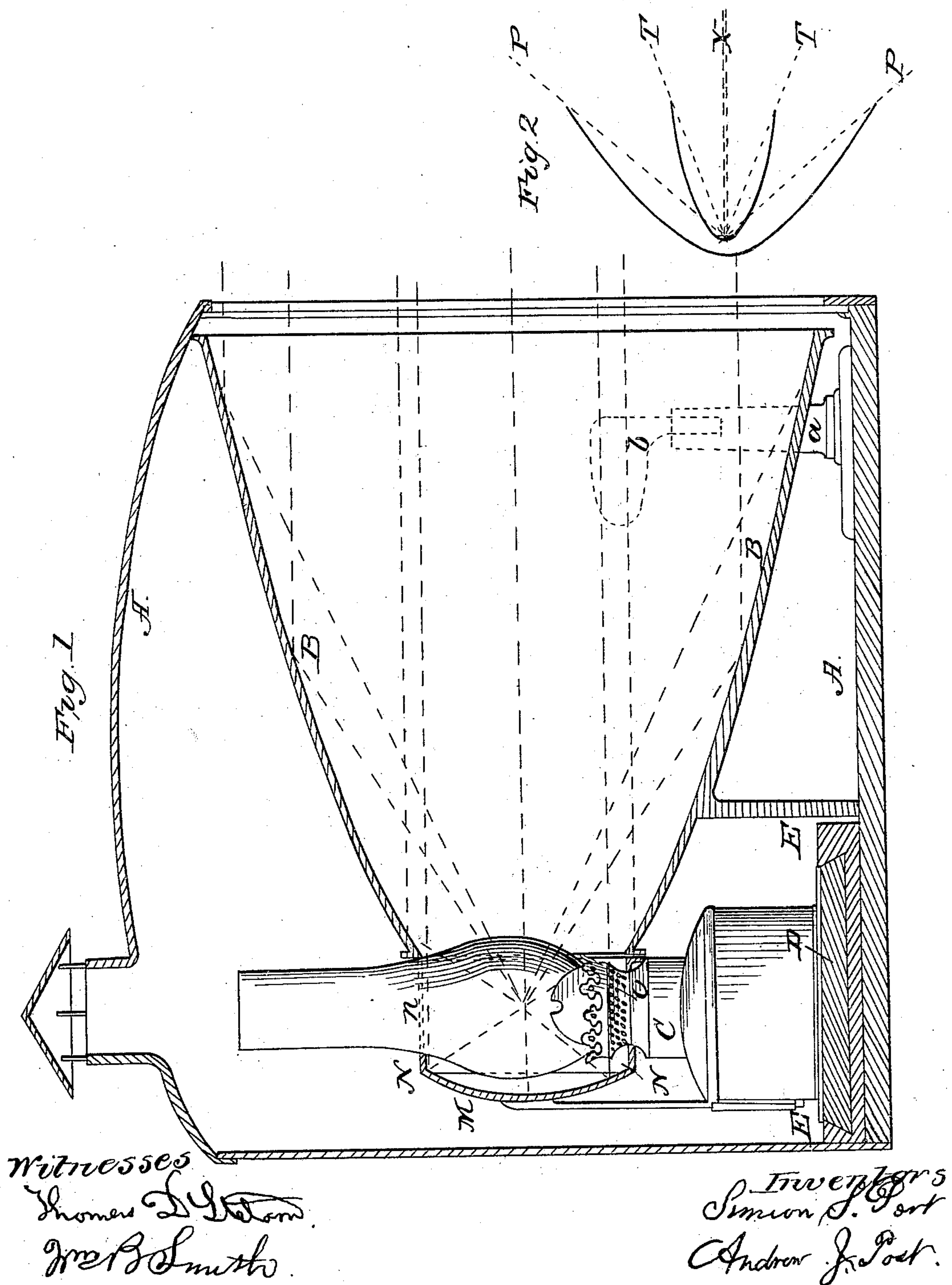


S. S. & A. J. POST.

Reflector.

No. 32,851.

Patented July 16, 1861.



UNITED STATES PATENT OFFICE.

SIMEON S. POST AND ANDREW J. POST, OF JERSEY CITY, NEW JERSEY, ASSIGNORS TO A. J. POST AND EDWD. C. CLARK, OF PIEDMONT, NEW YORK.

