

Method for obtaining a reinforced alveolar structure

A / 00078 / 20.02.2023

Authors: Emilia Dobrin, Sorin Mușuroi,
 G.-V. Mnerie, C.M. Matei

B

The process for producing reinforced alveolar structures according to the invention solves the technical problem presented and eliminates the disadvantages mentioned in that the structure obtained, with components produced by 3D printing, can be configured from the design phase according to the material used for printing, the intensity and orientation of the anticipated mechanical stresses and the mechanical strength imposed on the final product.

The structure is composed of a 3D-printed semi-finished product and metal fabric reinforcement, the joining of the structure components is done by ultrasonic welding equipment after the printing material, polymer or polymer with reinforcing agent (composite) is deposited layer by layer in a cellular volume structure with a configuration (cell size and orientation) determined by the mechanical strength requirements of the final product.

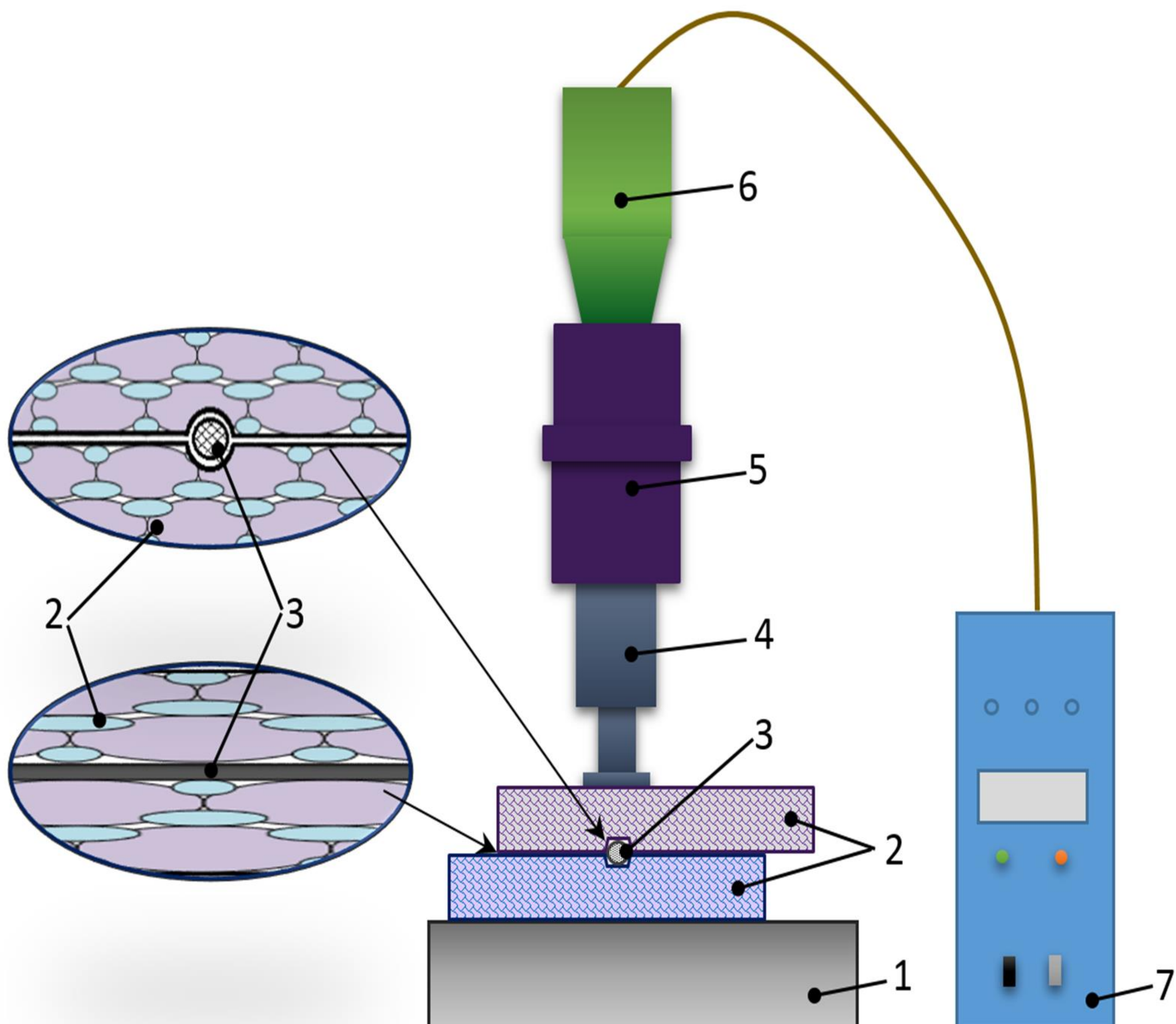


Figure - Reinforced alveolar structure and the equipment to obtain it: workbench (1), workpiece (2), metal reinforcement (3), sonotrode (4), booster (5), transducer (6), ultrasonic generator (7)