A Study of Applying TRIZ Theory to the Innovative Design of Toothbrush

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ABSTRACT

Oral care is an important daily routine. According to the research of Academic Foundation of Periodontal Disease Control, about 70% Taiwanese has different degrees of periodontal disease. Tooth decay has been listed after cardiovascular disease and cancer as the third non-contagious disease by World Health Organization. A healthy life needs to be sustained by health teeth. To protect the teeth one must have the good habit of brushing teeth in the morning and before sleep. Thus, a creative healthy tooth brush is a significant oral care tool. The research used TRIZ theories to analyze personal tooth brushes and suggest their improvements. The systematic design process of ARIZ, such as problem analysis and solution generation, and the creative innovative theory of TRIZ, such as contradiction matrix, 39 engineering parameter, 77 Inventive Principle, S-Fields etc. innovatively improve the structure of tooth brush.The research reviews the practicability of patent toothbrushes and help designers realize users ’ needs and oral care ’s market allocation and tendency. The analysis of the research would like to help reduce the time and cost of R&D and develop more innovative user-friendly products. Finally the research has the following conclusions: 1.We matched different kinds of tooth brush with different age groups of consumers. 2.We helped designers to realize consumers ’ needs and tooth brush ’s place and trend in the oral care market.. 3.We proposed three patents. Designing a toothbrush with, environmental friendliness, combine chopsticks , comfortable to use and so on,meets consumers ’ needs.

Keywords : TRIZ ; patent ; toothbrush

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