

No. 713,573.

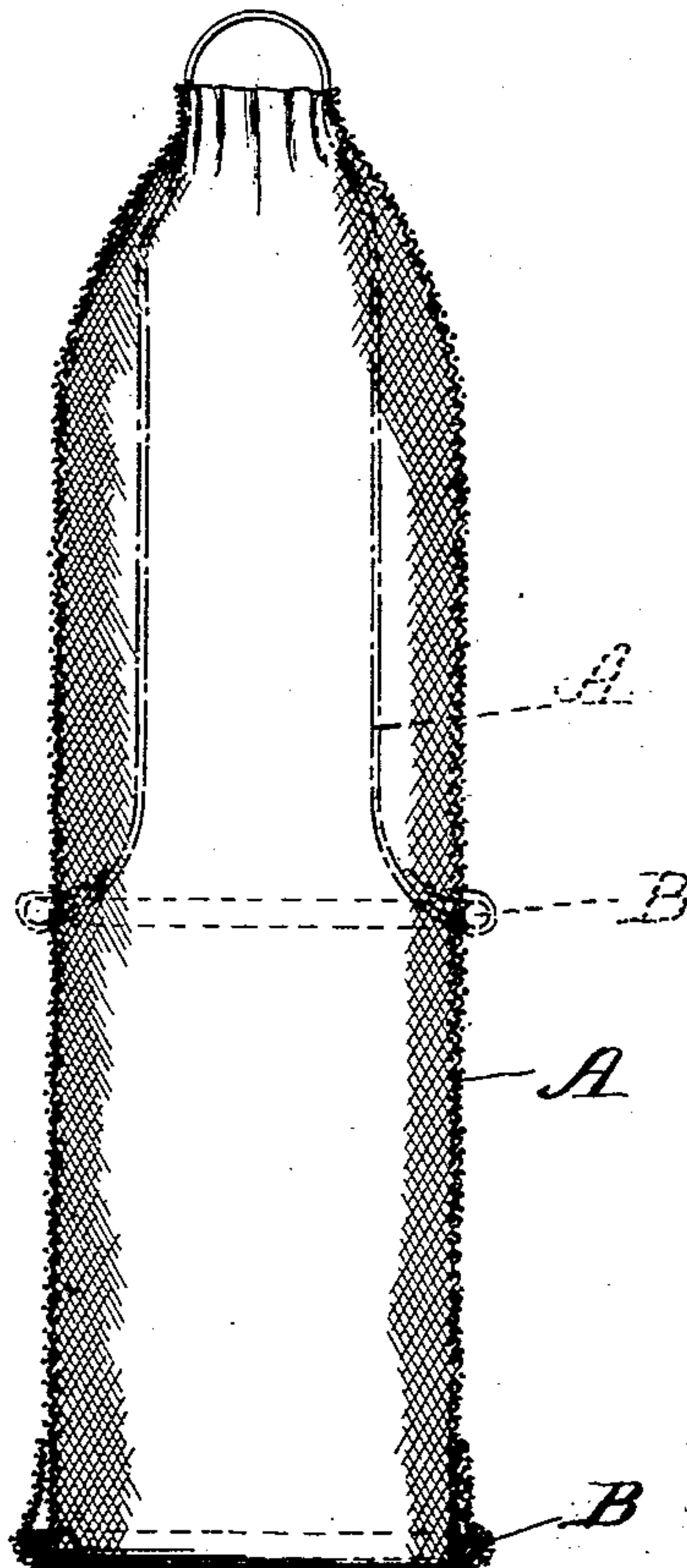
Patented Nov. 11, 1902.

J. T. ROBIN.

PROCESS OF MANUFACTURING INCANDESCENT GAS MANTLES.

(Application filed Feb. 26, 1902.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH T. ROBIN, OF NEW YORK, N. Y.

PROCESS OF MANUFACTURING INCANDESCENT GAS-MANTLES.

SPECIFICATION forming part of Letters Patent No. 713,573, dated November 11, 1902.

Application filed February 26, 1902. Serial No. 95,666. (No specimens.)

To all whom it may concern:

Be it known that I, JOSEPH T. ROBIN, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented a new and useful Process of Manufacturing Incandescent Gas-Mantles, of which the following is a specification.

