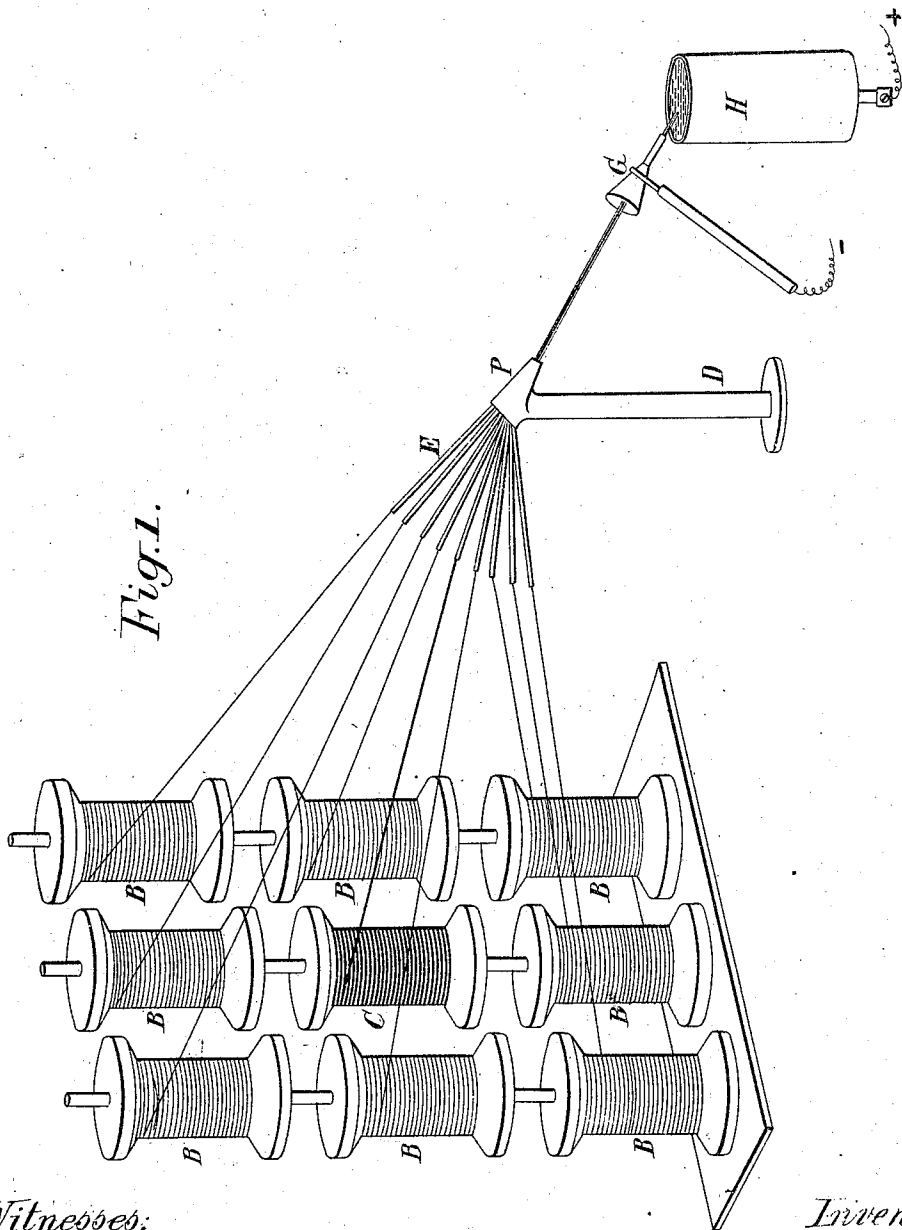


P. G. TRIQUET.
 PROCESS FOR MANUFACTURING THE HOOKS INTENDED TO SUPPORT THE FILAMENTS
 OF ELECTRIC INCANDESCENT LAMPS.
 APPLICATION FILED FEB. 4, 1910.
 967,084. Patented Aug. 9, 1910.
 2 SHEETS—SHEET 1.



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Fig. 6.

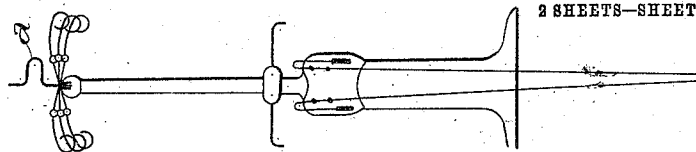


Fig. 5.

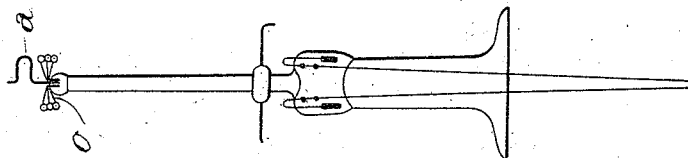


Fig. 4.

