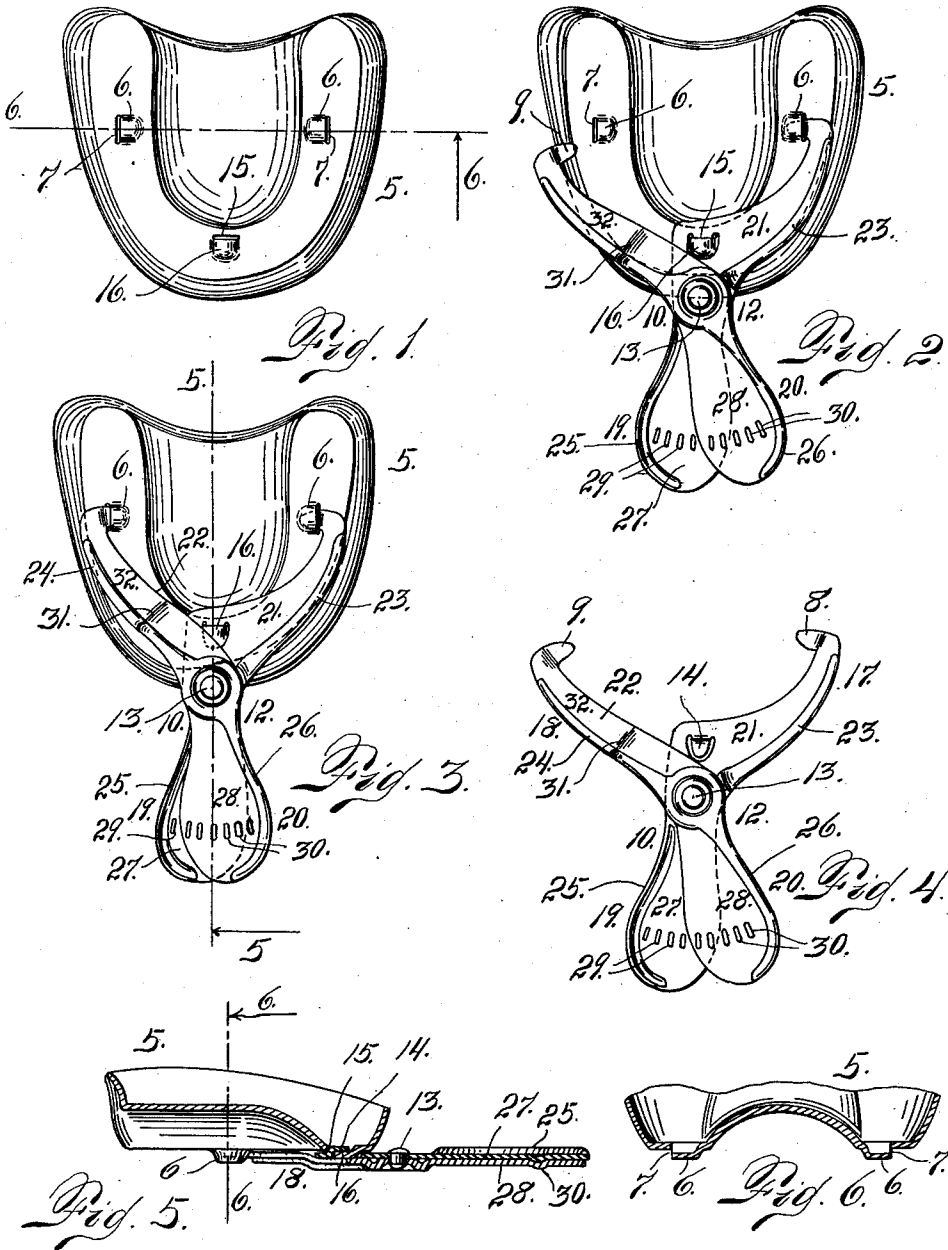


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DENTAL IMPRESSION TRAY AND DETACHABLE HANDLE.
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UNITED STATES PATENT OFFICE.

