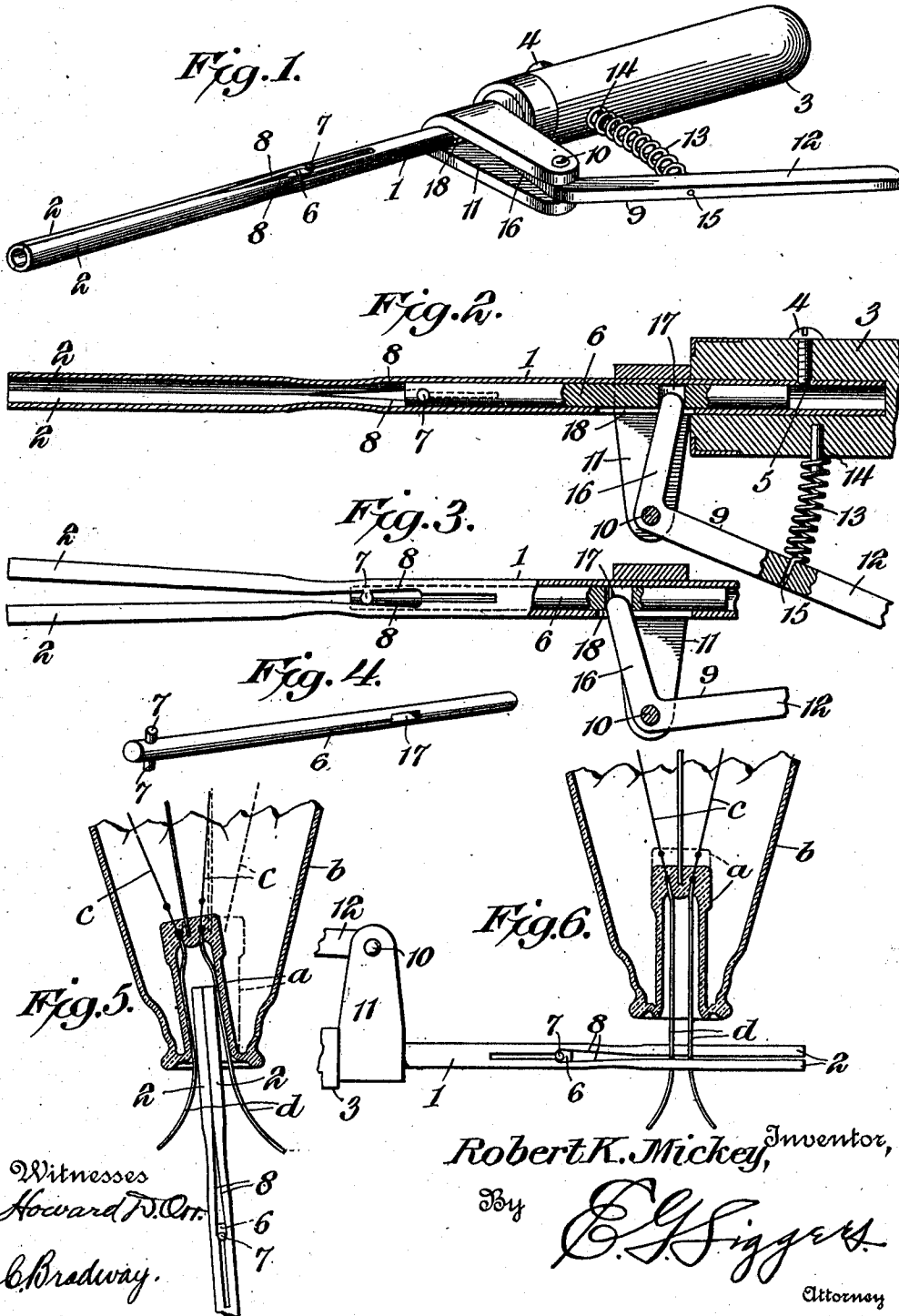


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 INCANDESCENT LAMP STEM CENTERING AND DRAWING TOOL.
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Witnesses
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UNITED STATES PATENT OFFICE.

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INCANDESCENT-LAMP-STEM CENTERING AND DRAWING TOOL.

970,938.

Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed December 14, 1909. Serial No. 533,024.

To all whom it may concern:

Be it known that I, ROBERT K. MICKEY, a citizen of the United States, residing at Emporium, in the county of Cameron and State of Pennsylvania, have invented a new and useful Incandescent-Lamp-Stem Centering and Drawing Tool, of which the following is a specification.

