



- (51) International Patent Classification:
F16M 11/02 (2006.01) *G06F 1/16* (2006.01)
- (21) International Application Number:
PCT/EP2015/061057
- (22) International Filing Date:
20 May 2015 (20.05.2015)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2014/07936 7 July 2014 (07.07.2014) TR
- (71) Applicant: **ARCELIK ANONIM SIRKETI** [TR/TR]; E5
Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).
- (72) Inventors: **GULER, Cemal**; E5 Ankara Asfalti Uzeri,
Tuzla, 34950 Istanbul (TR). **DEMIRHAN, Dogan**; E5
Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).
ASKAN, Mustafa; E5 Ankara Asfalti Uzeri, Tuzla, 34950
Istanbul (TR). **CEYLAN, Ozgur**; E5 Ankara Asfalti Uzeri,

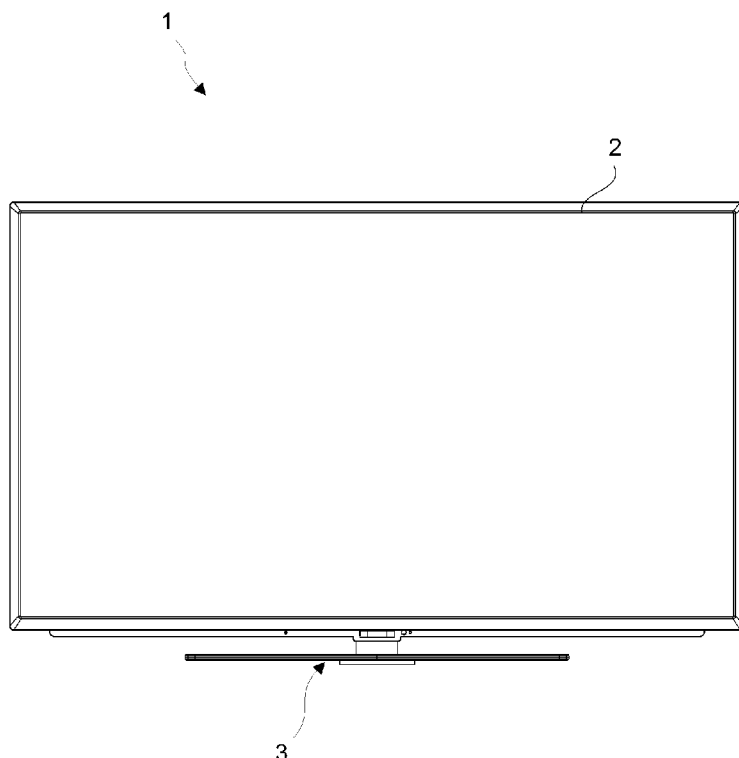
Tuzla, 34950 Istanbul (TR). **KASAPOGLU, Sevginar
Oguz**; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul
(TR).

- (81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,

[Continued on next page]

(54) Title: A DISPLAY DEVICE COMPRISING A STAND

Figure 1



(57) Abstract: The present invention relates to a display device (1) comprising a body (2) and a stand (3) that is fixed to the body (2) and that has a neck (4), a base (5) preferably produced from glass material and having an opening (6) wherein the neck (4) is inserted, an upper retainer (8) disposed on the body (2) and exerting pressure on the base (5) from above and a lower retainer (7) disposed under the base (5) and supporting the base (5) from below.



LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, **Published:**
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, — *with international search report (Art. 21(3))*
GW, KM, ML, MR, NE, SN, TD, TG).