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DENTAL IMPRESSION-TRAY AND DETACHABLE HANDLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LESLIE EUGENE EATON, a citizen of the United States, residing at Sturgis, county of Meade, and State of South Dakota, have invented certain new and useful Improvements in Dental Impression-Trays and Detachable Handles; and I do declare the following to be 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in dental impression trays and detachable handles therefor. As is well known, trays of this character are employed by dental surgeons in taking an impression of the gums of the patient preparatory to supplying a set of teeth. Plastic material as wax is placed in these trays and they are inserted in the mouth of the patient, the wax being pressed against the gums. Trays of this kind are used but once after which they are discarded. In using a tray of this character, it is very essential that the tray be provided with a handle. By making this handle detachable it can be used indefinitely, or with any number of trays.

The object of my present improvement is to provide a construction of this character which shall be exceedingly economical and at the same time efficiently perform the function heretofore outlined; and to this end, the tray is composed of such material that it may be stamped with a die, the die being prepared to partially punch out portions of the material, whereby openings are formed adapted to receive teeth or projections with which the handle is provided. The handle is composed of two members pivoted intermediate their extremities, one end of each member being adapted to enter the openings in the bottom of the tray from opposite sides, while one member has an additional tooth adapted to enter an intermediate, but forwardly located opening in the bottom of the tray. The perforations in the bottom of the tray are formed by depressing portions

of the material which is cut on one side only, the perforations being formed by the depressed portions, whose cut edges are thereby spaced sufficiently from the corresponding edges of the bottom of the tray, to permit the entrance of the teeth or projections of the handle. By virtue of this special construction, the cost of producing trays of this character, is greatly reduced as compared with any construction with which I am familiar.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing—Figure 1 is an underneath view of a tray constructed in accordance with my improvement. Fig. 2 is a similar view, showing the tray in connection with the handle, which is partly applied. Fig. 3 is a view similar to Fig. 2, but with the handle completely attached. Fig. 4 is a detail view of the handle. Fig. 5 is a section taken on the line 5—5, Fig. 3, the device being shown in the upright position. Fig. 6 is a section taken on the line 6—6, Figs. 1 and 5, but shown in the upright position as in Fig. 5.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a dental compression tray considered in its entirety. On opposite sides of the bottom of the tray, parts 6 are pressed outwardly, to form openings 7 on the outside, adapted to receive teeth 8 and 9, of handle members 10 and 12 which are pivotally connected intermediate their extremities as shown at 13. The member 10 of the handle is also provided with a tooth or lip 14 pressed out of the material of the member, the material being cut through, except on one side, whereby the tooth remains connected with its handle member. This tooth is adapted to enter an opening formed in the bottom of the tray by depressing a part 16 which is located forwardly of the depressed parts 6 and intermediate the same.

The handle members 10 and 12 are composed of parts 17 and 18 extending rearwardly beyond the pivot. These parts may

be termed jaws. The members are also provided with hand pieces 19 and 20, extending forwardly beyond the pivot. The free extremities of the jaws are equipped with the teeth or projections 8 and 9, which are offset slightly from the plane of the flat parts 21 and 22 of the jaws in order to bring them into the same plane with the tooth 14 and also into proper position to enter the openings 7 in the bottom of the tray, as the jaws are closed or caused to approach each other, until they are brought into the position shown in Fig. 3. The jaws are provided with strengthening ribs 23 and 24, which are raised slightly from the body or flat parts 21 and 22 of the jaws. The hand pieces 19 and 20 are also provided with similar strengthening ribs 25 and 26 extending above the planes of the flat parts 27 and 28. These last named parts are provided with cooperating interlocking depressions 29 and 30, whereby when the jaws are closed or in position to interlock with the tray, they will be retained in the interlocked position against accidental displacement. The handle parts may, however, be readily moved to open the jaws as occasion requires. The rear part 32 of the jaw 18 is slightly offset as shown at 31 from the rest of the jaw, to bring it into the same plane with the corresponding part of the opposite jaw 17, since the parts of the jaws carrying the teeth or projections 8 and 9, should occupy a corresponding plane.

