

March 29, 1949.

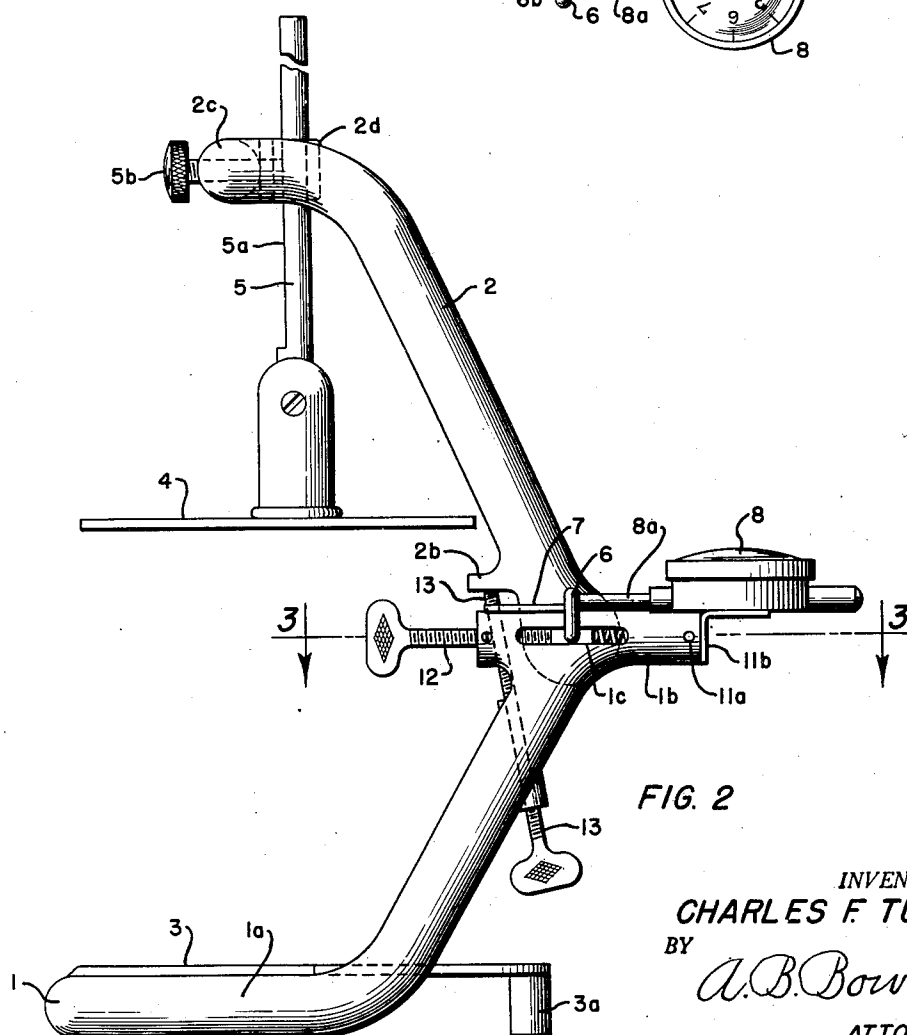
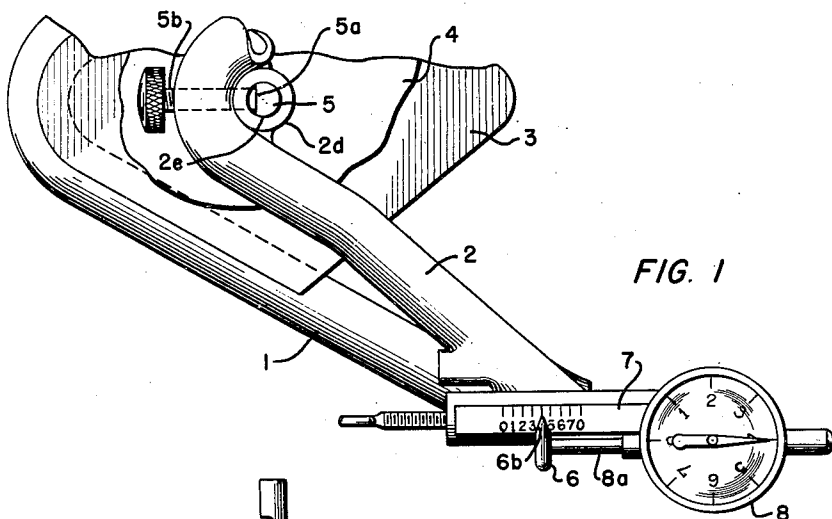
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2,465,618

