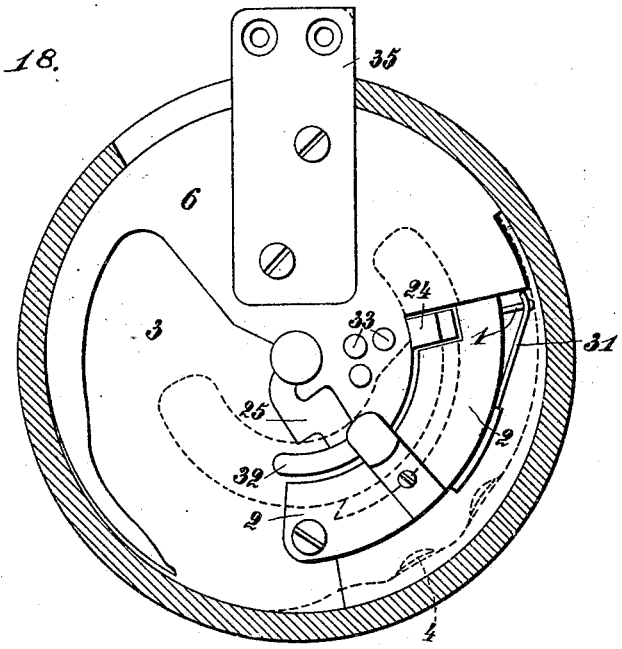
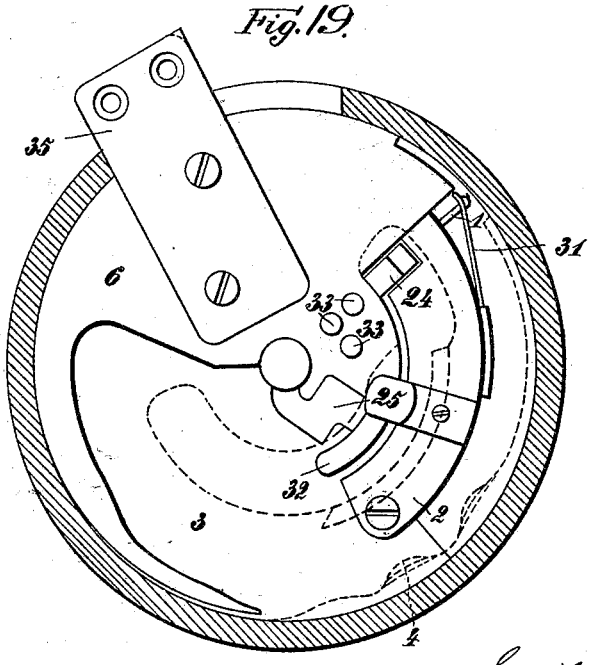


Fig. 19.



Witnesses:
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Enstace W. Hopkins
Att'y.

No. 676,989. Patented June 25, 1901.

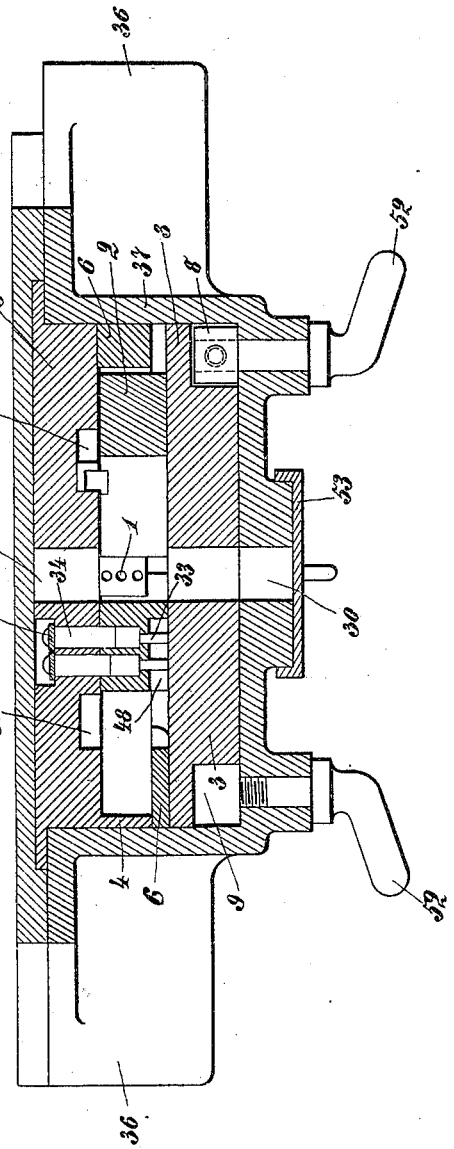
E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Aug. 29, 1899.)

