No. 765,537. PATENTED JULY 19, 1904.

F. P. ABBOTT.

DENTAL DUCT APPLIANCE.

APPLICATION FILED NOV. 14, 1903.

NO MODEL.

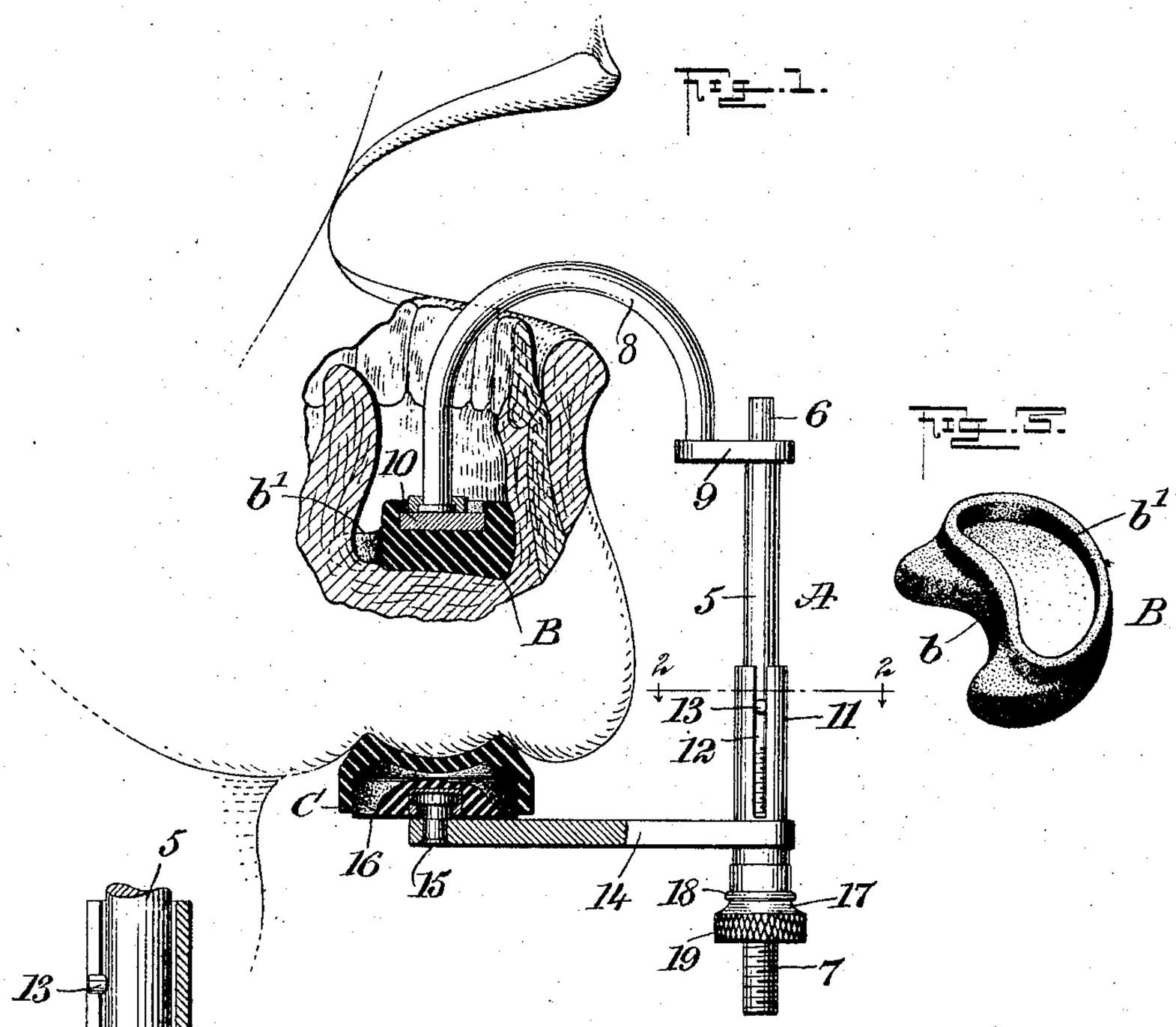

Fig. 1.

Fig. 3.

