

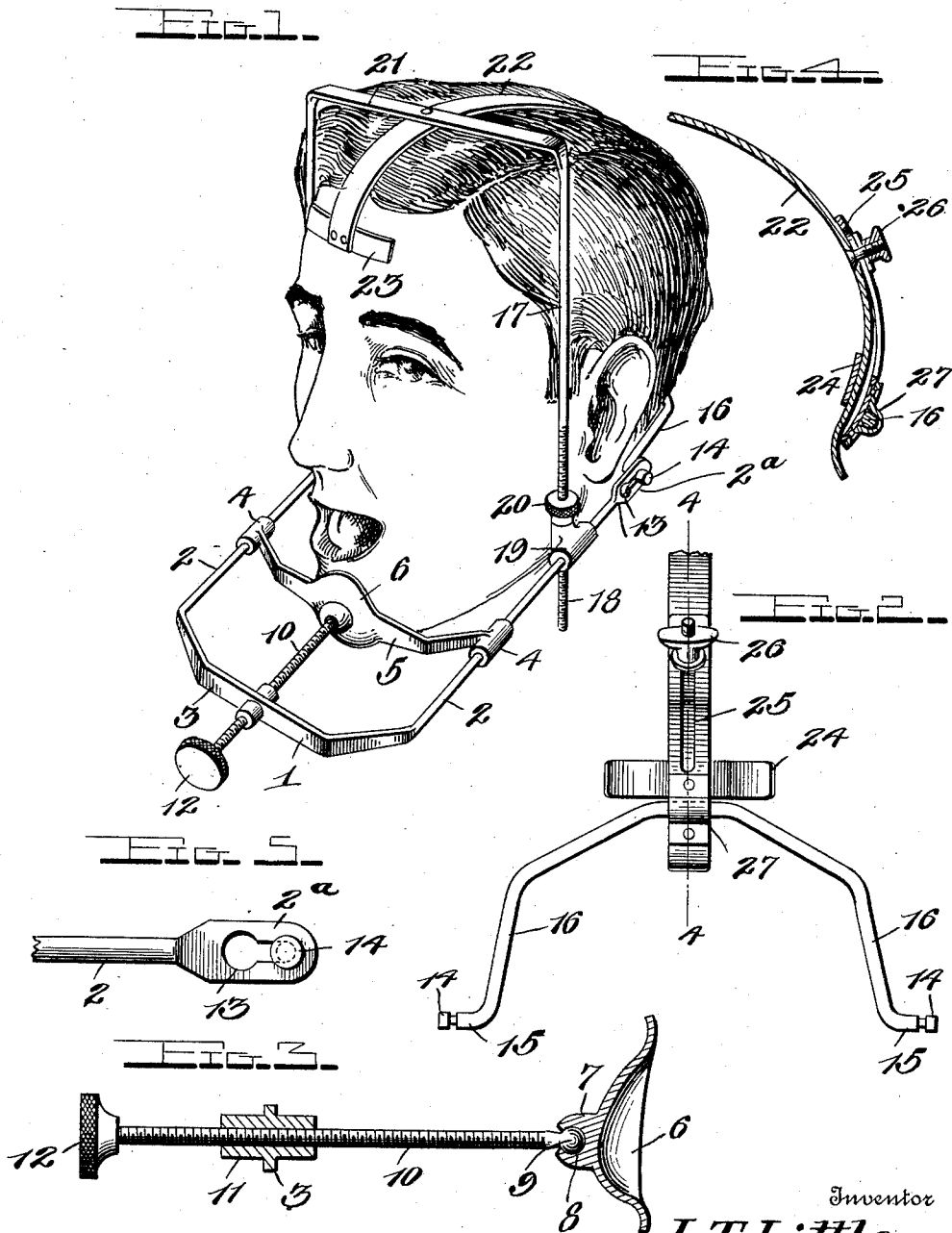
L. T. LITTLE.

JAW BRACE.

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JAW-BRACE.

1,044,206.

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To all whom it may concern:

Be it known that I, LEO T. LITTLE, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Jaw-Braces, of which the following is a specification, reference being had to the accompanying drawings.

My present invention relates to the art of dentistry and more particularly to jaw braces.

