

No. 694,220.

Patented Feb. 25, 1902.

G. C. WEBSTER.

FORMER FOR FILAMENTS FOR INCANDESCENT ELECTRIC LAMPS.

(Application filed Dec. 30, 1901.)

(No Model.)

Fig. 1.

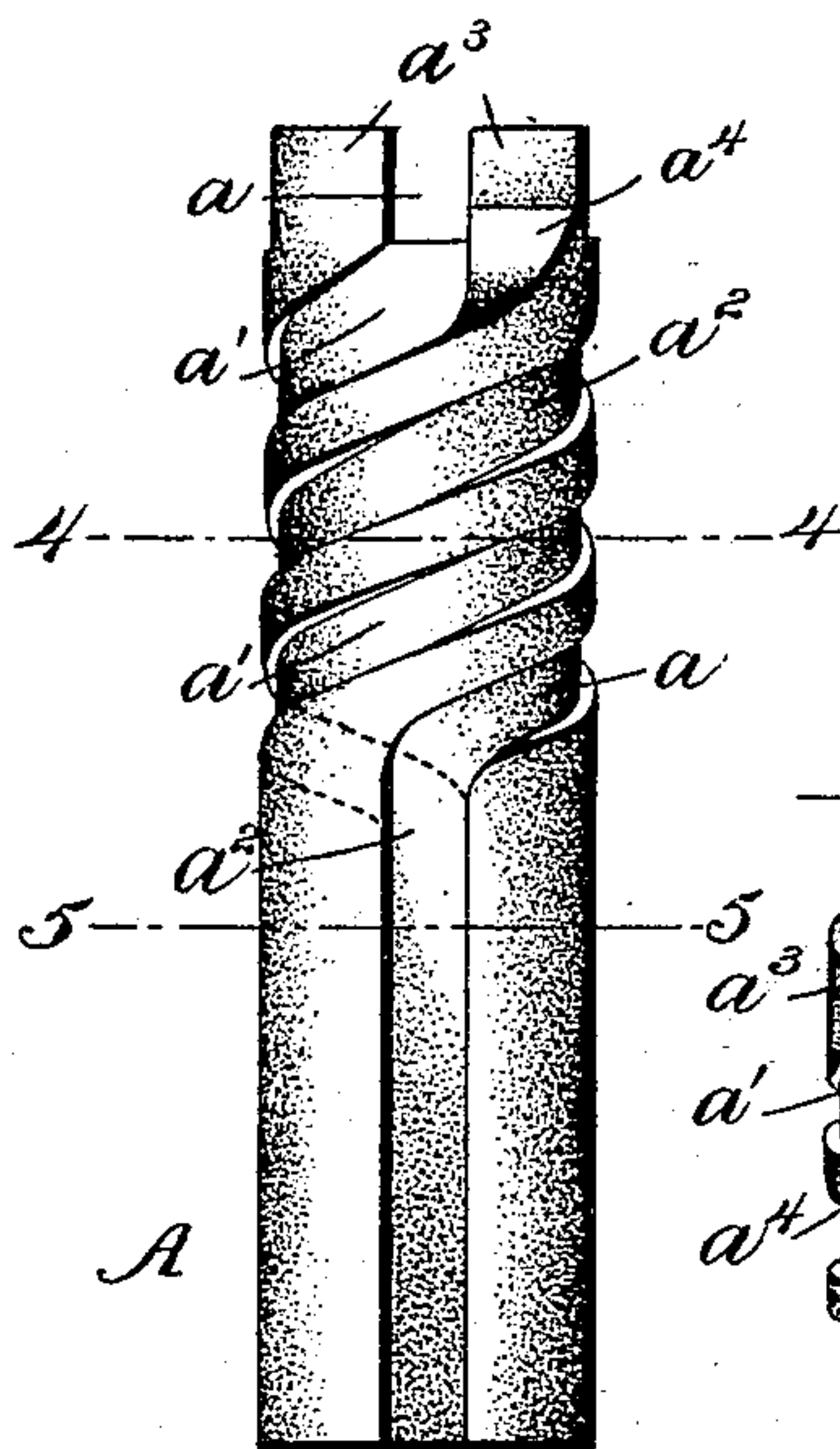


Fig. 2.

