

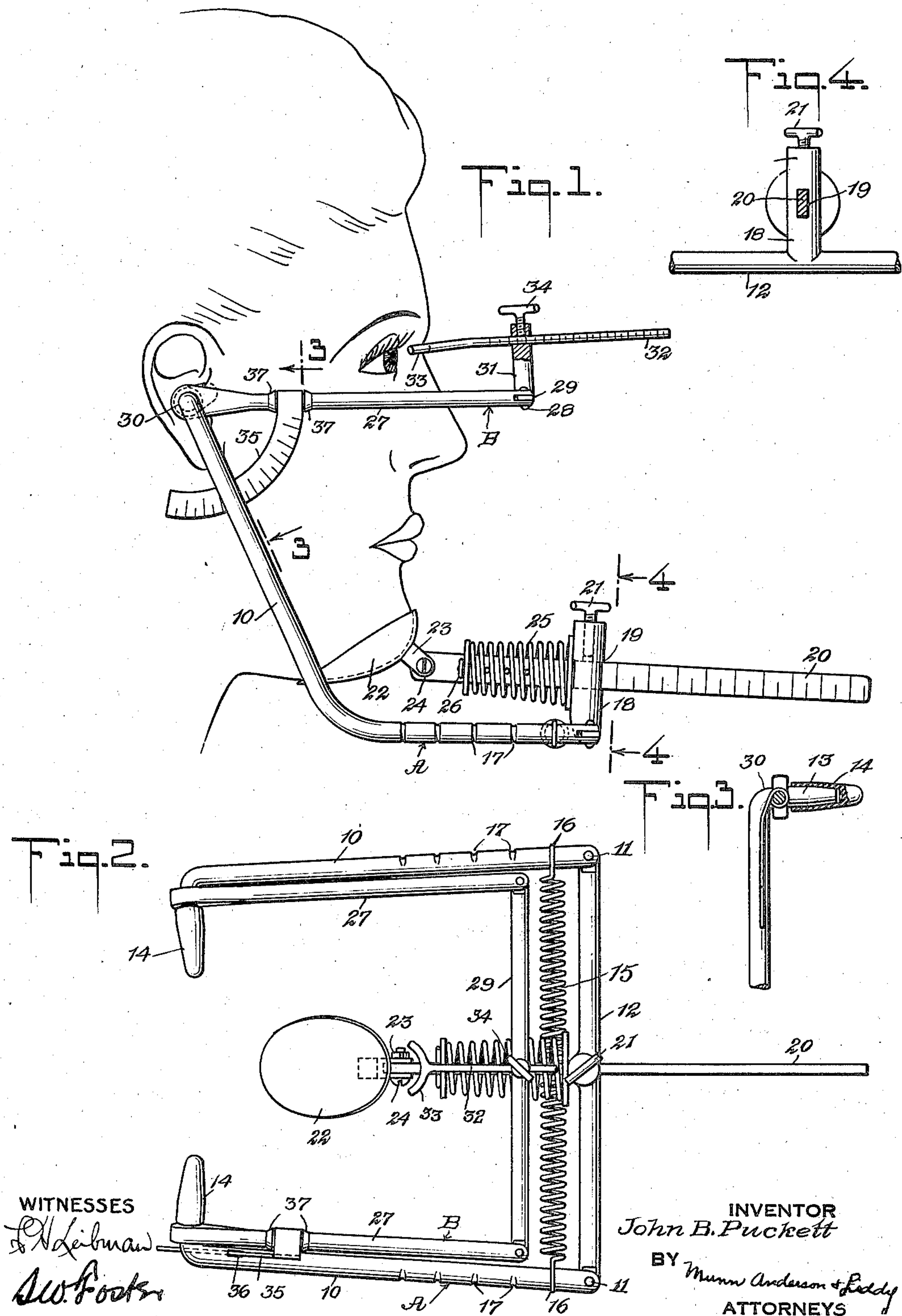
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DENTAL DEVICE

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DENTAL DEVICE

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5 Claims. (Cl. 32—21)

This invention relates to dental devices and more specifically to a dental device adapted to be positioned on the head of the patient for obtaining centric occlusion by extra-oral method, using the external auditory meatus and canal as a basis for determining the relation.

The invention consists in certain novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawing—

Fig. 1 is a view in side elevation illustrating the improved device in operative position on the head of a patient;

Fig. 2 is a plan view of the device removed;

Figs. 3 and 4 are fragmentary detail views, partly in section and partly in elevation.

My improved device includes a lower bow indicated generally by the reference character A, and an upper bow indicated generally by the reference character B. The lower bow comprises a pair of mandibular arms 10, 10, which are pivotally connected at their forward ends, as shown at 11, to a cross bar 12. These mandibular arms are bent at an obtuse angle intermediate their ends and at their free ends are formed with inwardly projecting ear-pieces 13 which are adapted to be positioned in the meatus and canals of the ears, and these ear-pieces 13 are preferably covered with soft rubber cups 14 which can be removed and sterilized as desired.

