(No Model.)

C. G. SMITH & A. FRENCH.

RAILROAD CAR LAMP.

No. 547,300. Patented Oct. 1, 1895.

Fig: 1.

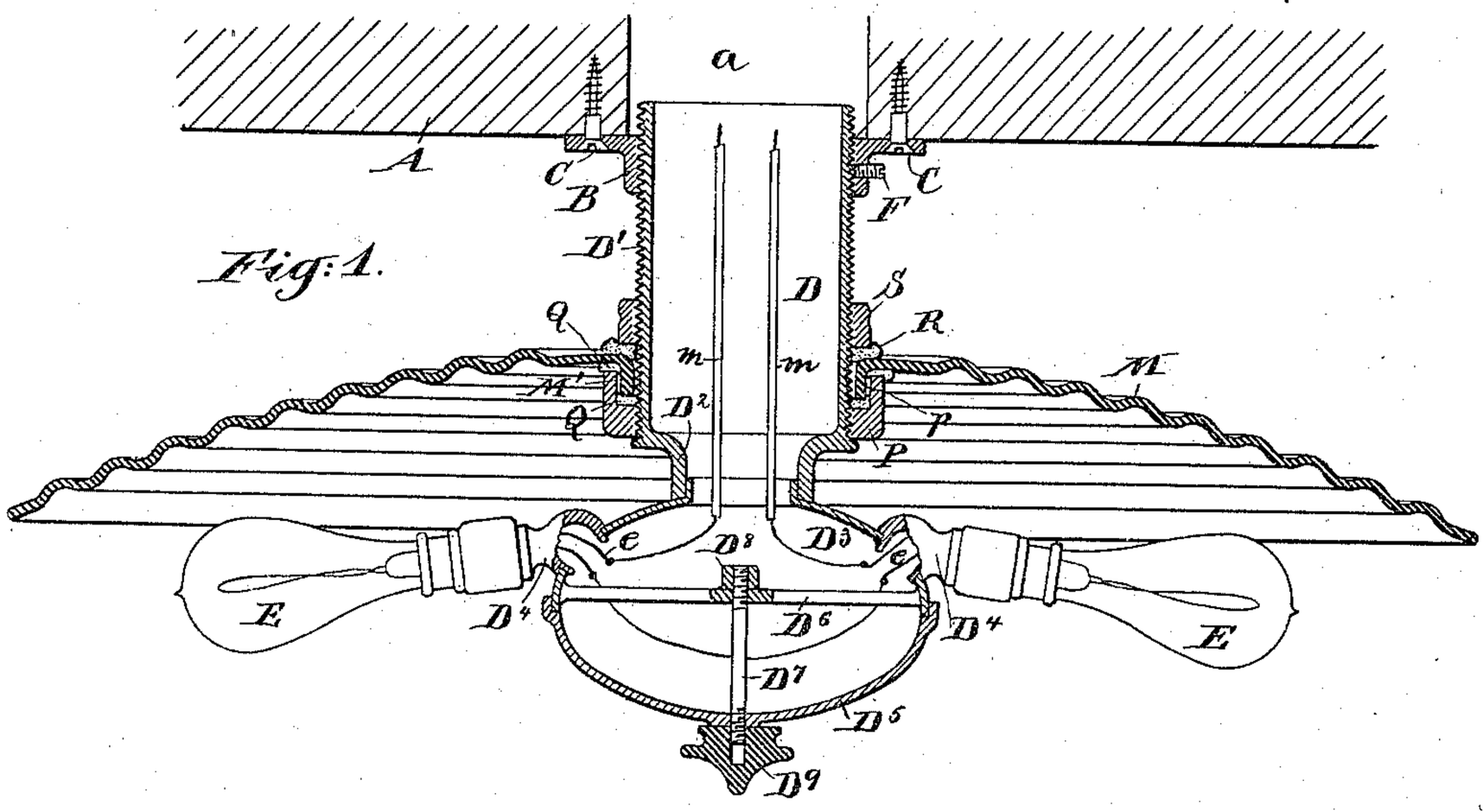


Fig: 2.