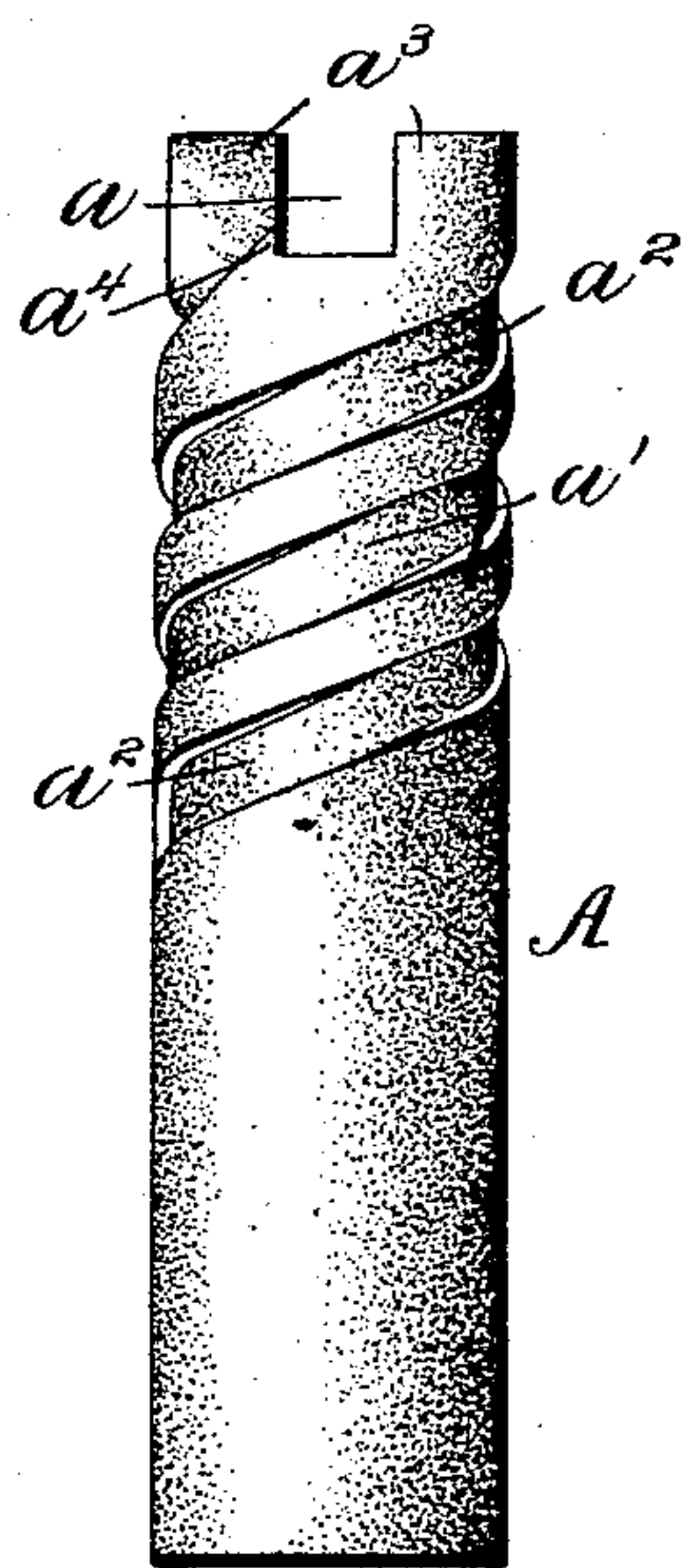


Fig. 3.

