(Model.)

2 Sheets—Sheet 1.

E. P. TEETERS.

LOCK.

No. 272,796. Patented Feb. 20, 1883.

Fig. 1.

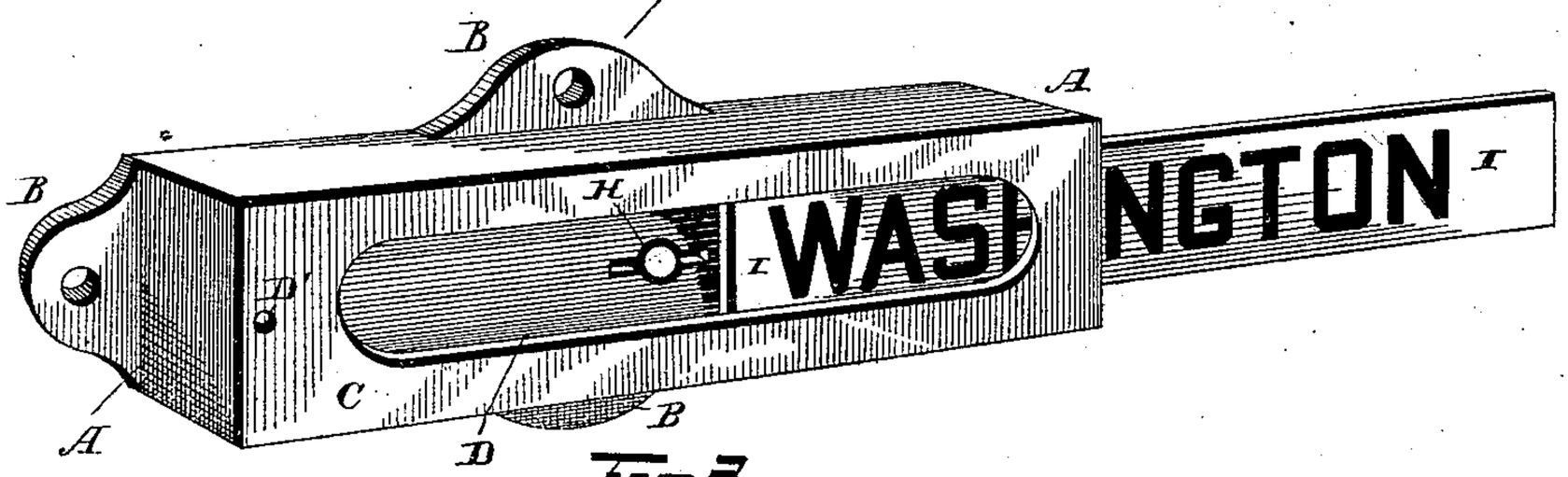


Fig. 2.

