

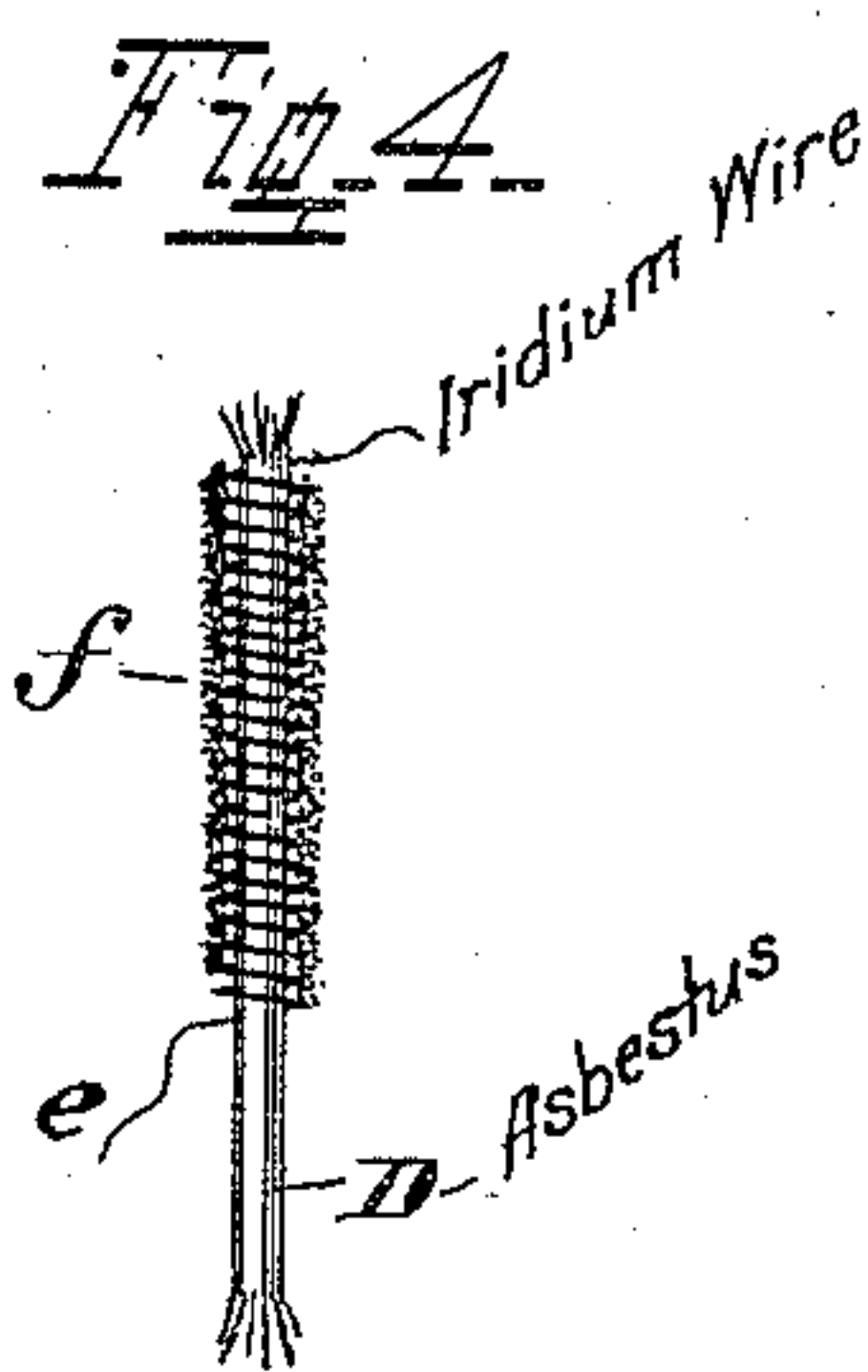