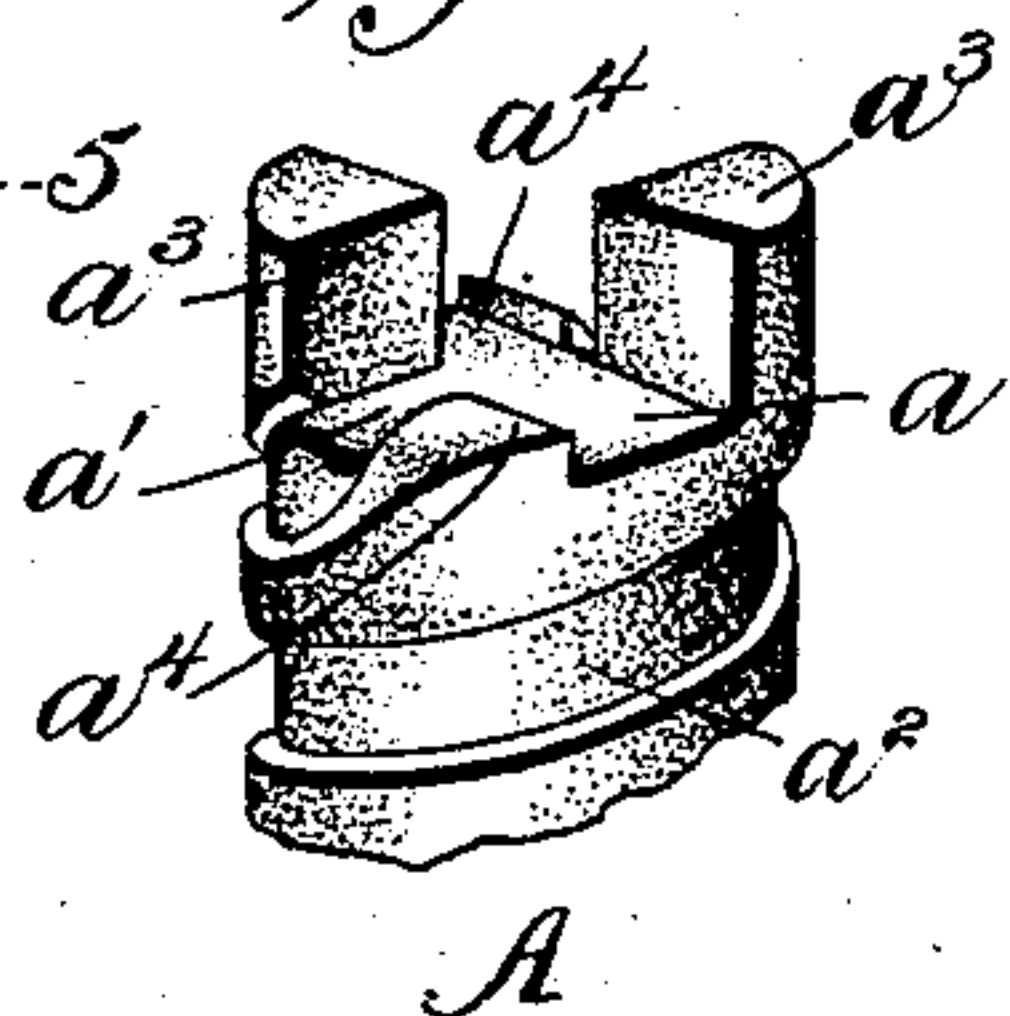


Fig. 6.

