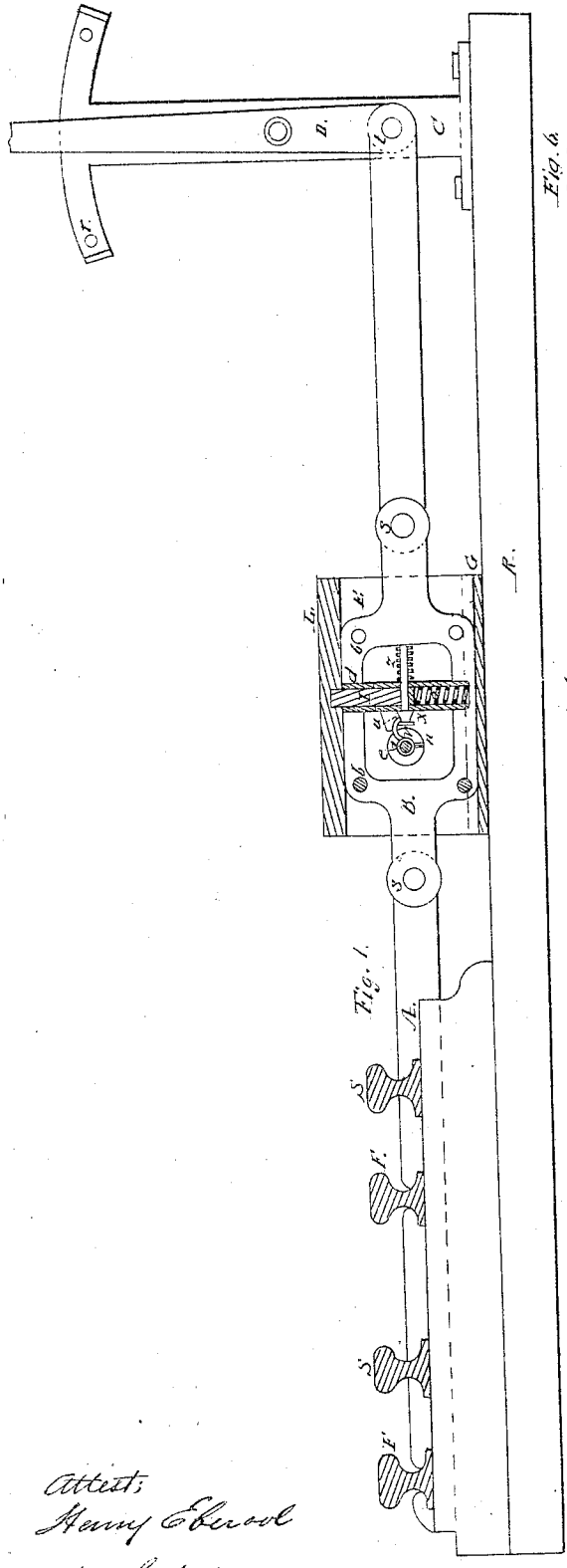
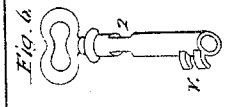
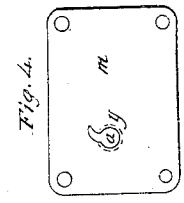
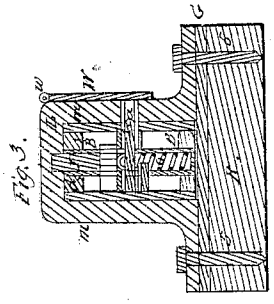
W. P. Patton,
R. R. Switch.

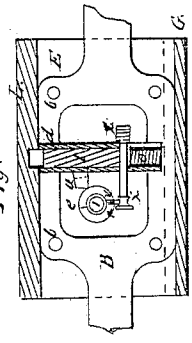
No. 73,752. Patented Jan. 28. 1868.

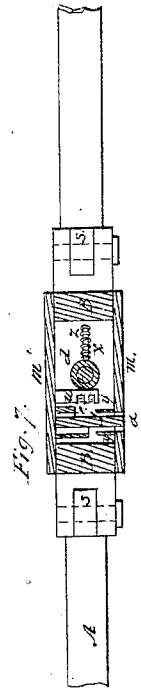


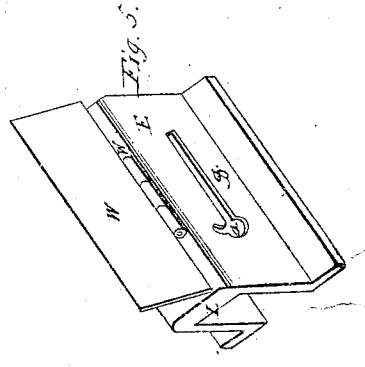












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Letters Patent No. 73,752, *dated January* 28, 1868.

IMPROVEMENT IN RAILROAD-SWITCHES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM P. PATTON, of Harrisburg, in the county of Dauphin, and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Switch Locks; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters of reference marked thereon.

The nature of my invention consists in constructing, combining, and arranging this lock substantially in the manner hereinafter set forth. In the drawings, making a part of this specification—

Figure 1 represents a side view, with the lock in section.

Figure 2 also represents a vertical side section of the lock when it is unlocked.

Figure 3 is a cross-section of the lock.

Figure 4 is the front plate of the lock, with the key-hole and guard shown.

Figure 5 represents an envelope, that encloses the lock, and answers a threefold purpose: first, as a means of protection to it; second, as a catch or stopper for the shot-bolt I of the lock; and, thirdly, as a key-retaining device, the purpose of which will be hereinafter set forth.

