No. 676,954. Patented June 25, 1901.

J. B. DE LÉRY.

INCANDESCENT GAS BURNER.

(No Model.) (Application filed May 19, 1899.)

Fig. 1

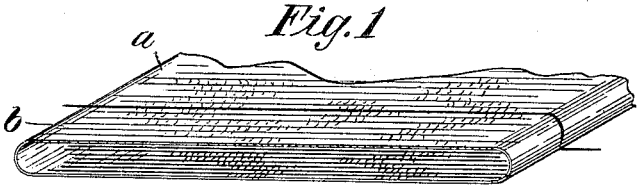


Fig. 2

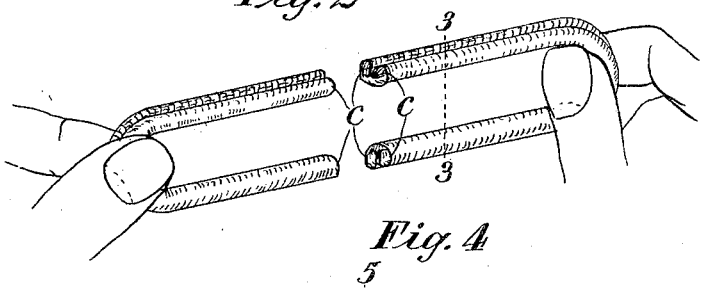


Fig. 3

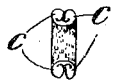


Fig. 4

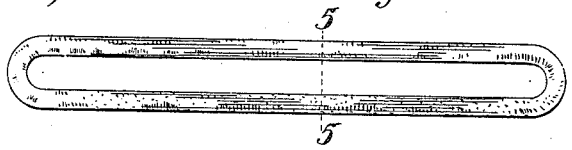


Fig. 5

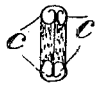


Fig. 6

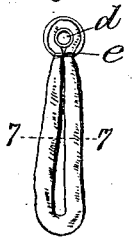


Fig. 8

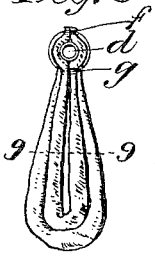


Fig. 10

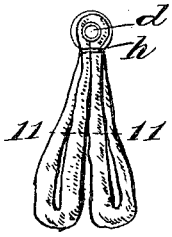


Fig. 7

Fig. 9

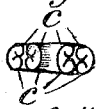
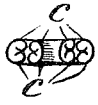


Fig. 11



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Henry V. Brown.

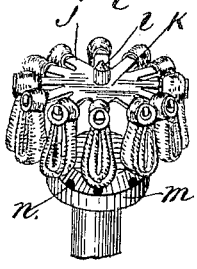

Fig. 12

INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

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INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 676,954, dated June 25, 1901.

Application filed May 19, 1899. Serial No. 717,500. (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 the borough of Manhattan, in the city of New York, State of New York, have invented certain new and useful Improvements in Incandescent Gas-Burners, of which the following is a specification.

This invention relates to improvements in burners for incandescent gas-lights.

More especially it relates to improvements in processes of forming the incandescible fabric into tassels and to the tassel as a new article of manufacture.

The invention is more particularly an improvement on the burners described and claimed in United States Patents Nos. 583,187, 597,803, and 620,338, and especially on the process described and claimed in United States Patent No. 621,927. The tassels shown and described in said patents have free open lower edges, while the tassels produced by the present invention have the lower end looped, thus preventing the disintegration of the tassels at this point.

The various steps in my improved process and the article of manufacture thereby produced are illustrated in the accompanying drawings, whereof—

Figure 1 is a broken perspective view of a flattened loop from which the strips for the improved element are cut. Fig. 2 is a broken perspective view of the curled strip, and Fig. 3 is a section thereof on the line 3 3. Fig. 4 is a longitudinal elevation of the curled strip turned outside in, and Fig. 5 is a section on the line 5 5 thereof. Figs. 6 and 7 are respectively an elevation and a section of a simple form of tassel made with a relatively short loop. Figs. 8 and 9 are respectively an elevation and a section of the preferred form of tassel made with a relatively longer loop. Figs. 10 and 11 are respectively an elevation and a section of a modified form of tassel made from the longer loop. Fig. 12 is a perspective view of a gas-burner and assembled tassels.

