~~Abstract~~

~~The present subject matter disclosed herein consists of a dentofacial orthopedic device configured to allow the user to advance their mid-facial bones relative to their skull, giving the user the ability to gradually open their airway to improve breathing and their facial structure. The device comprises a brace that is configured to be wrapped around a user's skull and anchored to it with screws that are designed to screw into the skull. An orthodontic "Y" bracket connects the brace to bony structures within the mid face, such as the maxilla, via ball and socket joints implanted inside the mouth, or via a tooth borne connection to a removable appliance designed to fit around the teeth of the upper jaw. The "Y bracket is connected to the brace via a rotating slot attached to the brace that the tail end of "Y" bracket inserts into. The tail end has a screw thread, with a bolt connected to it at the anterior end of the slot. The user may turn the bolt along the screw thread of the tail end of the "Y" bracket to pull it through the slot, pulling the mid face in the anterior, or desired direction, causing separation between cranial sutures under tension, which may generate bone at the sutures. The "Y" bracket can be adjusted in multiple angles, including up and down, to pull the mid face at desired angles. The device may also comprise of a mouthpiece for the teeth of the lower dental arch that is anchored to the "Y" bracket via a second rod that may be spring-loaded, which slides through a sleeve on a screw thread which can be advanced using a bolt to advance the lower jaw during sleep with its weight distributed onto the brace, and to keep open the user's airway during sleep.~~

ABSTRACT

ORTHOPEDIC DEVICE FOR MIDFACIAL BONE STRUCTURE ADVANCEMENT

A dentofacial orthopedic device comprising a brace and a bracket. The brace is configured to be anchored to a skull with cranial anchorage assemblies. The bracket comprises a first bracket member and a second bracket member. The first bracket member comprises a proximal end secured by an adjuster to a receiving member of a clamp mounted to the brace. The second bracket member has a tail end hingedly connected to a distal end of the first bracket member by a hinge joint and an anterior member configured to be rotatably anchored to an anterior portion of the skull by fasteners. The first bracket member is rotatable about the receiving member for a selective locking of the first bracket member at different angular positions relative to the second bracket member with the

hinge joint. Actuation of the adjuster causes displacement of the bracket relative to the brace.

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