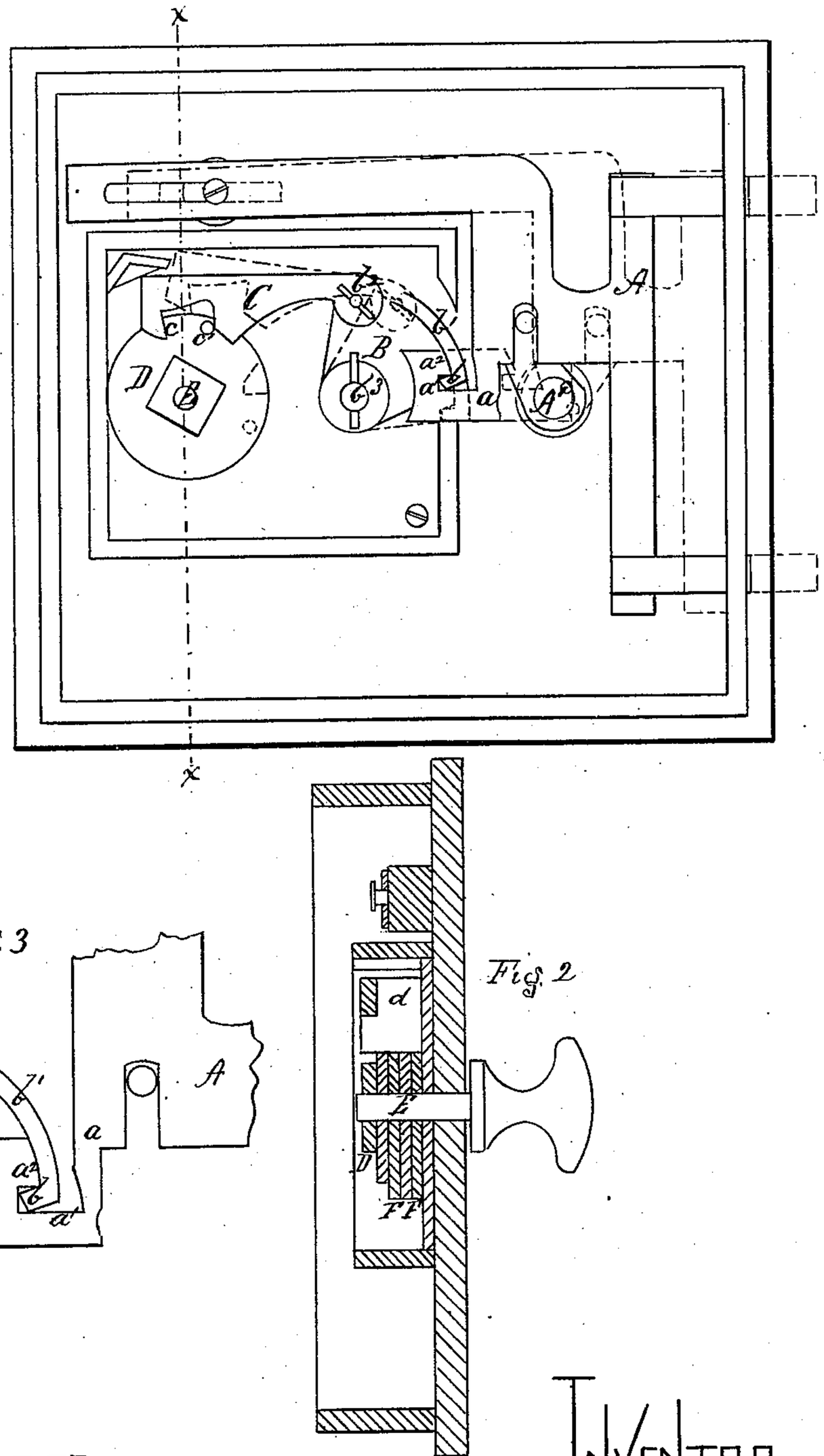
G. RIESECK.

Combination-Lock.

No. 164,214. Patented June 8, 1875.



WITNESSES

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GEORGE RIESECK, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN COMBINATION-LOCKS.

