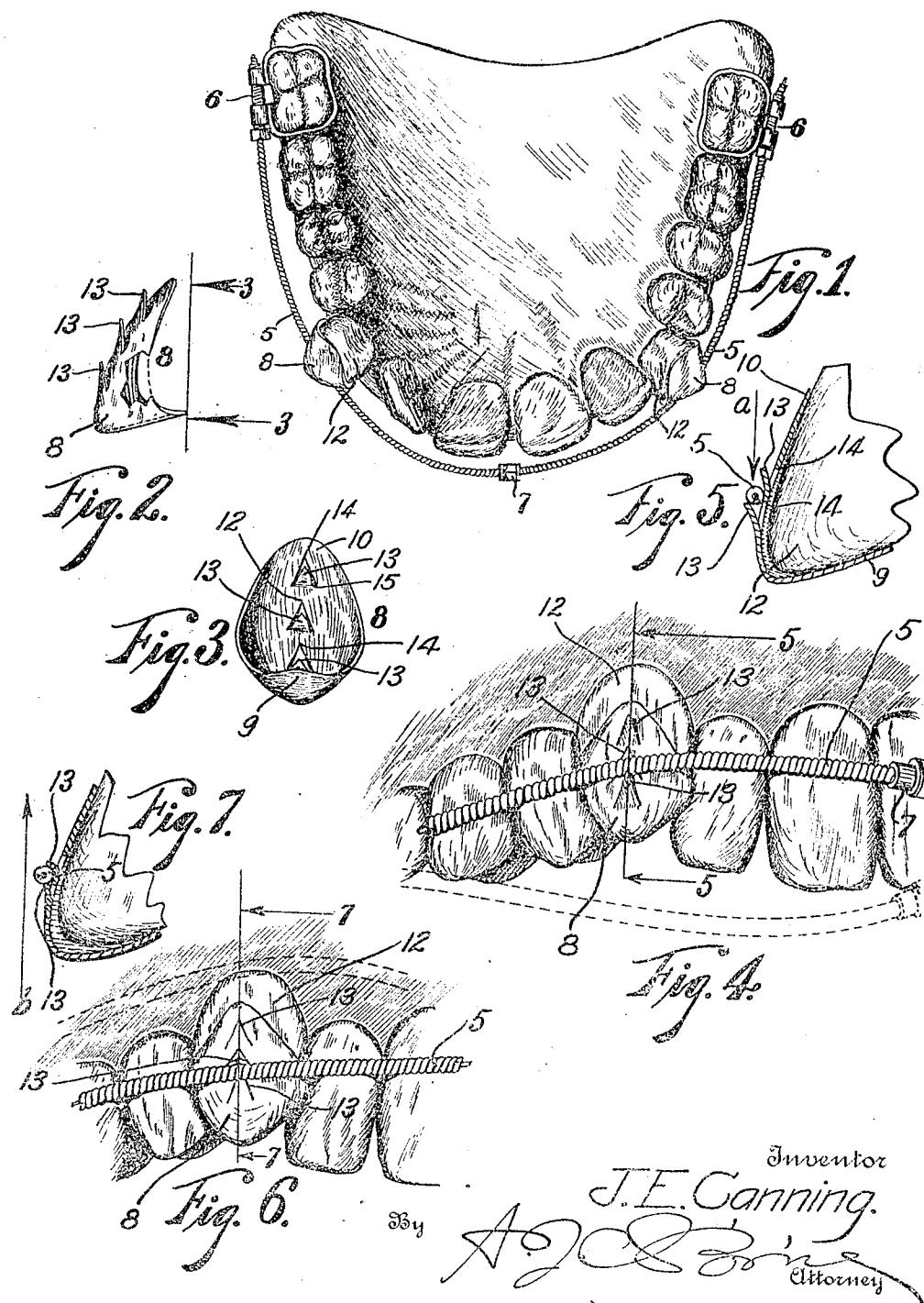


J. E. CANNING,
TOOTH REGULATOR,
APPLICATION FILED MAY 20, 1918.

1,292,702.

Patented Jan. 28, 1919.



UNITED STATES PATENT OFFICE.

JOHN E. CANNING, OF DENVER, COLORADO.

TOOTH-REGULATOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN E. CANNING, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Tooth-Regulators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to 10 which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

15 My invention relates generally speaking to improvements in tooth regulators, but more specifically to a cap for cuspid teeth, the cap being for temporary use while straightening the teeth and its object being 20 to hold the arch employed for straightening purposes in proper position upon the tooth in order to efficiently perform the straightening function. This cap is applied to the upper part of the tooth but extends farther 25 downwardly on the outside where it is provided with small projections which are integral with the cap and punched out of the same from the inside after forming slits which intersect at the point of the projection. As illustrated in the drawing, these 30 projecting parts are triangular in shape and are adjustable to facilitate the action of the arch in any particular case.

Having briefly outlined my improvement 35 I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof. In this drawing:

40 Figure 1 is a view from the inside of one of the jaws showing a set of teeth, to two of which my improved caps are applied.

Fig. 2 is a side view partly broken away 45 showing the cap in detail and on a larger scale.