This invention relates to a tool which is intended more particularly for use in the manufacture of incandescent electric lamps whereby the filament-supporting stem can be straightened or centralized when necessary, or drawn outwardly when the filament is too near the bulb of the lamp.

The invention has for one of its objects to provide a tool of this character which is reliable and efficient in use, readily manipulated, and of comparatively simple construction.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention, Figure 1 is a perspective view of the tool. Fig. 2 is an enlarged longitudinal section with a portion of the handle and operating lever broken away. Fig. 3 is a fragmentary sectional view, showing the jaws of the tool sprung open. Fig. 4 is a perspective view of the jaw-operating plunger detached. Fig. 5 is a view, showing the tool used for centering the lamp stem, the lamp being shown in section. Fig. 6 is a view, showing the use of the tool in drawing out the filament-supporting stem of the lamp.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, 1 designates the tubular shank of the tool which is split longitudinally to form spring jaws 2 that are semi-tubular and form continuations of the shank, the end of which opposite from the jaws extends into a handle 3 and is held in place by a set screw 4 or equivalent device which enters a recess or notch 5 in the tubular shank, as shown in Fig. 2. The

jaws are opened or spread apart by a reciprocatory plunger 6 mounted in the portion of the shank between the jaws and handle. This plunger, as shown in Fig. 4, consists of a rod slidable longitudinally of the shank and provided at one end with oppositely-projecting lugs 7 that form cams or wedges that move between the jaws at the root or base portions thereof where the opposed edges are cut away at 8, to form oppositely-inclined wedge-engaging faces. As the plunger is moved longitudinally toward the jaws, the members 7 pass between the faces 8 of opposite jaws and force the latter apart from the position shown in Fig. 1 to that in Fig. 3. When the plunger is moved in the opposite direction, the jaws will close by their own resiliency. The plunger is actuated by a bell crank lever 9 which is fulcrumed at 10 on the U-shaped bracket 11 rigidly secured to the shank and extending laterally therefrom. The arm 12 of the lever extends along the handle in spaced relation thereto so that both the lever and handle can be gripped in one hand and the lever pressed toward the handle by the fingers, there being a compression spring 13 inserted between the handle and arm 12 of the lever so as to return the lever after it has been actuated. This spring has one end engaged over a projection 14 on the handle and the other end seated in an opening 15 in the lever. The other arm 16 of the lever projects inwardly through the bracket 11 and engages loosely in an opening 17 in the plunger or follower 6, so that the latter will be actuated when the lever is compressed, there being a longitudinal slot 18 in the tubular shank 1 to permit the arm 16 of the lever to swing back and forth. When the lever is compressed toward the handle, the plunger will be moved longitudinally in a direction to force the jaws open by the projections 7 on the follower engaging between the jaws to thus permit the jaws to be gripped to the article to be operated on. In order to close the jaws, it is merely necessary to release the pressure on the lever, so that the spring 13 will expand to retract the follower and permit the jaws to close by their own tension on the article. The tool, thus described, is especially adapted for operating on the stems of incandescent electric

lamps. In the manufacture of these lamps, it sometimes happens that the stem *a* is sealed in the bulb *b* in a slanting position, as shown in Fig. 5, so that it is necessary to
 5 straighten or centralize the stem to properly position the filament *c* with respect to the bulb, as shown by dotted lines. In doing this, the jaws, while in closed position, are inserted in the hollow of the stem to act
 10 as a pry to tilt the stem in one direction or the other, so that its axis will be in alignment with the axis of the bulb, this being, of course, done while the glass at the joint between the stem and bulb is still soft from
 15 the sealing operation. Again, it might be necessary to draw the stem outwardly longitudinally to remove the filament a proper distance from the bulb, and in performing this operation, the jaws of the tool are
 20 spread open in the manner hereinbefore described, and the leading-in wires *d* are engaged between the jaws which are then closed to grip the wires. While thus gripped, pressure is applied to the tool by one hand
 25 while the other hand of the operator holds the bulb so that the tube will be pulled longitudinally in an outer direction from the dotted to the full line position, Fig. 6. It will thus be seen that the same tool can be
 30 used for two separate operations, both of which may be necessary in a single lamp. The tool is extremely handy, readily manipulated and highly effective in use.

