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MOUNTING FRAME FOR DENTAL ARTICULATORS

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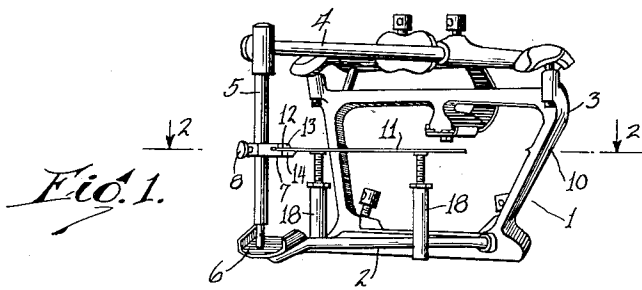


Fig. 1.

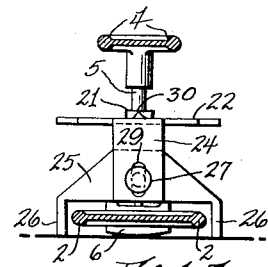


Fig. 5.

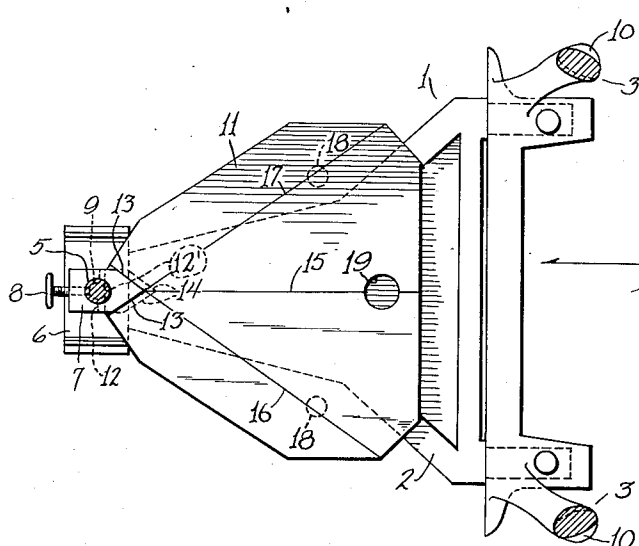


Fig. 2.

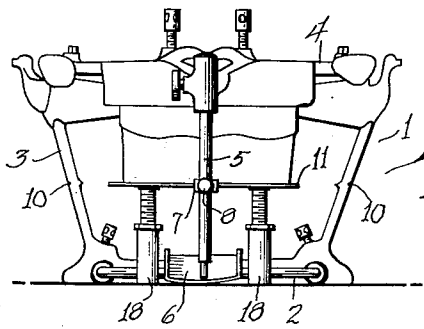


Fig. 3.

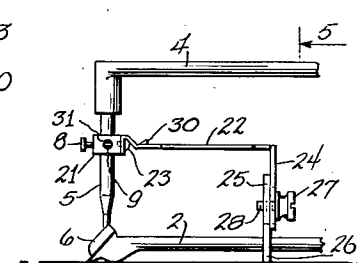


Fig. 4.

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MOUNTING FRAME FOR DENTAL ARTICULATORS

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6 Claims. (Cl. 32—32)

The present invention relates to improvements in mounting frames for dental articulators, and the principal object of the invention is to provide means for accurately securing models and bite blocks to an articulator without error or loss of time.

A further object of the invention is to locate the upper bite blocks and casts in their correct anatomical relationship and to retain them in this relationship without chance of error while they are being secured to the articulator by the aid of plaster.

A further object of the invention is to provide means for transferring and securing bite relationships on a number of articulators at the same time by the use of a plurality of mounting frames, whereby one mix of plaster may be utilized for all cases worked upon, and the bite blocks and models of each device may be accurately secured without sacrifice of time or chance of error.

Further objects and advantages of my invention will appear as the specification proceeds.

