| **原文** | **訳文** |
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| 1軸のヒンジを採用し2つの筐体が180度まで開く構造にした場合、次のような問題が考えられる。 | If a structure is adopted in which a single-axis hinge is employed and two casings are opened to 180 degrees, problems such as the following are conceivable. |
| 2013-067665 filed on March 27, 2013, the entire contents of which are incorporated herein by reference. | 2013-067665 filed on March 27, 2013, the entire contents of which are incorporated herein by reference. |
| An electronic device comprising: 第1の回転軸により回転可能に支持された第1の筐体と、前記第1の回転軸に平行な第2の回転軸により回転可能に支持された第2の筐体と、前記第1の回転軸に設けられ、前記第1の筐体の回転に伴い前記第1の回転軸を中心に回転し、前記第1の回転軸と共に前記第1の筐体を前記第2の回転軸から離れる方向に移動させる第1のカムと、前記第2の回転軸に設けられ、前記第2の筐体の回転に伴い前記第2の回転軸を中心に回転し、前記第2の回転軸と共に前記第2の筐体を前記第1の回転軸から離れる方向に移動させる第2のカムと、前記第1の回転軸と前記第2の回転軸とを近づける方向に力を加える弾性部材 | An electronic device comprising: a first casing rotatably supported by a first rotation axis; a second casing rotatably supported by a second rotation axis that is parallel to the first rotation axis; a first cam that is provided on the first rotation axis, rotates about the first rotation axis in accordance with rotation of the first casing, and causes the first casing to move together with the first rotation axis in a direction away from the second rotation axis; a second cam that is provided on the second rotation axis, rotates about the second rotation axis in accordance with rotation of the second casing, and causes the second casing to move together with the second rotation axis in a direction away from the first rotation axis; and an elastic member that applies a force in a direction in which the first rotation axis and the second rotation axis become closer. |
| CROSS-REFERENCE TO RELATED APPLICATION | CROSS-REFERENCE TO RELATED APPLICATION |
| The electronic device according to claim 1, 前記弾性部材は、前記第1の回転軸と前記第2の回転軸とを個別に収納する湾曲部を有するＭ型バネである。 | The electronic device according to claim 1, wherein the elastic member is an M-shaped spring having bent sections in which the first rotation axis and the second rotation axis are separately housed. |
| The electronic device according to claim 1, 前記第1のカムは、前記第1の回転軸から前記第1の筐体の回転時に前記第2の筐体に対向する前記第1の筐体の第1の縁部に向かう方向に突出し、前記第2のカムは、前記第2の回転軸から前記第2の筐体の回転時に前記第1の筐体に対向する前記第2の筐体の第2の縁部に向かう方向に突出する。 | The electronic device according to claim 1, wherein the first cam protrudes from the first rotation axis toward a first edge section of the first casing that faces the second casing when the first casing rotates, and the second cam protrudes from the second rotation axis toward a second edge section of the second casing that faces the first casing when the second casing rotates. |
| The electronic device according to claim 1, 前記第1のカムは、前記第1の筐体の回転時に前記第1の筐体が前記第2の筐体に干渉しない位置まで前記第1の回転軸を移動させ、前記第2のカムは、前記第2の筐体の回転時に前記第2の筐体が前記第1の筐体に干渉しない位置まで前記第2の回転軸を移動させる。 | The electronic device according to claim 1, wherein the first cam causes the first rotation axis to move to a position where the first casing does not interfere with the second casing when the first casing rotates, and the second cam causes the second rotation axis to move to a position where the second casing does not interfere with the first casing when the second casing rotates. |
| The electronic device according to claim 1, 前記第1のカム及び前記第2のカムは、前記第1の筐体の回動時の負荷トルクと前記第2の筐体の回動時の負荷トルクとが異なっている。 | The electronic device according to claim 1, wherein, in the first cam and the second cam, the load torque when the first casing turns and the load torque when the second casing turns are different. |