Description**A DISPLAY DEVICE COMPRISING A STAND**

- [0001] The present invention relates to a display device comprising a stand.
- [0002] Stands that are fixed to the body of the display device are used so that the display devices can stand upright on a flat surface. In stands having glass bases, the neck portion carrying the weight of the display device cannot be fixed to the glass base and a metal plate is placed under the glass base and the neck is fixed to the metal plate by screwing or by other fixing means. The metal plate is fixed to the glass base by double-sided adhesive bands. This operation increases material and maintenance costs.
- [0003] In the state of the art United States Patent Application No. US20100231815, a display unit is disclosed having a support having a metal plate under the glass base.
- [0004] In the state of the art Chinese Patent Application No. CN202091734, a television is disclosed having a rotatable stand that can rotate around itself, produced by using interlocking parts.
- [0005] The aim of the present invention is the realization of a display device comprising a stand the production costs of which are decreased.
- [0006] The display device realized in order to attain the aim of the present invention, and explicated in the first claim and the respective claims thereof, comprises a body and a stand that enables the display device to stand on the surface by being fixed to the body and that has a base, a neck disposed on the base and produced integrated with an upper retainer and a lower retainer. An opening is arranged at the base through which the neck can be inserted and the neck is supported by the upper retainer from the upper portion of the base and the lower retainer from the lower part and is fixed in upright position with respect to the base. As the neck is produced as a single piece together with the lower retainer and the upper retainer, using an extra part for connection on the stand is not required and production costs are lowered.
- [0007] In an embodiment of the present invention, the neck, the lower retainer and the upper retainer are produced as a single piece by plastic injection

method. By means of the plastic injection method, the neck, the lower retainer and the upper retainer are fixed firmly to the base and rigidity thereof is increased.

- [0008] In an embodiment of the present invention, in the neck a rod produced from metal is provided, that extends along the length of the neck and enables the strength of the neck to be increased. The neck is prevented from breaking due to weight of the display device by means of the metal rod placed into the mold of the neck during production.
- [0009] In an embodiment of the present invention, the lower retainer is so wide as to almost entirely cover the lower surface of the base. Thus, the weight of the display device is distributed evenly to the base, moreover level difference between the lower retainer and the base is avoided without requiring using balancing pins between the base and the surface.
- [0010] In an embodiment of the present invention, on the base preferably produced from glass, cavities are arranged, filled in partially by the lower retainer and/or the upper retainer. In this embodiment, releasing the lower retainer and the upper retainer, that are produced by plastic injection method, from the mold becomes easy and also the esthetic appearance of the stand is improved.
- [0011] In an embodiment of the present invention, a rotation mechanism disposed on the neck is used, that enables the viewing angle of the display device to be changed. By means of the rotation mechanism, the display device can be rotated around the axis of the neck as the base remains fixed.
- [0012] In an embodiment of the present invention, the neck is configured to be telescopic so that the height of the display device can be changed. In this embodiment, the height of the display device can be adjusted by changing the height of the neck.
- [0013] In the stand enabling the display device of the present invention to stand upright on a flat surface, production costs are lowered by producing the neck, the lower retainer and the upper retainer as a single piece, thereby decreasing the number of parts used. Moreover, assembly time is decreased since parts that should be fixed to each other are not used.
- [0014] The model embodiments that relate to the display device realized in order

to attain the aim of the present invention are illustrated in the attached figures, where:

- [0015] Figure 1 – is the front view of a display device related to an embodiment of the present invention.
- [0016] Figure 2 – is the sideways view of a display device related to an embodiment of the present invention.
- [0017] Figure 3 – is the perspective view of a stand related to an embodiment of the present invention.
- [0018] Figure 4 – is the perspective view of a stand from another angle related to an embodiment of the present invention.
- [0019] Figure 5 – is the top view of a stand related to an embodiment of the present invention.
- [0020] Figure 6 – is the cross-sectional view of a stand related to an embodiment of the present invention.
- [0021] Figure 7 – is the schematic view of a stand related to an embodiment of the present invention.
- [0022] Figure 8 – is the schematic view of a stand related to another embodiment of the present invention.
- [0023] The elements illustrated in the figures are numbered as follows:
- [0024] 1. Display device
- [0025] 2. Body
- [0026] 3. Stand
- [0027] 4. Neck
- [0028] 5. Base
- [0029] 6. Opening
- [0030] 7. Lower retainer
- [0031] 8. Upper retainer
- [0032] 9. Rod
- [0033] 10. Cavity
- [0034] 11. Rotation mechanism
- [0035] The display device (1) comprises a body (2) and a stand (3) that is fixed to the body (2) and that has a neck (4), a base (5) preferably produced from glass material and having an opening (6) wherein the neck (4) is inserted,

an upper retainer (8) disposed on the base (5) and exerting pressure on the base (5) from above and a lower retainer (7) disposed under the base (5) and supporting the base (5) from below.

