Nov. 6, 1951 C. F. TULLY 2,574,427

CONDYLE POSITION INDICATING APPARATUS

Filed Sept. 22, 1945

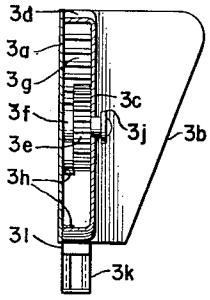


FIG. 3

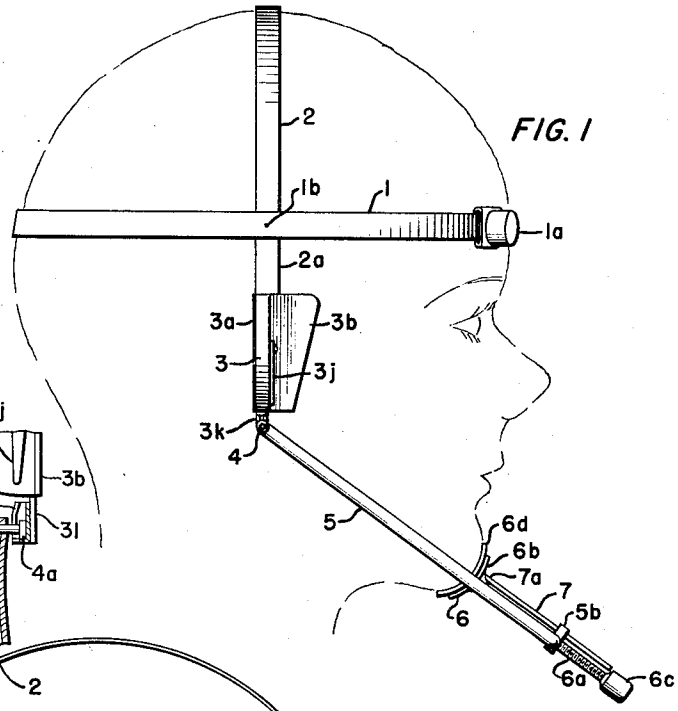


FIG. 1

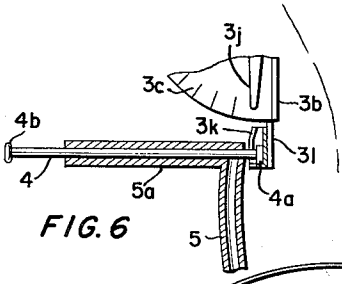


FIG. 6

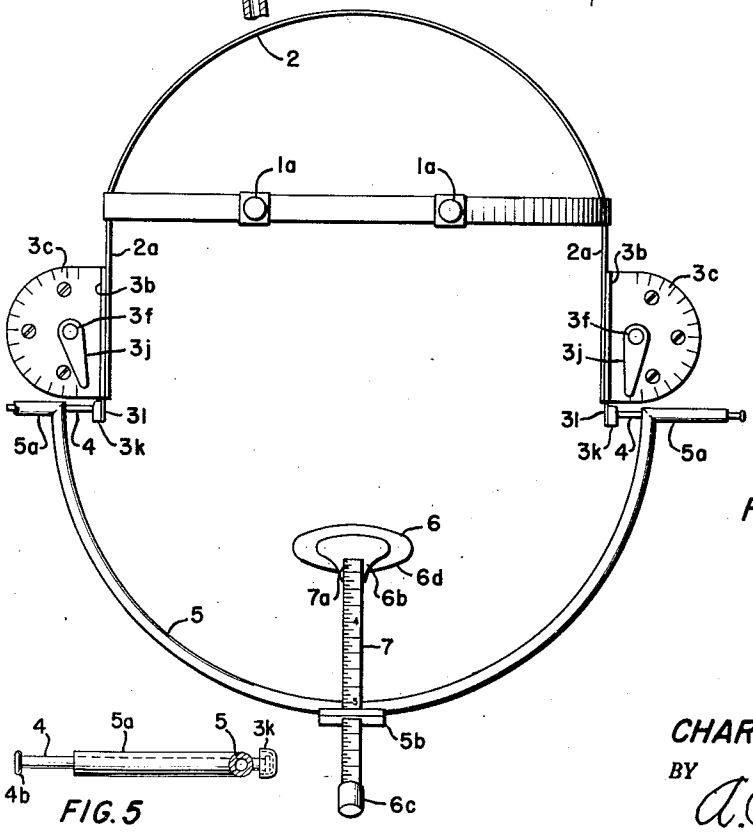


FIG. 2

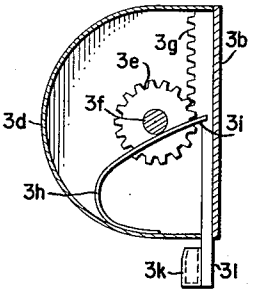


FIG. 4

FIG. 5

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Patented Nov. 6, 1951

2,574,427

UNITED STATES PATENT OFFICE

2,574,427

CONDYLE POSITION INDICATING APPARATUS

Charles F. Tully, San Diego, Calif.

Application September 22, 1945, Serial No. 618,025

3 Claims. (Cl. 33—174)

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My invention relates to a condyle position indicating apparatus and the objects of my invention are:

First, to provide a device to determine the correct or natural position of the jaw of a patient before a major dental surgery operation such as the extraction of his teeth, and to make it possible to record this position and to duplicate or cause the patient to assume this position again at a later time as in making the correct "bite" on plastic impression material used in moulding dentures.

