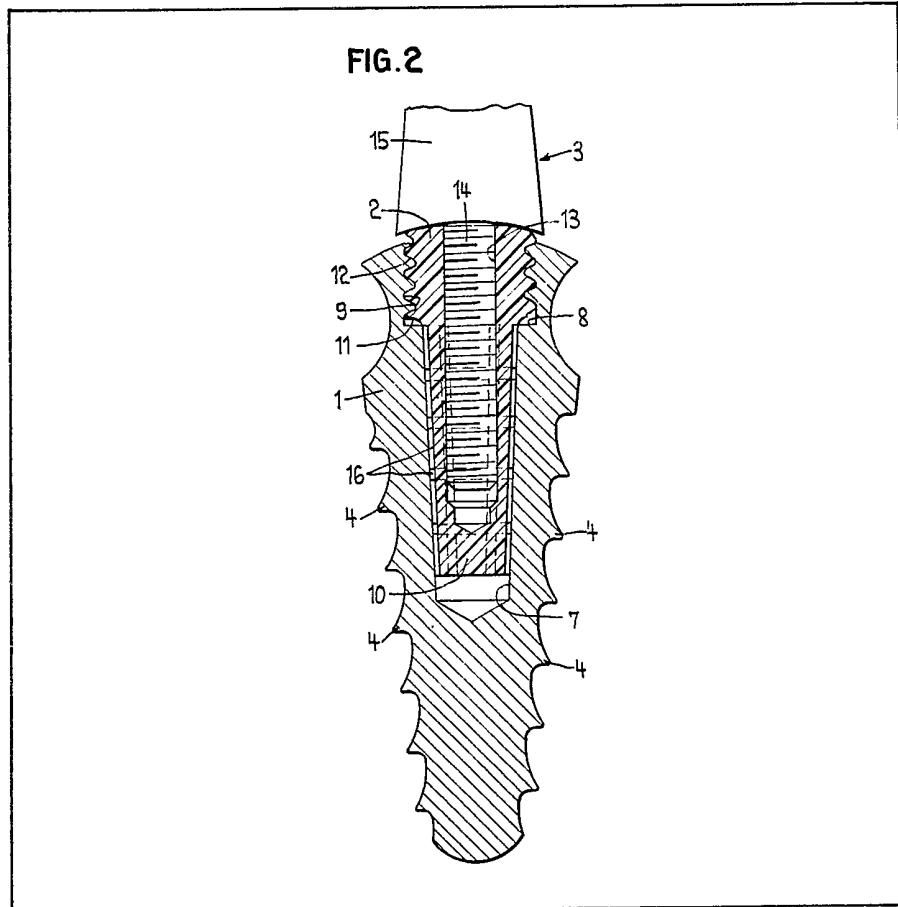


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(54) **Jaw implant**

(57) The implant for the jaw comprises an implant body 1, to be fixed without bone cement, a bed 2 made of plastics material and an implant support 3 for receiving the suprastructure. In order to reduce the specific load on the bone the implant body is provided with support ribs 4, which have the profile of a bone screw. The bed, providing a flexible layer between the implant body and support is frustro-conical towards its lower end and is spread by the implant support, when said support is screwed in.

Such a construction provides for a good anchorage of the implant body into the bone as well as of the bed and the implant support into the implant body.