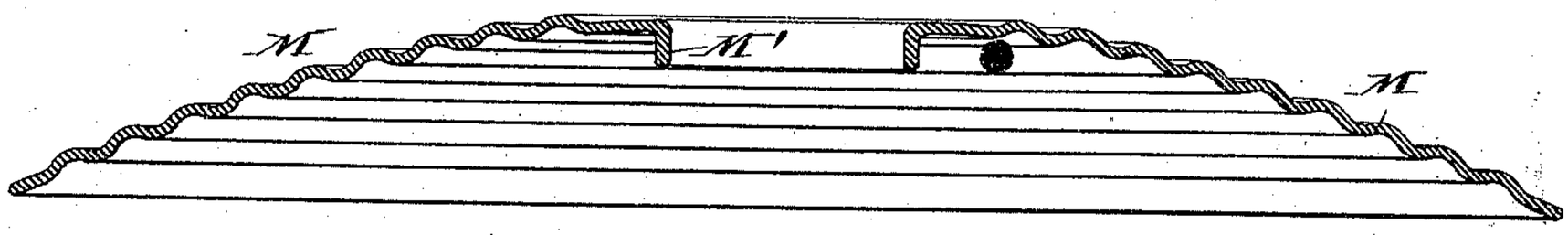
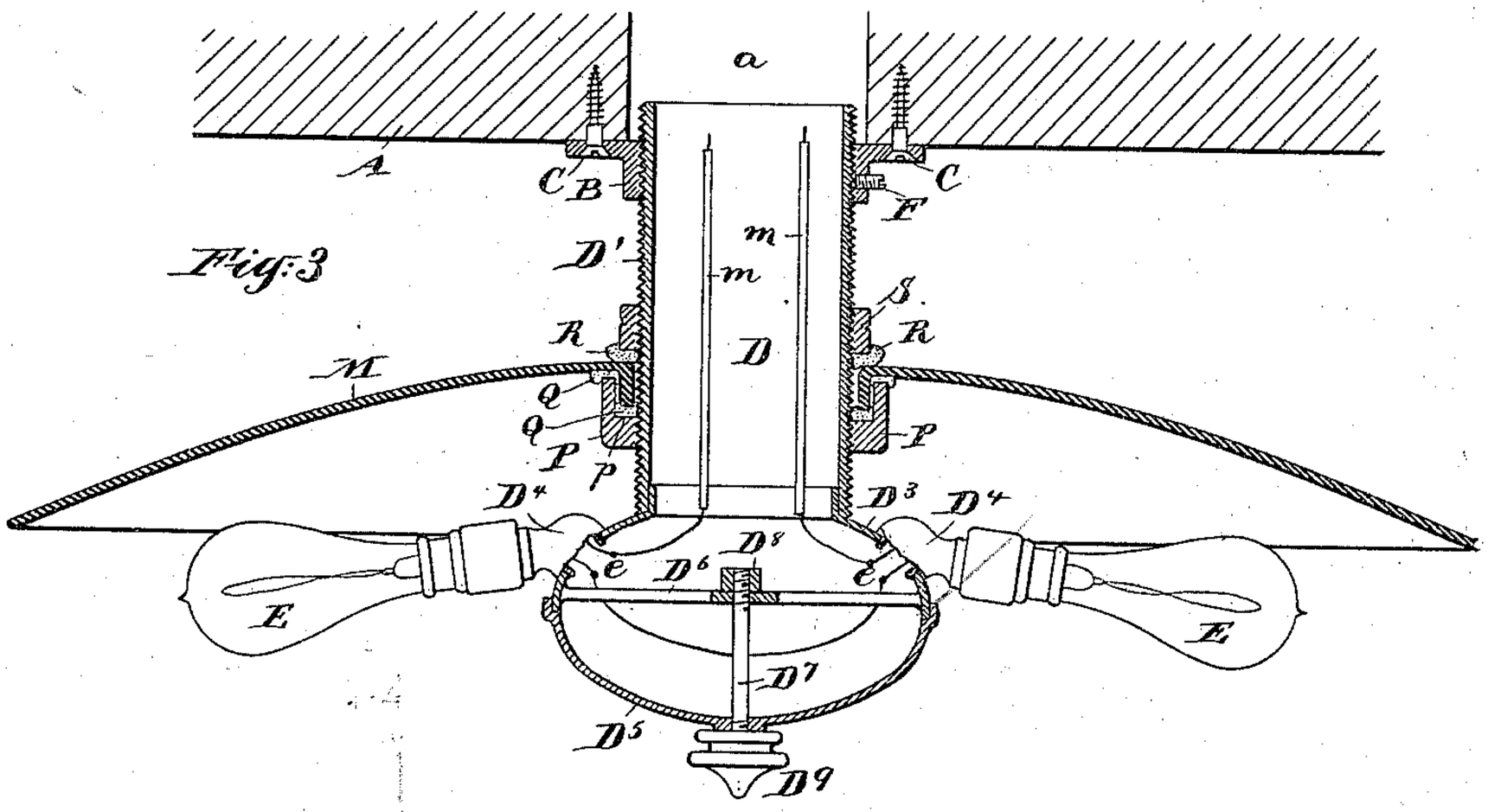