The invention has for its primary object an improved jaw brace which is of simple construction and which will be efficient in operation for use in bracing a patient's jaw and in limiting or preventing any forward movement or protruding thereof, whereby, when impressions are taken for false teeth, the lower set will, when the jaws are closed, be in proper relation to the upper set, which is a distinct desideratum in the profession.

It is well known that a person may easily cause the lower jaw to protrude at will, but that it is an exceedingly difficult matter, if not practically impossible, for a patient to cause the lower jaw to recede, and my invention therefore aims to take care of this factor by mechanical means whereby the lower jaw, when taking impressions will be held in proper relation to the upper jaw, as above stated.

Another object of the invention and an object which is of no less importance than the object hereinbefore stated, is to provide a device of this character which may be conveniently and readily used in cases of fracture of the jaw, whereby the lower jaw of the patient may be held in proper position with the patient's mouth open so that he may be fed, the invention thereby doing away with the cumbersome gags or similar devices that have heretofore been used in the patient's mouth, causing, as is manifest, considerable discomfort. And the invention also aims to generally improve this class of devices and to render them more useful and commercially desirable.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention reference is to be had to the following de-

scription and accompanying drawings, in which:—

Figure 1 is a perspective view of a jaw brace constructed in accordance with my invention, the brace being shown as provided with a head attachment a part of which is designed for use particularly in treating patients with a fractured jaw. Fig. 2 is a fragmentary rear view of the device. Fig. 3 is a detail view of the actuating rod of the appliance, illustrating particularly the adjusting nut thereof and the universal joint or ball connection between the inner end of said rod and the cupped chin rest. Fig. 4 is a detail sectional view through the adjustable portion of the head band. Fig. 5 is a detail view of the detachable interlocking connection between the main frame of the brace and the pivoted rear bar thereof.

Corresponding and like parts are referred to in the following description and designated in the accompanying drawing by like reference characters.

My improved appliance for use particularly by dentists, includes a U-shaped main frame 1 which embodies substantially parallel side rods 2 that are integrally connected at their forward ends with a cross bar 3. Mounted on the side rods 2 are sleeves 4 which are connected to the ends of a transversely extending chin engaging member 5 which is in the form of a bar integrally connected to the sleeves 4 and which is enlarged at a middle point to form a cupped or dish-shaped chin engaging element 6. This element is, in the present embodiment of the invention, formed with a boss 7 which is provided with a substantially spherical opening 8 designed to receive the rounded end 9 of a longitudinally extending threaded actuating rod 10. The cross bar 1 carries a nut 11 which is threaded on the rod 10, whereby, by clamping the milled or serrated knob or finger piece 12 secured to the outer end of the rod, the same may be moved inwardly or outwardly as required to adjust the chin engaging member 5 longitudinally on the side rods 2 of the frame 1.

The rear ends of the rods 2 are respectively formed with flattened portions 2^a each of which is provided with a key hole shaped slot 13 designed to receive and detachably hold the headed studs 14 that are formed on the outwardly projecting ends 15 of a bail 16 which is in the form of an arched rod, as best illustrated in Fig. 2.

From as much of the description as has preceded it will be understood that in the practical use of the device for the purpose of holding the lower jaw of a patient rigid while impressions are taken of the gums, the ends 15 of the bail 16 are pivotally engaged with the rear ends of the side rods 2 of the frame 1, whereby the entire frame surrounds the back of the head and lower portion of the face of the patient, and the patient's chin is then engaged in the cupped chin engaging element 6 and the actuating rod 10 screwed inwardly so as to press the patient's lower jaw backwardly or rearwardly to the required extent, it being positively held in the desired position.

In connection with the frame 1 and its pivoted bail 16, I use a head brace which embodies a longitudinally extending curved spring bar 22 which is preferably provided at its forward end with a laterally elongated strip 23 adapted to engage the forehead of the patient, the spring bar 22 extending rearwardly in use over the crown of the patient's head and downwardly at the back of the head where it is preferably provided with a corresponding laterally elongated brace strip 24. I have found in my practice that the strain of the frame 1 should be imposed approximately at the lobes of the ears, that is, half way between the condyle and the angle of the jaw, this being the approximate point of center as regards the opening and closing movements of the jaw. In order to secure this position, with heads of different sizes, the bar 22 is constructed in two sections as clearly illustrated in Fig. 2, one section being slotted as indicated at 25 and being held in extensible relation to the other section by a set screw 26. The slotted section of the bar 22 is pivotally connected to the bail 16 at the middle thereof, a crimped metallic strap 27 being used for this purpose in the present embodiment of this invention.

