

CLAIMS

1. A dental treatment appliance comprising a dental treatment system for delivering
5 a treatment to the oral cavity of a user, the dental treatment system comprising detecting means for transmitting a pulsed signal towards the oral cavity and for receiving a signal returned from the oral cavity, and a controller for actuating the treatment of the oral cavity of the user depending on a signal received from the detecting means.
- 10 2. An appliance according to claim 1, comprising a handle and moving means for moving the detecting means relative to the handle.
3. An appliance according to claim 2, wherein the moving means is arranged to move the detecting means reciprocally relative to the handle.
- 15 4. An appliance according to claim 3, wherein the moving means is arranged to move the detecting means relative to the handle at a frequency in the range from 200 to 300 Hz.
- 20 5. An appliance according to claim 2 or claim 3, wherein the moving means is arranged to oscillate the detecting means relative to the handle at an oscillation frequency F , and the detecting means is arranged to transmit optical signals at a frequency $nF/16$, where n is an integer greater than or equal to 1.
- 25 6. An appliance according to any of claims 2 to 5, wherein the moving means is arranged to move the detecting means relative to the handle along a path which is arranged perpendicular to a longitudinal axis of the handle.
- 30 7. An appliance according to any of claims 2 to 6, wherein the moving means is arranged to move the detecting means relative to the handle reciprocally along a curved, preferably arcuate, path.

8. An appliance according to claim 7, wherein the detecting means is swept about the longitudinal axis of the handle by an angle in the range from 10 to 30°.
- 5 9. An appliance according to any of claims 2 to 8, wherein the moving means comprises a drive unit for driving movement of the detecting means relative to the handle.
- 10 10. An appliance according to claim 9, comprising a brush unit comprising a bristle carrier and a plurality of bristles mounted on the bristle carrier, and wherein the drive unit is arranged to drive movement of the bristle carrier relative to the handle.
11. An appliance according to claim 10, wherein the detecting means is arranged to move with the bristle carrier relative to the handle.
- 15 12. An appliance according to claim 10 or claim 11, wherein the detecting means is mounted on the bristle carrier.
13. An appliance according to any of claims 10 to 12, comprising a stem extending
20 between the handle and the brush unit, and wherein the drive unit is arranged to move the stem relative to the handle.
14. An appliance according to any of claims 2 to 13, wherein the dental treatment system is configured to deliver a working fluid, preferably a liquid working fluid, to the
25 oral cavity of the user.
15. An appliance according to claim 14, wherein the dental treatment system comprises a nozzle for delivering working fluid to the oral cavity of the user.
- 30 16. An appliance according to claim 15, wherein the nozzle is arranged to move with the detecting means relative to the handle.