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2,468,479

DENTAL APPLIANCE

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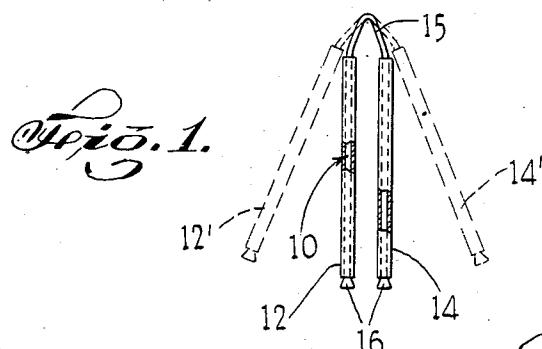


Fig. 2.

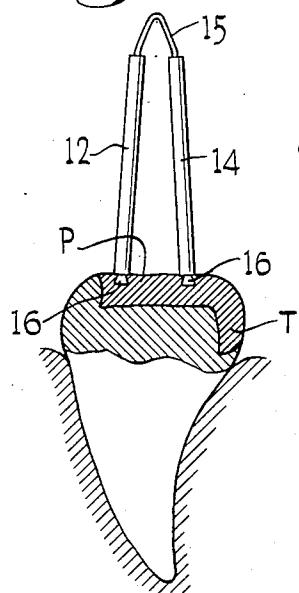


Fig. 3.

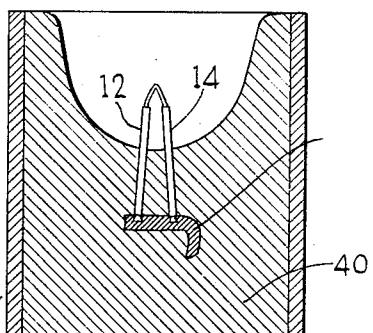


Fig. 6.

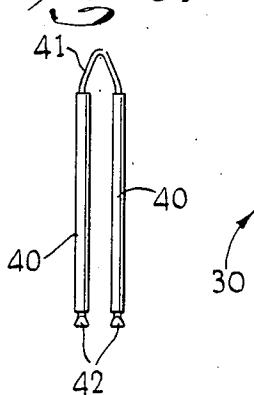


Fig. 4.

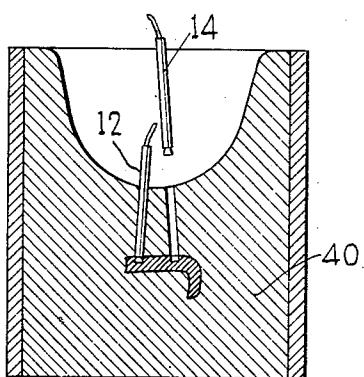


Fig. 5.

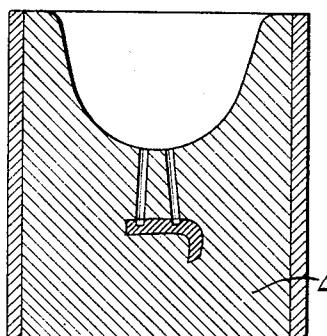
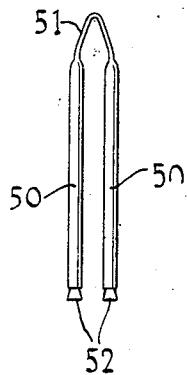


Fig. 7.



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DENTAL APPLIANCE

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1 Claim. (Cl. 22—162)

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This invention relates generally to the art of forming dental castings. More particularly my invention is concerned with an improved construction of a sprue appliance to facilitate the forming of dental castings.

The following procedure is generally followed by dentists in forming dental castings. Wax is first pressed into the cavity of a designated tooth so as to secure a pattern thereof. A sprue device is then forced slightly into the wax a sufficient distance to permit the removal of the wax from the cavity of the tooth and the carrying of said wax pattern by the sprue device. The wax pattern with the sprue device is then placed within an investment cup and investment material poured into the cup to cover the wax pattern and a portion of the sprue device to which it is slightly attached. When the investment material has hardened, imprisoning the wax therein, the sprue device is removed. This leaves an opening in the hardened investment material corresponding to the shape of that portion of the sprue device which was embedded therein, and forms a passageway communicating with the wax pattern and the outer top surface of said investment material. The investment is then subjected to heat sufficient to melt the wax pattern which may be emptied from the mold through the above mentioned passageway. Molten gold or other metal is then introduced into the mold in any desirable manner to form a casting of the wax pattern.

One of the objects of my invention is to provide a novel and highly improved sprue device which shall be so constructed that it may be satisfactorily employed for all sizes of wax patterns.

