W. SETTERBERG.

Locking-Latch.

No. 203,783. Patented May 14, 1878.

Fig. 1.

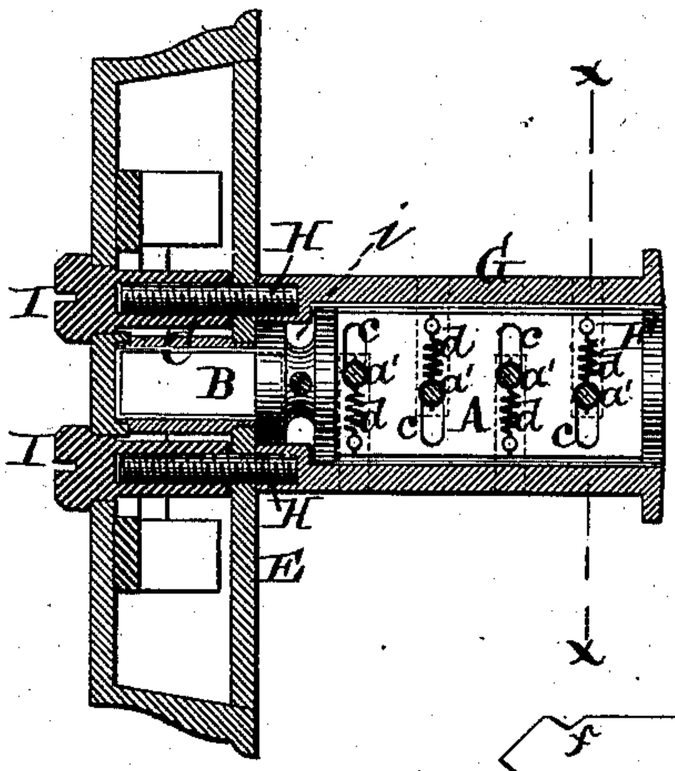


Fig. 2.

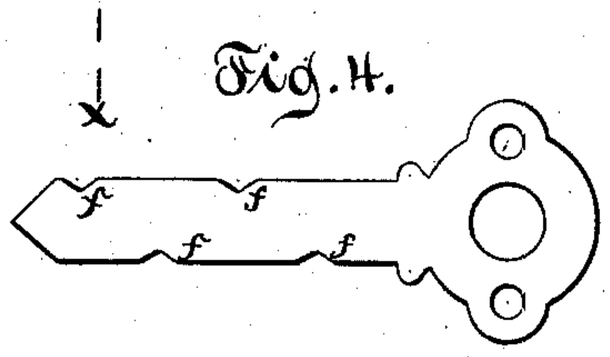


Fig. 4.

