

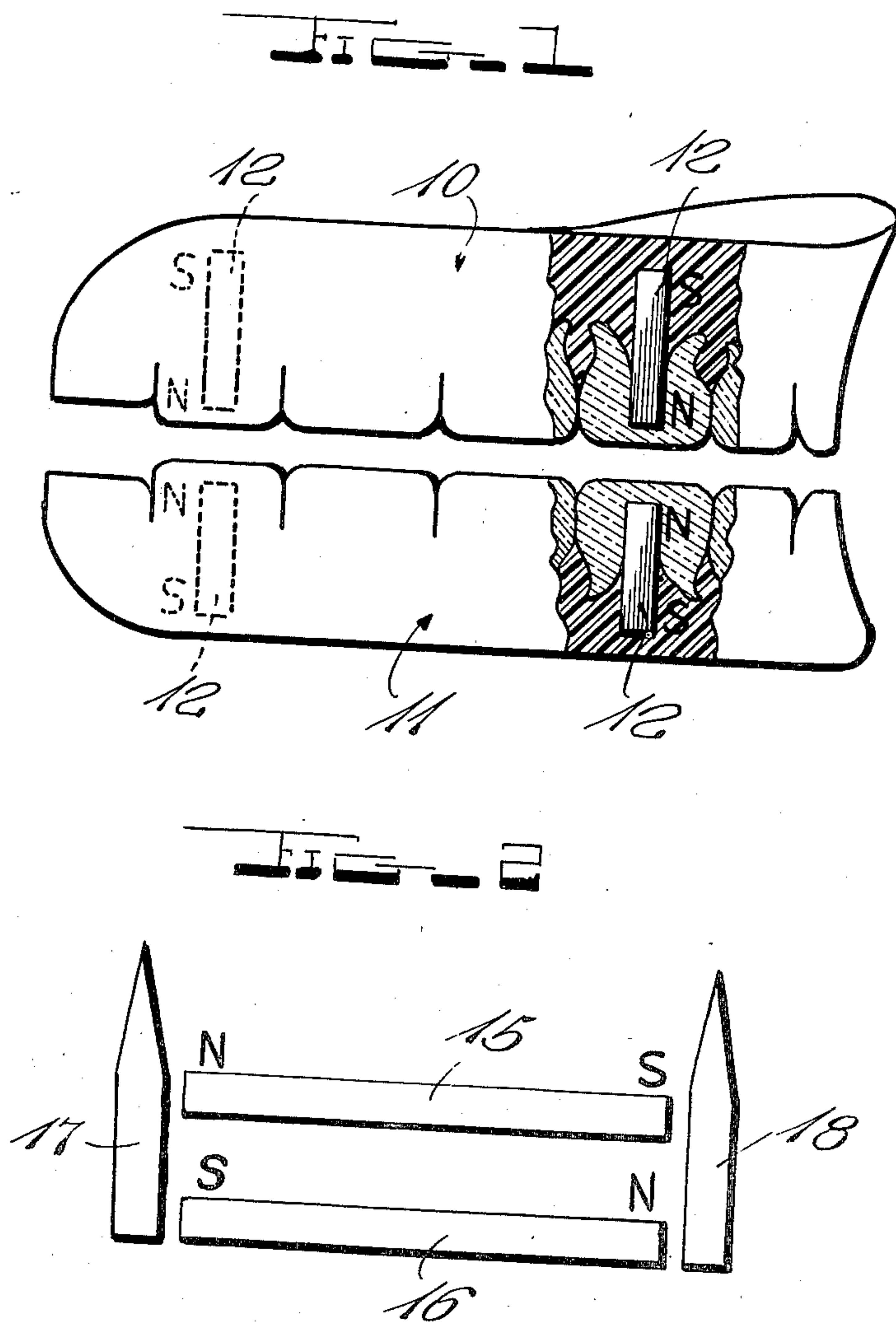
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E. E. GOLDSCHMIDT

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DENTURE

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Ernst Emil Goldschmidt, INVENTOR.

BY

John Q. Brady
ATTORNEY

UNITED STATES PATENT OFFICE

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DENTURE

Ernst Emil Goldschmidt, London, England

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1

The present invention relates to dentures and has for its object to provide new or improved means for assisting the retention of dentures in their correct position in the mouth.

Hitherto, for maintaining dentures in position, reliance has usually been placed largely upon adhesion between the dentures and the upper and lower parts of the mouth and, at least with some wearers, such adhesion frequently breaks down.

The present invention is concerned with dentures associated with one or more permanent magnets for assisting their retention of position in the mouth.

One object of the present invention is to provide a denture having at least one permanent magnet embedded partly in an artificial tooth and partly in the supporting structure of the denture so as to be completely enclosed, whereby demagnetization of the magnet by contact with another magnet is prevented and whereby the magnet or magnets are protected from corrosion by acids in the mouth.

Another object of the invention is to provide a denture having at least one completely enclosed permanent magnet, the magnet extending partly into an artificial tooth and partly into the supporting structure of the denture, whereby a magnet having a favorable ratio of length to cross sectional dimensions of the magnet can be employed.