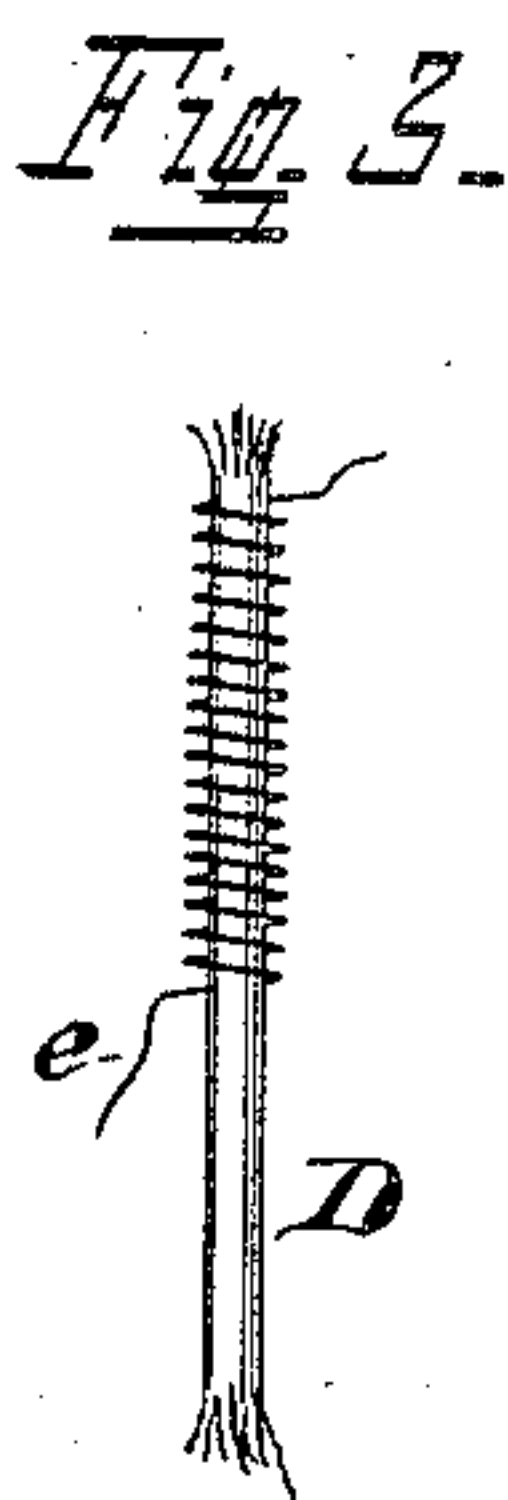
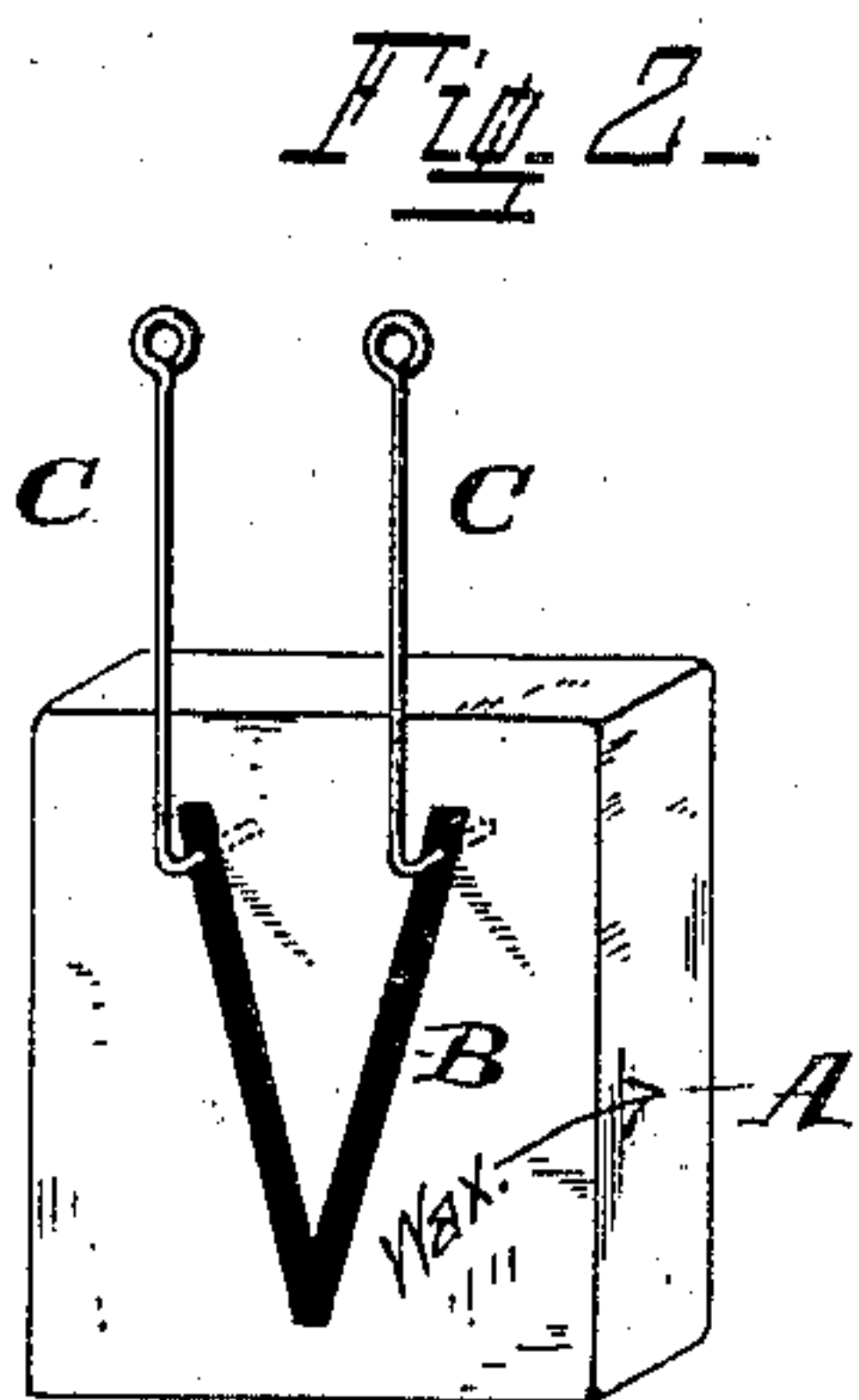
