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J. MAHER & C. W. HARBISON.

LOCKING MECHANISM FOR SWITCH POINTS.

APPLICATION FILED MAY 2, 1904.

NO MODEL.

Fig. 1.

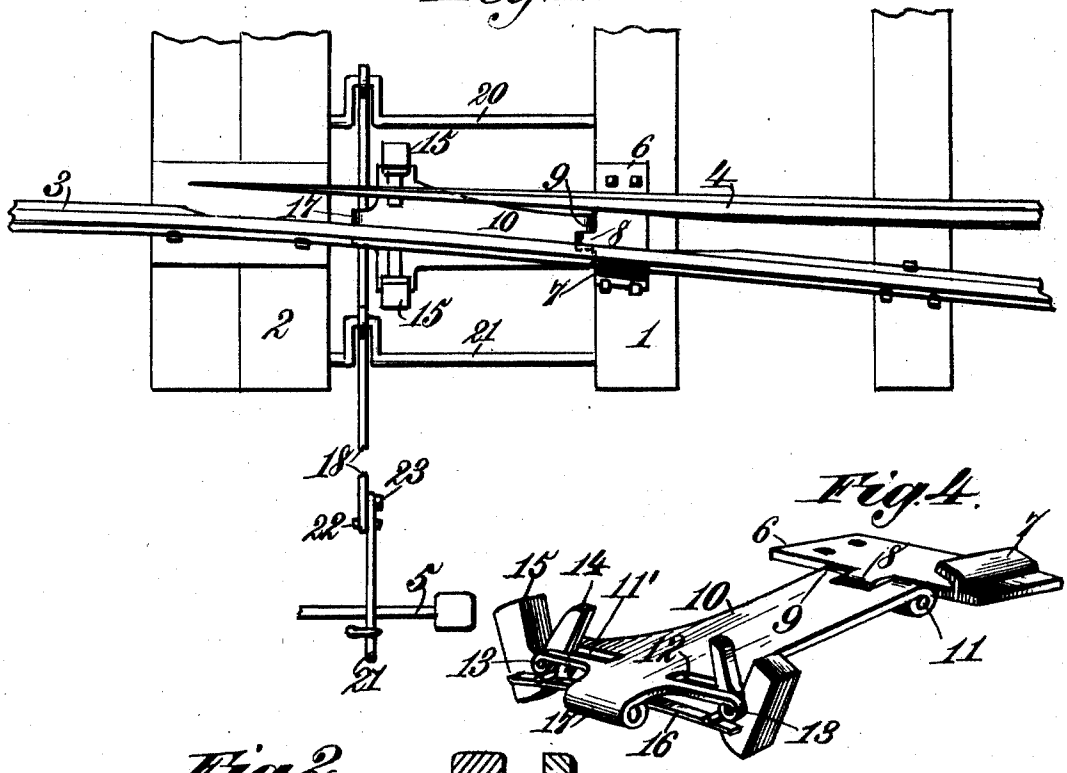



Fig. 4.




Fig. 2.

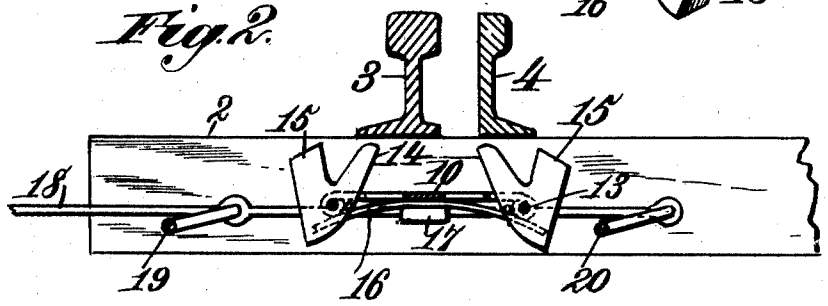
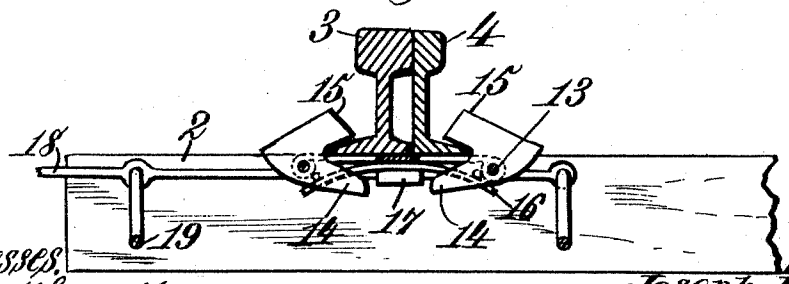



Fig. 3.




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No. 775,840. Patented November 22, 1904.

