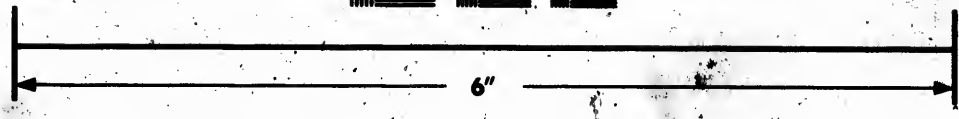
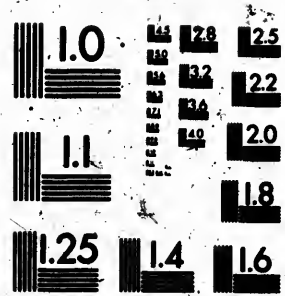


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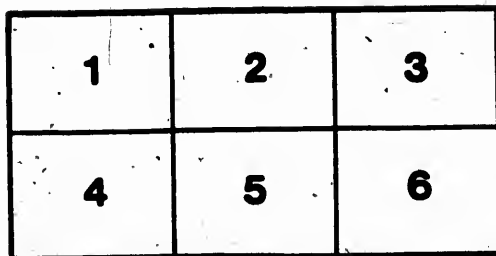
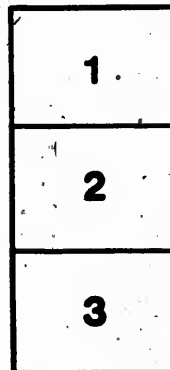
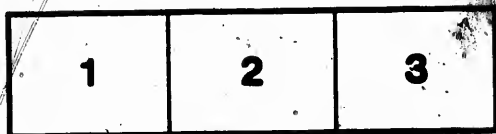
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*W. K. Muir*

# GREAT WESTERN RAILWAY.

*Hamilton, Ontario, Oct. 15, 1877.*

The improvements referred to in this Circular are in use upon this Railway, and considered valuable, and are worked under the following regulations :

" Engines of all trains will have Head-lamps fitted with a red shade, and before any Engine is moved to come upon the main track, or foul of it, after sunset and during night-time, the Engineer must first draw the red shade so as to exhibit the red light from the Head-lamp, and just so long as the Engine is upon the main track running with or without a train, this red signal must be displayed, and the moment the Engine and its train is clear of the main track, and upon the side track, and the switches all properly set for the main track, then the red shade will be withdrawn, and only the ordinary white light visible, but each Engine, night and day, will have placed and exhibited upon the front of the Head-light-glass, upon the bar for the purpose, the number of the train, whether regular or special, to which it is attached. Engineers will carefully see that the numbers are properly set on the bar.

If your Company would like to try them, the cost is comparatively small, please address

Yours respectfully,

**ANDREW DICK.**

Reference :

**W. K. MUIR,**  
General Superintendent.

[Please turn over.]

A. DICK.

Improvement in Signal Lights of Locomotives.

No. 129,797.

Patented July 23, 1872.

Fig. 1

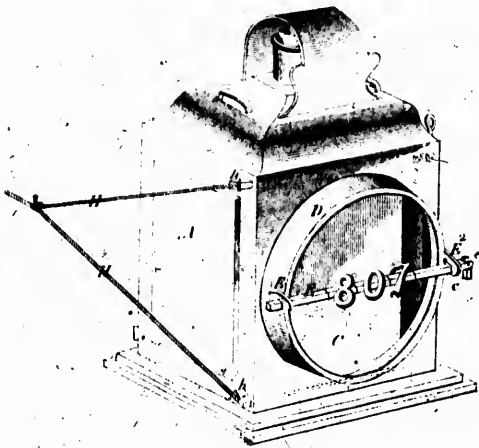


Fig. 2

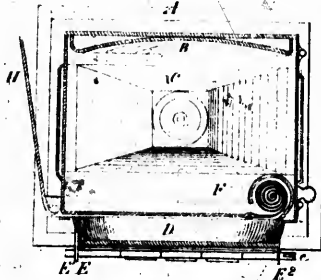


Fig. 3

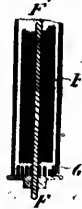


Fig. 2  
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# Improvement in Signal Lights for Locomotives.

Specification forming part of Letters Patent No. 129, 797, dated 23rd July, 1872.

Figure 1, is a perspective view of a Head Light having my improvements applied thereto; Fig. 2 transverse Sectional View on lines Y Y Fig. 1, and Fig 3 is a detached view shewing the Coiled Spring which rolls up the screen.

