(No Model.)

# A. SWAN.

## DEVICE FOR FORMING LOOPS IN TERMINAL WIRES FOR ELECTRIC LAMPS.

No. 263,622. Patented Aug. 29, 1882.

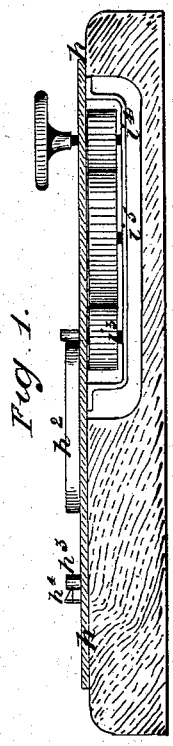

Fig. 1.

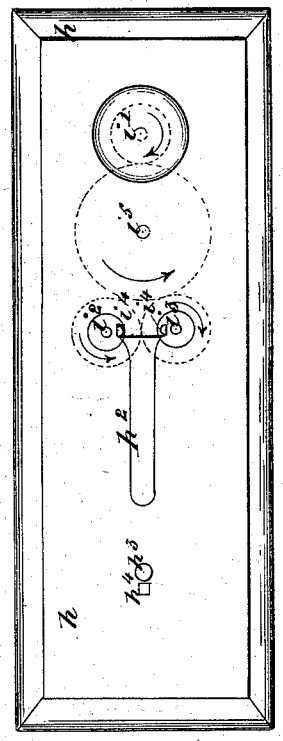

Fig. 2.

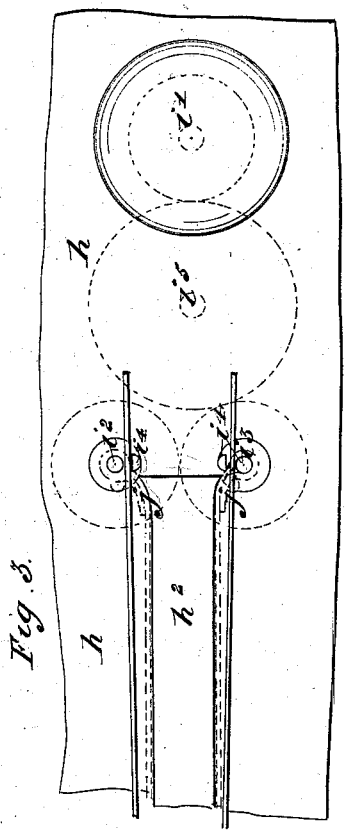

Fig. 3.

Fig. 4.

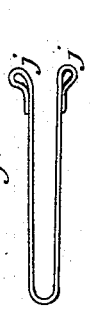

Fig. 5.

Witnesses:

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# UNITED STATES PATENT OFFICE.

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

## DEVICE FOR FORMING LOOPS IN TERMINAL WIRES FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 263,622, 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 Improvements in Apparatus for Bending Loops or Eyes in the Terminal Wires for Incandescent Electric Lamps, (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 relates to improvements in apparatus for bending loops or eyes in the terminal wires for incandescent electric lamps for the attachment of the conducting-wires; and it consists as follows:

Figure 1 of the accompanying drawings represents in plan, and Fig. 2 in side elevation, an apparatus for this purpose constructed according to my invention. Fig. 3 is an enlarged plan of a part of the same.

Upon a bed-plate, $h$, I fix a stop-piece, $h^2$, of the form shown, and a button, $h^3$, which may be provided with a head or a spring-catch, as shown at $h^4$, to retain the wire loop in position. In a framing, $i$, beneath the bed-plate $h$, are carried spindles $i'$ $i^2$ $i^3$ $i^5$, furnished with gearing-wheels for transmitting motion to both of the spindles $i^2$ $i^3$ when the button on the spindle $i'$ is rotated. The spindles $i^2$ and $i^3$ project above the bed-plate $h$, as shown, on either side of the end of the stop-piece $h^2$, the distance between the axes of the said spindles being equal to that required between the centers of the loops to be made in the wire. The projecting ends of the spindles $i^2$ $i^3$ are formed with slits or recesses, which may be made either by cutting them in the substance of the projecting ends of the spindles or by pins $i^4$, placed near to the said projecting ends, as shown. The wire bent into the U form shown in Fig. 4 is placed around the button $h^3$, with its legs or side pieces lying along the sides of the stop, and the two ends of the said wire are placed in the slits or recesses in the projecting ends of the spindles $i^2$ $i^3$, as shown in full lines in Fig. 3. On partially rotating the spindle $i'$ by means of the button the gearing-wheels cause also the spindles $i^5$ $i^2$ $i^3$ to partially rotate until prevented from further rotating by the stop $h^2$, so that the spindles $i^2$ $i^3$ are brought into the position shown in dotted lines in Fig. 3, and by this partial rotation (as the ends of the wire are confined in the slits or recesses in the ends of the said spindles) the said ends of the wire are bent into a loop form, as shown in dotted lines in Fig. 3, and also in Fig. 5, which represents a bent wire removed from the apparatus, short tags or ends being formed, as at $j$, which tags or ends serve to effect the secure attachment of the loops to the glass when they are subsequently embedded therein.

I claim as the invention—

The hereinbefore-described apparatus for forming loops or eyes in the terminal wires for incandescent electric lamps, the essential feature of which apparatus is the combination of the rotating spindles $i^2$ $i^3$, recessed or slotted or otherwise formed for the reception of the ends of the wire to be bent into loops or eyes with the stop $h^2$ or stops $h^2$ $h^3$, as hereinbefore described and illustrated.

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.*