

J. RADLEY.
Locomotive Lamp.

No. 55,903.

Patented June 26, 1866.

Fig. 1

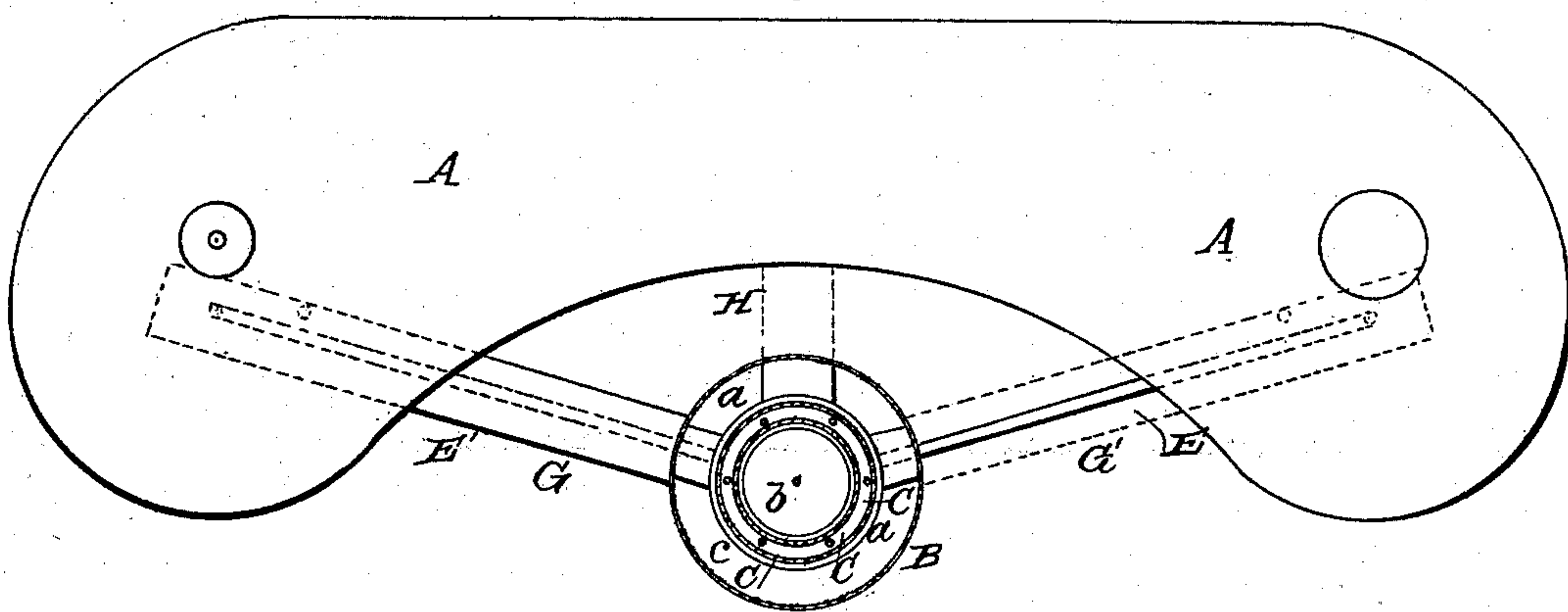
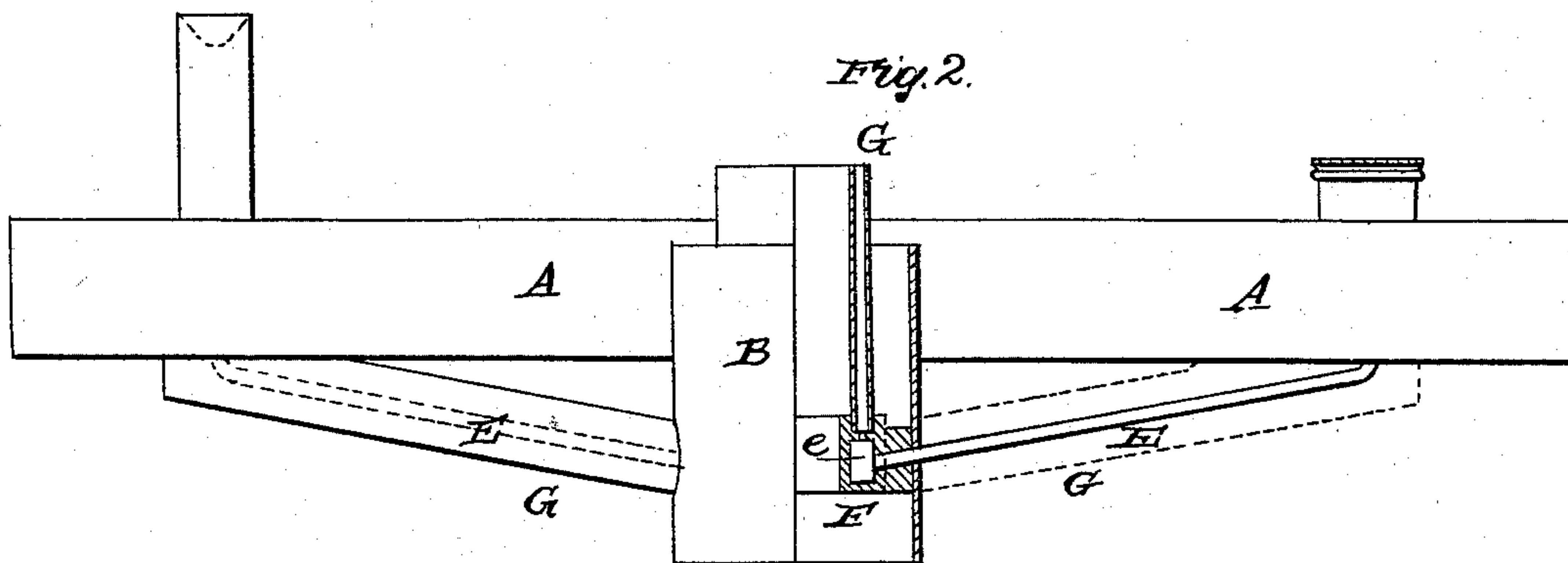