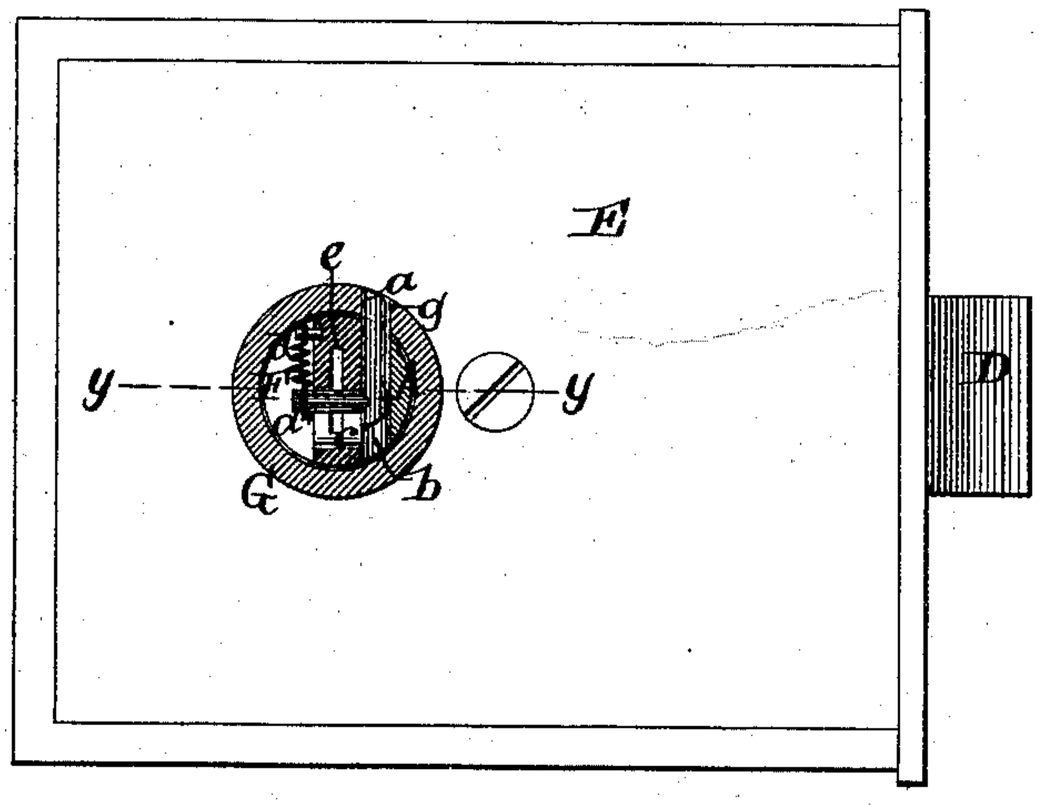
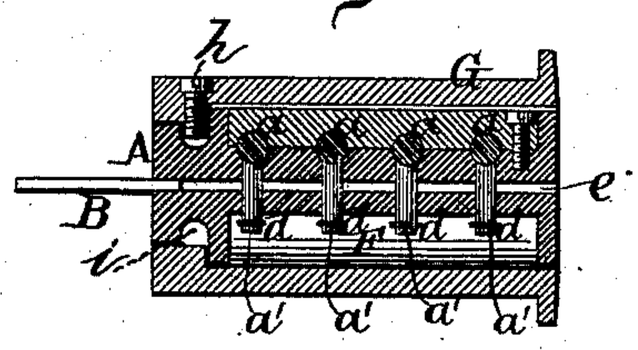


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM SETTERBERG, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LOCKING-LATCHES.

Specification forming part of Letters Patent No. **203,783,** dated May 14, 1878; application filed August 22, 1877.

To all whom it may concern:

Be it known that I, WILLIAM SETTERBERG, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Locking-Latches, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical section of a lock containing my improvement. Fig. 2 is a rear view thereof, partly in section. Fig. 3 is a longitudinal section of the cylinder and concomitant parts in the line *y y*, Fig. 2. Fig. 4 is a face view of a key used in connection with my lock.

Similar letters indicate corresponding parts.

The invention relates to improvements in that class of locking-latches in which is employed a tumbler-holder having a series of sliding tumblers constructed with central slots of different lengths for the passage of a flat key, the tumblers being brought into juxtaposition when the key is inserted, and thrown out of position when the key is withdrawn, said tumblers being acted upon by springs between an arm on the tumbler and the bottom of a socket.

My invention consists in an arbor constructed in two parts, adapted to be united by a pin or screw, and formed with right-angled apertures and a longitudinal recess, in combination with right-angled tumblers confined in the apertures in the arbor and between the two parts composing the same, and coiled springs arranged in the recess and attached to the tumblers and to the arbor, and an outer fixed cylinder having a series of perforations, all of which will be fully hereinafter described.

The invention further consists in a peculiar construction and arrangement of parts, whereby the tumblers are caused to be projected alternately through the opposite sides of the arbor and fixed cylinder by means of alternately-arranged attached springs, as will be more fully hereinafter described.