(No Model.) 9 Sheets—Sheet 9.

Fig. 20.



Witnesses:
Alpheus Wirkus
Hugo Böhme.

Inventor:
Emerich von Marsóvszky
by: Eustace W. Hopkins
Att'y.

UNITED STATES PATENT OFFICE.

EMERICH VON MARSÓVSZKY, OF BUDAPEST, AUSTRIA-HUNGARY.

CYLINDER-LOCK.

SPECIFICATION forming part of Letters Patent No. 676,989, dated June 25, 1901.

Application filed August 29, 1899. Serial No. 728,922. (No model.)

To all whom it may concern:

Be it known that I, EMERICH VON MARSÓVSZKY, a subject of the Emperor of Austria-Hungary, residing at Budapest, Austria-Hungary, have invented certain new and useful Improvements in Cylinder-Locks, of which the following is a full, clear, and exact description.

The present invention relates to a simplified form of cylinder-lock having a compound key; and it consists of a lock-housing containing only two rotary cylinders, the key-bit having an immovable and a movable bit-section.

The device consists of the details of construction hereinafter set forth, and particularly pointed out in the claims.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar characters of reference denote similar parts throughout the several views.

Figure 1 is a rear elevation of the lock with the back cover removed, showing the parts locked and indicating the unlocked position of the same in dotted lines, the said lock being applied for use in connection with railway vans or trucks. Fig. 1ª is a vertical section through the locking-disk and part of the housing; Fig. 2, a plan of the locking-disk; Fig. 3, a front elevation of the same; Fig. 4, a section on line D D of Fig. 2; Fig. 5, a plan of the bolt-disk; Fig. 6, a front elevation of the same; Fig. 7, a section on line E E of Fig. 5; Fig. 8, a plan of the base-plate; Fig. 9, a section on line F F of Fig. 8; Fig. 10, a section on line G G of Fig. 8; Fig. 11, an elevation of the key; Fig. 12, a vertical section through the bit; Fig. 13, a horizontal section through the bit on the line H H of Fig. 11; Fig. 14, a section on line J J of Fig. 12; Fig. 15, a section on line K K of Fig. 12; Fig. 16, a plan showing the operation of the parts when the key is inserted into the keyhole; Fig. 17, a similar view showing the position of the parts at the unlocking of the section of the bit; Fig. 18, a similar view showing the bit about to operate the bolt-cylinder, and Fig. 19 a similar view showing the bolt-cylinder turned and unlocked. Fig. 20 is a vertical section showing the arrangement of the cylinders.

In order to render the present specification as brief and explicit as possible, the key will first be described, then the various cylinders in the order of their arrangement, and finally the operation of the parts with reference to Figs. 16 to 20, inclusive.

Referring to Figs. 11 to 15, the key consists of the shaft 21, having thereon a stationary bit 23, with a downward projection 24, overlapping the movable bit-section 25 and adapted to be locked to the latter by means of a series of horizontally-disposed spring-pressed bolts 26 27. These bolts are of various lengths, so that when a certain set of operating-pins are inserted at the front end of the stationary bit, so as to press the bolts 26 back, the one bit-section may be separated from the other as soon as the lines of juncture of the sets of bolts 26 27 coincide with the line of juncture of the bits, as will be evident. The stationary bit-section 23 contains the vertical recesses 28, adapted, as hereinafter set forth, to operate the bolt-disk-releasing pins or bolts after the sections have been separated in the lock.

The base-plate of the lock is illustrated in Figs. 8 to 10 and is provided with a cam-surface 4, adapted to operate a series of spring-pins mounted on the locking-disk to disengage the bit-sections, as hereinafter set forth. The said base-plate 5 further contains the pins 34, having springs 56 to press them into recesses of the locking-disk and to retain the said latter disk in the locked position. The position and arrangement of these pins 34 correspond to those of the bolts or pins 33 of the bolt-disk 6, Figs. 5 to 7, and also to the location of the recesses 28 in the stationary or rigid bit-section 23. The said base-plate has, further, a suitable recess 56′ to allow of the proper movement of the rigid bit-section and a central boring 0 for the shaft of the key. Next to the base-plate is mounted the bolt-disk 6, having the bolt 35 to lock the door or for other purposes. This disk is illustrated in Figs. 5 to 7. It contains a suitable recess 6′ to allow of the proper movement of the means for unlocking the bit-sections described hereinafter. It further contains the bolts 33 to coact with the bolts 34 by means of the key-bit and release the said bolt-disk to allow the bolt 35 to be turned, the said

