W. C. J. GUILFORD.

IMPRESSION DEVICE FOR DENTAL USE.

APPLICATION FILED JAN. 7, 1910.

1,093,125. Patented Apr. 14, 1914.

Fig. 1.

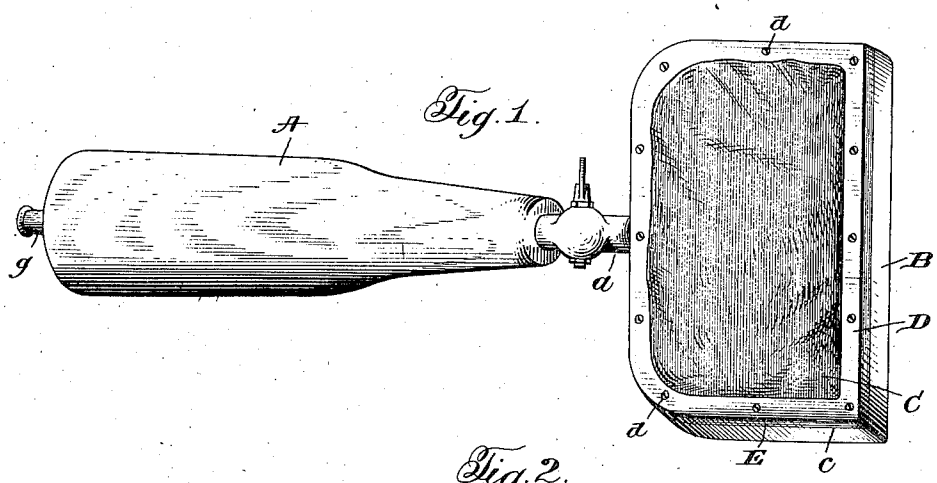


Fig. 2.

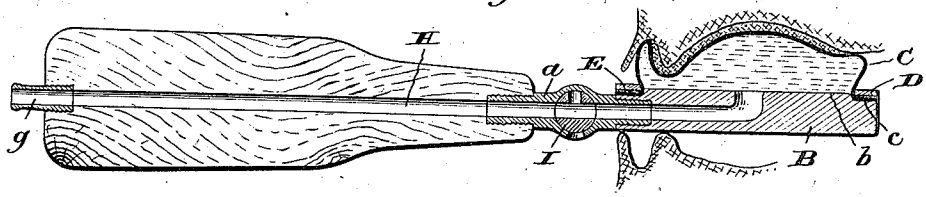


Fig. 7.

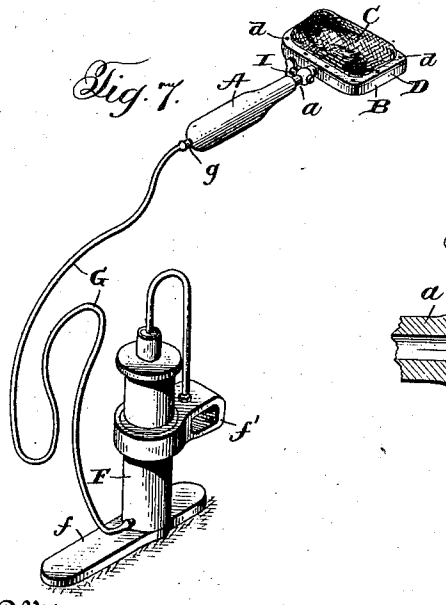


Fig. 3.

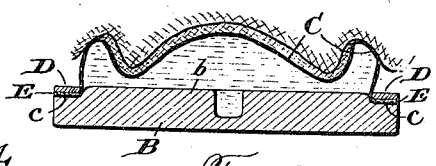


Fig. 4.

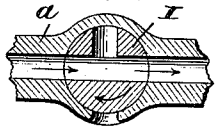


Fig. 5.

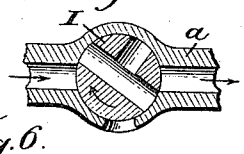
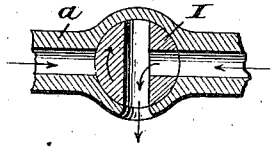


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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IMPRESSION DEVICE FOR DENTAL USE.

1,093,125. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed January 7, 1910. Serial No. 536,913.

To all whom it may concern:

Be it known that I, WILLIAM C. J. GUILFORD, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Impression Devices for Dental Use, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to implements designed for obtaining accurate impressions of the mouth from which dental plates or fittings may be formed, the primary object of the invention residing in the provision of improved instrumentalities facilitating the handling and manipulation of a device of the character stated, and means insuring accurate impressions of the minutest variations or conditions of the parts to be treated.

The invention embraces a hand tool carrying an expansible member or former adapted to directly support the sheet or blank adapted to constitute the impression, said former being provided with means, preferably operable by foot power, for expanding the same under equal pressure throughout the extent thereof against the impression sheet or blank to correspondingly force the sheet or blank or distribute the material thereof against the portion of the mouth being treated, the surface contour of the former and the blank conforming accurately to the surface variations or conditions.

