

Dec. 23, 1941.

W. H. GRIESINGER

2,266,860

ORTHODONTIA APPLIANCE

Filed Aug. 25, 1939

FIG. 1.

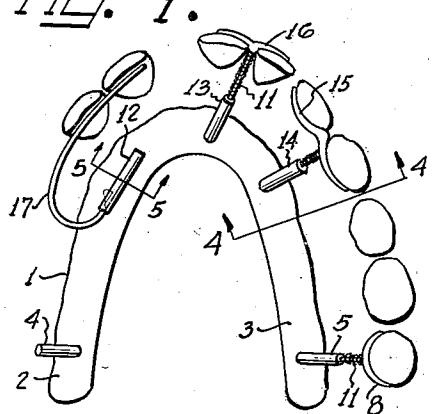


FIG. 2.

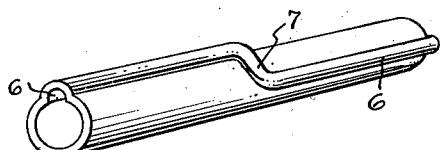


FIG. 3.

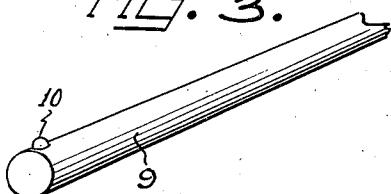


FIG. 4.

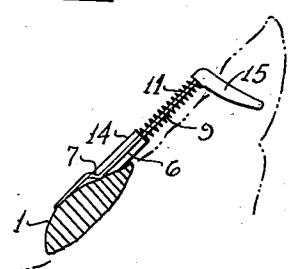


FIG. 5.

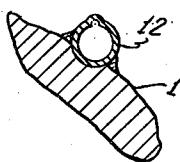


FIG. 6.

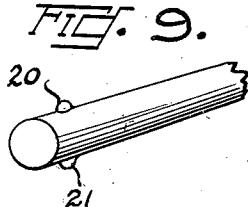
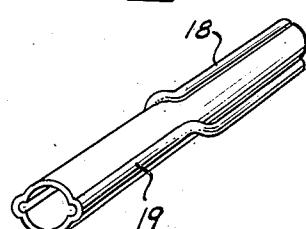


FIG. 7.

FIG. 8.



INVENTOR  
WALTER H. GRIESINGER

BY *James Givens*  
ATTORNEY

## UNITED STATES PATENT OFFICE

2,266,860

## ORTHODONTIA APPLIANCE

Walter H. Griesinger, Portland, Oreg.

Application August 25, 1939, Serial No. 291,881

## 1 Claim. (Cl. 32—14)

This invention relates to improvements in orthodontia appliances and has for its principal object to provide an appliance of this character which is of simple, efficient, durable and inexpensive construction and wherein the several parts, although readily accessible to manipulate and adjust in constricted places, are hidden from view behind the teeth of the wearer, and thereby eliminate danger of injury or decay to the teeth.

Other objects and advantages will appear as the invention is more fully hereinafter described in the following specification, illustrated in the accompanying drawing and finally pointed out in the appended claim.

## In the drawing:

Figure 1 is a plan view of the appliance in operative position in the roof, or palate, of the mouth and in operative engagement with the teeth.

Figure 2 is an enlarged perspective detail view of a wire-locking tube.

Figure 3 is an enlarged perspective detail view of a wire with a projection formed thereon and adapted for locking engagement with the tube illustrated in Figure 2.

Figure 4 is an enlarged sectional view taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged sectional view taken on the line 5—5 of Figure 1.

Figure 6 is an enlarged detail view of a clasp secured to one end of the wire illustrated in Figure 3.

Figure 7 is a view illustrating the fact that the wire-locking tubes may be disposed and secured to the palatal bar in any angular relation, with respect thereto.

Figure 8 is a modified form of wire-locking tube.

Figure 9 is a modified form of wire for engagement with the locking tube shown in Figure 8.

