2 Sheets—Sheet 1.

P. B. HENNESSY.

TIME-LOCK.

No. 170,558. Patented Nov. 30, 1875.

Fig. 1

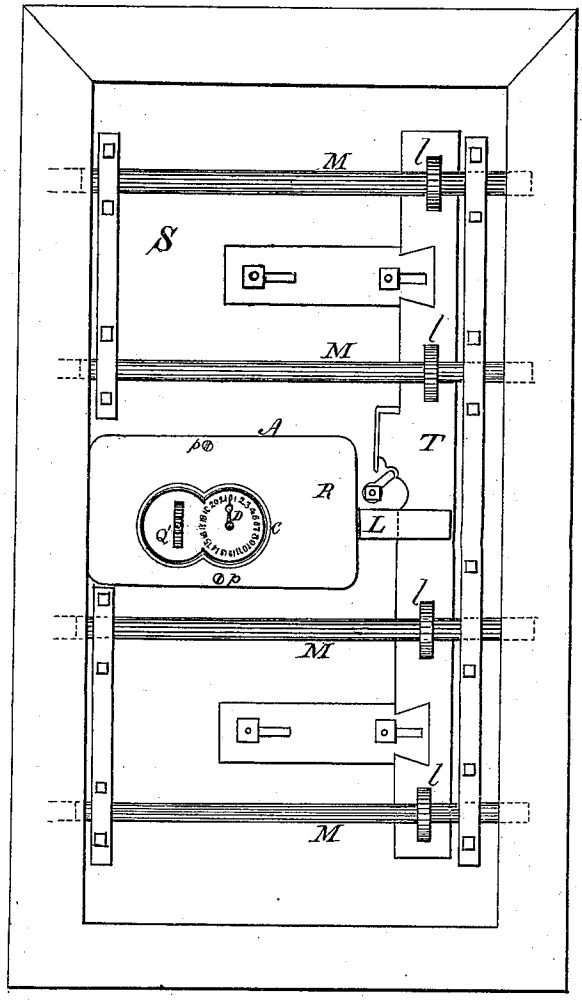
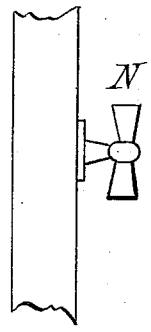


Fig. 2



Witnesses

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John Edgar

Inventor

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By Wm Bruce

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2 Sheets—Sheet 2.

P. B. HENNESSY.

TIME-LOCK.

No. 170,558. Patented Nov. 30, 1875.

