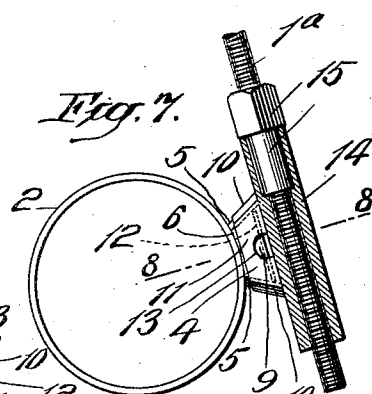
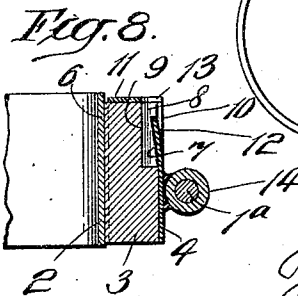
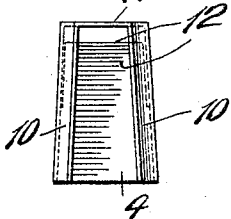
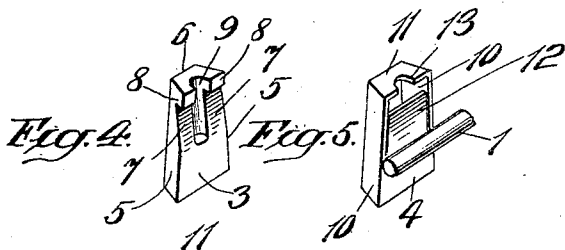
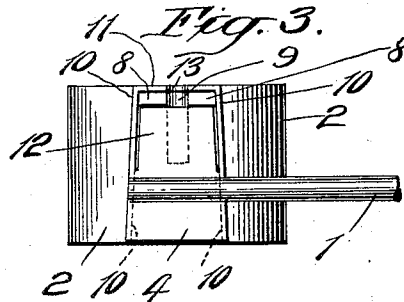
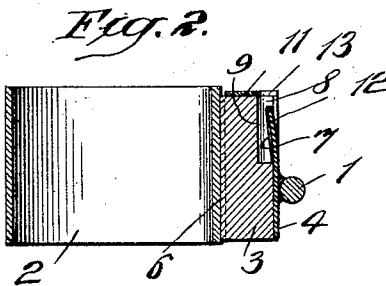
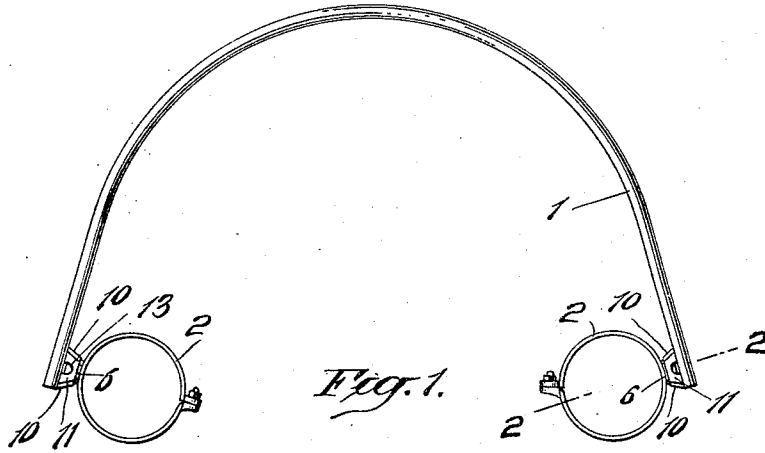


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ORTHODONTIA APPLIANCE.
APPLICATION FILED JULY 5, 1918.

1,304,723.

Patented May 27, 1919.



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ORTHODONTIA APPLIANCE.

1,304,723.

Specification of Letters Patent.

Patented May 27, 1919.

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To all whom it may concern:

Be it known that I, JACOB LOWE YOUNG, a citizen of the United States, and resident of New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Orthodontia Appliances, (Case #4), of which the following is a specification.

10 This invention relates to improvements in orthodontia appliances or tooth-regulating and retaining appliances of the arch-wire type.

15 The present invention has for one of its objects the provision of efficient means for detachably locking the arch wire or delivery member to the anchor teeth and the malposed teeth.

20 A further object of the invention is to provide separably interlocked sets of devices for connecting the arch wire with the anchor teeth or malposed teeth, or both, as desired, said devices being so constructed as to permit the arch wire to extend about 25 the dental arch in the same horizontal plane, if desired, and so that the arch wire may be held to one set of devices to extend transversely thereof in horizontal planes at various distances from the plane of the gum.