| The electronic device according to claim 3, 前記第1のカムは、前記第1の筐体が回転しカム山の頂点が前記第1の回転軸と前記第2の回転軸とを結ぶ直線上に位置する状態で、前記第1の縁部の頂点から前記第1の回転軸までの距離と、前記第1の筐体の回転時に前記第1の筐体に対向する前記第2の筐体の面から前記第2の回転軸までの距離とを足した距離よりも、前記第1の回転軸から前記第1のカムのカム山の頂点までの距離と、前記第2の回転軸から前記第1のカムのカム山の頂点までの距離とを足した距離が長くなる高さを有し、前記第2のカムは、前記第2の筐体が回転しカム山の頂点が前記第1の回転軸と前記第2の回転軸とを結ぶ直線上に位置する状態で、前記第2の縁部の頂点から前記第2の回転軸までの距離と、前記第2の筐体に対向する前記第1の筐体の面から前記第1の回転軸までの距離とを足した距離よりも、前記第1の回転軸から前記第2のカムのカム山の頂点までの距離と、前記第2の回転軸から前記第2のカムのカム山の頂点までの距離とを足した距離が長くなる高さを有する。 | The electronic device according to claim 3, wherein the first cam has a height such that, in a state in which the first casing rotates and the apex of a cam crest is positioned on a straight line joining the first rotation axis and the second rotation axis, the distance obtained by adding the distance from the first rotation axis to the apex of the cam crest of the first cam and the distance from the second rotation axis to the apex of the cam crest of the first cam is longer than the distance obtained by adding the distance from the apex of the first edge section to the first rotation axis and the distance from a surface of the second casing that faces the first casing when the first casing rotates, to the second rotation axis, and the second cam has a height such that, in a state in which the second casing rotates and the apex of a cam crest is positioned on a straight line joining the first rotation axis and the second rotation axis, the distance obtained by adding the distance from the first rotation axis to the apex of the cam crest of the second cam and the distance from the second rotation axis to the apex of the cam crest of the second cam is longer than the distance obtained by adding the distance from the apex of the second edge section to the second rotation axis and the distance from a surface of the first casing that faces the second casing to the first rotation axis. |
| The electronic device according to claim 6, 前記第1のカム及び前記第2のカムは、前記第1の筐体と前記第2の筐体とが開く場合、前記第1の筐体の回動時の負荷トルクが前記第2の筐体の回動時の負荷トルクよりも小さく、前記第1の筐体と前記第2の筐体とが閉じる場合、前記第1の筐体の回動時の負荷トルクが前記第2の筐体の回動時の負荷トルクよりも大きい。 | The electronic device according to claim 6, wherein, in the first cam and the second cam, when the first casing and the second casing open, the load torque when the first casing turns is less than the load torque when the second casing turns, and when the first casing and the second casing close, the load torque when the first casing turns is greater than the load torque when the second casing turns. |
| The electronic device according to claim 7, 前記第1の筐体と前記第2の筐体とが開く場合の、前記第1のカムのカム受けを押圧する側の傾斜角度が、前記第2のカムのカム受けを押圧する側の傾斜角度よりも小さく、前記第1の筐体と前記第2の筐体とが閉じる場合の、前記第1のカムのカム受けを押圧する側の傾斜角度が、前記第2のカムのカム受けを押圧する側の傾斜角度よりも大きい。 | The electronic device according to claim 7, wherein, the inclination angle at the side where a cam receiver for the first cam is pressed when the first casing and the second casing open is less than the inclination angle at the side where a cam receiver for the second cam is pressed, and the inclination angle at the side where the cam receiver for the first cam is pressed when the first casing and the second casing close is greater than the inclination angle at the side where the cam receiver for the second cam is pressed. |
| This application is based upon and claims the benefit of priority from the prior Japanese Patent Application No. | This application is based upon and claims the benefit of priority from the prior Japanese Patent Application No. |