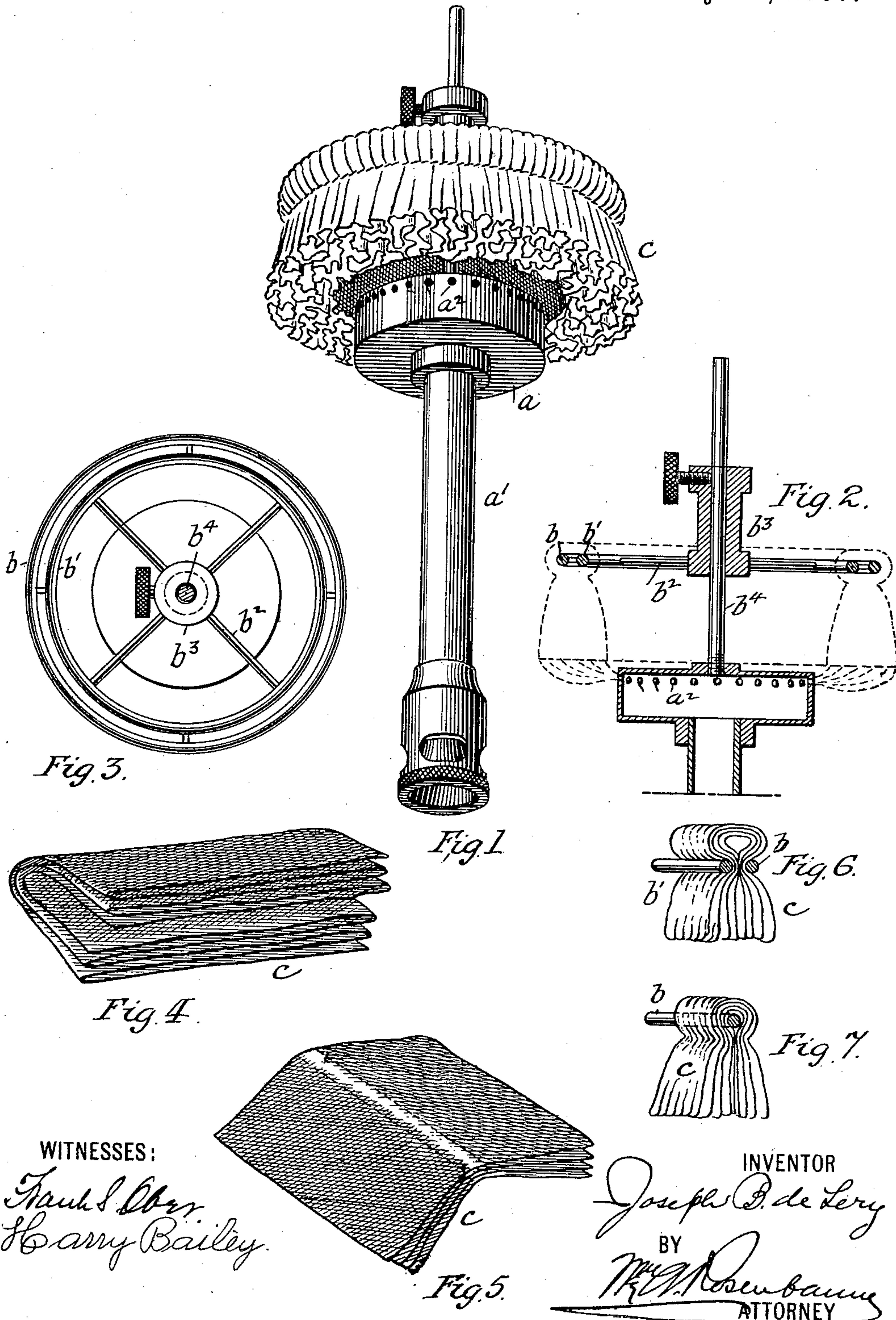


(No Model.)

J. B. DE LERY.
INCANDESCENT GAS BURNER.

No. 583,187.

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INCANDESCENT GAS-BURNER.

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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 Gas-Burners, of which the following is a full, clear, and exact description.

This invention relates to incandescent gas lighting, the primary object being to provide a burner which shall meet the requirements of a street-light in that the incandescing element shall be of such construction as to resist the shocks from storms and the jarring from heavy traffic. The provisions for accomplishing this object also adapt the burner for use anywhere where it is subjected to forces which tend to destroy the mantle or incandescing body.

A further object of the invention is to provide a burner which will shed its rays of light downward and laterally without interference from any portions of the burner or fixture itself.