[0036] In the display device (1) of the present invention, the neck (4) is produced as a single piece with the lower retainer (7) and the upper retainer (8).

[0037] The lower retainer (7), the upper retainer (8) and the neck (4) are produced as a single piece and thus the number of parts used on the stand (3) is decreased. Furthermore, assembly time decreases and also an esthetic appearance is provided since there are no parts that should be fixed to each other (Figure 3 and Figure 4).

[0038] In an embodiment of the present invention, the neck (4), the lower retainer (7) and the upper retainer (8) are produced by plastic injection method. In plastic injection, the mold is placed on the base (5) and the neck (4), the lower retainer (7) and the upper retainer (8) are produced together by filling in the opening (6) on the base (5). In the plastic injection method, by holding the injection pressure high, the neck (4), the lower retainer (7) and the upper retainer (8) are firmly fastened to the base (5). By means of firmly fastening the neck (4) to the base (5), the weight of the display device (1) is distributed evenly on the base (5) through the neck (4) (Figure 7 and Figure 8).

[0039] In an embodiment of the present invention, the display device (1) comprises a rod (9) that is produced from metal, that extends inside the neck (4) along the length of the neck (4) and that which provides increase in strength. The strength of the neck (4) is increased by the metal rod (9) placed inside the mold while the lower retainer (7), the upper retainer (8) and the neck (4) are produced by plastic injection method and the neck (4) is prevented from breaking due to weight (Figure 6).

[0040] In an embodiment of the present invention, the lower retainer (7) almost entirely covers the lower surface of the base (5). In this embodiment, the weight of the display device (1) is distributed evenly to the entirety of the base (5) through the lower retainer (7). Thus, the base (5), that is preferably produced from glass, is prevented from breaking due to weight.

[0041] In an embodiment of the present invention, the display device (1)

comprises at least one cavity (10) that is arranged on the base (5) and wherein the lower retainer (7) and/or the upper retainer (8) partially extends. By means of the cavity (10) arranged in the vicinity of the opening (6) on the base (5), in the plastic injection method, the lower retainer (7) and/or the upper retainer (8) partially fills in the cavity (10) and the neck (4) is enabled to be rigidly fixed to the base (5) preferably produced from glass (Figure 7).

- [0042] In an embodiment of the present invention, the cavities (10) are positioned on the base (5) so as to be aligned with the sides of the lower retainer (7) and/or the upper retainer (8). In this embodiment, the plastic injection mold is placed into the cavities (10) and thus during plastic injection the plastic is prevented from overflowing onto the base (5).
- [0043] In an embodiment of the present invention, the display device (1) comprises a rotation mechanism (11) that is disposed inside the neck (4) and that enables the display device (1) to rotate around the axis of the neck (4). By means of the rotation mechanism (11), the user can rotate the display device (1) to the direction he/she desires and can adjust the viewing angle without rotating the base (5).
- [0044] In an embodiment of the present invention, the length of the neck (4) can be changed telescopically. In this embodiment, the user can adjust the height of the display device (1) as per his/her preference.
- [0045] In the display device (1) of the present invention, the neck (4) that carries the weight of the display device (1) on the base (5) preferably produced from glass is produced as a single piece together with the lower retainer (7) and the upper retainer (8). Thus, while the esthetic appearance of the stand (3) is improved, decrease in production costs is provided at the same time. Furthermore, saving in labor costs and time is provided since fixing means like screws are not used.