Fig. 2.



Witnesses
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JAMES RADLEY, OF NEW YORK, N. Y.

IMPROVEMENT IN LOCOMOTIVE-LAMPS.

Specification forming part of Letters Patent No. 55,903, dated June 26, 1866.

To all whom it may concern:

Be it known that I, JAMES RADLEY, of the city and county of New York, and State of New York, have invented a new and useful Improvement in the Construction of Lamps for Locomotive Head-Lights and other purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the figures and letters marked thereon, and in which—

Figure 1 is a top view or plan, and Fig. 2 a front elevation, of the device, and in both figures the same parts are indicated by the same letters.

The nature of my invention consists in so constructing, arranging, and fortifying the connections between the lamps and the oil-tank as shall prevent the absorption of the heat from the flame by these pipes.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The lamp or burner and the oil-tank may, respectively, be of any approved form; but I prefer an oil-tank without partitions for this combination, unless such partitions are arranged so as to suit this purpose.

In the accompanying drawings, A A is the oil-tank, and B the body or outside casing of the lamp, between which and the interior portion, C, there is an annular air-space, *a a*. The interior portion, C, contains the wick between two concentric tubes, as shown in section at C, Fig. 2, and has a circular air-space, *b*, within it in the usual manner.

The oil to supply the burner passes through two small ducts or tubes, E and E', connecting, respectively, with the outer ends of the oil-tank A A and with the annular passage F in the base of the wick-tube G, (shown in section in Fig. 2,) so as to supply the oil to the flame of the wick, passing upward for that purpose through the small holes *c c c* in the bottom of the wick-space.

In these drawings, the tube E is shown in full lines and tinted, and the tube E' in dotted lines.

The oil-tubes E and E' are merely large enough in the bore to supply the proper quantity of oil to the lamp under all conditions, and they should be as long as the tank or ap-

paratus will conveniently permit. These small oil-tubes I inclose within the larger tubes or cases G and G', (G being shown in full lines, and G' in dotted lines,) and fill up the space between them with plaster-of-paris or some other substance that is a non-conductor of caloric, thereby preventing the action of radiated heat upon the said small oil-tubes.

The connection from the oil-tank to the lamp heretofore in use consisted of a single short tube of large diameter, as shown by dotted lines at H, Fig. 1. Through this short tube the heated oil from the lamp would flow back into the oil-tank by the jarring of the locomotive, thereby causing the whole quantity of oil in the tank and lamp to become so heated, especially when some forms of coal or petroleum oil are used, that the soldering of the joints is sometimes melted, permitting the heated oil to escape, and this, taking fire from the flame of the lamp, as is usual in such cases, causes the destruction of the whole head-light; but such an occurrence, although frequent with the modes of construction heretofore in use, could not take place in lamps fitted up with my improvements.

In the mode of construction herein shown and described the lamp occupies a position opposite to the center of the oil-tank, and therefore in the center of oscillation, and the oil-tubes being of small caliber and connecting the lamp with the opposite ends of the oil-tank, the pressure of the oil upon the lamp is not varied by such oscillation of the oil-tank; and the flow of the oil from the oil-tank through these tubes to the lamp being slow and in merely sufficient quantity to support the flame, the connecting-tubes being small and of considerable length, and thereby presenting a large amount of friction to the flowing oil, the regurgitation of the oil through these tubes back from the lamp to the oil-tank is effectually prevented.

The transmission of heat from the lamp to the oil-tank through the conducting power of the metal of the said small tubes is also prevented by the presence or use of the non-conducting substance in which they are incased.

The advantage of these improvements in the construction of lamps for locomotive head-lights is of very great importance to the successful working of railways, as it is by means of the

head-light the engineer of a moving train is enabled to see the condition of the road before him; and so thoroughly does it accomplish this, when properly constructed and in proper order and condition, that trains of cars are run at night on express time with as much confidence as in the day-time. The destruction of the head-light is accordingly a very serious disaster to such a train, and renders its further progress a most hazardous proceeding to all on board of it; but by the use of my improvements, as herein described, such a catastrophe could not occur from the causes that have heretofore produced or led to the production of such results.

Having thus described my improvements in the construction of lamps, what I claim therein as my own invention, and desire to secure by Letters Patent, is—

The combination of the lamp with the oil-tank by means of one or more small oil-tubes incased with a non-conductor of caloric, arranged and constructed in the manner substantially as described.

JAS. RADLEY.

Witnesses:

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