(No Model.)

E. P. THOMPSON.

CARBONIZING MOLD FOR INCANDESCENT ELECTRIC LIGHT FILAMENTS.

No. 369,664. Patented Sept. 6, 1887.

Fig. 1.

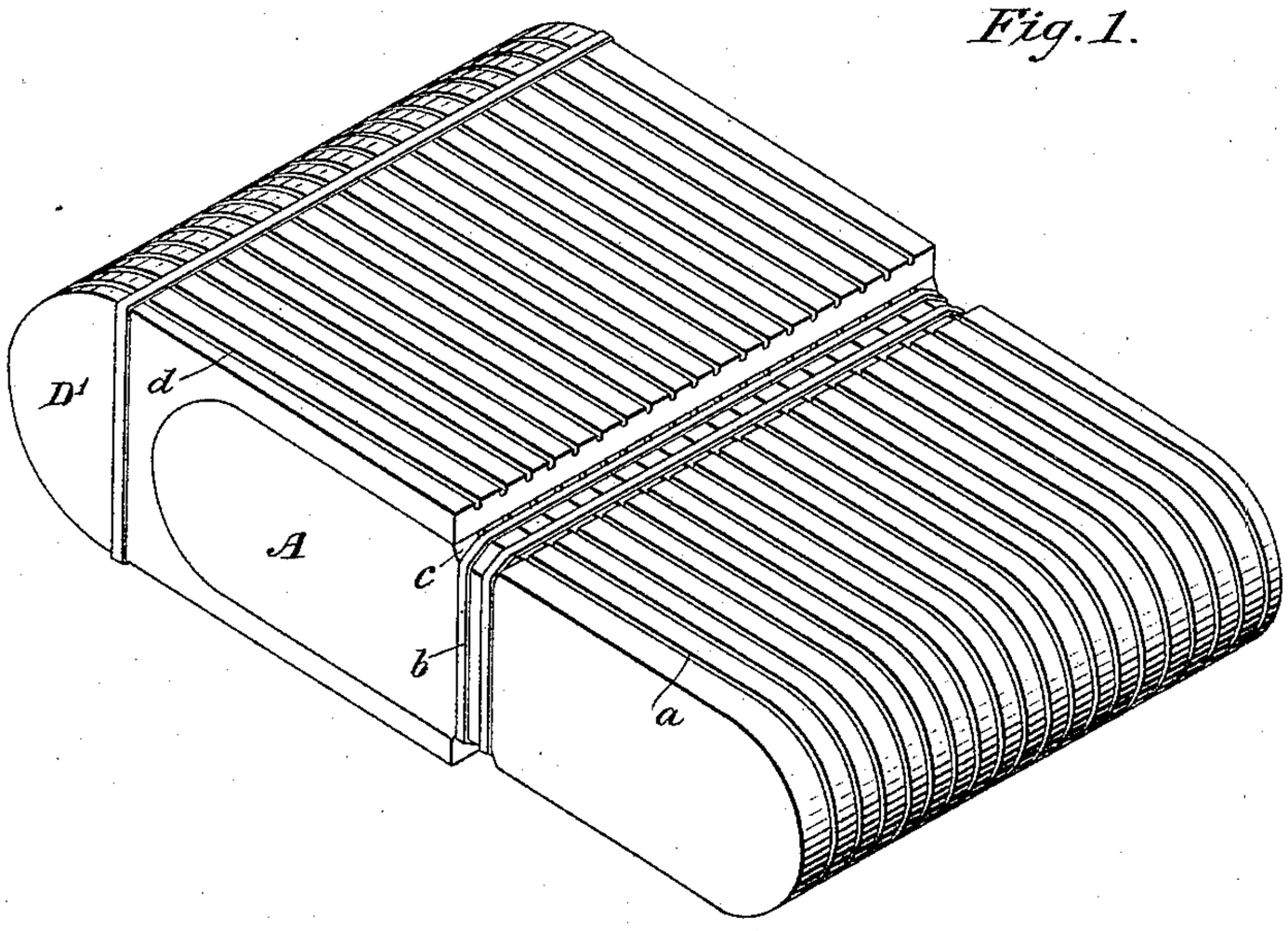
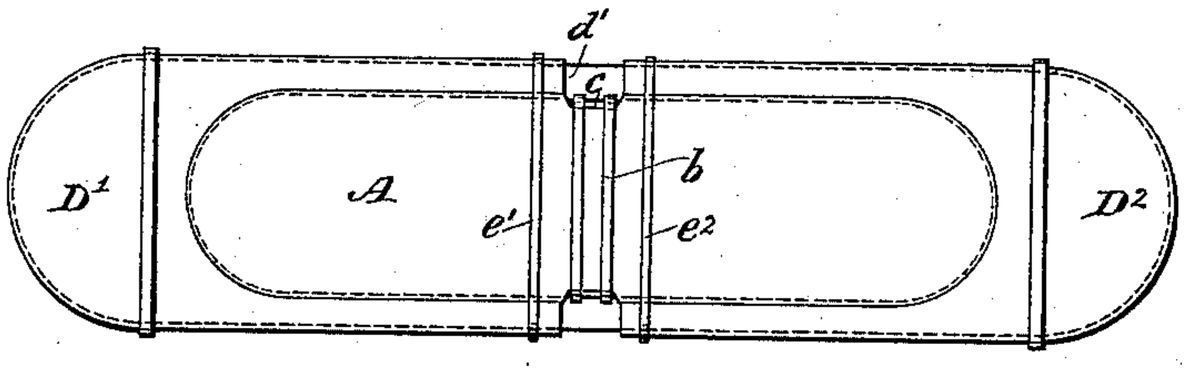


Fig. 2.



