

May 5, 1959

C. F. FISHER

2,884,743

SEALING PEG

Filed March 20, 1958

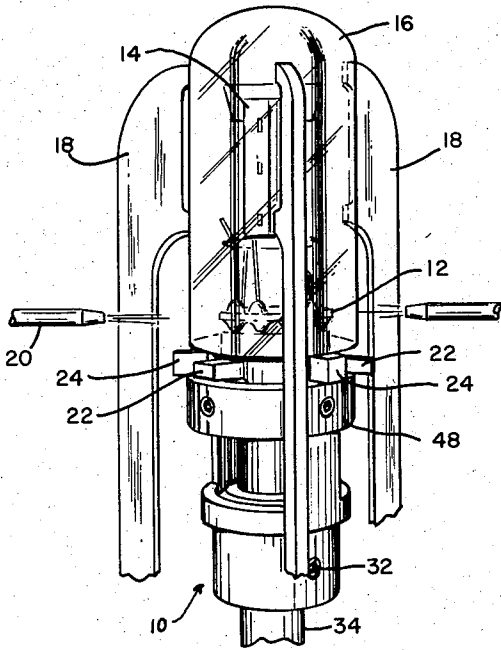


FIG. 1

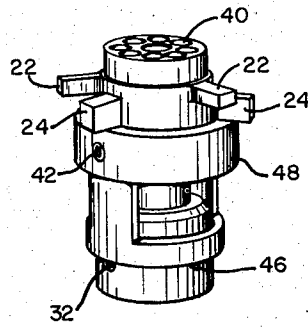


FIG. 2

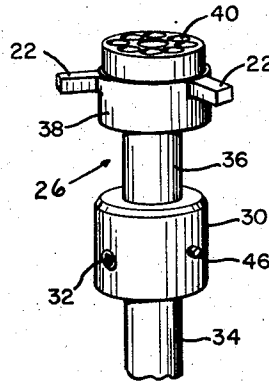


FIG. 3

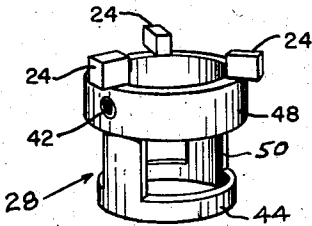


FIG. 4

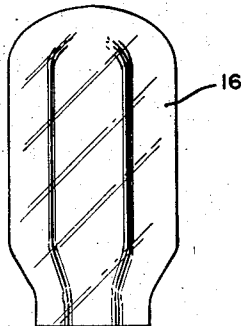


FIG. 5

INVENTOR

CLAUDE F. FISHER

BY

*Michael Hertz*

ATTORNEY

1

2,884,743

SEALING PEG

Claude F. Fisher, Jersey Shore, Pa., assignor to Sylvania Electric Products Inc., a corporation of Massachusetts

Application March 20, 1958, Serial No. 722,729

6 Claims. (Cl. 49—2)

The invention relates to sealing pegs such as are utilized in electronic tube manufacturing machinery to seal a bulb or envelope to a base portion which supports the electrodes. More particularly, the invention relates to a sealing machine having sealing pegs, the pegs being adaptable to various sizes of bulbs and base portions.

It is common practice, at the present time, to use a single bulb to base portion (or stem) sealing machine for various types of bulbs and stems which have like diametered stems and bulbs. However when production is changed from one type of tube to another where the size of the bulb or the size of the stem is changed, it is necessary to remove all of the sealing pegs from the machine and replace them by others which would suit the requirements of the new sized bulb or the new sized stem.

It is an object of this invention to provide a sealing peg that can be utilized with at least two different diametered envelopes or two different diametered stems.

This and other objects of the invention will be better understood after consideration of the following specification when taken in conjunction with the accompanying drawing in which:

Fig. 1 is a pictorial view of a new sealing peg and made in accordance with the invention, and also associated parts, the view showing an adjustable peg with a sleeve in an upper operative bulb supporting position.

Fig. 2 is a view of the new sealing peg with the sleeve in an inoperative lower position.

Fig. 3 is a perspective view of an inner post forming part of the sealing peg.

Fig. 4 is a view of the sleeve which is slidable along the post and which forms another part of the sealing peg and

Fig. 5 is a view of the electron bulb itself when formed on a peg of the character disclosed herein.

The sealing peg of this invention may be utilized in a bulb to stem sealing machine such as is shown and described in the patent to Gartner 2,661,576.

In Fig. 1 of the instant disclosure there is shown a sealing peg generally indicated at 10, a glass stem 12 with its attached mount 14 resting on the peg, and a glass bulb 16 also supported by the peg. The bulb is held in vertical position by positioning fingers 18 with the bulb ready to be sealed, at its skirt portion, to the stem. There is also shown burners 20 with their fires directed at the skirt portion of the bulb.

As the peg with the supporting positioning fingers is rotated before the burners, the glass in the bulb will be softened while the glass stem will become heated; gradually the glass at the bottom of the bulb will be shrunk in diameter, the length of the bulb will decrease and finally the bottom of the bulb will fuse with the rim of the glass stem. Depending on the relative diameters of the stem and of the bulb, i.e. on the space between the interior of the bulb wall and periphery of the stem, there must be initially a definite amount of glass below the level of the area where the bulb and stem are joined; the greater the spacing the more glass is initially required in the skirt

2

portion of the bulb below the joint level. To determine the length of the skirt portion, the sealing peg is made with two sets of supporting ears 22 and 24. With a small clearance between the bulb and the stem the tops of the ears 24, which tops are all in a common horizontal plane, extend above the ears 22 and support the bottom of the bulb as shown in Fig. 1. With a larger clearance between the bulb and the stem, the ears 24 are below the level of the tops of the ears 22, as shown in Fig. 2, and the ears 22, whose tops are also in a common horizontal plane, then support the bulb with the skirt portion of the bulb extending farther below the stem than in the case of Fig. 1, allowing more glass for bridging the space between bulb and stem.