Fig: 3



Witnesses:
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M. F. Boyle.

Inventors:
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by their attorney
Thomas Drew Stetson

UNITED STATES PATENT OFFICE.

CHARLES G. SMITH, OF BROOKLYN, AND ALONZO FRENCH, OF NEW YORK, N. Y.; SAID FRENCH ASSIGNOR TO SAID SMITH.

RAILROAD-CAR LAMP.

SPECIFICATION forming part of Letters Patent No. 547,300, dated October 1, 1895.

Application filed August 11, 1894. Serial No. 520,058. (No model.)

To all whom it may concern:

Be it known that we, CHARLES G. SMITH, residing in Brooklyn, Kings county, and ALONZO FRENCH, residing in the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Railroad-Car Lamps, of which the following is a specification.

The improvement applies to that class of electric-light devices in which a tube extending downward from the ceiling and inclosing the properly-insulated wires carries a series of incandescent-light bulbs and supports over them a nearly flat reflector adapted to throw the light downward.

It is important in railroad-cars that the parts be held very firmly to endure the constant slight concussion to which they are subjected in traveling, and especially to endure the violent strains liable to be imposed in cases of accident.

Our improvement provides therefor and also for conveniently and delicately adjusting the height of the light-bulbs and reflectors relatively to each other, and also for adjusting the height of both relatively to the car.

The accompanying drawings form a part of this specification and represent what we consider the best means of carrying out the invention.

Figure 1 is a central vertical section through all the parts of our lamp and a portion of the top of the car, and Fig. 2 is a corresponding section through the reflector detached. Fig. 3 is a similar section showing a modification.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the ceiling of a car, and *a* a hole bored therein of sufficient size to receive the tube to be presently described.

B is a screw-threaded thimble, having a broad flange B′, by which latter it is secured to the ceiling A by means of wood-screws C.

Referring to Fig. 1, D′ D^2 D^3 is a hollow casting of brass or other suitable material. The upper part D′ is of uniform diameter and screw threaded. We will refer to this entire casting, when necessary, by the single letter D. The portion D^2, below the screw-threaded part D′, is of smaller diameter and connects the portion D′ with the upper half of an ornamental flattened globe D^3. On the upper surface of this globe are brazed or otherwise secured nozzles D^4, having screw-threaded extremities. E E are electric-light bulbs of the ordinary standard construction, engaging on these screw-threads and having their wires *e* electrically connected in the ordinary manner with wires *m*, which extend loosely down in the interior of the casting D. The lower half D^5 of the globe is formed separately from the upper half, and is removable to allow the wires to be adjusted, being removably held by means of a rod D^7, engaged with a cross-bar D^6, formed integral with the upper half. The union is effected by the aid of nuts D^8 and D^9, the lower of these nuts being ornamental.

It will be understood that contents of the bulbs E and other parts not specifically described may be of the ordinary and long-approved construction.

M is a reflector having a lip M′ on its inner edge, which fits loosely around the large screw-threaded pipe D′ and extends down into an internal rabbet *p*, formed in the upper side of a screw-threaded ring P, which latter is screwed upon the part D′ and forms the lower part of the provision for firmly holding the reflector.