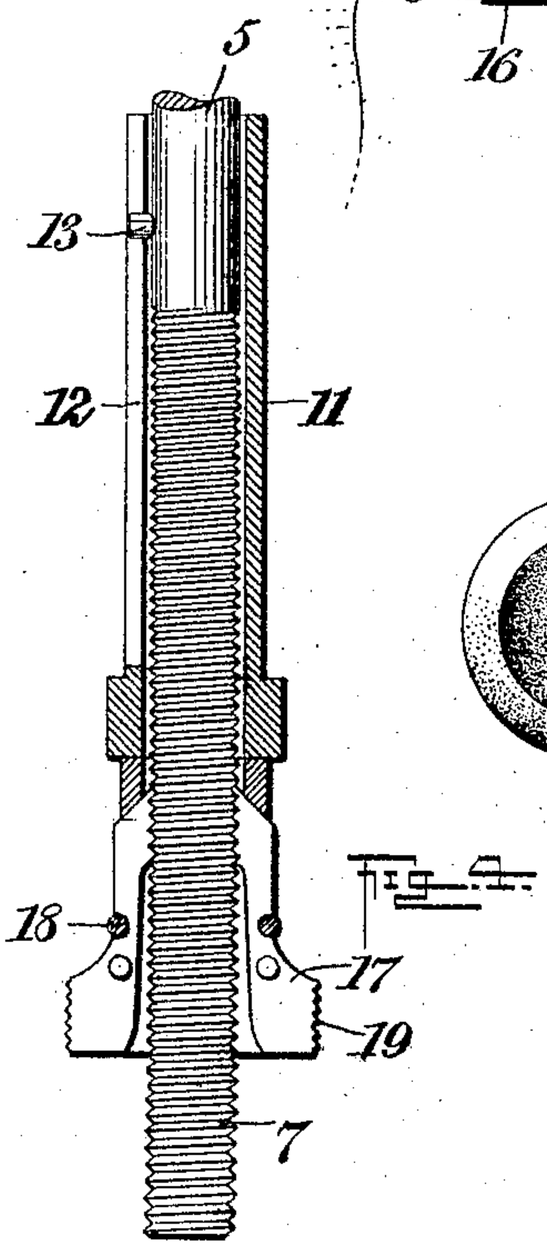

Fig. 4.

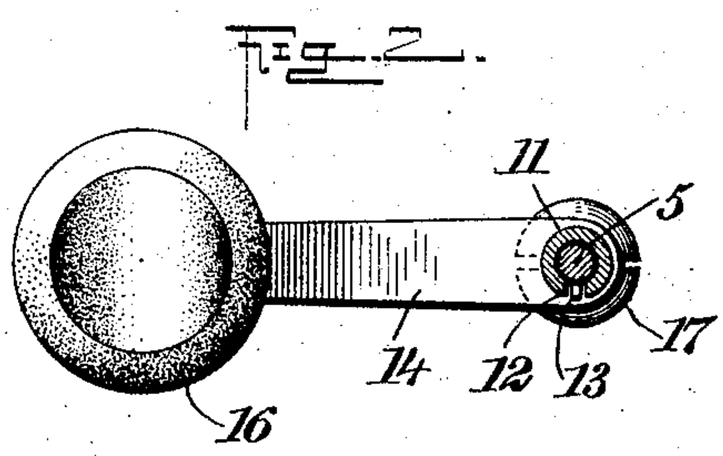

Fig. 2.

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No. 765,537. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

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DENTAL DUCT APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 765,537, dated July 19, 1904.

Application filed November 14, 1903. Serial No. 181,177. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. ABBOTT, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Dental Duct Appliance, of which the following is a full, clear, and exact description.

In certain dental operations, such as crown and bridge work, it is necessary to prevent the accession of saliva to the teeth; otherwise the liquid is liable to lodge on the teeth and prevent the work from adhering permanently to the tooth or teeth. Various expedients have been resorted to for keeping the saliva from the teeth, among them being the insertion of absorbent cotton in the mouth, the employment of rubber dams, and other devices.

