L. A. WOOD.

Head-Light for Locomotives.

No. 208,553. Patented Oct. 1, 1878.

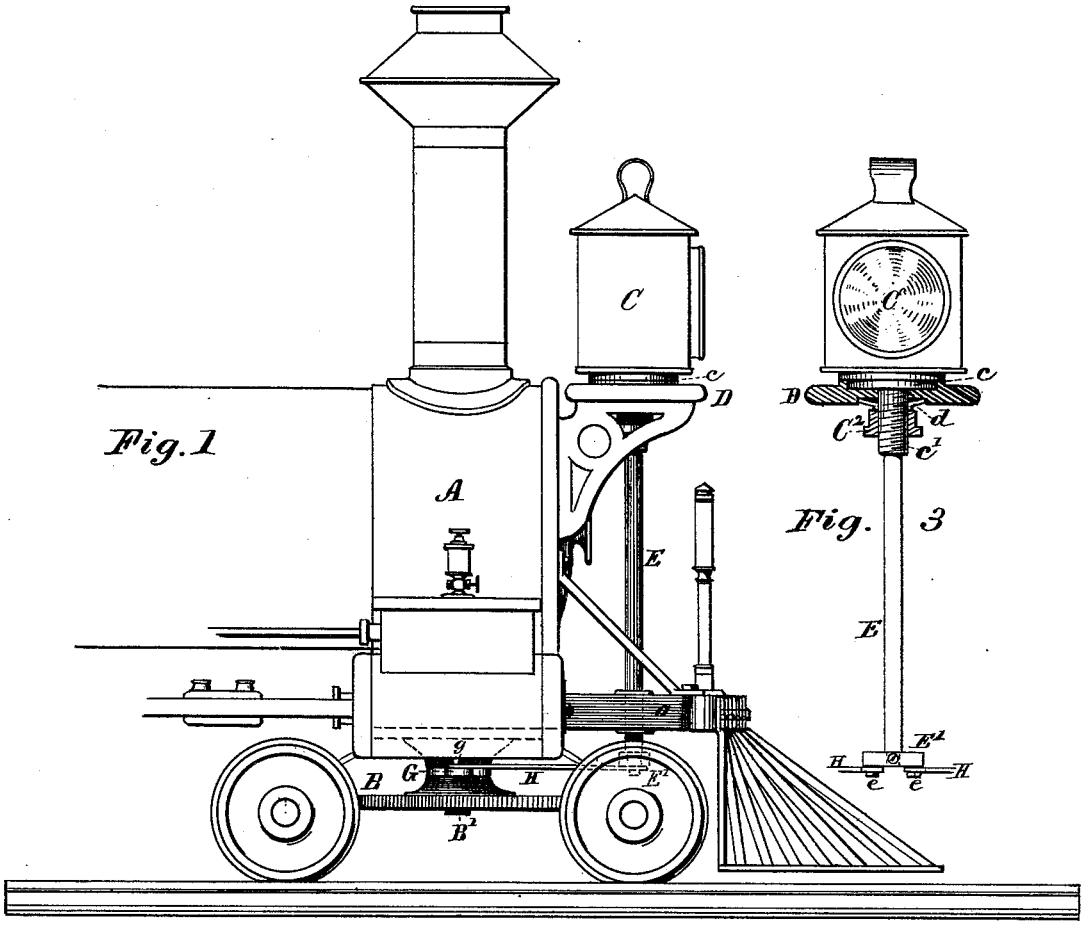

Fig. 1

Fig. 3

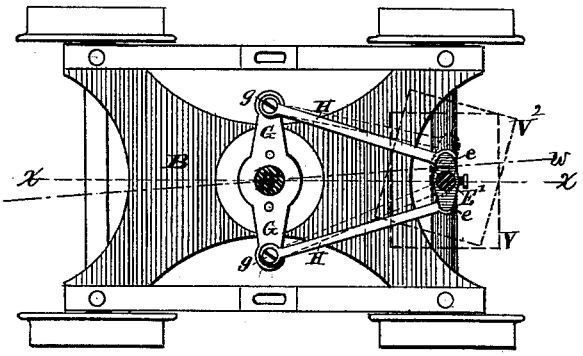

Fig. 2

Witnesses.

