

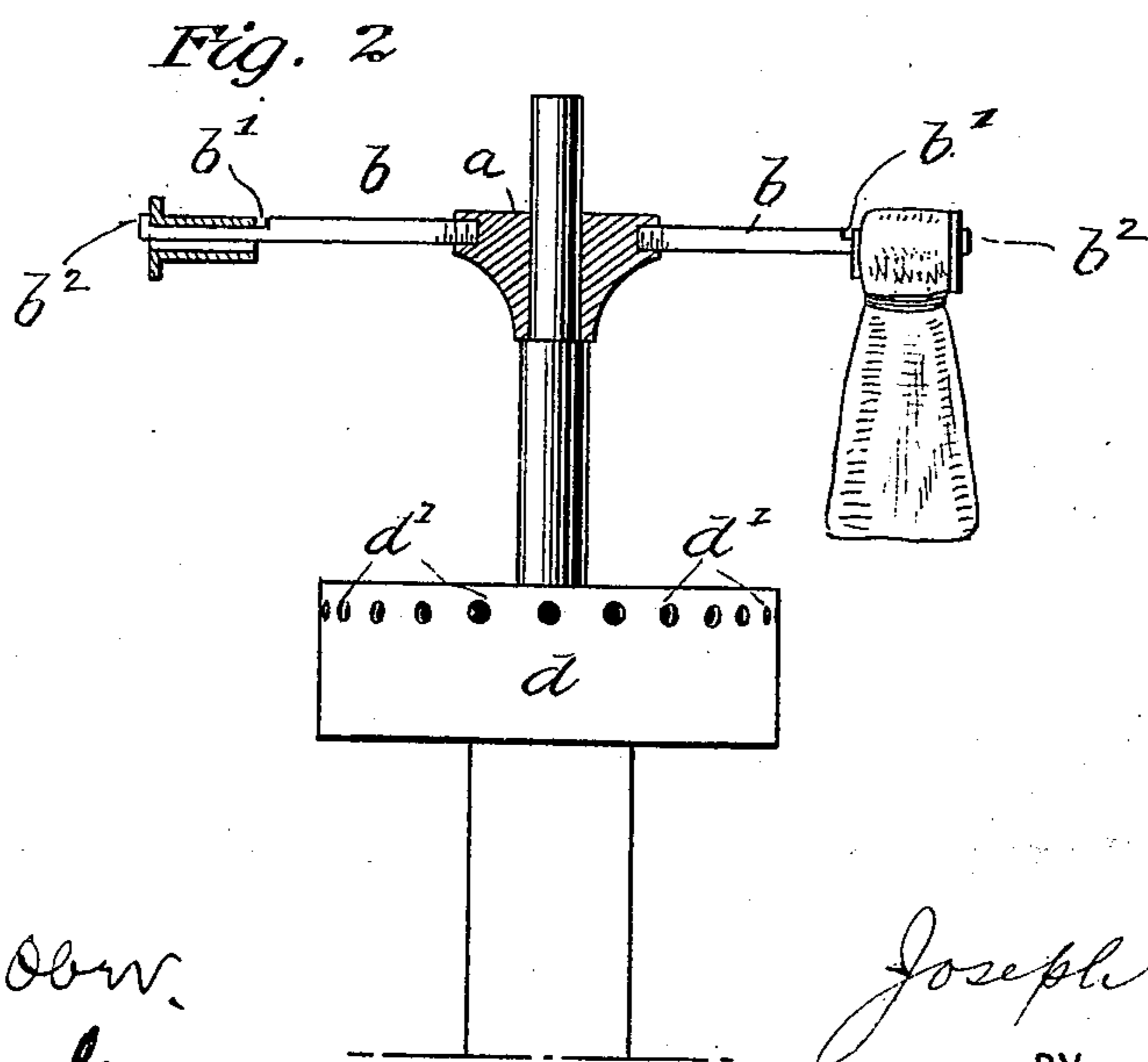
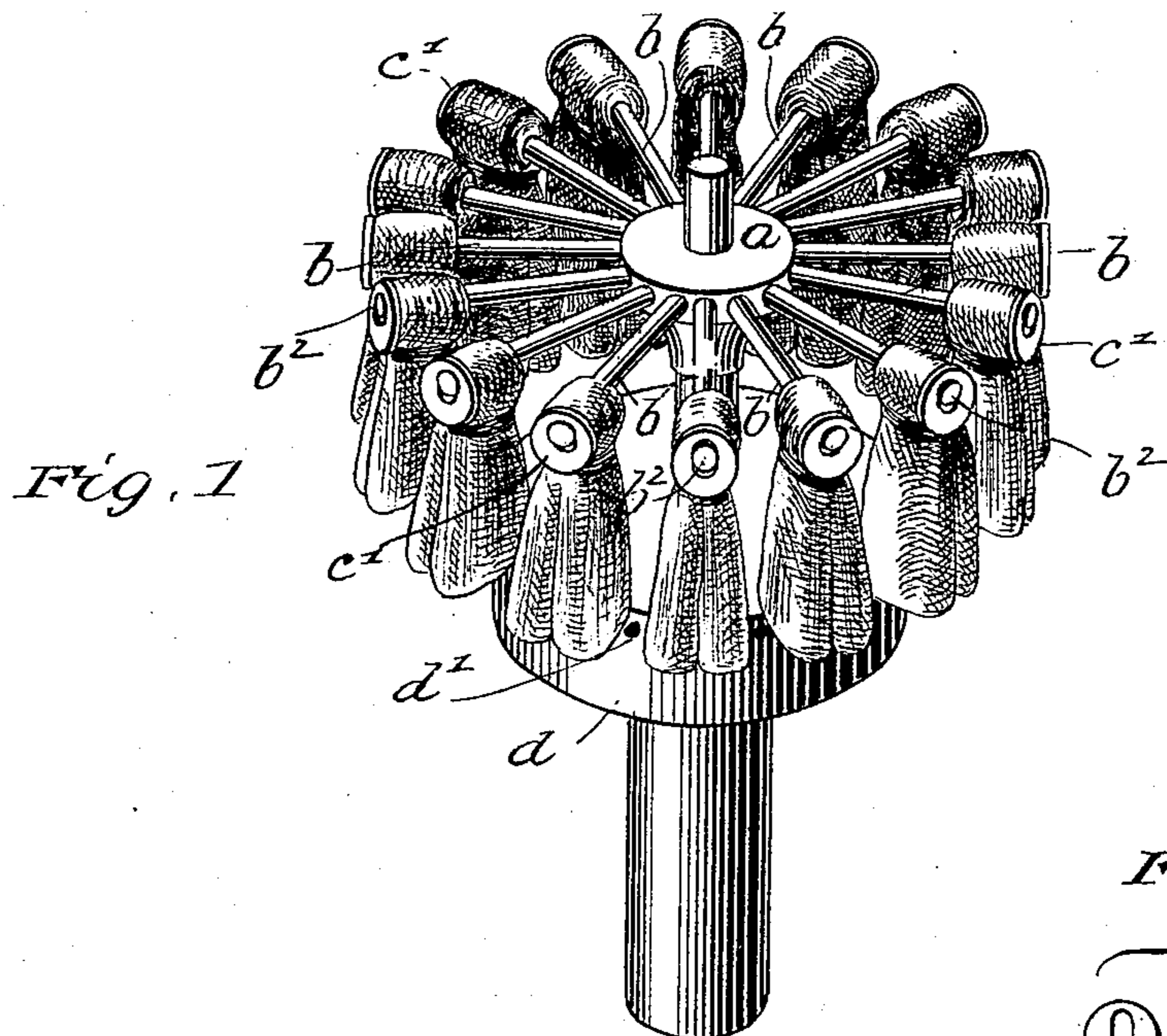
No. 620,338.