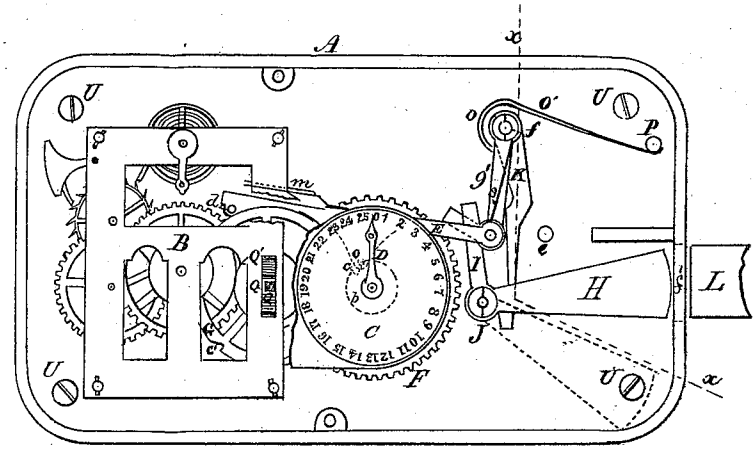

Fig 3

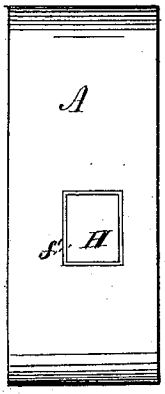

Fig 4

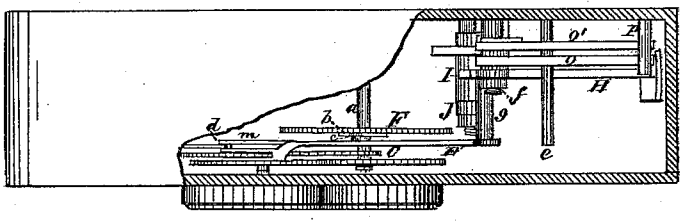

Fig 5

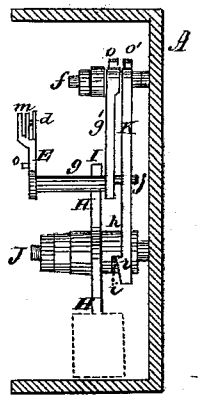

Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

PATRICK BRIEN HENNESSY, OF HAMILTON, CANADA.

IMPROVEMENT IN TIME-LOCKS.

Specification forming part of Letters Patent No. **170,558**, dated November 30, 1875; application filed August 24, 1875.

To all whom it may concern:

Be it known that I, PATRICK BRIEN HENNESSY, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Safe Time-Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings forming a part of this specification.

Figure 1, Sheet 1, represents the inside of a safe-door with my lock affixed to the same. Fig. 2 is a side or edge view of the door. Fig. 3 is the lock detached with the cover or face-plate removed. Fig. 4 is an end view of the same. Fig. 5 is a top view with a portion broken away. Fig. 6 is a vertical section at the line *x x*.

A, Fig. 1, represents my lock secured to the inside of a safe-door, S, by means of four screws, U U U U. It can be easily fastened to the door of any safe or vault without removing the locks upon them. Inside of the lock, and a little to one side, is secured a time-movement, B. Any movement which will keep correct time will answer. C is a dial affixed to a small shaft, *a*. It has cut on its face a series of figures, marking hours. Any number can be marked on it up to one hundred. It is provided with an index-hand, D, the purpose of which will be shown hereafter. E is a connecting-lever, provided with a horizontal arm, *g*, and an upright arm, *g'*, the said portion *g'* being secured on a pin, *f*. Its extreme outer end is provided with a horizontal pin, *d*, which is for dropping into a notched wheel, as will be shown hereafter. It is also provided with a pin, *o*, projecting horizontally from it, which drops into a notch, *c*, of a disk, *b*, which is affixed to the shaft *a* alongside of a gear time-wheel, F, on the same shaft. On the free end of said lever E is fastened a slotted guide, *m*, which is made to pass on each side of the frame of the time-movement, for the purpose of steadying the said lever. G is a wheel, having a plain outside edge, and has a notch cut in its outer circumference, for the purpose of allowing the pin *d* of the lever E to drop into it at a certain time, which has the effect of pushing back the lever to open the lock at the set time. H is a lock-bolt, affixed to the pin J. When the bolt is up it is opposite the bolt-hole *f'* in the end of the lock, as shown in Figs. 3 and 4. The safe or vault door is always locked when the bolt is in the horizontal position, as shown, and open when the said bolt drops. It is provided with an upward arm, I, on which the part *g* of the lever E operates to raise the bolt H when it is down. J is the pin affixed to the back of the lock upon which the bolt H revolves. K is a pendent pawl, affixed upon pin *f*. Its lower end is constructed with a catch, *r*, which is made to hook under a projection, *i* of the cylindrical portion *h* of the bolt H for holding up the said bolt to its place opposite the bolt hole or opening *f'* in the end of the lock. *j* is a small pin inserted in the vertical part *g'* of the lever E, the object of which is as follows: when the lever E is pushed back the said pin *j* presses against the pawl K and releases its catch *r* from the bolt H, when the said bolt drops down by its own weight, as shown in dotted lines in Fig. 3. L is a tongue, affixed to the sliding bar T of the safe-door bolt immediately opposite the bolt-hole *f'* in the end of the lock, and into which it enters (when the lock-bolt H drops in the position shown in dotted lines in Fig. 3) when the sliding bar T and bolts M are thrown back by means of a turn of the outside handle N. *l l l l* are circular collars tightly surrounding the bolts M. Said collars are made to work in slots cut into the flat sliding bar T, so that when the said bar is moved by the action of the outside handle the circular bolts M and and the tongue L move with it, and it will be observed that the said sliding bar with the bolts attached cannot be moved back to open the safe-door, as the tongue L will come in contact with the end of the locking bolt H, which completely blocks up the bolt-hole *f'* in the lock; the safe-door, therefore, cannot be opened until the time is up for which it was set. At that time a small pin, *o*, of the lever E drops into the notch *c* of the small wheel or disk *b*, which allows the pin *d* at the end of the said lever to simultaneously drop into the notch *c'* of the larger wheel G, which pushes the lever back and causes the pin *j* to strike against the pawl K, the backward movement of which releases its catch from the cylindrical por-