A still further object of the invention is to provide a denture having at least one completely enclosed permanent magnet which is in the form of a rod and therefore easy and cheap to manufacture.

In the case of a set of dentures, comprising upper and lower dentures, according to the present invention each is provided with one or more permanent magnets, the magnets in the upper and lower dentures being so disposed as to have like poles facing one another, and hence repelling one another, when the dentures are in position in the mouth.

The invention will be described by way of example with reference to the accompanying drawing showing somewhat diagrammatically one embodiment of the invention in which:

Figure 1 is a side elevational view of a set of dentures embodying the arrangement of magnets of my invention, the view being partially broken away and shown in section; and Fig. 2 shows schematically the arrangement of magnets for mounting individual teeth with respect to the dentures.

Referring to the drawing, there is shown a set

2

of dentures comprising an upper denture 10 and a lower denture 11. Embedded in the artificial teeth and in the supporting material of the denture so as to be completely enclosed are a number of permanent bar magnets 12 shown in dotted lines. These are so arranged that like poles face one another when the dentures are in their correct positions in the mouth. Thus the magnets repel one another and tend to assist the retention of the dentures in their correction positions.

By using simple bar magnets the construction is simple and inexpensive, and if the length of the bar magnets is as indicated in the drawing several times their cross-sectional dimensions the magnetic efficiency can be made high. For the purpose of high magnetic efficiency the spacing of the bar magnets in each denture is as shown in the drawing made at least equal to the width of any of the artificial teeth and substantially greater than the maximum cross-sectional dimension of the magnets.

Where a magnet is embedded in a tooth or other part of a denture its polar surface or surfaces are preferably arranged close to a surface of the tooth or other part, the latter surface being one which in use will be close to a co-operating magnet or magnetic material. In this way the magnetic forces serving to retain or assist the retention of the denture can be made effective. Thus in Fig. 1, the pole surfaces of the magnets should be arranged as close to the biting surfaces of the teeth as possible consistent with the provision of an adequately thick surface as a protective covering over the magnet as will usually be necessary to avoid deterioration of the magnet material through the action of the liquids in the mouth.

In some cases it may be convenient to manufacture the denture with unmagnetized permanent magnet material embedded therein and to magnetize the material subsequently. This may for instance be done when the manufacture may involve some step, such as heating, which would impair the magnetization.

In the arrangement so far described the magnets are arranged in two dentures in such a manner as to repel one another. Where only a single denture is worn the invention may for example take the form shown in Fig. 2. In this figure the denture itself is not shown. Permanent magnets 15 and 16 are embedded in or otherwise fixed to the denture and posts of magnetic material 17 and 18 are embedded in or otherwise fixed to roots of teeth or to teeth. In this case the denture

3

tends to be held in position by attraction between the magnets and the posts.

The magnets are preferably of a material of high coercive power such for example as an aluminium-nickel steel. They may be moulded from suitable powdered aluminium-nickel steel with a synthetic resin binder. In some cases they may be made hollow for the sake of lightness.

I claim:

1. A denture comprising at least one artificial tooth, a supporting structure for said tooth and at least one permanent magnet embedded partly in said tooth and partly in said supporting structure so as to be completely enclosed and positioned to exert magnetic force upon magnetic material in the mouth of a user to assist retention of the denture in its correct position.

2. A denture comprising at least one artificial tooth, a supporting structure for supporting said tooth in position in the mouth and a permanent magnet embedded partly in said tooth and partly in said supporting structure so as to be completely enclosed.

3. A denture comprising at least one artificial tooth, a supporting structure for supporting said tooth in position in the mouth and a rod constituting a permanent magnet wholly embedded in said denture, a part of said rod being embedded in said tooth and the remaining part of said rod being embedded in said supporting structure.

4. A denture comprising at least one artificial tooth, a supporting structure for supporting said tooth in position in the mouth and an elongated body constituting a permanent magnet embedded partly in said tooth and partly in said supporting structure so as to be completely enclosed, one extremity of said body being disposed close to the biting surface of said tooth.

4

5. A set of dentures comprising upper and lower dentures each comprising at least one artificial tooth, a supporting structure for supporting said tooth in position in the mouth and an elongated permanent magnet structure embedded partly in said tooth and partly in said supporting structure so as to be completely enclosed, said permanent magnet structures being disposed with like poles facing one another, and hence repelling one another, when the dentures are in their correct positions in the mouth.

6. A denture comprising a plurality of artificial teeth, a supporting structure for said teeth and a permanent magnet in each of said teeth, each said permanent magnet being embedded partly in a tooth and partly in said supporting structure so as to be completely enclosed and the most adjacent of said magnets being spaced apart by a distance at least equal to the width of any of said teeth.

7. A denture comprising a plurality of artificial teeth, a supporting structure for said teeth and a plurality of elongated permanent magnets wholly concealed within said denture and having polar surfaces close to the biting surface of said denture the spacing between said magnets being substantially greater than the maximum cross-sectional dimension thereof.

ERNST EMIL GOLDSCHMIDT.

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