June 29, 1937. J. M. NOUEL C. 2,085,268

TOOTH

Filed Nov. 17, 1936

Fig. 1

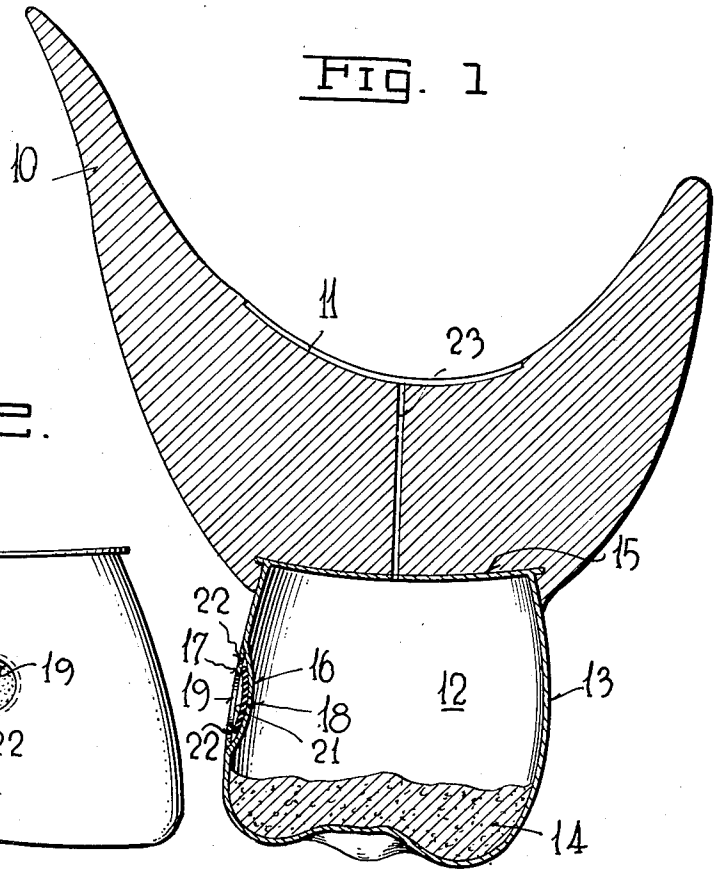


Fig. 2.

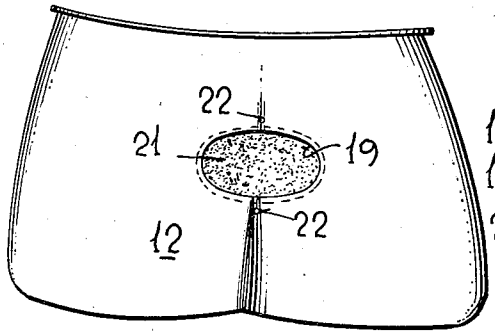


Fig. 3.

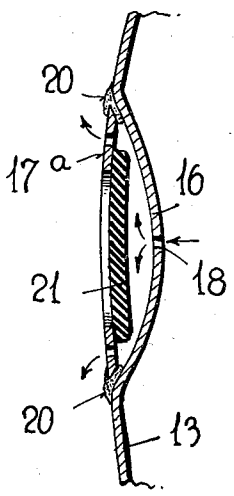
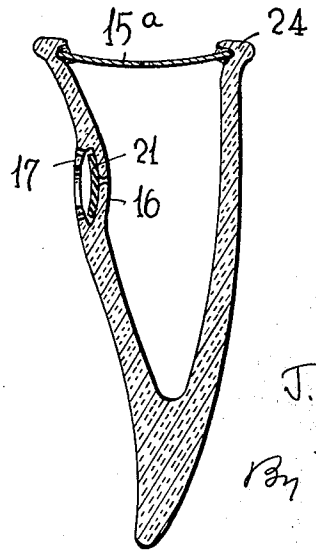


Fig. 4



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TOOTH

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4 Claims. (Cl. 32—3)

The plates for false teeth ordinarily do not rigidly adhere to the gums but tend to become loose and move about in the mouth. One method employed for avoiding this is to provide a vacuum channel or chamber on the plate adjacent the gum. In order to maintain an operative vacuum in a satisfactory way in such a structure it is desirable that means be employed for withdrawing air from the chamber and preventing ingress of air thereto. This is somewhat difficult because of the variations in conditions in the mouth especially while talking or eating. The present invention contemplates the production of a hollow tooth which may be associated with the dental plate. The interior of the tooth may be connected with the vacuum chamber by a channel through the denture itself and an opening may be provided in an exposed surface of the tooth. This hole in the tooth is open to the mouth but is protected by a one way valve mechanism allowing air to escape from the tooth into the mouth but prohibiting air from going into the tooth from the mouth.

In the accompanying drawing Figure 1 is a transverse vertical section of a denture showing a tooth installed in the plate. Fig. 2 is a side elevation of the tooth of Fig. 1 illustrating a preferred position of the opening in its face. Fig. 3 is a fragmentary section view illustrating an optional construction for the opening and valve. Fig. 4 is a transverse vertical section showing another form of tooth.

