

(No Model.)

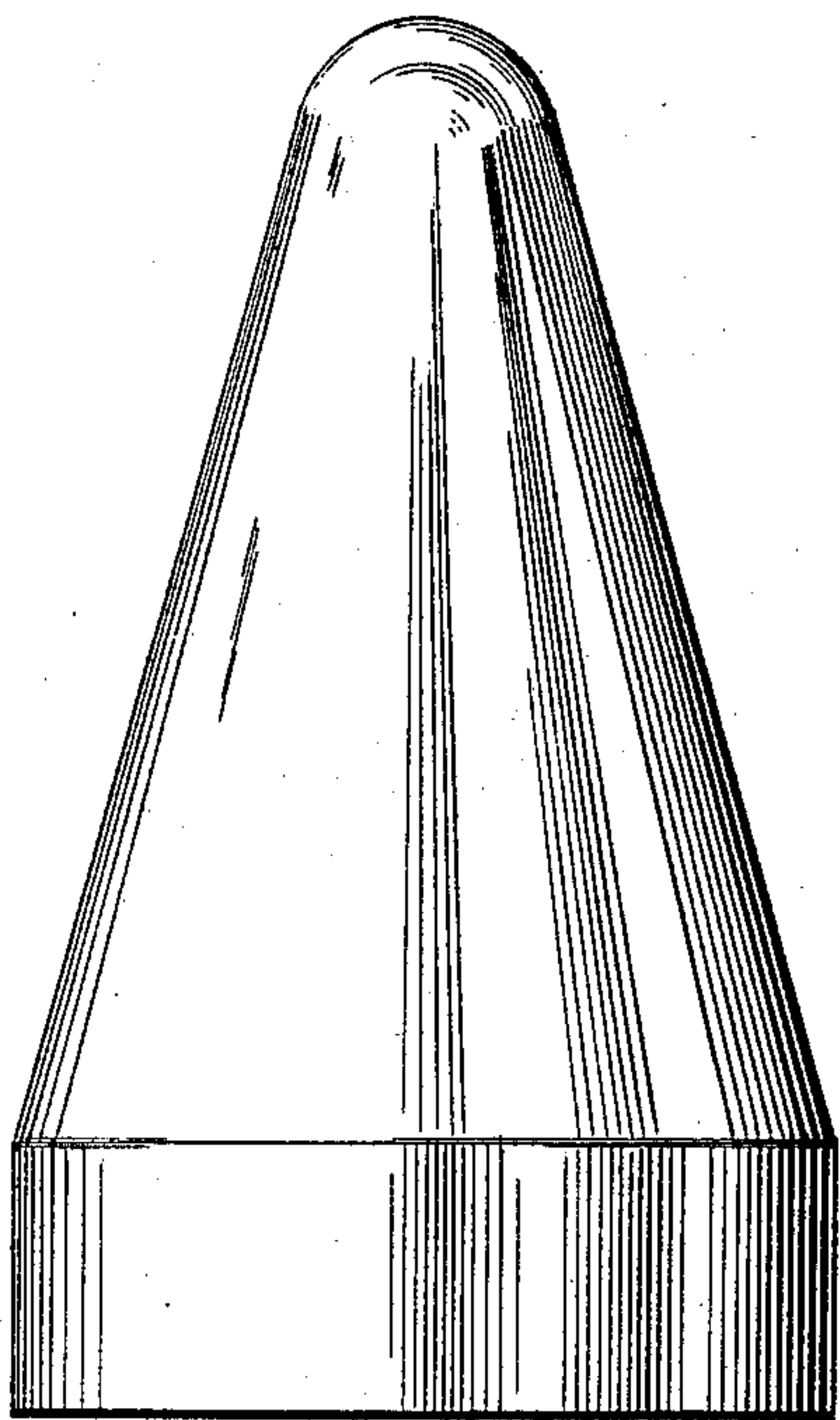
E. MOREAU.

METHOD OF MAKING INCANDESCENT GAS BURNERS.

