(No Model.) 2 Sheets—Sheet 1.

F. M. NYE.

RAILWAY SWITCH SIGNAL.

No. 480,825. Patented Aug. 16, 1892.

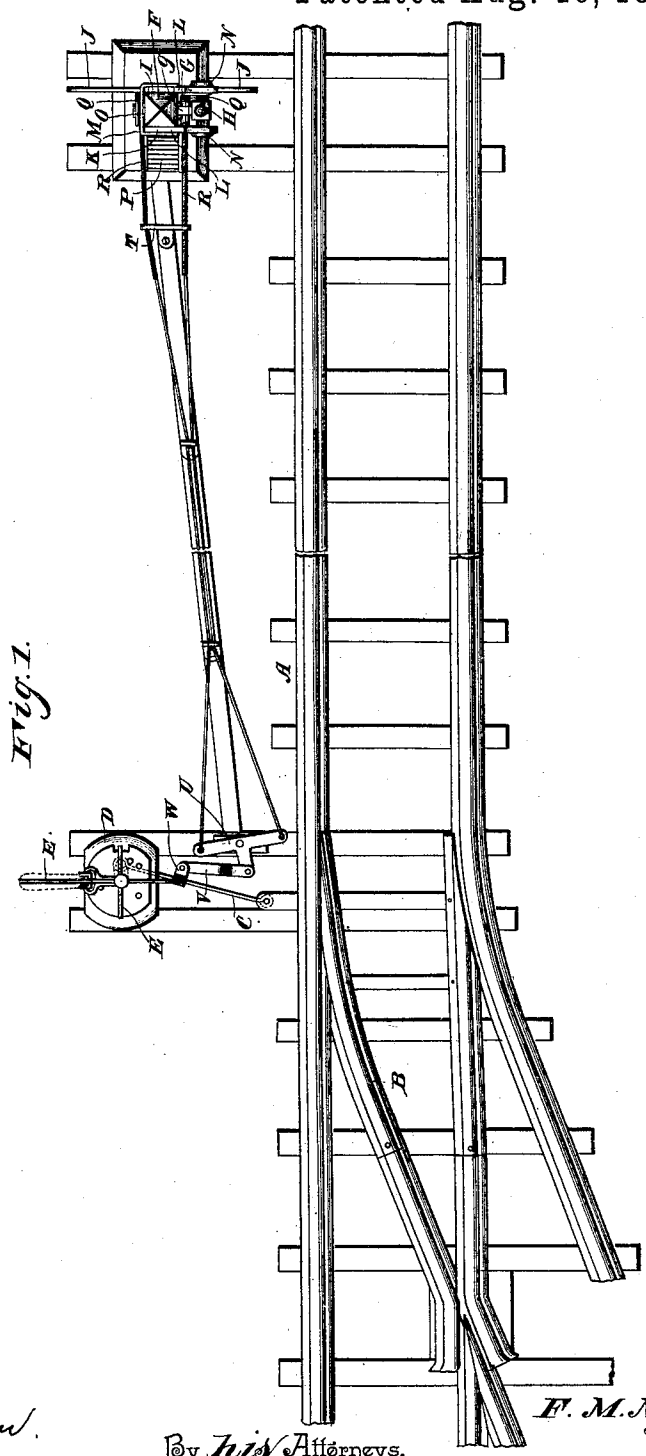

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

F. M. NYE.

RAILWAY SWITCH SIGNAL.

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Fig. 2.

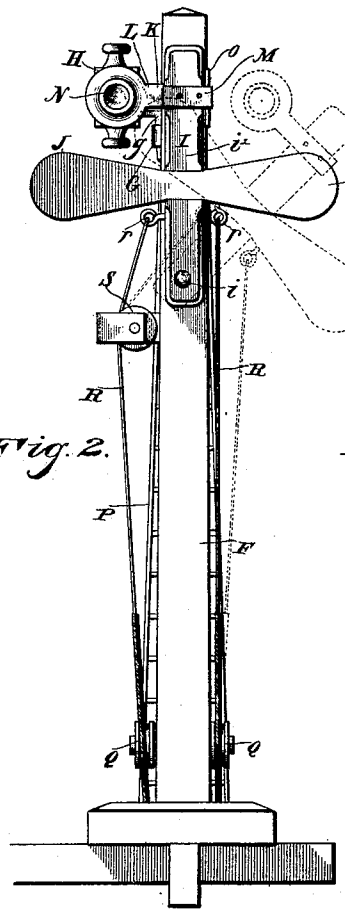


Fig. 5.

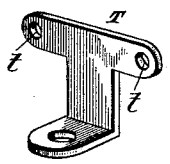


Fig. 3.

