2 Sheets—Sheet 1.

A. DRESSELL, & E. H. & J. G. VOTH.

Head-Light for Locomotives.

No. 202,711. Patented April 23, 1878.

Fig. 1.

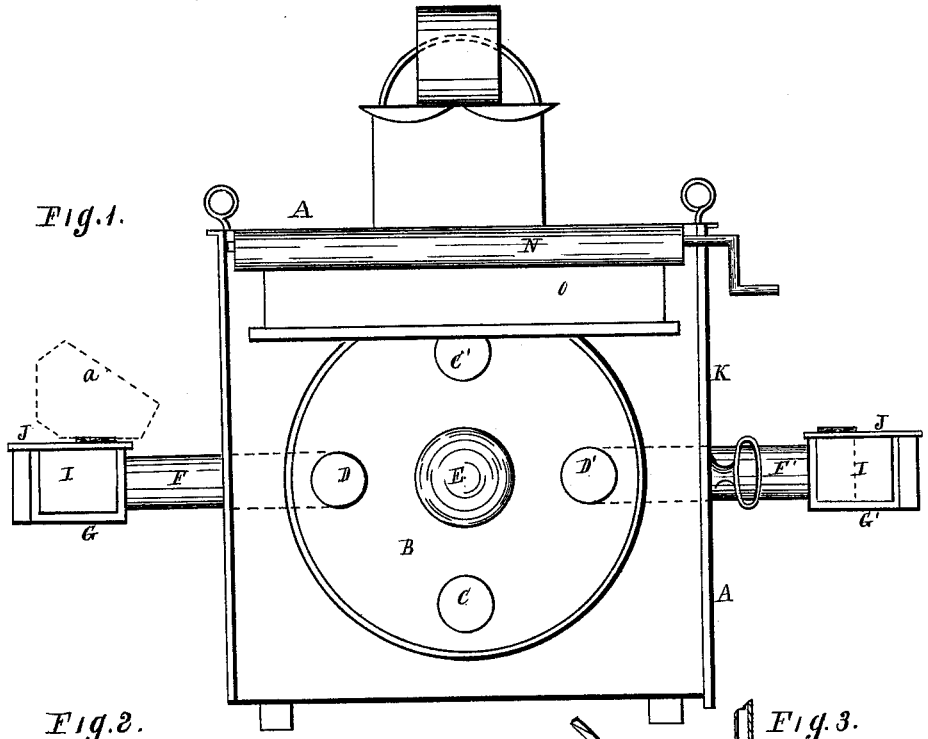


Fig. 2.

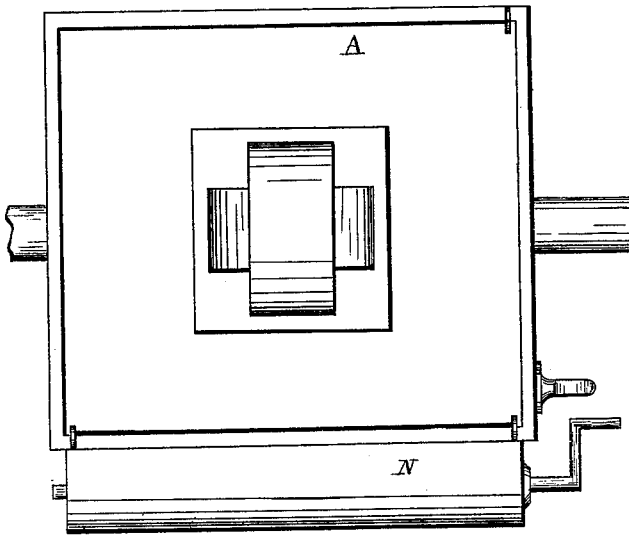


Fig. 3.