30 Another object of the invention is the provision of separably interlocking devices supported by the arch wire and teeth, respectively, so constructed that the devices will not engage the gum when interlocked.

35 Another object is the provision of positively but separably interlocking sets of devices for connecting the delivery member with the teeth, so constructed as to insure firm and rigid connections between the delivery member and the teeth.

40 In the drawings, Figure 1 is a plan view of one embodiment of the invention showing the arch wire and the means for connecting the arch wire to the anchor teeth;

45 Fig. 2 an enlarged vertical, sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 an enlarged side elevation showing the anchoring means at one end of the delivery member;

50 Figs. 4 and 5 detail perspective views of the two members of one of the separable coupling devices;

Fig. 6 a rear elevation of the coupling member shown in Fig. 5;

55 Fig. 7 a fragmentary plan view, partly in horizontal section, showing the coupling

embodied in an appliance of the type shown in the patent to Angle, No. 626,476; and

Fig. 8 a vertical sectional view taken on the line 8—8 of Fig. 7.

60 Referring to the various parts by numerals, 1 designates the curved delivery member, which may be of the usual or any suitable construction, preferably being formed of a piece of relatively stiff resilient 65 wire bent to conform approximately to the curvature of the dental arch, and 2 designates the usual anchor bands adapted to be fitted about the anchor teeth or molars. The separable connections between the anchor 70 bands 2 and the delivery member are of the same construction, and comprise relatively slidable members 3 and 4. The member 3 is in the form of a post or block 75 having tapering side edges 5, which edges are beveled so as to extend inwardly toward each other from the outer face of the block 3 to the inner face 6 of the block. The relatively narrow inner face of the block 80 is soldered to the outer side of the anchor band, and the block 3 is preferably of such length that the ends thereof do not extend beyond the edges of the band 2. The relatively wide outer face of the block or 85 post 3 is notched or cut away to form a depression. The notch in the post is preferably formed, as shown more clearly in Fig. 4, to provide an inclined surface 7 and shoulders or abutments 8, adjacent the 90 smaller end of the tapered block or post 3. The relatively wide outer face of the post 3 is also provided with a vertical groove or channel 9. The socket member 4 is formed 95 of sheet metal, and comprises a tapered plate formed with side flanges 10 bent inwardly toward each other to conform to the beveled and inclined side edges 5 of the block 3, and with a transverse bar 11 connecting the ends of said flanges together at the smaller end of the tapered 100 socket member. The relatively narrow or rear face of the socket member 4 is open throughout its length, and the relatively wide front plate of the socket member is stamped or cut to form a resilient tongue 105 12, normally deflected rearwardly toward the narrow open rear side of the socket member 4. The transverse bar 11 connecting the side flanges 10 of the socket member 4 is cut away at its outer or wider edge to 110 form a notch 13, adapted to register with the groove or channel 9 in the post or block

3, when the members 3 and 4 are in engagement with each other. The delivery member or arch wire 1 may be soldered to the wide outer wall of the socket member 4 at any point intermediate the base of the tongue 12, and the wider end of the socket member.

It will be obvious that when the socket member 4 is slid downwardly about the post or block 3, that the free end of the resilient tongue 12 will snap under the shoulders 8 on the post 3, and thus positively lock the members 3 and 4 together. To disconnect the members 3 and 4, it is simply necessary to insert an instrument having a fine or needle point, downwardly through the notch 13 in the transverse bar 11 of the socket member into the groove or channel 9 in the post 3, and force the point of the implement laterally to press the resilient tongue 12 outwardly from beneath the shoulders 8, whereupon the member 4 may be moved relatively to the member 3, by pressure on the arch wire 1.

The separable connection above described is also adapted for use with an appliance of the type shown in the patent to Angle, No. 626,476, above referred to. When so employed, the post or block 3 is soldered or otherwise fixed to the anchor band 2, as above described, and the socket member 4 is soldered or otherwise fixed to the usual anchor tube 14, employed in this type of appliance. The arch wire 1^a extends through the anchor tube 14, and has threaded thereon the usual adjusting nut 15. In the construction just described, it will be observed that the delivery member or arch wire 1^a, the adjusting nuts 15, and anchor tubes 14, may be removed from the mouth bodily in assembled relation, without disturbing the adjustment of the nuts 15.