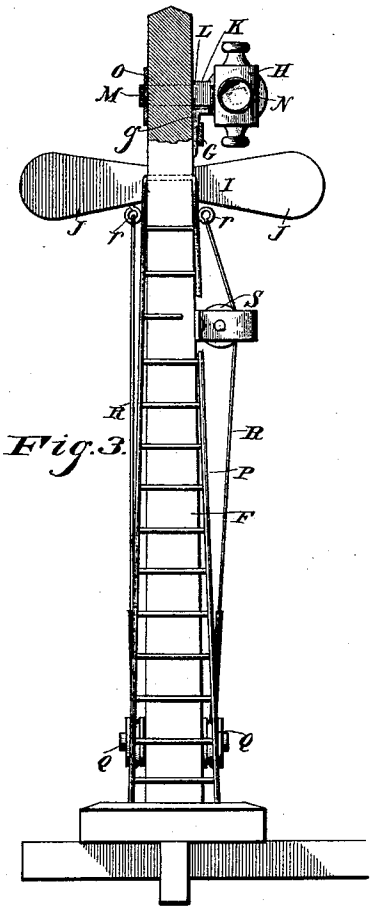
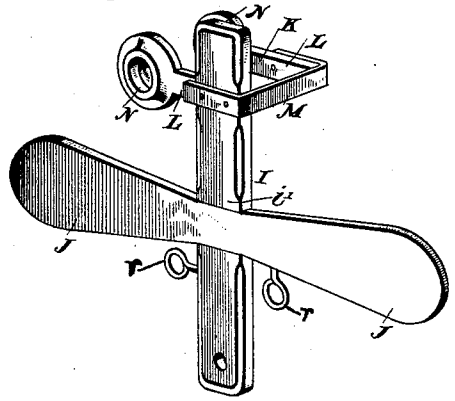


Fig. 4.



Witnesses;

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UNITED STATES PATENT OFFICE.

FREEMAN M. NYE, OF BELLEVUE, OHIO.

RAILWAY-SWITCH SIGNAL.

SPECIFICATION forming part of Letters Patent No. 480,825, dated August 16, 1892.

Application filed February 29, 1892. Serial No. 423,174. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN M. NYE, a citizen of the United States, residing at Bellevue, in the county of Huron and State of Ohio, have invented a new and useful Safety Railway-Switch Signal, of which the following is a specification.

This invention relates to railway-switch signals; and it has for its object to provide an improved switch-semaphore which may be readily and accurately controlled from the switch-stand and one which provides a visual signal which can be easily observed by day and night at long distances from the switch.

It is also an essential feature of this invention to avoid the use of numerous levers to operate the semaphore and to supplant the same by the use of a single T-lever connected with the switch-lever and the semaphore to materially simplify the operating devices and render the same more accurate.

With these and many other objects in view the invention consists, besides the details of construction specially noted, particularly of a single T-lever connected with the semaphore and the switch-levers, as will be hereinafter described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a plan view of a section of a track and a switch open and with which is connected the operating switch-stand and the semaphore as contemplated by this invention. Fig. 2 is an elevation of a semaphore tower or pole, showing the semaphore in both positions. Fig. 3 is a vertical sectional view of the same. Fig. 4 is a detail in perspective of the semaphore-signal detached from the tower. Fig. 5 is a similar view of the chain or rod bracket.

Referring to the accompanying drawings, A represents a section of a main track, connected with which is an ordinary switch B. The said switch B is controlled by means of the operating-rod C, connected therewith, and the operating mechanism in the switch-stand D, which is also of any suitable construction and adapted for locking the switch in its open or closed positions, and is itself provided with the ordinary colored signals E for indicating whether the switch is open or not; but in most cases, being not sufficient, are therefore connected with the semaphore device contemplated by my invention.

Located at any suitable point alongside of the main track A a distance from the switch-stand is the upright semaphore pole or tower F, which is of a suitable height so that the signals displayed therefrom may be observed at a considerable distance from the switch. Secured to the pole or tower F, near the top thereof and facing the track, is the lamp-socket G, which receives the arm *g*, carrying the signal-lantern H, which is provided with white lenses and is designed to show a white light by night when the switch is closed and a colored light by night, in connection with the semaphore, to be presently described, when the switch is open, as will be readily understood.

Pivoted to one side of the semaphore-pole F is the semaphore I. Said semaphore I is pivoted at its lower end, at *i*, to said pole or tower, and is provided with the right-angularly-disposed signal-arms J, extending to both sides thereof and of an enlarged flattened shape, so that the same may be readily observed at a distance. The entire semaphore and the arms thereof are painted in the usual signal or danger color, (red,) which is more easily seen. When said semaphore is in its vertical position and in a line with the vertical pole or tower, the right-angularly-disposed arms thereof extend to both sides of said post or pole and at right angles thereto, and indicate that the switch is open, and when the switch is closed and the main track clear, by the mechanism to be described said semaphore is adapted to be thrown away from the pole, and the two arms thereof fall to an angle of forty-five degrees, as will be quite apparent. Such construction of the semaphore is sufficient for signaling by day; but being insufficient in itself for night use, the same is provided with a lens attachment used in connection therewith. Secured to the upper end of the main arm *i'* of the semaphore I is a U-shaped lens-frame K, which comprises the opposite parallel arms L, connected at their inner ends by the cross-arm or strap M. The said parallel arms L are adapted to work over opposite sides of the vertical semaphore-pole F and to be thrown into alignment with the

