Jan. 11, 1927. 1,613,659

L. C. HICKOK

DENTAL APPARATUS

Filed April 17, 1925 2 Sheets-Sheet 1

Fig. 1.

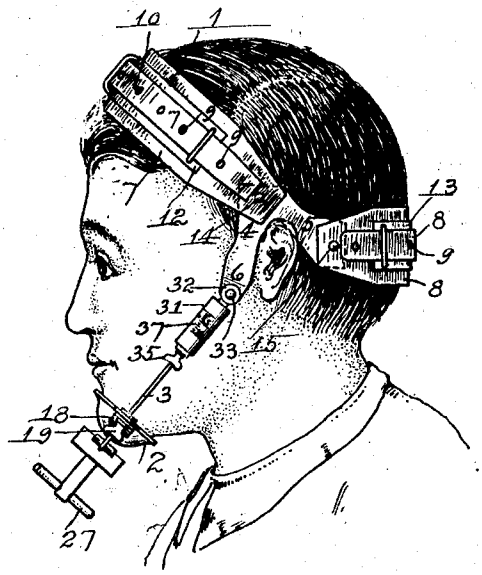
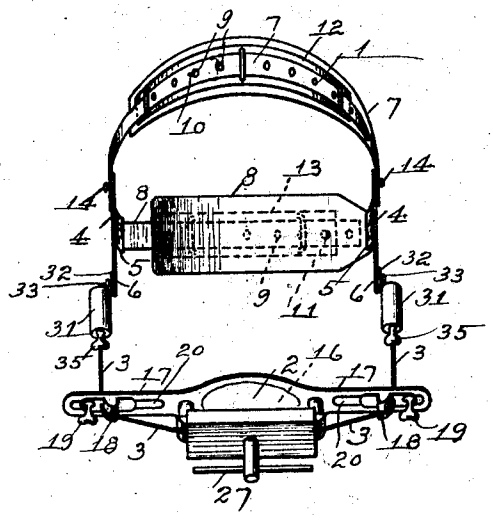


Fig. 2.



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DENTAL APPARATUS

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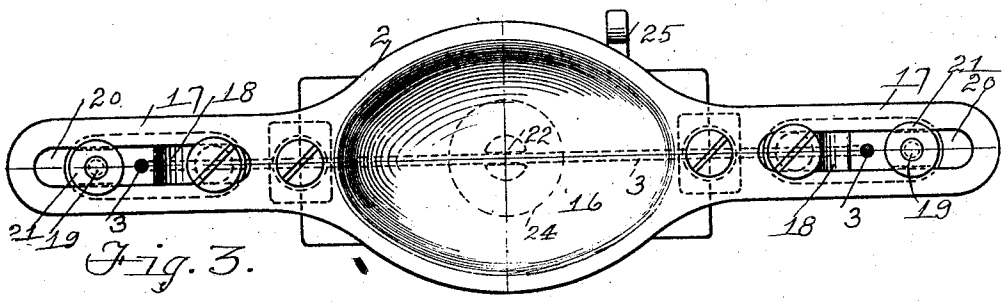


Fig. 3.

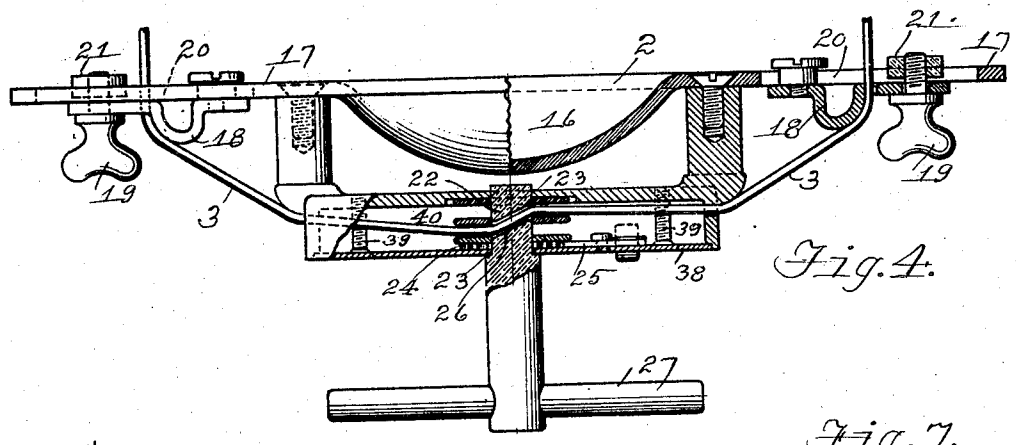


Fig. 4.