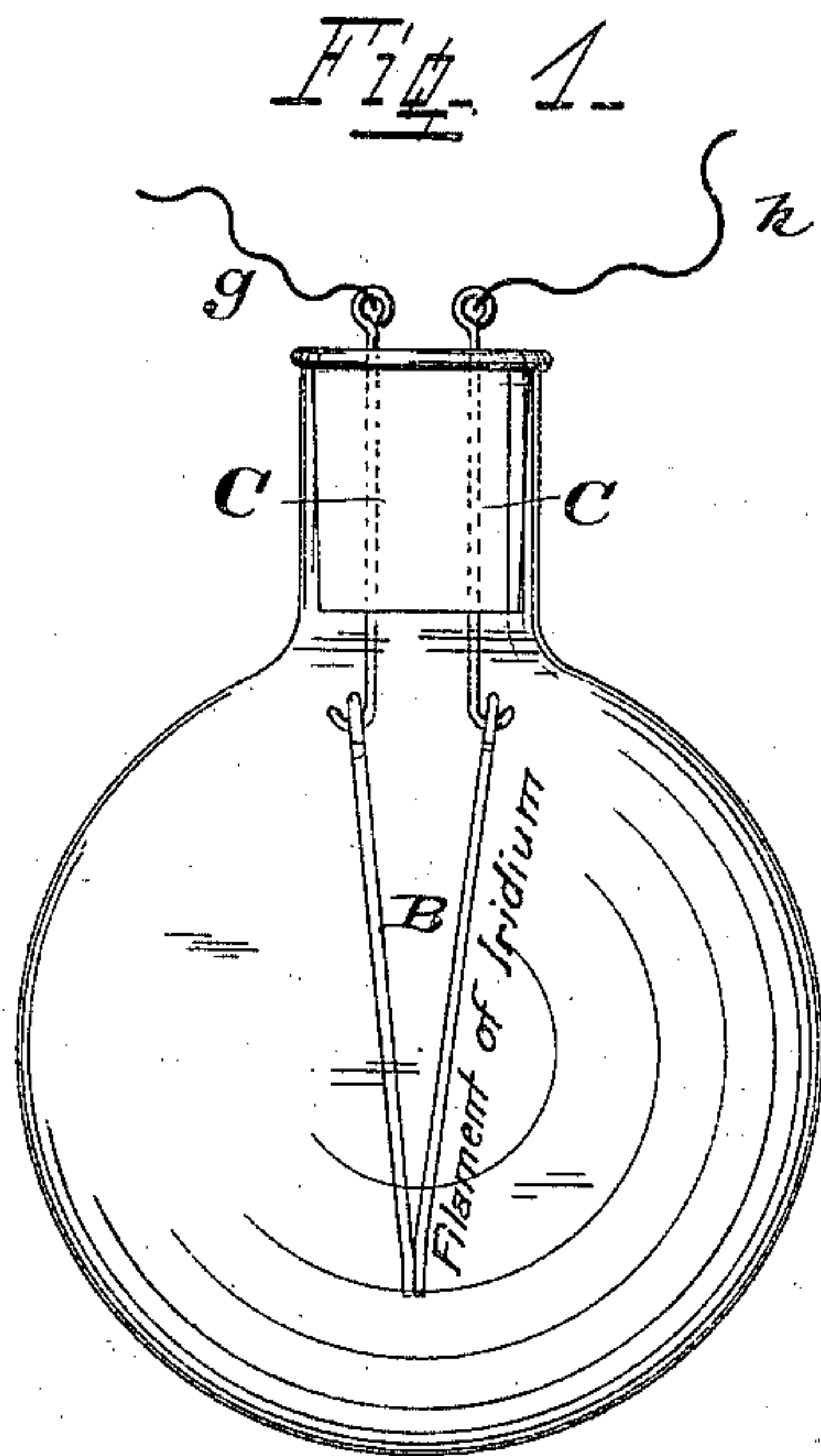
(No Model.)

