

CLAIMS

1. A dental treatment appliance comprising:
 - 5 a handle;
an optical system comprising illuminating means for illuminating an oral cavity of a user, and a window for receiving light from the illuminated oral cavity, and from which the received light is conveyed to image capturing means for capturing images of the illuminated oral cavity;
 - 10 a dental treatment system for delivering a treatment to the oral cavity in dependence on one or more features contained in the captured images; and
moving means for moving the illuminating means and the window relative to the handle;
wherein the moving means is configured to move the illuminating means and the
15 window relative to the handle at a first frequency F1, and the illuminating means is configured to illuminate the oral cavity at a second frequency F2 to generate a plurality of illumination events each second.
2. An appliance according to claim 1, wherein the illuminating means comprises a
20 plurality of LEDs.
3. An appliance according to claim 1 or claim 2, wherein the window is located adjacent to the illuminating means.
- 25 4. An appliance according to any preceding claim, comprising a head, and a stem extending between the head and the handle, and wherein the moving means is arranged to move the stem and the head relative to the handle.
5. An appliance according to claim 4, wherein the illuminating means and the
30 window are located on the head of the appliance.

6. An appliance according to claim 4 or claim 5, wherein the head of the appliance comprises a plurality of bristles.
7. An appliance according to any preceding claim, wherein the dental treatment
5 system comprises a nozzle for ejecting working fluid towards the oral cavity.
8. An appliance according to claim 7 when dependent from claim 4, wherein the nozzle is located on the head of the appliance.
- 10 9. An appliance according to any preceding claim, wherein the image capturing means comprises a rolling shutter camera.
10. An appliance according to claim 9, wherein the camera comprises a sensor comprising a plurality of rows of pixels, the rows of pixels being exposed sequentially,
15 and wherein each row of pixels is exposed to the same number of illumination events
11. An appliance according to any preceding claim, wherein $F1=F2$.
12. An appliance according to any of claims 1 to 10, wherein the second frequency
20 $F2$ is selected such that $0 < |F1 - nF2| < N$, where N is the number of images captured per second by the image capturing means, and n is a positive integer selected such that $|F1 - nF2|$ has a minimum value.
13. An appliance according to any preceding claim, comprising a sensor for
25 measuring the ambient light intensity, and a controller arranged to vary at least one of the intensity and the duration of each illumination event depending on the measured ambient light intensity.
14. An appliance according to any preceding claim, wherein the moving means is
30 arranged to move the illuminating means and the window relative to the handle along a path which is arranged perpendicular to a longitudinal axis of the handle.

15. An appliance according to claim 14, wherein the moving means is arranged to move the illuminating means and the window relative to the handle reciprocally along a curved, preferably arcuate, path.