

No. 880,328.

PATENTED FEB. 25, 1908.

R. E. SADLER.
COMBINED IMPRESSION TRAY AND CHEEK DISTENDER.
APPLICATION FILED MAY 13, 1907.

FIG. 1.

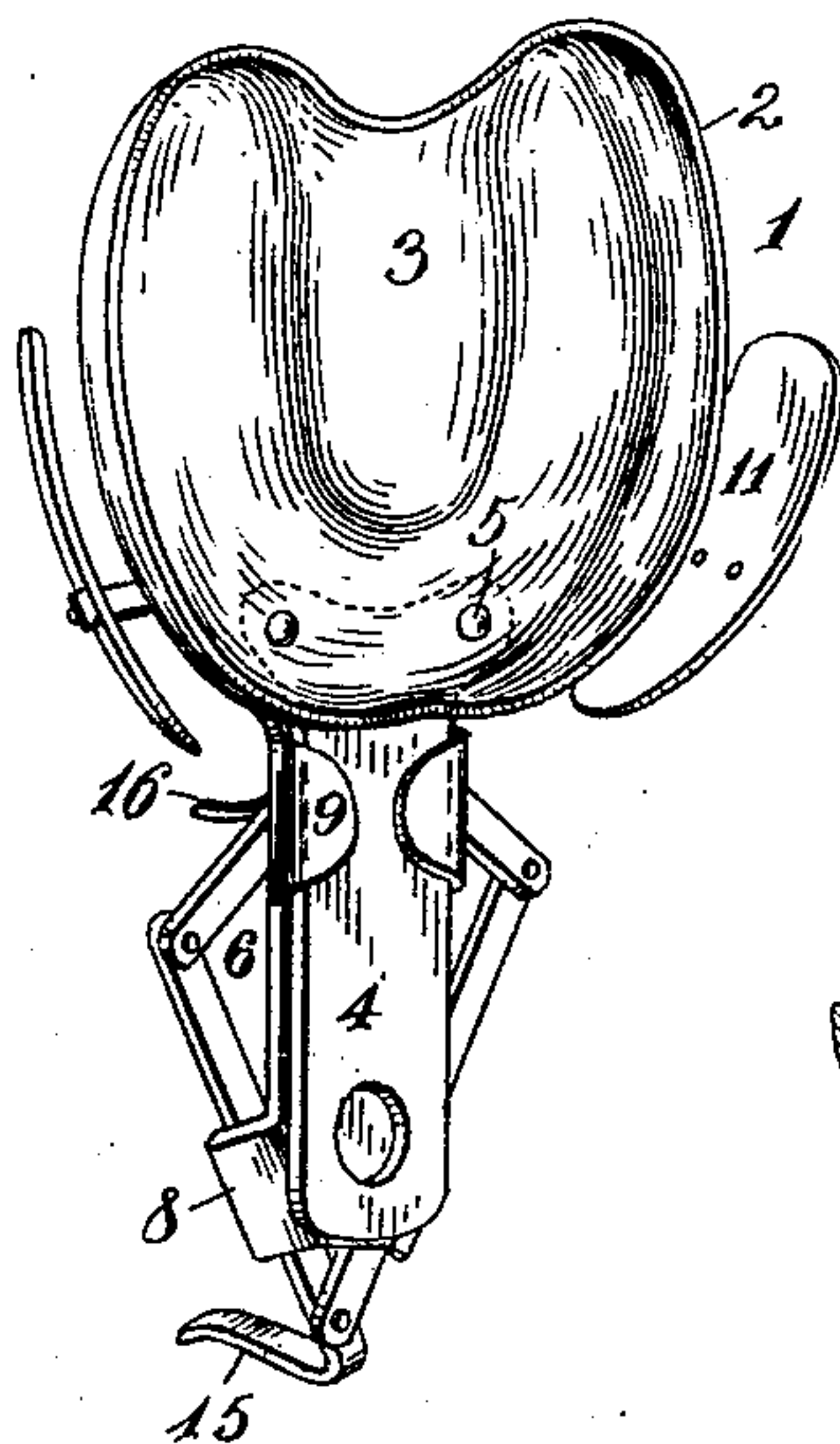


FIG. 3.

