

E. H. ANGLE & J. L. YOUNG.
DENTAL TOOTH REGULATING APPLIANCE.
APPLICATION FILED DEC. 28, 1910.

1,005,131.

Patented Oct. 10, 1911.

FIG. I.

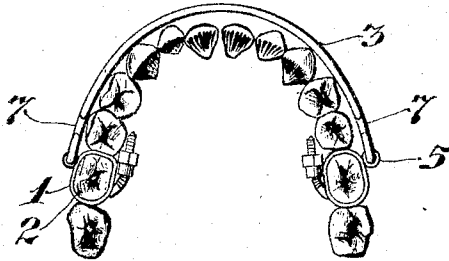


FIG. II.

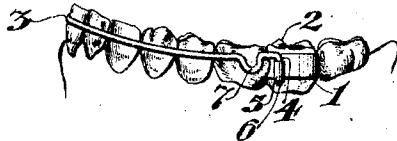


FIG. III.

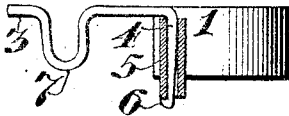


FIG. IV.

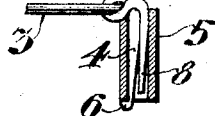


FIG. V.



FIG. VI.

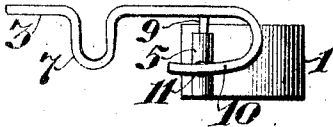


FIG. VII.



FIG. VIII.

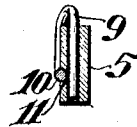


FIG. IX.

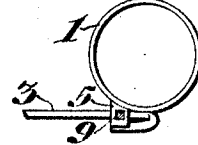


FIG. X.

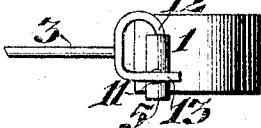


FIG. XI.

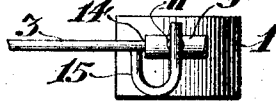


FIG. XII.

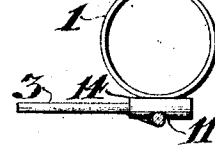


FIG. XIII.

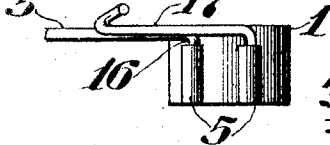
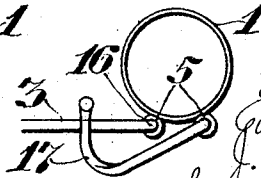


FIG. XIV.



Witnesses

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DENTAL TOOTH-REGULATING APPLIANCE.

1,005,131.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, EDWARD H. ANGLE and J. LOWE YOUNG, citizens of the United States, residing, respectively, at New London, in the county of New London and State of Connecticut, and New Rochelle, in the county of Westchester and State of New York, have invented a certain new and useful Improvement in Dental Tooth-Regulating Appliances; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in dental tooth regulating or orthodontia appliances of the arch-bar type, our object being to simplify and increase the efficiency of such appliances.

The invention is illustrated in the accompanying drawings, described in the following specification and pointed out in the claims at the conclusion thereof.

In said drawings—Figure I is a plan view of one form of our new appliance mounted upon the natural teeth. Fig. II is a side view thereof. Fig. III is an enlarged detail view of one form of connection between the arch and band. Fig. IV is a similar view of another form. Fig. V is a top view of the form indicated in Fig. IV. Fig. VI is an enlarged view of still another form in side elevation. Fig. VII is a sectional view of the same. Fig. VIII is a sectional view at a right angle to Fig. VII; and Fig. IX is a plan view. Fig. X is a view in side elevation of another form. Figs. XI and XII are views of another form, the former in side elevation and the other in plan. Figs. XIII and XIV are corresponding views of another form.

Tooth regulating or orthodontia appliances of the arch-bar type consist of an anchor member and a delivery member. The anchor member, in the form of bands, is secured to anchor teeth, as molars; while the delivery member, in the form of an arch-bar, is secured to the malposed tooth or teeth, which by means of the appliance are to be restored to their normal or correct position in the dental arch. The movement of the malposed teeth is accomplished by distending, projecting, or contracting the delivery member relatively to the anchor member. This distending, projecting or

contracting of the delivery member is effected in two different ways; first, by actually moving the entire delivery member or arch relatively to the anchor member, as by adjusting nuts; and second, by bending, crimping, stretching or otherwise altering the length of the anterior portion of the arch without actually moving it as a whole.

