

E. ROSS.
METHOD OF MANUFACTURING INCANDESCENT GAS MANTLES.
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Patented Jan. 25, 1910.

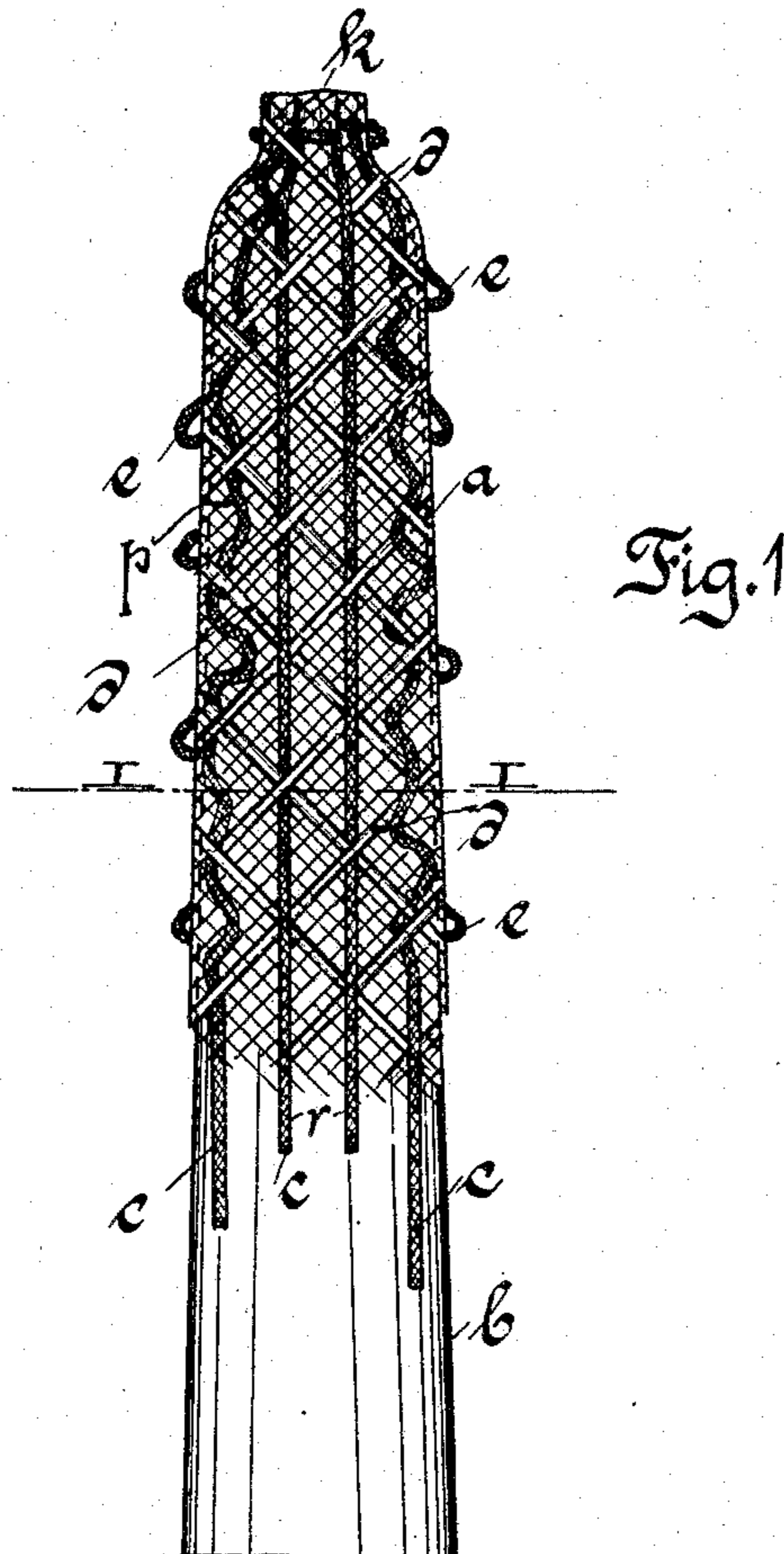


