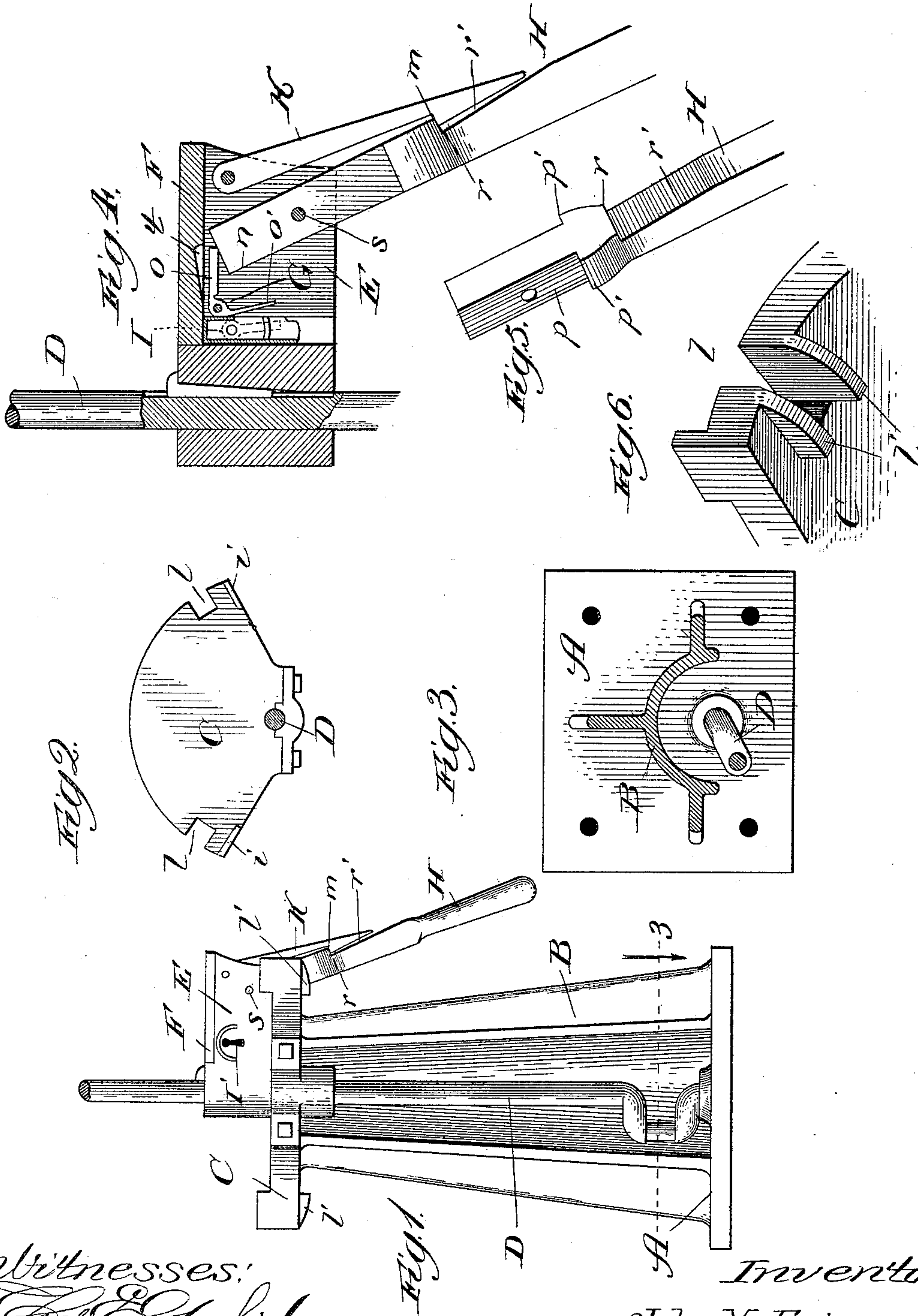


(No Model.)

J. V. ERICSON.
RAILWAY SWITCH LOCK.

No. 462,828.

Patented Nov. 10, 1891.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN V. ERICSON, OF ESCANABA, ASSIGNOR OF ONE-HALF TO D. M. PHILBIN,
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RAILWAY-SWITCH LOCK.

SPECIFICATION forming part of Letters Patent No. 462,828, dated November 10, 1891.

Application filed June 10, 1891. Serial No. 395,802. (No model.)

To all whom it may concern:

Be it known that I, JOHN V. ERICSON, a citizen of the United States, residing at Escanaba, in the county of Delta and State of Michigan, have invented a new and useful Improvement in Railway-Switch Locks, of which the following is a specification.

My invention relates to a locking device for the operating-lever in a railway-switch, and is intended particularly to be applied to a locking-lever having a jointed connection with the switch-operating rod.

The object of my invention is primarily to effect an improvement in key-operated locks for the purpose named which are made to lock automatically and to unlock on the insertion of a key with the proper wards and configuration; and the further object of my invention is to provide a readily releasable catch for the throw-arm by which the operation of the lock may be prevented to enable the switch to be operated from rail to rail without necessitating an unlocking at each throw, but which by an easily-performed operation will permit the lock to be automatically effected.

To the above ends my invention consists, primarily, in a switch-stand provided with a catch located contiguous to the inner extremity of the throw-arm operating by impingement against the throw-arm to prevent turning of the latter on its pivot when down, and adapted by the action of an inserted key to be moved out of impingement against the arm, thereby permitting the latter to be elevated; and my invention consists, secondarily, in the combination, with a pivoted throw-arm and a locking-catch therefor, of a readily-releasable catch adapted automatically or otherwise to engage the throw-arm and prevent its being locked by the automatic lock; and my invention consists, finally, in the general and specific details of construction, combination, and arrangement of parts, as hereinafter more fully set forth.