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UNITED STATES PATENT OFFICE.

LUCIUS A. WOOD, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JOSEPH TILLOTSON, OF SAME PLACE.

IMPROVEMENT IN HEAD-LIGHTS FOR LOCOMOTIVES.

Specification forming part of Letters Patent No. **208,553,** dated October 1, 1878; application filed March 18, 1878.

To all whom it may concern:

Be it known that I, LUCIUS A. WOOD, of Worcester, in the county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Head-Lights for Locomotives; and I declare the following to be a description of my said invention, sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a side view of such parts of a locomotive and head-lantern as are necessary to illustrate the nature of my invention. Fig. 2 represents a plan view of the pilot-truck and connecting devices. Fig. 3 is a front view of the head-light lantern with swivel-spindle and section of bracket-board.

The object of this invention is to provide means whereby locomotive head-lights may be automatically oscillated or adjusted to throw their central rays of light more directly onto the track while passing curves of the road.

The nature of my invention consists in the improved mechanism for swiveling and automatically operating the head light or lantern, as hereinafter explained.

The minor features and details of the invention will be understood from the following description:

In the drawings, A denotes the body or head-frame of the locomotive. B indicates the pilot-truck, of ordinary construction, and pivoted in the usual manner beneath the head-frame by the central king-bolt B′.

C denotes the head light or lantern, which rests upon the bracket-board D in the usual position. In the present instance the bottom of the lantern is made with a circular boss or projection, *c*, which fits into a circular central opening or depression formed on the bracket-board D, while a hub or central extension, c^1, extends through the bracket-board, and is provided with a nut or clamp-piece, C^2, for retaining the lantern upon its seat. A cup-disk or spring, *d*, is arranged above the nut C^2, the upper part of which fits a recess in the under side of the board D, as illustrated in Fig. 3. This spring device serves to regulate the degree of pressure between the lantern C and its seat.

E indicates the operating-spindle or swivel-rod, arranged in upright position, with its upper end rigidly attached to the lantern C or its pivot-extension c^1, and its lower end, which extends below the pilot-board *a*, provided with a cross-head or crank-piece, E′, from which connection is made with the frame of the truck B.

G indicates an arm-bar fixed across the boss or center of the truck-frame and swinging with the frame. From the ends of the arms G connecting-rods H extend to the crank-pins *e* of the cross-head E′, whereby any swinging movement of the truck on the king-bolt B′ will be transferred to the spindle E, causing an oscillative movement of the lantern C. The joint-connections *g* between the arms G and rods may be made adjustable, so that the relative movement of the parts can be easily regulated, if desired.

The operation is illustrated in Fig. 2.

When the track is straight, the axis of the truck B and engine-body A coincide, as per dotted line *x x*. The lantern C then stands straight in position, as per dotted square V, the light being thrown directly forward. But when the track is curved, the axis of the truck B and the axis of the engine A assume angular positions, relatively, as per dotted lines *x x* and *w w*, and the connections operate to swing the lantern to one side, as indicated by dotted lines V^2, thus causing the central rays of light to be thrown inward onto the curve of the track, as indicated by the arrow.

The operating parts being once properly adjusted, difference in the curves causes no practical deviation in the effect of the light, since the shorter the radius of the curve in the track the greater will be the degree of swing or oscillative movement of the truck B and consequent movement of the lantern C.

The arm-piece G may be transversely slotted for the king-bolt B′ when used on trucks having free lateral swing connection with the main frame, so that the transverse vibration of the truck will not move the lantern.

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

1. In combination, substantially as hereinbefore described, the head light or lantern C, the axial spindle-rod E, rigidly connected thereto, and provided with the cross-head E′, the pilot-truck B, having cross-arms G and the connection-rods H, arranged and operating as set forth.

2. In a locomotive head-light apparatus, in combination, sustantially as hereinbefore described, the recessed bracket-board D, the lantern C, having bottom boss *c* and extension-hub c^1, the spring *d*, and adjustable clamp-piece or nut C^2, for the purpose set forth.

Witness my hand this 11th day of March, A. D. 1878.

LUCIUS A. WOOD.

Witnesses:
CHAS. H. BURLEIGH,
JOHN TILLOTSON.