Oct. 7, 1941. G. D. IRWIN 2,258,207

ARTIFICIAL DENTURE RETAINER

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Fig. 1.

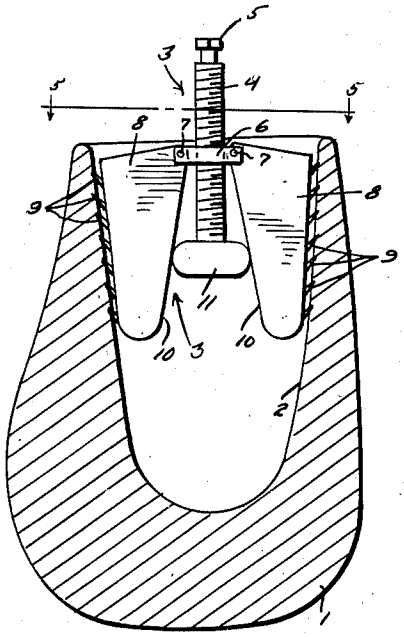


Fig. 3.

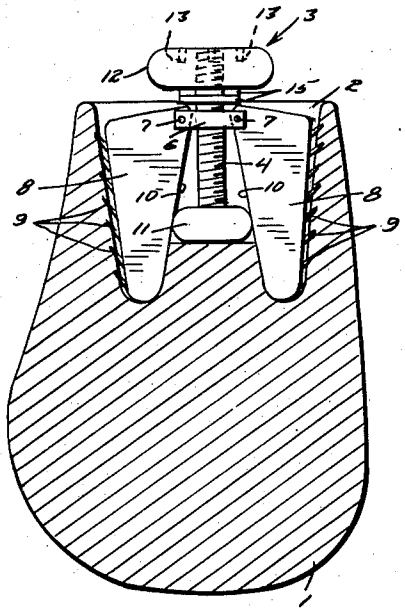


Fig. 6.

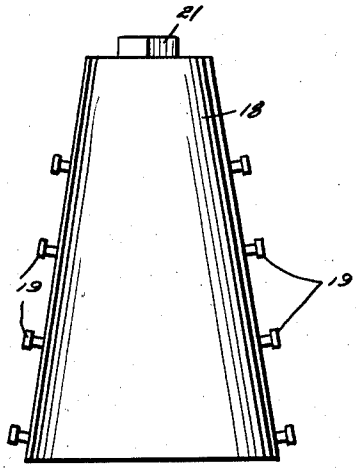
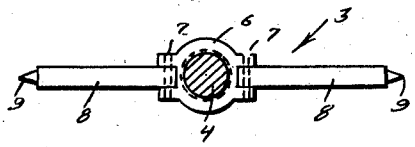


Fig. 5.



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Fig. 2.

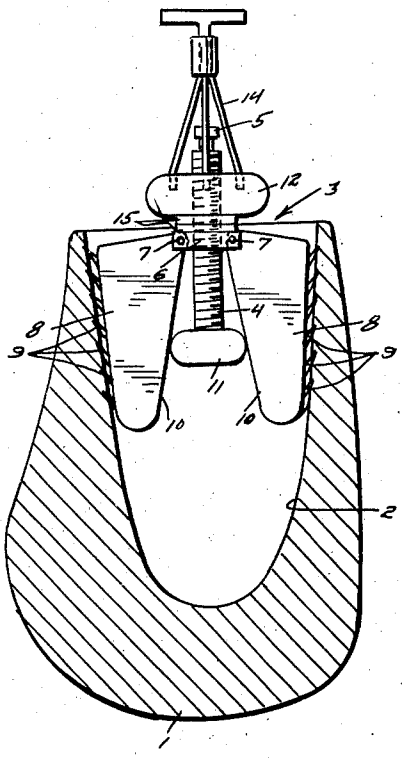


Fig. 4.

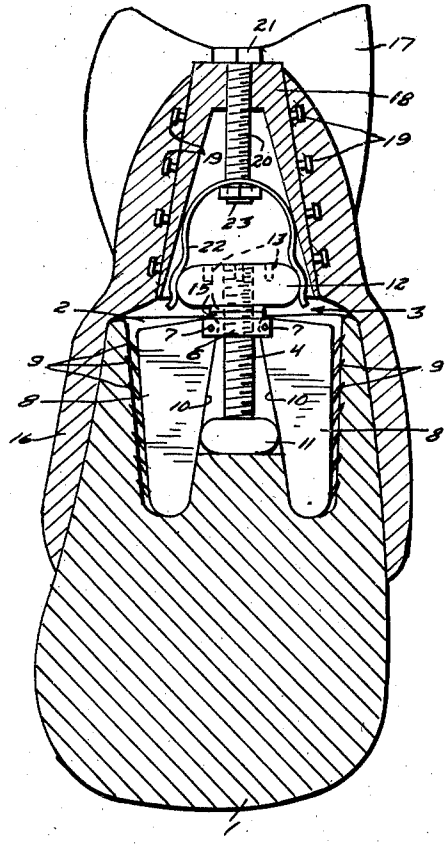
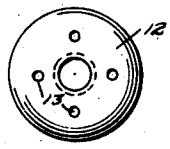


Fig. 7.