A piece of combustible fabric saturated with a suitable solution is rolled so as to curl the edges to form coils or tubes, and I prefer to use for this purpose a stocking *a*, such as is employed in the manufacture of incandescent mantles. This stocking, which is long enough for a number of tassels, is cut into strips *b*, Fig. 1. These strips *b* are next stretched in the direction of the diameter of the original stocking by inserting the fingers in the ends and drawing out the strip, Fig. 2, or in any other suitable manner. This stretching both sets the mesh, whereby the subsequent shrinkage when the tassels are burned out is diminished, and also causes the edges *c c* of the strip to curl or roll—first outwardly, then inwardly—forming tubes or coils, as seen in Figs. 2 and 3. Thus, whether I roll the edges of the flat strip or of the loop, I produce a coil or tube, and I prefer to turn the loop, if such were used, outside in, Fig. 4, whereby the curled edges assume the position of Fig. 5. If I start with a flat strip, I sew the ends together to form a loop and preferably with the curled edges inward. In this case the loop can be stretched after the ends are sewed. The material is now ready to be made into tassels, of which Figs. 6 to 11 illustrate several varieties.

The single tassel, Fig. 6, is formed by placing any suitable eyelet *d* through one end of the loop and sewing the fabric with properly-saturated thread around the eyelet at *e*. The folds of this tassel are arranged as shown in Fig. 7, and such tassel will preferably be formed from relatively short loops.

To form the double tassel of Fig. 8, the curled loop, Fig. 4, is bent at the middle and the ends of the loop turned upward till they meet. The meeting ends are then sewed with saturated thread at *f*, an eyelet *d* is passed through the loop below the sewing, and all the layers of fabric are then sewed together under the eyelet at *g*. The folds of this tassel are arranged substantially as shown in Fig. 9.

Yet another double tassel can be formed by bending the middle of the loop, Fig. 4, around the eyelet *d*, as in Fig. 10, and sewing through all the layers beneath the eyelet, as at *h*. The folds of this tassel are arranged as seen in Fig 11.

In all the modifications of the tassels it will be observed that a number of layers of looped fabric are firmly in contact at one end, there-

by increasing the strength and durability of the tassel after it is burned out, but that said loops are relatively separated at the other end, which will be adjacent to the flame, so as to be readily raised to high incandescence.

In use a number of these tassels are arranged on the radial arms *j* of a wheel *k*, which is carried by the standard *l* of a Bunsen burner *m*, so that each tassel is adjacent to a gas-escape orifice *n* in the burner-head. When the gas is ignited, the combustible fabric is consumed and the solution of the earths is converted into a skeleton of mineral oxid of the exact configuration of the fabric.

While the process hereinbefore set forth is peculiarly adapted to making tassels, it is not limited thereto, but is also useful in manufacturing incandescent elements of other forms.

Now having described my improvements, I claim as my invention—

1. The process of forming incandescent elements from combustible fabric hereinbefore described, and consisting in first stretching a loop of suitable incandescible fabric, whereby the edges of the loop are curled, then turning the loop outside in, so as to bring the curled edges inward and adjacent, and finally forming an eye with the folds of the loop superimposed and sewing said folds together at the eye.

2. An incandescible element consisting of saturated incombustible fabric having a plurality of layers in contact at the point of support of said element and a continuous free loop of the same fabric at the other end of the element, substantially as and for the purpose described.

3. An incandescible element consisting of saturated incombustible fabric formed with a tube or tubes with inwardly-curled edges, and with a plurality of layers of the fabric in contact at the point of support and a continuous loop or loops of the same fabric at the other end of the element, substantially as and for the purpose described.

JOSEPH B. DE LÉRY.

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