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(54) **VERTICALLY ADJUSTABLE ARMREST ASSEMBLY FOR A VEHICLE INTERIOR COMPONENT**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,116,093 A * 12/1963 Bosack A61G 15/10
297/115
4,848,627 A * 7/1989 Maeda B60R 7/04
108/44

(Continued)

FOREIGN PATENT DOCUMENTS

DE 102007024000 11/2008
FR 2961763 12/2011

OTHER PUBLICATIONS

PCT International Search Report mailed Nov. 28, 2013.

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(57) **ABSTRACT**

An armrest assembly includes a pivot joint positioned at a first longitudinal end of the armrest assembly. The pivot joint is configured to rotatably couple the armrest assembly to a housing of a vehicle interior component. The armrest assembly also includes an armrest configured to rotate about the pivot joint between a lowered position and a raised position. In addition, the armrest assembly includes an adjustment mechanism positioned at a second longitudinal end of the armrest assembly, opposite the first longitudinal end. The adjustment mechanism is configured to hold the armrest in one of a variety of vertical positions including the lowered position and the raised position.

5 Claims, 6 Drawing Sheets