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FIG. 1

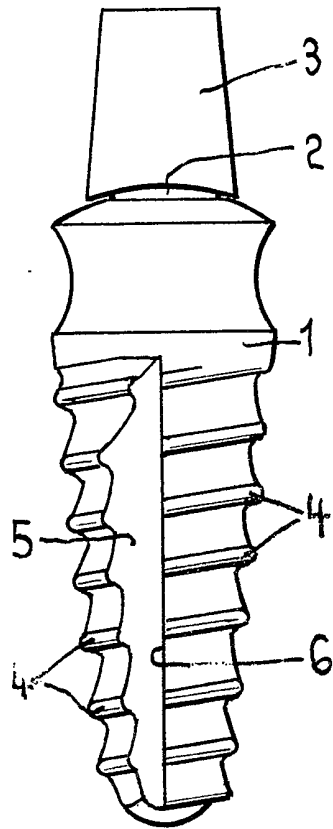


FIG. 2

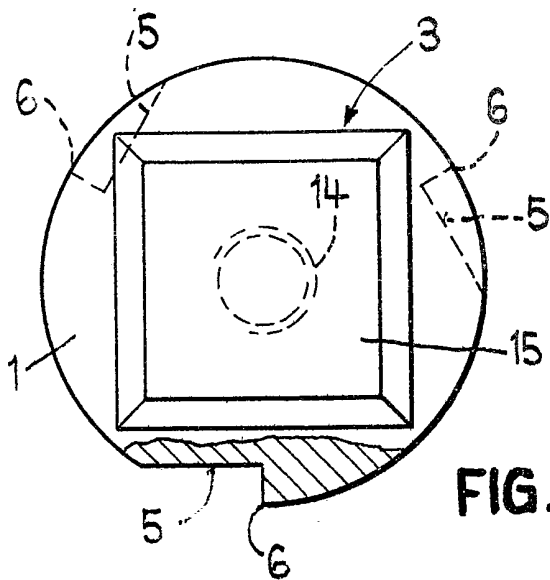
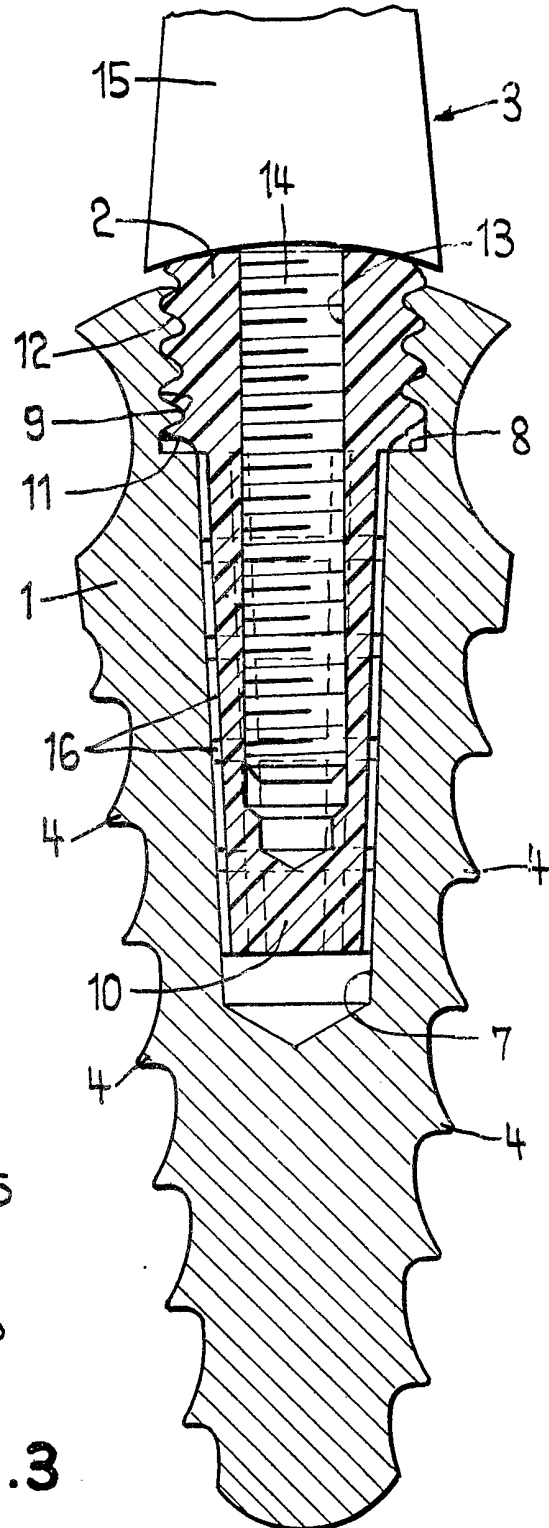


FIG. 3

## SPECIFICATION

**Implant for the jaw**

5 The present invention concerns an implant for the jaw, comprising an implant body for cementless implantation, a bed made of plastics material and an implant support.

10 Implants for the jaw with two stabilisator wings at the implant body and an implant support which is fastened into the bed of plastics material are known. The wings are conferring to the implant body a rotational stability but they make more difficult the exact adjustment and adaptation of the body, after the  
15 incision for the wings have been made. Furthermore, because the rest of the walls are smooth the adherence of the jaw-bone to said implant is not always warranted. The bed of plastics material is necessary for obtaining a certain flexibility of the tooth and a  
20 dampening of the chewing load and is made as cylindrical casing with an exterior and internal thread.

