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E. A. CLEVELAND
ADJUSTABLE DENTAL TRAY

Filed Jan. 29, 1923

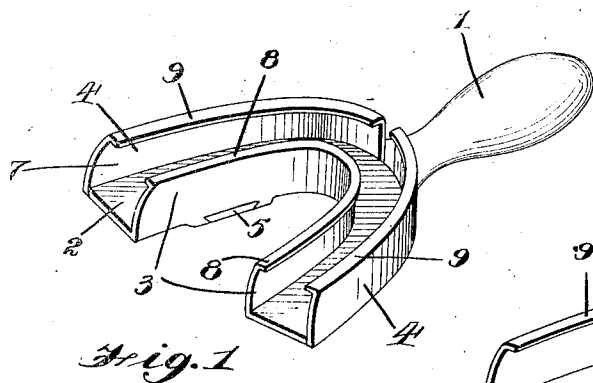


Fig. 1.

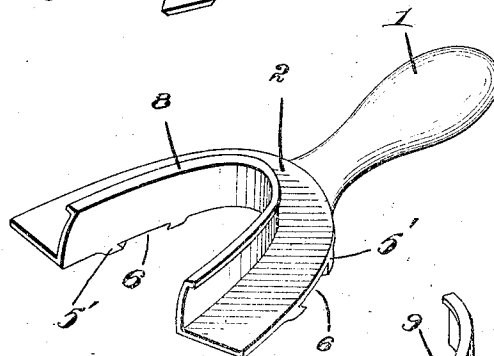
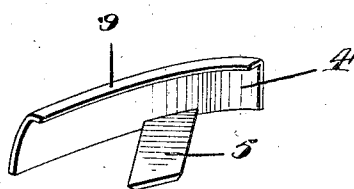


Fig. 2.

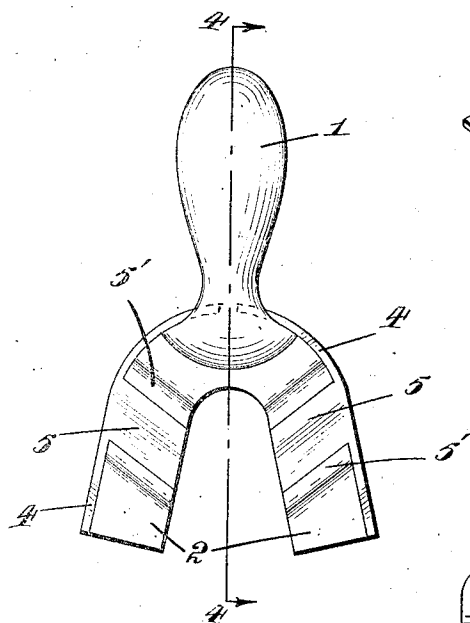


Fig. 3.

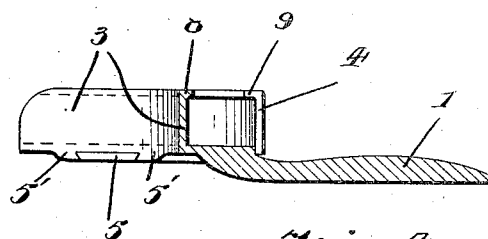


Fig. 4.

Inventor
Ernest A. Cleveland
By William Linton
Attorney

UNITED STATES PATENT OFFICE.

ERNEST A. CLEVELAND, OF MONTREAL, QUEBEC, CANADA.

ADJUSTABLE DENTAL TRAY.

Application filed January 29, 1923. Serial No. 615,718.

To all whom it may concern:

Be it known that I, ERNEST A. CLEVELAND, a subject of the King of Great Britain, residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Adjustable Dental Trays; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to novel improvements in dental trays used by dentists for taking impressions of the teeth.

A device of this character of the type now in use consists of a tray or other suitable receptacle adapted to contain a quantity of plaster which is pressed against the teeth for taking an impression thereof. Subsequently a model is made from the impression and an artificial set of teeth constructed in accordance with this model. In the use of such devices it has heretofore been difficult to remove the tray and plaster from the mouth without injury to the patient due to the plaster hardening against the teeth. To overcome this defect a modeling compound, which is a yieldable substance, has been introduced, but this is objectionable in that the impression is altered while the cast is being drawn away from the teeth. The present invention aims to overcome the difficulty in removing the cast from the teeth, at the same time maintaining the accuracy of the impression. The cast before removal from the teeth has a tendency to crack medially in a curved plane between the front and back wall of the impression. In the improved tray, this tendency is allowed to manifest itself in that the outer surface of the tray may be moved, thus increasing the width of the space within the cup, while the tray is still in the mouth. When the tray is withdrawn, the parts of the cast on opposite sides of the crack are allowed to separate, whereby they may be removed from the teeth without alteration of the true impression. To avoid the plaster adhering to the teeth during the removal of the tray, the walls of the latter are undercut or provided with flanges at the outer edges so that the plaster is gripped and carried with the tray.

