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2,909,806

DENTAL CASTINGS

Filed Sept. 25, 1956

2 Sheets-Sheet 1

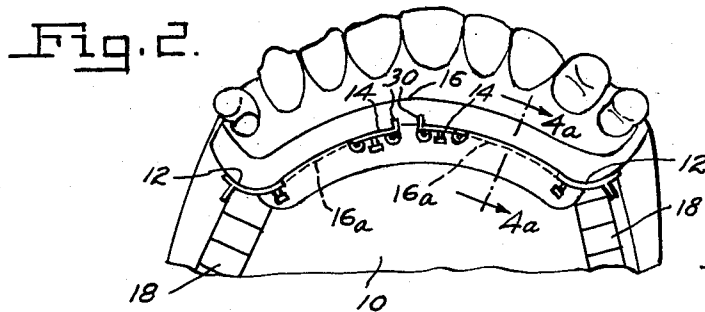
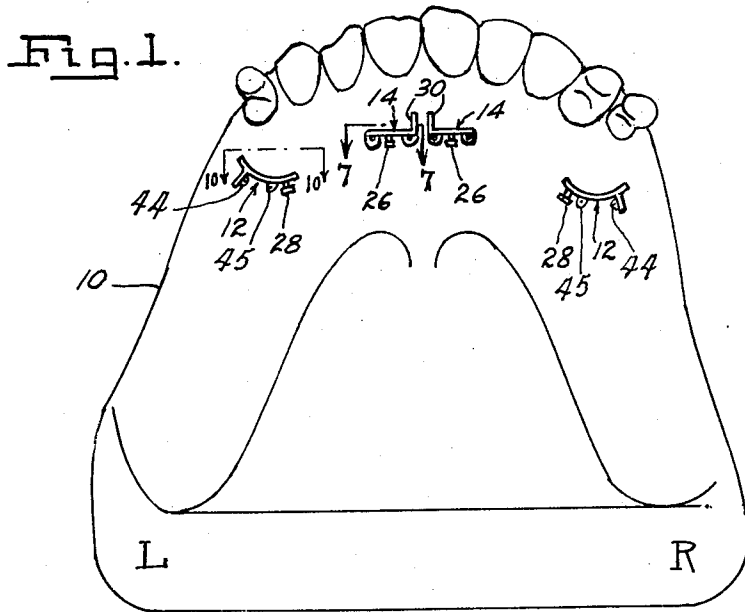
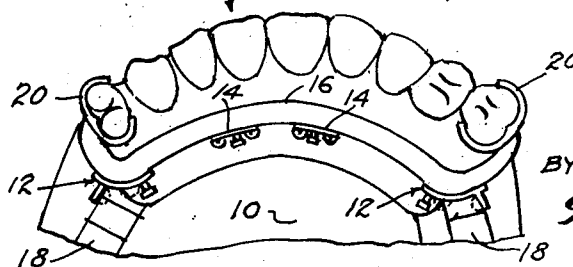


Fig. 4.



Fig. 3.



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2 Sheets-Sheet 2

Fig. 5.

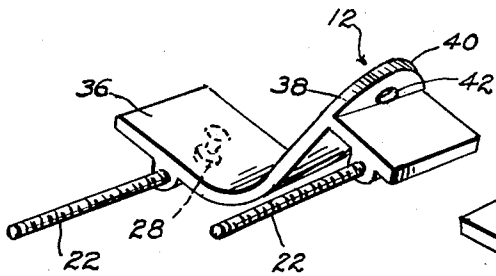


Fig. 6.

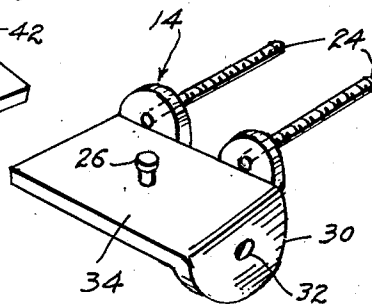


Fig. 8.

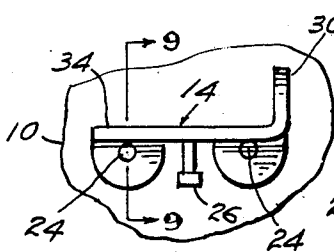


Fig. 9.