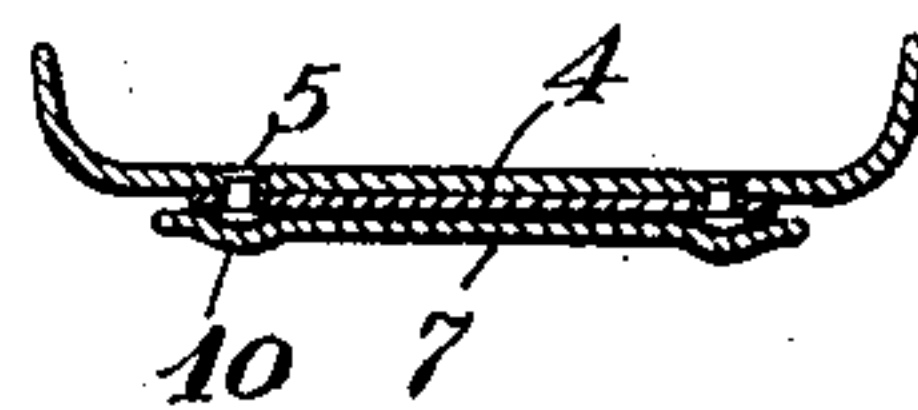
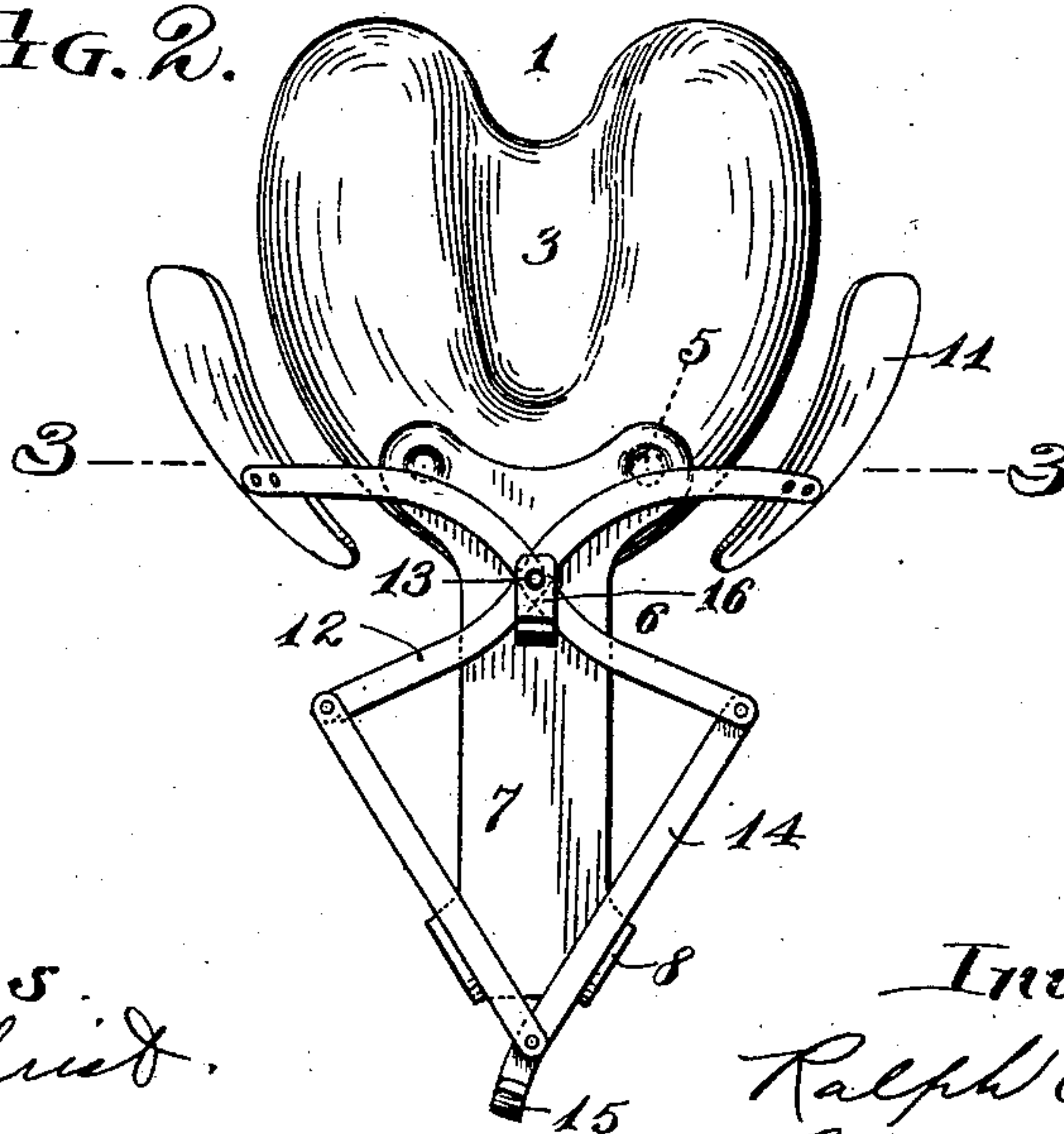


FIG. 2.