The tapered formation of the members 3 and 4 insures an accurate fit of the members 3 within the members 4, and the beveling of the side edges 5 of the post 3 prevents outward movement of the members 4 relatively to the post 3. It will thus be observed that a firm and rigid connection is provided between the delivery member and the anchor band, and that relative movement of the interlocked members of the separable connection is impossible, while the members are in interlocked relation. It will also be observed that accidental disconnection of the delivery member from the teeth is impossible, and that the delivery member cannot be disconnected by the patient, but may be readily removed by the dental surgeon, by means of a suitable implement. It will also be obvious that the separable coupling members 3 and 4 may be employed to connect the delivery member 1 to bands fitted about malposed teeth, as well as to bands fitted about the anchor

teeth or molars, and that the delivery member 1 may be soldered or otherwise fixed to the socket member 4 at any desired point intermediate the wider end of the socket member and the base of the tongue 12.

What I claim is:

1. Anchoring means for the delivery member of an orthodontia appliance comprising an anchor band adapted to be fixed to an anchor tooth, a block fixed to said band having outwardly flaring side edges and provided with an abutment on its outer face, a member supported by the delivery member adapted to slide longitudinally of said block having a channel formed with side walls inclined toward each other, and yieldable means carried by said channel member adapted to engage the abutment on the block.

2. Anchoring means for the arched bar of an orthodontia appliance comprising an anchor band, a block affixed to said band having outwardly flaring side edges and provided with an abutment on its outer face, a member connected with the arch wire slidable longitudinally on said block and having a channel formed with side walls inclined toward each other to embrace the flaring side edges of the block, and a resilient tongue carried by said member adapted to engage said abutment on the block.

3. In an orthodontia appliance, the combination with a tooth band and an arched delivery member, of a separable coupling for connecting the delivery member to the band embodying a block having flaring side edges and a notch or recess in one face thereof, and a socket member having a channel formed to receive the block and having a yieldable portion adapted to engage in a notch or recess in said block to releasably lock the block and the socket member together.

4. Means for detachably locking the arch bar of an orthodontia appliance to a tooth band, embodying two relatively longitudinally slidable members held to the band and arch bar respectively, one of which is provided with flaring side edges and a recess in one face thereof, and the other of which is formed with a channel to receive the other member and a resilient portion at the bottom of said channel adapted to engage in said recess to lock the members in engagement with each other.

5. An orthodontia appliance comprising an arched or curved delivery member, a socket member carried by said delivery member having one open end and an open face and side walls inclined inwardly toward each other, the other face of said socket member being provided with a spring tongue normally deflected toward the open face of the socket member, a band adapted to be se-

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cured about a tooth, a block fixed to said band and having outwardly flaring side edges and a notch or recess in its outer face adapted to receive the free end of the spring tongue when said block is engaged in the socket member.

6. An orthodontia appliance comprising a band adapted to be secured to a tooth, a tapered block fixed to said band and having outwardly flaring side edges and a depression in its outer face adjacent the smaller end of the block, a delivery member, a tapered socket member supported on the delivery member and having side walls inclined inwardly toward each other to embrace the tapered and flaring edges of the block, and a spring tongue carried by the socket member adapted to engage in the depression in the block to releasably lock the block and socket member together.

7. An orthodontia appliance comprising a band adapted to be secured to a tooth, a block fixed to said band and having beveled side edges and a transverse notch in its outer face intersected by a longitudinal channel, a metal plate having side flanges bent inwardly toward each other to embrace the beveled edges of the block and a yieldable tongue stamped therefrom adapted to snap in the transverse notch in said block when the plate is slid longitudinally on the block,

and a delivery member connected with said plate.

8. An orthodontia appliance comprising a band adapted to be secured to a tooth, a block fixed to said band and having tapered and beveled side edges and a transverse notch in its outer face, a tapered metal plate slidable longitudinally of said block having inclined side flanges bent inwardly to embrace the tapered and beveled side edges of the block and formed with a resilient tongue normally deflected inwardly between said flanges and adapted to snap in said notch in the block, and a delivery member connected with said plate.

9. In an orthodontia appliance the combination with a tooth band and an arch wire, of a separable coupling for connecting the arch wire to the band embodying a block formed with a notch or recess in one face thereof, and a socket member having a channel formed to receive the block and provided with a resilient tongue adapted to engage in the notch or recess in said block to releasably lock the block and the socket member together, one of said coupling members being connected to the tooth band and the other being connected to the arch wire.

This specification signed this 29th day of June, A. D. 1918.

JACOB LOWE YOUNG.

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