My invention relates to a process for manufacturing incandescent gas-mantles.

I will describe a process embodying my invention and then point out the novel features thereof in the claims.

In its first stage of manufacture an incandescent gas-mantle consists of a tubular woven fabric impregnated with a suitable substance or substances, such as thorium and cerium. The impregnated fabric is subjected to certain operations, which are, first, a burning away of the fabric to leave a network structure of the substance or substances with which the fabric was impregnated; second, a shaping of the resultant structure; third, a hardening of the said structure; fourth, dipping the structure in a stiffening solution, and, finally, trimming the stiffened structure. The burning-off, shaping, and hardening operations are performed with the use of burners, and the best results, especially in the shaping and hardening operations, are obtained by having the burners introduced into the structure. The first operation—namely, that of burning away or destroying the fabric—is accompanied by a contraction or reduction in size and generally the formation of irregularities in the wall of the structure. Irregularities in the wall resulting from imperfections in the thread of the fabric cause unequal absorption of the impregnating substance or substances. To obviate such irregularities, I stretch the structure in a longitudinal direction. This operation may be accomplished by a weight having a connection which is circumferential of the structure. Preferably an annular weight will be used. It will be seen that by reason of the character of the connection of the weight the contraction of the structure longitudinally due to the operation of burning out the fabric will be lessened by the weight. If the contraction of the structure shall produce folds and the parts including the folds are really longer

than those parts of the structure which appear straight, the straight parts of the structure will be stretched first, and the stretching will continue until the folded parts are distended, whereupon the stretching of the latter will begin. By varying the weight the stretching of the structure can be varied. It will be understood, of course, that the weight employed will not be heavy enough to disrupt or break the structure.

The accompanying drawing illustrates a means for carrying out my improvement. It is a vertical sectional view of an impregnated tubular fabric having a weight circumferentially connected therewith. The full lines indicate the impregnated fabric before the fabric is burned, and the dotted lines indicate the structure formed after the fabric is burned.

A designates the impregnated fabric, and B the weight. The weight is here shown as being in the form of a ring, and, if desired, it may be a discontinuous ring, in order that it can be changed as to its diameter. The circumferential connection between the structure A and the weight B is here shown as consisting of a fold produced by turning up the end of the structure A around the weight.

When the fabric is burned out, the shrinkage of the remaining structure in a lateral direction causes the ring to be securely inclosed in the fold.

Preferably the stocking is ignited at its top to destroy the fabric.

The ring will hold the lower end of the structure open, so that the shaping and hardening devices can easily enter the interior of the structure. During the shaping process the weight will act in the same manner as during the burning out of the fabric. The flame of the shaping-burner is under pressure. Hence when the structure becomes softened the pressure increases the diameter of the structure, and by varying the pressure mantles can be obtained of various diameters.

The ring prevents a change in shape of the structure at its lower end when the structure is dipped, and the weight of the ring tends to hold the structure in a desirable vertical position, thereby preventing the structure, which is fragile, from becoming broken.

I do not herein claim anything shown and

described in my copending application, Serial No. 72,994, filed August 23, 1901.

What I claim, and desire to secure by Letters Patent, is—

- 5 1. In the process of manufacturing an incandescent mantle from a fabric impregnated with a suitable substance consisting in destroying the fabric so as to leave a structure
10 formed from the said substance, heating said structure and stretching said structure longitudinally while heated.
2. In the process of manufacturing an incandescent mantle from a fabric impregnated
15 with a suitable substance consisting in destroying the fabric so as to leave a structure formed from the said substance, heating said structure and stretching said structure by a weight acting upon the structure while heated.
- 20 3. In the process of manufacturing an incandescent mantle from a fabric impregnated with a suitable substance consisting in de-

stroying the fabric so as to leave a structure formed from the said substance, heating said structure and stretching said structure by a weight having a connection with the structure which is circumferential of the structure. 25

4. In the process of manufacturing an incandescent mantle from a fabric impregnated with a suitable substance consisting in destroying the fabric so as to leave a structure formed from the said substance, heating said structure and stretching said structure by a ring-like weight engaged with a transversely- 30 extended portion of the structure. 35

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH T. ROBIN.

Witnesses:

GEO. E. CRUSE,
R. H. E. STARR.