

J. ADERER.
TOOTH REGULATING DEVICE.
APPLICATION FILED SEPT. 29, 1908.

941,840.

Patented Nov. 30, 1909.

Fig. 1

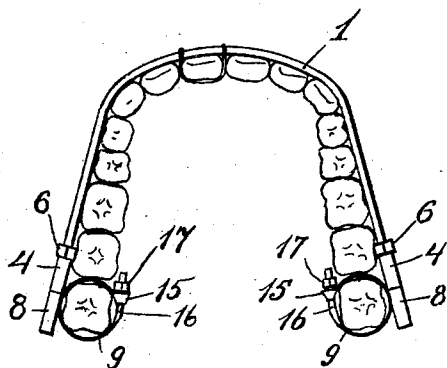


Fig. 2

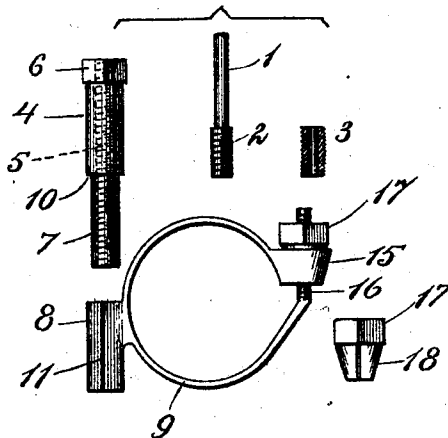


Fig. 3

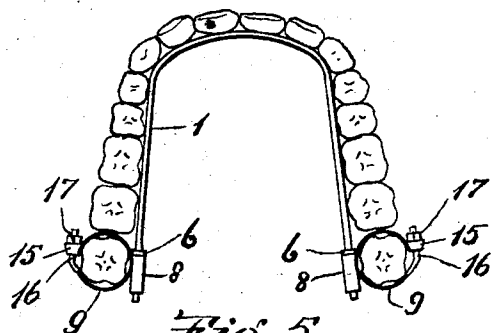


Fig. 4

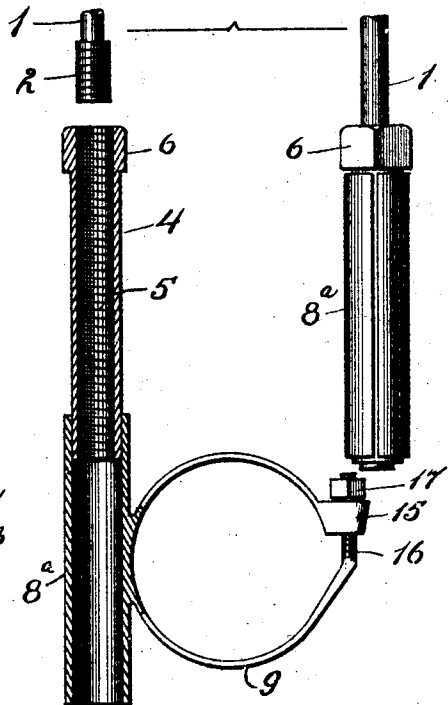
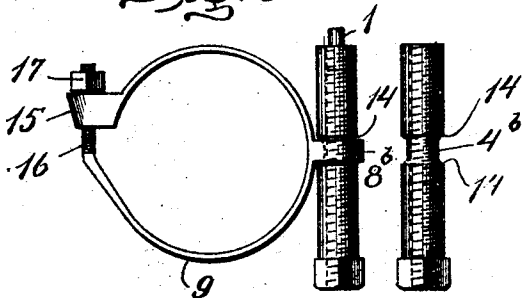


Fig. 5



Witnesses
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UNITED STATES PATENT OFFICE.

JULIUS ADERER, OF NEW YORK, N. Y.

TOOTH-REGULATING DEVICE.

941,840.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JULIUS ADERER, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Tooth-Regulating Devices, of which the following is a specification.

My invention relates to tooth-regulating devices, and has for its object to provide an appliance of this character wherein the threads of the adjusting screws are so covered while the device is in use that the mouth of the patient will be protected from such threads, and one wherein the threads themselves are raised above the normal surface of the wire of the delivery member for adding strength to the structure and for cooperation with the thread covering or protecting portion of the appliance.

This invention is in some particulars an improvement over that type of tooth regulating appliance wherein the delivery member which is either straight or arched in form is screw-threaded for a considerable distance for receiving the adjusting nut which in turn delivers its thrust against the anchor member adapted to be secured to an "anchor" tooth. In the type of appliance just referred to the screw threaded portion of the delivery member has always been relatively much longer than the adjustment nut, thereby resulting in the exposure of its screw thread in the mouth to the injury and annoyance of the wearer. This defect is remedied in my present improvement, which prevents any exposure whatsoever of screw threads throughout the intended range of adjustment of the appliance. The delivery member of the old form of appliance is weakened and often breaks at its screw threaded portion, first, for the reason that said screw threaded portion is so extensive in length, and second, for the reason that the threads are cut directly into the metal of the delivery member which is generally made of wire of sixteen to eighteen gage. This weakness is done away with in the present improvement because the length of the screw threaded portion of the delivery member is reduced to a minimum and its diameter is increased, thereby having the effect of strengthening rather than weakening the delivery member at this point.