The present invention seeks to overcome these disadvantages by providing an implant which  
25 causes a better anchorage of the bone and allows a better adjustment by the implantation and which bed has a stronger grip. Such implants are described in the claims.

The invention will be described further, by way of  
30 example, with reference to the accompanying drawings, in which:

Fig. 1 is a side view of an implant according to the invention,

35 Fig. 2 is a sectional view in a larger scale of the implant of Fig. 1, and

Fig. 3 is a top plan view of the implant of Fig. 2.

In the section of Fig. 2 is shown the implant body 1, the bed 2 made of plastics material and the  
40 implant support 3. The implant body 1, in this example made of aluminiumoxide ceramics, has a frusto-conical form towards the bottom reaching into the bone and comports support ribs 4 which have the profile of a bone screw. These support ribs decrease the specific load of the implant on the  
45 jaw-bone and stimulate therefore and by their form the anchorage of the bone at the implant. It provides further for the primary optimal tight agglomeration of implant surface and surrounding bone. The surface of the implant body comprises further three  
50 notches 5, see Fig. 3, which constitute each a cutting edge 6, facilitating the screwing in of the implant body. The implant body comprises further a conical hole 7, tapered towards the bottom, for receiving the bed 2. The conical hole 7 has at its top end a shoulder 8 and passes over into a cylindrical hole, which has a greater diameter and an internal thread 9. At the top, the hole passes into a cross-slot, for the  
55 insertion of an appropriate tool.

The external form of the bed matches the two  
60 holes of the implant body and comprises a frusto-conical part 10, tapered towards the bottom, a shoulder 11, and an external thread 12. The bed 2 has an internal thread 13 for the fixation of the implant support 3. The outer surface of the bed, adjacent to the implant body, has a structure 16 for

enabling a greater flexibility and deformability because the bed contacts the internal surface of the implant body only punctually. This structure allows also a dampening of the chewing forces on the bone.

70 The implant support 3 comprises a threaded stud 14 and a square head 15, tapered towards the top, for receiving the suprastructure, that is the tooth. The outer diameter of the stud is dimensioned thus, that the conical part 10 of the bed is spread when the  
75 support is screwed in, causing the wedging of the bed with the implant body. The implant support is made of an appropriate metal or metal alloy.

As material for the implant body 1 can be taken, besides the already mentioned aluminiumoxide ceramics, all materials usually employed in the human medicine, as for example titanium, a  
80 chrome-cobalt-molybdenum-alloy, carbon-fibres reinforced polyethylene, stainless steel or carbon, whereas the bed can be made of polyethylene.

85 For implanting, first a core hole with an appropriate diameter is drilled, than a thread is turned in and the implant body is screwed in, whereby the cutting edges 6 are reducing the force to be applied on the implant body. Upon this cementless fastening of the  
90 implant body the plastics material bed and afterwards the implant support are screwed in.

**CLAIMS**

1. An implant for the jaw, comprising an implant body to be cementless implanted, a bed of plastics material, and an implant support, wherein said  
95 implant body is conical and tapered towards its lower end reaching into the bone and is provided with support ribs for the anchorage into the bone, and wherein said bed and the corresponding hole in said implant body are conical and tapered towards  
100 the lower end.

2. An implant according to Claim 1, wherein said bed comprises at its top end a cylindrical part with an external thread, which matches an internal thread  
105 of said implant body, and a shoulder at the junction to its conical part, which matches a shoulder in the implant body.

3. An implant according to Claim 1, wherein said support ribs have the profile of a bone screw.

110 4. An implant according to Claim 1, wherein said bed is provided with an internal thread for receiving an implant support, said implant support having a threaded stud with a slightly larger diameter as the diameter of said internal thread, causing a wedging effect.

115 5. An implant according to Claim 1, wherein the external surface of said implant body comprises notches with cutting edges, for rendering the screwing in more easy.

120 6. An implant according to Claim 1, wherein said implant body is made of aluminiumoxide ceramics.

7. An implant according to Claim 1, wherein said implant body is made of titanium, a chrome-cobalt-molybdenum-alloy, stainless steel, carbon or  
125 carbonfibres reinforced polyethylene.

8. An implant according to Claim 1, wherein the external surface of said bed is provided with a structure.

130 9. An implant according to Claim 1, wherein the implant support comprises a square head, said head

**being tapered towards its top.**

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