Fig. 7.

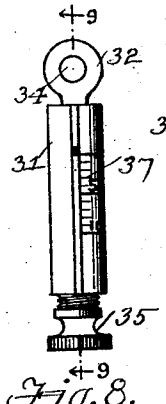


Fig. 8.

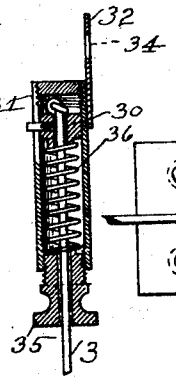


Fig. 9.

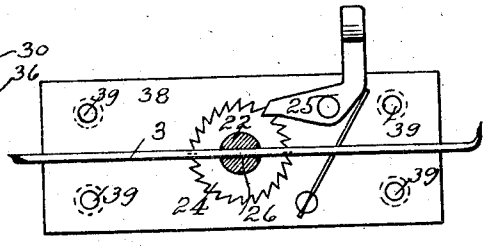


Fig. 5.

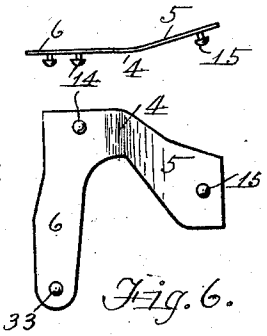


Fig. 6.

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Patented Jan. 11, 1927. 1,613,659

UNITED STATES PATENT OFFICE.

LEON C. HICKOK, OF GRAND RAPIDS, MICHIGAN.

DENTAL APPARATUS.

Application filed April 17, 1925. Serial No. 23,797.

The present invention relates to dental apparatus, i. e. such apparatus as is employed by dentists, preparatory to making artificial teeth, for positioning the patient's jaws in that proper interrelation in which the artificial teeth carried thereby will properly meet in the closing movement of the jaws; in other words, apparatus for "taking the bite" of such teeth; and the object of this invention is, generally, to provide an apparatus of this character which may be readily adjusted and operated, and which will prove accurate in operation; and further and more specifically, to provide such an apparatus improved in various respects hereinafter appearing.

These objects are attained by, and the invention finds preferable embodiment in, the apparatus hereinafter particularly described in the body of this specification and illustrated by the accompanying drawings, in which:

Figure 1 is a side view of my dental apparatus applied to the patient's head and jaw;

Figure 2 is a front view of the apparatus;

Figure 3 is an inner side view of the chin support of the apparatus;

Figure 4 is an upper edgewise view of the same, shown partially in central longitudinal section;

Figure 5 is an inner side view of a covering plate carrying a ratchet wheel, etc.;

Figure 6 is a side view of a plate carried at the side of the head gear of the apparatus;

Figure 7 is an upper edgewise view thereof;

Figure 8 is a view of a device for securing an end of the chin supports connecting cord to said plate; and

Figure 9 is a sectional view of the same taken on line 9—9 of Figure 8.

Inasmuch as the human jaws are loosely jointed together, and as the patient is likely to project his lower jaw when the "bite is being taken," it is found difficult in dental practice to properly position the jaws interrelatively in thus "taking the bite." The object of the present invention is to obviate this difficulty.

In the embodiment of the invention chosen for illustration by the drawings and for detailed description in the body of this specification, my dental apparatus comprises a head gear designated generally 1, and a chin support designated generally 2, connected by a cord or cords 3 in such manner that the chin support may be drawn toward the head gear by the cords and may be held thereby in adjusted position relatively to the head gear. This head gear has at its opposite sides metallic plates 4 comprising arms 5 adapted to contact the wearer's head, and other arms 6, preferably flexible or resilient, positioned forwardly of the arms 5, and spaced from the sides of the wearer's head, so that his lower jaw may open and close without frictionally engaging said arms 6. These plates 4 are held in position on the opposite sides of the wearer's head by adjustable straps 7, 8, any of whose holes 9 may be engaged by tongues 10, 11 of the flexible metallic strips 12, 13 carried in connection with these straps respectively, the ends of strap 7 being detachably secured on buttons 14 carried by these plates and the ends of strap 8 being detachably secured on buttons 15 carried by the rear arms 5 of said plates.

