Aug. 30, 1955 S. R. ATKINSON 2,716,283

ORTHODONTIC DEVICE

Filed Aug. 29, 1952

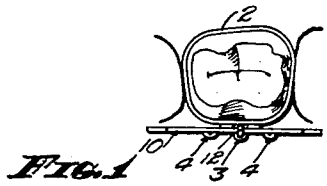

FIG. 1

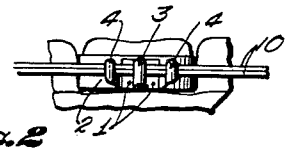

FIG. 2

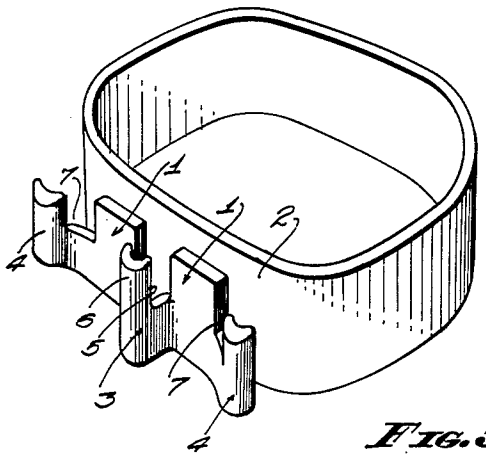

FIG. 3

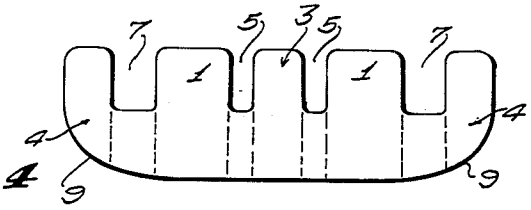

FIG. 4

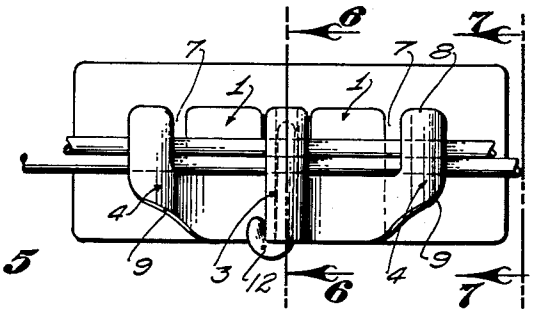

FIG. 5

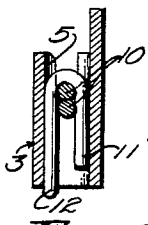

FIG. 6

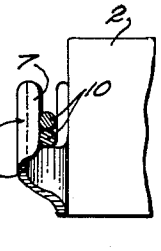

FIG. 7

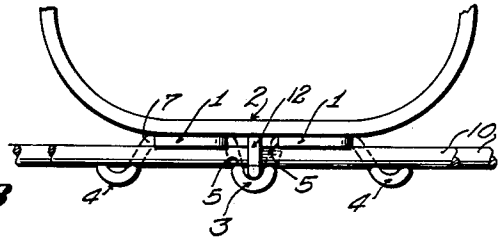

FIG. 8

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2,716,283

ORTHODONTIC DEVICE

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Application August 29, 1952, Serial No. 307,129

5 Claims. (Cl. 32—14)

My invention relates to orthodontic devices, and included in the objects of my invention are:

First, to provide an orthodontic device which is adapted to be fastened to a tooth and joined by orthodontic wire to other teeth for the purpose of applying a force to correct defects in the position of the tooth.

Second, to provide an orthodontic device which depending on the manner of its connection to the orthodontic wire may exert a rotational force or torque on a tooth about the axis of the tooth or transverse thereto, or may exert a lateral force or axial force tending to displace the tooth bodily, as desired, thus providing a device capable of exerting virtually universal movement on a displaced tooth to meet all conditions.

Third, to provide an orthodontic device which may be installed on either the lingual or buccal side of a tooth and which is particularly compact to facilitate its use in children's mouths.

Fourth, to provide an orthodontic device which is easily fabricated, easily installed, and easily manipulated to exert the desired degree and direction of restoring force on a tooth.

With the above and other objects in view as may appear hereinafter, reference is directed to the accompanying drawings in which:

Figure 1 is an enlarged top view of my device shown in position on a tooth.

Figure 2 is an enlarged, side view thereof.

Figure 3 is a greatly exaggerated perspective view of my orthodontic device.

