

J. B. BESANT.
MOUTH PROP.

APPLICATION FILED OCT. 31, 1904.

Fig. 2

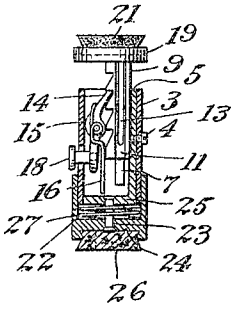


Fig. 1

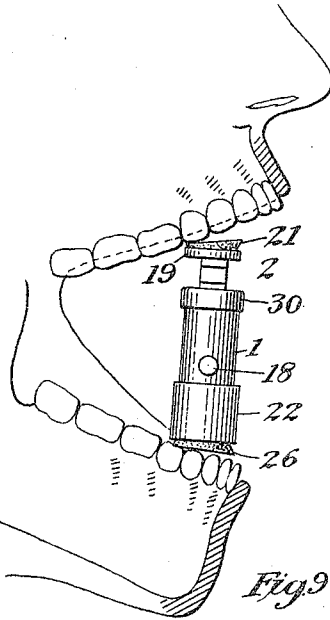


Fig. 4

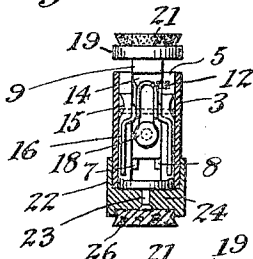


Fig. 5

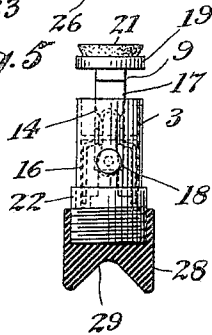


Fig. 6

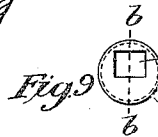
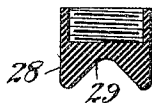


Fig. 6

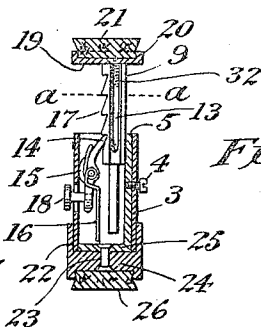


Fig. 3

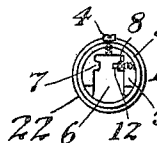


Fig. 7

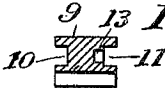


Fig. 8

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UNITED STATES PATENT OFFICE.

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MOUTH-PROP.

No. 801,840.

Specification of Letters Patent.

Patented Oct. 17, 1905.

Application filed October 31, 1904. Serial No. 230,730.

To all whom it may concern:

Be it known that I, JOSEPH B. BESANT, a citizen of the United States, residing at Saranac Lake, county of Franklin, and State of New York, have invented certain new and useful Improvements in Mouth-Props, of which the following is a full, clear, and exact specification.

My invention relates to instruments for the use of dentists, surgeons, and the like in operations upon the teeth or jaws of patients and by the use of which the jaws of the patient may be maintained in an extended condition.

The object of my invention is to improve the devices by which the said instrument is maintained in an extended position, as well as the cushion-tips upon which the teeth or gums of the patient rest.

In constructing said mouth-prop I have provided a main cylindrical body portion, which receives a longitudinally-extensible member and which has a pawl and ratchet for holding the said extension member in its set or adjusted position and a key for releasing same, and I use the said device in connection with a yielding or cushion tip in cases where the teeth are missing, in which case said tip may rest directly upon the gum of the jaw.

One form in which my invention may be constructed is illustrated in the accompanying drawings, in which—

Figure 1 illustrates an elevation of my improved mouth-prop, showing the same in operative position. Fig. 2 is a longitudinal section thereof, partially extended, showing a side view of the pawl-and-ratchet mechanism and of the extension member, including cushion and socket therefor in full lines. Fig. 3 is a view somewhat similar to Fig. 2, illustrating a modification of my invention. Fig. 4 is a longitudinal section of the device illustrated in Fig. 3, a face view of the extension member being shown in full lines. Fig. 5 is an elevation of my device, illustrating the application thereto of a tip for use on the gums. Fig. 6 is a cross-section of said tip. Fig. 7 is a top view of the body portion of my device with the extension member removed. Fig. 8 is a cross-section of the extension member, taken on the line *a a* of Fig. 3. Fig. 9 is a plan view of the cover for the body of my device, and Fig. 10 a cross-section of the same on the line *b b* of Fig. 9.