In the drawings accompanying and forming a part of this specification Figure 1 is

a plan view of a regulating arch having my improvement applied thereto. Fig. 2 is a detailed view of some of the parts shown in Fig. 1 detached and upon an enlarged scale. Fig. 3 is a plan view showing my improvement applied to a regulating arch adapted to press the teeth outwardly. Fig. 4 is a view, on an enlarged scale, of one end of the delivery member together with the adjusting nut and anchor device showing a different form of nut from that illustrated in Fig. 2; and Fig. 5 illustrates a further modification of the connecting devices.

In Figs. 1 and 2 a regulating arch 1 of well known form is illustrated, which arch is preferably made of hard wire to secure springiness, and is provided at the extremity of its lugs with screw threads which are frequently cut into the wire, which wire is frequently of from sixteen to eighteen gage. By my present improvement, however, the screw thread 2 is raised above the normal surface of the wire of the delivery member 1. By having the screw thread raised above the normal face of the wire, a nut traversing such thread may pass over the end thereof which is toward the body portion of the delivery member, which would not be the case were the threads cut directly into the wire where this is of its normal thickness. One way of securing the raised screw threads is to form the threads upon the sleeves 3 rather than to cut them directly into the material of the wires. The sleeves 3 will be made so that they will have a tight fit upon the wire 1 and may then be secured to the wire in some approved manner, as for instance by soldering. The adjustment sleeves or nuts are long relative to the length of the threaded portion 2 of the delivery member. In the present instance adjustment sleeves 4 are illustrated each of which is provided internally with a screw thread 5 to engage the screw thread 2 on the delivery member, and this thread 5, it will be seen, can in practice be made several times longer than the thread 2 so that the range or amplitude of adjustment of the sleeve 4 upon the screw thread of the delivery member may be of considerable extent without running the adjustment sleeve 4 off of and exposing the thread 2 at either end. The thrust member for the appliance will be fastened to one of the teeth in the mouth of the patient, and in the present instance is shown as comprising an

anchor tube 8 which is carried by the tooth clamp band 9 which will be securely clamped to the tooth. The adjustment sleeve carries wrench engaging faces in the form of a nut 6 for rotating the sleeve and thereby causing the same to traverse the screw threads of the delivery member. In Figs. 3 and 4 the nut head will engage the end of the anchor sleeve 8, 8^a for affording the thrust bearing. In Figs. 1 and 2 a reduced portion 7 is shown upon the adjustment sleeve 4 and a shoulder 10 is provided at the end of such reduced portion for engaging the sleeve 8, which is shown shorter in Fig. 2 than in Fig. 4. The anchor sleeve 8 is shown as split at 11 in a well known manner for producing friction upon the adjustment sleeve.

The clamp band 9 may carry at one end a conical sleeve 15 having its smaller end directed toward the opposite end of the band from which extends a threaded rod 16 which will project through the conical sleeve and be engaged by a conical extension 18 of the nut 17 which is adapted to mate with the chambered interior of the sleeve and adapted to act as a lock nut, it being split for this purpose.

In Fig. 5 the anchor member 8^b is shown reduced in length as compared with the anchor members in the other views, and such anchor member engages a reduced portion 4^b upon the adjustment sleeve and such reduced portion is provided at each end with shoulders 14—14, one of which shoulders will act as the thrust bearing face for engaging the anchor member. This device prevents longitudinal movement of the adjustment sleeve relative to the anchor tooth; but permits a certain amount of pivotal movement relative thereto, which is desirable in certain devices wherein a large range of adjustment of the delivery member is desired.

In the device illustrated in Fig. 5, the anchor member will be longitudinally slit and sprung open and the reduced portion of

the sleeve will be inserted in the anchor member when this will be closed up.

Having described my invention I claim:

1. In a tooth regulating device the combination with an anchor member, and means for securing the same to a tooth, of an interiorly screw threaded sleeve rotatably carried thereby, and a wire having at its end a screw thread raised above the normal surface of the wire and mating with the said interior screw thread.

2. The combination with a sleeve having an interior screw thread, of a wire delivery member provided with a screw thread having its base located outwardly of the normal surface of the wire and extending longitudinally a distance less than the length of the sleeve.

3. In a tooth regulating device, the combination with a delivery member having a short length of screw thread elevated above the normal surface of the said member, of an adjustment sleeve long relative to the length of said screw thread, internally threaded for engaging the thread of the delivery member and having a thrust shoulder, and an anchor member for supporting the adjustment sleeve and having a shoulder for receiving the thrust of the shoulder thereon.

4. In a tooth regulating device, the combination with a smooth delivery member, of an externally screw threaded sleeve having a fit with the delivery member, an adjustment sleeve having internal threads for engaging the external threads of the first named sleeve, and an anchor member for supporting the adjustment sleeve and receiving the thrust therefrom.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

JULIUS ADERER.

Witnesses:

E. W. SCHERR, Jr.

SAMUEL EMBERSON.