According to this invention I employ a cushion-pad which is shaped for application to the interior of the mouth over the sublingual ducts through which the saliva is supplied, said pad being associated with suitable means for pressing it firmly in place, so as to choke off the flow of saliva. The pressure device which I prefer to employ contemplates a form of compress which has a rest to be applied to the jaw in a position to coöperate with the mouth-pad, and this compress also includes means by which the parts may be operated quickly and to secure nicety and accuracy, to the end that the appliance may be used without hurting the patient and may be quickly dismounted as the needs of the service may require.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the actual scope thereof will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my improved dental appliance for preventing the flow of saliva into the mouth and showing the device in its operative position in the mouth of a patient. Fig. 2 is a horizontal sectional plan view on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the cushion-pad removed from the appliance, and Fig. 4 is an enlarged vertical sectional elevation showing one embodiment of means by which the arm that supports the rest may be adjusted quickly.

In carrying my invention into practice I employ a compress, which is indicated in its entirety by the reference character A. This compress is adapted to support a mouth-pad B and a jaw-rest C, as shown by Fig. 1, said mouth-pad and the jaw-rest being disposed in coöperative relation and one of these parts being adjustable with relation to the other through the medium of the compress in a way to hold the mouth-pad firmly in place over the sublingual ducts of the mouth for the purpose of cutting off the flow of saliva therethrough into the mouth.

As shown by the drawings, the compress includes in its construction a stem 5, which is reduced at its upper portion in order to form a tenon 6, while the lower portion of the stem has a continuous male screw-thread 7. Loosely swiveled on the tenon 6 of the stem is a yoke 8, which is provided at one end with a short arm 9, adapted to be loosely fitted on the stem in any suitable way, so as to be held from sliding movement on the stem and at the same time to be capable of turning freely thereon. The other end of the yoke is swiveled to a head 10, and this head is adapted to carry the mouth-pad B.

11 designates a tube which is fitted loosely on the lower portion of the stem 5, so as to slide freely thereover, said tube being provided in one side with a longitudinal slot 12, into which projects a stud or pin 13, that is made fast to the stem 5 at a suitable point below the swiveled connection of the yoke 8 with the stem. This tube or sleeve is held by the stud or pin from rotative movement on the stem; but said sleeve is limited to and is capable of a free sliding movement lengthwise of the stem in order that it may move toward or from the yoke 8 at the point where it is swiveled on said stem. This sleeve 11 carries an arm 14, which extends outwardly from the sleeve and the stem for a suitable distance, and at the free end of the arm is

mounted a pivotal stud 15, the latter extending upwardly from the arm and having a loose connection with another head, 16. This head 16 is disposed in opposing or facing relation to the head 10 on the yoke 8, and on this lower head 16 is mounted the jaw-rest C. The sleeve 11 and the arm 14 carried thereby are adapted to be adjusted lengthwise of the threaded stem by means of a nut 17, which is shown by Figs. 1 and 2 as having threaded engagement with the male-threaded part 7 of said stem and as abutting against the lower extremity of the sleeve 11.

For the purpose of securing a quick adjustment of the sleeve 11 and the arm 14 with relation to the stem 5 I prefer to employ a divided or split nut, as shown by Figs. 2 and 4 of the drawings, and the members of this split nut are held or confined in their coöperative relation by a spring band or ring 18, which is seated in an annular groove, the latter being provided in the matching sections of the divided nut. This nut is constructed for its sections to have a limited movement toward each other when pressure is applied to the lower milled portion 19 thereof; but the spring ring or band 18 serves to normally hold the upper female-threaded portions of the members in threaded engagement with the lower part of the stem 5. It is evident that the operator may compress the lower part of the split nut in order to free the latter from engagement with the threaded stem, thus allowing the nut, the sleeve, the arm 14, and the head 16 to be slipped lengthwise of the stem 5 with ease and rapidity; but when the nut is released from pressure and the spring holds it into threaded engagement with the stem said nut may be rotated on the stem in order to secure nicety in the adjustment of the parts.

An important feature of this invention consists in the employment of a cushion-pad which is adapted for application to the interior of the mouth in a way to effectually close the sublingual ducts and to be held under the required pressure without injury to the tender muscles of the mouth or to the cord of the tongue. I find it necessary to employ a peculiar construction of this cushion-pad, and one peculiarity of the pad consists in the formation or presence of a recess *b* in that side of the pad which lies next to the cord of the tongue. The pad is made of soft rubber or any other suitable material which will possess the requisite qualifications of being impervious to moisture and of not injuring the tender muscles of the mouth. I prefer to make the pad with a socket *b'*, in which the head 10 of the appliance is adapted to fit snugly, thus allowing the pad to be applied to the head and to hold itself on said head by frictional engagement therewith. The pad can be made very cheaply, so that a fresh pad can be used each time the appliance is employed in the mouths of different patients, and said pad can be easily and quickly applied to and removed from the head of the appliance. I also prefer to make the jaw-rest C of soft rubber and to place it removably on the head 16, which is carried by the arm 14 of the appliance.

