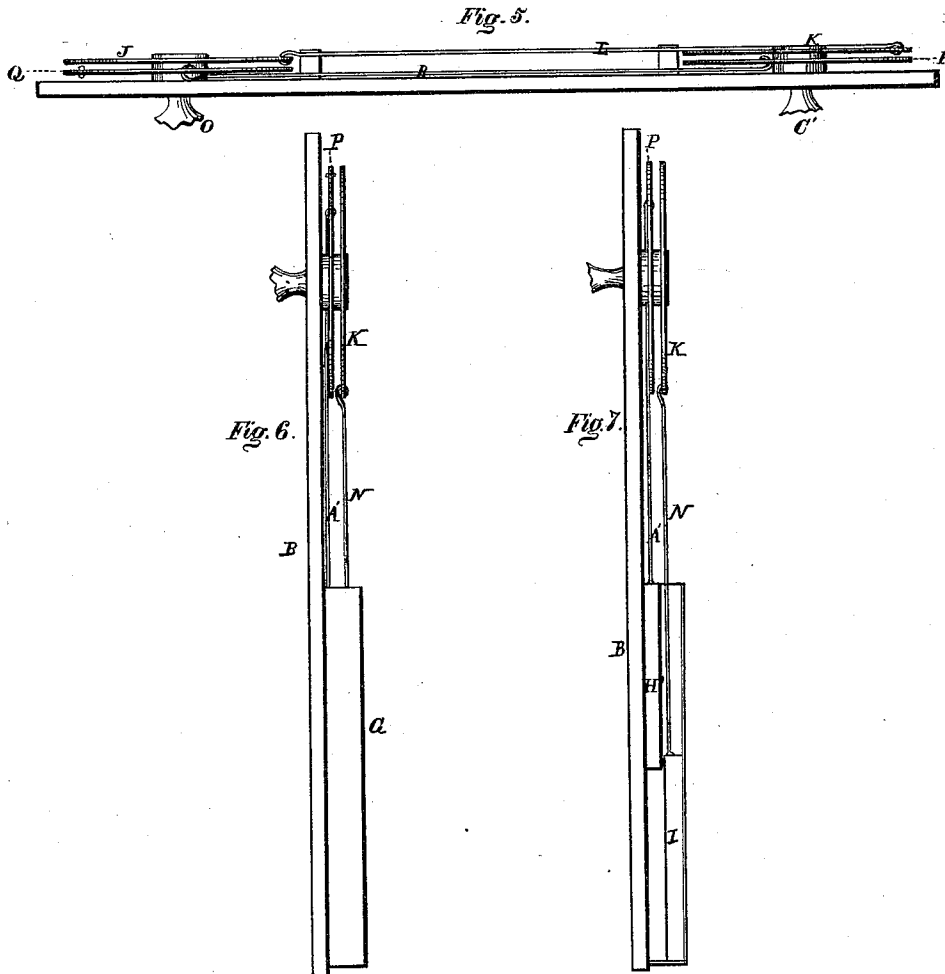


A. DRESSEL.

LOCOMOTIVE SIGNAL HEAD-LIGHTS.

No. 179,406.

Patented July 4, 1876.



Witnesses

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UNITED STATES PATENT OFFICE.

ANDREW DRESSEL, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF HIS
RIGHT TO JOHN McCULLOW, OF SAME PLACE.

IMPROVEMENT IN LOCOMOTIVE SIGNAL HEAD-LIGHTS.

Specification forming part of Letters Patent No. **179,406**, dated July 4, 1876; application filed
May 13, 1876.

To all whom it may concern :

Be it known that I, ANDREW DRESSEL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Signal Head-Light for Locomotives; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

Figure 1 is a front view of the head-light. Fig. 2 is a side view of the inside, a portion of the door of which is represented as broken away in order that it may be seen. Fig. 3 is a view of the inside of the front door. Fig. 4 is a front view of the inside of the head-light. Fig. 5 is a view of the upper edge of the front door. Fig. 6 is a side view of the edge of the door. Fig. 7 is a detached section.

Like letters of reference refer to like parts in the several views.

The nature of this invention relates to a head-light for locomotives, &c.

The object of the invention is to combine in one lantern or head-light the three lights of different colors—viz., white, green, and red—usually employed on locomotives as track-lights and signal-lights, and for which purpose a separate lamp is used for each color.

By the use of my invention several colored lanterns or lamps are dispensed with, and the care, expense, and trouble of them avoided.

The said invention is constructed and operated substantially as follows :

The light termed the "head-light" on a locomotive consists of a large open-face lantern, containing a single white light with a reflector behind it. This light is especially for illuminating the track, and for giving notice of the approaching train. Besides this head-light are used two green lights, consisting of lanterns placed on the front of the engine; or, in place of the green lights, two red lights are used.

It is understood that the red lights indicate that another train is closely following on time. The green lights indicate that there is a following train, but at no special time, and which is sometimes called a "wild" or "extra" train, as it is not run on card-time, while the train carrying the red light is.

These several lamps require much care,

time, labor, and expense to keep in order, and to remove them from, or to place them in, position on the engine. To avoid the use of these several lamps—namely, the green and red—is the purpose of this my invention. To this end I make use of the head-light modified in its construction as follows :

In Fig. 1 of the drawings, A indicates the lantern of the head-light, which is or may be of the same shape and size of that in ordinary use. B is the door, and C the glass or eye, of the lantern, below on each side of which are two smaller eyes, D D. Within the lantern, and directly back of the eye C, is placed the reflector E, corresponding in size and character with the eye, below and on each side of which is a smaller reflector, F F, Fig. 4, corresponding in size and position to the eyes D D referred to, behind which they are respectively located, as will be seen in Fig. 2. The lamp and chimney of the lantern are indicated by the dotted lines *a b*, Fig. 4, which are or may be the same as the chimney and lamp of an ordinary head-light.

