

(No Model.)

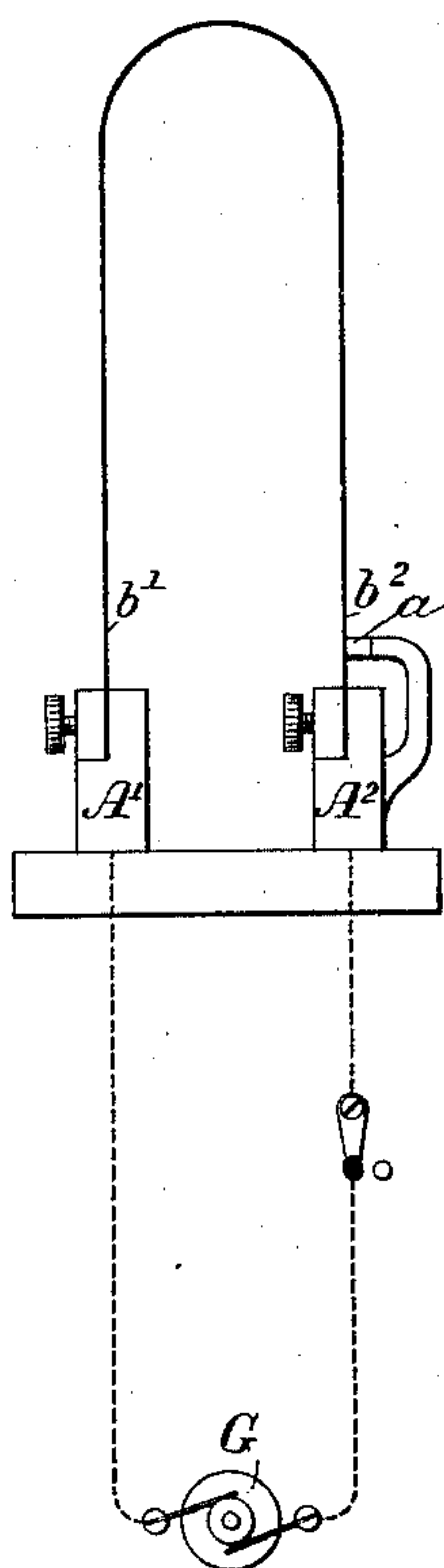
E. P. THOMPSON.

PROCESS OF TREATING ELECTRIC LIGHT FILAMENTS.

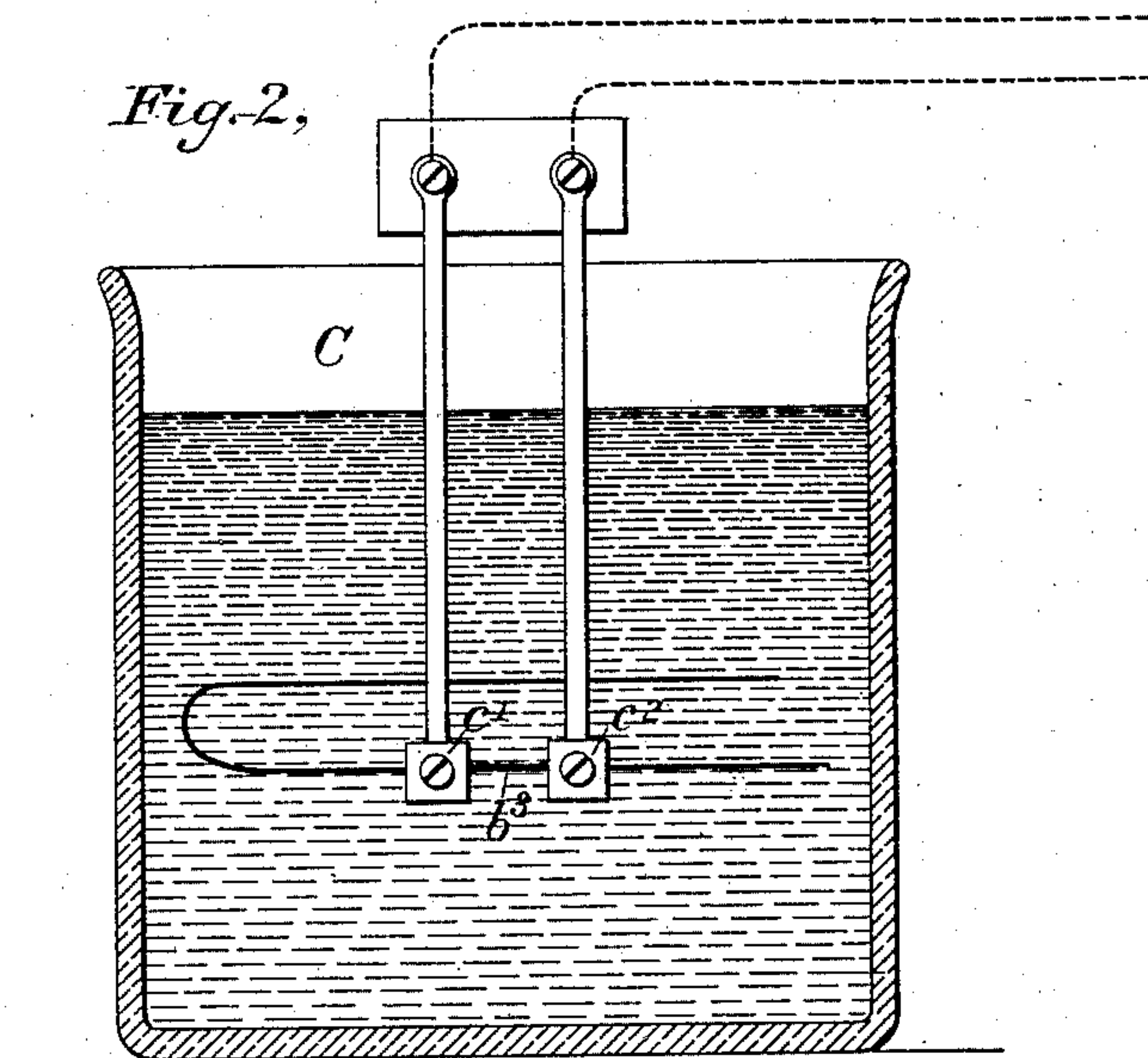
No. 370,992.