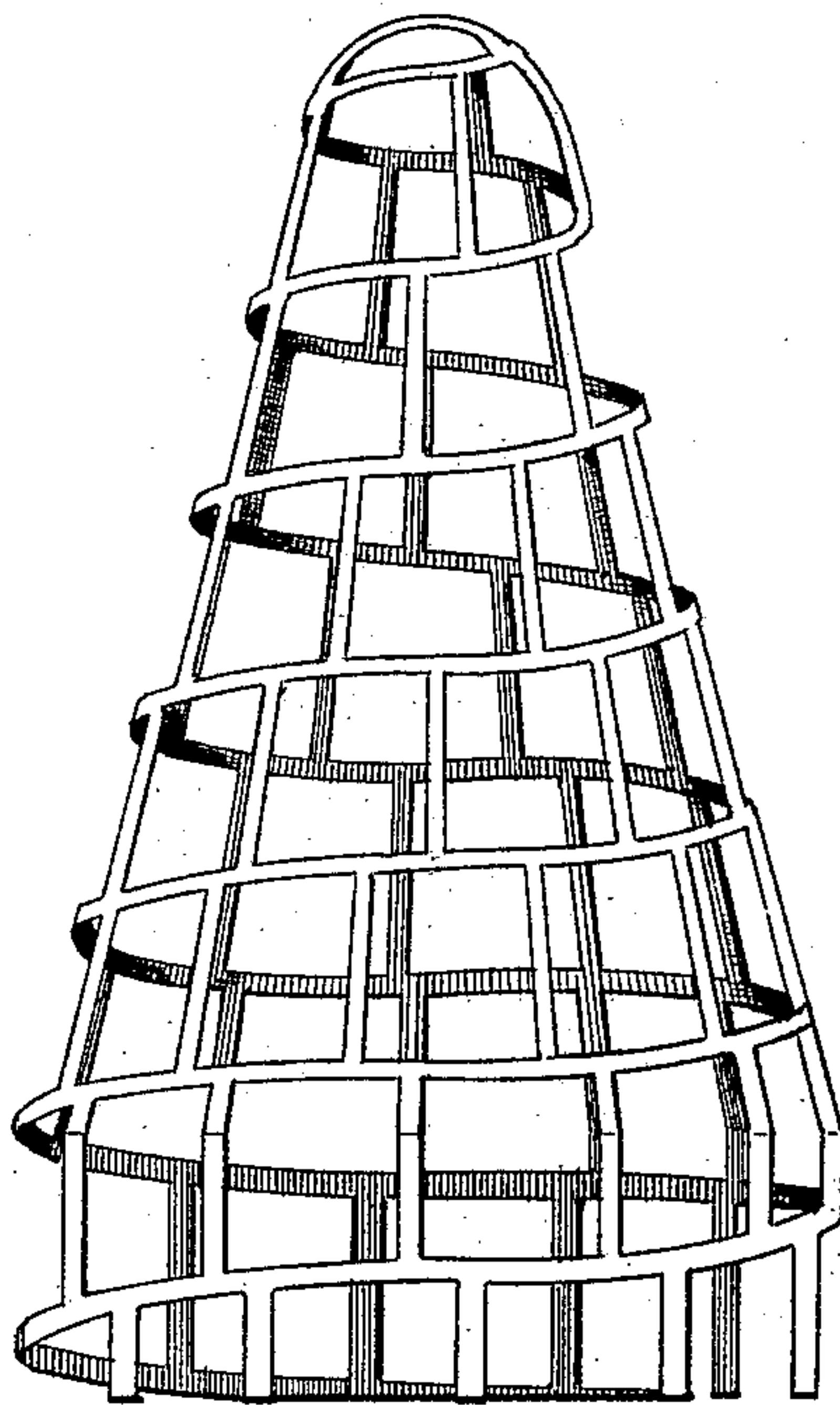
No. 392,129.

Patented Oct. 30, 1888.

—fig. 1.



—fig. 2.



Witnesses:

N. W. Mortimer,
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Inventor :
Eugene Moreau,
by *A. S. Dyerforth.*
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UNITED STATES PATENT OFFICE.

EUGÈNE MOREAU, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF MAKING INCANDESCENT GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 392,129, dated October 30, 1888.