My mouth-prop is constructed of a body

portion 1 and an extension member 2. The body portion 1 comprises an outer shell or casing 3, which is secured by a set-screw 4 to the main body portion 5, which it incloses and protects. The body portion 5 has a longitudinal channel 6 extending from its upper end nearly to the bottom, where it is closed by bottom plate 25, which may be integral with said body 5. Projecting into this channel 6 are tongues 7 8, formed in the main body portion 5, as seen in Fig. 7. These tongues serve to guide the extension member 2 of my mouth-prop as the same is extended. For this purpose the said extension member 2 is provided with a shank or post 9, having longitudinal grooves 10 11, which fit the tongues 7 8.

It is desirable to prevent the extension member 2 from being separated from the body portion 1, and to accomplish this I have provided a stop 12, which projects from the rib 8 and engages into a slot 13, formed in the shank 9 at the bottom of groove 11, which slot 13 is closed at its lower end. The extension member 2 may be raised until the closed end of the slot 13 comes in contact with stop 12, when it will be held from further upward movement. To facilitate taking the device apart, the stop 12 may be in the form of a screw, the outer end of which should be flush with the outer surface of the main body portion 5, so as not to interfere with the casing 3. The extension member 2 moves freely upon the body portion 1 and may be easily raised to the desired position. To securely hold it there during use, I provide a pawl 14, which is mounted upon bearings journaled in lugs 15, which project forwardly from said main body portion 5. The forward end of the pawl 14 is under the tension of a spring 16, which is coiled around the bearing upon which the pawl is mounted and the free ends of which rest against the lower part of the main body portion 5 or may be secured there, if desired. The said forward end of the pawl 14 engages ratchet-teeth 17, which are cut in the shank 9 of the extension member 2, and serves to securely hold said extension member in the position to which it may be adjusted. By the location of the pawl within the body portion 1 I protect it from injury and also render it easier to keep clean.

Release-key 18 extends through an opening in the shell or casing 3 and at its inner end bears upon the projecting rear part of pawl

14, to which it may be secured by any suitable means, such as by being screwed into it. Pressure upon this key 18 releases the pawl 14 from the ratchet 17 and allows the extension member 2 to return to normal position.

At the upper end of the extension member 2 is a socket 19, having an upwardly-extending flange 20, which is undercut on its inner face and holds the removable cushion 21, which engages the teeth in the upper jaw of the patient when the device is in use, as shown in Fig. 1. This removable cushion may be constructed of cork or of other suitable material.

At the lower end of the body portion 1 is a socket 22, into which the shell or casing 3 fits and which, as shown, is secured to the said body portion by a bolt 23 passing through the head 24 of said socket 22 and through the bottom 25 of the main body portion 5. The head of said bolt is countersunk in the head 24 of the socket 22, and it is secured by a countersunk nut to the bottom 25.

The socket 22 is provided with a removable cushion 26, similar in construction to that in the upper socket 19 and held in place in the same manner.

Inserted between the bottom plate 25 and the head 24 is a spring 27, which imparts elasticity to the apparatus and renders the same more comfortable to the patient. This spring may, if desired, be received in a cup formed in the bottom 25. It is restrained by bolt 23. The said spring 27, however, is not absolutely essential for the proper working of the device and in some cases may be omitted. Fig. 2 shows the device with the spring in place and Figs. 3 and 4 with it omitted.

As the parts 22 and 25 are brought together, compressing the spring 27, the countersunk nut and bolt 23 will rise above the said bottom plate 25 and enter the lower part of channel 6, returning to its normal position when the pressure is removed.

