May 8, 1945. G. A. WIECHERT 2,375,509

CUTTING CUSP FOR DENTURES

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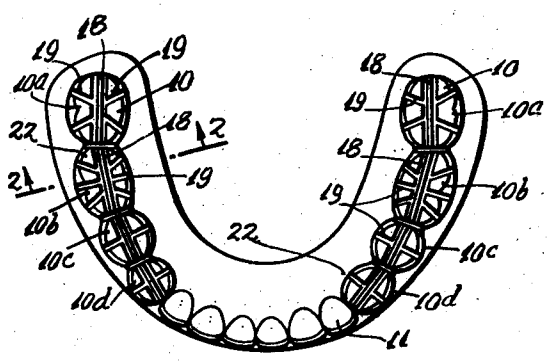


Fig. 1.

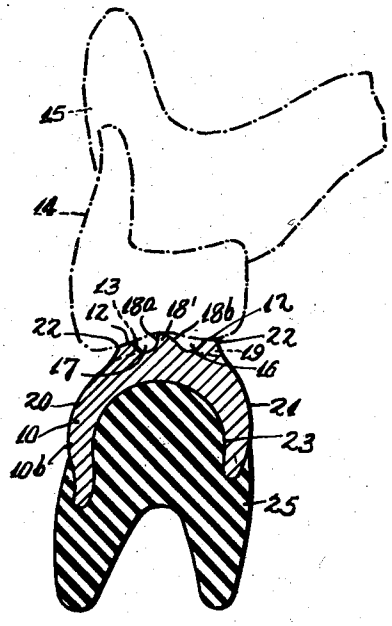


Fig. 5.

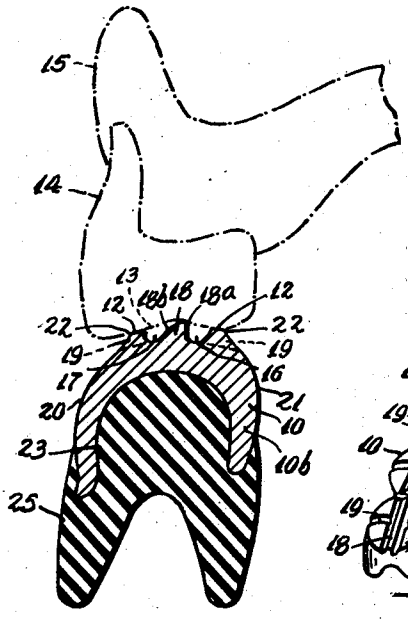


Fig. 2.

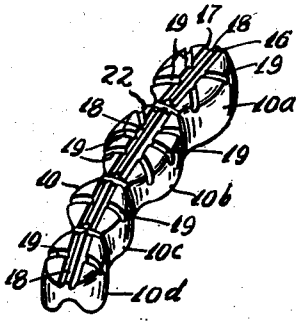


Fig. 3.

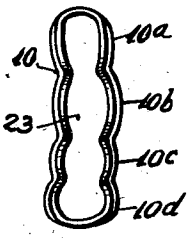


Fig. 4.

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CUTTING CUSP FOR DENTURES

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Application October 23, 1943, Serial No. 507,371

8 Claims. (Cl. 32—8)

This invention relates to new and useful improvements in cutting cusps for dentures. This application relates to the subject matter of my abandoned application filed on April 26, 1940, Serial Number 331,751.

More specifically, the invention contemplates the construction of an artificial posterior lower or upper denture tooth having a smooth convexly curved mesio-distally extending occlusal face for engaging a complementary concaved curved occlusal face of the tooth in the opposed denture, and formed with a pair of mesio-distally extending smooth channels or sluices with the central wall, or ridge between the sluices comprising a blade having a straight side and an opposed convexly curved side forming a chisel sharp edge.

More specifically, the invention contemplates constructing said convexly curved mesio distally extending occlusal face with several transverse channels or sluices extending from the buccal and lingual sides to and joining said mesio-distally extending channels or sluices.

An artificial tooth so constructed truly represents a triple duty cutting cusp with anatomical proportions designed to cut at will all types of food with equal effectiveness at an approximate 50% reduction of applied forces, thereby preserving the underlying tissue structure.