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CARBONIZING-MOLD FOR INCANDESCENT-ELECTRIC-LIGHT FILAMENTS.

SPECIFICATION forming part of Letters Patent No. 369,664, dated September 6, 1887.

Application filed September 15, 1886. Serial No. 213,568. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. THOMPSON, a citizen of the United States, residing in Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Carbonizing Molds for Incandescent-Electric-Light Filaments, of which the following is a specification.

The object of my invention is to provide an efficient means for carbonizing incandescent-electric-light filaments, and to render it possible to carbonize a large number of filaments in a small space.

It has heretofore been proposed to wind the material to be carbonized upon carbon blocks shaped to produce the form of filament required, and, having fastened the material into position, to subject it to the carbonizing process.

The present invention involves certain improvements upon this method; and it consists, in general terms, in employing a foundation-block grooved upon its outer surface to receive the filaments, which are wound continuously in the grooves and are fastened in position by a ligature wound at right angles thereto. The shape of the block is such that its cross-section corresponds to two filaments placed with their ends toward each other. In addition to this block, there is employed a covering consisting of two outer sections adapted to slip over the ends of the foundation-block and cover the main portion of the filament wound thereon. These outer sections also have grooves upon their outer surfaces, in which there is to be wound a filament adapted when carbonized to produce the larger filaments employed in large incandescent lights. In this manner two sets of filaments, or filaments of two different sizes, may be simultaneously formed. The whole mold, when the filaments have been wound in place, is subjected to the usual carbonizing process.

In the accompanying drawings, Figure 1 is a perspective view of a mold embodying the features of the invention, and Fig. 2 is a side view of the mold.

Referring to the figures, A represents an inner block of carbon oval in cross-section and having a continuous spiral groove upon its outer surface, as shown at *a*. In this groove it is designed that the filament to be carbonized shall be wound, and, having been wound, it is secured in position by a ligature of thread, of cloth, or of other suitable material, as shown at *b*. This ligature is wound at right angles to the direction of the filaments and at the center of the block. A groove, *c*, is cut into the block upon each side at the center and at right angles to the grooves *a*, for the purpose of facilitating the cutting of the filaments when they are ready for carbonizing. This may be accomplished by drawing a knife across the same above the groove. In this manner the entire length is divided into two sets of loops, which are to constitute the smaller carbon filaments of the lights.

The casing, consisting of two sections, D′ and D², preferably of carbon, fits over the block A, inclosing the filaments in the grooves and preventing them from springing out of position during the process of carbonizing. These two blocks are preferably separated at the center by a narrow slit or opening, *d′*, through which access may be had to the inner filaments for the purpose of cutting them. The casing or blocks D′ and D² are formed with grooves *d*, similar to the grooves *a* upon the inner blocks, and in these grooves there are wound other filaments, which are also to be carbonized. The outer surfaces of these blocks are such as to give the proper form to the larger filaments, which are not only of greater length, but have their arms farther apart than the small filaments. The outer filaments having been wound, they are bound in position by two sets of ligatures, *e′* and *e²*, upon opposite sides of the opening *d*, and they are then cut apart in the line of the openings. When thus prepared, the entire mold is placed in a carbonizing-retort, and the filaments are carbonized in the usual manner.

It should be noticed that during the carbonizing process the filaments are under strain during only the first portion of the time—that is, until their ends have been withdrawn from beneath the ligatures. Preferably the grooves are sufficiently shallow to allow the filaments to project slightly therefrom, and then the ligatures press upon them; but as they withdraw from the ligatures they are left practically free to contract. In this manner it will be understood that the strain is placed upon them only during the time that their strength is greatest.

I claim as my invention—

1. A carbonizing-block having circumferential grooves for receiving filaments and an inclosing-case consisting of two sections, substantially as described.

2. A carbonizing-mold for filaments, consisting of an inner block having longitudinal grooves and an outer casing having grooves upon its surface and formed in two sections, substantially as described.

3. A mold for filaments, consisting of an inner block having longitudinal grooves for receiving filaments and transverse grooves, and a casing consisting of two sections separated a slight distance above the transverse grooves, substantially as described.

4. A mold for carbonizing filaments, consisting of a block having a cross-section conforming to two filaments having abutting ends and having transverse grooves, substantially as described.

5. The combination, substantially as described, of a mold for carbonizing filaments, filaments placed thereon, ligatures binding the free ends of said filaments and leaving the remaining portions free, substantially as described.

In testimony whereof I have hereunto subscribed my name this 17th day of August, A. D. 1886.

EDWARD P. THOMPSON.

Witnesses:

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