April 2, 1929. WALTHER-WINFRIED LOEBE ET AL 1,707,675

LAMP MAKING MACHINE

Filed Jan. 24, 1927

Fig.1.

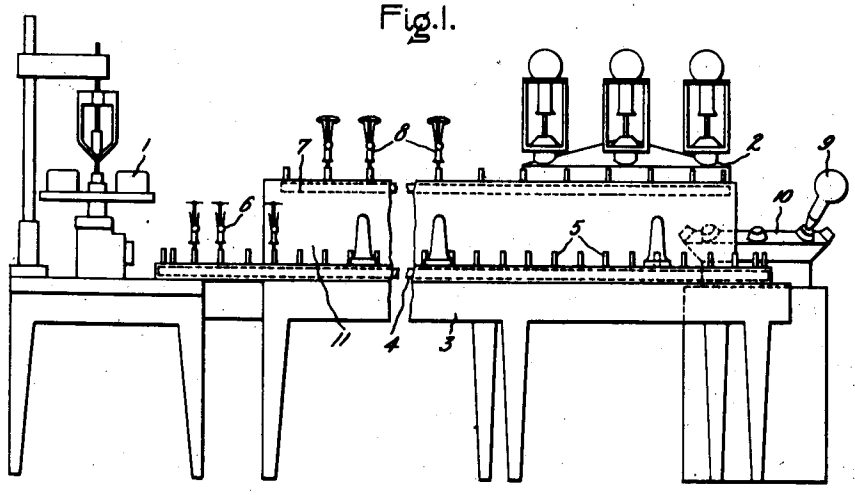
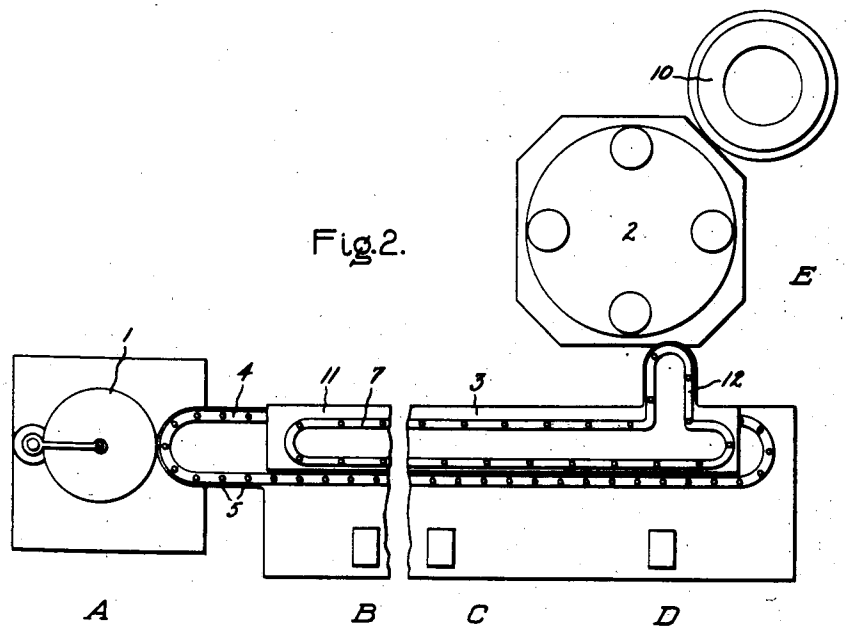


Fig.2.



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UNITED STATES PATENT OFFICE.

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LAMP-MAKING MACHINE.

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The manufacture of electric incandescent lamps and similar devices is often carried out by a number of specially arranged mechanisms or machines for making the parts of the device. In order to lessen as much as possible transportation and handling of these parts, the mechanisms have been assembled into a so-called unit. Nevertheless some handling and transportation between mechanisms cannot be avoided in many cases, especially when hand work must be done between two mechanisms, as for example, the winding of the filament onto the stem between the anchor inserting machine and the sealing in machine.

One object of the invention is to provide between juxtaposed mechanisms for making lamp parts a comprehensive transportation device for lamp parts. A further object is to provide a transportation device which will not only automatically feed the incandescent lamp parts to the operators at the intermediate working positions, but at the same time make it very convenient for them to take off and deposit lamp parts. To this end we provide between two mechanisms or machines for making lamp parts, two or more superposed horizontally movable carriers, such as conveyor chains, which move past one or more intermediate working positions. This construction renders possible the delivery of the incandescent lamp parts to a certain conveyor at one machine and after the arrival of these parts and completion of the work on them at an intermediate working position the parts can then be very easily transferred to another conveyor likewise located above or below the first one at the intermediate working position. The latter conveyor then carries the completed incandescent lamp parts continually to a second machine, but separately from the uncompleted lamp parts. As the incandescent lamp parts delivered at the machine and at the intermediate working positions are carried on separate conveyors which are furthermore at different heights, there is slight chance of the different operators making a mistake in taking off and putting on the lamp parts. Lamp parts which were not taken off at the intermediate working positions or at the second machine cannot be lost, but reach during the travel of the conveyor a suitable delivery place where they may be taken off automatically.