Application filed February 20, 1888. Serial No. 264,570. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE MOREAU, a citizen of the Republic of France, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Producing Incandescent Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to incandescent gas-burners. The object is to effect certain improvements in the manufacture of the cones or other curved bodies used as incandescent gas-burners; and it consists, essentially, in a method of producing the hood, cone, or mantle, made of suitable material, metal or other refractory substance, whereby the web remaining after the perforating process will be integral and will be composed of practically-uniform portions.

In the annexed drawings, Figure 1 shows a conical shell before being perforated. Fig. 2 shows the same after having been perforated and when ready for use.

Heretofore reticulated metal burners for incandescent lamps have been prepared by weaving fabric from wire, or an intended equivalent thereof has been made by simply perforating a sheet of metal, providing it with numerous holes; but where the reticulated metal hood has been made by weaving wire it has been impossible to make the product of practically-equal thickness throughout, since where the wires cross it is of course at least twice as thick as where the wires are single, whereby not only will the hood suffer in use from strain incident to the movement of the wires one upon the other, but this very movement will destroy the uniformity of the structure, since any strain will tend to open some portions more than others, while when the metal has been perforated to take the place of woven fabric, as the perforations have been circular or without any definite arrangement, the product has failed to be of regular construction, with practically-uniform portions of metal left between the perforations—that is, with a practically-uniform and homogeneous web—and so has been unequally heated and again subject to strain.

In the employment of incandescents great difficulty has been experienced from their rapid destruction under subjection to heat. While it is desirable to have incandescents last for several hundred hours, in many instances as at present constructed they will last but a short time, some breaking down in a few hours. The usual construction of these incandescents is of woven platinum wire yielding a metallic net or gauze, or an intended equivalent thereof, as before said, has been made by simply perforating a sheet of metal, providing it with numerous holes; but where the reticulated metal fabric has been made by weaving wire the strands are not fastened, and owing to its uneven thickness it is always unevenly heated in use, the difference in temperature between the parts setting up motion, which strains the structure, and, causing the wires to move one upon the other, soon destroys it for actual use, while when the metal has been perforated to take the place of woven fabric, as the perforations have been circular or without definite arrangement, the product has failed to be of uniform construction—that is, with a uniform web—and, again, uneven heat of the incandescent has caused its destruction, or it has failed in requisite luminosity. The rapid destruction of the woven-wire incandescent has been sought to be overcome by providing the same with strengthening-ribs; but owing to this additional violation of the laws of expansion and contraction the provision of the ribs has only increased the rapidity of destruction. I have found that the difficulty may be obviated and an incandescent be caused to last in use and with greatly-increased luminous effect very much beyond the present duration by making the web left between the openings of practically-uniform size; but it is always desirable, for reasons that will be apparent from what has been set forth above, to have the incandescent in a single piece, and in the case where the metal has been made up into the form of a cone something more than mere intention is necessary to leave a practically-uniform web after perforating—in other words, a particular procedure has to be observed. To form a cone, this is first brought into shape, as shown in Fig. 1, by any of the well-known processes of sheet-metal drawing and stamping, or by electrical deposition upon a suitable mold.

It is then, either by hand or by means of machinery, perforated from the apex to the base with parallel-sided openings, the perforations following a spiral line the thread of which is
5 equal to the distance between the centers of two consecutive perforations. By this mode of operation the cone, while left integral, will be perforated and left with a web of practically-uniform portions between the perfora-
10 tions.

A machine which may be utilized in carrying out the method herein described is fully illustrated and described in my application for patent, Serial No. 279,222, dated July 6, 1888.

15 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The method of producing an incandescent gas-burner in shape of a cone or other suitable curved-surfaced body in a single piece, 20 with practically-uniform web, which consists in taking the body as an imperforated shell and then perforating it with parallel-sided openings in a spiral line the pitch of which is equal to the distance between the centers of 25 two consecutive perforations, substantially as set forth.

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

EUGÈNE MOREAU.

Witnesses:

R. G. DYRENFORTH,
W. W. MORTIMER.