From the foregoing description, the manner of using my improvement will be readily understood. In order to connect the handle with the tray, the latter is inverted or placed in the position shown in Figs. 1, 2 and 3, after which the handle when in the proper position, shown in Fig. 4, is placed upon the bottom of the tray so that its tooth 14 is just forward of the opening 15 of the depression 16. The handle is then moved slightly forwardly to cause the tooth to enter the opening and interlock with the depressed portion 16. The jaws 17 and 18 are then closed by pressing the hand pieces 19 and 20 toward each other, or until the parts of the handle occupy the position shown in Fig. 3, whereby the teeth 8 and 9 as well as the tooth 14, are brought into interlocking engagement with the depressed parts 6 of the tray, having entered the openings 7. The entire device is then turned over to bring the tray into the upright position, after which the necessary wax is placed therein, and the tray inserted in the mouth of the patient, the wax being brought against the gums to obtain the impression or mold in the usual manner.

An important reason for employing a detachable handle in connection with trays of this character, is that in shipping, the goods may be packed to much better advantage as

the trays may be nested together separately from the handles much more advantageously than when equipped with fixed handles, as has been the case heretofore.

My improved handle may be termed a universal handle, as it is adapted for use with trays of varying sizes. In fact, a single handle may be used with trays of all sizes that will be found necessary in a dental surgeon's practice.

Having thus described my invention, what I claim is:

1. A handle for dental trays, comprising pivoted jaws having teeth at their free extremities, one of the jaws having a third tooth forwardly located, the said teeth being adapted to engage open counterpart recesses, with which the said tray is provided.

2. The combination of a dental impression tray, having exteriorly projecting open recesses, and a handle including pivoted jaws equipped with teeth adapted to enter said recesses.

3. The combination of a dental impression tray, whose bottom is provided with three open exteriorly projecting recesses respectively arranged on opposite sides and on the central front portion thereof, and a handle composed of two centrally pivoted members, the parts forward of the pivot being provided with teeth arranged to enter the said recesses, whereby the handle is detachably connected with the tray, substantially as described.

4. The combination of a dental tray, whose bottom is provided with exteriorly projecting covered recesses, the said recesses being arranged on opposite sides and at the central front portion thereof, respectively, and a handle having crossed centrally pivoted members, the parts forward of the pivot comprising jaws, whose free extremities are equipped with teeth adapted to enter the side recesses of the tray, one of the jaws being provided with a third tooth arranged to enter the other recess of the tray, the parts of the members forward of the pivot being equipped with cooperating interlocking parts, substantially as described.

5. A handle for dental impression trays, comprising two crossed members pivoted at their intersection and having rearwardly projecting jaws equipped with teeth at their free extremities, one of the jaws having a third tooth forwardly located, all the teeth lying in a common plane, the portions of the members forward of the pivot being provided with cooperating interlocking parts, for the purpose set forth.

6. A handle for dental impression trays comprising two crossed members pivoted at their intersection and having rearwardly projecting jaws equipped with teeth at their free extremities, while the portions of the

members forward of the pivot are provided with cooperating interlocking parts for the purpose set forth.

7. A handle for dental impression trays comprising two members pivotally connected with each other, the portions of the said members rearward of the pivot being equipped with teeth for the purpose set forth.

10 8. A handle for dental impression trays

comprising two crossed members pivoted at their intersection, the portions of said members rearward of the pivot being equipped with teeth for the purpose set forth.

In testimony whereof I affix my signature 15 in presence of two witnesses.

LESLIE EUGENE EATON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."