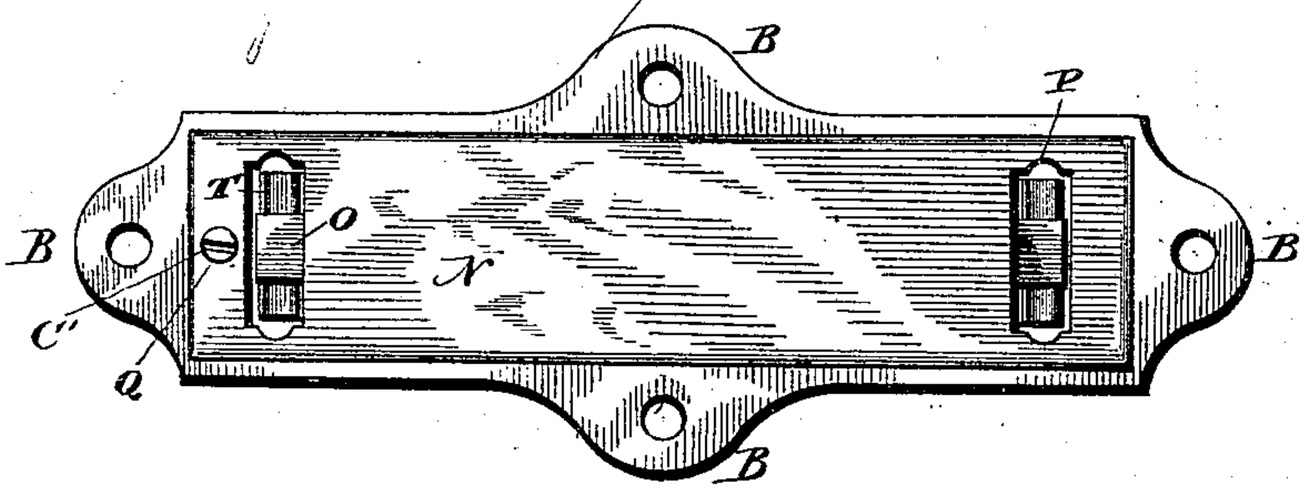


Fig. 3.

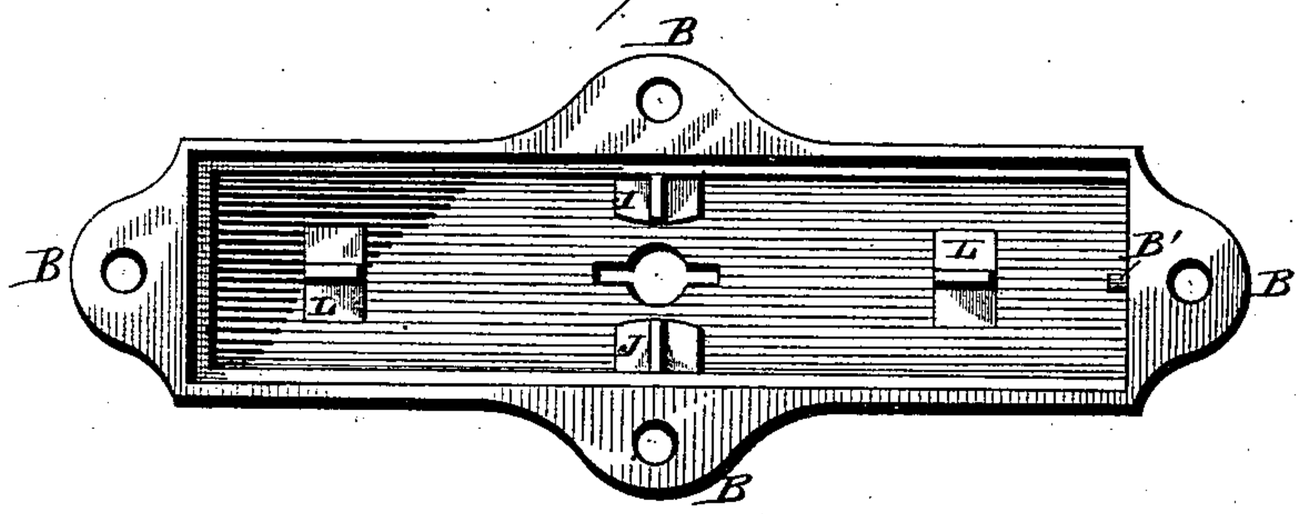
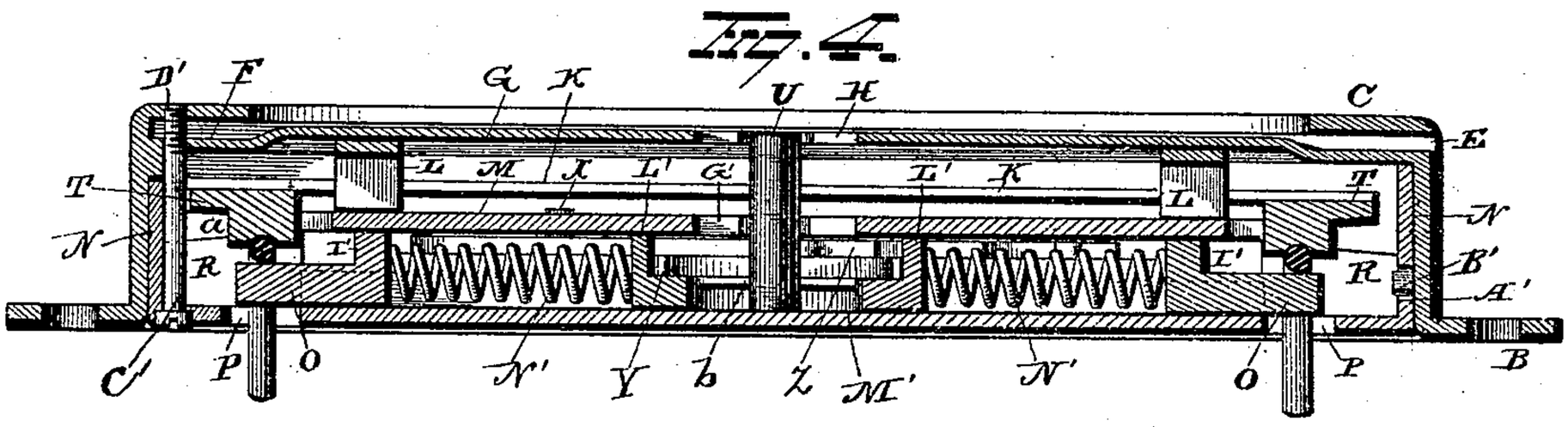