tion of the locking-bolt when it (the bolt H) drops. The bolts M can then all be thrown back by a turn of the handle, as the tongue L can then enter unobstructed into the lock through the opening *f'*. O is a spring, affixed to the arm *g'* of the lever E, and held in place by the pin P. Its object is to push the said lever forward. O' is a similar spring, attached to the upper end of the pawl K, and held in place by the pin P, and it is for the purpose of pushing the said pawl forward, so that it may always catch and hold up the bolt H until released by the lever E. Q is a shaft, upon which the spring for motive power is fastened, which is on the under side or behind the wheel G, and not necessary to be shown on the drawing. A knob, Q', is fastened to the outer end of said shaft Q by means of a small screw, for the purpose of conveniently turning and setting the hand D to any desired hour. R is the face-plate of the lock, secured to it by means of the two screws *p p*.

In the operation of the device the first thing to be done is to set the hand D, by means of the knob Q', to any hour hour marked on the dial C at which the door is required to be opened. This, of course, is done while the door is open. The door is then closed and the bolts M are shot into their recesses by a turn of the handle N. This action also withdraws the tongue L from the opening *f'* in the lock, and the bolt H rises and covers the opening *f'*, thereby locking the safe-door. The bolts M and tongue L cannot be moved back until the hour arrives that it was set to. When the set hour of opening arrives, the pin *d* on the connecting-lever E drops into the notch *c'* of the wheel G, and forces the said lever back against the pawl K, which releases its hold of the locking-bolt H, and allows the end of said bolt to drop, as shown in dotted lines, Fig. 3, leaving the opening *f'* free for the tongue L to enter when the outside handle is turned, thus allowing all the bolts M to be drawn back to open the door.

The gear-wheels may be placed in the most convenient position for operating the device.

I may now mention, what should have been stated above, that *s* is a flat spring secured to the arm *g'* of the lever E, and made to pass into a notch in the arm *g* of the same lever, for the purpose of assisting to push downward the outer end of the said lever E, so that the pin *d* will not fail to drop into the notch *c'* of the wheel G, and also the pin *o* to drop into the notch *c* of the disk *b*.

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

1. In combination with a time-movement, the lever E, provided with pins *d o j*, arms *g* and *g'*, and guide *m*, hinged on the pin *f* and acted upon by springs O and *s*, wheels G and *b*, substantially as and for the purpose specified.

2. In combination with a time-movement, the arrangement of the wheel G, with notch *c'*, and wheel *b*, with notch *c*, for operating the lever E and pawl K, substantially as and for the purpose specified.

3. In combination with a time-movement, the pivoted locking-bolt H, provided with arm actuated by the lever E and the pawl K, substantially as and for the purpose described.

Dated at Hamilton, Ontario, Canada, this 21st day of April, 1875.

PATRICK BRIEN HENNESSY.

In presence of—
WM. BRUCE,
P. L. SCRIVEN.