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UNITED STATES PATENT OFFICE.

RALPH E. SADLER, OF CLEVELAND, OHIO.

COMBINED IMPRESSION-TRAY AND CHEEK-DISTENDER.

No. 880,328.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed May 13, 1907. Serial No. 373,255.

To all whom it may concern:

Be it known that I, RALPH E. SADLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in a Combined Impression-Tray and Cheek-Distender, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to spreading or distending devices for use by dentists, and more especially to a device of this character which may be combined with dental impression trays, and has for its object to provide a spreading device which may be removably attached to the tray, and which may be conveniently operated to distend the cheeks of the patient while applying the tray in proper position to the jaws of the patient to enable an efficient impression to be taken in the plaster-of-paris supported by the tray.

In the use of trays now on the market, it is difficult to position the same properly with respect to the jaws of the patient owing to the action of the cheeks and lips of the patient in forcing the trays inwardly and backwardly, thereby bringing the gums in close proximity to the front and sides of the tray, frequently leaving no substantial thickness of material between the impression and the outer edge of the cast. It has been attempted to overcome this difficulty by providing distending devices which are inserted into the mouth and then, after the cheeks have been distended, inserting the tray and placing the same in proper position with respect to the jaw. This requires the employment of one hand of the operator to manipulate the distender and the employment of the other hand for the purpose of applying the tray. Furthermore, the distending devices with which I am familiar are productive of discomfort to the patient.

It is a further purpose of this invention to combine with a tray a distending appliance which may be opened, after the insertion of the tray into the mouth of the patient, to permit the inspection of the jaw and the proper application of the tray thereto, after which, by merely releasing the distending appliance, the same will be collapsed by the tension of the cheeks and lips of the patient, and no more discomfort thereafter will be caused to the patient during the time required for the plaster-of-paris to set than is

due to the presence of the tray itself in the mouth.

I attain these results by the embodiment of my invention illustrated in the drawings, wherein

Figure 1 represents a perspective view of a dental tray having my distender applied thereto. Fig. 2 represents a bottom plan view of the same, and Fig. 3 a sectional view on the line 3—3 of Fig. 2, the distending wings being omitted.

In describing my invention, the terms "top" and "bottom" will be employed for convenience of description, though, as will be obvious, the tray herein shown may be reversed in order to enable it to be applied to the lower jaw of the patient.

Describing the parts by reference numerals, 1 denotes an impression tray of ordinary construction, the same comprising a hollow body of proper shape to receive the impression material, as plaster-of-paris, and being provided with a peripheral flange 2 and with an elevated portion 3, between which and the flange 2 there is provided a U-shaped pocket for the reception of the impression material. The tray is provided with a handle 4 which is secured to the under front side of the tray by means of rivets 5. 6 denotes the distending device which is removably applied to the tray, the same comprising a base plate 7 provided at its end with a pair of downwardly projecting convergent flanges 8 and a pair of upwardly and inwardly projecting flanges 9 which are adapted to slidably engage the handle 4 of the tray. The inner end of base plate 7 is of the same general contour as the corresponding end of handle 4 and is provided with indentations 10 enabling the inner end to be slipped over the heads of the rivets 5 and thus assist in retaining the attachment frictionally on the handle 4. The base plate 7 supports the distending or cheek members 11 by means of crossed levers 12, which are pivoted to the base plate 7 at 13, said levers being so curved that, when operated, the cheek plates (which are shaped to conform to the curvature of the corresponding portions of the flange 2) will be maintained nearly parallel with the said flange when spread therefrom, as will appear from Figs. 1 and 2 of the drawing. The front ends of the members 11 will preferably be reduced in height as compared with the rear ends and will be rounded at such ends, to avoid discomfort to the patient. The front ends of levers 12 are

connected with a pair of links 14, which are joined at their front or outer ends, one of said links being provided with an operating handle 15, the construction of the links and levers forming a "lazy tongs" for operating the members 11. A finger member 16 is also supported by the base plate, conveniently by the same pin 13 on which levers 12 are pivoted.

