Dec. 22, 1942. R. A. ENGLISH 2,305,854

DENTAL PRESSURE TRAY EQUIPMENT

Filed Sept. 30, 1941

Fig. 1.

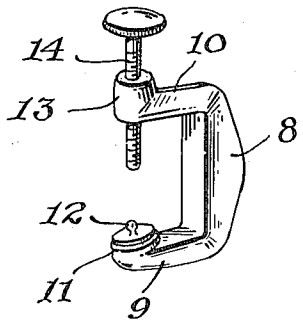


Fig. 2.

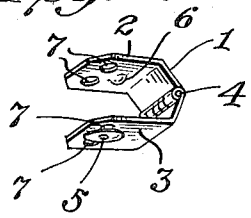


Fig. 3.

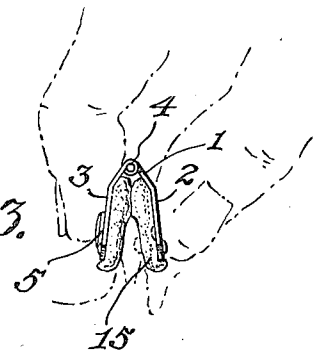
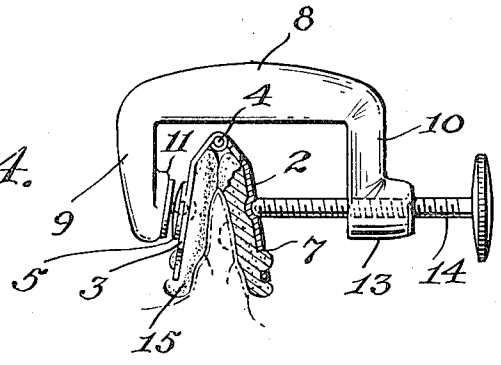


Fig. 4.



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DENTAL PRESSURE TRAY EQUIPMENT

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3 Claims. (Cl. 32—63)

This invention relates to apparatus for taking impressions of teeth and for condensing and forcing against the cavity walls and margins of prepared cavities, a mass of mortarized silicate filling material which has been previously plugged into the prepared cavity.

A primary object of the invention resides in the provision of a separable hinged tray and clamp for taking the impressions etc., whereby the various steps in the process are greatly facilitated.

Another object of the invention consists in providing a separable tray and clamp in which the tray may be manually operated in taking the impression and may be mechanically operated in the final stage of filling the cavity.

A still further object of the invention resides in the provision of a separable tray and clamp in which the clamp may be operated in a facile manner, and yet which will not unduly inconvenience the patient nor be liable to be inadvertently struck or interfered with by movements of the patient.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawing, in which,

Figure 1 is a perspective view of the clamp.

Figure 2 is a perspective view of the hinged tray for use with and without the clamp.

Figure 3 is a side elevational view of the tray being manually applied to a tooth in taking an impression thereof, and

Figure 4 is an elevational view, partly in section, showing the tray applied to a tooth and clamped thereto by the separable clamp, in the final operation of filling a cavity.

Referring to the drawing in more detail, the numeral 1 indicates a tray formed of metal or the like and comprised of two sections 2 and 3, and a hinge 4 for permitting adjustment of the sections in the various steps of filling a cavity. While only one such tray is shown in the drawing it is to be understood that separate trays, varying only slightly in design and proportion, may be used to fit anterior, bicuspid and molar teeth, so that any type of cavity such as proximal, proximo-occlusal, or cervical, etc., may be properly condensed, etc.

One of the tray sections 3 is provided with a female snap or socket member 5, such as a dress snap, for use in conjunction with a complementary member on the clamp, as will later appear. The other tray section 2 may be provided with a depression 6 for cooperation with another element on the clamping member. Both of the tray sections are provided with a plurality of apertures or depressions 7 for interlocking with the matrix material as will appear hereinafter.

