(No Model.)

A. SWAN.

MOLD FOR FORMING THE STEMS OR CLOSING PIECES FOR THE BULBS OR GLOBES OF INCANDESCENT ELECTRIC LAMPS.

No. 263,621. Patented Aug. 29, 1882.

Fig. 1.

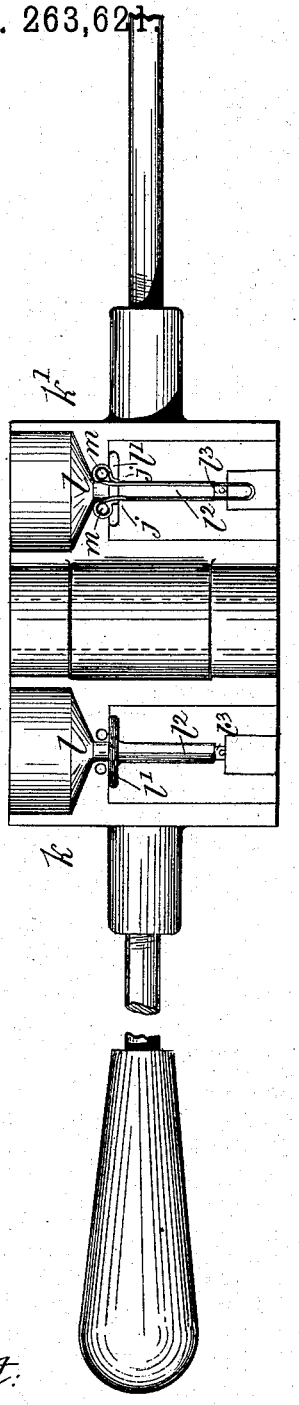


Fig. 5.

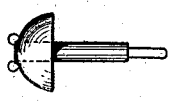


Fig. 3.

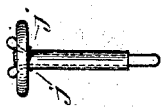


Fig. 2.

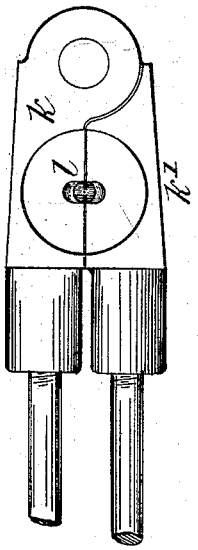
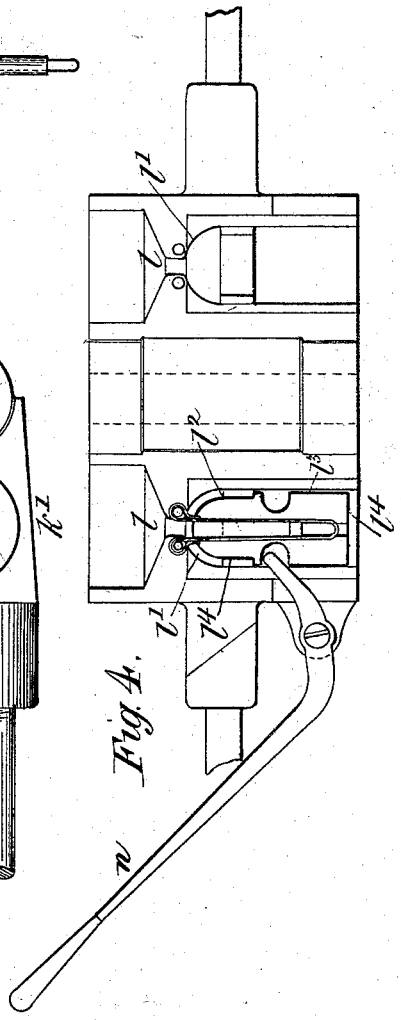


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

ALFRED SWAN, OF GATESHEAD, COUNTY OF DURHAM, ENGLAND.

MOLD FOR FORMING THE STEMS OR CLOSING-PIECES FOR THE BULBS OR GLOBES OF INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 263,621, dated August 29, 1882.

Application filed July 20, 1882. (No model.) Patented in England June 19, 1882, No. 2,898.

