Oct. 23, 1956 N. H. GLADSTONE 2,767,469

ORTHODONTIC ARCH WIRE LOCK

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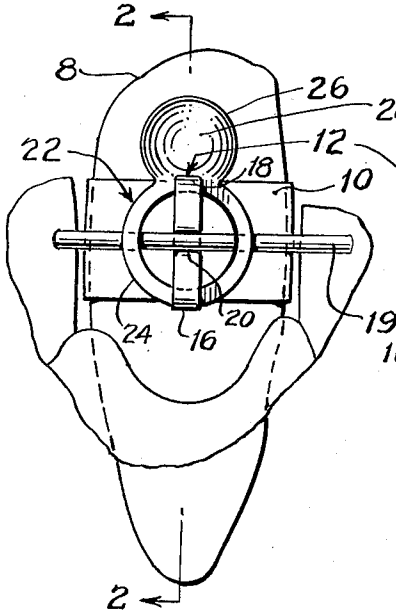


Fig. 1.

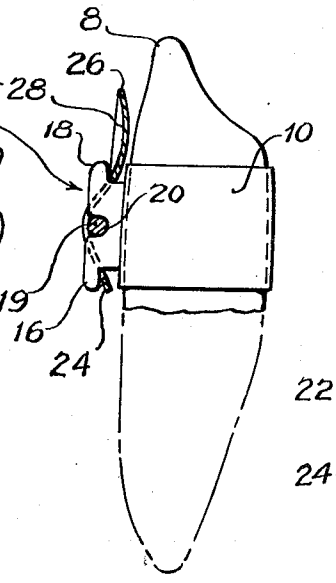


Fig. 2.

Fig. 4.



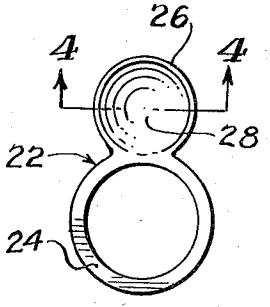
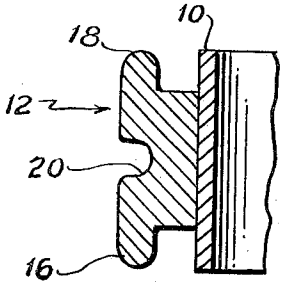


Fig. 3.

Fig. 5.



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ORTHODONTIC ARCH WIRE LOCK

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2 Claims. (Cl. 32—14)

My invention relates to an orthodontic wire support for holding the arch wire securely in position. Hitherto such arch wire, either rectangular or circular in cross-section, was secured to its supporting bracket by clamping pins or clips that were usually difficult to install and remove.

It is an object of my invention to provide an improved means for quickly and simply snap fitting a lock to a bracket over the arch wire.

Further objects of my invention are to provide a snap fitting lock that may be inexpensively stamped from sheet metal, and which may be shaped in the form of a loop to facilitate engagement over the two oppositely extending ends of a T-shaped bracket.

These and other objects are accomplished and my new results obtained as will be apparent from the device described in the following specification, particularly pointed out in the claims, and illustrated in the accompanying drawing, in which:

Fig. 1 is a labial view of a tooth showing my orthodontic wire support, mounted thereto, holding an arch wire securely in position.

Fig. 2 is a side view thereof.

Fig. 3 is an enlarged plan view of the loop lock.

Fig. 4 is a sectional view taken in the plane 4—4 of Fig. 3.

Fig. 5 is a side view of the bracket and band for positioning the arch wire.

In preparing teeth 8 for the orthodontic band 10, such as is shown in Fig. 1, I first separate the teeth in a known manner by twisted thin copper ligatures (not shown), which are tightened between the contact points of adjacent teeth. After a week or so, the copper wires are removed and a band 10 is fitted around each tooth, as is shown in Fig. 1. The bands are removed and soldered or welded together and installed on the teeth with dental cement and left on the teeth until the positions of the teeth are corrected. Usually twelve teeth are involved in each arch.

On the labial side of each band, a bracket 12 is welded thereto before installation. The bracket 12 comprises a T-shaped body 14 having wing sections 16 and 18, and an arch wire receiving groove 20. The groove may be square or round in cross-section, depending on the arch wire selected. The arch wire 19 is inserted into each groove 20 and locked to each bracket by a loop lock 22. The loop lock as is illustrated in Figs. 1 to 5, comprises a ring shaped element 24, made of resilient, springy material which is capable of being caught under one of

the wings of the bracket and flexed over the arch wire and caught under the remaining wing. A handle 26 may be formed in the loop wire to facilitate handling during installation. The handle may be provided with a longitudinally extending valley-like region to facilitate the camming and provide an instrument gripping area 28. The loop lock may be made of wire stock or stamped from sheet material. It should possess the ability to flex from substantially circular form to a somewhat elliptical form to permit resilient installation over the wings of the bracket and over the arch wire to lock the wire to the bracket by a camming action.

By inserting a tool underneath the handle portion 26, it is possible to cam the loop from underneath one of the wing sections and free it from the bracket, thus releasing the wire.

The materials are preferably metals benign to human tissue and resistant to deterioration from secretions from the mouth.

I have thus described my invention but I desire it understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which objects of my invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

I claim:

1. The combination of an orthodontic band having a bracket portion extending from the labial surface thereof, a groove for seating the arch wire therein, a pair of wing sections laterally extending therefrom; and a lock for said wire, shaped in the form of an endless loop made of resilient material capable of flexing and adapted to be hooked under one of the wing sections, and cammed over the remaining wing section to be snap-fitted thereunder, said lock provided with an integral handle to facilitate installation thereof.

2. The combination of an orthodontic band having a bracket portion extending from the labial surface thereof, a groove for seating the arch wire therein, a pair of wing sections laterally extending therefrom; and a lock for said wire, shaped in the form of an endless loop made of resilient material capable of flexing and adapted to be hooked under one of the wing sections, and cammed over the remaining wing section to be snap-fitted thereunder, said lock being substantially circular in shape and adapted to be flexed into a somewhat eliptical shape under pressure, and to restore itself into the circular shape when the pressure is released.

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