Claims

1. A display device (1) comprising a body (2), a stand (3) that is fixed to the body (2) and that comprises
 - a neck (4),
 - a base (5) that is preferably produced from glass material and that has an opening (6) wherein the neck (4) is inserted,
 - an upper retainer (8) disposed on the base (5) and exerting pressure on the base (5) from above and
 - a lower retainer (7) disposed under the base (5) and supporting the base (5) from below,**characterized by** the neck (4) produced as a single piece together with the lower retainer (7) and the upper retainer (8).
2. A display device (1) as in Claim 1, **characterized by** the lower retainer (7), the upper retainer (8) and the neck (4) that are produced by plastic injection.
3. A display device (1) as in any one of the above claims, **characterized by** a rod (9) that is produced from metal, that is disposed inside the neck (4), extending along the length of the neck (4) and that provides increase in strength.
4. A display device (1) as in any one of the above claims, **characterized by** the lower retainer (7) that almost entirely covers the lower surface of the base (5).
5. A display device (1) as in any one of the above claims, **characterized by** at least one cavity (10) that is arranged on the base (5) and wherein the lower retainer (7) and/or the upper retainer (8) partially extends.
6. A display device (1) as in any one of the above claims, characterized by a rotation mechanism (11) that is disposed inside the neck (4) and that enables the display device (1) to rotate around the axis of the neck (4).
7. A display device (1) as in any one of the above claims, **characterized by** the neck (4) the height of which changes telescopically.