Fig. 4.



WITNESSES

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(Model.) 2 Sheets—Sheet 2.

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No. 272,796. Patented Feb. 20, 1883.

Fig. 5.

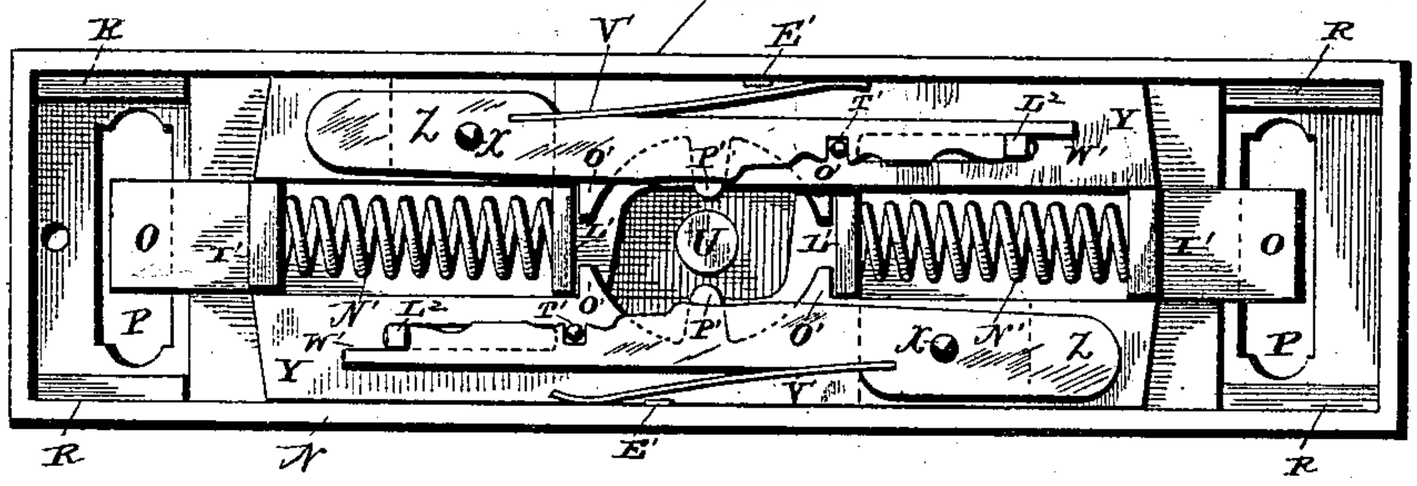


Fig. 6.