Figure 4 is a greatly enlarged view of the blank from which my device is formed.

Figure 5 is a greatly enlarged, side view of my device.

Figure 6 is a sectional view thereof through 6—6 of Figure 5.

Figure 7 is an end view thereof taken through 7—7 of Figure 5 with the supporting band shown fragmentarily.

Figure 8 is a top view of my device with the supporting band shown fragmentarily.

My orthodontic device is formed from a single blank of material as shown in Figure 5 and includes a pair of spaced mounting pads 1 adapted to be spot-welded to a mounting band 2. The mounting band itself is conventional and is adapted to be fitted around a tooth. The material is folded between the mounting pads 1 to form a central rib 3 and is folded beyond the pads 1 to form end ribs 4.

The central rib 3 is channel-shaped in cross section, the web portion being rounded. The upper portions of the side walls of the central rib are cut away to form notches 5 so that the web projects upwardly to form a tongue or hook 6. Between each end rib 4 and corresponding pad 1 there is provided a notch 7 so that the upper portions of the end ribs form tongues or hooks 8.

The various corners formed by the notches 5 and 7 are rounded and the lower, extended portions below the ribs 4 may be beveled as indicated by 9.

The notches 5 and 7 are adapted to receive one or more orthodontic wires 10, usually two such wires being employed. The wires may be held in place by a U-shaped tie wire 11 adapted to be inserted in the channel formed by the central rib on either side of the orthodontic wires as shown best in Figure 6. One end of the tie wire 11 may project below the rib 3 and be bent to form a retaining hook 12.

My orthodontic device is adapted to be used in a wide variety of ways for the purpose of imparting the desired restoring force on the tooth. The device is used in conjunction with similar devices or anchoring means for the orthodontic wire or wires 10. By bending the end ribs 4 outwardly or inwardly relative to the orthodontic wire, a torsional force about the longitudinal axis of the tooth may be exerted. If the tooth is above or below the normal level of the orthodontic wires 10, the orthodontic wires will bear downwardly or draw upwardly on the central rib 3 to exert a longitudinal force on the tooth by imparting a twisting force on the wires 10 either by means of devices fastened to adjacent tooth or by the end ribs 4.

A torsional force transverse to the longitudinal axis of the tooth may be exerted. Such force might be employed to counteract any turning movement by the longitudinal axis in the attempt to move the tooth bodily upwardly or downwardly. If both of the end ribs are bent inwardly against the orthodontic wires 10, a lateral force may be exerted to move the tooth lingually or buccally as desired.

Having thus described certain embodiments and applications of my invention, I do not desire to be limited thereto, but intend to claim all novelty inherent in the appended claims.

I claim:

1. An orthodontic device, comprising: a blank bent to form a central rib; end ribs and a pair of attachment portions therebetween, the upper ends of said ribs being notched to define a channel passing across said attachment portions to receive an orthodontic wire, said end ribs being displaceable to exert bearing pressure against said orthodontic wire.

2. An orthodontic device comprising: a central hook element and a pair of spaced end hook elements arranged substantially in a row and adapted to be secured to a tooth band, said hook elements defining a channel adapted to receive an orthodontic wire, said end hook elements being twistable and displaceable laterally with respect to said tooth band thereby to transmit a correcting force from said orthodontic wire to a tooth encompassed by said band.

3. An orthodontic device adapted for attachment to a tooth band, comprising: a central vertically disposed hollow rib, having notches at opposite sides of its upper end to define a transversely extending orthodontic wire receiving channel; a pair of spaced hook elements disposed at opposite sides of said hollow rib and adapted to extend under and around said orthodontic wire to exert a biasing load thereon.

4. An orthodontic device formed of a single piece blank and comprising: a pair of attachment portions adapted to be secured to a tooth band; a central vertical rib between said portions and notched at opposite sides of its upper end to define an orthodontic wire receiving channel traversing said rib; and a pair of hook elements extending from the remote margins of said attachment portions under and around said orthodontic wire to exert a biasing load thereon.

5. An orthodontic device formed of a single piece blank and comprising: a pair of attachment portions adapted to be secured to a tooth band; a central vertical rib between said portions and notched at opposite sides of its upper

end to define an orthodontic wire receiving channel traversing said rib; and a pair of hook elements extending from the remote margins of said attachment portions under and around said orthodontic wire to exert a biasing load thereon; said central hollow rib defining a vertical opening bridged by said orthodonic wire and adapted to receive a tie wire to secure said orthodonic wire to said rib.

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