The preferred forms of my invention are illustrated in the accompanying drawing, in which

Figure 1 shows a perspective view of a standard articulator having my mounting frame attached thereto;

Figure 2 a horizontal section through the articulator taken along line 2—2 of Figure 1;

Figure 3 a front view of the articulator with a cast in place upon my mounting frame;

Figure 4 a side view of a modified form of mounting frame, a portion only of the articulator being shown; and

Figure 5 a transverse section taken along line 5—5 of Figure 4.

While I have shown only the preferred forms of my invention, it will be understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

The articulator 1 may be of any approved standard form and comprises a lower bow 2 having a substantially vertical frame 3 rising from the rear end thereof, and an upper bow 4 joined to the vertical frame in the peculiar manner used in dental articulators for the purpose of reproducing average movement of mastication of the human jaw. Since the articulator is of standard form it is not necessary to describe the particular construction.

The front end of the upper bow has an incisal guide pin 5 projecting downwardly therefrom, and the lower end of this guide pin rides on an inclined guide plate 6 provided at the front end of

the lower bow. An indicator 7 is secured to an intermediate portion of the incisal guide pin by means of a set screw 8 extending into a groove 9 in the guide pin, and this indicator is arranged in such a manner as to define the occlusal plane of the apparatus which substantially corresponds to the line marked 2—2 in Figure 1. This occlusal plane is further defined in the standard articulator by notches 10 provided in the outer faces of the vertical frame, and in standard practice it is customary to provide a visible outline for the occlusal plane by means of a rubber band or string guided through the notches in the upright frame members, and around the center of the set screw 8. This manner of defining the occlusal plane is rather awkward since it is very easily disturbed by the rubber band or string sliding off, and frequently interferes with a quick and accurate positioning of the model relative to the articulator.

In my invention, instead of relying on a rubber band or string to define the occlusal plane, I provide the plate 11 as a positive support for the model or cast to be built up against the upper bow. This plate 11 is supported in a slit 12 provided in the occlusal plane indicator 7, and the plate itself is preferably made substantially in the form of a triangle so as to substantially correspond to the outlines of a model or cast. The slit 12 in the indicator preferably extends to the depth of the groove 9 in the guide pin and the plate is preferably formed with a centering notch 12' in its apex which abuts against the bottom of the groove 9. The indicator is shaped so as to provide tapered sides 13 and 14 above and below the plate 11, the tapered sides meeting at points lying on the vertical median plane of the apparatus. The plate itself is preferably marked symmetrically on opposite sides of the median vertical plane to facilitate the orientation of the plate. For this purpose I preferably mark the plate with a median center line 15 above and below to correspond to the median plane of the apparatus, and with angular lines 16 and 17 corresponding to the outlines of the tapered indicator above and below the plate line. For holding the plate more securely in position, I also preferably provide a pair of legs 18 projecting downwardly from the plate at points sufficiently spaced from the apex of the plate to form a balanced support for the latter.

The manner of using the device will be readily understood from the foregoing description. In order to position the upper cast, I place the plate 11 in the position indicated in the three figures, and then place the cast to be secured to

the upper bow on top of the plate. Since the upper surface of the plate coincides with the occlusal plane of the articulator the cast is held in the proper position without the necessity of
 5 sighting for the occlusal plane, or of using a rubber band or string for defining the occlusal plane. If slight adjustments in a sideways direction are deemed advisable, they may be easily
 10 executed by a slight shifting of the plate in one direction or the other, the plate being firmly held in the occlusal plane by the legs and by its support in the slit of the indicator 7. When the proper position of the cast and the plate has been secured the plate will normally remain
 15 in that position, and the cast may be secured to the upper bow without any difficulty, and without any danger of the cast being accidentally disturbed while the plaster is being applied.

After the plaster has hardened, the plate 11
 20 may be easily withdrawn and hung on a convenient support, for which purpose the plate is provided with a hole 19 near the rear wall thereof.