opposite lenses of the signal-lantern H. The said arms are provided at their extreme outer ends with the colored lenses N, of the same color as the semaphore, and which, when the said semaphore is in a position having the parallel arms thereof in alignment with said lantern, are adapted to cover the white lenses of the lantern and exhibit a colored light, which is readily seen at night and indicates that the switch is open. When the semaphore is thrown away from the lantern, the same displays a white light, which indicates that the switch is closed and the track clear. The rear connecting-strap M, connecting the rear ends of said parallel arms together, is adapted to strike against the strike-plate O, secured to the face of the pole or tower F directly opposite the lantern, and thus limit the motion of the semaphore, so that when the same is thrown up against said pole the lenses carried by the parallel arms will be thrown into direct alignment with the lenses of the lamp or lantern. The advantages of such construction are apparent. An ordinary ladder P is connected with said pole or tower, and provides means whereby ready access may be had to the lamp or lantern.

Secured to opposite sides of the pole or tower F and near the bottom thereof are the opposite guide-pulleys Q, over which pass operating-wires R, which extend up from said pulleys and are connected at *r* to opposite sides of the semaphore I, so that a pull on one wire will cause the semaphore to drop, while a pull on the opposite wire will draw the same up against the pole. A supplemental offstanding guide-pulley S is secured to the track side of the pole or tower and holds the wire which throws the semaphore up against the post off from said poles, so that when the same is drawn upon the semaphore will be tightly and accurately drawn against said pole, so that the lenses carried thereby will be always thrown into alignment with the lenses of the lamp.

The two operating-wires R pass from under the guide-pulleys Q through an adjacent T-shaped bracket T, located adjacent to the pole or tower F and provided with perforations *t* in each end thereof, so as to spread said wires and allow the same to evenly pass over said guide-pulleys. The operating-wires R pass from said spreading-bracket and are connected at their other ends to opposite arms of a horizontal oscillating T-lever U, pivoted to a suitable point of attachment adjacent to the switch-stand D. Said T-lever U is connected pivotally with the connecting-bar V, which is itself pivotally connected with the switch-operating rod C by means of a suitable clamp W. It will thus be seen that as the switch-operating rod is operated from the switch-stand D to open and close the switch that the horizontal oscillating T-lever connected therewith will operate the two semaphore-wires R to either throw the semaphore away from the pole or tower, as described, or to pull the same up against the supporting pole or tower, both positions and the use of the same as signals being already fully described.

The construction, operation, and advantages of the herein-described switch-semaphore and its operating mechanism are thought to be quite obvious without further description. As originally premised, it may be further observed at this point that an essential feature of this invention is the avoidance of divers levers to operate the semaphore and the use of a single T-lever U, which not only simplifies and reduces the multiplicity of parts, but also at the same time renders the apparatus less likely to get out of order, and therefore more efficient in operation.

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

1. In a railway-signal, the combination, with a pole or tower and a signal-lantern secured to one face of said pole near its upper end, of a semaphore pivotally secured to said post and having opposite right-angularly-disposed signal-blades and a U-shaped lens-frame at its upper end working over said post and provided with opposite colored lenses adapted to be thrown into alignment with the opposite lenses of said lamp or lantern, and means for swinging said semaphore, substantially as set forth.

2. In a railway-signal, the combination, with a pole or tower having a strike-plate upon one face near its upper end and a signal-lantern secured to said pole directly opposite said plate, of a semaphore pivoted at its lower end to said pole and provided with opposite right-angularly-disposed signal-blades and a U-shaped lens-frame at its upper end, said lens-frame comprising opposite parallel arms having colored lenses at their outer ends, and a connecting-strap or cross-arm connecting the inner ends of said arms and adapted to be thrown against said strike-plate to limit the movement of the semaphore, and means for swinging said semaphore, substantially as set forth.

3. In a switch-signal, the combination, with a switch-stand, the switch-rod connected to said stand, a pole or tower located at a distance from said stand, and a signal-lantern secured to said tower, of a semaphore pivotally secured to said post and provided with a U-shaped lens-frame working over said post in conjunction with the lantern, guide-pulleys secured to opposite sides of said pole near its lower end, a supplemental offstanding guide-pulley secured to the track side of said pole above one of said guide-pulleys, a T-shaped spreading bracket, a horizontal T-lever adjacent to said switch-stand and connected with the switch-rod, and operating-wires connected at one end to opposite ends of said T-lever, passing through said spreading bracket, under the opposite guide-pulleys, and connected to opposite sides of said semaphore, the wire adjacent to the track passing over said off-

standing guide-pulley, substantially as and for the purpose specified.

4. In a switch-signal, the combination of a switch-lever, the semaphore-pole having opposite guide-pulleys near its lower end, a swinging semaphore pivoted to said pole, a wire-spreading bracket located adjacent to the pole, a single horizontal T-lever located adjacent to said switch-lever and connected therewith, and operating-wires connected to opposite ends of said T-lever, passing through said bracket and under the opposite guide-pulleys and connected to opposite sides of the swinging semaphore, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FREEMAN M. NYE.

Witnesses:
L. E. MERRY,
D. C. BURNISON.