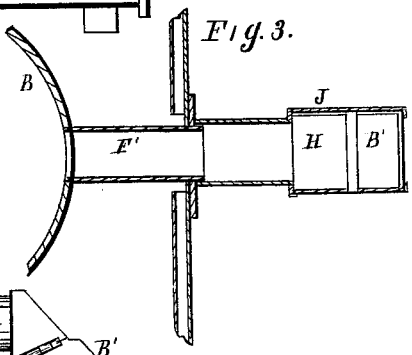
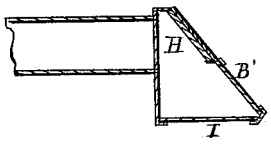


Fig. 4.



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2 Sheets—Sheet 2.

A. DRESSELL, & E. H. & J. G. VOTH.

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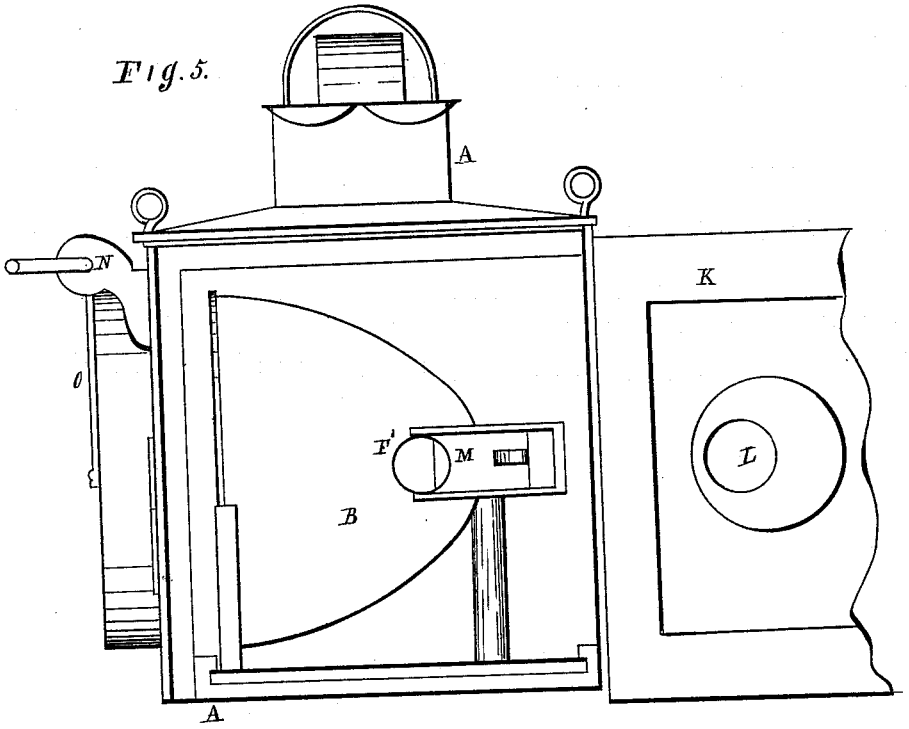
Fig. 5.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HEAD-LIGHTS FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. **202,711**, dated April 23, 1878; application filed March 5, 1878.

To all whom it may concern:

Be it known that we, A. DRESSELL, E. H. VOTH, and J. G. VOTH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Head-Lights for Locomotives, of which the following is a description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of the head-light. Fig. 2 is a top view. Figs. 3 and 4 are detached sections. Fig. 5 is a side view.

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

The nature of our improvement in head-lights relates to the construction and arrangement of the side or colored lights (termed "signal-lights") in connection with the main head-light, whereby the light from the reflector passes through a tube or pipe, one end of which terminates in the reflector and the other in a chamber wherein is also a reflector. By means of said tube the light passes from the head-light into the said chamber, falling upon the mirror or reflector therein, from which it is reflected through the colored glass in front of the aforesaid chamber, so that these colored lights can be seen for a long distance in front of the engine. These colored side lights or signal-lights are placed on each side of the head-light lantern, and about in line with the lamp of the lantern, so that its light will pass directly through the tubes to the reflectors in the chambers. This light eliminated from the head-light is sufficient to illuminate the signal colored lights for all purposes required. Furthermore, by this improvement a large amount of oil is saved, and the ordinary night-lanterns now used on each side of the front of the engine are dispensed with, the head-light being made to perform the duty of both, in so far as the light may be concerned, without any appreciable diminution of strength.

