March 9, 1926. 1,576,260

H. F. WAITE

DENTAL LEVEL

Filed March 1, 1921

Fig. 1

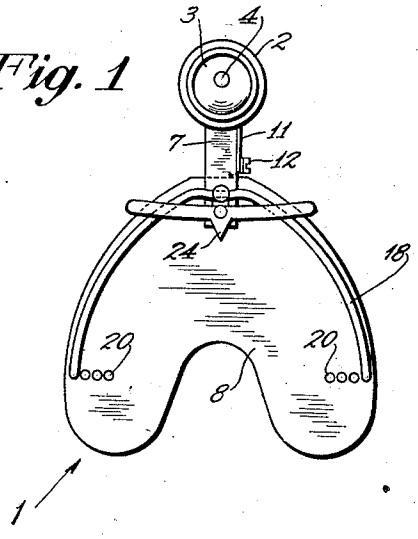


Fig. 2

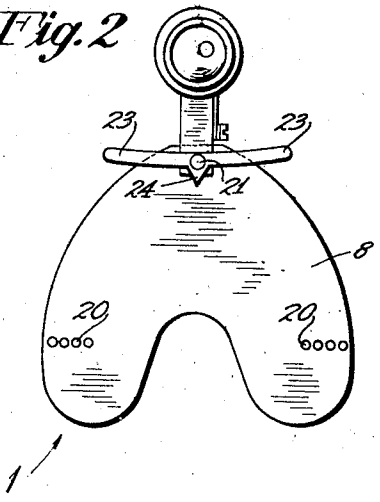


Fig. 3

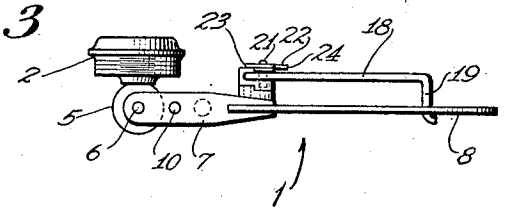


Fig. 4

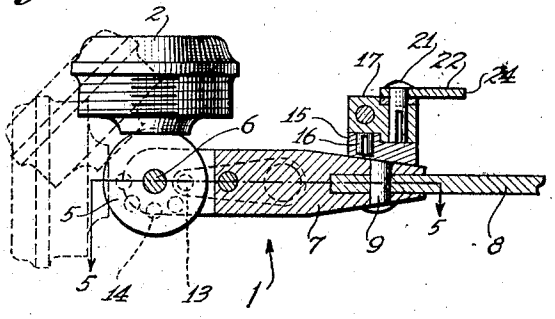
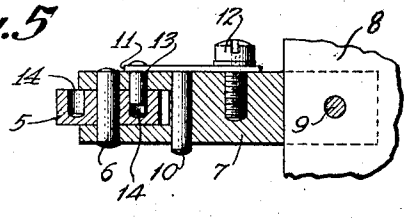


Fig. 5



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UNITED STATES PATENT OFFICE.

HARRY F. WAITE, OF NEW YORK, N. Y.

DENTAL LEVEL.

Application filed March 1, 1921. Serial No. 448,792.

To all whom it may concern:

Be it known that I, HARRY F. WAITE, a citizen of the United States, and a resident of the city of New York, county of Queens, and State of New York, have invented a new and useful Improvement in Dental Levels, of which the following is a specification.

The object of my invention is to provide a dental level which may be placed in the mouth of a patient so that a patient's head may be levelled while at rest in a dental chair preparatory to the use of X-rays so that the head of the patient will always be in the same position with regard to the X-rays whenever a radiograph is taken, whereby corresponding exposures will always be had in a set of radiographs and changes in condition can be readily identified. This object is accomplished by my invention, one embodiment of which is hereinafter more particularly set forth.

For a more exact description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a plan view of a complete level, and

Figure 2 is a similar view with a guide removed.

Figure 3 is a side elevation taken at right angles to the view shown in Figure 1, and

Figure 4 is an enlarged sectional view of a portion of the level.