A particularly simple and advantageous arrangement of the conveyor device is attained when the vertical link bolts of the horizontally movable conveyor chains are formed to constitute holders for the lamp parts to be conveyed, preferably by providing these bolts with openings or sleeve to receive the lamp parts.

In the accompanying drawing, which shows diagrammatically a conveyor device constructed in accordance with the invention and mounted between an anchor inserting machine and a sealing in machine, Figure 1 is a side view and Figure 2 a plan view of one form of the invention.

As shown in the drawing, an anchor inserting machine 1, which may be like that shown in U. S. patent to Schlüter, No. 1,238,575, August 28, 1917, and which forms a bead on the cane of the stem and also fastens the anchors in the bead, is placed near a sealing in machine 2, and between them is a so-called filament mounting table 3. This table preferably has several working positions B, C and D, as one operator, even when working rapidly, cannot mount filaments on all of the stems continually as fast as the stems are supplied by the comparatively high speed anchor inserting machine 1.

The conveying of the stems from the anchor inserting machine 1 to the operators working at the filament mounting table 3 and the further conveyance after the mounting of the filament to the sealing in machine is effected by a conveyor, such as a chain 4, having holders 5 for the stems 6, the particular device shown consisting of two such chains 4 and 7 arranged horizontally and one above the other. More chains may be similarly arranged if desired. In the construction illustrated the lower chain 4 receives stems 6 from the anchor inserting machine 1 and carries them to the working positions B, C and D of the filament mounting table 3 where they are taken off, provided with a filament, and then placed on the second or upper chain 7, which finally carries them to the sealing in machine 2.

The lower chain 4 is sunk in the table 3 in a channel so that only the stem holders 5 pro-

ject somewhat, and thereby the danger of contact with the chains by the operators is avoided. For the same reason the upper chains 7 are mounted within a casing 11 on table 3.

The removal of the stems from the anchor inserting machine 1 and the delivery of them to the chain 4 is done by the operator in position A. The mounts 8, which are the stems 6 provided with a filament, are brought by the second or upper chain 7 to the sealing in machine 2, are there taken off by an operator in position E, and introduced into the sealing in machine. After the completion of the sealing in operation the sealed in lamp 9 is put by the same operator on the exhaust pump 10.

The sealing in machine 2 can be arranged either at right angles to the filament mounting table, or as an extension at the right-hand end of the table. In the latter arrangement the short loop 12 of the chain 7 standing at a right angle to the rest of the chain in the arrangement illustrated in the drawings is omitted, and the upper chain 7 then extends far enough to the right to overlap the right-hand end of the lower chain 4.

In order to effect a secure holding of the stems on the chains and to avoid special fastening means, the perpendicular link bolts of the horizontal movable chains may act as the holders 5. This can be accomplished very simply by providing these bolts with openings or set on sleeves into which the downwardly projecting exhaust tubes of the stems may be introduced.

A conveyor device constructed in accordance with the invention may also be provided between other machines used in incandescent lamp manufacturing, as, for example, between the exhaust pump and the basing machine, in order to allow the operators to put the cement in the bases, or between the basing machine and the flashing device in order to permit soldering of the leading-in wires to the base by hand before the lamps are lighted up in the flashing device.

What we claim as new and desire to secure by Letters Patent of the United States, is,—

1. A lamp making machine comprising two mechanisms for performing successive lamp making operations on a stem, and a transporting device between said mechanisms comprising two horizontally movable conveyors provided with stem holders and mounted one above the other to overlap at a position for an operator intermediate said mechanisms and to be adjacent each other at said position, one of said conveyors having its receiving end adjacent one of said mechanisms and the other having its delivery end adjacent the other mechanism.

2. A lamp making machine comprising two mechanisms for performing successive lamp making operations on a stem, and a transporting device between said mechanisms comprising two horizontally movable conveyor chains each having perpendicular link bolts shaped to form stem holders, and mounted to travel past an intermediate position for an operator and be adjacent each other and to overlap at said position, one of said conveyor chains having its receiving end adjacent one of said mechanisms and the other having its delivery end adjacent the other mechanism.

3. In a device of the character described, the combination of an anchor inserting machine, a horizontally movable conveyor chain having stem holders on it and mounted with its receiving end adjoining said machine, a filament mounting equipment adjoining the delivery end of said conveyor, a second horizontally movable chain conveyor having stem holders on it and mounted with its receiving end adjoining said mounting equipment, and a sealing-in machine adjoining the delivery end of said second conveyor.

In witness whereof, we have hereunto set our hands this 7th day of January, 1927.

DR. WALTHER-WINFRIED LOEBE.
WILLY LEDIG.