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(54) Title: SHAPE MEMORY DENTAL RETENTION SYSTEMS

(57) Abstract: Shape memory dental retention systems which facilitate the adjustment or removal of an oral appliance, e.g., a crown or bridge, from a reconfigurable abutment assembly are described. The adjustable abutment assembly may be secured to an anchoring implant bored into the bones within the mouth. The abutment assembly has a projecting abutment portion with one or more shape memory material sleeves or plates or elements extending along the abutment. Each of the sleeves has a length with at least one curved or arcuate portion. Energy may be applied to the elements such that the arcuate portion flattens to allow for the oral appliance to be placed thereupon while removal of the energy allows the elements to reconfigure into its curved configuration thereby locking the oral appliance to the abutment. Removal of the oral appliance may be effected by reapplication of energy to the elements.

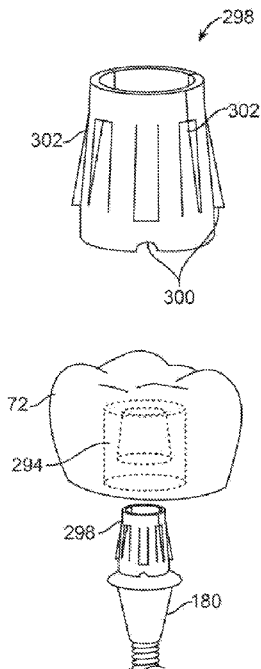


FIG. 27C

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| A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - A61C 13/10 (2012.01) USPC - 433/193 According to International Patent Classification (IPC) or to both national classification and IPC | | |
|--|---|--|
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC(8) - A61C 13/10 (2012.01) USPC - 433/193 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched 433/167, 172, 177, 191, 194, 195, 229 (Search term limited; see below) Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWest (PGPB, USPT, EPAB, JPAB); Google Search Terms: Shape memory, nitinol, polymer, sleeve, dental, abutment, implant, finger, tab, removable, replaceable, detachable, crown, appliance, denture, energy, heat, apply | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 2011/0014585 A1 (SEO) 20 January 2011 (20.01.2011) Abstract, para [0040]-[0046], [0064]-[0065] and FIGS. 1-3, 13. | 1-4, 10, 12, 13, 15, 20-25, 27, 28 |
| Y | | 5-9, 11, 14, 16-19, 26, 29, 30 |
| Y | US 2004/0193261 A1 (BERREKLOUW) 30 September 2004 (30.09.2004) Abstract, para [0226]-[0229] and FIGS. 33-36. | 5-9 |
| Y | US 2006/0154195 A1 (MATHER et al.) 13 July 2006 (13.07.2006) Abstract and para [0099]. | 11 and 26 |
| Y | US 2003/0124480 A1 (PEACOCK) 03 July 2003 (03.07.2003) Abstract, para [0056]. | 14 |
| Y | US 5,516,288 A (SICHLER et al.) 14 May 1996 (14.05.1996) Abstract, col 3, ln 34-46, col 3, ln 58 to col 4, ln 9, col 4, ln 46-50 and FIGS. 2-3. | 16-19 and 29-30 |
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| A | US 4,728,330 A (COMPARETTO) 01 March 1988 (01.03.1988) Entire document. | 1-30 |
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