In the drawings:—Figure 1 is a perspective view of the device, Figs. 2 and 3 are respectively longitudinal and cross sectional views of the hand operated portion or tool showing the former in its expanded condition to conform the blank carried thereby to the mouth, Figs. 4, 5 and 6 are detail sectional views through the stem of Fig. 1 showing the different positions of the controlling valve, and Fig. 7 is a perspective view of the device and its operating pump.

Referring more specifically to the drawings wherein like reference characters designate corresponding parts in the several views, A represents a hollow handle provided with a hollow neck portion *a* having a threaded engagement with one edge of a base plate B adapted to rest against either the upper or lower edge of the mouth, dependent upon the jaw of which the impression is desired to be taken. The base plate B has a centrally disposed panel *b* over which a rubber expansible sheet C is secured, the margin *c* of said sheet being confined against the depressed edge of the base B surrounding the panel *b* thereof by an open frame D laid thereover with a felt or other packing E therebetween and secured to the base through the medium of detachable screws or rivets *d*. It will be observed that the rubber sheet C is not only sufficient in length and breadth to correspond to the panel *b* of the base, but is quite loose thereon or enlarged to provide an ample amount of material for expansion into the roof or base of the mouth and upwardly or downwardly around the edges of the jaws or teeth, as the case may be, it being understood that this expansible sheet is adapted to directly support and carry the wax or other sheet or blank of conformable material to force the same under substantially even pressure throughout the extent thereof against the portion of the mouth being treated to secure an impression conforming exactly to the minutest or detail conditions of the mouth.

Heretofore in this art, so far as I am aware, the same has advanced simply to the extent that a rigid impression tray has been provided, the same adapted to carry the impression substance, and said tray being provided with a handle adapted to be used by the operator in forcing and rocking the tray and substance against the portion of the mouth being treated to conform the substance to the mouth, but in the use of such a device, as is apparent, every slight change in the direction of application of force or movement of the tray, correspondingly creates a different or new impression; or the tray has been provided with openings covered by a canvas or like floor adapted to be manipulated through said openings, resulting in uneven pressures at different points by the hands of the operator, and requiring impressions at separate points at different times. These objections I desire to overcome, and do so as an incident to the placing of the tool in the mouth, and utilizing the base B as a fixed rest bearing against one jaw to resist the expansion of the former C and the blank or sheet carried thereby against the other jaw, and owing to the character of the said former C, and the implement being simply held in one fixed position

by the hands of the operator, the impression thus obtained in a single operation is accurate in every respect and conforms to minutest conditions of the mouth not otherwise obtainable.

To supply the necessary operating medium to the former C, and to leave both hands of the operator free for manipulating the tool, I provide a foot pump F provided with a steadying or holding foot portion *f* for engagement by one foot of the operator, and an operating stirrup *f'* for engagement by the other foot of the operator, a long flexible tube G extending from the discharge port of the pump to a nipple *g* on the end of the handle A communicating with the hollow interior or longitudinal passage H extending through the handle and opening to the space between the base B and the former C. A valve I in the neck *a* of the handle controls the supply of the fluid, said valve having a three-way port adapted in one position to admit the fluid from the pump beneath the former C to expand the same, in its second position to cut off the supply and hold the former in its expanded condition while the conformed blank or impression sheet is becoming set, and finally to discharge to the exterior of the device to relieve the pressure beneath the former and to permit ready withdrawal of the same, and the resultant impression from the mouth. Different positions of the valve are indicated in Figs. 4, 5 and 6.

While I have herein disclosed one embodiment of my invention, other embodiments may be resorted to, as will be apparent to those skilled in the art, without departing from the spirit of the invention.

I will not herein describe in detail or claim the pump element of my combination inasmuch as the same *per se*, constitutes the subject matter of a co-pending application executed of even date herewith.

Having thus described the invention, what is claimed is:—

1. A device of the character described comprising a handle, a support carried by the handle adapted to rest against a jaw, an expansible former of a character and formation to conform to the irregular surfaces of mouths carried by the support and adapted to carry a conformable substance and force the same into engagement with the mouth to obtain an impression of the same, and fluid pressure means for expanding the expansible former to force the same and the conformable substance carried thereby over the parts of the mouth to be treated.

2. A device of the character described comprising a handle, a support carried by the handle adapted to rest against a jaw, and an expansible former of a character and formation to conform to the irregular surfaces of mouths carried by the support adapted to carry a conformable substance and force the same into engagement with the mouth to obtain an impression of the same, in combination with means for supplying uniform fluid pressure to said former through the extent of the same, said means comprising a supply medium and a pipe connection from the same to the former, said pipe connection being connected to the end of the handle and communicating through the handle to the former.

3. A device of the character described comprising a support adapted to rest against a jaw, and an expansible former of a character and formation to conform to the irregular surfaces of mouths carried by the support and adapted to carry a conformable substance, means for supplying pressure to the former, to force the same and said substance over the parts of the mouth to be treated, and controlling means for maintaining the pressure in the former and for relieving the pressure to permit the former to collapse.

4. A device of the character described comprising a support formed for insertion in the mouth, an expansible former of a character and formation to conform to the irregular surfaces of mouths, carried by the support, and adapted to carry a conformable substance, and means constituting part of the device and in addition to the support, for expanding the expansible former to force the same and said substance over the parts of the mouth to be treated.

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

WILLIAM C. J. GUILFORD.

Witnesses:

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