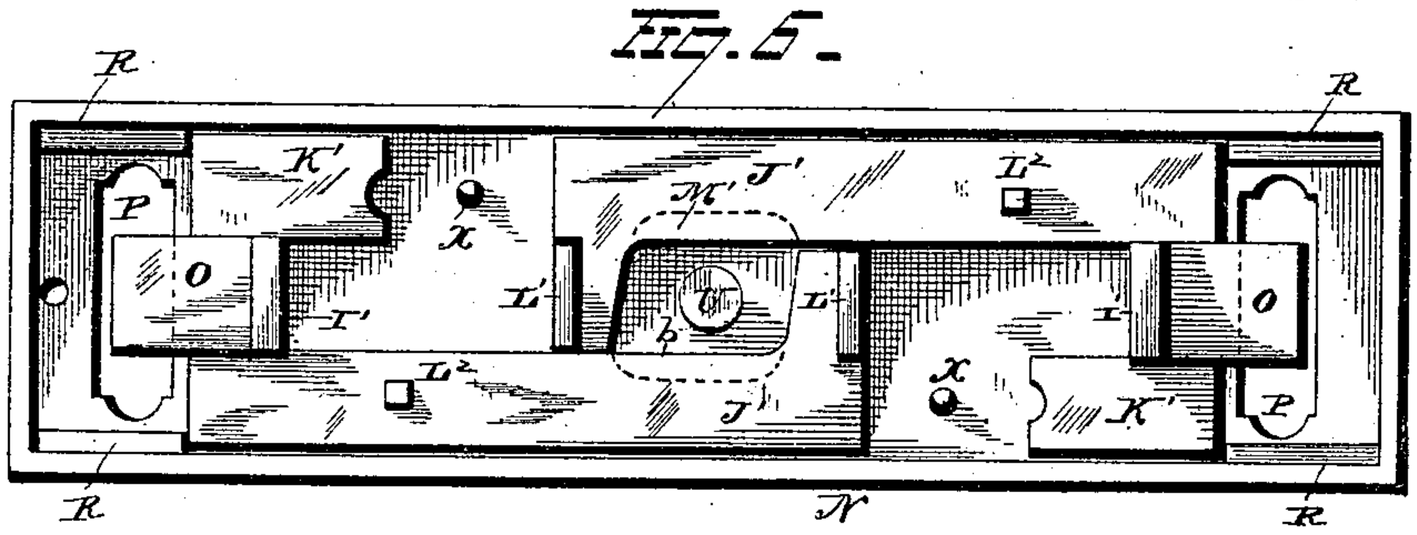
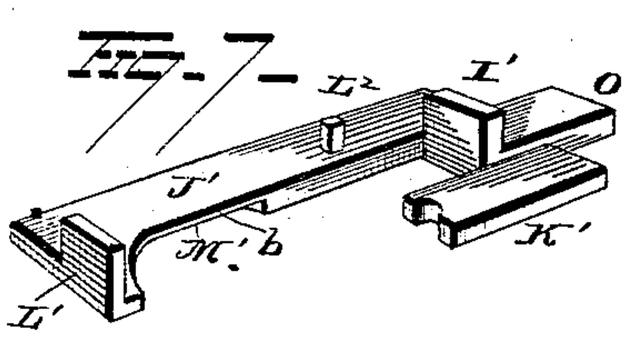


Fig. 7.



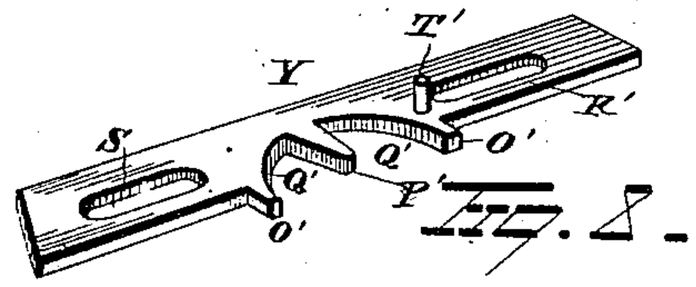


Fig. 8.

