J. R. PERSHALL.
Recording-Lock.

No. 208,033. Patented Sept. 17, 1878.

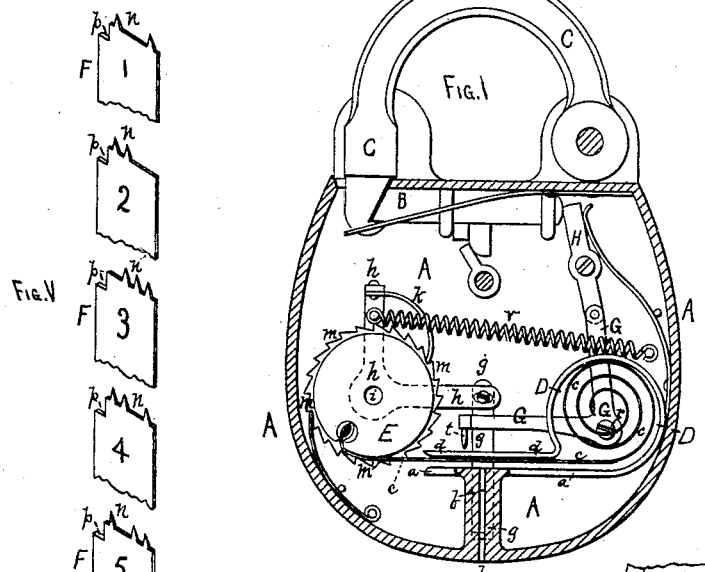
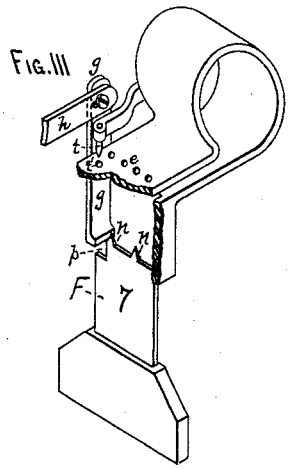
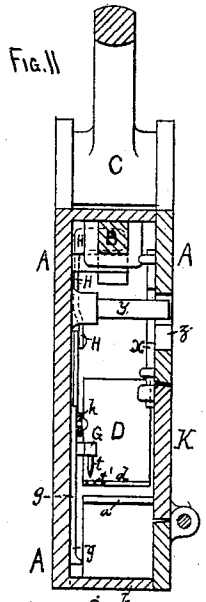


Fig. V

Fig. VI





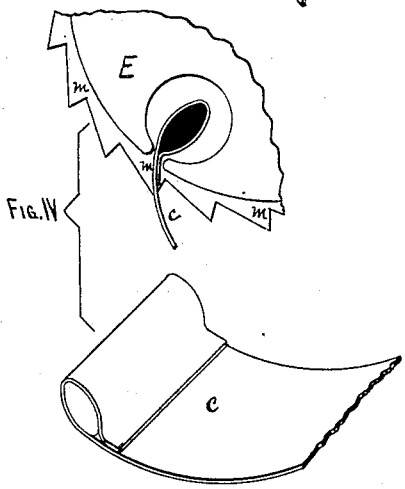
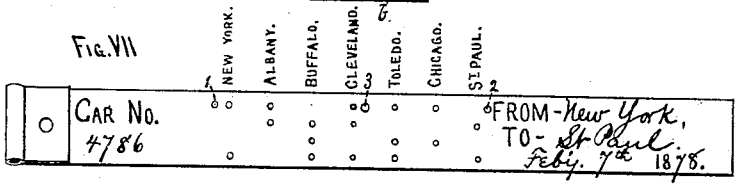


Fig. VII



WITNESSES.
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UNITED STATES PATENT OFFICE.

JAMES R. PERSHALL, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN RECORDING-LOCKS.

Specification forming part of Letters Patent No. **208,033**, dated September 17, 1878; application filed February 16, 1878.

To all whom it may concern:

Be it known that I, JAMES RUSSELL PERSHALL, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Registering-Locks, which improvement is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a sectional front elevation, and Fig. 2 a sectional side elevation, showing the interior arrangement of the lock. Fig. 3 is a perspective view of the paper-magazine and tripping mechanism detached. Fig. 4 is an enlarged detail view of the paper strip and method of holding it in place; Figs. 5 and 6, views of the ends of the keys, showing their variations; Fig. 7, detail view of the paper strip after being used.

This invention relates to locks for freight-cars, express safes and cars, mail-bags, &c.; and consists in an arrangement of a paper or similar strip or ribbon within the casing, which is acted upon by a series of keys or similar instruments of different patterns at the several stations on the line and by the bolt of the lock, so that at the end of the route the fact may be ascertained whether or not the lock has been opened, as well as to locate the point at which it occurred, as hereinafter set forth.