Figure 1

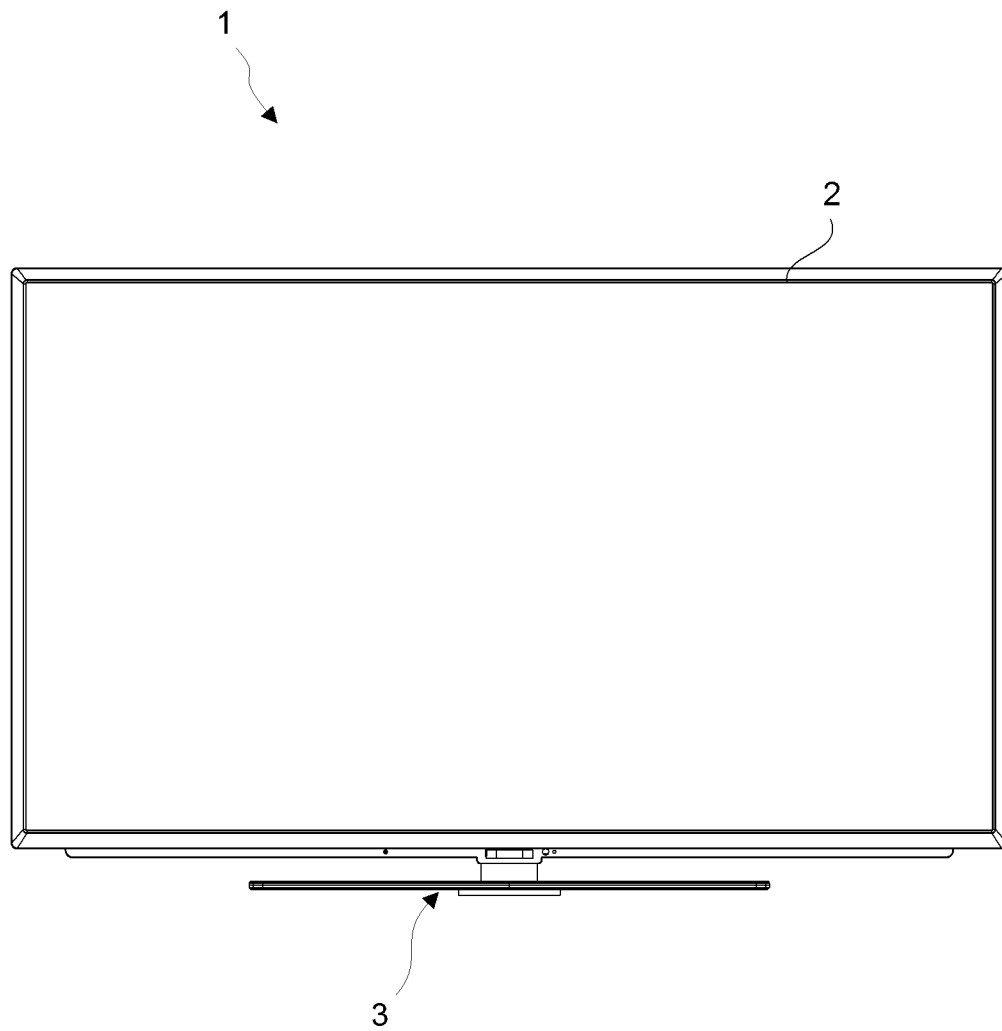


Figure 2

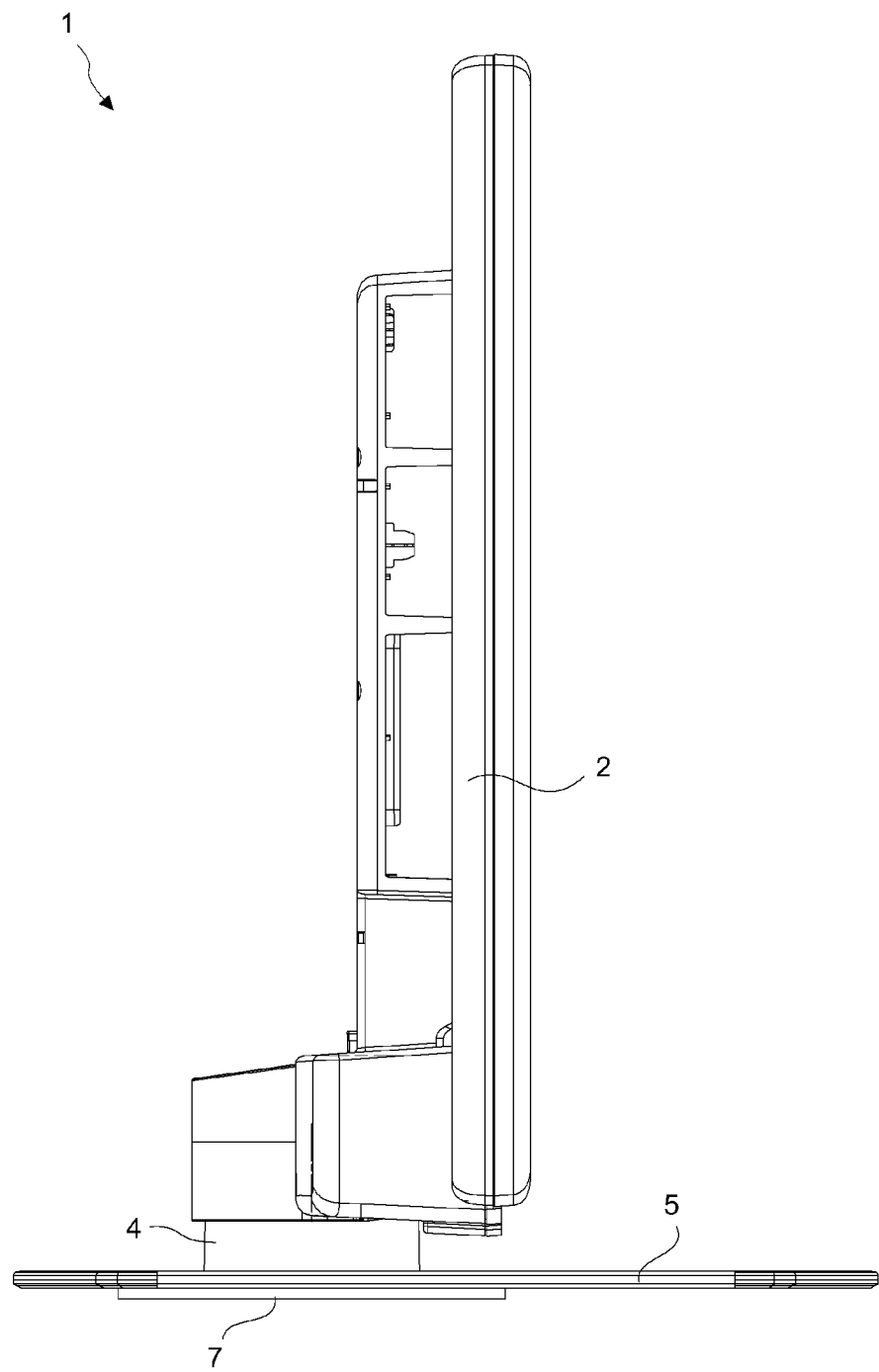