A further improvement relates to a transparent curtain, so arranged in front of the head-light lantern that it may be rolled up and down over the front or glass, the object of which is to protect the light in case the glass of the lantern becomes broken; also, to indicate that, when the engine is on the side track and the curtain down, the main track is clear for an approaching train.

For a more full and detailed description of the said invention reference will be had to the accompanying drawings and following specification.

In Fig. 1, A represents the lantern of the head-light, and B the reflector, which may be of the usual construction, to which is connected the improvements referred to. The openings or holes C C′ in the reflector are for the lamp and its chimney arranged in the usual way. In the sides of the said reflector are holes or openings D D′, arranged in line with the light of the lantern, supposing it to be at E. Hence the radiating rays of light will pass directly from E to the openings D D′, thence through the tubes F F′ into the chambers G G′, in which chambers are arranged reflectors, as seen at H, Figs. 3 and 4, at such an angle that the light from the lamp at E and reflector B are thrown from the reflectors H through the glass or lenses I, respectively, in front of the chambers, by which these side lights can be seen for a long distance from the engine.

The construction and arrangement of the several parts of the side-light mechanism and the tubular connection with the reflector B are alike on either side of the head-light, and which, as above said, consists of tubes F and F′, with their respective chambers, having glass faces or fronts, and also glass backs B′, so that the light may be seen from the rear as well as from the front of the engine. Access is had to the chambers through the top, of which J, Fig. 1, is the cover. The dotted lines *a* indicate that the cover is open.

Access is had to the head-light through the side door K, which, in Fig. 5, is represented as open. That section of the tube F′ projecting from the outside of the door is a trifle larger than that part thereof inside attached directly to the reflector B. Hence, on closing the door, the ends of the two sections of tube will shut one over the other, and its continuity is thereby maintained, as seen in Fig. 3. On opening said door the tube is separated, as seen in Fig. 5, in which L represents the end of the tube attached to the door, and F′ the tube project-

ing from the reflector. M is a slide whereby the light may be shut off from entering the tube and the chamber G. Each of tubes F and F′ are alike provided with a slide for the purpose specified.

In a cylindrical case, N, is a roller, whereon is wound a transparent curtain, O, Fig. 1. Said curtain is shown as partially unrolled, and which may be so far unrolled as to cover the entire face of the head-light.

The purpose of the colored side lights above described is for signaling as to the nature of the approaching train—whether it is a train running on time or a train running between the regular trains, as the local ones or way-trains. Said side lights are used for all the signaling purposes for which the two signaling-lights are used, and placed on each side of the front of the engine, requiring, as above said, two separate lamps. Hence their use is attended by an additional expense of oil and time in caring for them, which is avoided by the use of the side lights herein described, as they borrow their light from the head-light, and that without diminishing its illuminating capacity, it not being interrupted by the side lights, but is thrown forward ahead of them upon the track.

Heretofore side lights have been used in connection with head-lights; but such lights have been placed so far forward and near the face of the head-light that their light is lost in the greater light from the main light. Hence such side lights fail to be seen at any considerable distance in advance of the engine. Therefore they are of little practical value.

The side lights herein described avoid this objection, for the reason of their being placed so far back from the face of the head-light that their light is not lost in its greater blaze. Hence they can be seen as far in advance of the engine as the ordinary lanterns alluded to.

Glass of different colors may be used in the side lights herein described, as the red and green, or other colors, as the nature of the signal to be given may require; and the light may be entirely shut off by the slides M.

In the event a train is standing upon a side track, leaving the main line open for a coming train, the fact is made known by lowering the curtain O, thereby partially concealing the brightness of the head-light, but at the same time leaving the side light in full glow, making known the fact that the track is clear, as aforesaid.

The curtain is also used to protect the glass from being broken by storms of hail, &c., and when broken it serves the purpose of a glass until repairs are made.

What we claim as our invention, and desire to secure by Letters Patent, is—

The chamber or chambers G and G′, reflectors H, glass face I, and glass back B′, substantially in the manner as described, and for the purpose specified.

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