To all whom it may concern:

Be it known that I, ALFRED SWAN, a subject of the Queen of Great Britain, and residing in the borough of Gateshead, in the county of Durham, England, have invented certain Improvements in and Molds for Forming the Stems or Closing-Pieces for the Bulbs or Globes of Incandescent Electric Lamps, and for securing the terminal wires therein, (for which I have obtained a patent in Great Britain, No. 2,898, dated 19th June, 1882,) of which the following is a specification.

My invention has for its object to provide means by which the stems of incandescent electric lamps—that is, the parts which are secured to and close the bulb or globe, and through which the terminal wires pass—are readily cast or formed in glass, enamel, or other suitable material, the terminal wires at the same time being firmly secured in the said stems.

Figure 1 of the accompanying drawings represents opened out a mold constructed according to my invention. Fig. 2 is a plan of the same closed, and Fig. 3 represents a stem cast in the mold, shown in Figs. 1 and 2. Fig. 4 represents a mold for casting a stem with cup-like flanges, and Fig. 5 a flanged stem produced in the mold shown in Fig. 4.

The mold shown in Figs. 1 and 2 is formed in halves, *k k'*, hinged together, each half being provided with handles for opening and closing the same. The said mold is formed with an opening or "get," *l*, leading into a portion of the mold at *l'*, in which the flange of the stem is formed, this portion *l'* of the mold opening into the portion l^2, in which the stem proper is formed. At *m* are two projections for receiving the eyes of the terminal wires to be embedded in the stem during the process of casting the said stem, the said projections, when the mold is closed, fitting into corresponding recesses in the other half of the mold. In Fig. 1 a loop of wire is shown in position. Pieces at l^3 form a filling for the bottom of the portion l^2 of the mold. The terminal wire being placed in position, as in Fig. 1, the mold is closed and molten glass (or enamel or other material of which the stem is to be formed) is introduced into the mold by the get *l*, and is pressed by means of a plug worked by a lever or otherwise into the portions *l'* and l^2, the wires being enveloped or embedded in the said stem, the tags *j* of the wires giving a very firm hold of the wires in the glass or material of the stem.

The mold shown in Fig. 4 is formed on hinged parts, and with a get, *l*, as in the mold hereinbefore described; but the portion *l'* is cup-shaped, and the portion l^2 is formed in a core-piece, l^4, capable of being slid into and from the mold, the lower part of the core-piece l^4 and the portion *l'* of the mold giving between them the necessary shape to the cupped flange of the stem. To enable the wire to be inserted, the core-piece l^4 is preferably made in halves. The terminal wires pass through a slit between the closing-pieces l^3, as shown in Fig. 4.

It will readily be seen that when the mold is closed and the molten glass or other material is introduced into the get *l* the said glass or material will flow under pressure into the cup-shaped recess at *l'*, and thence into the portion l^2 in the core-piece l^4, the wires becoming embedded in the said material. By means of the lever *n* the core-piece l^4 is raised from the mold immediately after casting to prevent risk of fracture of the stem.

It will be understood that the wires may be cast in the stem before the eyes are formed in the said wires; but I prefer to cast then after the said eyes have been formed, as then the tags *j* are firmly embedded in the glass, as described.

I claim as my invention—

1. The method of forming the stems or closing-pieces for the bulbs or globes of incandescent electric lamps by inserting the terminal wires of the lamp into a mold of the character described, and then pouring in the molten glass, enamel, or other material of which the stem is to be composed and allowing it to harden around the wires, so that the latter will be embedded therein, substantially as set forth.

2. The molds described, having a deep straight portion for the stem proper and a shal-

low circular portion for the flange, and provided with means for holding the terminal wires while the stem is cast around them, substantially as described.

3. The stems or closing-pieces for the bulbs or globes of incandescent electric lamps, composed of glass, enamel, or similar material, with the terminal wires firmly embedded therein, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED SWAN.

Witnesses:

ROBT. SPENCE WATSON,
Solicitor, Newcastle-on-Tyne.

R. W. JOHNSON,
Clerk to U. S. Consul, Newcastle-on-Tyne.