The invention contemplates arranging the artificial posterior lower or upper denture teeth in groups, preferably of two, three or four, and mounting these groups in the denture. It is contemplated that these teeth be case hardened metal or other metal or materials so that they retain their keen efficiency perpetually. The teeth may be formed of cobalt, chromium, alloyed metal or other similar materials of extreme hardness which are non-ferrous, non-corrosive, non-magnetic and stainless, which can be polished to a high luster and which maintain that luster and are not affected in any way by the acids or secretions of the mouth. It is further proposed that the outer surfaces, including the channels or sluices, be highly glazed to insure self-elimination of masticated food. The group of artificial teeth in the denture may include any desired number of teeth.

The invention contemplates shaping the cutting cusps to include all types of artificial posteriors, and it is proposed that these be applicable to old dentures as well as new ones.

The cutting cusps, in accordance with this invention, are the result of long experiments and actual use under the most exacting conditions in the mouth. They are superior to heretofore known cusps, and particularly designed to make mastication a pleasure to long-suffering denture wearers.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure—

Fig. 1 is an elevational view of a denture provided with posterior teeth constructed in accordance with this invention.

Fig. 2 is a vertical sectional enlarged detailed view taken on the line 2—2 of Fig. 1, illustrated in combination with a schematic showing of an opposed denture.

Fig. 3 is a perspective view of one side group of the artificial posterior denture teeth shown in Fig. 1.

Fig. 4 is a bottom elevational view of the group of teeth shown in Fig. 3.

Fig. 5 is a sectional view similar to Fig. 2 but illustrating a modification of the invention.

This invention particularly relates to a group of artificial posterior denture teeth 10 consisting of the four teeth 10^a, 10^b, 10^c and 10^d. This identical group applies to both sides of the mouth. The front artificial teeth 11 are of conventional construction. The group of teeth 10 preferably is cast of one integral piece of non-rusting metal, as shown in Figs. 3 and 4. However, the invention is not limited to metallic teeth and may apply to porcelain or other material. The dominating feature of the invention resides in the specific construction of each of the teeth of the group 10.

Each of the teeth of the group 10 has a smooth convexly curved mesio-distally extending occlusal face 12 for engaging a complementary concaved curved occlusal face 13 of the tooth 14 in the opposed denture 15. The face 12 is formed with a pair of mesio-distally extending channels or sluices 16 and 17 with the central wall or ridge 18 between the channels or sluices comprising a blade having a flat side 18^a and an opposite convexly curved side 18^b forming a chisel sharp edge along the common portions of the sides 18^a and 18^b.

The said convexly curved mesio-distally extending occlusal face 12 has several bucco-lingually extending channels or sluices 19 extending from the buccal and lingual sides to and joining the mesio-distally extending channels or

sluices 16 and 17. The purpose of these bucco-lingually extending channels or sluices 19 is to cut down the area of the occlusal face 12 so as to increase the pressure of the bite of the tooth on the smaller area. These areas essentially comprise flat milling surfaces for the milling and grinding of food particles.

The occlusal face 12 intersects the buccal face 20 and the lingual face 21 in sharp edges 22 which assist the chisel sharp edge of the blade 18 in the proper mastication of the food.

In the form of the invention illustrated in Figs. 1–4 inclusive the group of teeth 10 is formed from one integral cast which has a hollow bottom side 23. The outer side of this cast is very smoothly finished and polished to form highly glazed surfaces. The group of teeth 10 is mounted in the denture 25 in the usual way.

In Fig. 5 a modified form of the invention has been disclosed which is very similar to the prior form, distinguishing merely in the fact that the blade 18′ has its straight flat side 18^a on the buccal side 20 and has its curved convexly shaped side 18^b on its lingual side 21. In other respects this form of the invention is similar to the previous form and like parts may be identified by like reference numerals.

During mastication the chisel sharp edges of the blades 18 and the sharp edges 22 will cut fibrous food, breaking down the fibers. The flat faces between the channels or sluices of the teeth will act as milling surfaces for milling the food particles. In view of the fact that the cutting cusps of the teeth do not project from the curved occlusal faces there will be no tendency to discomfort due to undue biting pressures, nor will there be any tendency to undue wearing away of the cusps. An artificial posterior tooth constructed in accordance with this invention is particularly adapted to efficiently masticate food.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. An artificial posterior denture tooth having a smooth convexly curved mesio-distally extending occlusal face for engaging a complementary concaved curved occlusal face of the tooth in the opposed denture and formed with a pair of mesio-distally extending channels or sluices with the central wall between said channels or sluices comprising a blade having a straight flat side and an opposite convexly curved side forming a chisel sharp edge, said convexly curved mesio-distally extending occlusal face having several bucco-lingually extending channels or sluices extending from the buccal and lingual sides to and joining with said mesio-distally extending channels or sluices.

