

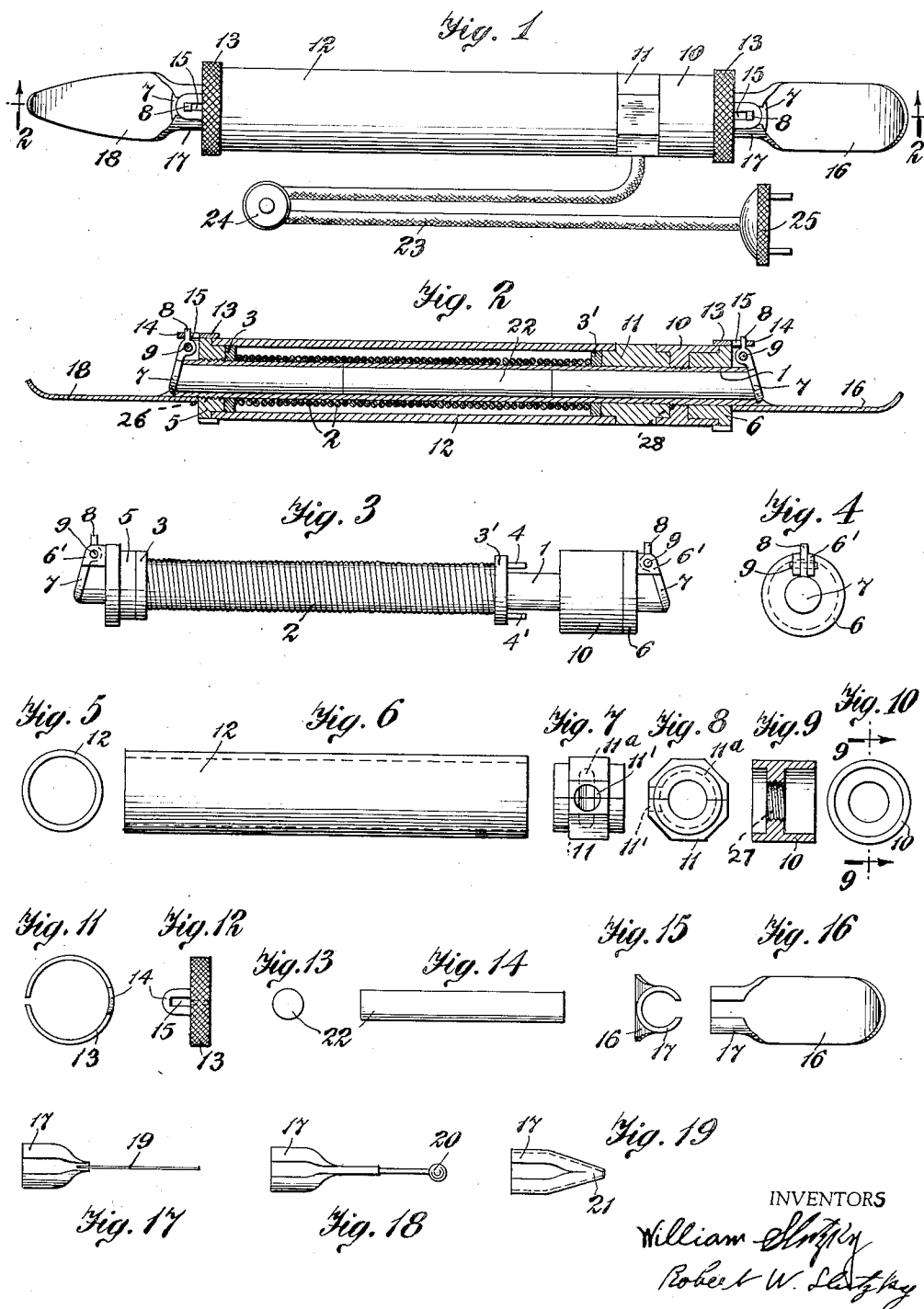
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ELECTROTHERMIC FOUNTAIN SPATULA WITH INTERCHANGEABLE DENTAL ATTACHMENTS

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ELECTROTHERMIC FOUNTAIN SPATULA
WITH INTERCHANGEABLE DENTAL AT-
TACHMENTSWilliam Slutzky and Robert W. Slutzky, New
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1 Claim. (Cl. 32—70)

Our invention relates to improvements in instruments used in plastic modeling and various dental operations; and the objects of our improvement are, first, to provide an instrument having an electrically heated magazine whereby a supply of plastic material may be fused; second, to provide an interchangeable means of connecting the spatula, applicators, and dental probes to the magazine; third, to provide a means to control the flow of fused material from the magazine to the spatula and applicators; fourth, to provide a means of heating the dental probes by conduction from the heated ends of the magazine.

