

F. C. RODGERS.
TOOTH STRAIGHTENING APPLIANCE.
APPLICATION FILED JULY 1, 1914.

1,292,885.

Patented Jan. 28, 1919.

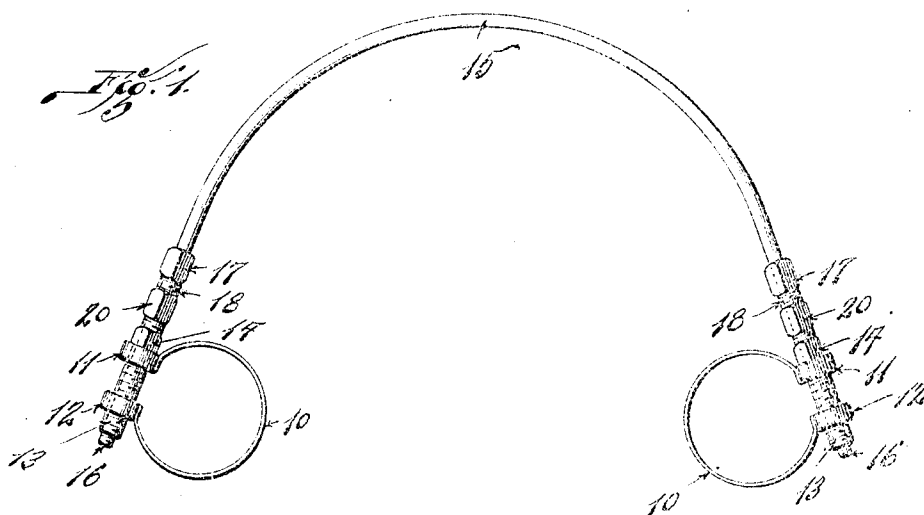


Fig. 2.

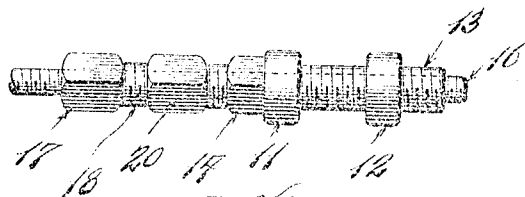


Fig. 3.

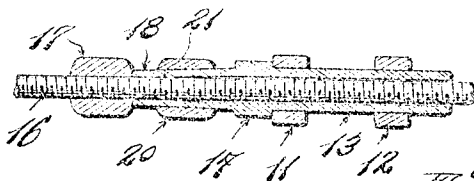


Fig. 4.

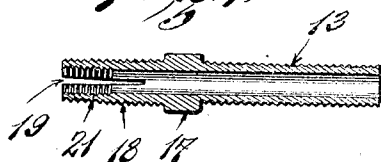
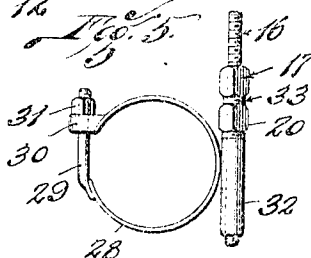


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK C. RODGERS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE MEIER DENTAL MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

TOOTH-STRAIGHTENING APPLIANCE.

1,292,885.

Specification of Letters Patent.

Patented Jan. 28, 1919.

Application filed July 1, 1914. Serial No. 848,361.

To all whom it may concern:

Be it known that I, FRANK C. RODGERS, a citizen of the United States, and residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Tooth-Straightening Appliances, of which the following is a specification.

This invention relates to tooth straightening or regulating appliances, and more particularly, to anchor bands therefor. This invention is an improvement on my co-pending application, Serial No. 838,866, filed May 15, 1914.

Some of the objects of this invention are to further improve the construction of this type of appliance, so as to cause the arch or other appliance element to be supported with greater rigidity, and so as to permit not only a universal operation of the appliance without requiring an excessive number of adjustments, but also to facilitate the ease of adjustment.

Further objects will appear from the detail description taken in connection with the accompanying drawings, in which:

Figure 1 is a view of an appliance embodying this invention,

Fig. 2 is an enlarged detail side elevation,

Fig. 3 is an enlarged detail longitudinal section,

Fig. 4 is a sectional detail of the hollow clamping bolt, and,

Fig. 5 is a detail of another form of appliance embodying this invention.

