

DISPLAY DEVICE FOR THE ATTITUDE OF AN AIRCRAFT WITH RESPECT TO A FIXED DIRECTION IN SPACE



Main Technological Area → Navigation

Keyword → Fixed Direction | Safety | Low Visibility | Display Device

The solution involves an external element that contains, inside, an element free to rotate. The external element can be fixed to a structure, for example the cabin of an aircraft, which under certain conditions can assume any orientation in space. The internal element instead, thanks to an appropriately positioned concentrated mass, it tends to assume a given orientation depending on the earth's gravitational attraction.

TECHNICAL SPECIFICATIONS

The specific embodiment envisaged consists of a transparent external spherical element. Inside it is installed another element, also spherical, which, thanks to the presence of a transparent liquid film interposed between the two, allows the same to rotate freely. On the surface of the internal spherical element there is a visual indication which consists of triangular shaped segments with opposing vertices converging in a single point, with the function of always indicating the vertical independently of the attitude of the aircraft / vehicle. Triangular segments can be luminescent (Fig. 2, Fig. 3).

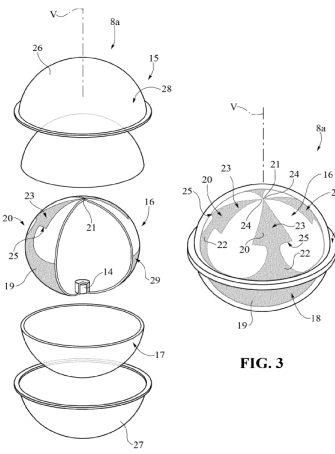


FIG. 3

FIG. 2

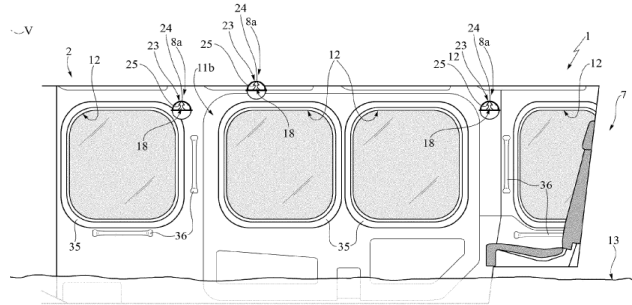


FIG. 4

The device could for example be installed in the cabin of an aircraft / vehicle (Fig. 4) in order to provide a precise indication of the vertical with respect to the emergency exits. This would allow, in the event of an emergency landing at sea, with possible overturning of the aircraft and / or in conditions of poor internal visibility, an evacuation of passengers in conditions of greater safety.

INNOVATION/BENEFITS

- 1) A simple design that requires no special maintenance and can operate without external energy supply
- 2) Easy installation and robustness
- 3) Increased safety: the device increases safety in conditions of loss of orientation due to poor or no visibility or in particular conditions of use (e.g. underwater).

AREAS OF USE

- 1) Rotary / fixed wing aircraft
- 2) Vessels, including submarines
- 3) Operations in immersion on wrecks or in caves with divers acting in conditions of potential loss of orientation.

PATENT INFORMATION

Priority Date – 2015/03/13

Priority Number - EP3067660A1

IPC Codes – B64D45/00 | G01C9/00 | G01C9/10 | G08B7/06

Active Worldwide Extensions

EPO – EP3067660B ; Filing Date: 2015/03/13; Grant Date 05/07/2017

Italy – Germany – France – United Kingdom

USA - US10435172B2; Filing Date 2017/09/05; Grant Date 08/10/2019

RUSSIA - RU2704667C2; Filing Date 2017/10/03; Grant Date 30/10/2019

CHINA - CN107429999A; Filing Date 2016/03/11; Grant Date 07/02/2020

KOREA - KR2017138404A; Filing Date 2016/03/11; Grant Date -----

Leonardo internal code

LDO-H7412