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H. E. S. CHAYES

1,514,831

METHOD OF FORMING DENTAL ANCHORING DEVICES

Filed April 21, 1922

Fig. 1.

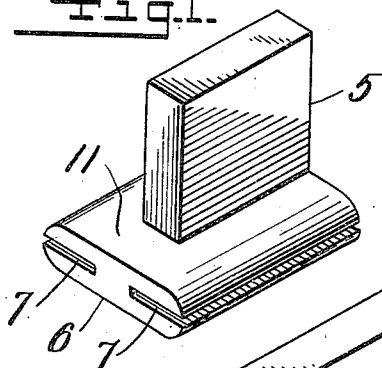


Fig. 2.

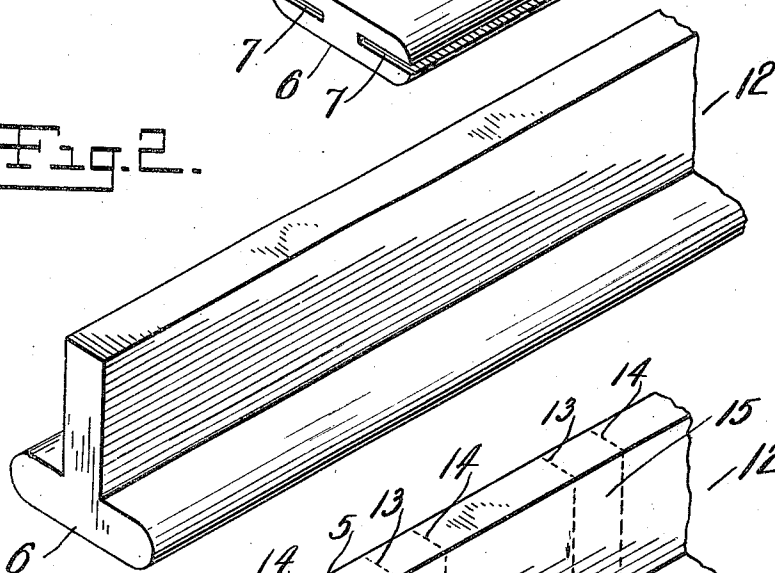


Fig. 3.

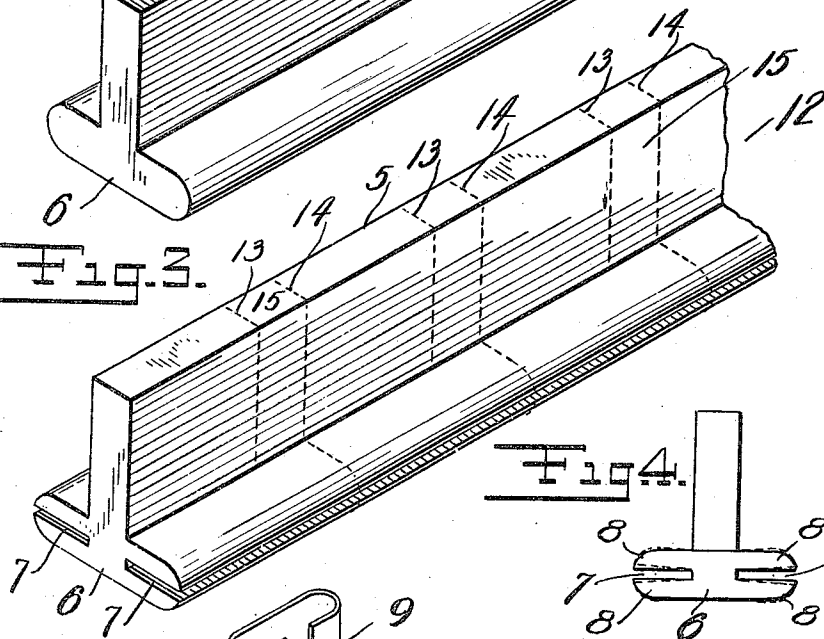


Fig. 5.

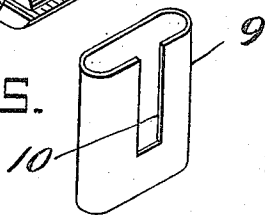
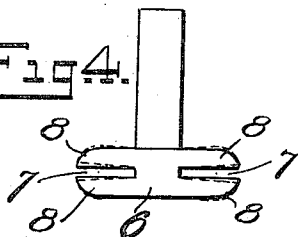


Fig. 4.



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By his Attorney
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UNITED STATES PATENT OFFICE.

HERMAN E. S. CHAYES, OF NEW YORK, N. Y.

METHOD OF FORMING DENTAL ANCHORING DEVICES.

Application filed April 21, 1922. Serial No. 555,924.

To all whom it may concern:

Be it known that I, HERMAN E. S. CHAYES, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Methods of Forming Dental Anchoring Devices, of which the following is a specification.

This invention relates to a method for forming dental anchoring devices such as are described and claimed in my pending application Serial No. 486,102, filed July 7, 1921.

The invention includes the preliminary forming of an elongated member whose cross-sectional dimensions coincide with the cross-sectional dimensions of the anchoring members to be formed, and in dividing the elongated member transversely into sections to produce the individual anchoring devices.

The specific anchoring device described and claimed in the pending application referred to consists of a T-shaped member having its laterally extending head portion slotted inwardly from its opposite lateral edges to provide wing members which can be spread apart to provide frictional engagement with the inner surface of a socket or seat formed to receive them. The slotted condition of the head member, which is difficult and expensive to produce in the anchoring members individually, is effected in the elongated member before the transverse dividing operation is performed.