A coiled contraction spring 15 connects the forward ends of the bars 10, 10, exerting a resilient pressure on the bars to hold the ear pieces in the ears of the patient. This spring 15 may have hook ends 16 which may engage in any of a series of notches 17 in the bars 10 to vary the tension on the bars. The cross bar 12 is provided with an upstanding post 18 which has a slot 19 therein receiving a rod 20, and a set screw 21 is provided in the upper end of the post 18 to engage the rod 20 and clamp it in any position of adjustment. A chin-engaging cup 22 is located on the inner end of the rod 20 and is formed with perforated ears 23 pivotally connected, as shown at 24, to the rod 20. 25 represents an expansion coil spring located on the rod 20 between the post 18 and a cross pin 26 on the rod, exerting an inner pressure on the rod to hold the cup 22 firmly against the chin of the patient.

The upper bow B includes a pair of approximately straight temple bars 27, 27, which at their forward ends are pivotally connected, as

shown at 28, to a cross bar 29, and the rear ends of said temple bars 27, 27 are provided with openings 30 through which the ear-pieces 13 project so that it will be noted that the lower bow and the upper bow are pivotally connected on a common axis. The cross bar 29 is provided, intermediate its ends, with an upstanding post 31 through which a rod 32 projects, and is formed at its inner end with a bifurcated or forked portion 33 which constitutes a nose bridge engaging member. A set screw 34 is located in the upper end of the post 31 and engages the rod 32 to secure the same in any desired position of adjustment.

To one of the temple bars 27 an arcuate member 35 is pivotally supported at one end and constitutes a protractor scale which extends through a slot 36 in a bar 10 of the lower box A. This member 35 at its point of connection with the temple bar 27, has a floating connection in that it has both a laterally pivotal movement and a somewhat free movement in all directions and is preferably secured on the rod between enlargements 37. In addition to the protractor scale member 35, both rods 20 and 32 are also provided with scales registering with their respective posts so that when the device is properly positioned on the head of the patient, the several scales will give the measurements desired.

The operation of the device is as follows: By placement of the ear-pieces of the main bows into the external auditory meatus and middle ear, a fixed point is arrived at. By adjustment of the chin cup to the point of the chin and release of strong spring the mandible is firmly gripped and induced into a retrusive position. Due to the entrance of the ear-pieces into the middle canal, upon transversion from normal position of the mandible, these ear-pieces will oppose free action of the rami of mandible, creating an unpleasant sensation and inducing the patient to close his mouth only in the centric position—it being opposed from protrusion by the pressure of the spring upon the chin, thus by combined opposition of the ear-pieces and chin spring, automatically causing patient to close into desired centric occlusion.

While the primary purpose of the device is, as above stated, to obtain centric occlusion by extra-oral method, using the external auditory meatus and canal as a basis for determining the relation, the device has an auxiliary purpose, namely, that of obtaining the same relation, or improving subsequently, of the pre-extraction mouth. This is done by means of the readings

of the protractor scale and other rod scales, and after teeth are extracted, to build up or reduce the trial-base bite block to cause the identical readings. This should be accurate to within 1
5 or 2 degrees, dependent upon the resiliency of the facial tissues.

While I have illustrated and described what I believe to be a preferred embodiment of my invention, it is obvious that various slight changes
10 may be made with regard to the form and arrangement of parts without departing from my invention, and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such changes and alterations
15 as fairly fall within the spirit and scope of the claims.

I claim:

1. A device of the character described including upper and lower bows pivotally connected,
20 said device having ear-engaging pieces at the points of pivotal connection of the bows, and means carried by both bows for engaging the head of a patient, the means carried by the lower bow constituting a chin-engaging member and
25 the means carried by the upper bow constituting a nose-bridge-engaging member.

2. A device of the character described including upper and lower bows pivotally connected,
30 said device having ear-engaging pieces at the points of pivotal connection of the bows, means carried by both bows for engaging the head of a patient, and an arcuate member pivotally connected to one of the bows, the other bow having a slot receiving the same, said arcuate member constituting a protractor scale.
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3. A device of the character described including upper and lower bows pivotally connected, said device having ear-engaging pieces at the points of pivotal connection of the bows, means
40 carried by both bows for engaging the head of

a patient, the means carried by the lower bow constituting a chin-engaging member and the means carried by the upper bow constituting a nose-bridge-engaging member, and an arcuate member pivotally connected to one of the bows,
5 the other bow having a slot receiving the same, said arcuate member constituting a protractor scale.

4. A device of the character described, comprising lower and upper bows, ear-engaging pieces
10 projecting at an angle from the ends of the lower bow, the upper bow having openings receiving said ear-pieces, posts on both of said bows, bars adjustable through said posts, a chin-engaging cup on the bar of the lower bow, a nose-bridge-
15 engaging member on the bar of the upper bow, and a coil spring exerting inward pressure on the bar of the lower bow.

5. A device of the character described including a lower bow consisting of a pair of mandibular
20 arms bent at an angle intermediate their ends, a cross bar pivotally connecting the forward ends of said arms, ear-pieces on the free ends of said arms adapted to be positioned in the ears of a patient, a coil spring connecting said arms and
25 exerting tension to draw them toward each other, a slotted post on the cross bar, a rod adjustable in said post, a chin-engaging cup pivotally connected to the inner end of said rod, a coil spring exerting inward pressure on the rod, a set screw
30 in the post engaging the rod to clamp the same at any position of adjustment, an upper bow pivotally connected to the ear-pieces of the lower bow, a post on the upper bow, a rod carried by the upper bow, a member on the end of said last-men-
35 tioned rod adapted to engage the bridge of the nose of the patient, and a set screw on the last-mentioned post engaging the rod, and both of said rods having scales thereon.

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