Patented Feb. 28, 1899.

J. B. DE LÉRY.
INCANDESCENT BURNER.

(Application filed Jan. 24, 1898.)

(No Model.)



WITNESSES:
Frank S. Orr.
Harry Bailey.

INVENTOR
Joseph B. de Léry
BY
McA. Rosenbaum
ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH B. DE LÉRY, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DE LÉRY LIGHT COMPANY, OF NEW JERSEY.

INCANDESCENT BURNER.

SPECIFICATION forming part of Letters Patent No. 620,338, dated February 28, 1899.

Application filed January 24, 1898. Serial No. 667,686. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. DE LÉRY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Incandescent Burners, of which the following is a full, clear, and exact description.

This invention relates to lighting by incandescence from gas and vapor; and it consists of an improved burner whereby great efficiency is attained and the replacing of injured portions of the incandescing body may be accomplished without the necessity of renewing the entire incandescing element.

The invention also includes certain details of construction relating to the means for supporting the incandescent material, all of which will be fully described hereinafter, with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the complete burner. Fig. 2 is a side elevation with parts broken away, and Fig. 3 shows modified forms of thimbles used in supporting the incandescing material.

In United States Patent No. 583,187, issued to me May 25, 1897, is described a burner in which the incandescing material is in the form of a continuous tufted ring made up of layers of incandescing material bunched and pressed together at their upper edges, leaving the lower edges free and more or less separated to permit the heat of the flame to enter. The gas-outlets are in a drum of smaller diameter than the ring of incandescent material, and the flames projecting from the sides thereof impinge against the lower edges of the ring. I have learned that while all the benefits of the mutual support of the layers of the incandescent material are obtained by this construction there still remains an obstacle to the highest state of incandescence, which is the fact that the tufts are so crowded together that there is not sufficient freedom for the circulation of air around about those portions of the burner which furnish the incandescence. By retaining this ring-like shape and separating the tufts or bunches so as to provide a free air-space between the adjacent

tufts I obtain a much higher grade of incandescence.

