C. L. ALEXANDER.

ORTHODONTIC APPLIANCE.

APPLICATION FILED DEC. 15, 1917.

1,361,661. Patented Dec. 7, 1920.

Fig. 1.

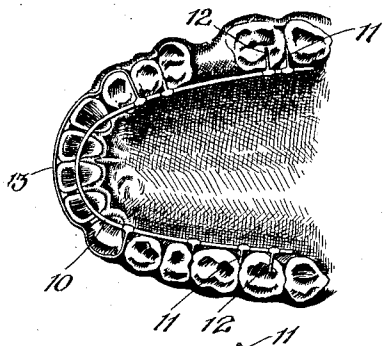


Fig. 4.

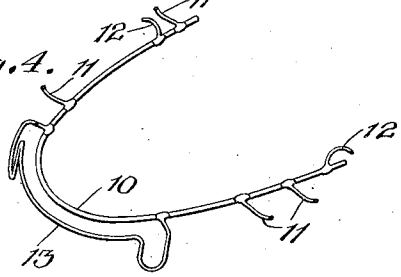


Fig. 2.

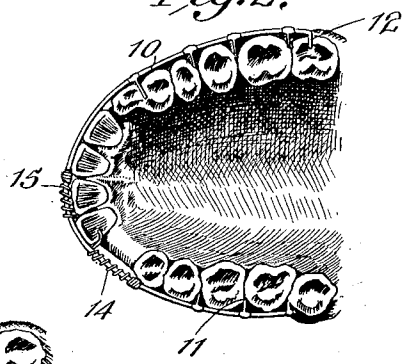
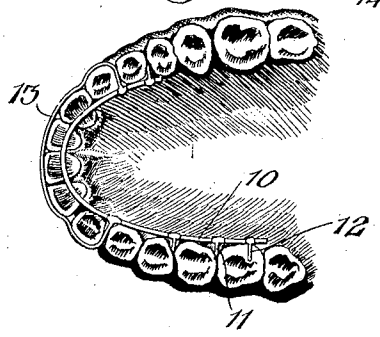


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ORTHODONTIA APPLIANCE.

1,361,661. Specification of Letters Patent. Patented Dec. 7, 1920.

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To all whom it may concern:

Be it known that I, CHARLES L. ALEXANDER, a citizen of the United States, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Orthodontia Appliances; and I 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.

This invention relates to orthodontia appliances, and has for an object to provide a device more easily positioned, more easily removed for sanitary reasons or when desired for other purposes and to be replaced with corrections as progress of the case may make desirable.

A further object of the invention is to provide a resilient expansion or contraction wire carrying laterals adapted to be inserted into or through the interproximal spaces for positioning the resilient wire and with hooks engaging over the faces or into the grooves between cusps to prevent the wire being forced uncomfortably into engagement with the gums.

A further object of the invention is to provide such resilient expansion or contraction wire and positioning means to which can be attached corrective appliances as the nature and progress of the case make necessary.

A further object of the invention is to provide such a resilient wire and positioning the same as a retainer when the proper correction has been made.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing,—

Figure 1 is a view of the appliance positioned in the mouth of the patient and occupying the lingual side of the teeth.

Fig. 2 is a view of the appliance positioned on the buccal side of the teeth.

Fig. 3 is a view of the device again on the lingual side of the teeth, this time being short of a complete arc.

Fig. 4 is a perspective view of one form of appliance removed.

Like characters of reference designate corresponding parts throughout the several views.

It has been demonstrated in orthodontia that a very slight constant pressure upon a tooth in any direction eventually produces the corrective effect aimed without causing discomfort to the patient while such corrective action is taking place. Heretofore it has been customary to employ orthodontia appliances of considerable degree of rapidity, whereby a considerable degree of pressure could be applied to the teeth to correct the error rapidly. It has been found however, such rapid correction has resulted in discomfort to the patient and is detrimental to the teeth and adjacent parts. The present invention is particularly aimed at the production of an appliance which will produce the desired corrective effect without accompanying discomfort and injury and lends itself to simple and quick removal and replacement. The appliance comprises essentially a resilient wire 10 which is curved to conform substantially to the arch of the teeth either upon the lingual or buccal side, the former being preferred, as it becomes practically invisible and is no more objectionable to the patient than one disposed upon the buccal side, but the position of the wire is determined by the nature of the case. The wire is provided with means for positioning and holding it in place consisting of lateral wires 11 which are inserted through the interproximal spaces and may, if found desirable, be curved upon the other side of the teeth opposite the wire to more securely position the device in place. Such curvature for the purpose of anchoring is, however, usually unnecessary. To prevent the wire from being forced into uncomfortable engagement with the gums through mastication hooks 12 are provided, hooking over the occlusial faces or into the grooves between the cusps of the teeth.

The hooks 12 are attached to the wire 10 at points angularly displaced approximately 90° from the points of attachment of the offset laterally projecting positioning wires 11, and are abutted against the wire 10, so that they, as well as the offset wires 11, present no obstruction that keeps the wire 10 from bearing against the teeth.

To the appliance thus provided any desired corrective devices may be attached as found necessary for the particular case, the

particular corrective features forming only indirectly part of the invention. The corrective devices are illustrated in the drawing by the device 13 and by the members 14 and 15, it being understood that the invention as embodied in the present application is only for the purpose of carrying and effectively positioning such requisite corrective appliances. The utility of the several corrective devices illustrated will be perfectly apparent without explanation and as they are not essential to the invention no further description need be entered into.

What I claim is:—

1. An orthodontia appliance comprising a resilient wire curved to conform to the arch of the teeth and adapted to press resiliently against the teeth, offset wires secured to and extending laterally from said resilient curved wire substantially in the plane of the axis of said curved wire, and positioned at intervals to enter the interproximal spaces of the teeth, in order to position the curved wire and prevent bodily displacement of said curved wire in the plane thereof, and means to prevent the curved wire from being pressed into the gums, comprising one or more stop wires each curved to bear upon the occlusial surface of a tooth.

2. In an orthodontia appliance, the combination of a resilient wire forming the usual arch band curved to conform to the arch of the teeth and adapted to rest on the teeth adjacent to the gum line, having means for positioning the wire, and a corrective device comprising a supplementary arcuate wire forming an outer arch band, and having at each end a downturned band to go over a tooth, each band attached at one side to the main band.

In testimony whereof I affix my signature.

CHARLES L. ALEXANDER.