(No Model.)

E. WILHELM.

LOCOMOTIVE HEAD LIGHT.

No. 262,169. Patented Aug. 1, 1882.

Fig. 1.

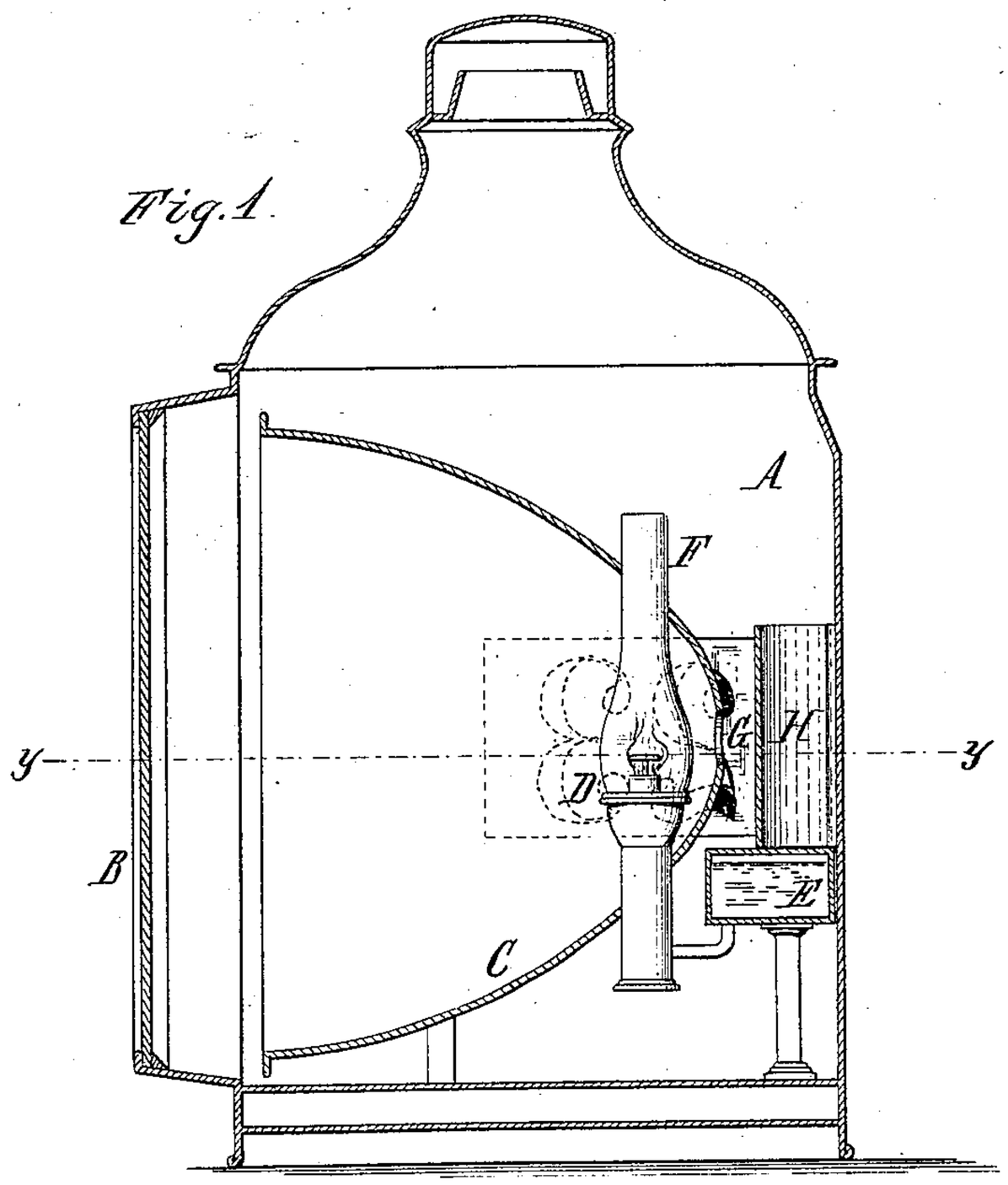
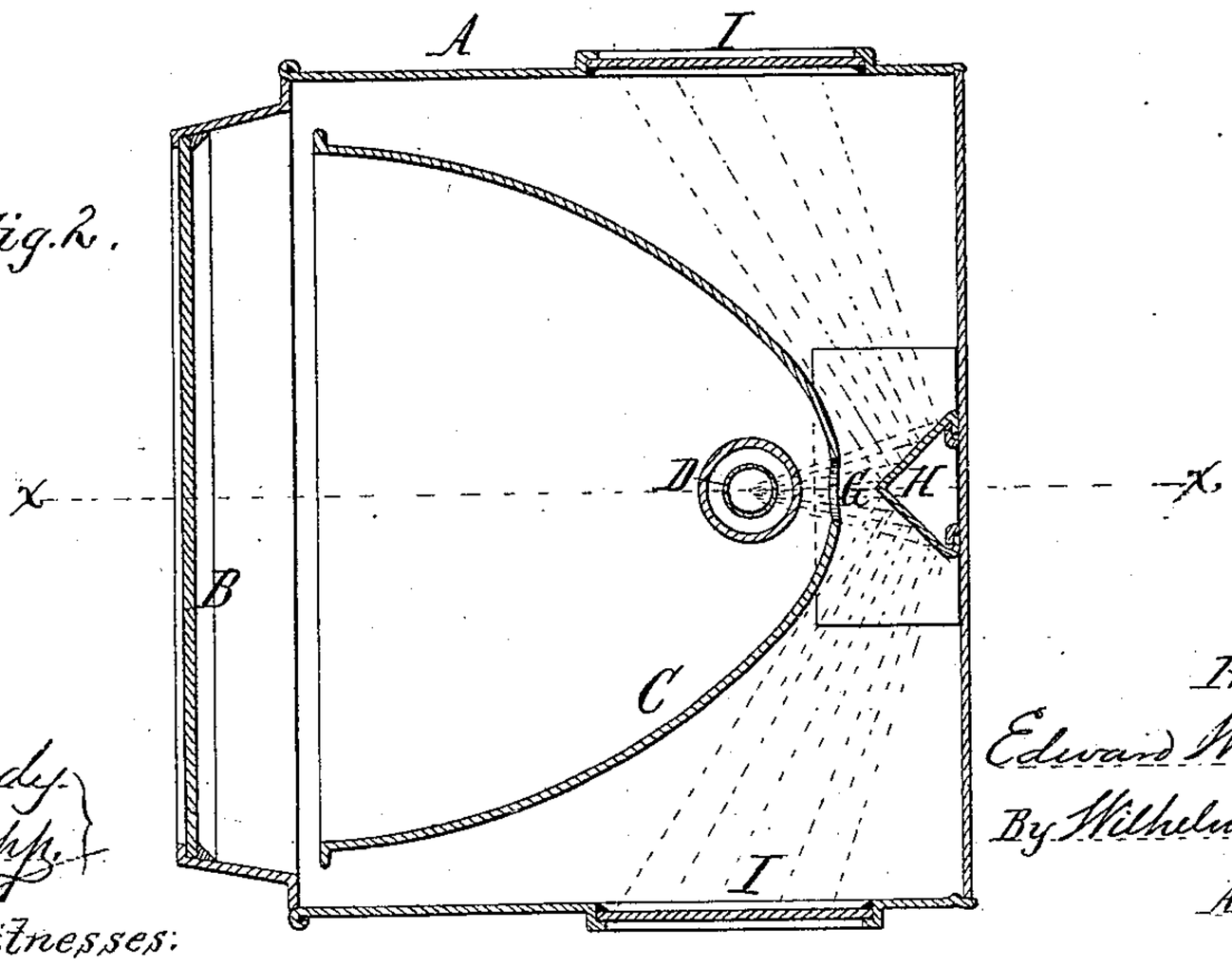