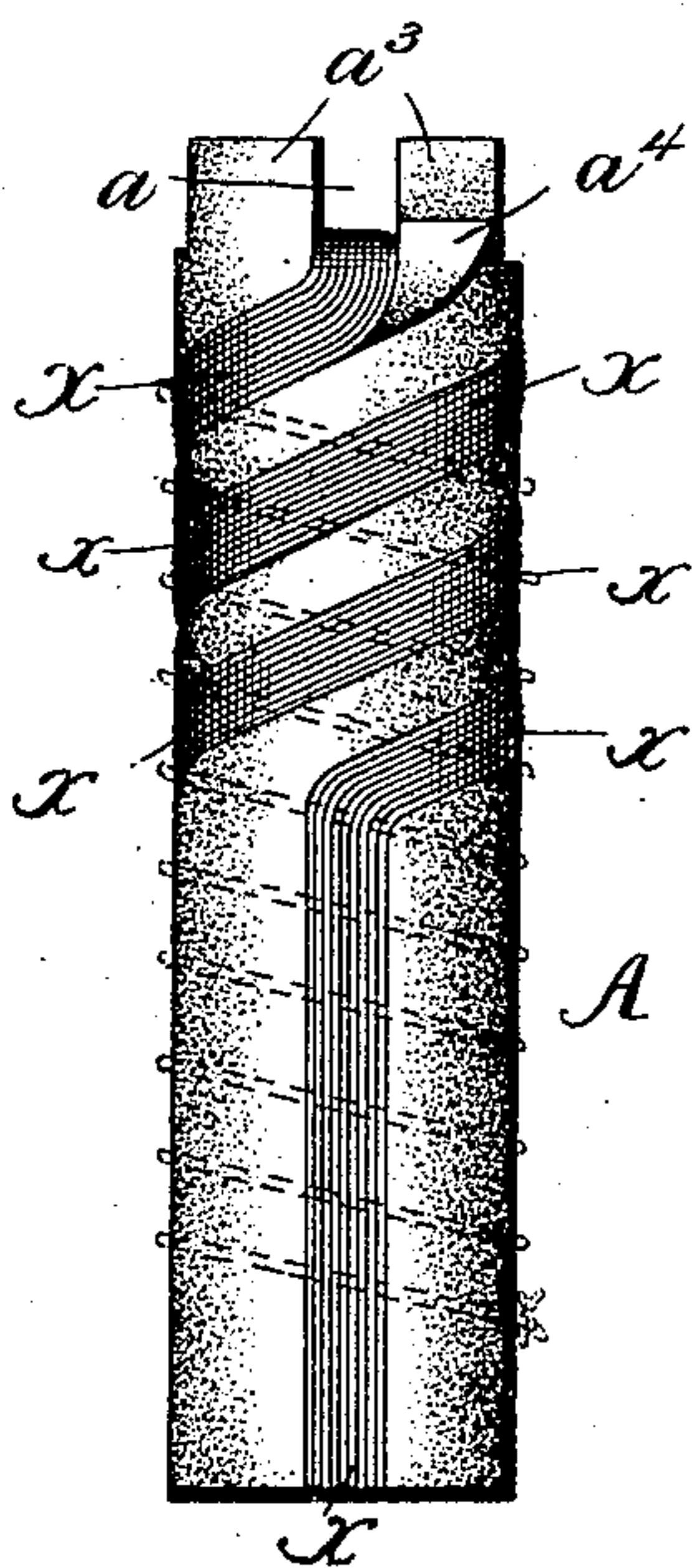


Fig. 4.