Figure 3

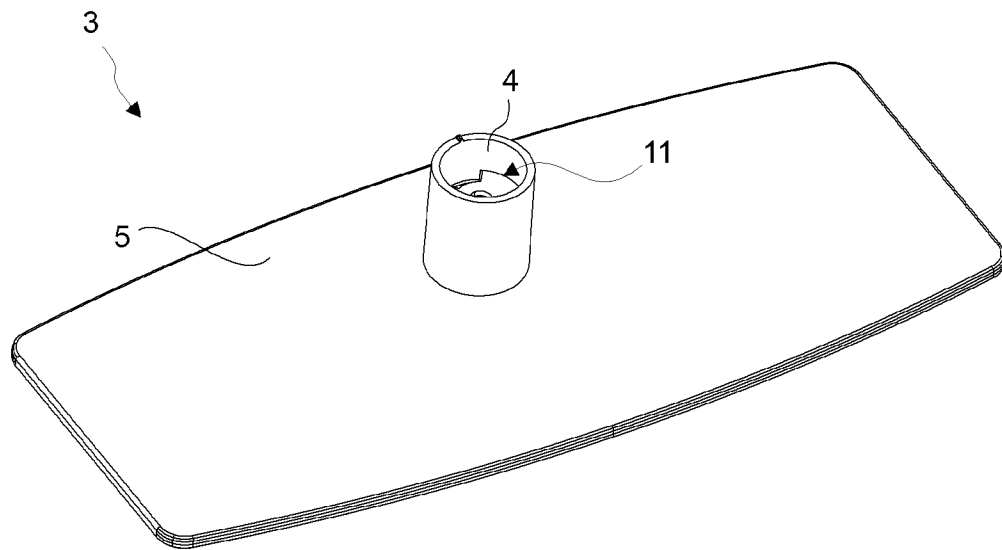


Figure 4