In operation, the spreading attachment is conveniently associated with the handle 4 by applying the flanges 9 to said handle and sliding the base plate inwardly until the inner end of said plate rides over the heads of the rivets 5. The flanges 9 and the frictional engagement of the base plate with handle 4 and particularly with the inner end of said handle and the rivet heads retain the spreading attachment in place on the tray. The tray and attached spreader are inserted into the mouth of the patient with the spreader in collapsed condition, that is to say, with the members 11 resting against the outer surface of the flange 2. When inserted into the mouth of the patient, the operator grasps the finger piece 16 with the fore-finger and pushes inwardly on the handle 15 with the thumb, thereby spreading out the members 11 and distending the cheeks of the patient. He can then make an inspection of the mouth and properly position the tray with reference to the jaw, the impression of which it is desired to make. When positioned, the pressure on 15 is relaxed, and the tension of the cheeks naturally closes the spreading members 11 against the adjacent portion of the flange 2. During the time required for making the impression, the patient is put to no greater discomfort than would be caused by the tray alone. After the tray has been removed from the mouth, the spreading attachment, being retained thereon by friction, may be readily disengaged for the purpose of cleansing the same, and will not interfere with the subsequent manipulation of the tray and the removal of the cast therefrom.

While I have shown but one embodiment of my invention in the drawing and have necessarily described the same in detail, it will be evident that the details thereof may be modified without avoiding the spirit of my invention.

Having described my invention, I claim:

1. A device for the purpose specified comprising a base plate, a pair of levers pivoted thereto, a pair of curved spreading members carried by the inner ends of said levers, and operating links connected with said levers, substantially as specified.

2. In a device for the purpose specified, the combination of a base plate, a pair of curved levers pivoted thereto, a spreading member operatively connected to each of said levers, links connected with said levers, and an operating member for said links, substantially as specified.

3. In a device for the purpose specified, the combination of a base plate, a pair of levers pivoted thereto, a spreading member operatively connected to each of said levers, and operating means for said levers, substantially as specified.

4. A device for the purpose specified comprising a base plate, a pair of levers pivoted thereto, distending members carried by said levers, links connected to said levers, and flanges projecting from said base plate and adapted to engage said links, substantially as specified.

5. A device for the purpose specified comprising a base plate having flanges adapted to be applied to the handle of an impression tray, a pair of levers pivoted to said base plate, distending members carried by said levers, and operating means for said levers, substantially as specified.

6. A device for the purpose specified comprising a base plate having flanges adapted to slidably engage the handle of an impression tray, a pair of distending members carried by the base plate, and means for operating the same, substantially as specified.

7. The combination, with an impression tray having a handle, of a distending device adapted to be applied to said handle and to be carried thereby, said distending device being provided with a pair of distending members, and means for moving said members away from the sides of the tray, substantially as specified.

8. The combination, with a dental impression tray, of a pair of distending members combined therewith, and operating means for moving said members away from said tray to distend the cheeks of the patient, substantially as specified.

9. The combination, with an impression tray having a handle, of a distending device removably fitted to said handle and comprising a pair of cheek distending members and operating means therefor, substantially as specified.

10. The combination, with a dental impression tray having a handle, of a spreading device combined therewith, said device comprising a base plate having means for engaging the handle and being provided with a pair of convergent downwardly projecting flanges, a pair of levers pivoted to said base plate and provided with cheek-distending members, a pair of links connected with the opposite ends of said levers and extending between said downwardly projecting flanges, and an operating member for said links, substantially as specified.

11. The combination, with a dental impression tray having a handle riveted to the under surface thereof, of a base plate the inner end whereof is provided with recesses adapted to receive the heads of said rivets and to frictionally engage the same, a pair of

cheek-distending devices, and means carried by said base plate for operating said devices, substantially as specified.

5 12. The combination, with a dental impression tray, of a base plate adapted to be detachably secured thereto, a pair of cheek-distending members, and operating devices therefor carried by said base plate, substantially as specified.

10 13. A device for the purpose specified comprising a base plate, a pair of levers pivoted thereto, distending members carried by said levers, links connected to said levers, an operating handle for said links, and a finger projection carried by said plate, substantially as specified.

14. A device for the purpose specified comprising a base plate, a pair of crossed levers pivotally connected at their intersection to said plate, a curved spreading member connected to the inner end of each of said levers, a link connected to the outer end of each of said levers, and a common operating handle for both of said links, substantially as specified.

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

RALPH E. SADLER.

Witnesses:

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W. L. McGARRELL.