In an application for patent filed by me October 14, 1897, serially numbered 655,167, I have described a particular form of tuft and stated that such tuft might be used singly or with others bunched together; but in this case the means for conveniently supporting and replacing the single tuft was not set forth. In the present case I propose to describe what I now believe to be the most practical and efficient form of burner of this class that can be devised, and while the difference of construction over the two cases above referred to are not great, yet those differences, such as they are, afford distinctly advantageous results, which lend to them considerable importance from a patentable standpoint.

The frame upon which the incandescent bodies are supported consists of a central hub *a*, from which radiate a series of arms or spokes *b*, on the outer ends of which the tufts of incandescent material are hung. The gas or vapor flows from openings in a drum arranged concentrically below the support for the tufts and is of a less diameter than the ring of tufts, so that it will not cut off the rays of light. The circumferential distance between the extremities of the arms *b* is such as to afford an open space for the circulation of air around each tuft, and since the entire lower portions of the tufts are thereby brought to a high state of incandescence the spaces between the tufts when the burner is in operation become obliterated and the burner has the appearance of a continuous ring of light.

To facilitate the removal and adjustment of the tufts upon the support, each tuft is saddled over a spool or thimble *c'* and bound around the same to form together an individual structure. Then to adjust the tuft to the end of an arm *b* it is simply slipped over the same and may be removed by as simple an operation. To prevent the tufts from being shaken off of the support, the end of the arm *b* is provided with a recess or seat *b'* for the spool and a cross-head or detent *b²*. When the spool is slipped over the end of the arm, it drops down behind the detent and will not

come off unless it is lifted to clear the detent. Modified forms of the spool are shown in Fig. 3, wherein the opening through the spool is oblong or formed with two parallel sides adapted to fit over a flat arm *b*, thus preventing slight rotation of the spool on the arm and so keeping the tuft steady. Other means, of course, may be provided for supporting the tufts upon the arms; but the means described are preferred on account of their simplicity and convenience.

The gas-drum, from which the heat-flames project, is shown at *d* and the gas-outlets at *d'*. This drum is of less diameter than the ring of tufts, so as not to obstruct the light therefrom. The row of gas-outlets is in the right plane to direct the flames into the open ends of the tufts.

This burner is admirably adapted for street-lighting on account of its ability to resist shocks and jars without breakage. It may, however, be used wherever illumination is required and may always be used without a chimney. In case a tuft is injured the burner obviously is not rendered useless, for those remaining will continue to furnish light; but an injured tuft may be replaced by a good one without interfering with the others, and this is an important advantage of the invention, for in the burner of the patent hereinbefore referred to and in the burner of the application referred to while it is possible to separate an injured tuft from the others it cannot be done without the greatest care and sometimes cannot be done at all, because after burning awhile mantles in contact with each other are likely to become welded together. A plurality of tufts separately and independently supported upon the extremities of a plurality of radial arms, in combination with gas-outlets arranged concentrically, but in side of the ring of tufts, possesses advantages over the other forms of burner herein referred to.

It will be understood that the tufts of incandescent material herein referred to are preferably those of the character described in the patent and the application referred to—that is to say, they are made of the usual fragile layers or sheets folded or placed together in such a way as to bring them into supporting contact with each other at one edge, while they are separated at the other edge to admit the heat of the flame.

I am aware that pencils and other solid

and substantial forms of incandescent bodies have been separately supported directly above a gas-flame; but the object was not to be able to remove them individually without injury to the others, and so far as I am aware no means has ever been provided for removing one of such pencils or solid bodies from its support without interference with the others.

Having thus described my invention, I claim—

1. The combination in incandescent gas-burners of a standard provided with a plurality of supports for incandescent elements and said supports arranged with a substantial interval between them, a plurality of incandescing tassels each consisting of a number of layers of fragile mineral fabric bunched at the top and free at the bottom, and said tassels suspended from said supports with a substantial air-space between them, and a burner provided with a perforate head adjacent to the free edges of said layers, whereby the flame enters within said layers and into the space between said tassels, substantially as and for the purpose described.

2. The combination in incandescent gas-burners of a standard provided with a plurality of supports for incandescent elements arranged with a substantial interval between said supports and each provided with a seat and detent, a plurality of incandescing tassels each consisting of layers of fragile mineral fabric as described and provided with a spool adapted to have a removable fit on said supports, from which said tassels are suspended with a substantial air-space between them, and a burner provided with a multi-perforate head adjacent to said tassels, whereby the flame enters the folds of the tassels and also the air-space between them, substantially as and for the purpose described.

3. In an incandescent gas-burner and in combination with a suitable support, an incandescing tassel composed of a plurality of layers of fragile mineral fabric and a thimble around which said layers are secured, and said thimble being adapted to a removable fit on said support, substantially as described.

In witness whereof I subscribe my signature in presence of two witnesses.

JOSEPH B. DE LÉRY.

Witnesses:

WM. A. ROSENBAUM,
HARRY BAILEY.