Specification forming part of Letters Patent No. **164,214,** dated June 8, 1875; application filed December 8, 1874.

To all whom it may concern:

Be it known that I, GEORGE RIESECK, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Locks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a rear view of the bolt, and so much of a lock as is necessary to illustrate my invention. Fig. 2 is a section on line *x x* of Fig. 1, showing the relation of the permutation-wheels. Fig. 3 is a detached view of the bolt and locking-cam.

Like letters refer to like parts in the several figures.

My invention relates to combination or permutation locks; and consists in so constructing the bolt and the locking cam or device which controls the movement of the bolt, that when the bolt is withdrawn, and the bolt and its locking device arranged in certain relations to each other, neither the bolt nor the lock can be operated independently, so as to throw the bolt or disarrange the combination.

In locks of this class, as at present constructed, if from any cause, such as carelessness or thoughtless handling of the knobs by persons unfamiliar with the lock, the bolt is shot forward while the door remains unclosed, a slight turn of the spindle will so disarrange the combination as to require the usual manipulation of unlocking to be performed before the bolt can be again drawn. In cases of fire, or similar times of excitement, or when hurried by business, being "locked out," as it is termed, is a fruitful cause of annoyance, as is also the injury caused to the safe and bolts by slamming, or attempts to close the door while the bolts are protruding.

To overcome these difficulties is the object of the present invention, in carrying out which I have formed a projection upon a portion of the bolt or bolt-slide, that takes under or locks with a similar projection on the cam or device which controls the movement of the bolt, so that, under certain circumstances, each acts as a check on the movement of the other.

I will now proceed to describe my invention, so as to enable others skilled in the art to apply the same.

A represents the bolt, provided with the usual slides and knob, and operated through the cam A′. In the rear extension *a* of the bolt or slide I form the notch a^1 and tooth or projection a^2, for the purpose of locking with a similar projection, *b*, upon the locking cam or device B. B represents the locking-cam, pivoted to the face-plate of the lock at b^3, and to the lever or tumbler C at b^2, said lever C engaging at *c c′* with a notch and pin, or similar devices, upon the disk D. The disk D is keyed or otherwise secured to the knob spindle or stem E, so as to move therewith. Between said disk and the face-plate, arranged upon the same spindle, are the permutation-wheels F F, any given number and form, according to the construction of the lock; the notches, which, together with the notch in disk D, engage with a dog or detent, *d*, upon lever C. The lever C may be held down upon the peripheries of the disk and permutation-wheels by an incline or spring, in any of the well-known ways. Upon the outer rim b^1 of locking-cam B is formed a projection, *b*, extending inward, so that when the bolt is withdrawn, as shown in the drawing, and the rim b^1 is resting within the notch a^1, the projection *b* of the cam will ride under the projection a^2 upon the bolt, so that the lock cannot be manipulated without first slightly moving the bolt to release the projection *b*, nor can the bolt be shot without first operating the lock to withdraw locking-cam B.

The operation of these devices is as follows: The spindle E being turned the number of times requisite to bring the permutation-wheels into line, the dog *d* falls into the notches of the disks, and the locking-cam can be raised or withdrawn, to allow the bolt to be shot back in the usual manner. When the bolt has been withdrawn the spindle E is turned forward, causing the rim b^1 of locking-cam B to enter the notch a^1 of the bolt, after which the bolt is moved forward slightly, so that the projection a^2 passes over the projection *b* upon the rim b^1 of the locking-cam.

By this means the bolt and lock are both secured, so that the spindle of the lock cannot be turned sufficient to destroy the combination

or disarrange the disks without first slightly retracting the bolt, to permit the escape of the cam B, nor can the bolt be projected until after cam B has been withdrawn; and as it is not likely that the two devices would be systematically operated without due thought, the ends desired—protection of bolt and lock—are attained simply and effectually.

Having thus described my invention, I claim—

The bolt A, having a projection, a^2, or similar device, in combination with the locking-cam B, constructed to engage with the projection upon bolt A, so as to hold the bolt when withdrawn, substantially as specified.

In testimony whereof I, the said GEORGE RIESECK, have hereunto set my hand.

GEORGE RIESECK.

Witnesses:
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