# UNITED STATES PATENT OFFICE.

JOSEPH MAHER AND CLARENCE W. HARBISON, OF COLUMBUS, OHIO.

## LOCKING MECHANISM FOR SWITCH-POINTS.

SPECIFICATION forming part of Letters Patent No. 775,840, dated November 22, 1904.

Application filed May 2, 1904. Serial No. 205,999. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH MAHER and CLARENCE W. HARBISON, citizens of the United States of America, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Locking Mechanism for Switch-Points, of which the following is a specification.

This invention relates to locking mechanism for switch-points.

The invention aims to provide new and novel means, hereinafter more specifically described, for securely locking a switch-point in an inoperative position and retaining the switch-point in such position until said means is operated manually to release the point.

The invention further aims to provide new and novel means, hereinafter more specifically referred to, for securely locking a switch-point in an inoperative position to the stock-rail and retaining the point in such position until said means is operated manually to release the point.

The invention further aims to provide a new and novel locking mechanism for switch-points which can be arranged and operated without interfering with the switch-point throwing, setting, or shifting mechanism.

The invention further aims to provide a locking mechanism for switch-points which shall be simple in construction and arrangement, readily and easily operated, strong, durable, efficient in its use, and comparatively inexpensive to set up.

With the foregoing and other objects in view the invention consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings, forming a part of this specification, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a top plan view showing the application of the mechanism. Figs. 2 and 3 are transverse sections showing, respectively, the locking mechanism in operative and out of operative position; and Fig. 4 is a detail perspective view of a portion of the mechanism.

Referring to the drawings by reference characters, 1 and 2 denote a pair of railway-ties upon which is secured the stock-rail 3 and on which operates the switch-tongue 4. The rail 3 and switch-point 4 are broken away at one end and said switch-point may be thrown, shifted, or set by any known means. It is thought unnecessary to show a switch-point throwing, shifting, or setting mechanism, as such forms no part of this invention. To show the arrangement of the operating-lever for the locking mechanism with respect to the switch-throwing, shifting, or setting-lever the latter is shown and indicated by the reference character 5.

Secured to the upper face of the tie 1 by any suitable holdfast device is what may be termed a "retaining-plate" 6 for that portion of the mechanism which forms the locking element, and the said plate 6 is arranged below the base of the rail 3 and the point 4. The plate 6 at one end is formed with a seat or chair for one side of the base of the stock-rail 3, as indicated by the reference character 7. One side of the plate 6 is provided with a pair of apertured ears 8, and between said ears 8 is arranged an apertured protuberance 9, formed on one end of the locking-element-carrying plate 10. Through the ears 8 and protuberance 9 extends a pivot 11 for connecting the plates 6 and 10 together. By such construction a hinge connection between the two plates 6 and 10 is provided.

The carrying-plate 10 is arranged between the ties 1 and 2 and beneath the stock-rail 3 and below the path of the switch-point 4. The plate 10 at the end opposite to that which is hinged to the plate 6 may be of any suitable width desired and preferably it is of greater width than its hinged end. The enlarged end of the plate 10 is provided with a pair of transversely-extending alining slots 11′ 12, within which is pivoted, as at 13, the rockable locking-knuckles. Each of the locking-knuckles consists of two arms 14 15, connected together at their lower ends. The arms 14 are what may be termed the "shifting arms" and the arms 15 the "locking-arms."

Normally the arms 14 extend in a vertical manner within the slots, while the arms 15 extend at an angle with respect to the arms 14. The function of the arms 14 is to cause in a manner as hereinafter set forth the arms 15 to engage the base of the switch-point 4 and stock-rail 3 and securely lock the switch-point to the stock-rail. Two locking-knuckles are employed, one of which is adapted to engage the base of the switch-point and the other of which is adapted to engage the base of the stock-rail.

The plate 10 has connected thereto a spring 16, engaging with the arms 14 for retaining the knuckles in their inoperative position when the locking mechanism is out of operation. The plate 10 is further provided with an apertured protuberance 17, through which extends a means for vertically moving in both directions the free end of said plate, causing thereby the rocking of the knuckles, so as to move the knuckles to operative position and to permit of the knuckles returning to inoperative position.

The means extending through the protuberance 17 consists of a shiftable rod 18, operating transversely in both directions of the track-bed, so when moved inwardly it will cause the free end of the plate 10 to lower and when moved in the other direction it will raise the free end of the plate 10. The rod 18 is supported upon a pair of crank-shafts 19 20, one of which is arranged at one side of the stock-rail 3 and the other at the other side of the said rail 3. The shafts 19 20 are pivoted at their ends within the opposing sides of the ties 1 2. The rod 18 is operated through the medium of an L-shaped lever 21, which is pivoted, as at 22, to one end of the rod 18 and also pivoted, as at 23, to the tie 2. The lever 21 extends over the switch-point-throwing lever 5 and is retained in position when the switch-point is locked through the medium of the catch 24 or other suitable means secured to the tie 2.