L. N. P. POLAND.

FILAMENT FOR INCANDESCENT ELECTRIC LIGHTS.

No. 432,710.

Patented July 22, 1890.



Witnesses
A. B. Miles
Mary E. Murray

Inventor
Lawrence N. P. Poland
By his Attorney L. E. J. Murray

UNITED STATES PATENT OFFICE.

LAWRENCE N. P. POLAND, OF CINCINNATI, OHIO.

FILAMENT FOR INCANDESCENT ELECTRIC LIGHTS.

SPECIFICATION forming part of Letters Patent No. 432,710, dated July 22, 1890.

Application filed April 21, 1887. Serial No. 235,591. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE N. P. POLAND, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Incandescent Filaments for Electric Lights, of which the following is a specification.

The object of my invention is an improved filament for incandescent electric lights.

The invention will be first fully described in connection with the accompanying drawings, and then particularly referred to and pointed out in the claim.

Referring to the drawings, in which like parts are represented by the same reference-letters wherever they occur throughout the various views, Figure 1 is a side elevation of an incandescent lamp embodying my improvements. Fig. 2 is a perspective view of the cathode for preparing my preferred form of filament. Fig. 3 is an enlarged view of a part of a filament in a partially-finished state, which is a modification of my preferred form. Fig. 4 is a partial sectional view of the same completed.

My preferred form is a filament of pure metallic iridium, which I obtain by electro-deposition in the following manner.

Referring to Fig. 2, A is a block or plate of beeswax or similar substance, upon the face of which the form of the filament B is stenciled in plumbago. Through the ends of the stenciled filament pieces of wire C are inserted into the beeswax. These are long enough to connect with the source of electricity, and suspend the plate A in the plating-bath. The plate A is suspended in an iridium plating-bath, and when a film of sufficient thickness is deposited upon the sten-

ciled design the filament is peeled off from the beeswax and the plumbago brushed off the back. The iron wires C are used as conductors. The filament is incandesced in the atmosphere, as it is practically non-combustible, or, for security against breakage, it may be incandesced in any suitable gas or in a vacuum.

The filaments shown in the modification, Figs. 3 and 4, are constructed in the following manner: D represents filaments of asbestos fiber. Around these are wound, spirally, thin irido-platinum wire *e*, binding the filaments of asbestos together in the form shown in Fig. 1. Over the filament so formed is brushed a coat of plumbago and the whole given a thin coat of iridium by electro-plating, after which the filament is connected to the two conductors *g h*, and is incandesced in the open air or in a sealed glass globe, as shown in Fig. 1.

Instead of the irido-platinum wire a fine irido-platinum sheet may be used. These filaments may be used in sealed globes without electroplating. The electric current heats the irido-platinum, which in turn heats the asbestos, producing a brilliant white light.

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

The combination of the plate A, having the form of an incandescent filament stenciled thereon, and the wires C, inserted in the plate through the upper ends of the stenciled filament, substantially as and for the purpose set forth.

LAWRENCE N. P. POLAND.

Witnesses:

GEO. J. MURRAY,
MARY L. MURRAY.