Patented Oct. 4, 1887.

*Fig. 1,*



*Fig. 2,*



Witnesses

*Carrie E. Davidson*  
*Carrie E. Ashley*

By his Attorneys

Inventor  
*E. P. Thompson*  
*Poppe & Edgecomb*

# UNITED STATES PATENT OFFICE.

EDWARD P. THOMPSON, OF ELIZABETH, NEW JERSEY.

## PROCESS OF TREATING ELECTRIC-LIGHT FILAMENTS.

SPECIFICATION forming part of Letters Patent No. 370,992, dated October 4, 1887.

Application filed September 15, 1886. Serial No. 213,570. (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 Processes of Treating Electric-Light Filaments, of which the following is a specification.

The object of the invention is to so treat the filaments employed in incandescent electric lights as to render them capable of longer endurance and to give them greater strength.

The invention consists in giving to the filaments a permanent set, and this is accomplished preferably by passing an electric current through the same of such strength as to raise them to a sufficient temperature to cause them to break. Having once been broken in this manner, a permanent set is given to the filament, and subsequently the filament will not be broken except by an application of an equal amount of heat, which in practice will never occur. The broken filament may be mended by a deposition of carbon or hydrocarbon, or it may be made of such length as to admit an end being broken off without rendering it shorter than is required in practice. The extreme temperature to which the filament is subjected drives off every particle of gas from the carbon, and gives the permanent set to the molecules by reason of the mechanical strain to which it is at the same time subjected, and it causes the carbon to pass through a viscous state, and when it cools it is more dense. The carbon thus treated is also found capable of being bent and strained, with less liability to break. It also throws off less carbon, and thus prevents the interior of the globes from becoming so quickly blackened.

In the accompanying drawings, Figure 1 illustrates a method of breaking the filaments. Fig. 2 represents the filaments in the process of being mended.

Referring to these figures, A' and A<sup>2</sup> repre-

sent two clamps for receiving the ends of an elongated filament, B, and placing it in circuit with a suitable source of electricity, G, capable of producing such current as will raise it to an intense heat. The filament may be broken simply by the application of heat in this manner, or a refracting contact-point, *a*, may be applied against its surface at a point near the clamp A<sup>2</sup>, for instance, and this will insure that when the filament is broken by heat it will be at the point where the contact-point *a* touches it. This being beyond the points *b'* *b*<sup>2</sup>, where a filament of the normal length would terminate, the breaking of the filament will not injure its usefulness. If, on the other hand, the filament should be broken without reference to its length—for instance, at a point, *b*<sup>3</sup>, Fig. 2—it will be necessary to mend the same. This may be done by placing the two sections of the filament in a deposition-vat, C, the parts being held near the broken ends by the clamps *c'* *c*<sup>2</sup>. A battery or other source of electricity has its respective poles connected with the arms *c'* *c*<sup>2</sup>, and this completes its circuit with the broken ends of the filament, which are held together in the deposition-vat containing a carbon or hydrocarbon in solution, and a deposit is made, the two ends uniting them firmly together.

I claim as my invention—

The hereinbefore-described method of treating carbons, which consists in raising them to a high temperature by electric currents, and purposely causing them to break by reason of such temperature, thereby giving them a permanent set.

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

EDWARD P. THOMPSON.

Witnesses:

DANL. W. EDGECOMB,  
CHARLES A. TERRY.