Fig. 9.

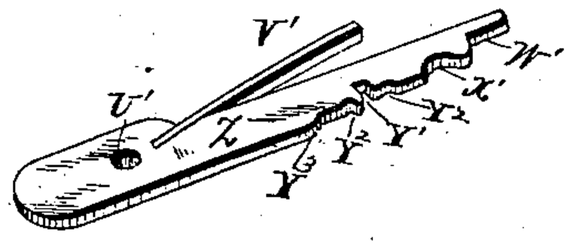


Fig. 10.

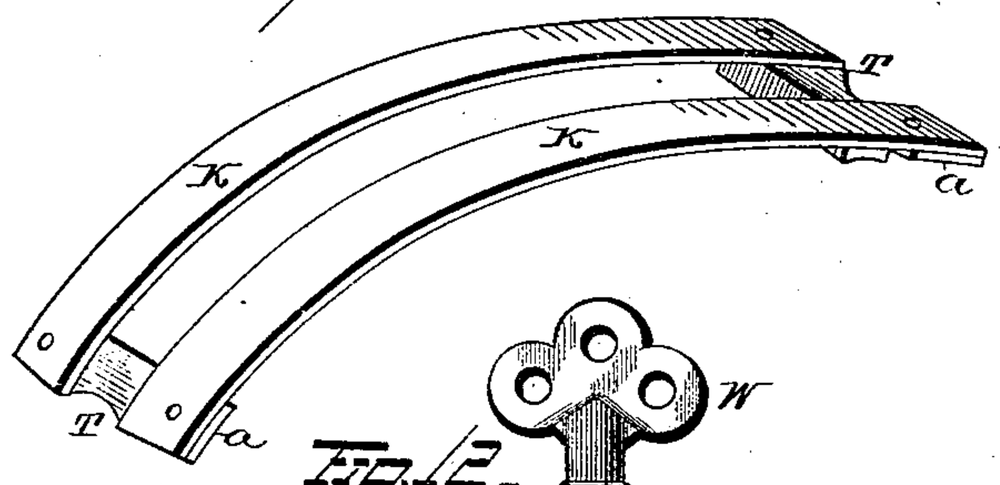
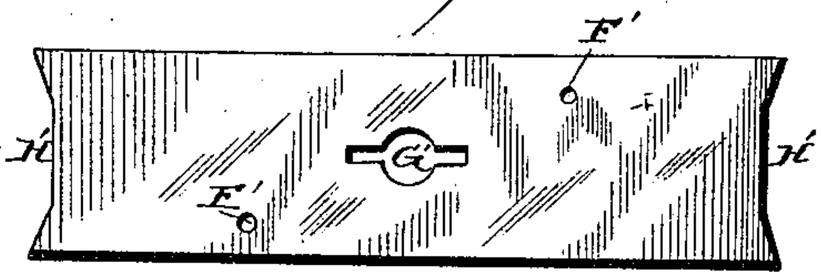


Fig. 11.



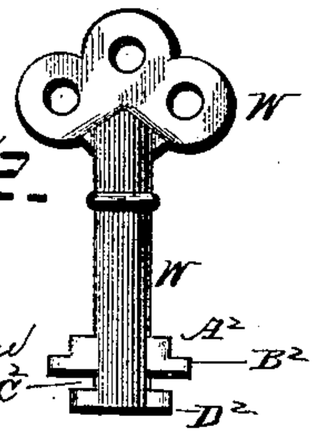


Fig. 12.