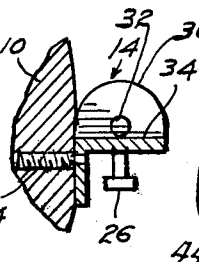


Fig. 11.

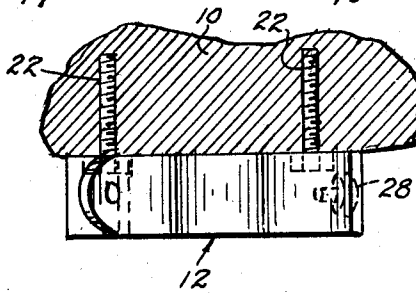
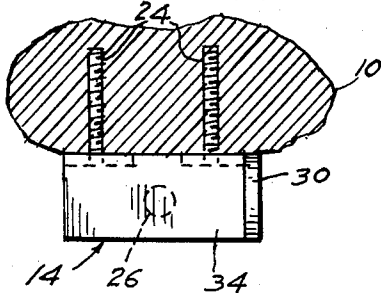
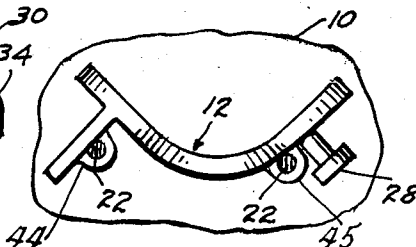


Fig. 7.

Fig. 10.

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1

2,909,806

DENTAL CASTINGS

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5 Claims. (Cl. 18—5.7)

This invention relates to improvements in dental castings and more particularly to split stress-breaker adaptors.

A primary object of this invention is to provide a method of dental casting whereby a partial plate may be cast all in one operation, without any welding, this being accomplished by using my new stress-breaker adaptors.

The old method requires that a lower lingual bar be cast in two half sections and so that the upper and lower half of the bar may be grooved for welding together to form a split bar stress-breaker.

An important object is to provide a more accurate stress-breaker partial that is simple and practical and requires less time to produce, permitting delivery in about four hours instead of two or three days.

With the foregoing and additional objects in view the invention resides in the combinations, arrangements and functional relationship of elements as set forth in the following description and then particularly pointed out in the appended claims.

Referring to the accompanying drawings, illustrative of a preferred embodiment of the invention,

Fig. 1 is a model of the mouth used in the first step of the method.

Fig. 2 shows the parts assembled on said model.

Fig. 3 shows the waxed lingual bar with the parts assembled on the model.

Fig. 4 shows the completed lingual bar on the model.

Fig. 4a is a sectional detail illustrating the mounting of the split lingual bar.

Figs. 5 and 6 are perspective views of the two lined split stressbreaker adaptors.

Fig. 7 is a section on line 7—7 of Fig. 1, on a much larger scale.

Fig. 8 is a side view of the structure shown in Fig. 7.

Fig. 9 is a section on line 9—9 of Fig. 8.

Fig. 10 is an elevation along line 10—10 of Fig. 1, partly in section the scale being much enlarged.

Fig. 11 is a bottom plan view of the structure shown in Fig. 10.

In the first four views of the drawings is shown a refractory model 10 of the mouth. In the preparation for and construction of a full lower lingual bar split stressbreaker partial plate, the use is made of four metal, lineal stress-breaker adaptors, such as 12 of Fig. 5 twice, and 14 of Fig. 6 twice.

A split lingual bar 16, retention saddles 18, and back action clasps 20 are outlined on a refractory investment model of the mouth with an indelible pencil, using the line of the split in the bar on the model as a guide for adapting all four stressbreaker adaptors 12 and 14 to the bar.

Using the eye as a guide the operator holds the adaptor 12 by its right distal side in his hand, leveling stress plane of same with split indelible pencil line on model on farthestmost distal end of bar where retention saddles 18 and bar 16 join. Next he will press threaded rods 22 against model so as to leave slight indentations, and then

2

will drill holes in same. The same procedure will be followed for the left side.

