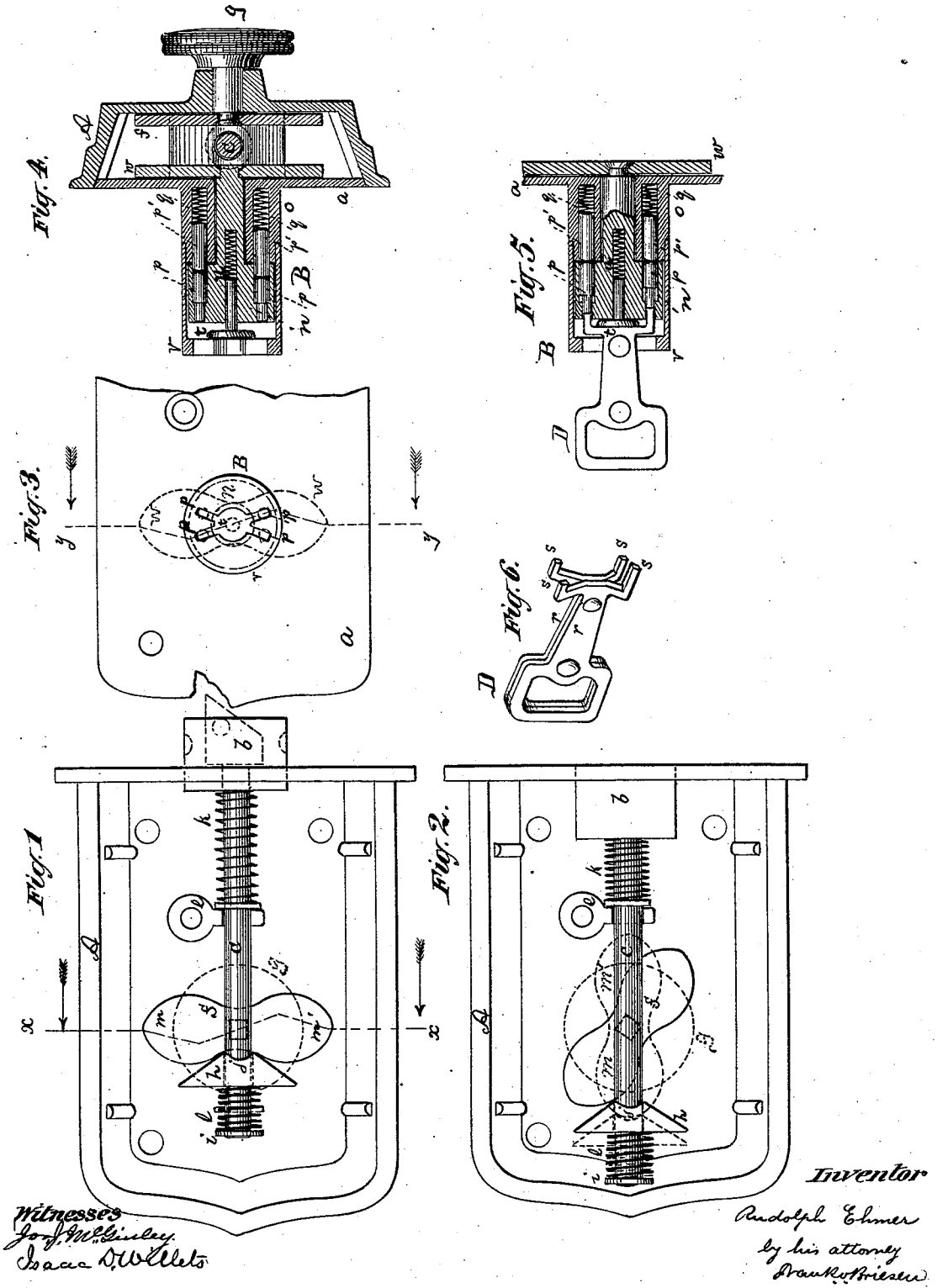
(Model.)

R. EHMER.

Latch.

No. 240,397. **Patented April 19, 1881.**



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UNITED STATES PATENT OFFICE.

RUDOLPH EHMER, OF NEW YORK, N. Y.

LATCH.

SPECIFICATION forming part of Letters Patent No. 240,397, dated April 19, 1881.

Application filed February 21, 1881. (Model.)

To all whom it may concern:

Be it known that I, RUDOLPH EHMER, of New York, county of New York, and State of New York, have invented a new and Improved Reversible Latch-Lock, of which the following specification is a full, clear, and exact description.