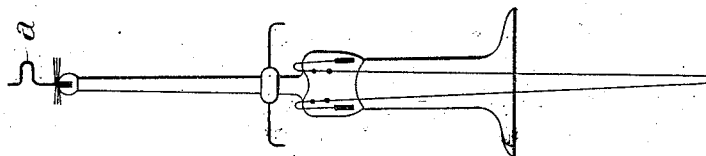


Fig. 3.

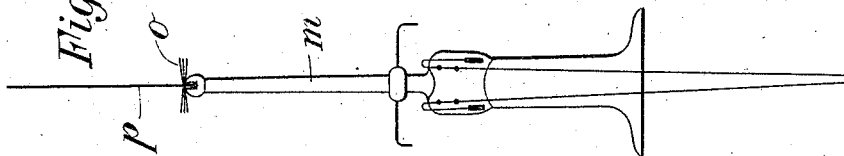
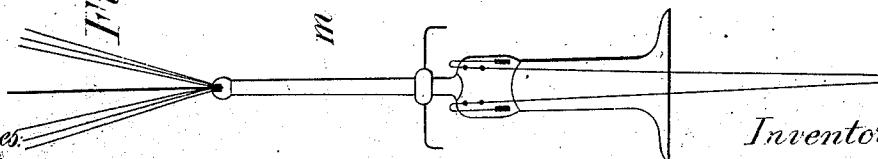


Fig. 2.



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UNITED STATES PATENT OFFICE.

PAUL GABRIEL TRIQUET, OF PARIS, FRANCE, ASSIGNOR TO PERFECTIONNEMENTS AUX LAMPES A FILAMENTS METALLIQUES, SOCIÉTÉ ANONYME, OF BRUSSELS, BELGIUM.

PROCESS FOR MANUFACTURING THE HOOKS INTENDED TO SUPPORT THE FILAMENTS OF ELECTRIC INCANDESCENT LAMPS.

967,084.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed February 4, 1910. Serial No. 542,114.

To all whom it may concern:

Be it known that I, PAUL GABRIEL TRIQUET, a citizen of the French Republic, and resident of Paris, France, have invented a certain new and useful Process for Manufacturing the Hooks Intended to Support the Filaments of Electric Incandescent Lamps, of which the following is a specification.

This invention relates to an improved process for manufacturing and a method of fitting the hooks intended to support the filaments of electric incandescent lamps and more especially of those hooks which have been manufactured as described and claimed in my prior patent application, Serial No. 462160, dated 11th Nov. 1908.

In order to render the explanations given hereafter as clear as possible I have shown in the accompanying drawings, given by way of example, a machine for uniting into bundles the thin wires intended to receive the hooks and the different phases of the mounting of said hooks.

In these drawings: Figure 1 is a perspective view of the machine for joining the wires or threads intended to serve as supports for the hooks. Figs. 2, 3, 4, 5 and 6 are perspective views showing the various phases of the fitting or mounting of the hooks.

It is a well known fact that one has already provided the end of the central pillar with a glass rod having a very small diameter and which is introduced into the crucible at the moment where the carrier is connected with the bulb of the lamp. This thin rod thus serves as a pivot and holds the carrier in the center of the bulb.

As after the production of the vacuum the end of this rod is soldered to the point of the lamp, a spring *a* (Figs. 4, 5 and 6) has been interposed between the central rod and the thin pivot rod for the purpose of providing for the drawbacks which would result from the expansions and contractions produced by the successive heating and cooling of the lamp.

It is readily understood that the manufacture of the head to which the supports or hooks have been secured until now, the individual insertion or pricking of the carriers or hooks around this head as well as the insertion or pricking of the spring *a* into the

end of the central rod require a long and costly work.

The improvements which form the subject matter of this invention have for their object to simplify the said work of fitting up as will be presently described. Besides, these improvements have still for their object to increase the elastic or yielding properties of the hooks.

Fig. 1 of the drawings shows a machine which is intended to unite or joint into a bundle, by means of the electric arc, the thin wires or threads intended to receive the hooks and the thicker wire or thread intended to form the spring of the thin pivot rod. This machine comprises pins on which are slid the bobbins B containing the thin thread or wire and the number of which is equal to the number of filaments which will be present in the lamp, and besides in the center the bobbin C containing the thicker wire or thread intended to form the spring *a*.

The standard D carries a series of tubes E the number of which is equal to that of the bobbins and which are connected with a funnel P.