It will be noted that the shank is circular
 35 in cross section and the edges of the jaws meet, in their closed position, so as to form a smooth outer surface free from ridges or wide seams, so that the tool may be readily inserted in the stem of the lamp without
 40 liability of marring the shape or otherwise injuring the same. Furthermore, this even convex outer surface of the tool extending from its end to the operating devices, permits the leading-in wires to be grasped as
 45 shown in Fig. 6 without fear of breaking the same or without any necessity of adjusting the jaws so that the wires will be at some particular point at the length of the same. Moreover, the cylindrical form pre-
 50 sented by the jaws, when in their closed position, with their longitudinal edges in contact, imparts a certain rigidity to the tool so that when it is manipulated to bring the stem more or less to one side of the
 55 bulb, it will act readily and turn the stem, as a whole, without bending the same and consequently will preserve the straight longitudinal lines of the sides of the stem.

My invention is easily distinguished from
 60 ordinary tweezers in that the latter only engage with the article at the extreme outer end or the point, whereas in my device the longitudinal side edges of the semi-tubular jaws engage with the wire at two spaced
 65 points and at any point along the engaging

edges of the jaws, whereby a positive engagement with the wire is secured when performing the operation indicated in Fig. 6 of the drawing.

From the foregoing description, taken in
 70 connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have
 75 described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and
 80 that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new, and desire to secure by Let-
 85 ters Patent, is:—

1. A tool of the class described comprising a shank, a pair of normally closed resilient jaws, a plunger movable in the shank to engage between the jaws for forcing them
 90 apart against their own tension, a handle connected with the shank, and a spring-pressed hand-operated lever mounted on the shank and operatively connected with the plunger to actuate the same.
 95

2. A tool for the purpose set forth comprising a pair of normally-closed resilient jaws, a handle supporting said jaws, a plunger arranged to move in the handle and between the inner ends of the jaws to separate the latter, and operating means for the
 100 plunger having a portion located adjacent the handle so as to be grasped by the hand that grips the handle and connected with the plunger to move the same longitudinally
 105 of the jaws.

3. A tool of the class described comprising a rod-like member split longitudinally to form spring jaws normally closed, a device movable longitudinally of the member and
 110 engaging between the jaws for spreading the latter apart, a bracket mounted on the member, a lever fulcrumed on the bracket and operatively connected with the device, said lever having an arm disposed adjacent the
 115 handle whereby the lever can be actuated by the hand of the user while gripping the tool by the handle.

4. A tool of the class described comprising a tubular rod-like member split longitudi-
 120 nally to form spring jaws normally closed and having a slot at a point intermediate its ends, a handle on the end of the member opposite from the jaws, a plunger movable in the member and engaging between the jaws
 125 for spreading the same, a bracket extending from the member, a bell crank lever fulcrumed on the bracket and having one arm extending into the slot and connected with the plunger and another member disposed
 130

adjacent the handle to move toward and from the same, and a spring interposed between the handle and the last-mentioned member of the lever to hold the same outwardly from the handle.

5. A tool comprising a member split longitudinally to form spring jaws, the opposed faces of the jaws having oppositely-inclined portions, a plunger mounted on the member and having oppositely-disposed lugs adapted to wedge between the inclined faces of the jaws for spreading the latter open when the plunger is moved in one direction, and means mounted on the member for actuating the plunger.

6. A tool for the purpose set forth comprising a tubular handle, a tubular shank connected thereto at one end, a plunger moving longitudinally in the shank and handle, and means mounted on the handle and shank and connected with the plunger for operating the latter, said shank being split longitudinally for a portion of its length to form spring jaws which are adapted to engage an article at any point of their length.

7. A tool of the class described comprising a tubular rod-like member split longitudinally to form spring jaws which are normally closed with their longitudinal edges in contact, said member having wedge-shaped

faces at its inner end in rear of the jaws, a plunger movable in the inner end of said member and having lugs to operate against the said faces to open the jaws, a handle to which the said member is connected, and means arranged exteriorly of the handle and member and connected to the plunger for operating the same.

8. A tool for the purpose set forth comprising a tubular shank split longitudinally to form semi-tubular jaws which are normally closed with their opposite side edges in contact, a plunger movable longitudinally in the shank to open the jaws and release the grip on an article, said plunger being held from rotative movement, a handle, and means mounted on the handle and connected with the plunger to move the same, said means being in the form of a lever which is disposed adjacent to the handle, whereby the lever can be actuated by one hand of the user while gripping the tool by the handle.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT K. MICKEY.

Witnesses:

KATHRYN WELSH,
HILDA HERTIG.