ANATOMICAL ARTICULATOR WITH CONDYLE ADJUSTMENT

Filed Nov. 21, 1945

2 Sheets-Sheet 1



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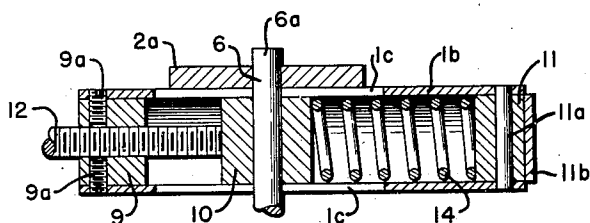


FIG. 3

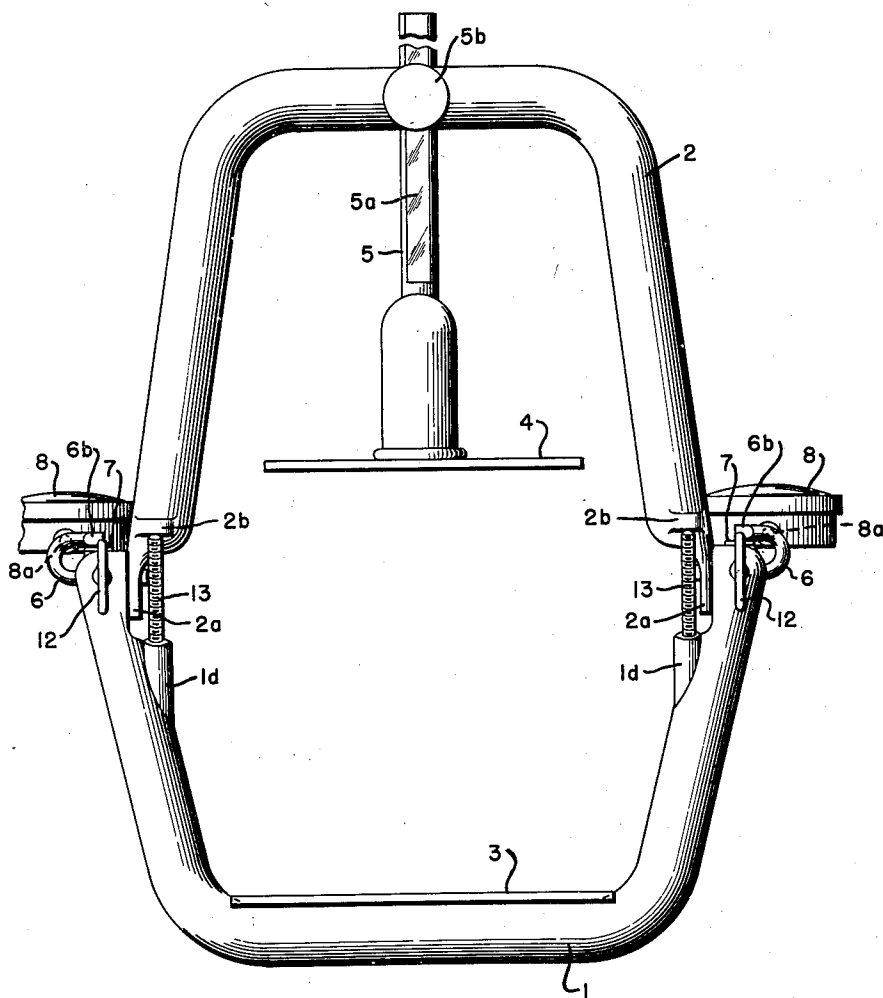


FIG. 4

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ANATOMICAL ARTICULATOR WITH
CONDYLE ADJUSTMENT

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4 Claims. (Cl. 32—32)

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My invention relates to an anatomical articulator with condyle adjustments more particularly for use in making dental plates which are properly arranged in accordance with the condyle anatomy of the patient. And the objects of my invention are:

First, to provide an articulator of this class which affords condyle adjustments in the setting of dental plates during the construction thereof;

Second, to provide an articulator of this class in which the base frame member and the pivoted frame member are substantially U-shaped whereby the supporting plates are freely accessible from all sides;

Third, to provide an articulator of this class having very accurate scales and adjustment means in connection therewith for making condyle adjustments of the dental plates relative to each other when fitting the same;

Fourth, to provide an articulator of this class which promotes very accurate and scientific reproduction of dentures in accordance with the patient's original teeth;

Fifth, to provide an articulator of this class in which two separate axles are adjustable to conform with the condyle anatomy of various patients being fitted with new dentures; and

Sixth, to provide an articulator of this class which is very simple and economical of construction, efficient in its action and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of such novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims.