The tip 28 (shown in Figs. 5 and 6) is adapted for use directly upon the gums of the jaw, whereas the cushions 21 and 26 are adapted to engage the teeth. The said tip is formed with a V-shaped groove 29 in the face, which engages upon the gum. This part of the tip I prefer to make of some yielding material, such as partially-soft india-rubber. The balance of the tip I prefer to make of hard vulcanized rubber or metal for convenience of attaching the same to the socket 22. I have shown one method of attaching the tip by means of a screw-thread; but any other suitable detachable connection may be used.

It may be found desirable in use for purposes of cleanliness, &c., to provide a cover 30 for the shell or casing 3. This cover is flanged to fit tightly on said shell or casing, being held thereon by friction, or it may be secured in place by a stop-screw. It has a passage-way 31 for the shank 9. I have illus-

trated the cover in position in Fig. 1, and its construction is clearly shown in Figs. 9 and 10. It is omitted from Figs. 2, 3, 4, and 5.

For the purpose of easily taking the device apart for cleansing, &c., I have secured the socket 19 to shank 9 by a screw 32, Fig. 3.

In taking the device apart cushion 21, screw 32, and socket 19 should first be removed. Set-screw 4 is then taken out and key 18 unscrewed, when the shell or casing 3 can be slipped off. Screw-stop 12 is then removed, which permits ratchet-shank 9 to be withdrawn, and the countersunk nut on bolt 23 is then accessible. This nut is of usual construction and is provided with holes to permit of its being unscrewed. Socket 22 can then be easily removed.

The operation of my device is simple and easily understood from the foregoing description. The jaws of the patient having been extended to the proper point, the device is inserted, the cushion 21 in position to engage the teeth in the upper jaw and the cushion 26 resting upon the teeth in the lower jaw. The extension member 2 is then raised to the proper height, at which it will be securely held by pawl 14 engaging the ratchet-teeth 17, in which position spring 27 will impart a certain elasticity to the device. Should the patient be without teeth in either the upper or lower jaw, tip 28 may be applied to sockets 19 or 22, which will rest easily and painlessly on the gums, at the same time holding the device securely in place. To remove the device, a pressure upon the key 18 will release pawl 14 from engagement with ratchet-teeth 17, when extension member 2 easily returns to its normal position. If desired, the screw 4 could be elongated and placed in such a position that its inner end could be used as stop 12, thereby dispensing with a separate screw for said stop.

What I claim, and desire to secure by Letters Patent, is—

1. A mouth-prop comprising a body portion, an extension member extending partly therein, a rack thereon, a pawl located within said body portion for adjusting the extension member and cushioned surfaces at the two ends of said prop, substantially as described.

2. A mouth-prop, comprising a body portion, an extension member extending partly within said body portion, a rack thereon, a cushioned surface on the outer end thereof, a pawl located within the said body portion for adjusting the position of the extension member, a socket located at the end of said body portion and having a slight longitudinal movement, a cushion-surface located at the end of said socket and yielding means between said body portion and said last-mentioned socket and means for restraining said yielding means which also serve to unite said socket and body portion, substantially as described.

3. A separable cushion or contact surface

for a mouth-prop comprising a V-shaped terminal composed of a yielding material and a base portion of stiff material having a recess for attaching the same to a mouth-prop, substantially as described.

4. A mouth-prop comprising two members, one of said members longitudinally adjustable relatively to the other, and means for holding said adjustable member in its adjusted position, consisting of a pawl and ratchet, cushions at the outer ends of said member, and yielding means between said pawl and one of said cushions, substantially as described.

5. A mouth-prop comprising two members, one of said members longitudinally adjustable relatively to the other, and means for holding said adjustable member in its adjusted position, consisting of a pawl and ratchet, a shell surrounding said non-adjustable member, a cover for said non-adjustable member, and means for releasing said pawl, a cushion at the end of said adjustable member and a cushion

at the end of said non-adjustable member, substantially as described.

6. A mouth-prop comprising two members, one of said members being adjustable with respect to the other and lying partly within the other, means for holding said adjustable member in its adjusted position, a stop to limit the movement of said adjustable member, fluid-excluding means inclosing said non-adjustable member comprising a cap to cover said non-adjustable member, recessed to permit the passage of said adjustable member and a shell surrounding the same, and uniform yielding means intermediate the terminals of said device, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH B. BESANT.

Witnesses:

E. E. SUMMER,
M. H. HEIM.