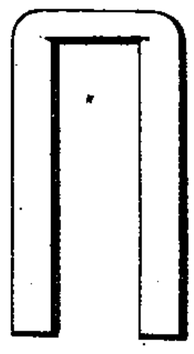


Fig. 13.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 272,796, dated February 20, 1883.

Application filed February 24, 1882. Renewed January 18, 1883. (Model.)

To all whom it may concern:

Be it known that I, ELISHA P. TEETERS, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in locks, the object being to provide a lock which shall be adapted to automatically engage with the locking-staples when they are forced into it, and to forcibly eject them when it is unlocked, and which shall combine simplicity of construction and ease of operation with durability and efficiency in use.

With these objects in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a lock constructed in accordance with my invention. Fig. 2 is a rear view thereof. Fig. 3 is a view of the interior of the lock-casing. Fig. 4 is a view of the lock in vertical longitudinal section, showing the parts of the lock in the adjustment due to them when it is locked, the lock-bolts being engaged with suitable staples. Fig. 5 is a plan view of the lock-bolts and the various devices with which they are associated, the shield of the case in which the said bolts and devices are inclosed being removed. Fig. 6 is a similar view, showing the lock-bolts alone. Fig. 7 is a detail view of one of the lock-bolts. Fig. 8 is a view of one of the slides. Fig. 9 is a view of one of the spring-pressed lock-tumblers. Fig. 10 is a view of the ejecting-spring. Fig. 11 is a view of the shield of the case. Fig. 12 is a view in side elevation of a key adapted to fit the lock, and Fig. 13 is a view of a suitable staple to be engaged by the lock-bolts.

A is the lock-casing, constructed in any desired manner, but preferably formed of a single piece of metal. It is provided with perforated flanges B to adapt it to be secured to the article with which it is used. The outer face, C, of the said lock-casing is provided with an elongated slot, D, which is closed by a suitable plate, F, located within the casing, and provided with a boss, G, conforming in shape to the said slot, and provided with a key-hole, H. Sufficient space is left between the face C of the casing and the bossed plate F to permit a label, I, to be interposed between them through the slot E, the said label being securely held in position by the friction derived from its deflection by the boss G. It is designed to indicate upon this label any descriptive matter, and when the locks are used upon mail-bags a label indicating the destination thereof will be employed. When in position in the casing the label covers the key-hole and excludes dirt from the lock.

Lugs J, attached to the inner face and midway of the length of the plate F, are designed to support the ejecting-spring K, while similar lugs, L, located respectively on opposite sides of the lugs J, are intended to offer bearing for the shield M of the case N, which contains the lock-bolts O and the devices associated with them. The outer face of the said case N is provided with two elongated slots, P, which receive the staples, and with a perforation, Q, to receive the screw by which the said case is attached to the casing A. Inclined bearings R, located in the four corners of the case N, are designed to support the bearing-faces *a*, formed on the opposite edges of the grooved plates T, which connect the ejecting-springs K. An upright stud, U, located in the center of the case, is adapted to receive the key W, while the studs X fulfill a fourfold function in defining the reflex movement of the lock-bolts O in guiding the slides Y, in constituting fulcrums for the lock-tumblers Z, and in maintaining the shield M in proper adjustment. The said case N is perforated at A′ to receive a stud, B′, projecting from one of the end walls of the casing A, said stud and slot constituting a lock for one end of the case N, the other end thereof being held in place by a screw, C′, inserted in the perforation Q, and extending into a registering-perforation, D′, formed in the outer face of the casing A.

Lugs E′, projecting from the side walls of the case A, are designed to support the shield M, which is provided with perforations F′ to receive the studs X of the case, and with a key-hole, G′, the ends of the shield being cut away, as at H′, to give increased play to the grooved plates T.