There is shown a denture or plate 10 which may be made of any of the usual materials such as specially prepared rubber or the like. The surface engaging the gum is provided with a vacuum chamber 11 which may be of any suitable shape, size and extent as is known in the art. A hollow tooth 12 is cast into the plate 10, or fastened therein in any suitable well known manner. The tooth 12 may be made of any suitable material and its walls may be of appropriate thickness to provide sufficient strength in accordance with the material which is chosen. Thus if metal such as gold and the like is employed thin walls as indicated at 13 may be sufficient. Reinforcing gold or other material 14 may be applied on the inside of the masticating surface of the tooth to increase the strength and tend to prevent deformation. At the top of the tooth is provided a transverse wall 15 completely closing the hollow within the tooth. In an exposed portion of the tooth is provided a double wall made up of the inner wall member 16 and an outer wall member 17. The outer wall member 17 will substantially correspond to the general contour or formation of the adjoining wall of the tooth. In the inner wall 16 is provided an opening 18 and in the outer wall 17 is provided an opening 19. The inner and outer walls may be cast or otherwise formed integral with the rest of the tooth, or if desired as shown in Fig. 3, the inner wall may be integral with the tooth and the outer wall may consist of a member 17A which will be attached to the tooth wall 13 by suitable means such as solder 20. Between the inner and outer walls may be inserted a valve member 21 which preferably may be merely a small suitably formed piece of rubber of suitable thickness. The hole 18 in the inner wall 16 may be relatively small while the hole 19 in the outer wall 17 of the tooth may be larger, being nearly as large as the valve member 21. It will thus be possible to readily and easily insert the valve member 21 through the opening 19 and straighten it out. It is desirable but not essential that the valve member 21 be large enough to entirely cover the hole 19 at all edges. As a matter of convenience the hole 19 is shown oval in shape but this is not essential to the invention. Within the borders of the inner wall 16 but beyond the edges of the valve member 21 are provided holes 22 in the outer wall 17. Two such holes 22 are illustrated but their number is immaterial to the present invention it being only necessary that they be sufficient in number and size to allow egress of air. After the tooth is set in the denture 10 a hole or channel 23 is drilled from the vacuum chamber 11 through the denture 10 and the top wall 15 of the tooth so as to connect the vacuum chamber 11 with the interior of the hollow tooth. The arrangement is such that when there is pressure of air in the vacuum chamber 11 the movement of the jaws will force it from the channel 23 into the hollow tooth 12 from which it may egress through the hole 18 pushing upward the valve member 21 and passing into the mouth through the holes 22. When, however, pressure is exerted by the action of the mouth on the outside of the tooth 12 the valve member 21 will be pressed inward into the position illustrated in Fig. 1 thus closing the opening 18 and preventing the entrance of air into the tooth 12. The tendency thus is to maintain the vacuum in the channel 11 and hold the denture in proper position in the mouth. The top 15 of the tooth may be of metal and preferably will be of the same metal as the body of the tooth to which it may be fastened by soldering or in any other well known way. In Fig. 4 is illustrated a construction

which may be especially suited to a porcelain tooth. The hollow tooth may be cast with walls as thick as necessary to give needed strength and the inner and outer double walls 16 and 17 may be cast at the same time and at the root of the tooth there may be provided a flange or groove 24 into which may be fastened in any suitable way a metal plate 15A to close the tooth. When the tooth is set in the denture the channel 23 may be drilled through the metal plate 15A without danger of fracturing the porcelain of the tooth.

Preferably the valve will be placed on the inner side of the tooth so as to face the tongue in the mouth in which position it will be more or less hidden and inconspicuous, but if desired it may be placed on the outer side of the tooth toward the cheeks. The valved teeth may be associated in the denture with teeth of the ordinary construction. It is not necessary that all the teeth of a denture be valved but one or more may be used as may be desired to properly maintain the adhesion by the vacuum chamber 11.

The specific details illustrated and described are not essential to the invention which may be embodied in other forms and materials.

I claim as my invention:

1. A dental plate having a vacuum channel, a hollow tooth in the plate connected to the channel by a passageway, a hole at one wall of the tooth, a rubber disc, and a cage for holding the disc at the hole.

2. A dental plate having a vacuum channel, a hollow tooth in the plate connected to the channel by a passageway and having a double wall at one exposed surface, and a flexible sheet between the double walls, there being an opening in the inner wall covered by the sheet and a hole in the outer wall covered by the sheet and another hole in the outer wall free of the sheet.

3. A hollow tooth, a double wall at one exposed surface, and a rubber sheet between the double walls, there being an opening in the inner wall covered by the sheet and a hole in the outer wall covered by the sheet and another hole in the outer wall free of the sheet.

4. A hollow porcelain tooth, a metal sheet closing the root end of the tooth, and a one way air valve in a wall of the tooth.

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