When it is desired to use the appliance in treating patients who have sustained a fracture of the lower jaw there is employed in connection with the head brace, an inverted U-shaped supporting member 17, the side rods of which are threaded at their lower ends as at 18, said threaded ends extending through vertical openings that are formed in sleeves 19 slidably mounted on the side rods 2, the vertical adjustment of the inverted arched or U-shaped bar 17 being accomplished by milled nuts 20 engaging the threaded portions 18, as best illustrated in Fig. 1. The cross bar 21 of the inverted U-shaped supporting member 17 is pivotally connected to the spring bar 22 of the head brace in any desired way.

In using the device in feeding or otherwise treating patients who have sustained a fracture of the lower jaw, the head brace is

applied to the patient's head and the chin brace 5 properly adjusted to the chin, and the nuts 20 are manipulated so as to maintain the lower jaw in proper relation to the upper jaw, whereby the patient's mouth is held open by mechanical means without any effort on the patient's part, and in fact entirely outside of his volition.

It will thus be seen that I have provided a very simple and efficient device for use by dental surgeons and others skilled in the art to which this invention appertains, the device being capable of being easily manufactured and readily adjusted according to the particular requirements of the case in hand. Having now fully described my invention what I claim is:—

1. A device of the character described, including a main frame embodying side rods and a cross bar connecting said rods at their forward ends, a bail pivotally connected to the rear ends of the side rods to freely swing vertically with reference thereto, means connected to the bail for supporting the device on a wearer's head, a chin brace carried by the frame, and means for adjusting said chin brace on the frame.

2. A device of the character described, including a main frame embodying side rods and a cross bar connecting said rods, a bail connected to said side rods, means for supporting said frame and the bail on a patient's head, a chin brace slidably mounted on the side rods of the frame and extending transversely of the latter, and an actuating rod adjustably carried by the cross bar and connected to said chin brace.

3. A device of the character described, including a main frame formed at its ends with key hole shaped slots, a bail having headed studs adapted to be detachably inserted in said slots whereby to pivotally connect the frame and bail together, a head brace connected to said bail, a chin brace carried by the main frame, and means for adjusting said chin brace on said frame.

4. A device of the character described, including a main frame, a bail pivotally connected to said frame, a chin brace adjustably mounted on said frame, means for adjusting the chin brace on the frame, a head brace pivotally connected to said bail, an inverted U-shaped supporting member pivotally connected to said head brace and having downwardly extending threaded ends, sleeves slidably mounted on said main frame and nuts carried by said sleeves and having engagement with said threaded ends.

5. A device of the character described, including a main frame embodying side rods, and a cross bar connecting said rods together at their forward ends, a chin brace extending transversely of the side rods in the same plane therewith and longitudinally movable on said rods, means carried by the cross bar

and engaging said chin brace for adjusting the same longitudinally of the side rods, a bail adapted to extend around the back of the wearer's head and pivotally connected to the rear ends of the side rods to swing freely in a vertical direction relative thereto, and means connected to said bail for supporting the device upon the wearer's head.

6. A device of the character described, including a main frame, a bail pivotally connected to said frame, a chin brace adjustably mounted on said frame, means for adjusting the chin brace on the frame, a head brace connected to said bail, an inverted U-shaped supporting member pivotally connected to said head brace, sleeves slidably mounted on the main frame, and a vertically adjustable connection between the ends of the supporting member and the sleeves.

7. A device of the character described, including a main frame embodying side rods, a chin brace extending transversely of said side rods, and adjustably mounted thereon to move longitudinally thereof in the same plane as said side rods, means for adjusting the chin brace on the side rods, a bail adapted to extend around the back of the wearer's head and pivotally connected to the rear ends of the side rods so as to freely swing in a vertical direction relative to the side rods, and a head brace pivotally connected at its lower end to the bail.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

LEO T. LITTLE.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."