The chin support 2 has a centrally disposed hollow or cup 16 adapted to receive the wearer's chin, and arms 17 extending laterally (horizontally) carrying guide members 18 over which the cord or cords 3 slidably bear, said members being held in longitudinally adjusted positions by set screws 19 passing therethrough and through elongated slots 20 in the arms 17 and threaded in nuts 21 slidable along the arms' inner surfaces. By this means the apparatus may be adjusted to wearers' heads of different widths, and the arms 6 of the plates 4 may be held by the tensioning of the cords adjustably out of contact with the wearer's head for the purpose above mentioned. Suitable means for tightening the cords are carried by the chin support, such preferable means, as shown, being a winch 22 turnable in bearings 23 in the chin support and carrying a ratchet wheel 24 having a pawl 25. The cord may be in single piece as shown, its middle portion being freely slidable through a diametrically-extending opening 26 in the winch, so that when the cord is in its unwound position, as seen in Figure 4, it may be slid in said opening to position the winch midway between the ends of the cord secured to the side plates 4. The turning of the winch by its handle 27 winds the cord on the winch and presses to the desired degree the wearer's chin toward the plates 4. The ends of the cord are desirably carried by heads 30 slidable in hollow cylinders 31 having ears 32

pivotally mounted on the plates 4 as by their pins 33 passing through holes 34 in these ears; and the lower ends of the cylinders have threaded plugs 35 through which the cord passes as shown in Figure 9. Springs 36 between the heads 30 and plugs 35 may be tensioned to the desired degree by screwing down the plugs, thus providing an adjustably yielding connection of the ends of the cords to the plates 4. The degree of the tension of these springs is indicated by the cylinders' gages 37. A removable covering plate 38 secured to the body of the chin support by screws 39 closes the chamber 40 containing the ratchet wheel, etc.

This invention being intended to be pointed out in the claims, is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings or hereinbefore described.

I claim:

1. In dental apparatus: a head gear; a chin support; a winch carried thereby; a cord wound on the winch and secured to the head gear's opposite sides.

2. In dental apparatus: a head gear; a chin support; a winch carried thereby; a cord having its ends secured to the opposite sides respectively of the head gear and having its middle portion freely slidable transversely of the winch in the cord's unwound position.

3. In dental apparatus: a head gear; a chin support having guide members movable to adjustably held positions; a winch carried by said support; a cord wound on the winch and having end portions slidable on the guides and secured to the opposite sides respectively of the head gear.

4. In dental apparatus: a head gear; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured yieldingly to the head gear's opposite sides.

5. In dental apparatus: a head gear; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured adjustably-yieldingly to the head gear's opposite sides.

6. In dental apparatus: a head gear having at its opposite sides arms adapted to contact the wearer's head and arms positioned forwardly from the first-mentioned arms and spaced from the wearer's head; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured to the second-mentioned arms.

7. In dental apparatus: a head gear having at its opposite sides arms adapted to contact the wearer's head and resilient arms positioned forwardly from the first-mentioned arms and spaced from the wearer's head; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured to the second-mentioned arms.

8. In dental apparatus: a head gear having at its opposite sides arms, adjustably connected by means extending behind the wearer's head, and adapted to contact the wearer's head and arms positioned forwardly from the first-mentioned arms and spaced from the wearer's head; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured to the second-mentioned arms.

9. In dental apparatus: a head gear having at its opposite sides arms spaced from the wearer's head; a chin support; a winch carried thereby; a cord wound on the winch and having its ends secured to said arms.

10. In dental apparatus: a head gear; a chin support having guide members movable to adjustably held positions; a cord having end portions slidable on the guide members and secured to the opposite sides respectively of the head gear; means carried by said support for tightening the cord.

11. In dental apparatus: a head gear; a chin support having guide members movable to adjustably held positions; a cord having end portions slidable on the guide members and secured yeldingly to the opposite sides respectively of the head gear; means carried by said support for tightening the cord.

In testimony whereof I have hereunto set my hand at Grand Rapids, Michigan, this 3rd day of April, 1925.

LEON C. HICKOK.