The eye C of the lantern is for the white light for illuminating the track, sometimes called "track-light," while the smaller eyes D D are for the green and red signal-lights.

To obtain the red and green colors for the signal-lights, the eyes D D are provided with green and red glass, which may be used interchangeably, as the case may be, thereby coloring the light as it passes through the eyes from the lamp *b*, which, at the same time, gives off the white light for the track through the eye C, thus giving two colors from the same lamp. The plates of colored glass for staining the light as it passes through the eyes D D are secured to the back of the front door B of the lantern, as follows : On each side of the eyes D D are fixed to the inside of the door B a guide or groove, G H, Fig. 3, wherein is fitted so as to slide freely two plates of glass or slides, (red and green,) one before the other, as will be seen in Figs. 3 and 7, in which I I' represent the green slides or squares of glass, immediately in front of which are the red squares or slides H, as shown in Fig. 7, representing an edge view of the door and glass slides.

Said glass slides are operated vertically by

a system of connecting-rods and wheels, arranged and operated substantially as follows: In the upper corner of the door is pivoted a wheel, J, Figs. 3 and 5. In the opposite corner is also pivoted a similar wheel, K. The two wheels are connected to each other by a link, L.

To the wheel J is attached the green slide I by a rod, M, and the green slide I' by a rod, N.

By this arrangement it will be obvious that on turning the pivot or pintle of the wheel J by the knob O, Figs. 1 and 5, in the direction of the arrow, the two green slides will be drawn upward so far as to cover the eyes D D, which, as a consequence, will give a green color to the light that may pass through them as it is eliminated from the lamp, and also reflected by the two smaller reflectors F F, situated behind them, as is the large reflector E behind the eye C.

These two green lights beheld in front of the engine are signals indicating that another train is coming, or may be expected along, but not immediately, as above said, thereby performing the same office that two separate and distinct green lamps do usually employed for this purpose, and which are placed upon the front of the engine, in such position that they may be readily seen by the employes of the road.

In the event green lights are not needed, but, on the contrary, red lights, the change is accomplished immediately, as follows: Behind the two wheels J K are arranged, on the same spindles or pintles, two similar wheels, P Q, Figs. 3 and 5. Said wheels P Q are connected to each other by a link, R, and the wheels are respectively attached to the red slides H' J' by rods A' and B', Fig. 3. The two red slides, when down, are not seen, they being covered by the green slides I I', but which, however, are of the same size, and work in similar grooves by the side of them.

In order to raise the red slides, so that they may take the place of green ones that may cover the eyes D D, the green ones are lowered, as shown in Fig. 3, by reversing the movements of the wheel J from that indicated by the arrow, which, as above described, raised them. Now, on turning the wheel P by the finger-piece C' in direction of the arrow, the red slides will be raised so far up as to cover the eyes D D, as shown in Fig. 3, substantially in the same way as did the green slides. The light now, as seen in the eyes, will be red, as before it was green, thereby indicating by the red signal-lights that a train is following close behind on time, the same as would the two separate red lamps ordinarily used for this purpose.

It will be seen that by this device one lamp only is employed for the triple purpose of lighting the track, signaling the coming trains, and the order or time of their coming, which heretofore has been done by the use of five

lamps—viz., one for the head-light proper for illuminating the track, two red lights for signaling the near approach of a following train on time, and two green lights for signaling the wild or extra train.

By this it will be obvious that a large expense is saved in the matter of lamps, as one lamp is made to answer the purpose of several, and that without any additional consumption of oil, and no more care than that required to trim and clean the head-light, the head-light performing these several duties by the colored interchangeable glass slides, which are easily and readily operated from the outside, as above described.

In thus using the light of the head-light for signaling, its power for its own peculiar duties is not materially diminished, as the signal-eyes D D do not obstruct the rays of the lamp and that of the reflector to such a degree as to impair its usefulness; and in the event that neither the red nor the green lights are required, both of them may be turned off, and a white light, or that from the lamp, will be emitted from them, as the glass in front of the eyes is white, thereby increasing the illuminating capacity of the head-light.

The said invention may be used for other purposes analogous to the one specified.

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

1. The glass slides I and I' and rods M N, as arranged in relation to the signal-eyes D D, and in combination with the wheels J K, link L, door B, and finger piece O, in the manner substantially as described, and for the purpose specified.

2. The glass slides H' and J', and rods A' and B', as arranged in relation to the signal-eyes D D, and in combination with the wheels P and Q, link R, door B, and finger-piece C', for operating the same, in the manner substantially as set forth, and for the purpose specified.

3. The door B, slides I I' and slides H' J', rods M N and rods A' B', wheels J K and P Q, links R L, and signal-eyes D D, arranged to operate substantially as described, and in relation to and in combination with a head-light or lantern, A, substantially as herein described, and for the purpose set forth.

4. The reflectors E and F F and signal-eyes D D, arranged with interchangeably colored lights between said reflectors F F and signal-eyes D D, substantially in the manner as described, and for the purpose set forth.

5. In combination with a head-light and signal-eyes D D, colored lights operated by mechanism to reflect different lights for signal purposes, substantially as and for the purpose set forth.

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Witnesses:

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