With all eight holes drilled for the four metal stress-breaker adaptors 12 and 14 the operator will then place all four adaptors into position on the model and will draw vertical lines on the model at mesial end of stress planes 12, doing same at distal ends of stress planes 14.

Owing to the symmetrical arrangement of the four adaptors, two of them being located near the mid-width of the model, and each of the other two farther from its mid-width, a sturdy, well balanced structure results.

Next cement is placed on the threaded rods 22 and 24 of all four adaptors and said rods, carried respectively by ears 44 and 45, are inserted into their holes and the cement is allowed ten minutes to set. Partial outlined bar, as in Fig. 2 is now ready for waxing.

The lower portion of lingual bar 16 is waxed starting from mesial end of adaptor 14, then covering mushroom retainer on base. Waxing is proceeded with so as to include headed stud 26, Fig. 6, to top level of adaptor 14 and level with lower portion of groove that was cut in model over to top level of adaptor 12, covering headed stud 28 and distal surface of adaptor 12, and then attaching retention saddle 18 to wax on distal surface of adaptor 12. After the right hand lower half of the lingual bar is completely waxed the same procedure is followed for the left half thereof.

A non-fusing compound is squeezed around ear 30 and aperture 32 of adaptor 14, across plate 34 of same, into groove cut into model; then across top of plate 36 of adaptor 12, up inclined surface 38 of same, around ear 40 and into aperture 42. After the right side has been completed in the aforesaid manner, the same procedure is followed for the left side.

The upper portion of the lingual bar 16 is now waxed over the non-fusing compound and to the model from the right hand side of the bar, completely around over the left side of the bar. The space between ears 30, Fig. 3, is then filled with wax, connecting same to upper half of waxed bar. Two back action clasps 20 are then waxed to model and connected to upper half of waxed bar.

The case is now completely waxed, ready for investing and placing in the oven. While the case is in the oven at a low temperature the non-fusing compound becomes baked and hard, forming a very smooth surface, to which the metal will not fuse or adhere.

After the case is cast in metal the lingual surface of the bar is tissue bearing and has an overlap of baked non-fusing compound where groove 16a in investment model was cut. The excess compound is ground off level with the bar. The threaded rods 22 and 24 on all four adaptors are cut off, together with ears 40 on adaptors 12. Lingual split stressbreaker bar 16 is now complete, see Fig. 4, and is ready for grinding and finishing.

Numerous changes may be made in the size and shape of parts without departing from the spirit of the invention or exceeding the scope of the appended claims.

I claim:

1. The method of constructing a lingual bar and lower split stressbreaker partials which includes the steps of applying to a model of the month four adaptors carrying headed studs and threaded rods, drilling holes in the model for said rods, replacing said adaptors in position upon the model, cementing said rods in position is said holes, waxing the adaptors and the lower portion of the lingual bar, attaching retention saddles to wax on each side, and then in finally waxing the aforementioned parts in place in their operative positions.

2. In a structure of the kind described, an adaptor which comprises a body portion consisting of an elongated, approximately rectangular stressbreaking plate

3

which has its midlength portion bent across its thickness so that the end portions of said plate extend at an obtuse angle in relation to each other, thus providing the plate with outer and inner faces, one of said end portions of said plate carrying an extension which projects angularly from its outer face, attaching means carried by said extension to aid in attaching the adaptor to a model of the mouth, and additional attaching means for the adaptor carried by the opposite end portion of said plate and projecting from its outer face.

3. The subject matter of claim 2, and each of said attaching means including a small rod to fit a bore provided for it in the model.

4. In combination with the lingual portion of a refractory investment casting model, four adaptors mounted upon said lingual portion in a symmetrically arranged manner, two of said adaptors being located near the mid-width of the model and each of the other two being

4

located farther from the mid-width of the model, and two rods secured to each of said adaptors, a portion of each of said rods being imbedded and cemented into holes drilled into said model.

5. In combination with the lingual portion of a refractory investment casting model, a plurality of adaptors mounted upon said lingual portion in a symmetrically arranged manner in relation to the length and width of the model, and two rods secured to each of said adaptors, said rods each having a threaded portion, said threaded portions being imbedded and cemented into holes drilled into said model.

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