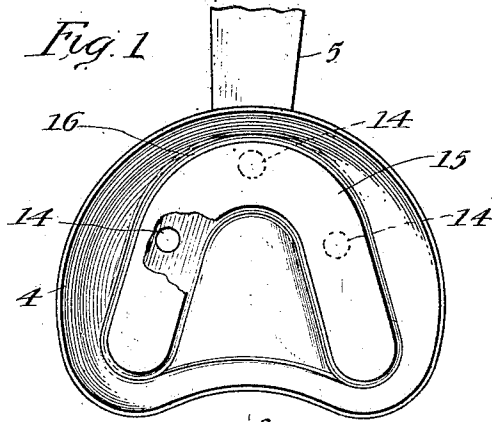
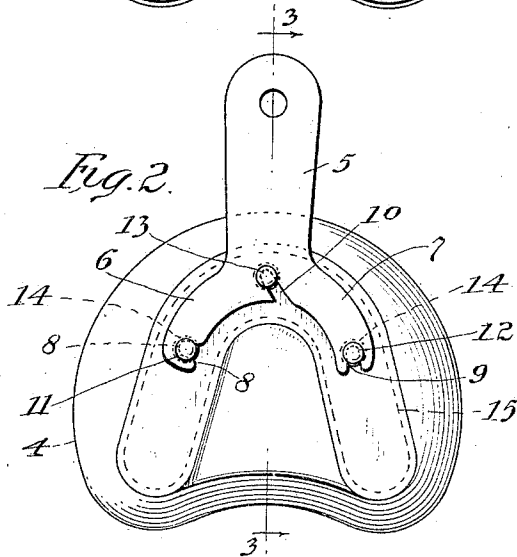
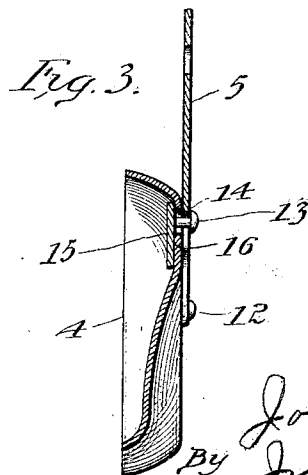


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DENTAL IMPRESSION TRAY.

APPLICATION FILED AUG. 28, 1918. RENEWED AUG. 28, 1920.

1,374.183.

Patented Apr. 12, 1921.



Inventor
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UNITED STATES PATENT OFFICE.

JOSIAH S. BRIDGES, OF CHICAGO, ILLINOIS.

DENTAL IMPRESSION-TRAY.

1,374,183.

Specification of Letters Patent.

Patented Apr. 12, 1921.

Application filed August 28, 1918, Serial No. 251,717. Renewed August 28, 1920. Serial No. 407,060.

To all whom it may concern:

Be it known that I, JOSIAH S. BRIDGES, citizen of the United States, and resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dental Impression-Trays, of which the following is a full, clear, and exact specification.

This invention relates to improvements in dental impression trays which for sanitary purposes have heretofore been constructed from non-metallic materials consisting of celluloid, water-proof paper and the like, having a detachable metallic handle provided with slots engaging headed pins fixed to the tray or else with lugs projecting through slots or loops formed from the material of the tray, the handle for the purposes of the slot and loop construction, consisting of two members pivoted together.

Dental impressions trays constructed from paper and celluloid, as above described, are necessarily quite thin and accordingly flexible and as a result of which detachable handle trays, prior to my invention, have been practical only when used in exceptionally favorable cases, that is to say, wherein there is little or no stress upon the cup or handle of the tray for its removal after the impression plaster or other material, has set and is partially hardened.

In other words, in the majority of cases standing teeth or "under-cuts" of the jaw processes form resistances which cause the handle to produce an undue stress upon the tray in removing the tray which after impression material is hardened, with the result that as heretofore constructed, it has been practically impossible to detach the impression material from the standing teeth or undercuts of the jaw process without either cracking or so distorting the material as to make impossible the restoration of the broken off pieces to their operative position, as must be for securing a perfect impression and for the purpose of a perfect casting.

The object of my invention is to provide a flexible or pliable dental tray, the handle for which is removable from the cup, with means cooperating with the handle to secure the cup in its operative position and adapted to impart a rigidity to and relieve the cup from all undue strain, flex and bend it during the removal of the impression from the mouth, and whereby a perfect impression may be

secured and the positive accurate replacement of the fractured parts of the impression may be made.