Reference being had to the accompanying drawings and to the characters of reference thereof, forming a part of this application in which:

Fig. 1 is a fragmentary top or plan view of my anatomical articulator with condyle adjustments. Fig. 2 is a side elevational view thereof showing a part thereof fragmentarily. Fig. 3 is an enlarged fragmentary sectional view taken from the line 3—3 of Fig. 2 and Fig. 4 is a fragmentary front elevational view of my anatomical articulator with condyle adjustments.

The base frame, 1, is substantially U-shaped

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as shown in Fig. 4 of the drawings and is provided with a horizontally disposed portion 1a on which the plate 3 is secured, which is supported at its rear portion by the foot 3a, all as shown best in Fig. 2 of the drawings. The upwardly extending ends of the base frame 1 are each provided with substantially horizontal hollow cylindrical portions 1b, provided with longitudinally slotted portions 1c in opposite sidewalls thereof, through which extend the condyle adjustment indicators 6, which forms bearings for the pivotal connection of the pivoted frame 2 with the base frame 1.

The condyle adjustment indicators 6 are provided with straight bearing portions 6a as shown in Fig. 3 of the drawing, which are fixed in the pistons 10, reciprocally mounted in the hollow cylindrical portions 1b of the base frame 1. It will be here noted that the fixed relation of these condyle adjustment indicators in connection with the pistons 10, prevents rotational movement of each condyle adjustment indicator, relative to the base frame 1. These condyle adjustment indicators 6, in connection with the pistons 10, are longitudinally mounted in the hollow cylindrical portions 1b of the base frame 1 and the slotted portions 1c therein, to accommodate movement of the protruding portions of the condyle adjustment indicator at opposite sides of the hollow cylindrical portions 1b of the base frame 1.

As shown in Fig. 3 of the drawing, each of the pistons 10 is engaged by a spring 14, positioned in the hollow cylindrical portion 1b of the base frame 1, retained by a plug 11 secured in place by a pin 11a. The opposite end of the piston 10 is engaged by one of the condyle adjustment screws 12, screw threaded in one of the nuts 9, secured by means of the screws 9a in the hollow cylindrical portion 1b of the base frame 1, all as shown best in Fig. 3 of the drawings.

As shown in Fig. 4 of the drawings, the pivoted frame 2 is substantially U-shaped and is arranged in inverted relation to the base frame 1, and pivotally supported on the condyle adjustment indicators at its bearing portions 2a.

It will be here noted that each of the condyle adjustment indicators forms a separate axis for making condyle adjustments of the pivoted frame 2, relatively to the base frame 1.

The scales 7 are positioned on the upper sides

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of the hollow tubular portions 1b of the base frame 1, and cooperate with the upwardly and inwardly extending pointer portions 6b of the condyle adjustment indicators 6, as shown best in Fig. 1 of the drawings.

The dial gages 8 are secured on the plugs 11 by brackets 11b and these dial gages 8 are provided with plungers 8a, engaged with the condyle adjustment indicators for synchronous operations therewith. The stop screws 13 are screw threaded in boss portions 1d of the base frame 1 and engage stop portions 2b protruding from the pivoted frame 2 for limiting the pivotal movement of the pivoted frame 2, relative to the base frame 1 in one direction.

The pivoted frame 2 is provided with a yoke portion 2c in which a boss portion 2d is secured, having a bore 2e therein, as shown best in Fig. 1 of the drawing. Reciprocally mounted in this bore 2e is the shaft 5 on the lower end of which is supported the plate 4.

The shaft 5 is provided with a flat portion 5a, engaged by the set screw 5b for fixing the plate 4 in certain position relatively to the pivoted frame 2.