When the locking mechanism is adapted to secure the switch-point to the stock-rail, the plate 10 is raised by shifting outwardly the rod 18, which causes the arms 14 to contact with the underneath face of the bases of the switch-point and stock-rail. Such engagement as the plate 10 is elevated will cause the knuckles to rock, and the arms 15 will be swung around and over one side of the bases of the switch-point and stock-rail, and when the lever 21 is locked the knuckles will securely connect and lock together the switch-point and stock-rail. When it is desired to release the switch-point, the lever 21 is unlocked and the rod 18 shifted inwardly, which will cause the lowering of the plate 10, and action of the spring 16 will cause the knuckles to assume their inoperative position—that out of engagement with the switch-point and stock-rail. The locking elements, as well as the operating means for the mechanism, are arranged between the ties and are down so low that the said elements and operating means cannot be injured or knocked out of place if a car is derailed or if anything is dragging.

It is thought the many advantages of a locking mechanism for switch-points constructed in accordance with the foregoing description, taken in connection with the accompanying drawings, can be thoroughly understood, and it will furthermore be evident that changes, variations, and modifications can be resorted to without departing from the spirit of the invention or sacrificing any of its advantages, and we therefore do not wish to restrict ourselves to the details of construction hereinbefore described, and set forth in the annexed drawings, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A locking mechanism for switch-points, comprising a pair of rockable locking-knuckles adapted to connect a switch-point to a stock-rail, and operating means for said knuckles.

2. A locking member for switch-points, comprising a rockable locking means adapted to engage with a switch-point and stock-rail for connecting them together, said means rocked through contact with the switch-point and stock-rail.

3. A locking mechanism for switch-points comprising a hinged plate, locking-knuckles carried thereby, and means for elevating and lowering said plate causing thereby the operation of the knuckles.

4. A locking mechanism for switch-points comprising a hinged plate, locking-knuckles pivoted to the plate, and means for elevating and lowering the plate.

5. A locking mechanism for switch-points comprising a hinged plate, locking-knuckles carried thereby, and a transversely-operable means engaging with said plate for elevating and lowering it.

6. A locking mechanism for switch-points comprising a hinged plate, locking-knuckles pivoted to the plate, and a transversely-shiftable means engaging with the plate for elevating and lowering it.

7. A locking mechanism for switch-points comprising a pair of rocking knuckles for connecting the point to a stock-rail, and supporting means for said knuckles.

8. A locking mechanism for switch-points comprising a pair of knuckles for connecting the point to a stock-rail, each of said knuckles consisting of a shifting and a locking arm, combined with a supporting-plate for said knuckles.

9. A locking mechanism for switch-points comprising a pair of knuckles for connecting

the point to a stock-rail, each of said knuckles consisting of a shifting and a locking arm, combined with a hinged supporting-plate for said knuckles.

10. Mechanism for locking a switch-point to a stock-rail comprising a retaining-plate, a carrying-plate hinged thereto, locking members carried by said plate and adapted to engage with the switch-point and stock-rail and lock them together when said carrying-plate is operated, and means for operating said carrying-plate.

11. Mechanism for locking a switch-point to a stock-rail comprising a retaining-plate, a carrying-plate hinged thereto, locking members carried by said plate and adapted to engage with the switch-point and stock-rail and lock them together when said carrying-plate is operated, and a transversely-shifting means engaging with said carrying-plate for operating it.

12. Mechanism for locking a switch-point to a stock-rail comprising a retaining-plate, a carrying-plate hinged thereto, locking members carried by said plate and adapted to engage with the switch-point and stock-rail and lock them together when said carrying-plate is operated, a transversely-shiftable rod for engaging with said carrying-plate for operating it, pivoted supporting means for said rod, and means for shifting the rod.

13. A device for locking a switch-point to a stock-rail, consisting of a vertically-movable locking mechanism arranged below said point and rail and adapted when moved to engage the underneath face of the point and rail thereby shifting said mechanism to locking engagement with the base of the point and base of the rail.

14. A device for locking a switch-point to a stock-rail comprising a pair of locking members adapted to be moved to engage the underneath face of the point and rail thereby shifting said members to locking engagement with the base of the point and base of the rail.

15. A device for locking a switch-point to a stock-rail comprising a pair of locking members adapted to be moved to engage the underneath face of the point and rail thereby shifting said members to locking engagement with the base of the point and base of the rail, combined with an outwardly-movable means engaging with said members for elevating them to engagement with the underneath face of the point and rail.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOSEPH MAHER.
CLARENCE W. HARBISON.

Witnesses:
G. S. ROCKAFIELD,
C. HERMAN.