Figure 6 is a perspective view of the key.

Figure 7 is a plan view of the lock in section.

In figs. 1, 2, 3, and 7, B represents the case or body of the lock. It is given the form substantially as shown in the figures named, and is made of iron, brass, or other suitable metal. In the body B the works of the lock are placed. They are constructed and adjusted in relation to each other substantially as follows:

The sleeve or tube *d* is fitted tightly in a hole made in the body of the lock for its reception, and in a vertical position, as shown in the drawings. This sleeve, *d*, is made of such a size, in relation to the shot-bolt I, as to allow said bolt to move freely up and down in it without lateral motion. In this shot-bolt, a short distance from its lower end, a hole is drilled, of a proper size to receive the key-bolt X. The shot-bolt I sets upon a spiral spring, *o*, that is also inserted in the sleeve *d*. This spring is made of brass or other suitable metal, and must be strong enough to insure the correct action of the bolt, against which it impinges. The sleeve *d* has two vertical slots made in it, opposite each other, and of such a size and length as to allow the key-bolt X to move freely the required distance it has to travel. This key-bolt X has a spiral spring, Z, encircling that portion of its body that projects through the shot-bolt I. This spring is for the purpose of keeping it (the key-bolt) in a proper position in relation to the key-post 1 and the guard *u*. The guard *u* is simply a projection, extending, from the back plate *m'*, over the key-bolt X, having notches cut in its body to suit the key of the lock. The key-post 1 also projects from the back plate *m'*, and is encircled at its base by a peculiar-shaped guard, that is constructed thus: It consists of an annular ridge, rising off the back plate *m'*, at different heights from the same, in two places. From the point *e*, around to *n* on the side next the guard *u*, the projection is made of such a height that the lower edge of the ward on the key will bear against it when the action of unlocking the lock is being performed, said key, at the same time, being allowed to pass freely through the notches formed for it in the guard *u*. The other portion of the annular ridge, that extends from *n* to *e*, on the side towards B, (fig. 1,) is made of such a height from plate *m'* as to form a shoulder at *e*, to prevent the key from being turned in the wrong direction. It also forms a shoulder at *n*, against which the key abuts when it has been turned far enough to open the lock. At the point *n* (fig. 1) the ridge is cut away down to the surface of the back plate, so as to form a retaining-groove, in which the lower ward of the key is thrust and is held when the lock is unlocked.

The key-bolt X has its head shaped substantially as is shown at X, (fig. 1.) Said head is made of such a length, in relation to the key-post 1, as to permit the wards on key V to fairly catch on it when applied, as shown in fig. 1.

The key V, fig. 6, has a hole drilled in its end, of a proper size to enable it to pass easily over the key-post 1, and has two curved wards or projections, that are intended to catch hold of and hold on to the head of key-bolt X when the lock is being unlocked. The key V has its body reduced, as represented at 2, (fig. 6,) thus forming two flattened parallel sides.

The shield or envelope E is made of cast iron or other suitable metal, and is formed substantially as shown in fig. 5. When in proper position, it embraces the lock-body on its sides, and also covers it.

The top, L, that covers the lock, has a hole or recess formed on its under side for the reception of the shot-bolt I. This hole must be made large enough to permit the end of the bolt to go in easily.

The shield E is further provided with a key-hole to correspond to the key-hole in the lock. From this key-hole a slot is cut or formed, of a proper size to admit the flattened part on the key when said key is placed in proper position.

The shield E is held firmly in place by bolts or spikes driven into a piece of timber, R, upon which the switch stands, the lock having been previously connected securely to the switching-bar A, either by the knuckle-joints *s s*, or other suitable method.

In fig. 1, S S represent a siding, and F F the main track.

Having the different parts of the lock and switch in proper position, as shown in fig. 1, it will be observed that the switch is locked upon the main track. Now, if it is desired to shift or change to the siding S S, the key is inserted in the lock until it can be pushed no farther. It is then turned to the right until it strikes the shoulder at *n*. During this operation, the wards on the key pass through the guard *u*, and catch hold of the key-bolt, and carry it down, and thus release the shot-bolt I, (see fig. 2.) The key is then pushed again, and enters the slot made in the guard at *u* for its reception. The lock is now unlocked, and requires the key to be left in its place to keep it so. The switch can now be turned on to the siding, as desired; but, upon moving the switch-lever, the flattened sides of the key pass into the slot in shield E, and prevent it (the key) from being withdrawn, so that, in order to recover his key, the person using the switch must remove it from the siding back to the main track and lock it before he can do so.

The advantages of this method of construction are as follows: First, a lock is obtained that causes every person using it to restore the switch to which it is applied to a safe position and lock it there. Any omissions of this required duty are reported by the retained key, as the keys will be numbered, and each man charged with his number. Thus the delinquent is infallibly pointed out.

The other advantages claimed for this lock are that it is more simple and secure, and less liable to get out of order than others now in use. It is also better protected from the action of dust and the weather than others.

Having thus given a full, clear, and exact description of my invention, and described its manner of operation, and pointed out its advantages and peculiar excellence, what I claim as new of my invention, and desire to secure by Letters Patent of the United States, is—

1. The arrangement of a lock-shield and key, in combination with the shifting-mechanism of a railroad-switch, so that the key can only be withdrawn from the lock when the switch has been returned to the main track, and been locked in that position, substantially as set forth.

2. I claim the guard L, in combination with the key 2, and a lock, attached to the shifting-mechanism of a railroad-switch, substantially in the manner and for the purpose set forth.

WM. P. PATTON.

Witnesses:

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WM. S. MILLER.