The operation of my anatomical articulator with condyle adjustment is substantially as follows:

Dentures are secured in connection with the plates 3 and 4 by wax or other suitable material and may be adjusted relatively to each other by means of the condyle adjustment screws 12, bearing on the pistons 10, carrying the condyle adjustment indicators 6. As these condyle adjustment screws 12 are forced inwardly into the hollow cylindrical portions 1b of the base frame 1, the pistons 10, together with the condyle adjustment indicators 6, move longitudinally in the slotted portions 1c, carrying the pointer portions 6b, together with the plungers 8a of the dial gages 8, longitudinally of the scales 7, indicating a certain measurement in accordance with the condyle anatomy of the patient, to which the dentures are being fitted.

It will be here noted that different readings may appear in connection with each of the condyle adjustment indicators with respect to the particular anatomical requirement of the patient.

The stop screws 13 are used to limit the pivotal movement of the pivoted frame 2, relatively to the base frame 1 in the forward direction for maintaining certain disposition of the plate 4, relatively to the plate 3. In operation, the springs 14 maintain the condyle adjustment indicators in fixed relation with the condyle adjustment screws 12 for positive setting of the adjustment in accordance with the scales 7 and dial gages 8. These springs 14 about the pistons 10 on one end and the opposite ends of said pistons 10 about screws 12 which are adjustably fixed and movable longitudinally of the axis of said pistons 10 in the frame 1. When the frame 2 is moved backwardly, the pin 6a causes the piston 10 to compress the spring 14. Plate 4 may be reciprocally elevated or lowered by means of the shaft 5 in its reciprocal relation to the bore 2e of the boss 2d. The screw 5b is normally tightly engaged with the flat side 5a of the shaft 5 for maintaining fixed adjustment of the plate 4 in vertical spaced relationship to the plate 3.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to the particular structure, construction,

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combination and arrangement, but desire to include in the scope of my invention, the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an articulator of the class described the combination of a substantially U-shaped base frame having upwardly extending end portions, provided with substantially horizontal hollow cylindrical portions, said hollow cylindrical portions having longitudinally slotted portions in opposite side walls, spring loaded pistons reciprocally mounted in said hollow cylindrical portions and condyle adjustment indicators extending through said slotted portions and said pistons in fixed relation with said pistons and a pivoted frame member substantially U shaped in form and arranged in inverted relation to said base frame member and pivotally mounted on the axis of said condyle adjustment indicators.

2. In an articulator of the class described the combination of a substantially U-shaped base frame having upwardly extending end portions, provided with substantially horizontal hollow cylindrical portions, said hollow cylindrical portions having longitudinally slotted portions in opposite side walls, spring loaded pistons reciprocally mounted in said hollow cylindrical portions, condyle adjustment indicators extending through said slotted portions and said pistons in fixed relation with said pistons, and a pivoted frame member substantially U shaped in form and arranged in inverted relation to said base frame member and pivotally mounted on the axis of said condyle adjustment indicators and calibrated means cooperating with said condyle adjustment indicator for indicating the relative lateral disposition of the base frame relatively to the pivoted frame at the extending ends thereof.

3. In an articulator of the class described the combination of a substantially U-shaped base frame having upwardly extending end portions, provided with substantially horizontal hollow cylindrical portions, said hollow cylindrical portions having longitudinally slotted portions in opposite side walls, spring loaded pistons reciprocally mounted in said hollow cylindrical portions, condyle adjustment indicators extending through said slotted portions and said pistons in fixed relation with said pistons, a pivoted frame member substantially U-shaped in form and arranged in inverted relation to said base frame member and pivotally mounted on the axis of said condyle adjustment indicators, calibrated means cooperating with said condyle adjustment indicator for indicating the relative lateral disposition of the base frame relatively to the pivoted frame at the extending ends thereof, and stop means arranged to limit the pivotal movement of said pivoted frame relatively to said base frame in one direction.

4. In an articulator of the class described the combination of a substantially U-shaped base frame having upwardly extending end portions, provided with substantially horizontal hollow cylindrical portions, said hollow cylindrical portions having longitudinally slotted portions in opposite side walls, spring loaded pistons reciprocally mounted in said hollow cylindrical portions, condyle adjustment indicators extending through said slotted portions and said pistons in fixed relation with said pistons, a pivoted frame member substantially U-shaped in form and arranged in

inverted relation to said base frame member and pivotally mounted on the axis of said condyle adjustment indicator for indicating the relative lateral disposition of the base frame relatively to the pivoted frame at the extending ends thereof, stop means arranged to limit the pivotal movement of said pivoted frame relatively to said base frame in one direction, and plates secured in connection with said pivoted frame and said base frame in spaced relation to each other.

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