bolts 33 being located in a recess 48 to allow of the movement of the key-bit to operate the bolts in a direction parallel to the axis of the key-shaft, and a spring-catch 32 to lock and retain the movable bit while the rigid bit is being turned further, and with it the bolt 35. Above the bolt-disk 6 is the locking-disk 3, (illustrated in Figs. 2 and 4,) said disk having the keyhole 30 and a downward extension 2, carrying horizontally-disposed flat springs 31, having substantially radially arranged pins 1, the backs of which engage the cam-surface 4, Fig. 8, by means of which as the key is turned, taking with it the disk 3, the said pins are forced into the orifices at the end of the rigid bit and push back the bolts 26 and 27 to allow the bit-sections to part. In the bolt-disk 6 is further mounted, close to the periphery thereof, a spring-pressed pin 7, extending through the thickness of the disk and projected out at the side of the same adjacent to the disk 3 by means of a spring. When the lock is closed, the depression 49 of disk 3, having slanting surfaces leading down to it, stands over the pin 7, which thus lies in the said depression and out of engagement with the depression 49′ of the plate 5. When the key is inserted into the lock and the disk 3 turned, which takes place first of all, the slanting surfaces of the depression 49 depress the pin 7 into the orifice 49′ of the base-plate 5, and thus couple the said base-plate 5 and disk 6, so that the latter cannot as yet turn. As the disk 3 continues to turn at a certain point in its rotation the orifice 50, having a one-sided cam-surface leading to its bottom, Fig. 2, comes over the pin 7, allowing the same to rise out of the orifice of the base-plate, and thus releasing the bolt-disk 6, which will thereupon be coupled to the disk 3 and be capable of turning with this latter to unlock the door.

The device operates in the following manner: Referring to Figs. 16 to 20, the key is inserted and the bit engages the cylinder 3, turning it and with it the spring-pressed pins, 1, the backs of which are brought into contact with the cam-surface 4 of the base-plates which surface extends up into the path of movement of the lug 2, carrying the said spring-pins 1. The action of the cam 4 causes the bit-sections to be unlocked, the movable section 25 engaging under the catch 32, whereby it is coupled to the disk 6, which carries said catch. On continuing to turn the key the disk 3 continues to rotate with the rigid bit until the orifice 50 comes over or in alinement with the spring-pressed pin 7, which latter then immediately enters the orifice 50 and couples the disk 6 to the moving disk 3, simultaneously uncoupling the same from the base-plate 5. Thus the disk 6 will turn with 3 and the bolt 35 will be operated to unlock the door. Before, however, the disk 6 is free to turn, the key-shaft, and with it the rigid bit, must first be forced farther into the lock, so that the recesses 28 of the bit-section, which have now been brought into alinement with the bolts 33 and 34, may operate to depress these bolts, and thus further uncouple and free the disk 6 from the retaining base-plate.

In order to assure the disk 3 being always arrested in the proper position when the lock has been closed, the said disk is provided with an annular groove 9 at its rim having a spring-pressed laterally-extending bolt 10 mounted therein, Fig. 2, and a nut 8, revoluble on a spindle having handle 52, Fig. 1ª, operable from the exterior of the housing, is provided with a recess into which the said bolt 10 must engage before the disks are in proper position to receive the key. Thus if the nut 8 is turned by means of the handle 52 so that the orifice is not in a position to receive the bolt 10 then the disk 3 will stand slightly askew, and the key can neither be inserted farther into nor removed from the lock until the handle of bar 52 has been turned to bring the orifice of the nut 8 into position to receive the spring-pin 10. The latter is merely spring-mounted to allow of sufficient play; but the spring is not thin enough to allow the bolt to be depressed entirely into its housing, and thus enable the lock to be operated when the nut is not in the proper position. As will be seen from Fig. 8, a second orifice 51 is provided in the base-plate 5, its object being to allow the bolt of the lock to be locked in its open position, if so desired, without, however, withdrawing the key from the lock. Thus when the bolt 35 has been turned into its unlocked position the pin 7 will be opposite the orifice 51, but cannot enter the same because the disk 3 is coupled to the disk 6 and the end of said bolt is lying in the recess or orifice 50 of the said disk 3. If, however, the key is partially withdrawn, which may be done, so as to release the bolts 33 and 34, it will be evident that the disks 3 and 6 will be uncoupled and the former may be slightly turned, so that the inclined surface of the orifice 50 will on this slight turn bear on the pin 7 and force the same into the orifice 51, thus locking the bolt 35 of the bolt-disk 6 in its unlocked position. As soon as the key has been turned back and the bolts 33 and 34 again operated to couple the disk 6 and the key-bit, the pin 7 will again reënter the orifice 50, and the lock may be locked again and the key withdrawn.