The lock-bolts O are provided with upright

bearing-plates I′ at their rear ends, with two rearwardly-extending arms, J′ and K′, the longer arms, J′, being provided with extensions furnished with bearing-plates L′, located directly in the rear of the bearing-plates I′, and with pins L^2. The rear ends of the arms J′ and K′ of both of the said lock-bolts O impinge against the studs X, and are limited in reflex movement thereby, the forward motion of the bolts being defined by the engagement of the outer ends of the said arms J′ and K′ with the bearings R, before alluded to. Recesses M′, formed in the said arms J′, are designed to receive the lugs D^2 of the key W, the thin walls *b* of the said recesses being received in slots C^2, formed in the key itself. When the said bolts are placed in their appropriate positions in the case N, their longer arms, J′, will pass each other and respectively extend beyond the central stud, U, the bearing-plates L′ of one bolt being in this manner arranged to constitute the bearing for the rear end of the spring N′ of the other bolt, and vice versa, the outer ends of the said springs being arranged to impinge against the bearing-plates I′. Each spring will thus be adapted to fulfill a twofold function in exerting a constant force to throw both bolts outward, and therefore should one spring break or become inoperative the efficiency of the lock will not be impaired.

The slides Y are provided each with two lugs, O′, which impinge respectively against the bearing-faces L′ of the arms J′ of the bolts O. They are also provided with wards P′, located in the center of the concave recesses Q′, formed between the lugs O′, and with elongated slots R′ and S, respectively adapted to receive the studs X and the pins L^2, and with pins T′, which engage with appropriate recesses in the lock-tumblers Z, as will be hereinafter explained. The said lock-tumblers are provided with perforations U′, adapting them to be pivotally secured to the studs X, and with springs V′, which impinge against the side walls of the casing N, and exert a constant tendency to engage the inner faces of the tumblers with the pins L^2 and T′. The inner faces of the said tumblers are provided with shoulders W′, which engage with the pins L^2 of the lock-bolts when the same are in locked adjustment, preventing them from being pushed back, with recesses X′, which receive the pins L^2 when the bolts are retracted, with notches Y′, adapted to engage with the pins T′ when the lock is in its locked adjustment, with notches Y^2, located on each side of the notches Y′, and designed to receive the pins T′ when the lock is unlocked, and with ledges Y^3, with which the lugs A^2 of the key engage. When the key is inserted into and turned within the lock for the purpose of unlocking it, its lugs A^2 will engage with the said ledges Y^3 of the tumblers, and by forcing the same outward break the engagements which exist between them and the pins L^2 and T′. It will also move the slides in opposite directions, and the pins T′ will be carried to points beyond the notches Y^2. It is necessary to turn the key back a short distance for the purpose of removing it from the lock, and when this is done the slides Y will be reversed sufficiently to engage the pins T′, attached to them, with the notches Y^2, the said pins being engaged with those of the said notches, which they pass when the slides are being actuated, as described.

It may be here observed that, by virtue of the construction and arrangement of the lock-bolts and the devices associated with them, in unlocking the lock the key may be turned in either direction, imparting precisely opposite movements to the slides when turned in one way from what it does when turned in the other direction. The object of engaging the pins T′ with the notches Y^2 is to prevent the slides to which the said pins are secured from moving and assuming positions interfering with the introduction of the key. If, however, the lock should receive a sufficiently violent shock to throw the pins out of the notches Y^2, they will fall into the deep notches Y′.

The key W is provided with two sets of lugs to actuate the double system of levers and tumblers, the upper lugs, A^2, being designed to operate the lock-tumblers Z, while the lugs B^2 are arranged to engage with the wards P′ of the slides Y. Slots C^2 receive the thin walls *b*, covering the recesses M′, formed in the longer arms J′ of the bolts N, the lugs D^2 of the key being adapted to enter said recesses.

Having described my improvement in detail, I will now describe the mode of its operation.