The cheapest and most generally used incandescing material is a web of textile material usually in the form of a tube or hood, this largely because the cotton or other fiber originally forming the base of the hood can be knitted or woven cheaply, and when so made is porous or sieve-like and permits the flame to permeate or pass through it. The incandescing element has also been made in the form of pencils individually supported and grouped together and in the form of blocks, but these have been found to be expensive and not durable. One of the main difficulties experienced with an incandescent element in the form of the web or hood is that it is very fragile and is consequently easily injured or destroyed. By my invention I obtain all the advantages of an incandescing element constructed of webbing, because I use the same webbing, and I impart strength to it by folding the web upon itself a number of times or use a number of layers of it secured together in such a manner that the several layers mutually support one another, thereby obtaining in the single structure the combined strength of the entire number of layers of material. The burner is formed by making tufts in this manner and mounting

them side by side in a ring. An exposed edge of this ring of tufts is then subjected to a series of small flames from a Bunsen burner, which raises the edges of the tufts to incandescence and forms a continuous ring of pure white light. The burner from which the jets of flame emanate is a cylindrical drum of less diameter than the ring of incandescent material and located only slightly below the ring, so that the rays of light from the latter may project uninterruptedly downward and outward.

My invention will be described in detail with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the burner. Fig. 2 is a section of the burner with parts in dotted line. Fig. 3 is a plan of the rings supporting the incandescent material. Figs. 4 and 5 are enlarged views of the layers of incandescent material, showing two ways of placing them together before they are tufted; and Figs. 6 and 7 show two ways of securing the incandescing material to the fixture.

a represents a cylindrical drum into which gas and air are admitted by a pipe a' , constructed in accordance with the plan of a Bunsen burner. Around the sides of the drum are a number of perforations a^2 , through which the gas and air may flow to feed jets of flame that project radially from the sides of the drum.

Above the burner is supported a frame consisting of two concentric rings b and b' , sustained by arms b^2 , radiating from a hub b^3 , adjustably supported upon a post b^4 , projecting from the top of the drum a .

The incandescing material c is supported by the rings b and b' . It is formed in the following manner: A textile fabric is made into a web by the knitting or weaving process. The web is then treated with a solution of rare earths. From this web are then cut strips which are to be folded together, as shown in Fig. 3, or small sheets which are placed together, as shown in Fig. 4, thus forming a number of bunches of the material, each consisting of a series of layers, sheets, or thicknesses. These bunches are then secured to the rings $b b'$ and one pressed against the other, so that each bunch will become a tuft and the series of tufts forming a contin-

uous ring of the incandescing material. A preferred way of securing each bunch to the ring is to bend it midway and saddle it over the two rings, as shown in Fig. 2, thus bringing the two ends together beneath the rings, where they may be secured by a few stitches immediately under the rings. The downwardly-projecting edges of the tufts should be of the same length all around. Other methods of securing the tufts may be adopted. They might be forced between the two rings, as shown in Fig. 6, or bound thereto with wire or in any other way secured, so long as the several layers of which they are composed rest against and support each other. One ring *b* might also be used and the incandescing material secured by saddling it, as shown in Fig. 7.

When the burner is lighted, the cotton or other fiber forming the base for the incandescing material is first burned out, and thereafter when the burner is lighted the lower edges of all the layers in the tufted ring become incandescent. The jets of flame projecting outward from the sides of the drum impinge against the lower edges of the incandescing ring, thus forming a source of light overhanging the drum on all sides, the downwardly-inclined rays from which are uninterrupted by the burner or the fixture on which it is mounted.

It will be seen that the short stubby sheets of the incandescing material projecting downward from the two rings, supported by each other, will afford considerable resistance to any shocks or jarring which the burner may in use be subjected to, and for that reason the burner will be very durable.

It is to be understood that my invention is not limited to the particular manner of making the tufts herein described, nor in fact is it limited to making a series of tufts. Substantially the same results may be obtained by making each bunch extend entirely around the ring.

The tufts may be formed by shirring the layers before they are attached to the rings, but it is quite as convenient to shir them afterward by squeezing them together in the manner described. The shirring separates the layers from each other at the lower edges and permits the heat to rise between them and so increase the area of incandescence.

Having thus described my invention, I claim—

1. An incandescing element for gas-burners consisting of a plurality of layers of incandescing material bunched and secured together with its layers in supporting contact along one edge, the opposite edges of the several layers being free and separated, substantially as described.

2. In an incandescent gas-burner, an incandescing element consisting of a plurality of layers of incandescing material, secured or placed together in supporting contact along one edge, the opposite edges of the several layers being free and separated, in combination with a burner arranged to direct its flame against the separated edges of the incandescing material, substantially as described.

3. An incandescent gas-burner consisting of an incandescing element in the form of a ring made up of layers of incandescing material secured together in supporting contact along one edge and depending from a suitable support, the lower or depending edges of said layers being separated and free, in combination with a gas-burner located inside of the ring and provided with a series of gas-outlets which direct the flames against the separated edges of the incandescing material.

4. An incandescent gas-burner consisting of an incandescing element in the form of a ring and made up of layers of incandescing material secured together in supporting contact along one edge and depending from a suitable support, the lower or depending edges of said layers being separated and free, in combination with a gas-burner located inside of the ring and provided with a series of gas-outlets which direct the flames laterally against the separated edges of the incandescing material.

5. In an incandescent gas-burner, a plurality of bunched layers of incandescing material in combination with a supporting rod or frame, the bunch of layers being folded and saddled over the rod or frame and secured thereon, substantially as described.

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

JOSEPH B. DE LÉRY.

Witnesses:

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