Similar letters of reference denote corresponding parts in both figures.

It is well known to all who are familiar with the running of Railroad Trains, particularly when trains are being run by telegraph, that it is a matter of much importance that the Conductor of passing trains shall know whether a train which they are passing, or which is passing them, is or is not a certain train specified in their Time Table or Schedule, or Telegraph Train Order. It is also very essential that the Engineer of a Train should be able to indicate promptly to an approaching Train whether he is on the Main Track or on a Siding; and with a view to place both of these important matters within the control of an Engineer while riding on his Engine, two features of construction in a Lamp are found to be desirable. First, a number or its equivalent mounted in a fixed position, so that it shall be illuminated by the Lamp, and an independent, moveable, semi-transparent Screen, Curtain or Shade, arranged so as to be readily seen from an approaching Train, this curtain being interposed or withdrawn at the will of the Engineer, in such manner that it shall serve as a Cautionary Signal, and yet shall not obscure the permanent Signal first referred to as indicating the number of the Train.

Having thus set forth the nature and object of my invention, I will now describe one method which I have invented for carrying it into effect.

In the accompanying Drawing A represents the body of the Lantern, which may be of any usual or desired construction. It is in this instance provided with a Reflector B in rear of the Lamp C, in order that as much of the light as is possible may be thrown through the Circular face plate D. E is a Signal Supporting Bar, mounted by preference in, slotted lugs or ears, E<sup>1</sup> E<sup>2</sup> projecting from opposite sides of shell or Sash of face plate D. One end of this Bar is jointed as at e, the short pivoted end hanging down by its own weight, and thus in connection with a pin e<sup>1</sup>, which passes through the Bar just inside of the ear E<sup>2</sup> serving to lock said Bar firmly in position in the ears, and guard against its accidental displacement, while at the same time it (the Bar) can be easily removed by raising up end e until it is in line with the rest of the bar, then sliding it inward until that end can be removed from bar E<sup>2</sup>, and then moving the Bar in the opposite direction until its opposite end is disengaged from ear E<sup>1</sup>. In the drawing I have shown the number (807) affixed to the bar; but it is evident that the Signals need not be confined to number, but that any other device may be employed at will, although in ordinary practice numbers will generally be found the most convenient. These numbers are secured to the bar by means of sleeves—one to each figure—the sleeve fitting the bar with sufficient accuracy to insure their retention in place; or when preferred, additional sleeves may be employed to fill the space at each side between the ears, leaving play enough to permit the bar to be put in place, or both bar and sleeve may be perforated to receive pins or other equivalent fastening devices employed, and it is apparent that a Spring-latch may be substituted for the jointed end to retain the bar in place. The Bar may be supported independent of the Lantern, but it is believed that the Construction and Arrangement shown will be found to be the best in practice. F is a flexible semi-transparent Signal Curtain or Shade. It is arranged behind—that is inside—of face plate D, but in front of the light, and is wound or rolled upon a roller or spindle F<sup>1</sup>. This Spindle is actuated by a Coiled Spring G (see fig 3) applied to one end of the roller in such manner as to roll up the curtain when left free to act upon it. H is a Cord the forked ends of which pass over pulleys h, h, and are attached to the upper and lower corners of the Shade, while the other end may be carried back into the cab or engine house within convenient reach of the Engineer. The position and arrangement of this cord in the lantern are fully shewn in full lines in Fig. 2, and in dotted lines in Fig. 1, and it will be readily seen that by pulling upon the cord the curtain can be drawn across the open face of the head-light, so as to show a coloured or white light at the will of the operator; the arrangement of parts being such that as the curtain is drawn before the light the tension of spring G is increased so that when the cord is released the curtain is automatically wound up.

Very many modifications of the devices which I have shown and described may be made without departing from the spirit of my invention; hence I do not wish to be confined to this precise construction; nor, do I wish to be confined to their use in connection with a head light, as they may, either in whole or in part, be used to advantage upon the various Signal Lamps employed by railway employees.

When it is desirable to exhibit different colours at different times from the same lamp, a series of rollers with curtains of various colours may be employed, these rollers being arranged upon the same side of the lamp, or upon opposite sides, as convenience may dictate.

It will be seen from the above description that the Bar E, although made removable for the purpose of changing the numbers, or for other purpose, yet so far as its use as a Signal is concerned, and with reference to the curtain, it is fixed, said curtain being removable at the will of the Engineer, and only used when occasion requires; whereas the numbers are always in position, and always in sight, either with or without the curtain.

