March 18, 1924. 1,487,288

S. THRONSEN

DEVICE FOR TREATING GLASS

Filed Sept. 19, 1919

Fig. 1.

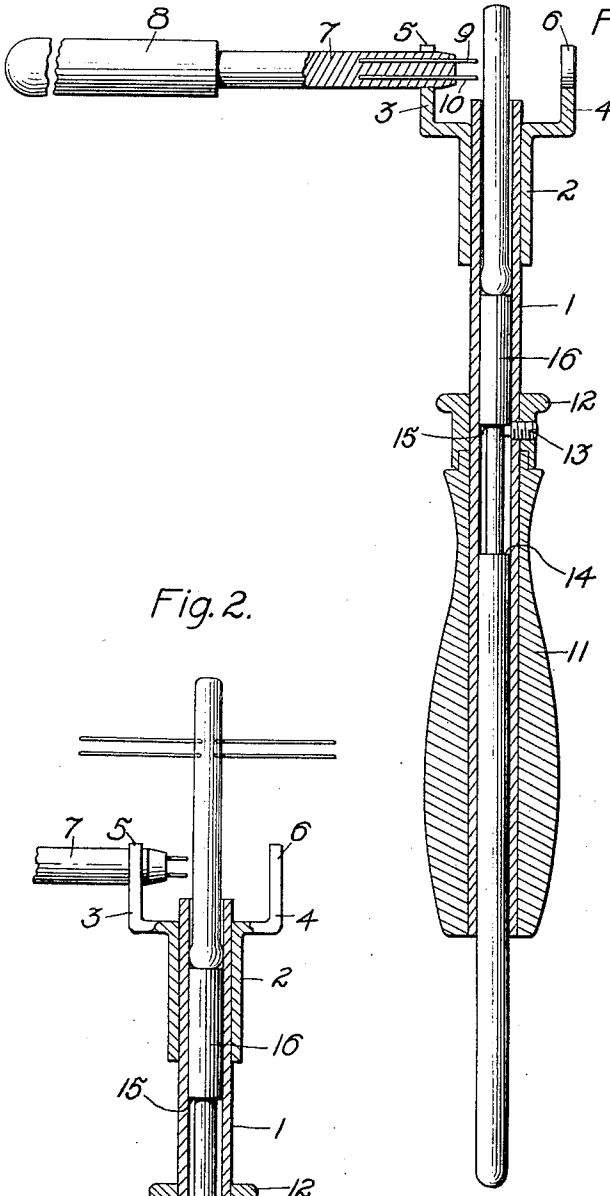
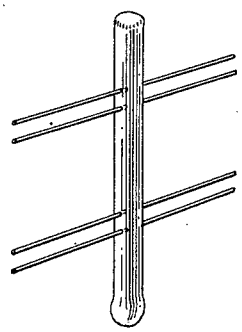


Fig. 2.

Fig. 3.



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by J. E. Roberts Att'y.

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UNITED STATES PATENT OFFICE.

SIGURD THRONSEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DEVICE FOR TREATING GLASS.

Application filed September 19, 1919. Serial No. 324,887.

To all whom it may concern:

Be it known that I, SIGURD THRONSEN, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Devices for Treating Glass, of which the following is a full, clear, concise, and exact description.

This invention relates to a device adapted for the treatment of glass or the like and has particular reference to one for inserting wires into rods of such material.

Its object is to provide a mechanism whereby a plurality of wires may be rapidly and accurately inserted into the material to achieve a more efficient commercial quantity production.

The invention in general comprises a tubular holder into one end of which the rod is inserted, the rod resting therein on a plunger which is adapted to be moved within the holder to lower or raise the rod with respect to a position on said holder where the wires are to be inserted. At this point is a support for a wire-inserting tool. The movement of the plunger is determined and limited. In this way, a wire-inserting tool which may be placed on the above-mentioned support can be operated to insert the wires into the proper points of the rod since the position of the rod with respect to the tool is, as above described, accurately determined.