Q Q represent thin gaskets, of soft vulcanized rubber, fitted one in the bottom of the rabbet *p* and the other on the remaining upper surface of the ring P.

The upper part of the provision for holding the reflector consists of a rubber gasket R and a threaded ring S. This ring is screwed down firmly.

F is a small pinching-screw tapped through the ring B. This is screwed in to press on the screw-threads of D′ after the height of the device is determined.

The lip M′, extending down from the inner edge of the slightly-domed reflector, contributes greatly to the strength of this necessarily fragile portion of the lighting apparatus. The holding is mainly effected by the pressure of the gaskets upon the body M; but the pressure received through the lip M′ contributes to the firmness of the holding.

The reflector M is corrugated horizontally.

These undulations add to the strength of the thin and fragile glass construction and also contribute to scatter and diffuse the light.

In setting up our lamp in a car, the reflector and the threaded rings with their respective gaskets having been applied in their proper succession upon the threaded portion D′ of the casting D, the latter is screwed into the thimble B to any required extent. When the light requires to be adjusted up or down, it can be effected by turning the whole. When the reflector alone is to be shifted up or down, this can be attained by properly operating the threaded rings P and S.

The yielding character of the contact formed by the gaskets Q and R is important. The reflector will usually be made of glass and will vary somewhat in thickness at different points. It is essential that this important and extended member of the combination be held with great force and also yieldingly. Our threaded-rings P and S attain this end and allow a large amount of adjustability. The gaskets allow the pressure to be very firm and distribute the pressure nearly uniformly on the irregular thickness.

The considerable diameter of the part D′ and the firmness of its engagement by means of the previously well-secured ring B insures an unusually firm support to the entire structure, while it allows the casting D, and consequently the lights, to be adjusted up and down within considerable limits. It is frequently important to adjust the reflector up or down relatively to the lights. The rings P and S, with their soft gaskets, allow this to be effected with great nicety and the whole to be held firmly.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. We can make the slightly-concave reflector M without the concentric waves and can make the neck or connecting portion D^2 of the same size as the screw-threaded part D′; but the effect of this latter modification on the eye is not as pleasant. Fig. 3 shows the device modified in both these points. We can use either one of the gaskets Q without the other.

We can use a screw-threaded ring, serving as a jam-nut, instead of the pinching-screw F to hold the device M against working up or down by the jarring motion of the car.

We claim as our invention—

1. In a railroad car lamp, for incandescent electric lights, the adjustable hollow casting D, having a screw-threaded upper portion of considerable diameter, the corresponding internally threaded ring B and fastenings C therefor fixed in the ceiling of the car, the provisions D^4 for receiving the bulbs E at the base, and holding them firmly, and the removable lower portion D^5 and suitable fastening means therefor, all combined and arranged to serve substantially as herein specified.

2. In a railroad car lamp, for incandescent electric lights, the adjustable hollow casting D, having a screw-threaded upper portion of considerable diameter, in combination with the corresponding internally threaded ring B and fastenings C therefor fixed in the ceiling of the car, and with the provisions D^4 for receiving the bulbs E at the base, and with the horizontal, slightly domed reflector M held on such casting at an intermediate height, and with the threaded rings P and S and the gaskets Q and R, adapted to hold the reflector strongly but yieldingly and allow its adjustment up and down, all substantially as herein specified.

3. In a railroad car lamp for incandescent electric lights, the slightly domed reflector M, having the lip M′ extending downward from its inner edge in combination with the lower threaded ring P, having a rabbet *p*, adapted to receive such lip, the upper threaded ring S adapted to press the lip of the reflector into such rabbet, and the soft sockets Q, Q, to distribute the bearing contact and with the hollow casting D and provisions for accommodating electric wires *m* and for receiving the bulbs E, all arranged for joint operation substantially as herein specified.

In testimony that we claim the invention above set forth we affix our signatures in presence of two witnesses.

CHARLES G. SMITH.
ALONZO FRENCH.

Witnesses:
CHARLES R. SEARLE,
M. F. BOYLE.