Fig. 1

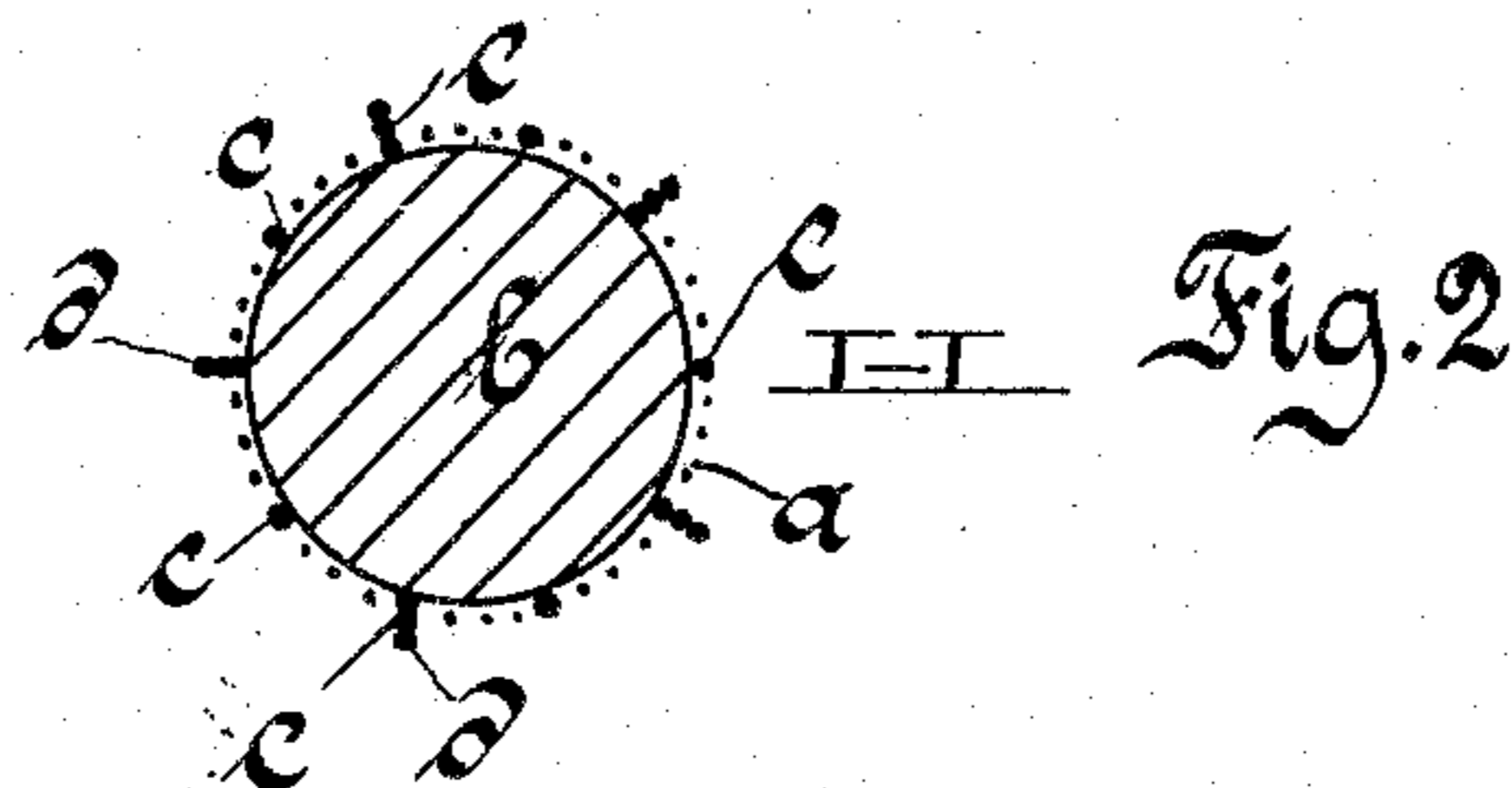


Fig. 2

Witnesses:

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UNITED STATES PATENT OFFICE.

