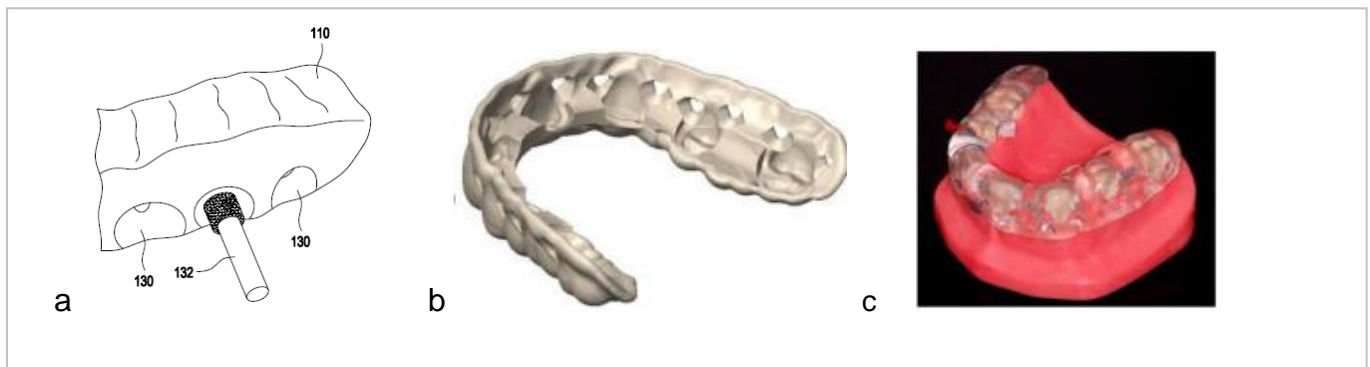




Dental splint to enhance cleaning efficiency

Technology Offer

Ref. No.: 32-19



Category

Process

Keywords

Dental splint, interdental brushes

Development stage

Clinical

Seeking

Licensing/ collaboration

IP status

EP3943038 (validated in DE, FR, GB)

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Background

Oral hygienic measures not only include the use of toothbrushes, but also include the use of so-called interdental brushes. Such interdental brushes are used in order to clean the interdental space between adjacent teeth.

However, many patients – particularly older adults – struggle to insert interdental brushes between their teeth, even when using holders or supports for the interdental brushes. The incorrect use of the interdental brushes involves injuries of the gingiva or insufficient cleaning effects.

It is therefore desirable to develop a dental splint that at least partially overcomes shortcomings of known devices and methods for cleaning the interdental space. In particular, a dental cleaning splint that correctly and reliably facilitates insertion of an interdental brush into the interdental space between adjacent teeth.

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Technology

The patent for producing a dental splint for interdental brushes was originally filed in 2020. Since then, scientists of the Heidelberg University continuously developed the technology, refining the digital production process and conducting in vitro (published) as well as clinical studies (to be published soon).

Automated and personalized process

- a.) An image is made of the patient's teeth and gingiva.
- b.) Insertion axes for insertion of interdental brushes (a 132) are defined
- c.) Funnel-shaped holes (a 130) are defined along the insertion axes
- d.) The dental cleaning splint is fabricated by 3D printing (b and c)

Enhanced cleaning efficiency

The final product is especially beneficial for patients with restricted manual skills or anatomical tooth restrictions, such as missing teeth, by restoring guide areas to facilitate effective dental cleaning.

Benefits

- Accurate production method
- Automated process
- Clinical trials (to be published soon)

Applications

- Manufacturing of an individualised dental cleaning splint

Publications

Rues S, Becker T, Bartha V, Spindler M, Hetzler S, Wolff D, Rammelsberg P, Zenthöfer A. Design and Efficacy of Custom-Made Cleaning Splints or the Approximal Plaque Removal – A laboratory Study. J. Clin. Med. 2024, 13, 7763. <https://doi.org/10.3390/jcm13247763>

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