Figure 5 is a sectional view taken on the line 5—5 of Figure 4.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved level 1 is provided with a liquid containing vessel 2 with a closed and transparent top 3 under which is a small bubble 4 of air or vapor which will not condense, as is customary in spirit levels. The bottom of the vessel 2 is secured to a disc 5 which has a central perforation through which a spindle 6 is passed to form a pivot and this spindle 6 also passes through a clevis 7 which at its other end is split to receive a heart shaped plate 8 which is secured by a swaged post 9 which will be described below. The clevis 7 is perforated near the disc 5 to receive a pin 10 which engages a leaf spring 11 which is fixed to this clevis by means of a screw 12 and this leaf spring is provided with a pin 13 at its free end which may enter any one of a number of corresponding holes 14 in the disc 5. Several of these holes are provided so that the vessel 2 may be held in any of several positions separated by a definite angle of 45 degrees.

The post 9 is provided with a socket 15 at its upper end which may receive a lug or slotted pin 16 extending from a holder 17 which carries a bail 18 which is preferably shaped substantially, as shown, and provided with laterally extending ends 19 which are adapted to take under and engage the lower surface of the plate 8, holes 20 being provided for this purpose, these holes being so situated and arranged that the ends 19 will be separated according to the width of the dental arch in connection with which they are employed.

The holder 17 is extended inwardly to receive a pin 21 which is fixed to a guide 22 which has laterally extending arms 23 and an index point 24, the purpose of which is to show where the joint between the center upper teeth should be with regard to the instrument. If the patient has no such teeth the instrument may be inverted and used with regard to the corresponding center of the lower teeth. If no center teeth are found in either jaw this pointer may be placed with regard to any other convenient point which can be readily identified.

If the wire bail 18 be not employed, as is often the case, the pin 21 may be placed where the pin 15 normally rests and then the apparatus is in the condition shown in Figure 2.

As the use of the level is simplest when the bail 18 is removed, its use in this condition will now be set forth. Its most normal use is when the patient's head is thrown back at substantially 45 degrees, and then the plate 8 is put in the patient's mouth and the vessel 2 is substantially horizontal, the pointer 24 being placed on the line between the center teeth of the upper jaw. If there be no such line because such teeth are lacking, this vessel 2 is thrown through an angle of 180 degrees and then the pointer 24 may be placed between the corresponding teeth of the lower jaw. If the head

be held vertical, the vessel 2 will be in the position shown in Figure 2 with regard to the plate 8 and if the index point 24 is placed opposite the line between the lower teeth, the vessel 2 will be thrown through an angle of 180 degrees.

There are times, however, when the head of the patient must be observed in a position which is neither 45 degrees to the normal or vertical, but when the head must be substantially 90 degrees to the normal, that is a substantially prone position. When this is the case the index point 24 is not sufficient as the plate resting in the mouth of the patient may be thrown a little one way or the other out of true, while the level remains true. To overcome this defect the bail 18 is employed with its ends 19 inserted in suitable holes 20 according to the width of the dental arch and then the apparatus is as shown in Figure 1, except that the vessel 2 is at right angles to the position in which it is shown and the bail 18 is then placed between the lips and gums or teeth of the patient, the index point 24 being located with regard to a fixed line or point of the jaw, as above described, and then the dental arch is held in fixed relation to the level and it is easy to properly position the patient's head with regard to the exposure which is made immediately thereafter and before the head is shifted.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but that it is broad enough to cover all structures that come within the scope of the annexed claims.

Having thus described my invention, what I claim is:

1. A dental level comprising a plate shaped and fitted so that it may be placed between the teeth of a patient and in the mouth of the same and an adjustably and pivotally mounted spirit level connected therewith which may be placed in any of several positions with regard to the plate.

2. A dental level composed of a plate which is shaped so that it may be placed between the teeth of a patient and in his mouth, a clevis connected to said plate and a spirit level pivotally connected to the clevis so that either face of the plate may be uppermost when in the mouth of a patient.

3. A dental level composed of a plate which is cut and shaped so that it may be placed between the teeth of a patient, a spirit level adjustably and pivotally connected to said plate and which may be placed in any of several positions with regard to the plate and an index pointer connected to said plate for facilitating the placing of the same in a proper position in the mouth of a patient.

4. A dental level composed of a plate, a spirit level adjustably and pivotally connected to the plate so that it may be held in any of several positions with regard to the plate and a bail secured to the plate and adapted to pass between the gums or teeth and lips of a patient.

In testimony whereof, I have hereunto set my hand this 24th day of February, 1921.

HARRY F. WAITE.