Let it be supposed that the lock is in its locked adjustment, that its bolts are engaged with staples, as shown in Fig. 4 of the drawings, and that it is desired to unlock the lock and release the said staples. The label I is first withdrawn or slipped aside to permit the introduction of the key into the lock. As the key is turned therein the lugs A^2 thereof will engage with the ledges Y^3 of the tumblers Z, and by forcing the same outward release the pins L^2, secured to the arms J′ of the lock-bolts, and the pins T′, secured to the slides Y, from engagement with the shoulders W′ and the notches Y^2, respectively, while the lugs B^2 of the keys will engage with the wards P′ of the slides Y and force the same in opposite directions, causing them to retract the bolts O by virtue of the engagement of the lugs O′ with the bearing-plates L′ of the arms J′ of the said bolts O. The slots C^2 of the key receive the thin walls *b* of the recesses M′, formed in the arms J′, and adapted to receive the lugs D^2 of the key. As soon as the bolts are withdrawn the grooved plates T, engaged with the staples, will, through the force of the springs K, eject the staples from the lock, the inner faces of the said plates being at the same time engaged with the outer ends of the lock-bolts, holding them against the force of the springs N′ from resuming the positions due them when the lock is in its locked adjustment. The lock-bolts being engaged, as described, the key is reversed for the purpose

of withdrawing it from the lock, and as it is turned the lugs B^2 will engage with the walls of the concave recesses Q′ of the slides Y and move the same, causing the pins T′, attached to them, to engage with the appropriate notches Y^2. Supposing now the lock to be in its unlocked adjustment, if the staples are pressed against the plates T, they will recede and permit the said staples to enter the lock. As the plates T are forced inward the lock-bolts N will be released and thrown forward to engage with the staples, retaining them until the lock-bolts are again withdrawn by the action of the key.

From the foregoing description it will be apparent that the lock not only automatically engages with the staples, but also forcibly ejects them.

In conforming my lock to the different uses to which it may be applied, some changes may be necessary. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but that I leave myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a lock-casing the outer face of which is provided with an elongated slot, of a plate located within the casing and provided with a boss conforming in shape to the slot, said boss having a key-hole formed in it, and a label interposed between the outer face of the lock casing and the bossed plate to cover the key-hole in the latter and exclude dirt from the lock.

2. In a lock, the combination, with bolts and devices associated with them to render their locking action automatic, of springs to forcibly eject the staples when the bolts are retracted, and to hold the said bolts in their open adjustment.

3. In a lock, the combination, with bolts and devices associated with them to render their locking action automatic, of springs provided at each end with plates which engage with the staples and forcibly eject them when the bolts are retracted, and with the bolts to hold them in open adjustment.

4. In a lock, the combination, with lock-bolts provided each with a rearwardly-extending arm, the said arms respectively extending beyond the key-stud, springs interposed between each bolt and the arm of the opposite bolt, and devices upon which the key operates to actuate said bolts simultaneously.

5. In a lock, the combination, with lock-bolts, provided each with two rearwardly-extending arms, the longer arms of the bolts respectively extending beyond the key-stud, springs interposed between each bolt and the longer arm of the opposite bolt, and slides provided with lugs to engage with the longer of the said rearwardly-extending arms to actuate them simultaneously.

6. In a lock, the combination, with two lock-bolts provided with rearwardly-extending arms, of slides to actuate said bolts simultaneously, lock-tumblers, and devices to engage the lock-tumblers with the lock-bolts, and with the slides to hold them in their different adjustments respectively.

7. In a lock, the combination, with bolts provided with rearwardly-extending arms, of slides to operate the bolts, and provided with elongated slots to receive pins attached to said arms, and lock-tumblers to engage with said pins, and with pins upon the slides, whereby the several parts are held in proper adjustment.

8. The combination, with a lock-casing, of a case secured therein, the lock-bolts and the devices associated with them being located in said case, which is provided with an elongated slot on each end to receive the staples, and with bearings, one being located in each corner of the case, and a spring provided at each end with plates, and interposed between the case and casing, the plates of the spring having bearing upon the bearings located in the case.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ELISHA P. TEETERS.

Witnesses:
HERMAN MORAN,
GEO. D. SEYMOUR.