In Fig. 1 the lock is shown in connection with the door-fastening hook of a railway-van. The bolt 35 is provided with a spring-mounted ratchet-cam 42, guided by slots on pins 40 41 and pressed forward by means of its spring 40′. A fork 44 to receive the end 39 of the pivotally-supported hook 38 is pivotally mounted at 43 and carries an arm 44′, extending toward the cam 42 and adapted to engage with the teeth of the said cam, by means of which the hook is held locked in the fastened position, shown in full lines in Fig. 1. When the bolt 35 is turned by means of the

key into the position shown in dotted lines in Fig. 1, the arm 44′ is released and the hook of the van-door may be unfastened. On relocking the van the arm 44′ will pass under the retaining-teeth of the cam 42, owing to the yielding of the spring 40′ of the same. All the above-described parts are inclosed in an upper auxiliary housing, (indicated at 36.)

I claim as my invention—

1. In a cylinder-lock, the combination of a base-plate a superposed bolt-cylinder and a superposed locking-cylinder, a key having a compound bit consisting of two sections, horizontal spring-pressed bolts to lock said sections together, the ends of said bolts being accessible from the end of the bit, a series of presser-pins, mounted on the locking-disk and a cam on the base-plate mounted in the path of movement of said presser-pins and adapted to actuate the same against the bit-bolt ends, and means for locking the bolt-cylinder to the base-plate until the key-bit is uncoupled, and for locking the bolt-cylinder to the locking-cylinder as soon as the detent-bolts of the said bolt-cylinder have been disengaged from the same by the stationary bit-section substantially as described.

2. In a cylinder-lock the combination of superposed base-plate, bolt and locking cylinders, a key having a compound bit with two sections, one being rigidly connected to the key-shaft and the other pivotally mounted and longitudinally movable thereon, a series of spring-pressed bolts at right angles to the key-shaft to retain the two bit-sections locked together, said bolt ends being accessible from the end of the bit, a series of spring-pressed pins to engage with and operate said bit-bolts, said pins being mounted on the locking-cylinder, a stationary cam mounted in the path of movement of the said pins to operate the same when the locking-cylinder is turned and means for disengaging the bolt-cylinder from the base-plate when the bit-sections have been parted, in the manner and for the purpose substantially as described.

3. In a cylinder-lock, the combination of superposed base-plate, bolt and locking cylinders and a key having two bit-sections as specified, means for locking the said sections together and means in connection with the locking-cylinder and the base-plate to disengage said bit-sections when the locking-cylinder is turned, means for releasing the bolt-cylinder from the base-plate and locking the same to the locking-cylinder after the bit-sections have been separated and means for retaining the bolt-cylinder in the unlocked position when the key is partially withdrawn from the lock substantially as described.

4. In a cylinder-lock having superposed base-plate bolt-cylinder and locking-cylinder and a key having two bit-sections specified, means in connection with the locking-cylinder and base-plate to disengage said bit-sections when the locking-cylinder is turned and to disengage the bolt-cylinder from the base-plate when the key is further turned after the bit-sections have been separated, an annular groove in the locking-cylinder having mounted therein a spring-pressed pin and a nut projecting into the groove and having an orifice to receive the said pin and means for turning the nut on its pivot from the outside of the lock in the manner and for the purpose substantially as described.

5. In a cylinder-lock having superposed base-plate and bolt and locking cylinders, a key having a compound bit consisting of two sections and a set of spring-pressed bolts mounted as specified to retain said bit-sections locked together, means in connection with the locking-cylinder and base-plate to disengage said bit-sections when the locking-cylinder is turned, and to disengage the bolt-cylinder after the sections have been separated and when the key is further turned, a ratchet-like catch or claw on the bolt of the bolt-disk, a tumbler pivoted in proximity thereto and adapted to engage and retain in the closed position a door-hook, in the manner and for the purpose substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EMERICH VON MARSÓVSZKY.

Witnesses:
PAUL BÖLISKEY,
LARS BOIES.