The following construction is employed to support the ears 22 and 24: The sealing peg has an inner post 26, shown in Fig. 3, and an outer sleeve 28 shown in Fig. 4. The post has a base 30 which is mounted in any convenient fashion, as by set screw 32, onto a rod 34 vertically slidable in the turret of the sealing machine, in a manner similar to that shown in the Gartner patent. Above the base 30, the post is reduced in diameter to form a column as indicated at 36 and is surmounted by an integral stem and bulb support 38. The support 38 is vertically perforated or bored, as at 40, with the circle diameter of the bores greater than the diameter of the column, to allow the leads of a stem to extend downwardly through the support and about the exterior of the column. The support 38 is further provided with 3 equally spaced ears 22 on which the bottom of a bulb may be brought to rest. The top surface of the ears 22 is at a fixed elevation relative to the top surface of the stem support so that a definite amount of glass will project down below the level of the stem placed on the stem support for a given set of stem and bulb.

Slidable on the inner post 26 is the sleeve 28, this sleeve being provided with set screws 42 only one of which is shown in Fig. 2. This sleeve has a lower skirt portion 44 slidable on the base 30, the lower limit of sliding being limited by a pin 46 set into the base. The upper end 48 of the sleeve surrounds the support 38 and is provided with three equally spaced upstanding ears 24 intercalated with the ears 22. The upper faces of the ears 24 extend above the level of the upper faces of ears 22 when the sleeve is raised to its maximum height with the upper face of the upper end of the sleeve in engagement with the under faces of ears 22. When a bulb and stem are utilized with a comparatively small spacing between the two, the bottom of the bulb is positioned on the now raised ears 24, since less glass will be required to properly fuse the bulb and stem together. The sleeve is cut out between the portions 44 and 48, as indicated at 50, to allow for ease in clearing out the peg holes 40, should that be necessary.

What is claimed is:

1. A sealing peg having an inner member carrying a stem support at its upper end, said stem support having laterally extending ears to support a bulb, a sleeve slidable on said inner member below the stem support with means to secure the sleeve at a selected height on the inner member, and ears on said sleeve adapted to extend above the level of said first ears to support the bulb when the sleeve is in an upper position.

2. A sealing peg having an inner member carrying a stem support at its upper end, said stem support having laterally extending ears to support a bulb, a sleeve slidable between limits on said inner member below the stem support with means to secure the sleeve at a selected height on the inner member intermediate and at said limits, and ears on said sleeve adapted to extend above the level of said first ears to support the bulb when the sleeve is in an upper position.

3

3. A sealing peg having an inner member carrying a stem support at its upper end, said stem support having laterally extending ears to support a bulb, a sleeve slidable on said inner member below the stem support with means to secure the sleeve at a selected height on the inner member, and ears on said sleeve in position adapted to be intercalated with said first ears and to extend above the level of said first ears to support the bulb when the sleeve is in an upper position.

4. A sealing peg comprising an inner member having a cylindrical base for attachment to a vertically reciprocable rod, a column of smaller diameter than said base and coaxial therewith extending upwardly from said base, and a support integral with said column at the upper end thereof, said support having vertical bores therethrough in a circle diameter greater than the diameter of said column to receive the leads of a stem, said support also having radially extending ears whose top surfaces are in a common plane to support the bottom edge of a bulb to be sealed to the stem; a sleeve surrounding the inner member, means to fasten the sleeve to said inner member at a selected elevation, additional ears on said sleeve with the top surfaces of said additional ears in a common plane, said additional ears being of a height sufficient to protrude above the ears on the support when the sleeve is in an upper position and to lie at or below the level of the tops of the ears on the support when the sleeve is in a lower position.

5. A sealing peg comprising an inner member having a cylindrical base for attachment to a vertically reciprocable rod, a column of smaller diameter than said base and coaxial therewith extending upwardly from said base, and a support integral with said column at the upper end thereof, said support having vertical bores therethrough in a circle diameter greater than the diameter of said column to receive the leads of a stem, said support

4

also having radially extending ears to support the bottom edge of a bulb to be sealed to the stem; a sleeve surrounding the inner member, means to fasten the sleeve to said inner member at a selected elevation and additional ears on said sleeve, said additional ears being of a height sufficient to protrude above the tops of the ears on the support when the sleeve is in an upper position and to lie at or below the level of the tops of the ears on the support when the sleeve is in a lower position; and means to limit the downward motion of the sleeve relative to the inner support.

6. A sealing peg comprising an inner member having a cylindrical base for attachment to a vertically reciprocable rod, a column of smaller diameter than said base and coaxial therewith extending upwardly from said base, and a support integral with said column at the upper end thereof, said support having vertical bores therethrough in a circle diameter greater than the diameter of said column to receive the leads of a stem, said support also having radially extending ears to support the bottom edge of a bulb to be sealed to the stem; a sleeve surrounding the inner member, means to fasten the sleeve to said inner member at a selected elevation, and additional ears on said sleeve, said additional ears being of a height sufficient to protrude above the tops of the ears on the support when the sleeve is in an upper position and to lie at or below the level of the tops of the ears on the support when the sleeve is in a lower position; and a cut out in said sleeve to provide access to the space within the sleeve for facilitating cleaning out the bores in the support.

References Cited in the file of this patent

UNITED STATES PATENTS

2,413,766 Honzl ----- Jan. 7, 1947