

R. WILES.
ORTHODONTIA APPARATUS.
APPLICATION FILED DEC. 3, 1909

982,406.

Patented Jan. 24, 1911.

Fig. 1.

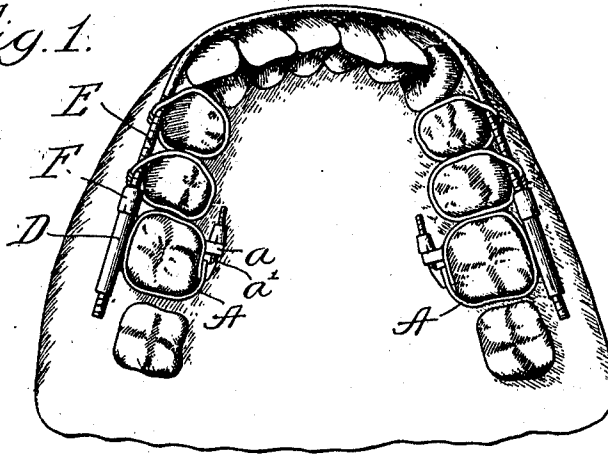


Fig. 2.

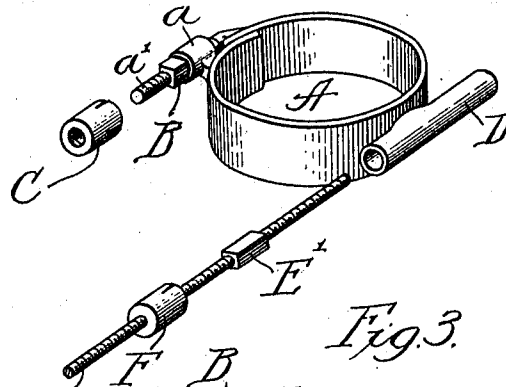
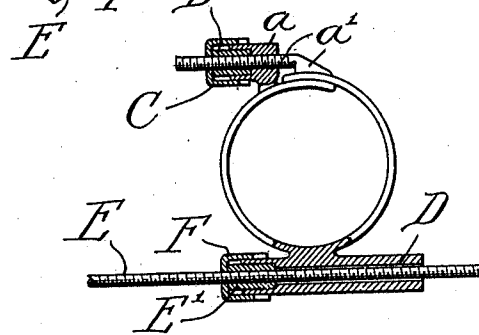


Fig. 3.



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ORTHODONTIA APPARATUS.

982,406.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUSSELL WILES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Orthodontia Apparatus, of which the following is a specification.

My invention relates to new and useful improvements in orthodontia apparatus, and is fully described and explained in the specification and shown in the accompanying drawing, in which—

Figure 1 is a plan view showing my apparatus in position upon a set of teeth in the manner in which the same is commonly used; Fig. 2 is a perspective view illustrating in detail those portions of the appliance embodying the novel features which characterize my invention, and Fig. 3 is a top plan showing certain of the parts in transverse section.

In the use of orthodontia apparatus of the general class herein illustrated it is the custom to secure an anchor band to a tooth which it is not required to move in the jaw, or under certain conditions anchor bands may be applied to more than one tooth and a straightening device may be connected to said two anchor bands. When anchor bands are so applied, other devices run therefrom to the teeth which are to be moved, and it is the practice to move said devices relative to the anchor band by means of a screw action, and the anchor bands themselves are usually fitted to their teeth and clamped thereon by a screw action. The screw action usually adopted consists of a nut movable upon a threaded member to secure the desired clamping action or the necessary relative movement between the parts to be affected, and considerable difficulty has been experienced in the use of orthodontia apparatus in the past by reason of the fact that the action of the lips and tongue of the wearer of the appliances tended to loosen the nuts used thereon for the aforesaid purpose.

Under ordinary conditions, the ordinary and usual friction between the parts is sufficient to hold the nuts against movement as long as tension is maintained upon them, but after a short period of application, the tooth to be affected by the orthodontia apparatus has usually moved to a sufficient dis-

tance to relieve this tension so that the nuts are not subjected to any great friction or pressure, and are therefore free to be moved by the action of the tongue or lips so as to very materially loosen the appliance in the mouth and permit the return of the teeth to the position from which they have just been moved.