Referring to the accompanying drawing, and more particularly, to Figs. 1 to 4 inclusive, which illustrate the invention applied to a Lukens appliance, 10 designates an anchor band provided with a smooth eyelet 11 and a threaded eyelet 12, through which extends a hollow clamping bolt 13 having an angular head 14. In the Lukens anchor band, the clamping bolt is formed hollow to provide an anchor tube for the arch 15, the threaded ends 16 of which extend into the clamping bolts and are provided with nuts 17. This Lukens appliance is fully described in United States Patent No. 660,194. The forward or mesial end of the anchor band, which forms, in this particular embodiment, the clamping bolt, is taper threaded, as shown at 18, and this end is split, as shown at 19, so that it may be contracted. This

threaded end is adapted to receive a clamping nut 20 which has a taper or pipe thread, as shown in Fig. 3. After the arch is in position, the nut 20 is tightened and the taper thread therein will contract the split end 18 of the anchor band so as to cause it to firmly clamp the arch and hold it against movement in any direction with respect to the anchor band. As soon as the nut is, however, loosened, the grip on the arch will be released so as to permit adjustment of the arch with respect to the anchor band.

In accordance with this invention, the distal projection 18 on the anchor band 13 is threaded internally for a short distance from its end, as shown in Fig. 4, adapted to engage the threads on the arch when this distal projection is contracted. The threads preferably extend in the same direction, and are of the same pitch, as the thread on the arch, so that when this distal projection is contracted on the arch, the threads will intermesh so as to firmly hold the arch in position against movement either longitudinally, laterally or rotatively. The distal projection 18 is also made long enough so that the clamping nut 20 can be moved toward the end of this projection sufficiently to loosen the grip of the split end of the arch, before the distal end of the clamping nut reaches the end of the distal projection. This feature is important in appliances of this kind. As pointed out in the co-pending application, it is much more convenient to position the arch nut 17 distally of the anchor band, since thereby the adjustments can be more readily obtained. This means that the arch nut will have to abut against the distal end of the anchor band. Now, where the clamping nut must be moved partly off of the distal projection, the adjustment of the arch will be disturbed every time that it is unclamped, and, since the arch can only be adjusted while unclamped, it, of course, follows that the adjustments cannot be made accurately. In accordance with this invention, however, the arch nut is always permitted to abut against the distal end of the anchor band, whether the arch is clamped or loosened, so that unclamping of the arch will not disturb its adjustment.

Fig. 5 shows the invention applied to an angle anchor band. This band 28 is pro-

vided with a bolt 29 attached to one end of the band and passing loosely through an eyelet or sleeve 30 on the other end of the band, this bolt being threaded to receive a nut 31. The anchor band 32 has its forward or mesial end 33 threaded and split, as in the other embodiment, so as to receive the clamping nut 20, and the inside of this anchor tube is corrugated or threaded as in the other embodiment.

The general operation has been described in my co-pending application, and the advantages of the construction were also pointed out. With this construction, however, the internal corrugating or threading of the anchor band results in a more rigid construction, while the arrangement of the clamping nut on the split end of the anchor band permits the arch to be clamped and unclamped without disturbing the adjustments of the arch.

While the parts 13 and 32 have been described as anchor tubes, and while the arch has been described and shown as the appliance element adapted to exert pressure on the tooth to be moved, it is obvious that the anchor band may be used with other appliance elements, such as, traction screws, etc., which are adapted to be placed in and received by the anchor band. It is to be understood, therefore, that the terms "arch" and "anchor tube" are to be construed accordingly. It is further obvious that various changes may be made in details of construction without departing from the spirit of this invention, and it is, therefore, to be understood that this invention is not to be limited to the specific construction shown and described.

Having thus described the invention, what is claimed is:

1. An anchor band for tooth straightening appliances, comprising an anchor tube adapted to permit an arch to slide there-through, the inside of said anchor tube being threaded, and said anchor tube being contractible to grip an arch.

2. An anchor band for tooth straightening appliances, comprising an anchor tube split at one end, and a nut threaded on said split end and adapted to contract the same, the inside of said split end being threaded.

3. In a tooth straightening appliance, an anchor band comprising an anchor tube, an arch in said anchor tube, an arch nut on said arch engaging the end of said anchor tube, and means surrounding the end of the anchor tube engaged by said nut, adapted to lock and unlock said arch but leave the adjustment of said arch nut undisturbed.

4. A tooth straightening appliance comprising an anchor band having an anchor tube split at one end, an arch in said anchor tube, a clamping nut threaded on said split end and adapted to contract the same, and an arch nut on said arch adapted to bear against said split end.

5. An anchor band for tooth straightening appliances comprising a hollow clamping bolt constructed to form a contractible anchor tube, the inside of said bolt being threaded to engage the threads on an arch.

In testimony whereof I affix my signature in the presence of these two witnesses:

FRANK C. RODGERS.

Witnesses:

T. H. SCHAEFERING,
A. G. MEIER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."