Fig. 3 is another view of the same looking in the direction of arrows 3, Fig. 2.

Fig. 4 is a fragmentary view of a set of teeth, one of which is equipped with my improved cap.

50 Fig. 5 is a section taken on the line 5—5, Fig. 4.

Fig. 6 is a view similar to Fig. 4 illustrating a slightly different use of the cap in conjunction with the arch.

Fig. 7 is a section taken on the line 7—7, 55 Fig. 6.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate an arch which is illustrated in the drawing is composed of 60 a closely woven wire spring forming threads which coöperate with threads in the anchoring members 6 at the extremity of the arch, the latter being so wound that its convolutions exteriorly form right and left threads 65 on opposite sides of a part 7 which is connected with the two oppositely threaded parts of the arch and is adapted to receive a wrench or small pair of pliers for operating purposes. This construction is set forth 70 in my previous application, Serial Number 141,083, filed January 8, 1917.

In Fig. 1 my improved cap which I will designate by the numeral 8 is applied to two of the cuspid teeth, the only object of this 75 view being to show the general use of the cap in connection with an arch or arch band of any suitable construction.

My improved cap as illustrated in the drawing is shown applied in Figs. 4 and 6 80 to a cuspid tooth of the upper jaw. Attention is called to the fact that this cap is relatively short on one side, as shown at 9, and long on the opposite side, as shown at 10. The long side of the cap, as illustrated 85 in the drawing, is on the outside of the tooth 12 where the arch engages. On the opposite side there is no necessity that the cap should extend downwardly close to the gum, since the arch does not engage the cap on 90 that side and the only function of its extension on the short side is to give a sufficient cup-shape to the cap to hold it securely in place.

On the long side 10 the cap is provided 95 with a number of pointed parts 13 which are formed by splitting the cap, the two slits intersecting at a point 14 and diverging so that when the part 13 is bent outwardly it is retained on the cap along a base 100 15 of considerable width, thus making it practicable to adjust the pointed part an indefinite number of times without danger of breakage. These caps are preferably formed of gold which is, of course, very 105 flexible and ductile, and therefore, capable of resisting breakage to an indefinite extent.

When the pointed parts 13 are in posi-

tion for use they extend outwardly from the outer surface of the cap as best illustrated in Fig. 2, whereby they are adapted to retain the arch in place and by virtue of their proper adjustment they are also adapted to coöperate with the arch, not only to bring the tooth back into its proper alinement or coöperative position with the other teeth but also to move it inwardly or outwardly, with reference to its position in the gum. In Figs. 4 and 5 the arch is positioned to have a tendency in coöperation with the cap, not only to pull the tooth inwardly into its proper alinement with the other teeth, but also at the same time to move it downwardly with reference to the gum. In this case the arch engages the cap between two of the projections 13 while the third projection is pressed inwardly and its presence is not noticeable. It should be explained that one or more of these projections when not in use may be pressed inwardly to fill up the opening formed, and afterward moved outwardly into coöperation with the arch band when needed.

In the form of construction shown in Figs. 6 and 7, the arrangement is such as to give the arch a tendency to cause the tooth to move upwardly instead of downwardly, and the projections 13 are positioned to produce this result. The dotted line position of the arch band in Fig. 4 indicates that before the arch was moved into engagement with the cap, as shown in full lines in this view, its position was below the teeth. Hence, when raised into the full line position in this view, it will be under tension to move the tooth downwardly as well as inwardly. In Fig. 6 the dotted line position of the arch is the reverse of that shown in Fig. 4 to indicate that when the arch is in the full line position it is under tension to move the tooth upwardly.

From this it will be understood that the cap is exceedingly useful in coöperation with the arch, since it aids the latter in performing its required function of bringing the tooth from its unnatural position back into proper position, both with reference to the other teeth and also with reference

of the gum, whereby the tooth shall not project too far or too short a distance from the gum.

In applying the cap to the tooth to be straightened, it should be temporarily cemented in place, so that it will be securely retained in proper position. After the tooth is straightened it may be easily removed from the cuspid. From this it will be understood that it is only for temporary use during the tooth straightening operation.

Attention is called to the fact that since the cap has a plurality of projections the effective range of the tooth straightening function brought about through its co-operation is greatly increased. For instance, after the tooth has been moved a predetermined distance or the full distance permitted with the arch in engagement with one of the projections, the arch may be adjusted to engage another projection, and so on until the tooth straightening operation is completed.

Having thus described my invention, what I claim is:

1. A temporary tooth cap having projections to facilitate the holding of an arch band during the tooth straightening operation.
2. A temporary tooth cap having integral projections arranged to facilitate the holding of the arch for tooth straightening purposes.
3. A tooth cap having an adjustable projection to facilitate holding an arch band during a tooth straightening operation.
4. The combination with an arch band, of a cap adapted to be applied to a tooth and having a plurality of adjustable projections arranged to engage and hold and to coöperate with the said band for tooth straightening purposes.

5. A temporary tooth cap extending farther downwardly on one side of the tooth than on the opposite side and equipped with adjustable projections adapted to retain the band in proper position during the tooth straightening operation.

In testimony whereof I affix my signature.

JOHN E. CANNING:

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