We attain these objects by the instrument formed of parts illustrated in the accompanying drawing, in which—

Fig. 1 is a top view of the electrothermic fountain spatulas.

Fig. 2 is a sectional view of same on line 2—2 Fig. 1.

Fig. 3 is a side view as the instrument appears without casing.

Fig. 4 is a front view of the magazine valve ends.

Fig. 5 is an end view of the casing.

Fig. 6 is a side view of the casing.

Fig. 7 is a side view of the connector bushing.

Fig. 8 is an end view of the connector bushing.

Fig. 9 is a sectional view of binding bushing on line 9—9, Fig. 10.

Fig. 10 is an end view of the binding bushing.

Fig. 11 is a side view of the valve ring.

Fig. 12 is a top view of the valve ring.

Fig. 13 is an end view of the magazine charge.

Fig. 14 is a side view of the magazine charge.

Fig. 15 is an end view of the spatula.

Fig. 16 is a top view of the spatula.

Fig. 17 is a side view of a dental probe.

Fig. 18 is a side view of a modified form of same.

Fig. 19 is a side view of solder applicator.

Similar numerals refer to similar parts throughout the several views.

The tubular magazine 1, the coil of insulated resistance wire 2, between the insulated separators 3, 3', the valve ends 5, and 6, with the hinged valves 7, 7, the binding bushing 10, the connector bushing 11, the casing 12, the valve rings, 13, 13, the attachments 16, 18, 19, 20, 21, the flexible conductors 23, the switch 24, and the attachment plug 25, constitute the several parts of the instrument.

The valve ends 5, 6, have slotted projections 6', 6', to which the valve 7, 7, are hinged by the pins 9, 9; the valves 7, 7, have the shanks 8, 8, which engage with the slots 15, 15, of the projections 14, 14, of the valve rings 13, 13, whereby the valves may be operated to open and close by the movement of the rings on the casing. The valve end 5, is attached to the magazine 1, by the screw thread 26; the casing 12, and the connector bushing 11, being secured in assembly by the binding bushing 10, which has a screw thread 27, engaging with the screw thread 28, on the magazine 1. The valve end 6, may be assembled without threaded engagement with the magazine 1, by having the reduced diameter of the valve end a finger press fit into the inside diameter of the binding bushing 10, so that the valve end 6, may be easily removed when charging the magazine 1.

Various forms of spatula, applicators, and dental probes having connecting ends 17, may be interchangeably attached to the magazine 1, to provide an instrument adapted to the work to be done. The ends 4, 4', of the heating coil 2, are connected to the flexible conductors 23, controlled by the switch 24, and served from a source of electric current supply by means of the attachment plug 25; the connector bushing 11, is split into halves and has the aperture 11', and the internal groove 11a, to facilitate the wire connections which may be made prior to the assembly of the casing 12.

The instrument as described may be used as a spatula for modeling with various materials that may be fused to a fluid state by a moderate degree of heat, for soldering with a paste form of solder, and for heating dental probes to dry out the moisture of root canals and cavities of teeth in dental practice. We will describe the operation in using the instrument with modeling wax as an example; the end piece 6, may be removed with the fingers and the magazine charged with the sticks of wax 22; and after replacing the end piece 6, the electric current controlled by the switch 24 is allowed to flow through the heating coil to fuse the wax to a fluid state, the flow of same being controlled by the valve 7, 7, to the spatula 16 or 18. When the instrument is used with a paste form of solder the magazine may be charged directly from the collapsible tube containers and the spatula replaced by the applicator 21, the solder being fused as previously described for the use with wax. When the instrument is to be used without valve control, the end piece 6, may be removed and the

attachments such as the probes, and applicators may be attached directly to the end of the magazine tube; the instrument may be used for drying out the root canals and cavities of teeth by
5 attaching the dental probes to the magazine 1, to conduct the heat from same for the purpose. The instrument may be used with other materials, and for other dental operations than described without departing from the principal of
10 our invention, the scope of which is intended to cover the use of same.

Having described our invention, what we claim as new, and desire to secure by Letters Patent is—

An electrothermic dental instrument for use as a spatula, applicator, and dental probe, comprising a tubular hand piece inclosing a tubular magazine surrounded by an electric heating element adapted to heat the magazine from a suitable electric current supply, the magazine and hand piece having removable end members with valve controlled openings adapted for interchangeable engagement with spatulas, applicator and dental probes. 5 10

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