The invention is fully disclosed in the

following description and in the accompanying drawings in which:

Figure 1 is a perspective view of the device;

Figure 2 is a similar view showing the device dismantled;

Figure 3 is a bottom plan view of the device; and

Figure 4 is a section on the line 4—4 of Figure 3.

As illustrated in these views in which like reference characters are employed to designate corresponding parts throughout, the tray comprises a handle 1 which is formed integrally with or secured to a base 2 having the general curvature of a set of teeth. At the inner edge of the base is formed an upstanding wall 3 which constitutes the lingual portion. The outer wall is formed in two sections 4 each of which carries a flange 5 at its lower edge. The branches of the base are formed at the under surface with enlargements 5' in which are cut dovetail grooves 6 adapted to receive the flanges 5 in slidable manner. The side wall sections 4 when attached to the base by means of the flanges and grooves stand parallel to the inner wall 3 forming the space 7 for receiving the material in which the impression is taken. The upper edges of the walls 3 and 4 are undercut or formed with flanges 8 and 9 respectively projecting into the space 7.

In use, the cup is inserted into the mouth after receiving a quantity of plaster, and is pushed against the set of teeth of which the impression is to be taken. After the plaster has remained in contact with the teeth for the required period of time, the wall sections 4 are moved outwardly to allow the cast to crack in the manner pointed out above. The tray is now moved away from the teeth with ease and without distortion of the impression since the separated portions of the cast are allowed to move apart. As the tray is moved away from the teeth, the cast is prevented from adhering thereto by virtue of the flanges 8 and 9 which pull it in the direction in which the tray is drawn. After removal from the mouth, the wall sections 4 are returned to their original positions, and the run is made. After the latter has hardened, the wall sections are removed entirely, the cast still remaining in engagement with

the lingual portion. The tray is turned so that the handle points upwardly, the entire mass being supported in this position by holding the cast in the hand. The outer
5 end of the handle is tapped with the other hand, whereby the tray is separated from the cast and drops away from it.

The device is applicable to either set of teeth. The slidability of the wall sections is
10 further useful in adjusting the tray to various sizes of mouths.

While a specific embodiment of the invention has been illustrated and described, it is to be understood that various alterations in the details of construction may be
15 made without departing from the spirit of the invention as indicated by the appended claims.

Having thus fully described the invention,
20 what I claim as new and desire to protect by Letters Patent is:—

1. A dental tray comprising a base having substantially the curvature of a complete set of teeth, an inner wall at the inner edge of
25 said base and substantially perpendicular thereto, and a pair of outer wall sections at the outer edge and slidable relatively to said inner wall.

2. A dental tray comprising a base having
30 substantially the curvature of a complete set of teeth, an inner wall at the inner edge of said base and substantially perpendicular thereto, and outer wall sections at the outer edge and slidably connected to the base.

35 3. A dental tray comprising a base having

substantially the curvature of a complete set of teeth, an inner wall at the inner edge of said base, a pair of outer wall sections at the outer edge and slidable relatively to said inner wall, and flanges extending from the
40 upper edges of said inner wall and outer wall sections into the space therebetween.

4. A dental tray comprising a base having substantially the curvature of a complete set of teeth, an inner wall at the inner edge of
45 said base, outer wall sections at the outer edge and slidably connected to the base, and flanges extending from the upper edges of said inner wall and outer wall sections into the space therebetween.

5. A dental tray comprising a base having substantially the curvature of a complete set of teeth, an inner wall at the inner edge of said base, said base having grooves formed
50 in its surface, and outer wall sections provided with flanges slidably receivable in said grooves.

6. A dental tray comprising a base having substantially the curvature of a complete set of teeth, an inner wall at the inner edge of
60 said base, said base having grooves formed in its surface, outer wall sections provided with flanges slidably receivable in said grooves, and flanges extending from the upper edges of said inner wall and outer wall
65 sections into the space therebetween.

In witness whereof I have hereunto set my hand.

ERNEST A. CLEVELAND.