My invention is particularly useful in larger establishments where a number of articulators
 25 are used at the same time. In that case a number of plates corresponding to the number of articulators are provided and the bite blocks may be positioned quickly and expeditiously in the various articulators and then attached to the
 30 upper bows by means of a single batch of plaster. A considerable saving in time and effort may be effected in this manner.

At times it is desirable to provide a laterally inclined frame for mounting the bite block and to accommodate those cases I provide further improvements in the modified form of mounting
 35 frame shown in Figures 4 and 5. In this form a small block 21 is substituted for the indicator 7 and the mounting frame or plate 22 is pivoted to the vertical rear wall thereof as shown at 23
 40 and the rear edge of the plate 22 has a depending flange 24 to which is pivoted a yoke shaped element 25 having two legs adapted to straddle the lower bow 2 and to rest on the supporting face
 45 for the articulator. The pivot comprises a screw 27 threaded into the yoke-shaped element as at 28 and passing through a vertical slot 29 in the flange 24. The slot is provided because there has to be a certain amount of vertical play for the
 50 pin in view of the fact that the two pivots for the plate are not alined.

To provide a guide for positioning the plate relative to the vertical median line of the articulator I slightly indent the plate to cause a tapered
 55 tooth 30 to project from the plate upwardly along the median line thereof. This manner of marking the plate allows the entire plate to be formed in a single stamping operation. The guide block has an aperture 31 in the side thereof whereby
 60 the positioning of the same on the guide pin is facilitated.

I claim:

1. The combination with a dental articulator having an incisal guide pin with a groove therein

indicating the occlusal plane, of a mounting plate, an occlusal plane indicator supporting the plate, said indicator being slidably mounted on the
 5 guide pin, securing means carried by the indicator for entering the groove for holding the indicator in the desired position, and adjustable supporting means for holding the plate in the desired position.

2. In combination, a dental articulator having an incisal guide pin and a mounting plate arranged relative to the guide pin so as to define
 10 the occlusal plane of the articulator for allowing a cast to be mounted thereon, the mounting frame being secured with freedom of tilting adjustment about a median line.

3. A mounting plate for a dental articulator having an incisal guide pin comprising a plate having means for pivoting the front edge thereof
 15 relative to the guide pin in the occlusal plane of the articulator and having a flange depending from the rear edge thereof and a yoke shaped element pivoted to the flange and having legs adapted to rest on the supporting surface for the
 20 articulator.

4. A mounting plate for a dental articulator having an incisal guide pin comprising a plate having means for pivoting the front edge thereof
 25 relative to the guide pin in the occlusal plane of the articulator and having a flange depending from the rear edge thereof and a yoke shaped element pivoted to the flange and having legs adapted to rest on the supporting surface for the
 30 articulator, the plate having a guide tooth projecting upwardly therefrom in the vertical median plane of the articulator.

5. The combination with a dental articulator having an incisal guide pin with a groove therein
 35 indicating the occlusal plane, of an occlusal indicator slidably mounted on the pin, a mounting plate pivoted to the indicator, securing means carried by the indicator for entering the groove for holding the indicator and the plate in the
 40 occlusal plane, supporting means for the other end of the plate, and means adjustably securing the supporting means to the plate and permitting vertical and angular adjustment of the plate.

6. The combination with a dental articulator having an incisal guide pin with a groove therein
 45 indicating the occlusal plane, of an occlusal indicator slidably mounted on the pin, a mounting plate pivoted to the indicator, securing means carried by the indicator for entering the groove for holding the indicator and the plate in the
 50 occlusal plane, supporting means for the other end of the plate, and means adjustably securing the supporting means to the plate and permitting vertical and angular adjustment of the plate, said angular adjustment of the plate being about
 55 a medial line extending across the plate and intersecting the guide pin axis, whereby either side of the plate will be raised the same distance the other side is lowered.

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