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD WILHELM, OF BUFFALO, NEW YORK.

LOCOMOTIVE HEAD-LIGHT.

SPECIFICATION forming part of Letters Patent No. 262,169, dated August 1, 1882.

Application filed June 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WILHELM, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Locomotive Head-Lights, of which the following is a specification.

This invention relates to an improvement in that class of head-lights which are provided with signal plates or lenses in the sides of the head-light case; and the object of the invention is to illuminate such signal-plates in a simple and efficient manner, so that the signals can be readily observed at night.

Heretofore these signal-plates have been illuminated in various ways, with more or less success, either by direct light thrown upon the signal-plates through openings in the reflector on both sides of the lamp, or by the light which is emitted through the chimney-opening of the reflector, and which diffuses itself in the upper portion of the head-light case, and also by light reflected backwardly from the front end of the head-light case.

My invention consists in constructing the reflector with an opening at or near its apex behind the lamp, whereby light is emitted backwardly into the head-light case, where it diffuses itself and may be utilized for illuminating the signal plates or lenses applied to the head-light case; also, in providing such case and reflector with an auxiliary reflector which deflects the light emitted backwardly through the openings in the main reflector, and directs such light upon the signals which are desired to be illuminated.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a head-light provided with my improvement, the plane of section being indicated by line *x x*, Fig. 2. Fig. 2 is a horizontal section in line *y y*, Fig. 1.

Like letters of reference refer to like parts in both figures.

A represents the head-light case, B the glass arranged in the front plate thereof, C the main reflector, D the burner, E the oil-reservoir, and F the chimney, all constructed and arranged in any suitable and well-known manner.

G represents an opening or aperture formed in the rear portion of the reflector C behind the burner D, and about in line therewith, so that the aperture G is covered or hidden by the burner and chimney, and not visible from the front to any considerable extent.

H represents a reflector arranged in the rear of the main reflector C, and constructed to divide the light which is emitted backwardly through the opening G, and to deflect such light laterally toward both sides of the head-light case. This reflector may be composed of two plane reflectors arranged at an angle to each other, as represented in the drawings; or it may be made curved, convex, or conical, or of any other suitable form, so as to deflect a sufficient quantity of light to properly illuminate the signal-plates I. The latter are preferably arranged in line with the burner D and reflector H, as represented in the drawings; but they may be arranged above or below the burner, in which case the reflector H is shaped so as to deflect the light in the proper direction to illuminate these signal-plates. The same result may be attained, but in a less satisfactory manner, by omitting the reflector H and painting the interior of the head-light case white, so that the light which is emitted through the opening G will be diffused in the head-light case and serve to illuminate the signal-plates I.

As the opening G lies directly behind the burner and is hidden by the same, it does not interfere with the illuminating power of the reflector, as openings in the sides of the reflector will do. The light emitted through this opening is more intense than that which is emitted by the chimney-opening, and not liable to be obscured when the upper portion of the chimney becomes covered with smoke or soot, which happens occasionally, and materially interferes with the illumination of the signal-plates. The opening G may also be used for lighting the lamp.

I claim as my invention—

1. In a head-light, a reflector provided with

an opening arranged behind the burner, whereby light is emitted backwardly into the head-light case for illuminating signal plates or lenses applied to said case, substantially as set forth.

2. The combination, with a head-light case, provided with signal plates or lenses, of a reflector constructed with an opening arranged behind the burner, and an auxiliary reflector, whereby the light emitted backwardly through such opening is directed toward the signal plates or lenses, substantially as set forth.

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