LAMP.

Specification of Letters Patent No. 32,851, dated July 16, 1861.

To all whom it may concern:

Be it known that we, SIMEON S. POST and ANDREW J. POST, of Jersey City, in the county of Hudson, in the State of New Jersey, have invented a certain new and useful Improvement in Reflectors for Lamps Intended More Especially for Headlights for Locomotives; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section on the axial line G, G. Fig. 2 is a diagram giving a comparative view of the effect of this and the ordinary reflector.

Similar letters of reference indicate like parts in both drawings.

A is a case or framing of the ordinary character.

B is a burnished reflector made of a paraboloidal form and mounted in the usual manner on supports *b, b*, inserted in hollow stands *a, a*. The paraboloid B is not complete but its smaller end is absent as represented.

A lamp C with a suitable chimney is mounted on a sliding carriage D so that it can be readily placed with its flame in the focus * and removed at pleasure. The slide D and its guides E are so located that the lamp is held in very close proximity to the edges of B.

M is a separate reflector made in a paraboloidal form and fixed upon the lamp slide D very close to the lamp. It is mounted in such position that when the lamp is in its place the axes of M and B coincide. The reflector M is more flattened or broad than B. By this we mean that the reflector M although actually smaller than B is cut from or may be conceived to form a part of a larger paraboloid. We place M in such position on D that the foci of the two paraboloids B and M coincide in position both being exactly in the brightest portion of the flame,—designated by a star, (*). The area of space covered by the rear reflector M is equal to or a little greater than that of the opening in the rear of the front reflector B. Around the edge of M is fixed a band N of burnished metal of such breadth as to extend across the interval between it and the rear edge of B. This band is open or omitted at the points *n, n*, directly above and below the common focus * of the reflectors.

In order to trim the lamp the slide E is withdrawn, bringing the lamp C and its several attachments altogether away from B. When again required for use the slide D carries all these parts back to the position represented. The guides E may stand so that the slide D may move in a plane which is at right angles to the axis as represented or may stand in other positions so that D shall move obliquely as it is withdrawn from B or they may be curved so that on withdrawing D it shall first move backward nearly or exactly in the line of the axis of the paraboloids and afterward when it has by a movement in that direction caused the lamp chimney and all the parts carried on the slide to be well separated from the front reflector it shall then move laterally.

It will be observed that no portion of the light is twice reflected except that which strikes on the band N. This latter is in great part ultimately utilized by a duplication of the reflections on the surfaces but all other rays are thrown directly in the proper parallel lines, those from M being projected exactly like those from the corresponding part of an ordinary paraboloidal mirror while those from B are also thrown in the same manner except that the paraboloid is of a deeper or more acute form than those ordinarily employed.

Our invention utilizes much light which would otherwise be diffused. In all reflectors of this class the effect sought is to project the rays of light in a nearly parallel direction. All the direct or unreflected rays which diverge more than about three degrees from the axial line are lost. In the use of the ordinary single paraboloidal form of reflector all the light within the cone * P, P except the slender pencil *, X, is diffused and lost by reason of the form of the reflector and this form cannot be changed to one more nearly akin to our reflector B because such change would bring the focal point too near the reflecting surface directly behind it. In our invention the form of B limits the quantity of rays thus diffused to the cone * T, T, which is smaller than * P, P, while the difficulty above pointed out as attending the use of such a form of reflector is obviated by our invention.

Beyond the mere use of the two reflectors arranged as described our invention involves

the novel feature of advantage in the fact that the rear reflector M and the edge band N thereof are mounted on the lamp slide D and carried therewith because it allows the
5 space between B and M to be less and consequently the proportion of the rays subject to double and triple reflection by striking N to be less than any means before known for such purpose.

10 Having now fully described our invention what we claim as new therein and desire to secure by Letters Patent, is—

In the construction of lamp reflectors the

employment of the part or frustum B of a smaller paraboloid mounted in front of the 15 paraboloid M and so arranged that their axes and foci coincide so as to produce the effect herein set forth.

In testimony whereof we have hereunto set our hands in the presence of two sub- 20 scribing witnesses.

SIMEON S. POST.
ANDREW J. POST.

Witnesses:

THOMAS D. STETSON,
WM. B. SMITH.