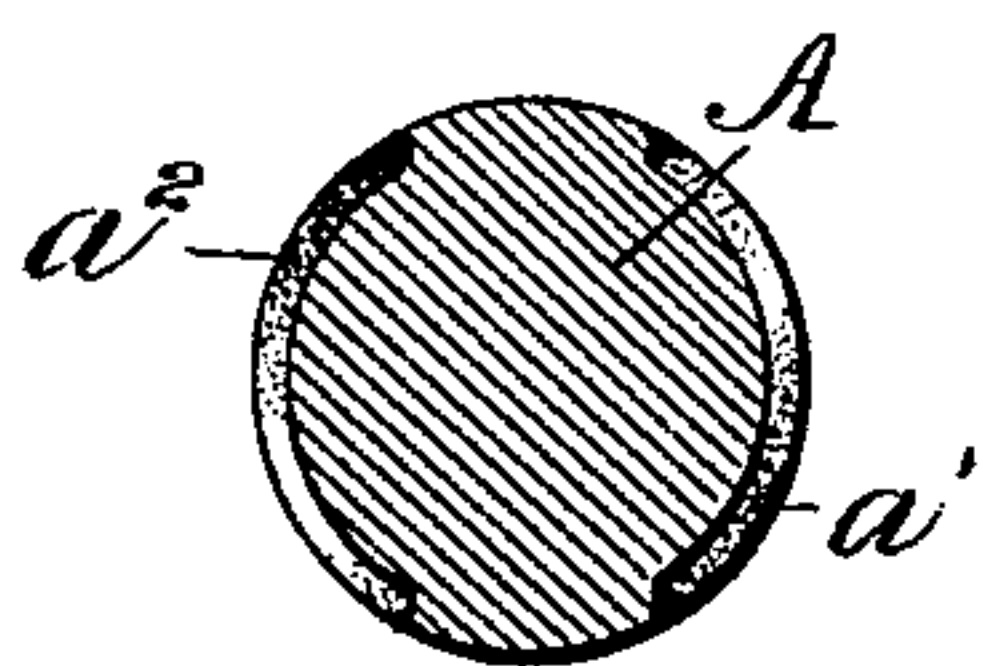
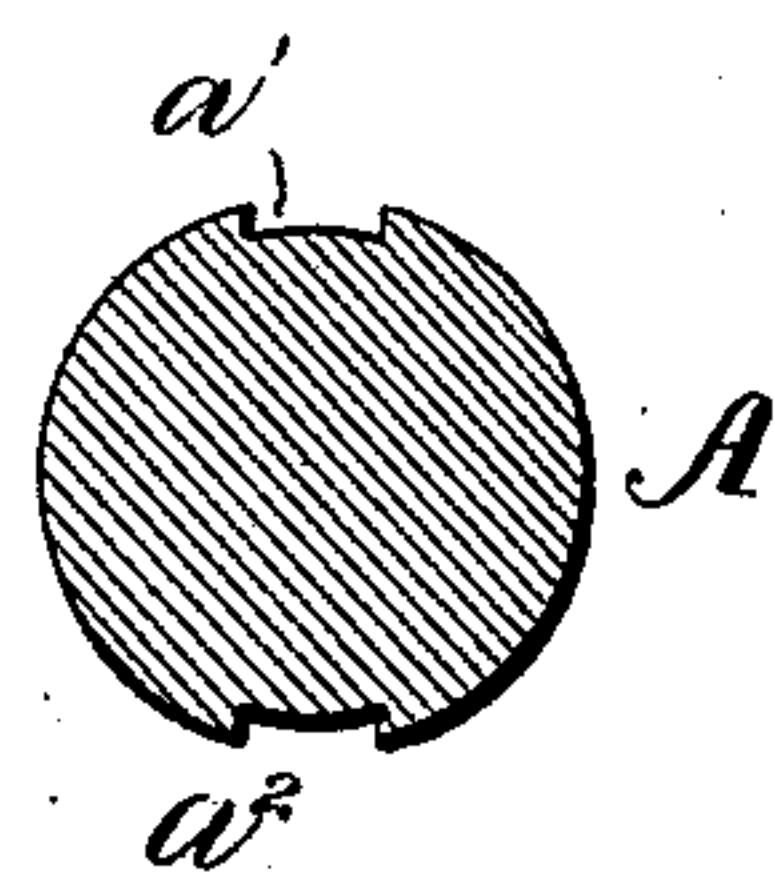


Fig. 5.



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FORMER FOR FILAMENTS FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 694,220, dated February 25, 1902.

Application filed December 30, 1901. Serial No. 87,723. (No model.)

To all whom it may concern:

Be it known that I, GLENN CANNON WEBSTER, a citizen of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have made certain new and useful Improvements in Formers for Filaments for Incandescent Electric Lamps, of which the following is a specification.

I have invented and produced an improved form of double spiral filament for incandescent electric lamps; and my present invention is an improved former or shaping implement upon which the filaments are wound and secured preliminary to the baking process to which they are necessarily subjected.