EWALD ROSS, OF BARMEN, GERMANY.

METHOD OF MANUFACTURING INCANDESCENT GAS-MANTLES.

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Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed March 30, 1908. Serial No. 424,227.

To all whom it may concern:

Be it known that I, EWALD ROSS, residing in the city of Barmen, Rhenish Prussia, Germany, a subject of the Emperor of Germany, have invented a new and useful Method of Manufacturing Incandescent Gas-Mantles, of which the following is a specification.

My invention relates to an improved method of manufacturing incandescent gas mantles.

Heretofore the fabric forming the foundation of gas mantles has been commonly produced on knitting machines or on weaving looms.

My invention provides for employing a textile fabric manufactured on a braiding machine from any suitable material but having longitudinally-extending reinforcing threads interwoven therewith; and for subsequently treating such fabric to produce a finished mantle of greatly increased durability.

The invention is fully described in connection with the accompanying drawing and is specifically pointed out in the claim.

Figure 1 shows my improved braided foundation fabric for a mantle, placed upon a shaping bar therefor. Fig. 2 is a cross-section on the line 1—1 of Fig. 1.

In carrying out my invention I produce a foundation fabric of tubular form on a braiding machine, which fabric does not show the characteristic features of the knitted or woven fabric ordinarily employed, but has threads *a* crossing each other as in an ordinary braid to form meshes which are elastic in structure so as to render the finished mantle less liable to breakage, and also enable the production of an improved light.

To increase the strength of the braided tubular fabric, and of the finished mantle based thereon, I loosely incorporate therein, during the braiding operation, a number of symmetrically arranged stronger longitudinal threads, either straight warps as indicated at *c c* or diagonally extending reinforcing threads as indicated at *d d*. The tubular braid is tightly woven so as to make it as narrow as practicable, one end thereof thus naturally forming a suitable compacted

head $\frac{1}{2}$ for the finished mantle, while the main portion of the fabric is adapted to be readily enlarged in diameter to form the body of the mantle.

In order to form a properly shaped mantle from the braided fabric described, I stretch the main portion of the same upon a mandrel or bar *b*, of desired conical form as indicated in Fig. 1, leaving an unstretched end $\frac{1}{2}$ to form the mantle head. This stretching of the body of the braided fabric to an enlarged diameter is readily effected, but it naturally involves a corresponding reduction in the length of the meshes and of the fabric as a whole. The longitudinal threads *c c* however have a resulting excess of length which is drawn up by the shortening of the fabric so as to form loops or folds *e*, which latter must be eliminated in order to provide a practically smooth surface and secure their full reinforcing effect. This is readily accomplished by pulling the surplus portion of these threads downward through the meshes of the fabric, from the unstretched end forming the head $\frac{1}{2}$, until the threads are straightened as indicated on the two middle threads *c c*, the surplus length being of course subsequently removed. The fabric, thus formed and manipulated, being impregnated as usual with the solution of rare earths and subjected to the burning process, serves as a specially strong and elastic foundation for the finished mantle.

What I claim is:—

The improvement in manufacturing incandescent gas mantles which consists in forming the to-be impregnated and burned foundation fabric therefor of tubular-braided material and interweaving therewith longitudinal reinforcing threads, shaping said fabric by diametrically stretching the main portion thereof upon a mandrel to form the enlarged body of the mantle, and straightening said interwoven longitudinal threads by pulling the drawn-up portions thereof through the fabric.

EWALD ROSS. [L. S.]

Witnesses:

OTTO KÖNIG,

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