More specifically stated, the object of my invention is to provide a normally flexible and pliable dental impression tray having a metallic handle, with a metallic reinforcing plate located internally thereof detachably connected with the handle and with the tray and adapted to stiffen the tray against bending or flexing, under all strain or stress to which the tray may be subjected, in moving the hardened impression material in and from the mouth, and whereby a perfect impression may be made, and fractured parts may be replaced, with the same facility and accuracy as with and under all the conditions common to the use of metallic trays heretofore employed.

With these ends in view my invention finds embodiment in certain features of novelty in construction, combination, and arrangement of parts, by which said object and certain other objects are attained, all as hereinafter described with reference to accompanying drawings and more particularly pointed out in the claims.

In said drawings, Figure 1 illustrates a top plan view of a dental impression tray, in which my invention finds its embodiment.

Fig. 2 has a bottom plan view of the same.

Fig. 3 is a section taken on the line 3, 3, of Fig. 2.

Similar letters of reference indicate the same parts in the several figures of the drawings.

The cup 4 is of the usual form and size for dental trays, and is preferably formed of celluloid, but may be from water-proof paper or card board in the manner usual for the construction of dental cups of either from these two materials.

The handle 5 for the cup is provided with the usual curved branching arms 6 and 7, the end of arm 6 being provided at its inner end with a slot 8 and the arm 7 with an end slot 9 and at their juncture with a slot 10 extending at an oblique angle to the center of length of handle 5; the several slots 8, 9 and 10 are so arranged that they are adapted for detachably engaging with headed pins 11, 12 and 13, projecting through perforations 14 in cup 4.

Headed pins 11, 12 and 13 are rigidly secured at their inner ends to a U-shaped plate

15, extending over and following the line of the gums and therefore such human teeth and roots as may be in place.

Cup 4 is preferably formed with a depressed flat surface 16, for the plate and the handle, preventing the tray from being distorted when clamping it between the plate and arms, the width of the plate and the arms being sufficiently narrow to adapt the same plate and handle to cups differing in sizes and corresponding in the width of their flattened surfaces respectively opposed thereto.

The material of the plate and the handle are preferably formed from sheet metal but may be from any other material sufficiently rigid for preventing the distortion of the impression, from the flexing of the cup under all strain or stress to which the cup may be exposed in taking the impression, and particularly from loosening the impression material after it is hardened, as must be for securing a perfect impression and the accurate replacement of broken parts and pieces.

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

1. A dental impression tray comprising in combination a cup, a handle therefor, a reinforcing means for and separate from the cup and means detachably connecting the handle with the cup and reinforcing means.

2. A dental impression tray comprising in combination a cup, a handle, a non-flexible means separate from and adapted for reinforcing said cup and handle, and means for detachably connecting the cup with said handle and reinforcing means.

3. A dental impression tray comprising in combination a cup constructed from normally flexible material, a substantially non-flexible detachable plate, located internally of the cup, between which plate and handle and the cup is confined, and means for detachably connecting said plate with the cup and handle.

4. A dental impression tray comprising in combination a cup, an internally U-shaped plate reinforcing said cup, a handle therefor, a fastening means secured to the plate projecting through the perforations in the cup and detachably connected with the handle.

5. A dental impression tray comprising in combination a cup the material of which is substantially thin and normally flexible, a substantially rigid U-shaped plate located internally thereof, a handle between which said plate and cup is located and means for detachably connecting and adjustably clamping the cup between the handle and plate.

6. A dental impression tray comprising in combination a cup of normally flexible material, a substantially rigid handle therefor provided with bifurcated arms for supporting the cup, a U-shaped substantially rigid plate located internally of the cup, opposed to said arms, and a fastening means fixed to said plate and adapted to be detachably connected with the handle for securing the cup in its operative position between said handle and plate.

7. A dental impression tray comprising in combination a cup of normally thin and flexible material the bottom of which is provided with perforations, a substantially rigid U-shaped plate located internally thereof having pins rigidly secured thereto, projecting through the cup perforations, a handle detachably and adjustably connected with said pins, said cup being provided with flat surface opposing the handle and plate from depressions in the cup.

In witness whereof, I have hereunto set my hand and affixed my seal this 20th day of August, A. D. 1918.

JOSIAH S. BRIDGES. [L. S.]

Witnesses:

C. M. STUMCKE,
Jno. G. ELLIOTT.