In the accompanying drawings, Figure 1 is a face view of my improved lock with the face-plate removed, showing the parts in their position when the lock is closed. Fig. 2 is a similar view with the lock open. Fig. 3 is a top view of the escutcheon; Fig. 4, a transverse section on the line *x x*, Fig. 1; Fig. 5, a similar section on the line *y y*, Fig. 3; and Fig. 6, a perspective view of the key.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to several improvements in reversible latch-locks; and it consists, first, of the combination, in a lock having a latch and bolt, of an eye through which the bolt passes with a slide upon the bolt, an operating-cam, and two springs of different tension; secondly, in the combination of a lock-case and operating mechanism with an escutcheon, composed of a cylinder, cam, lower portion, and set of pins and springs, and with a spring and knob, the shank of said knob resting upon said spring and extending into a central hole of the cylinder; finally, the invention consists in the combination of a lock-case and operating mechanism, and an escutcheon having holes out of plane with each other, with a key which is composed of two flat keys riveted together, said flat keys having their bits turned outward, so that the pins on the bits fit into the holes of the escutcheon, all as is hereinafter more fully pointed out.

In the drawings, A is the lock-case, *a* being the removable face-plate.

b is the latch; *c*, the bolt to which the latch is attached, said bolt passing through an eye, *e*, secured to the inner side of the lock-case. The bolt is of such a length that its end strikes against the end of the lock-case when the lock is open.

f is the cam for operating the bolt. This cam may be revolved by the knob *g*, (indicated in dotted lines in Fig. 1,) and is pivoted in line with the axis of the bolt *c* and between the eye *e* and the end of the bolt.

h is a slide upon the rear portion of bolt *c*, said bolt being provided at its end with a head, *i*, which prevents said slide from slipping off. The slide *h* is notched at *j*, opposite the cam.

k is the spiral lock-spring, wound around the bolt *c*, between the eye *e* and latch *b*.

l is a second spiral spring, of less tension than the spring *k*, and wound around the bolt *c*, between the slide *h* and head *i*. The two arms *m m'* of the cam *f* are longer than the length of the latch *b*, so that the lock may be entirely opened by but partly turning the knob *g*.

If it is desired to hold the lock permanently open the cam *f* is turned so far as to bring its arms in line with the axis of the bolt *c*. (Dotted lines in Fig. 2.) In this case the arm *m* opposite the slide *h* will gradually crowd said slide backward, compressing spring *l* until the end of said arm falls into the notch *j* of slide *h*, holding the slide back. As the spring *k* is of greater tension than the spring *l* the latch *b* will have been drawn into the lock-case and held in position as long as the cam holds the slide back. A partial revolution of the cam will free the slide, allow the springs *k* and *l* to expand, and close the latch. If the lock is to be reversed the latch *b* is drawn out of the case to its full length, and is turned around with its bolt *c*.

B is the escutcheon, *n* its revolving cylinder, and *o* the corresponding portion below the same, rigidly attached to the face-plate *a*. By means of a cam, *w*, attached to the lower end of the cylinder *n*, the bolt of the lock is moved. Through the cylinder *n* and lower portion, *o*, holes are drilled, not in plane with each other, as customary, but out of plane—to wit, at the four corners of a rectangle—as shown in Fig. 3. Within the four holes are the two sets of pins *p p p p* and *p' p'*, &c., and spiral springs *q q*, &c., as customary, the lower pins, *p' p'*, &c., being of equal, and the upper pins of unequal, length, so that the faces of the pins must be brought in line by the key D when the cylinder is to be turned and the lock opened. The key D is composed of two flat keys, *r r*, riveted together lengthwise, and

having their bits turned outward, so that the pins *s s* on the bits fit into the four holes of cylinder *n*. In this way great security is given. Within the cylinder *n* an additional central hole is drilled, extending but partly through the cylinder. Into this hole fits the shank of a knob, *t*, resting upon a spring, *u*. This knob is situated between the four holes of the cylinder, and is depressed by the key when the latter is inserted. The slotted cap *v*, extending over the knob *t* and cylinder *n*, and fastened to the lower portion, *o*, of the escutcheon, serves to keep the knob in place.

I claim as my invention—

1. The combination, in a lock, of the latch *b*, bolt *c*, cam *f*, eye *e*, springs *k* and *l*, and slide *h*, substantially as and for the purpose herein shown and described.

2. The combination of a lock-case, A, and operating mechanism, with the escutcheon B, which is composed of cylinder *n*, cam *w*, lower portion, *o*, pins *p p p' p'*, springs *q q*, and of the spring *u* and knob *t*, the shank of said knob resting upon said spring and extending into a central hole of the cylinder *n*, substantially as and for the purpose specified.

3. The combination of a lock-case, A, and operating mechanism, and the escutcheon B, having holes out of plane with each other, with the key D, which is composed of two flat keys, *r r*, riveted together, said flat keys having their bits turned outward, so that the pins *s s* on the bits fit into the holes of the escutcheon B, substantially as and for the purpose specified.

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