(No Model.)

A. SWAN.

MANUFACTURE OF INCANDESCENT LAMPS.

No. 282,472. Patented July 31, 1883.

Fig. 1.

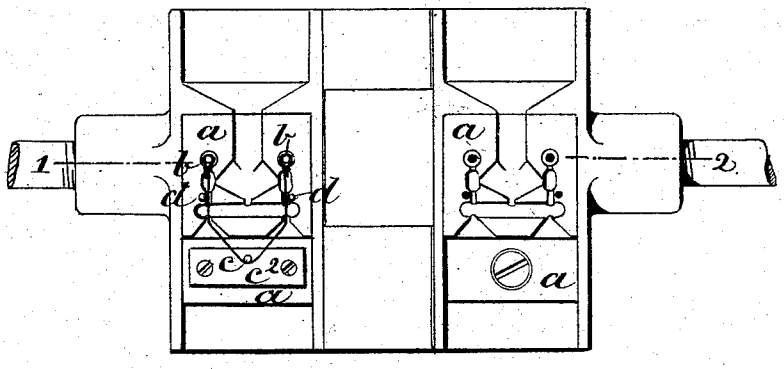


Fig. 2.

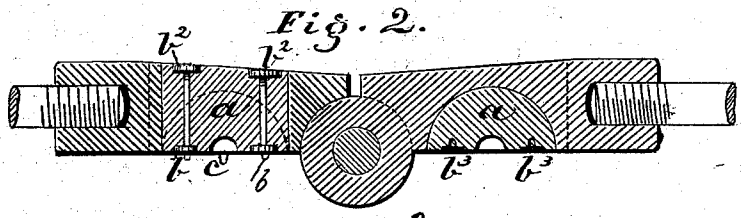


Fig. 3.

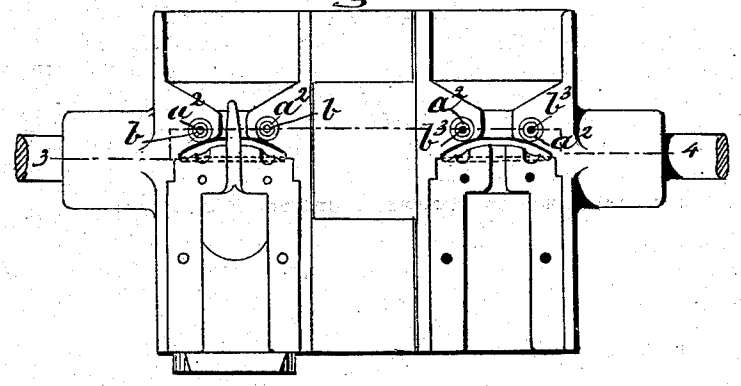
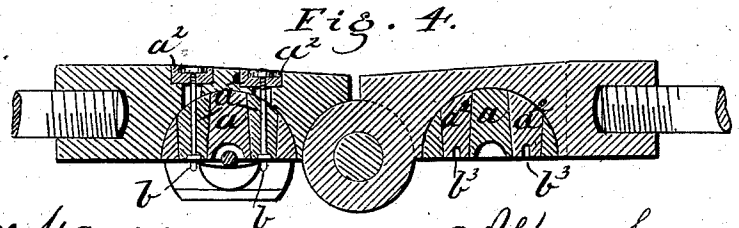


Fig. 4.



Witnesses.

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Alfred Swan by A. Pollok his attorney

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

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

MANUFACTURE OF INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 282,472, dated July 31, 1883.

Application filed June 9, 1883. (No model.) Patented in England November 20, 1882, No. 5,504.

To all whom it may concern:

Be it known that I, ALFRED SWAN, a subject of the Queen of Great Britain, and residing at the borough of Gateshead, county of Durham, England, have invented certain Improvements in the Manufacture of Incandescent Lamps, (for which I have obtained a patent in Great Britain, No. 5,504, dated November 20, 1882,) of which the following is a specification.

My invention relates to the manufacture of incandescent electric lamps, and has for its object to give a more complete adhesion between the glass or the like and the terminal wires which pass through the said glass or the like to the carbon filament, and prevent the formation of air-bubbles along the track of the wires.

According to my said invention I pass an electric current through the wires at the same time that the glass or the like is being pressed around them. This may be effected in any convenient or suitable way. When, for example, the stems are being cast in molds, as described in the specification of my Patent No. 263,621, dated August 29, 1882, I may insulate portions of the metal of the said molds, so as to lead the current-wires up to and through the wires which are to be embedded in the stem.

Figure 1 represents an opened-out mold constructed with an insulating portion, for the purpose of carrying my invention into effect; and Fig. 2 is a transverse section on the line 1 2, Fig. 1.

The part marked *a* (in which the recesses in which the glass is cast are made) is of a non-conducting material or comparatively non-conducting material.

b are studs, pins, or pegs on one half of the mold, over which the loops of the terminal wire pass, the said wire being also passed over a stud, pin, or peg, *c*, formed upon a plate, c^2, screwed or otherwise secured to the material *a*. The pegs *b* are carried to the exterior of the casing of the mold, being surrounded by the material *a*, as shown in Fig. 2, as there terminated in contact-plates b^2. When the wire is placed in position, as shown in Fig. 1, the pegs *b* are brought into contact with a battery or other source of electricity, which may conveniently be effected by causing the contact-plates b^2 to come into contact with other plates in the press or receiver in which the mold is held during the casting of the glass therein, the last-named plates being in metallic connection with the positive and negative wires of the source of electricity. Thus, when the mold is put in place, a current of electricity is passed through the terminal wires at the same time that the glass is passed around them, whereby very complete adhesion of the glass to the wires is obtained.

d are pegs for retaining the wires in proper position.

Fig. 3 represents an opened-out mold, and Fig. 4 a section on the line 3 4, Fig. 3, in which mold the pegs *b* in the one half of the mold and the recesses b^3 in the other half, into which the said pegs fit when the mold is closed, are surrounded by insulating material, as shown at a^2. The pegs *b* are continued to the exterior of the mold for connection to the source of electricity, as hereinbefore described.

I do not limit myself to any particular form of the molds, nor of the recesses therein for the reception of the glass; and the said molds may be constructed of any suitable material, provided that insulation is provided for the purpose of directing an electrical current through the wires during the embedding of the wires in glass or the like.

I claim—

1. The improvements in the manufacture of incandescent electric lamps, consisting in passing an electric current through the terminal wire while the glass or the like is being pressed or formed around it, substantially as hereinbefore described.

2. In the manufacture of incandescent electric lamps, the employment of molds for forming the glass portions through which the terminal wires pass, the said molds being formed or provided with insulating material to direct an electrical current through the wire while the glass is being pressed or formed around it, 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-upon-Tyne.

ROBERT LOCKEY,
Clerk to Messrs. Watson & Dendy, Solicitors, Newcastle-upon-Tyne.