In using my improved device the dentist fits a mouth-pad B of the proper size and contour on the head 10, while a suitable jaw-rest C is fitted to the head 16. With the tube 11, the divided nut 17, the arm 14, and the jaw-rest C in a position at or near the lower extremity of the threaded stem 5 the dentist proceeds to apply the device in the mouth of the patient by placing the pad B on the muscles of the mouth below the tongue, the recessed edge *b* of the pad extending on opposite sides of the cord of the tongue, while the yoke 8 arches the teeth and lip on the lower jaw of the mouth. The arm 14 is adjusted to present the rest C against the under side of the jaw and preferably at a point directly below the mouth-pad B, after which the split nut is spread and the several parts are moved quickly along the stem, or, if desired, these parts may be adjusted to approximately the desired position, when the jaw-rest C is fitted in place. Having preliminarily adjusted the parts, the operator proceeds to rotate the nut 17 on the stem in order to move the arm 14 toward the yoke and make the pad B and the rest C exert the required pressure on the mouth for the purpose of closing the sublingual ducts and choking off the flow of saliva into the mouth.

An advantage in the practical service of my appliance is the ability of the dentist to shift the device from one side of the mouth to the other without disturbing the position of the pad B and rest C, because the yoke 8 and the arm 14 are loosely mounted with respect to the stem 5, and the yoke 8 and arm 14 have pivotal connection with the heads 10 16, respectively, thus allowing the appliance to be readily changed in position without disturbing its position in the mouth. In case it is desired to quickly remove the appliance, as is necessary in some operations, according to the condition of the patient, the nut 17 is compressed and the several parts held thereby may be rapidly slipped along the threaded tube, thus disengaging the rest C and allowing the yoke and the pad to be withdrawn from the mouth.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A dental appliance consisting of a threaded stem, a yoke connected thereto, a mouth-pad supported by the yoke, an arm slidable on the stem, a jaw-rest on said arm, and a nut having threaded engagement with the stem and adapted to adjust the arm on said stem.

2. A dental appliance comprising a compress having a threaded stem provided at one end

with a yoke, a rest-support slidable on the stem of said compress, a divided nut operatively related to the stem of the compress and the adjustable rest-support, and a pad on the yoke of said compress.

3. A dental appliance consisting of a compress having heads in coöperative relation, a mouth-pad removably fitted to one of said heads, a chin-rest on the other head of the compress, and means for adjusting one of said heads with relation to the other.

4. A dental appliance consisting of a threaded stem, a yoke attached thereto, a slotted sleeve fitted loosely on said stem and held from rotative movement thereon, a nut threaded on the stem for adjusting said sleeve endwise, an arm movable with the sleeve and carrying a jaw-rest, and a pad supported by the yoke.

5. A means for preventing the flow of saliva into the mouth during dental operations, consisting of a pad to be placed in the mouth having one edge fashioned into a recess to fit to the cord of the tongue.

6. A means for preventing the flow of saliva into the mouth during dental operations, consisting of a pad to be placed within the mouth, a rest to be placed beneath the chin, and a compress engaging said pad and said rest and free to swing relatively thereto so as to allow ready access to the mouth.

7. A dental appliance consisting of a compress, a jaw-rest, and a pad arranged for application to the interior of a mouth to cover the saliva-ducts therein, said pad being provided with a recess to accommodate the cord of the tongue.

8. A dental appliance consisting of a stem, a yoke at one end of said stem, an arm slidable on the stem, a pad mounted on the yoke, a jaw-rest supported by the arm, means for adjusting said arm and said jaw-rest upon said stem, and mechanism for preventing radial movements of said arm relatively to said stem.

9. A dental appliance comprising a compress having adjustable members, a mouth-pad on one of said members, and a revoluble nut having threaded engagement with one part of the compress and connected to an adjustable member thereof, said nut being spreadable and adapted with an adjustable member of the compress for quick movement on a non-adjustable member of said compress.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK P. ABBOTT.

Witnesses:
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