In the drawings, which represents my invention as applied to a vertical switch-stand, Figure 1 is a view in elevation on a switch-stand provided with my improvement. Fig. 2 is a plan view of the top plate of the switch-

stand. Fig. 3 is a plan view taken on the line 3 of Fig. 1 and viewed in the direction of the arrow. Fig. 4 is a central vertical section taken through the lock-carrying box and showing the locking device in elevation. Fig. 5 is a perspective view of the throw-arm. Fig. 6 is a perspective view of a section of the upper plate, showing the lateral stop for the throw-arm and the notch for the latter.

A represents the base, B the upright, C the top plate, and D the vertical operating-rod, of an ordinary vertical switch-stand, the parts named being of common construction, except as to the top plate C, presently described in detail. Keyed to revolve with the vertical rod D, and located to move freely upon the top plate C, is the lock-box E, open at the bottom, as shown, and provided with a top plate F, in which is formed a beveled recess *t*. The top plate F may be removable, if desired, and instead of being provided with the recess *t* may be further removed from the upper arm of the catch G, presently described. A pivot-pin *s* passes through the box E near its lower outer edge, and on this pin is carried the operating or throw arm H. The arm H is provided on its upper face with the shoulder *r*, which may be conveniently formed by cutting the beveled recess *r'*, as shown, and is also provided with the reduced part *p* and shoulder *p'*. Mounted near the upper inner corner of the box E is an angular catch G, the upper plate of which is adapted to enter the recess *t* in the plate F when the catch is turned, while when in its normal horizontal position the upper plate *o* is adapted to impinge against the upper lateral edge *n* of the throw-arm H when the latter is in a vertical position. The depending part *o'* of the catch G may be provided with recesses or wards, or may be straight, as shown, to be adapted to be operated by the insertion of a key I, (shown in dotted lines in Fig. 4,) said key I being inserted through the key-hole I'. (Shown in Fig. 1.)

Pivoted near the upper outer edge of the box E and adapted to swing freely upon the pivot is the catch K, the lower part of which is provided with the shoulder *m*. The ar-

rangement of the catch K and lever H is such
 that the shoulder *m* on the former may en-
 gage the shoulder *r* on the latter when the
 throw-arm has reached a point somewhat out
 5 of the vertical line, at which time the upper
 plate *o* of the catch G rests upon the inner ex-
 tremity of the throw-arm. When in this po-
 sition it is obvious the catch G fails to op-
 erate to prevent lifting of the throw-arm,
 10 which may therefore be returned to a hori-
 zontal position and move from side to side of
 the plate C, thus turning the rod B; and by
 reason of the adjacent pivoting of the catch
 K and arm H and a tendency of the former
 15 in assuming a vertical line by gravity to slide
 upon and remain in contact with the arm,
 unless the catch K shall be held away from
 the arm, the latter will be prevented by en-
 gagement of the shoulders from assuming a
 20 vertical line. By lifting the catch K from
 engagement with the arm H, however, the
 latter assumes a vertical position, permitting
 the top plate *o* to assume a horizontal posi-
 tion and impinge against the lateral edge *n*
 25 of the arm, thus preventing the latter from
 being again returned to a horizontal position
 until the catch G is released.

The top plate C is provided with notches *l*,
 re-enforced underneath the plate by ears *l'*,
 30 and at the lateral edges of the plate C stops
i act to limit the throw of the arm. It is ob-
 vious that as many notches *l* may be provided
 in the plate C as the requirements of the
 switch may render necessary.

35 The operation of the device will be readily
 apprehended from the above description, and
 it may be stated that my invention is not
 limited to specific configuration or arrange-
 ment of details, particularly in the matter of
 40 the catch G, except to the extent that such
 limitation may be specifically named in the
 claims which follow.

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

45 1. The combination, with the switch-stand
 and its switch-operating arm, of a locking-
 catch to engage and lock the arm, and a re-

leasable retaining-catch adapted to engage
 the arm and prevent it being locked, substan-
 tially as described.

2. In combination with a switch-stand and
 its switch-operating arm, a key-operated piv-
 oted locking-catch adapted to lock the arm
 against movement, and a releasable retaining-
 catch adapted to engage the arm and prevent
 55 it being locked, substantially as described.

3. In a switch-stand, in combination, a
 pivoted throw-arm H, box E, carrying the
 throw-arm and connecting it with the oper-
 ating-rod, and a key-operated gravity-catch
 carried by the box and located near the in-
 ner end of the throw-arm and adapted to en-
 gage the lateral edge of the throw-arm within
 the box to lock the same, substantially as de-
 scribed.

4. In a switch-stand, in combination with
 the vertically-moving pivoted throw-arm H, a
 readily-releasable gravity-catch K, arranged
 to engage the throw-arm, substantially as de-
 scribed.

5. In a switch-stand, in combination with
 the rod D, the box E, carried by the switch-
 rod, a key-operated locking-catch G, and re-
 leasable catch K, and a vertically-moving
 throw-arm H, pivoted to the box, substantially
 75 as described.

6. In a switch-stand, in combination with
 the rod D, the box E, keyed with the rod to
 operate the same, the catch K, pivoted in the
 box and having the shoulder *m*, and the arm
 80 H, pivoted in the box and having the shoulder
r, substantially as described.

7. In a switch-stand, the combination of the
 following elements: rod D, top plate C, hav-
 ing the notches and lateral stops, box E, with
 the rod D to revolve same, key-operated grav-
 ity-catch G, readily-releasable gravity-catch
 K, and pivoted throw-arm H, the parts be-
 ing arranged to operate substantially as de-
 scribed.

JOHN V. ERICSON.

In presence of—

WM. R. NORTHUP,
 M. E. NORTHUP.