A is the casing, B the bolt, and C the hasp, all made in the usual manner. *a* is a flat plate connected to the bottom of the casing, and provided with a narrow slit, *b*, through which the keys are passed. D is a circular magazine on one side of the plate *a*, in which a paper strip, *c*, is coiled, and E is a drum upon the opposite side of the plate, and in which the opposite end of the paper strip *c* is secured, as shown, the intervening portion of the strip passing over and lying upon the plate *a'*.

d is another plate, similar to *a*, and lying parallel with it, and provided with a number of holes, *e*, (see Fig. 3,) the two plates *a d* forming a channel, through which the paper strip passes from the magazine D to the drum E.

g is a slide or bolt which passes down behind the plates *a d*, and is connected to a crank-arm, *h*, upon the shaft *i* of the drum E, this crank-arm being provided with a spring-dog, *k*, which acts upon a series of ratchet-teeth, *m*, upon the drum E.

F is a key or punch, which is provided with a series of points, *n*, and a shoulder, *p*. The points *n* are arranged differently upon each key, so that there are no duplicates, and may be made in any suitable manner.

G is another crank-arm, pivoted to the casing A at *r*, as shown, and connected at one end to a short straight lever, H, upon which the rear end of the bolt B of the lock acts, while the other end is provided with a punch or pin, *t*, directly over a hole, *t'*, in the plates *a d*.

K is a door or "half-cover" to the face of the lock, through which the paper strip is placed and removed, and is provided with a bolt, *x*, (see Fig. 2,) by which it may be locked, said bolt being actuated by a key turning upon the same pin *y* upon which the ordinary key of the lock is operated, thus utilizing the same key-hole *z* and pin *y* for both bolts B and *x*.

The operation of the lock is as follows: When the car is ready to start, one of the paper strips *c*, which has the number of the car and starting-point and destination marked upon it, is placed in the lock, as shown in Fig. 1. The cover K is then locked and the lock placed upon the car, and the hasp C closed, which springs the bolt B, and, through the levers G H and pin *t*, perforates the paper strip *c*, as at 1 in Fig. 7. This indicates that the car has been properly locked at starting. Key F, No. 1, (see Figs. 5 and 6,) is then inserted into the slit *b* and forced upward as far as it will go. This action causes the shoulder *p* to strike the bolt *g* and carry it upward with it, which causes the spring-dog *k* to move backward a number of teeth on the ratchet *m*, ready to revolve the drum E and wind up the paper strip a short distance, when the key shall release it. In the meantime the points *n* on the key have been pressed up through the paper, and thus marked it, the holes *e* in the plate *d* being made for the reception of the points *n*, and to hold the paper so that the certain cutting is insured. The key is then withdrawn, which releases the bolt *g*, which, through the spring *v*, causes the dog to act upon the ratchet and wind up a portion of the paper,

so that it cannot be marked twice in the same place. The car then proceeds to the next station, where key F, No. 2, is used, which marks the strip in a different pattern, and so on until the destination is reached, where the lock will be removed. This again causes the punch *t* to act upon the strip, as indicated at 2, Fig. 7. This shows that the lock was opened in the proper manner. But should the lock be opened during the transit of the car, the punch *t* will indicate that fact, and also between what two stations. This is demonstrated by Fig. 7, which represents a strip from a lock which has been used on a trip from New York to St. Paul. At 1 the mark of the punch *t* appears, and just back of it the mark of key F, No. 1, or "New York," indicating that the car started all right. The marks of Albany, Buffalo, and Cleveland also show that the lock had not been opened up to the latter point; but between Cleveland and Toledo appears the "tell-tale" mark 3 of the pin *t*, showing that the lock must have been opened between those two points, thus giving a clue upon which to work in locating any depredations, if any have been committed.

Any number of the keys may be used, the greater the number used, of course, the greater certainty of locating the point at which the lock was opened, as well as giving a more perfect control over the contents of the car.

The paper strip *c* is provided with an enlarged end by pasting in a piece of twine or other substance, (see Fig. 4,) so that when placed in the cavity in the drum E it cannot be removed except sidewise; but this, I am aware, is not new, as it is shown in the patent of Hartshorn, September 3, 1867, No. 68,502.

I do not wish to confine myself to the form of the keys shown, as I am aware that many different forms may be employed for the same purpose.

If desired, an inking ribbon or pad may be placed in the lock, over which the paper strip will be run, and different marks printed upon it by keys or stamps of varying designs; and the paper may be made in the form of a disk, if desired.

The lock may be used to advantage as a "watchman's detecter" by placing the keys at different points about the premises to be guarded, which the watchman shall be required to visit and use in regular order.

The paper will be made water-proof to insure it against the action of moisture.

I am acquainted with the patent of L. Aldrich, November 16, 1875, No. 169,942, which shows a paper strip actuated by clock-work and marked or printed upon by keys or types inserted through the casing; but such I do not claim, broadly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the bolt of a lock, of a recording mechanism so arranged as to automatically mark or print or otherwise record upon a strip of paper or similar article every time the bolt is sprung in opening or closing the lock, substantially as hereinbefore specified.

2. The combination and arrangement of the bolt B, levers H G, with punch *t*, and paper strip or ribbon *c*, substantially as hereinbefore described.

3. The combination of the drum E, magazine D, paper or other strip *c*, bolt *g*, levers and ratchet *m h*, and key or similar instrument F, arranged and operated substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES RUSSELL PERSHALL.

Witnesses:
C. N. WOODWARD,
LOUIS FEESER.