The details of construction are as herein-after described and claimed, and illustrated in the accompanying drawings, in which—

Figures 1 and 2 are different side views of my improved former. Fig. 3 is a perspective view of the top portion of the former. Fig. 4 is a horizontal section on the line 4 4 of Fig. 1. Fig. 5 is a horizontal section on the line 5 5 of Fig. 1. Fig. 6 is a side view of the former with a series of filaments applied and secured thereto in the manner required for the baking operation.

The former A is composed of powdered carbon compressed to the requisite degree and forming a hard solid cylinder. The upper portion of the body A of the former is provided with two adjacent spiral grooves a' and a^2 , whose lower portions extend lengthwise of the former on the opposite sides thereof, as shown in Figs. 1 and 5. At the top of the former A the grooves a' and a^2 are connected, as shown at a —that is to say, by a passage-way between two projections or ears a^3 , which are arranged diagonally opposite each other. The function of these ears is to hold the carbon filaments x in place when applied thereto as shown in Fig. 6—that is to say, the said ears form practically a groove or passage-way a , which permits the convenient application and detachment of the filaments x . As an additional means for holding the filament in place on the top of the former A, I provide two shorter ears a^4 , which are arranged diagonally opposite and each directly opposite one of the longer ears a^3 , as shown in Fig. 3. As illustrated in Fig. 6, filaments x , which have been duly prepared for the purpose, are

laid with their central portions in the space a between the ears a^3 and a^4 and are wound spirally around the body of the former, so as to fill the respective grooves a' and a^2 . They are then secured in place by means of threads wound spiral around them and the former, as illustrated. In this condition the former, with its attached filaments, is ready for the baking operation—that is to say, to be placed in a bed of powdered graphite and to be subjected for a period of thirty to forty hours to a high degree of heat, so as to be thoroughly baked. In such baking process the binding-thread is burned off, and when the former, with the filaments clinging thereto, is removed from the graphite and duly cooled the filaments are carefully detached and separated and are nearly in the shape required for use in lamp-bulbs. It will be observed that the shorter ears a^4 are beveled on their outer sides. This construction and the relative arrangement of the longer ears a^3 have considerable utility in function—that is to say, the longer ears serve to hold in place any number of filaments that the grooves a' and a^2 can accommodate, and the smaller ears a^4 supplement this function by allowing the spirally-formed filaments to be conveniently detached after baking, since it is apparent the top bend of the filaments will pass easily over the bevels of the ears a^4 if the bundle of filaments be turned or rotated around the body of the former.

While I prefer and have described the former as cylindrical, I do not restrict myself to such shape, since it may be made elliptical in cross-section and still serve the purpose.

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

1. An improved former for filaments of incandescent lamps, the same having two opposite spiral grooves leading downward from its upper end, substantially as shown and described.

2. An improved former for filaments of incandescent electric lamps, the same being shaped as described, and having two similar spiral grooves in its upper portion and two opposite straight grooves in its lower portion, which grooves are joined with the spiral ones, as shown and described.

3. The improved former for the purpose specified, consisting of a cylindrical body having a passage-way at the top and two spiral grooves leading downward therefrom on opposite sides as shown and described. 5

4. The improved former for the purpose specified, consisting of a cylindrical carbon body having a passage-way at the top and two spiral grooves leading downward therefrom on opposite sides and terminating in straight portions parallel to the central axis of the former, as shown and described. 10

5. The improved former for the purpose specified, consisting of a round body having opposite ears at the top which are separated by a space suitable to receive a bundle of carbon filaments, and two similar spiral grooves 15

leading downward on opposite sides and terminating in straight portions which are also opposite each other as shown and described. 20

6. The improved former for the purpose specified, consisting of a cylindrical carbon body having two opposite ears or projections at the top, and two other ears which are diagonally opposite and beveled on their outer sides, and two similar spiral grooves leading downward from the space between the ears and terminating in straight portions arranged on opposite sides of the body of the former, as shown and described. 25

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Witnesses:

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