The invention is illustrated in the drawings of which Fig. 1 is a central longitudinal vertical section of the device; Fig. 2 is a similar enlarged view of part of the device, and Fig. 3 is a perspective view of the product of the operation of the machine.

As illustrated in the drawings, the invention comprises a tubular holder 1 having at its upper end a bracket 2 which is provided with oppositely disposed arms 3 and 4 having curved slotted portions 5 and 6 adapted to receive the end of a wire-inserting tool 7. This tool has a handle portion 8 and is provided with apertures at one end adapted to receive wires 9 and 10. These apertures may be of any predetermined depth since it is generally desired to insert into the glass rods of vacuum tubes wires which have a definite length and to insert them to a definite depth. For this reason, the depth of the apertures and the amount which the wires extend therebeyond is important, because having inserted the wires in the tool, the operator need then only to force the tool against the glass as far as it will go and will know then that the wires are not only of the proper length but are inserted to the proper depth.

The tubular holder 1 is provided with a handle portion 11 to the upper end of which is attached a flange sleeve 12 having a screw-threaded pin 13 therein, one end of which pin extends inwardly from the inner face of the holder 1. This pin is adapted to extend into a recess formed by the shoulders 14 and 15 on a plunger 16. These shoulders are spaced at a definite distance apart to limit in a predetermined manner the movement of the plunger.

In the operation of the device, the plunger is moved to its lowermost position and a glass rod is placed in the upper end of the holder. The operator places the proper wires into the tool 7 and subjects the glass at the desired part thereof to the heat of a flame so as to soften it. At the proper moment, he places the tool on the bracket support 2 and forces the wires into the glass as far as they will go. The plunger is then moved upwardly a definite distance determined by the distance between the shoulders 14 and 15, whereupon the glass rod is positioned anew with respect to the bracket support 2. The operation of inserting wires is again repeated for the other side of the rod, as above described. Fig. 2 shows the uppermost position of the glass rod with the wire-inserting tool in position.

In Fig. 3 there is shown a glass rod in which four pairs of wires have been inserted at oppositely and equally spaced points on the rod. This rod, as shown, is adapted and used as a stem for vacuum tubes from the wires of which stem the various electrodes of the vacuum tube may be supported. It has been found that by the use of this tool, considerable economy in time and an increased accuracy in the insertion of wires in the glass have been obtained, since the insertion of the wires is not dependent upon the judgment of the eye in placing them in the glass but is definitely determined by the mechanism provided, as above described.

The term "rod" as used herein is intended to be descriptive of both solid as well as hollow rods such as tubes.

What is claimed is:

1. A hand tool for inserting wires into

rods comprising a cylindrical holder for a rod, a bracket support carried by the upper end of said holder, a wire-inserting tool adapted to be placed on said bracket support and adjacent the rod, and reciprocating means within the holder and upon which the rod is adapted to rest for moving said rod into a plurality of predetermined positions with respect to said tool and said bracket support.

2. A device for inserting wires into rods comprising a tubular holder, a wire inserting tool, a bracket support for said tool at the upper end of said holder, a reciprocating plunger within said holder and upon which the rod is adapted to rest, said plunger having a portion of reduced diameter intermediate its length, and a projection extending inwardly from the holder and adapted to engage the shoulders on said plunger formed by the reduced diameter to limit in a predetermined manner the movement of the plunger.

3. A device for inserting wires into rods comprising a wire-inserting tool having end apertures in which the wires of predetermined length may be inserted and held, a tubular holder, a supporting bracket at the upper end thereof, adapted to receive said tool, a reciprocating plunger within said holder upon which a rod is adapted to rest and having a portion of reduced diameter intermediate its length, a pin extending inwardly from the holder and adapted to engage the shoulders formed by the reduced diameter of the plunger to limit the movement thereof and thereby determine the position of the rod with respect to the bracket support.

In witness whereof, I hereunto subscribe my name this 8th day of Sept. A. D., 1919.

SIGURD THRONSEN.