Other features of the invention will be hereinafter referred to.

In the drawings in which a preferred form of the invention has been selected for illustration,

Figure 1 is a view in perspective of an anchoring device made in accordance with the invention.

Figure 2 is a view in perspective showing an operation of an elongated member preliminarily formed as a base structure for a plurality of anchoring devices.

Figure 3 is a view similar to Figure 2 showing expansion slots and dotted lines showing proposed cutting operations.

Figure 4 is a view in end elevation of the device shown in Figure 1 on a reduced scale and showing the expansion of the slotted portions to engage anchoring sockets.

Figure 5 is a view in perspective showing

a suitable form of socket to be used with the anchoring device described.

Referring to the drawings there is shown in Figure 1 a dental anchoring device of the same general type as is described and claimed in my pending application already referred to. This anchoring device consists of a stem member 5 adapted to be permanently seated in an artificial dental member and with a laterally extending head member 6. It will be seen that the stem member 5 and the head portion 6 taken as a whole form a T-shaped device. The oppositely disposed lateral edges of the laterally extending head portion 6 of the device are provided with inwardly extending slots 7. The slots 7 serve to provide wing members 8 which can be spread apart as indicated in Figure 4 of the drawing to thereby bring about any desired degree of frictional contact with the inner surfaces of a socket member 9 such as is shown in Figure 5 of the drawing.

The socket member 9 is intended to be seated in a natural tooth which is thereby made to provide a pier or seat in which the head portion 6 of the anchoring device can be received. The socket member 9 is provided with a recess 10 in its exposed side wall which it will be seen does not extend completely to the bottom of the socket and which is formed to receive the stem portion 5 of the anchoring device. It will also be noted that the anchoring device has a portion 11 of the head member 6 formed to extend beyond the adjacent ends of the stem portion and to fit within the lower portion of the socket 9 beneath the lowermost edge of the opening 10 to thereby increase the effectiveness of the engagement of the anchoring device in the socket.

In order to efficiently produce the anchoring devices which because of their relatively small size cannot have operations performed upon them individually, except at a considerable loss of efficiency and correspondingly increased expense, I have found that I can conveniently form a preliminary base structure having the same conformation of an elongated rod 12 or bar having a T-shaped cross-section as is indicated in Figure 2 of the drawing. The elongated member 12 is formed in any suitable manner as by rolling, extruding or other operation performed upon the chemically inert and non-corrosive

metal chosen for the purpose. Following the basic forming operation the elongated member is subjected to a slitting or cutting operation in order to form in the lateral margins of the head portion 6 the already referred to slots 7. It will be seen that the production of the slots 7 can be much more effectively and accurately formed in the elongated members 12 than in the short and relatively small members such as are represented by the final product shown in Figure 1 of the drawing.

Following the forming and slitting operations referred to the stem portion 5 of the elongated member 12 is subjected to transverse or cutting operations at the points 13. The cuts produced at 13 do not extend through the head portion but merely to the junction of the head portion 5 to the head portion 6. The elongated member 12 is then subjected to a transverse dividing operation which takes place at the divisional points indicated at 14, in Figure 3 of the drawing. The cutting or dividing operations performed at 14 divide the bar into sections, each having a length coincident with the length of the individual anchoring devices to be produced. Following the dividing operation the portion of the stem member of each section indicated at 15 is removed to thereby bring about the extension 11 of the head portion 6 already referred to beyond the adjacent end of the stem portion 5 and cause the length of the stem portion 5 to correspond to the depth of the slot 10 in the socket 9.

The division of the elongated T-shaped bar into the sections indicated will, as will be clear, produce the individual anchoring devices described. The spreading apart of the wing members 7 formed by the laterally extending margins of the head member 6 is effected as indicated in Figure 4 of the drawing to produce the desired grip or clamping engagement of the socket members with the head portions of the anchoring devices. The forming and cutting opera-

tions which are produced in the manner indicated on an elongated bar form what is in effect a plurality or series of potential anchoring devices, greatly increase the efficiency of production of the devices and substantially reduce the cost of manufacture thereof. The anchoring devices thus produced are particularly useful because of their expansible feature by reason of which they can be expanded or enlarged to produce any desired degree of snugness of fit in the receiving sockets.

What is claimed is:

1. The method of making T-shaped anchoring devices having expansible head portions, which consists in forming an elongated member having a T-shaped cross-section; in slitting the member longitudinally throughout its length along a lateral edge of the head portion of the T-shaped formation perpendicularly to the stem of the T; in cutting through the elongated member at spaced intervals corresponding to the length of the head of the devices to be produced, and in removing a portion of one end of the T-stem of each device, so that the T-head portion thereof is longer than its T-stem.

2. The method of making T-shaped anchoring devices having expansible head portions, which consists in forming an elongated member having a T-shaped cross-section; in slitting the member longitudinally throughout its length along each lateral edge of the head portion of the T-shaped formation but in the same plane, and so that the inner ends of the slits are spaced apart by a median portion of the head; in cutting through the elongated member transversely at spaced apart intervals corresponding to the length of the head of the devices to be produced, and in removing a portion of one end of the T-stem of each device, so that the T-head portion thereof is longer than its T-stem.

In testimony whereof I affix my signature.

HERMAN E. S. CHAYES.