Referring now more particularly to the drawing:

In Figure 1, I have illustrated a palatal bar 1, formed in the usual manner to conform precisely to the roof of the mouth. The palatal bar is preferably made of metal and is substantially U-shaped as shown. At or near the ends of the leg portions, 2 and 3, of the palatal bar 1 secure by brazing, soldering, or any other approved means, tubes 4 and 5 which are shown in enlarged detail in Figure 2, and which are formed with a longitudinal slot 6 extending full length of the tube and off-set at, or near, its center as at 7.

The tubes 4 and 5 disposed at, or near the ends of the legs 2 of the palatal bar may be

arranged in any angular relation with respect thereto, as best suited to fit the contour of the palate of the mouth. These ends of the palatal bar are secured in position by means of clasps 8, which partially embrace the molar teeth as shown in Figure 1. The wire 9 is secured at one of its ends to the clasp and its opposite end, which carries the projection 10, extends through the tube 4, or 5 and terminates anywhere between the off-set portion 7 and the end of the tube. A compression spring 11 is interposed between the upper end of the tube and the clasp 8 to exert pressure against the palatal bar to maintain it in position within the mouth. The wire 9 is thrust downwardly through the tube with the projection 10 riding in the slot 6 until it reaches the off-set portion 7, then the wire is rotated about its longitudinal axis, so that the projection 10 will follow around through the off-set portion 7 of the slot. Following this, the wire is again thrust forwardly, or downwardly through the tube and is thereby prevented from being removed unintentionally.

The tubes 4 and 5 and their related springs, wires and clasps serve as anchors to maintain the rearward portion of the appliance in proper position within the mouth.

At the forward end of the palatal bar, any number of tubes, such for instance as those indicated at 12, 13, and 14, may be secured to the bar in any angular relation, ranging from horizontal to vertical to accommodate the conditions of the mouth, or they may be arranged in a direct line toward the particular tooth or teeth being dealt with.

As shown in Figure 1, the tube 14, the wire extending outwardly therefrom, and the clasp 15 are bearing against the cuspid teeth to exert outward pressure thereon. The clasp 16 connected with the tube 13 is arranged in front of the lateral teeth, or in front of one lateral tooth and one central tooth to exert an inward pull, or an inward pressure thereagainst.

The tube 12 may be secured in a horizontal position with respect to the palatal bar 1 to receive one end of a spring wire 17, whose outer or free end, bears against the interior of any of the forward teeth to exert outward pressure thereagainst.

From the foregoing, it will be obvious that any number of wire-locking tubes may be secured to the palatal bar and extended outwardly therefrom in any position to accommodate any desired number of clasps applied either to the interior, or exterior, of the teeth for applying outward or

inward pressure thereto. The novel combination of the wire-locking tube and the wire with the projection thereon enables the operator to quickly and conveniently attach clasps to, or detach them from the palatal bar without soldering, or the like.

In instances where the clasp is to apply outward pressure to the teeth, such for instance as the clasp 15, the supporting wire for the clasp is sprung toward the teeth, to apply outward pressure thereon, while in instances where teeth are to be drawn inwardly, the clasp, for example, clasp 16, is arranged on the outside of the teeth and its supporting wire is sprung inwardly, so that the clasp will bear against the outside of the teeth.

The modified form of wire-locking tube shown in Figure 8 is formed with two off-set slots 18 and 19, to accommodate the diametrically opposed projections 20 and 21 formed on the wire 20 illustrated in Figure 9.

While I have shown a particular form of em-

bodiment of my invention I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention. Having thus described the invention, what I claim as new and desire to protect by Letters Patent is:

An orthodontia appliance consisting of a palatal bar adapted to be disposed within and conformed to the interior of the mouth, a plurality of tooth-engaging elements yieldingly mounted with respect to the palatal bar and means for removably securing the tooth-engaging elements to the palatal bar, said means consisting of a yieldable shaft whose one end carries the tooth-engaging elements and whose opposite end is removably engaged with a tube extending outwardly from said palatal bar, said tube having two slots offset with respect to each other and interconnected by a transverse slot and said shaft having a projection on one of its ends for engagement with said slots.

WALTER H. GRIESINGER.