Second, to provide a device from which mathematically precise data is obtained for use in guiding the mechanical dentistry operations in fashioning dentures.

Third, to provide a device which provides precise information which the dental surgeon may use in diagnosis.

Fourth, to provide a device of this character which is practicable to manufacture, simple, scientific and convenient to use, not unaesthetic or uncomfortable to the patient and which will give efficient and enduring service.

With these and other objects in view as will appear hereinafter my invention consists of certain 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 drawing and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a side elevational view of my invention operatively applied to the head of a patient; Fig. 2 is a view of my invention, viewed as from the right hand side of Fig. 1; Fig. 3 is side elevational view showing portions in section of the dial indicator with the combined bracket pressure plate; Fig. 4 is front elevational view showing portions in section of the dial indicator with the hand and front plate or dial removed to show the internal mechanism thereof; Fig. 5 is a plan view of one of the lateral pivots; and Fig. 6 is a fragmentary view of one of the lateral pivots and adjacent structure with portions shown in section to facilitate the illustration.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawing.

The horizontally disposed headband 1 is adapted to encircle the head of the patient and is made adjustable by means of a pair of clamps 1*a*. This headband 1 is secured as at 1*b* to a vertically disposed headband 2 fashioned preferably

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from spring steel or like material to provide for a gentle clamping action by the straight terminal sections 2*a*.

A pair of dial indicators 3 are rigidly mounted on said straight sections 2*a* by means of the plate brackets which are bent at a 90° angle to provide more or less semi-circular sections 3*a* constituting the back plates of the dial indicators and the generally triangular sections 3*b* which function as pressure plates on the side of the head of the patient. The front plates 3*c* are circumferentially calibrated and have arcuate flanges 3*d*, best illustrated in Fig. 3, which constitute the side walls of the dial indicators. Each indicator has a pinion 3*e* suitably mounted on a short shaft 3*f* and adapted to coact with a rack 3*g*, slidably mounted between the front plate 3*c* and the corner formed between the back plate 3*a* and the pressure plate 3*b*. A spring 3*h* is secured at one end to the side wall 3*d* and the other end of the spring contacts the rack 3*g* as at 3*i* urging this rack in one direction. A hand 3*j* is secured to the shaft 3*f*. At the lower end of the rack 3*g* I provide for the attachment of the rack to the lateral pivot pins 4. This is accomplished by a slotted box bearing 3*k* secured to the end 3*l* of rack 3*g*, the bearing being slotted to allow the insertion of the pivot pin 4 with the knob or head 4*a* within the bearing. The knob 4*b* on the outer end of the pin 4 is made removable to allow insertion of the pins into the lateral bearings 5*a*. The yoke 5 is half circular and extends from the lateral bearings 5*a*, in which the pivot pins 4 are mounted, through an arc with a radius slightly greater than the distance from the condyle to the chin of the average person. At the center point of this arc I provide an enlargement or boss 5*b* which provides support for the chin rest 6 by means of a rod 6*a* screw threaded in a threaded hole in said boss 5*b* and universally mounted as at 6*b* to the chin rest 6. At the outer end of the rod 6*a*, a thumb nut 6*c* facilitates the control of the chin rest. The chin rest is provided with a chin rest pad 6*d* and a metering scale 7 secured at one end 7*a* to the chin rest extending parallel to said rod 6*a* to pass through a slot in the boss 5*b*. Calibrations on the scale 7 allow the position of the chin rest to be determined relative to a demarcation on the boss 5*b*. It will be here noted that primary adjustment of the chin rest may be made to fit the patient's jaw in normal rest position, while the dial indicators serve to indicate amplitude of jaw movement relative to said normal rest position.

In using my invention, the device is slipped onto the head of the patient so that the pressure plates

3*b* lie just forward of the ears and the headbands 1 and 2 are adjusted while the chin rest 6 is made to contact the point of the chin fairly firmly, the adjustment of the chin rest 6 being made by turning the thumb nut 6*c*. A reading may be obtained on the metering scale 7. As the chin rest 6 is moved, the yoke 5 transmits this movement to the pivots 4 and the dial indicators 3, and the hand 3*j* will move over the calibrated dial 3*c* to allow readings of the movement and position of the chin rest to be made.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, 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. A device of the character described comprising a head band having a horizontal component and a vertical component, an amplitude jaw movement dial indicator secured to said vertical component, a yoke pivotally and operatively secured to said dial indicator, and a chin rest adjustably secured to said yoke, provided with a scale for primary adjustment of the chin in normal rest position.

2. In a device of the character described, the combination of a head band, a pressure plate to contact the side of the head, an amplitude jaw movement dial indicator secured to said pressure plate at a ninety-degree angle thereto, a yoke pivotally and operatively secured to said dial indicator, and a chin rest mounted on said yoke, provided with a scale for primary adjustment of the chin in normal rest position.

3. In a device of the character described, the combination of a head band, a pair of amplitude jaw movement dial indicators mounted on said head band, one on each side of the head, a yoke having bearings, pivot pins journaled in said bearings, and operatively secured to said dial indicators, and a chin rest on said yoke, provided with a scale for primary adjustment of the chin in normal rest position.

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