In the drawings, the letter A designates the arbor of my lock, having a projection, B, at its inner end, which is inserted in a suitable opening formed in a dog, C, which forms part of the mechanism by which the latch or bolt D is actuated. This mechanism is of the usual form, and is inclosed in a case, E. Said arbor A carries four (more or less) tumblers, which are placed at equal distances apart, and are each composed of two arms, *a a'*, extending at right angles to each other, or nearly so. The main arm *a* of the tumblers slides in a transverse hole, *b*, while the arm *a'* moves in a slot, *c*, this slot being made to extend sidewise from the hole *b*, and being adjacent to a recess, F, (best seen in Figs. 2 and 3,) which is formed in the side of the arbor. The recess F contains springs *d*, which, in the example shown, are formed of coiled wire, and are, respectively, connected at one end to pins projecting from the arbor A, and at the other end to the arm *a'* of the tumblers, said springs being so arranged that they have a tendency to force the tumblers outward, which constitutes their locking position, while the tumblers, moreover, are arranged to extend in opposite directions.

In the arbor A is formed a longitudinal hole, *e*, which extends from the outer edge thereof inward, and is so arranged that it intersects the arm *a'* of the tumblers. Hence, if a key of suitable form is inserted in the hole *e* the tumblers are thereby displaced.

I prefer to use a key of the form shown in Fig. 4, the same being beveled at its outer end, and having notches *f*, into which the arm *a'* of the tumblers drops when the key is inserted in the hole *e* of the arbor.

In order to allow of placing the tumblers in position within the arbor A with facility, I construct the latter in two parts, which are united by a screw, as clearly shown in Fig. 3; but the arbor can also be made in one solid piece.

The arbor A is fitted in a cylinder, G, which is provided with holes *g* (see Fig. 2) in such a part thereof that when the tumblers are allowed to follow the action of their springs *d* the arms *a'* thereof drop into said holes, and by this means the arbor is effectually prevented from turning, while at the same time, when a key is inserted in the hole *e*, the said arm *a* of the tumblers is thereby withdrawn from the holes *g*, and the arbor is free to be turned in either direction.

From the inner end of the cylinder G project two or more bolts, H, (see Fig. 1,) which

are provided with a screw-thread, and are made to extend through the inner plate of the lock-case E, while they are engaged by screw-nuts I passing through the outer plate of said case.

It will be seen that by this arrangement the cylinder G is firmly secured to the lock-case E, while by loosening the nuts I the cylinder, together with the arbor A, can be adjusted at various distances from the lock-case, so that the cylinder is adapted to doors of different thicknesses, the projection B being arranged to slide in the dog C, so that the same also is extensible, while the arbor is thereby retained in engagement with the dog in any of its positions, or in any position of the cylinder.

Through the cylinder G passes a screw, *h*, which catches in a groove, *i*, formed in the arbor A, so that the arbor is prevented from being drawn out of the cylinder, and at the same time is permitted to rotate.

It will be observed, upon reference to Fig. 1, that the outer cylinder G and the arbor A are constructed with the perforations and right-angled apertures alternating with each other, (shown in dotted lines,) and the springs are attached to the tumblers and arbor in an alternate manner, so that the tumblers are thrown outwardly on opposite sides of the arbor through the perforations in the opposite sides of the cylinder, whereby, when the latch is locked, the arbor is held by tumblers projecting on opposite sides of the same, thus adding to the efficiency of the latch and preventing displacement of the working parts should strain be brought to bear on the arbor, which might occur where the tumblers are all projected on one side of the arbor.

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

1. The arbor A constructed in two parts, adapted to be united by a pin or screw, and formed with the right-angled apertures *b c* and longitudinal recess F, in combination with the right-angled tumblers confined in the apertures of the arbor and between the two parts composing the same, the coiled springs arranged in the recess F and attached to the tumblers and arbor, and the outer cylinder G, having a series of perforations, *g*, substantially as described.

2. The combination, with the fixed cylinder G, having a series of perforations, *g*, on its opposite sides, the arbor A, having a series of vertical and lateral apertures, *b c*, the tumblers *a a'* arranged therein, and the alternately-arranged springs *d* connected to the arbor and to the tumblers, said tumblers adapted to be projected alternately through the opposite sides of the arbor and fixed cylinder by the action of the attached alternatetely-arranged springs, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 20th day of August, 1877.

WILLIAM SETTERBERG. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.