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SEALING COLLAPSIBLE TUBES

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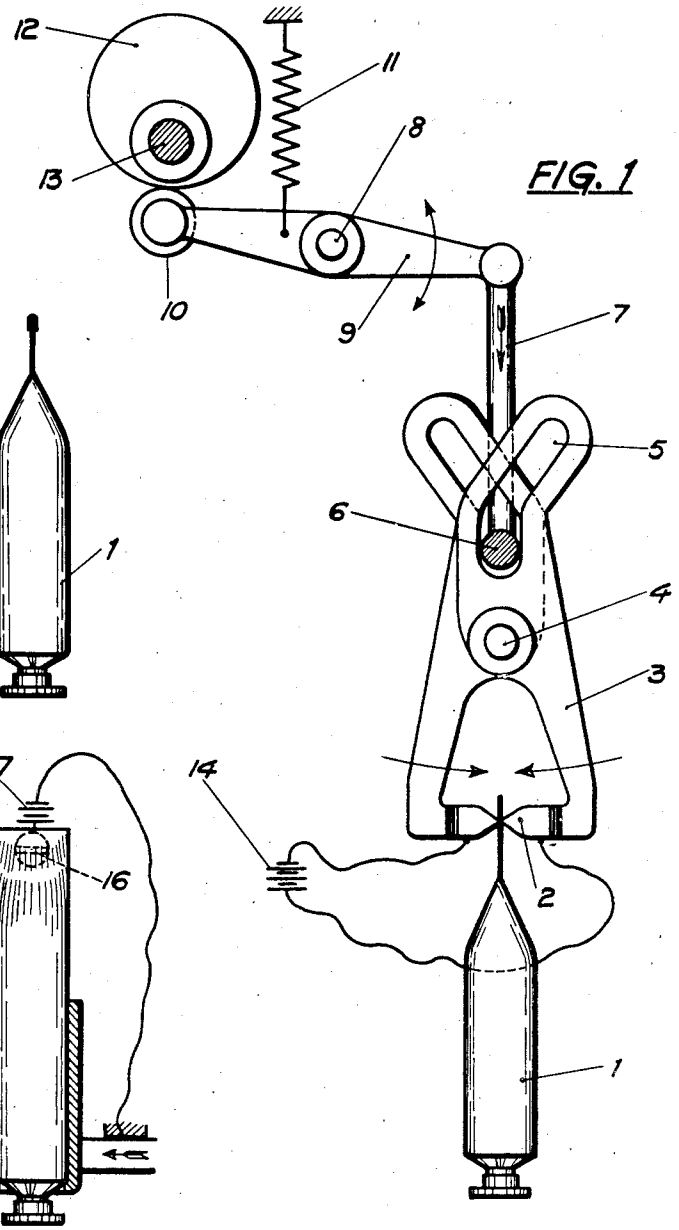


FIG. 1

FIG. 3

FIG. 2

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SEALING COLLAPSIBLE TUBES

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3 Claims. (Cl. 219—10)

This invention relates to sealing of collapsible tubes having a fusible end of tin or lead, for instance, and it is the object of the invention to provide a particularly simple method and means for sealing such tubes.

In the annexed drawing are shown in Figs. 1 and 2 two embodiments of a device for performing the method according to the invention and Fig. 3 shows a side view of a tube end sealed by means of said method and having a beading at the sealed end formed by fusion of the metal.

The tube 1 which consists of a fusible metal, for instance tin, is moved into position between the bevelled jaws 2 of a tongs (Fig. 1). The jaws 2 are electrically insulated from the legs 3 of the tongs. The legs 3 are pivoted on a pin 4, and their upper ends have slots 5 in which is movable up and down a pin 6 which is secured to a rod 7. The slots 5 are angularly formed so as to provide for closing and opening the tongs and for maintaining the tongs closed for a short period. The rod 7 is pivotally connected to one end of an arm 9 which is turnably journalled on a pin 8. The other end of the arm 9 carries a roller 10 which is by a spring 11 pressed against a cam disc 12 which is secured to a continuously rotating shaft 13. The jaws 2 are connected to an electric circuit which includes an electric power source.

On using the device now described the tube 1 is moved (possibly by means of a conveyor) into position between the open jaws 2, whereafter the pin 6 is moved downwards so that the tongs are closed and held closed for a short period. Thereby the electric circuit is closed and the temperature of the edge portion of the tong jaws is increased so that heat is transmitted from the edges of the tool to the metal of the tube and the end of the tube is cut off by fusion and sealed at the same time. Heat is transmitted to the end portion of the tube from the angularly disposed faces of the tongs' edges so as to ensure that the metal shall flow evenly and form a beading at the cut off end and on the sides adjacent said end as illustrated in Fig. 3.

According to Fig. 2 the tube is moved by a conveyor 15 past an electric pole 16 which is electrically connected to an electric power source 17. The electric power source 17 is also connected to the conveyor 15 in such manner that when the tube 1 is brought into contact with the pole 16 an electric circuit through the tube is closed and the contact point between the pole 16 and the tube will be heated so that the tube end is sealed by fusing as the tube is moved past the pole 16.

I claim:—

1. The method of sealing the flattened transverse end of a collapsible metal tube having its walls in contact for a substantial distance from the end to be sealed comprising applying heat to said walls along a transverse line to cut said walls off by fusion and to fuse the cut off edges so that the fused metal of said edges flows aside upon the sides of the flattened end portion of said tube, and solidifying the fused metal.

2. The method of sealing the flattened end of a collapsible metal tube having its end walls in contact for a substantial distance from the end to be sealed comprising supplying heat to said walls along a transverse line of the tube and angularly to the flattened portion of the walls adjacent said line, to fuse the metal of said cut off edges so that the fused metal of said edges flows aside upon the sides of the flattened end portion of said tube, and solidifying the fused metal.

3. The method of sealing the flattened end portions of collapsible metal tubes having their end walls in contact with each other for a substantial distance from the end to be sealed comprising passing an electrical current through the flattened end walls of a tube in the direction transverse to the flattened end portion, along a line extending transverse to the longitudinal axis of the tube and lying in the plane of the flattened end portion to produce heat by resistance to melt the metal of the tube along said line, transmitting heat to the flattened portion of the tube adjacent the said line from an angle at each side to melt the metal of the flattened portion of the tube for a distance from said line, whereby a beading of molten metal forms at the end and along the sides adjacent said end of the flattened portion of the tube, and cooling said molten beading to solidify the molten metal and seal the tube end.

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