Another object of my invention is to provide a novel and highly improved sprue device which shall be so constructed that it may be readily removed from the hardened investment material.

Still another object of my invention is to provide a sprue device having means for firmly holding the wax pattern to facilitate its removal from the tooth and which shall represent a general improvement in the art.

Other objects of my invention will in part be obvious and in part hereinafter pointed out in the description read in conjunction with the accompanying drawings in which:

Fig. 1 is an elevation view of a dental sprue device constructed and arranged in accordance with my invention;

Figs. 2, 3, 4 and 5 are sectional views illustrating the use and function of my sprue device; and

Figs. 6 and 7 are elevational views, similar to

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Fig. 1, but illustrating modified forms of my invention.

Referring now in detail to the drawings, I have illustrated in Fig. 1 a dental sprue device of the class described, constructed and arranged in accordance with my invention and comprising a wire 10 which is preferably relatively thin and of a malleable material so that it may be easily manually flexed or bent as desired. Mounted on the said wire 10 are a pair of tubular members 12 and 14 of relatively rigid material which would normally resist manual bending. It is noted that these rigid tubular members 12 and 14 cover practically the entire length of the wire 10 with the exception of a central portion 15 and portions 16 adjacent opposite ends of said wire 10. In view of the fact that the wire 10 is flexible, it may be bent at the portion 15 substantially in half to form an inverted U-shaped or V-shaped device, 20 in which shape it is ready for use. It is noted that the ends 16 are enlarged to hold the tubular members 12 and 14 captive on the wire 10 and flattened into trapezoidal shape, the purpose of which will soon be set forth.

25 I will now describe the use of my invention in accordance with the procedure in forming dental castings outlined above.

In Fig. 2 I have shown a tooth T, having a quantity of wax pressed thereagainst to form a wax pattern P. The sprue device of my invention is then slightly forced into the wax pattern P, so that the ends 16 are embedded in the wax. The trapezoidal shape of the said ends 16 will firmly retain the wax pattern P in firm attachment to the sprue device. It is noted that the legs of the said sprue device have been spread apart slightly more than that shown in Fig. 1. It is thus seen that the device can be readily made to accommodate different sizes of wax patterns by simply spreading apart the legs of the sprue device, such as for example, to the dot and dash line position 12' and 14' or closely brought together to the full line position. This novel construction eliminates the necessity of the dentist having a supply of many sizes of sprues for wax patterns of different sizes. In Fig. 3 I have shown the wax pattern P removed from the tooth T and while still attached to the sprue device, disposed in an investment cup 30 filled with investment material 40.

50 In view of the fact that the legs of the sprue device are spread apart, the said sprue device could not easily be removed from the hardened investment material without damaging the same. Therefore, in accordance with my invention I have

made the wire 10 of such material that it may be easily cut by a scissors or other similar suitable available cutting instrument. In Fig. 4, I have illustrated the wire portion 15 as cut so that each leg of the sprue device may be easily removed separately.

In Fig. 5, I have shown how the mold appears after the sprue device has been severed and removed. The customary dental molding procedure may then be carried on.

In Fig. 6 I have shown a modified construction for my sprue device in which instead of the tubular members 12 and 14, I make my wire 40 relatively thick and turn down a portion 41 at the center thereof to be relatively thin and manually easily bendable so that the same may be used in the same manner as the sprue shown in Fig. 1 of the drawings. Portions 42 adjacent the free ends of the wire 40 are turned down and flattened to serve a similar function to the ends 16.

In Fig. 7 I have shown my sprue device constructed from a relatively thick bar or wire 50, with the central portion 51 made thin and flexible and the ends 52 flattened. However, in this form of my invention my sprue device may be made by stamping so that instead of turning the parts 51 and 52 down, they are flattened and the excess material trimmed away.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having described my invention, what I claim and desire to secure by Letters Patent is:

A sprue for dental casting comprising an inverted substantially V-shaped relatively thin wire member of bendable material having a pair of legs terminating in free edges and an interconnecting portion and tubular sleeve members on said legs, said tubular members being of such size and so disposed as to leave portions of the wire adjacent the ends thereof freely projecting beyond said tubular members as well as to leave uncovered said interconnecting portion between said tubular members; said tubular members being of relatively rigid construction so as to resist bending whereby the said legs may be readily manually spread apart to fit varying sizes of wax patterns, the said end portions of said wire member which project freely beyond said tubular members being deformed to provide a gripping area for holding the wax pattern, the width of said deformed portions being no greater than the outside diameter of said tubular members, whereby when the sprue is severed between said tubular members, each leg thereof may be easily withdrawn.

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