2. An artificial posterior denture tooth having a smooth convexly curved mesio-distally extending occlusal face for engaging a complementary concaved curved occlusal face of the tooth in the opposed denture and formed with a pair of mesio-distally extending channels or sluices with the central wall between said channels or sluices comprising a blade having a straight flat side and an opposite convexly curved side forming a chisel sharp edge, said convexly curved mesio-distally extending occlusal face having several bucco-lingually extending channels or sluices extending from the buccal and lingual sides to and joining with said mesio-distally extending channels or sluices, said chisel sharp edge being on the buccal side of the blade.

3. An artificial posterior denture tooth having a smooth convexly curved mesio-distally extending occlusal face for engaging a complementary concaved curved occlusal face of the tooth in the opposed denture and formed with a pair of mesio-distally extending channels or sluices with the central wall between said channels or sluices comprising a blade having a straight flat side and an opposite convexly curved side forming a chisel sharp edge, said convexly curved mesio-distally extending occlusal face having several bucco-lingually extending channels or sluices extending from the buccal and lingual sides to and joining with said mesio-distally extending channels or sluices, said chisel sharp edge being on the buccal side of the blade, the areas of said occlusal face between said channels or sluices comprising flat milling surfaces.

4. An artificial posterior denture lower tooth of hard stainless alloy and having a smooth convexly curved mesio-distally extending occlusal surface for engaging an occlusal face of a tooth in an opposed denture and formed with a pair of mesio-distally extending channels having rounded bottoms with the central wall between said channels comprising a blade having a straight flat side meeting said face substantially at right angles, said convexly curved mesio-distally extending occlusal face having several bucco-lingually extending channels or sluices extending from the buccal and lingual sides to and joining with said mesio-distally extending channels at the bottom thereof and remote from the blade, the areas of said occlusal face between said channels comprising substantially milling surfaces, the channel bottoms being rounded so that particles of food forced down beside one wall will be reversed in direction and be pushed up the opposite side wall to a different milling surface.

5. An artificial hard metallic posterior denture tooth containing chromium and having a smooth convexly curved mesio-distally extending occlusal face for engaging an occlusal face of a tooth in an opposed denture and formed with a pair of mesio-distally extending channels with the central wall between said channels comprising a blade having a straight flat side forming a sharp edge, said convexly curved mesio-distally extending occlusal face having a bucco-lingually extending sluice extending from the buccal and lingual sides to and joining with said mesio-distally extending channels remote from said blade.

6. An artificial hard metallic posterior denture tooth containing chromium and having a smooth convexly curved mesio-distally extending occlusal face for engaging an occlusal face of a tooth in an opposed denture and formed with a pair of mesio-distally extending channels with the central wall between said channels comprising a blade having a straight flat side forming a sharp edge, said convexly curved mesio-distally extending occlusal face having a bucco-lingually extending sluice extending from the buccal and lingual sides to and joining with said mesio-distally extending channels remote from said blade, the areas of said occlusal face between said channels or sluices comprising flat milling surfaces.

7. A non-corrosive artificial posterior denture tooth containing cobalt and chromium having a smooth convexly curved mesio-distally extending occlusal face for engaging an occlusal face of the tooth in the opposed denture and formed with a pair of mesio-distally extending channels or sluices, with the central wall between the channels comprising a blade having straight flat sides forming chisel sharp edges, said convexly curved mesio-distally extending occlusal face having a bucco-lingually extending channel or sluice extending from the buccal and lingual sides to and joining with said mesio-distally extending channels or sluices, said chisel sharp edge being on the buccal side of the blade.

8. An artificial posterior denture tooth having a smooth convexly curved mesio-distally extending occlusal face for engaging an occlusal face of a tooth in an opposed denture and formed with a pair of mesio-distally extending channels with the central wall between said channels comprising a blade having a straight flat side forming a sharp edge, said convexly curved mesio-distally extending occlusal face having a bucco-lingually extending sluice extending from the buccal and lingual sides to and joining with said mesio-distally extending channels remote from said blade.

GEORGE A. WIECHERT.