G designates a second funnel provided with a handle which is connected with one of the poles of a supply of electric current. H is a block of carbon connected with the other pole of said supply of electric current. The wires or threads which it is intended to join into a bundle are each pushed into one of the tubes E and pass together out of the end of the funnel P. They are hereafter drawn out and inserted into the funnel G and are caused to project from the end of the latter on a length of about 1 centimeter. Thereafter an electric arc is produced between the threads or wires and the block H, thus the fusion of the threads or wires is produced and the latter are soldered together. A tractional effort is then exerted on the soldered end of the bundle so as to cause the threads or wires of the latter to advance through the funnel G and the tubes E on a length which is equal to that which it is desired to give the bundle. The bundle is hereafter cut by means of a pair of scissors and the operation is repeated. The bundles thus obtained are employed for fitting up the lamp under the following conditions:

As shown by Fig. 2, each bundle is inserted and secured into the end of the central

rod *m* this operation being facilitated by melting the glass of the rod end. As readily seen this operation does away with all the operations cited above and which did consist in forming a head at the end of the central rod in inserting and securing the nickel wires one after the other into said central head. In my process on the contrary it is no longer necessary to form the head and the inserting and securing process is carried out by one operation. The thin threads or wires intended to carry the hooks are thereafter cut away and folded down at *o* as shown by Fig. 3. The thick wire *p* which is intended to form the spring of the thin carrier rod remains alone and projects in line with the central rod *m*. The spring *a* of the pivot rod is then formed by means of swage shears so as to take the shape shown by Fig. 4. Small glass heads are then deposited by means of a blow pipe on the end of the thin wires *o* and all that remains to do is to prick into these small heads of glass which are softened by means of the blow pipe, the hooks made of any suitable material and which, as shown by Fig. 6, will support the filaments. The operation is then finished.

It is readily seen that by operating in the manner described the work is simplified, that the elasticity of the hooks is increased by the longer lever arm obtained by the omission of the central head and that a strong mechanical soldering is obtained while at the same time the carbon carriers are electrically insulated from the central support.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent is:

1. An improved process for manufacturing and fitting up the carriers intended to receive the hooks intended to support the metallic filaments of electric incandescent lamps consisting in uniting into a bundle the thin wires intended to receive the carrying hooks, as well as a thicker wire, intended to form the spring of the pivot rod of the lamp, soldering together the ends of all said wires, securing the bundle thus obtained to the end of the central rod of the lamp, shortening and folding down the thin wires intended to receive the hooks forming the spring bend in the said thick central wire and securing the supporting hooks to the end of said thin wires, substantially as and for the purpose set forth.

2. An improved process for manufacturing and fitting up the carriers intended to receive the hooks intended to support the filaments of electric incandescent lamps consisting in uniting into a bundle the thin wires intended to receive the said carrying hooks, as well as a thicker wire intended to form the spring of the pivot rod of the lamp, soldering together the ends of all said wires by means of an electric arc, securing the

bundle thus obtained to the ends of the central rod of the lamp, shortening and folding down the said thin wires, forming the spring bend in said thick central wire and securing the supporting hooks to the ends of said thin wires, substantially as and for the purpose set forth.

3. An improved process for manufacturing and fitting up the carriers intended to receive the hooks for supporting the filaments of electric incandescent lamps, consisting in uniting into a bundle thin wires intended to receive the said supporting hooks, as well as a thicker central wire intended to form the spring of the pivot rod of the lamp, soldering together the ends of all said wires, securing the soldered end of the bundle thus obtained into the end of the central rod of the lamp by melting the glass of said end, shortening and folding down the said thin wires, forming the spring bend in said thick central wire, securing a glass head to the end of each of said wires and securing the said supporting hooks into said glass heads by melting the latter, substantially as and for the purpose set forth.

4. A machine for carrying out the process described and comprising in combination, a plurality of pins, a plurality of bobbins containing thin wire and one central bobbin containing thicker wire, all these bobbins being rotatably engaged on said pins, a funnel carried by a standard, a plurality of tubes carried by the wall of the large opening of said funnel and adapted to receive the said wires coming from the said bobbins and to convey them toward the narrow opening of said funnel and means for soldering the free ends of said wires together, substantially as and for the purpose set forth.

5. A machine for carrying out the process described and comprising in combination a plurality of bobbins containing thin wire and one bobbin containing a thicker wire, means for rotatably carrying the said thick wire bobbin in the middle and the said thin wire bobbins around the thick wire one, a funnel carried by a standard, a plurality of tubes carried by the said funnel at its large end and adapted to receive said wires and direct them to the narrow end of said funnel, a soldering funnel adapted to receive the bundle of wires leaving the first named funnel and connected with one pole of a supply of electric current and a soldering block connected with the other pole of said current supply, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

PAUL GABRIEL TRIQUET.

Witnesses:

H. C. COXE,

ERNEST GALIBERT.