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UNITED STATES PATENT OFFICE

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ARTIFICIAL DENTURE RETAINER

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Application March 18, 1941, Serial No. 383,994

2 Claims. (Cl. 32—2)

The present invention relates to new and useful improvements in artificial dentures or plates and has for its primary object to provide, in a manner as hereinafter set forth, novel means for positively securing the denture to the jaw bone, thus retaining said denture in proper position in the mouth and preventing it from loosening.

Other objects of the invention are to provide an artificial denture or plate retaining means of the character described which will be comparatively simple in construction, strong, durable, safe, sanitary and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a cross sectional view through the lower jaw bone in the region of the lower second bicuspid, showing the anchoring portion of the present invention engaged in the socket left by a tooth which has just been extracted.

Figure 2 is a view substantially similar to Figure 1 but showing the retaining head being threaded on the anchoring means.

Figure 3 is a cross sectional view through the lower jaw bone after healing has taken place and with the complete anchoring means in position.

Figure 4 is a cross sectional view, illustrating the complete invention in position.

Figure 5 is a view in horizontal section, taken substantially on the line 5—5 of Figure 1, the jaw bone being omitted.

Figure 6 is a detail view in elevation of the substantially conical core on which the denture or plate is mounted.

Figure 7 is a detail view in top plan of the threaded retaining head.

Referring now to the drawings in detail, it will be seen that the reference numeral 1 designates a lower jaw bone having a socket 2 left therein by an extracted tooth. The embodiment of the present invention which has been illustrated comprises an anchoring unit which is designated generally by the reference numeral 3, said anchoring unit being engageable in the tooth socket 2.

The anchoring unit 3 includes a threaded shank 4 which is provided, on its upper end, with a reduced head 5. Threaded on the shank 4 is an annular nut or ring 6. Pivotally mounted, as at 7, on diametrically opposite sides of the nut 6 and depending therefrom are jaws 8. The jaws 8 are provided, on their outer edges, with teeth or prongs 9 which are adapted to bite into the opposed side walls of the socket 2. The jaws 8 are further provided with oppositely tapered or inclined inner edges 10. On the lower end of the shank 4 is a disk 11 which, upon rotation of said shank, is engageable with the oppositely tapered or inclined edges 10 of the jaws 8 for expanding or spreading said jaws thereby embedding the teeth or prongs 9 in the walls of the socket 2.

After the unit 3 becomes firm in the jawbone a retaining head or member 12 is threaded downwardly on the shank 4. The reduced head 5 of the shank 4 permits this. The head 12 has formed therein a plurality of sockets 13 which accommodate a suitable turning tool 14. Spacing washers 15 may, if necessary, be interposed between the head 12 and the nut 6 for properly positioning the former. The shank 4 is now cut off flush with the top of the head 12.

After healing has taken place, the denture or plate is applied. Referring to Figure 4 of the drawings, a saddle of suitable material is indicated at 16, said saddle being shown in position on the jaw bone 1. An artificial tooth is indicated at 17. A saddle 16 is mounted on a substantially frusto-conical hollow core 18 of suitable material. Projecting from the core 18 are headed pins 19 which are embedded in the saddle 16 for anchoring said saddle to said core. The core 18 is embedded in the saddle 16 between two of the teeth 17, the adjacent sides of which may be suitably ground as may be necessary or desirable to accommodate said teeth.

Threadedly mounted in the closed upper end portion of the core 18 is a bolt 20 the head 21 of which is flush with the top of the denture. Mounted on the lower end portion of the bolt 20 is a resilient clamp 22 which is retained and adjusted on said bolt through the medium of a nut 23. In the embodiment shown, the clamp 22 is substantially U-shaped. The legs of the resilient clamp 22 are engageable with the head 12 for connecting the artificial denture or plate to the anchoring unit 3 in the jaw bone socket 2.

It will thus be seen that the denture or plate is firmly secured to the jaw bone. By simply turning the bolt 20 in the core 18, before the case is finished, the clamp 22 may be moved upwardly or downwardly in the substantially conical socket in said core for regulating or adjusting the tension of said clamp as desired. This

also permits the clamp 22 to be expeditiously adjusted upwardly or downwardly to meet certain conditions that may be encountered. The nut 23 permits the clamp 22 to be expeditiously removed, if necessary, for replacement or for any other purpose. Two fastening means are to be provided for the denture, one on each side of the jaw.

It is believed that the many advantages of an artificial denture or plate embodying the present invention will be readily understood, particularly by those skilled in the dental profession, and although a preferred embodiment is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. In an artificial denture, an anchoring unit adapted to be mounted in a tooth socket in a jaw bone and comprising a threaded shank, a nut threadedly mounted on said shank, jaws pivotally mounted on the nut and engageable with the walls of the tooth socket for securing the anchoring unit therein, a disk on the shank for spreading the jaws into engagement with the socket walls, a head mounted on the shank, a denture saddle, and means for connecting said saddle to the head.

2. In an artificial denture, an expansible anchoring unit adapted to be mounted in a tooth socket in a jaw bone and embodying expanding jaws and means for expanding the jaws into engagement with the walls of the tooth socket embodying a disk shiftable relative to the jaws and engageable therewith for expanding the jaws relative to one another, an adjusting shank connected with the disk for shifting it, and a denture saddle embodying a hollow core, and a resilient clamp housed within said core and engaging said shank for detachably securing said saddle to said anchoring unit.

GLENN D. IRWIN.