The clamp preferably used with the tray 1 is separately shown in Figure 1 and comprises a base member 8 of substantially C shape, providing outwardly directed arms 9 and 10. The arm 9 is provided with a seat 11 which is inclined downwardly to the left, as shown in Figure 1, and mounted on this seat and also slightly inclined in the same direction, is a male snap 12 complementary to the socket member 5 on the tray 1. The other arm 10 of the clamp base 8 is provided with a vertically-extending threaded bearing 13 in which is threaded a clamping screw 14. The inner end of the screw 14 is adapted to cooperate with the depression 6 in tray section 2, and the diameter of the screw and depression are substantially the same.

The tray and clamp are shown in their combined relation in Figure 4, and in this figure as also in Figure 3 is shown the impression material 15 which is applied to the two sections of the tray in taking impressions and which is used as a matrix in finally condensing the filling material.

The operation of the novel equipment in carrying out the various steps in condensing silicate filling material will now be described.

If the cavity is small an impression may be taken of the tooth before preparing the cavity, if the cavity is large however, it is desirable to prepare the cavity and build it to contour with some easily removable substance such as temporary stopping. An impression of the tooth is then taken by first softening a modeling compound and applying it to the inner sides of the tray which should itself be warm. Portions of the modeling material will of course interlock with the aperture 7 in the tray. The modeling material is then preferably given a thin coat of vaseline or oil and applied to the tooth with the snap section 3 on the lingual side thereof. The two sections of the tray are then pressed toward each other by the fingers of the operator so as to secure an accurate impression of the tooth to be filled.

The impression is then chilled and the tray snapped into the clamp 8 as shown in Figure 4 so that the tray and clamp become a unitary and convenient assembly. If stopping material has been placed in the cavity it is removed and the cavity disinfected and lined in the usual manner. The filling material is now inserted

into the cavity and plugged into all pits, grooves or undercuts to overfullness. The tray assembly is then placed on the tooth with the tray in the same position used when taking the impression; the screw 14 is then rotated to lightly close the tray sections or impression members against the soft filling material, thereby molding it to the proper form and condensing it and driving and pressing it tightly against the margins. The clamp is of course left in position during the setting of the filling material; the clamp and tray being then removed; the polishing of the filling being deferred until a subsequent sitting.

It will be apparent from the foregoing description and the attached drawing that I have provided a novel yet simple device for condensing fillings; that it may be used separately or as a unit, as occasion requires; that the hinged tray provides excellent means for taking impressions, and that when interlocked with the screw clamp it serves in a unitary manner to apply the pressure necessary to adequately condense the filling material and force it tightly against the margins.

In accordance with the patent statutes I have described what I now believe to be the preferred form of the equipment, but it will be understood that various changes may be made in the details of construction without departing from the spirit of the invention, and it is intended that all such changes be included within the scope of the appended claims.

What is claimed is:

1. Apparatus of the class described comprising a tray formed of hinged sections of stiff material, a snap socket member on the exterior of one tray, the other section provided with an exterior depression, a clamp, a pin on the clamp for detachably engaging the socket of the socket member on one section of the tray, and a screw-threaded member on the clamp for engaging the depression in the other section of the tray.

2. A dental pressure device comprising a tray composed of hinged sections of stiff material, each of which is adapted to receive impression material, a snap member on the exterior of one of said sections and the other section provided with an exterior depression, a clamp for engaging said tray sections, a snap member on said clamp complementary to the snap member on one of said sections, a part of the clamp being adapted to be received in the depression of the other section.

3. A dental pressure device comprising a tray composed of hinged sections of stiff material each of which is adapted to receive impression material, a snap member on the exterior of one of said sections, a clamp for engaging said tray sections, and a cooperating snap member on the clamp complementary to the first-named snap member, the snap member on the clamp being placed at a slight angle to the axis of the clamp so as to correspond to the position of the snap member on the tray section when the tray sections are only partly closed.

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