It is the object of my present invention to provide a construction of such a nature that this loosening of the nuts by the tongue and lips of the wearer will be impossible.

Referring to the drawings; A is an anchor band, the ends of which overlap to allow adjustment upon the tooth to which the same is applied. Attached to one end of this anchor band is a perforated ear *a*, and to the other end is a projecting screw threaded post *a*¹ which extends through the perforated ear *a*. A nut B is threaded upon the post *a*¹ for the purpose of tightening the anchor band upon the tooth to which it is applied, and a sheet metal cap C is passed over the end of the post, and over the nut B and a portion of the perforated ear *a*, the cap being split at its end to secure a firm engagement between itself and said perforated ear. By this means it will be seen that the nut B is entirely protected from such contact with the lips or tongue as can by any possibility tend to unscrew the same, thereby loosening the anchor band upon the tooth.

Attached to the anchor band upon the opposite side thereof, is a sleeve D through which is passed a threaded wire E, which is made use of in the ordinary manner for exerting pressure upon other teeth. A nut E¹ is threaded upon the wire E and the sleeve D is counter sunk at the end so that the greater part of the body of the nut enters this counter sunk portion, a comparatively small part of the nut projecting from said counter sunk portion to afford a place suitable for the engagement of the tightening tool. A sheet metal cap F is provided upon the threaded wire E which can be slipped over the projecting portion of the nut, in the manner illustrated, to cover and protect the same.

It will be seen from the foregoing description of the construction of the adjusting means between the anchor band and the wire that the nut is completely protected

from contact of the tongue or lips so that it cannot be loosened thereby. It will further be seen that even though the cap F were omitted in this case, still the bulk of the nut is covered up by the counter sunk portion of the sleeve upon the anchor band so that only a small portion of the nut will be subjected to such contact of the tongue and lips and therefore in all probability the nut could not be loosened. It is therefore possible to accomplish largely the purpose of my invention, even though the cap is dispensed with, the salient feature being that the nut is wholly or partially protected from the action of the tongue and lips of the wearer of the device so that the friction between it and the several threads of the wire upon which it moves will maintain it in position even when tension ceases to be exerted upon it.

It will be evident of course that the principle here illustrated is in no way dependent upon any friction between the nut and sleeve, and in fact, for purposes of ready adjustment, I prefer to have the nut quite free within the sleeve, the sleeve merely serving to surround and protect the same from frictional contact with the lips and tongue. This method of preventing accidental and improper loosening of the nut can obviously be applied to other portions of an orthodontia apparatus and to devices of this general class, other than the form herein specifically shown and described, and I do not intend to be limited in any way to its use in such connections.

I realize that considerable variation is possible in the details of construction of my improved device, without departing from the spirit of my invention, and I do not in-

tend, therefore, to limit myself to the specific form herein shown and described.

I claim as new and desire to secure by Letters Patent:—

1. In an orthodontia apparatus, the combination with an anchor band of a threaded tension member, a female member surrounding the same, a nut upon the threaded member to abut against the female member and surrounding and projecting parts about the nut whereby engagement between the tongue and lips of the wearer and the nut is prevented.

2. In an orthodontia apparatus, an anchor band, a threaded tension member, a female member movable thereon, and a nut adapted to abut against the female member, the female member being countersunk to receive the nut freely therein, whereby the nut is protected from contact with the tongue and lips of the wearer.

3. In an orthodontia apparatus, an anchor band, a threaded tension member, a female member movable thereon, a nut adapted to abut against the female member, and a cap adapted to inclose the nut and engage the female member.

4. In an orthodontia apparatus, an anchor band, a threaded tension member, a female member movable thereon, a nut threaded upon the threaded member and adapted to engage the female member, the female member being countersunk to receive the nut freely therein, and a cap passed over the nut and engaging the female member.

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