Our invention is applicable to the last named class of the arch-bar type of appliances. Heretofore the arch-bar of this class of appliances has been permanently connected to the anchor member, as by soldering. Instead of this permanent connection we have devised a separable interlocking connection between the arch-bar and the anchor bands, of which we herein show several different forms.

Referring now to Figs. I and II, 1 indicates the bands applied to molar teeth 2 and constituting the anchor member, and 3 indicates the delivery member or arch-bar to which the malposed teeth may be secured in any suitable manner. The inner ends 4 of the arch-bar 3 are bent at right angles and are inserted in tubes 5 secured to the bands 1, the tubes in this instance being disposed perpendicular to the bands. As will be seen in Fig. III a head or hook 6 is formed upon the extremity of the bent end 4 of the arch-bar, this hook engaging the lower end of the tube 5. In this way the bent ends 4 serve as spurs for fitting in the tubes and also as latches.

In operation the bands 1 are first secured to the molar or anchor teeth and the arch-bar 3 is connected to the bands by inserting the spurs 4 in the tubes 5 until the latches 6 engage the ends of said tubes. The arch is made of stiff spring wire and before it is applied to the anchor bands it is bent or crimped as indicated at 7. Extension of the anterior part of the arch for placing and maintaining the arch under tension for the purpose of moving the malposed teeth to which the anterior portion of said arch is secured, may be effected by removing the arch and slightly straightening the bends 7, it being necessary to repeat this from time to time during the treatment of the case. By means of the detachable interlocking connection between the arch and the anchor bands, the arch may be easily and quickly removed and replaced without disturbing the anchor bands. The anterior teeth may be moved

- lingually or the dental arch contracted by increasing the bends in the wire arch, and other forms of tooth regulation be accomplished as will be understood by the orthodontist. The appliance is also valuable for retaining purposes. It will of course be further understood that a half arch or the segment of an arch may be used with a single anchor band.
- 10 The detachable interlocking connection, or spring lock, as it may also be called, may be made in a large variety of forms, some of which are indicated in the drawings and which we will now describe. Figs. IV and V
- 15 show a connection similar to that shown in Fig. III, but in which a supplemental spur 8 is placed by the side of the bent end 4 of the arch. The tube 5 is made elliptical in cross section to receive the two spurs. In the form
- 20 shown in Figs. VI, VII, VIII and IX a plain spur 9, preferably square in cross section, is soldered to the arch, the end 10 of said arch being curved to form a latch adapted to engage a notch 11 formed in the tube
- 25 5. The connection indicated in Fig. X is similar to that just described, except that the spur 12 and the latch 13 are formed of the same piece of wire soldered to the arch. In the form shown in Figs. XI and XII the
- 30 tube is disposed in a line parallel with the band 1, the spur 14 extending in the same plane as the arch and the latch 15 extending at a right angle thereto to engage a notch in said tube. In the form illustrated in Figs.
- 35 XIII and XIV the ends of the arch are bent to form a plain spur 16, the latch 17 being carried by the band 1 and adapted to bear upon the arch 3.
- We claim as our invention:—
- 40 1. A dental tooth regulating appliance comprising anchor bands, an arch-bar, and detachable interlocking, non-adjustable connection between said arch bar and said anchor bands.
2. A dental tooth regulating arch-bar 45 formed at each extremity with a spur and also with a latch crossing said spur.
3. A dental tooth regulating appliance comprising anchor bands, a tube secured to each of said bands, an arch-bar, and detach- 50 able, interlocking, non-adjustable connections between said arch-bar and said tubes.
4. A dental tooth regulating appliance comprising a pair of anchor bands, a tube rigidly secured to each of said bands, an 55 arch-bar, the ends of which have detachable connection with said tubes, and a latch at each end of said arch-bar having interlocking connection with said tubes.
5. A dental tooth regulating appliance 60 comprising a pair of anchor bands, a tube rigidly secured to each of said bands, an arch-bar, spurs on said arch-bar adapted to enter said tubes and latches adapted to form an interlocking connection between said 65 arch-bar and said tubes.
6. A dental tooth regulating appliance comprising a pair of anchor bands, a tube secured to each of said bands, a notch in said tube, and an arch-bar formed with a spur 70 to enter said tube and a latch to engage said notch.

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