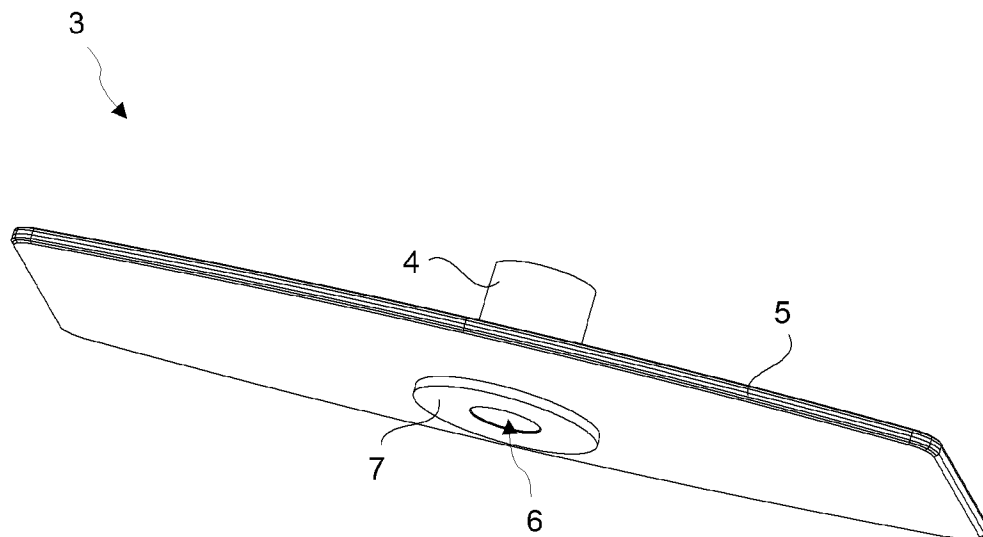


Figure 5

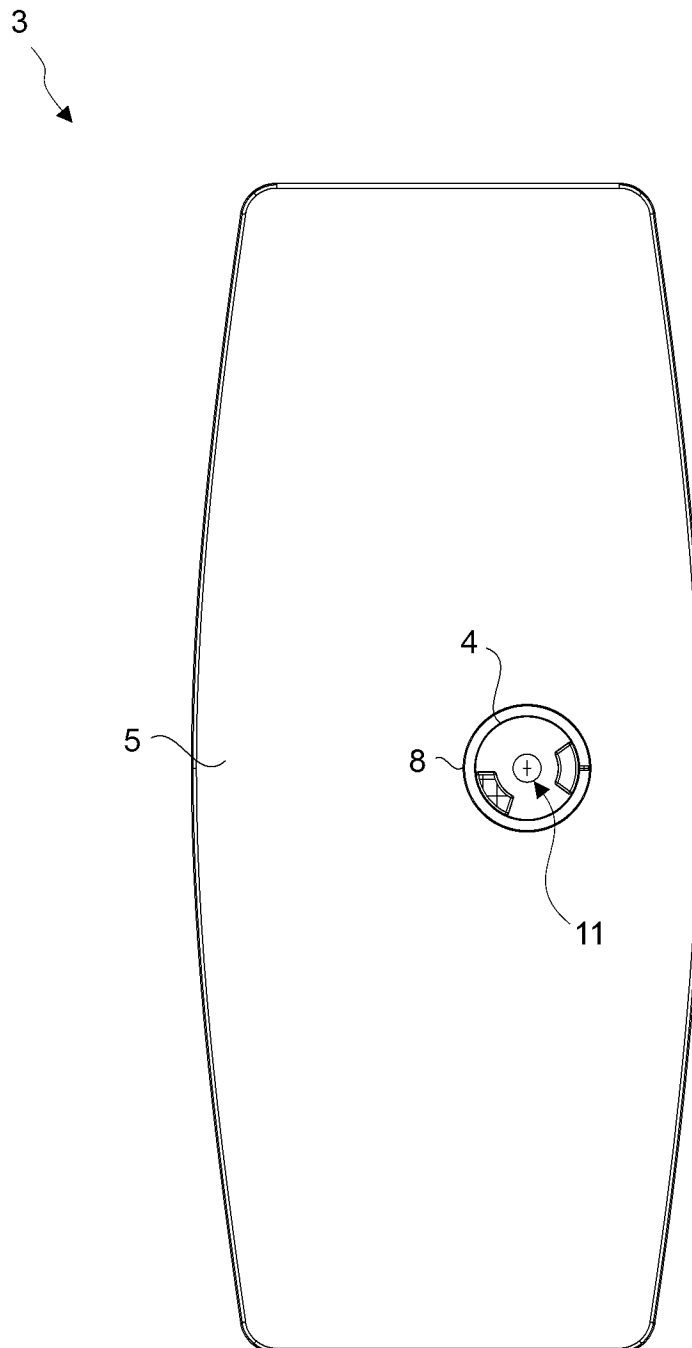


Figure 6

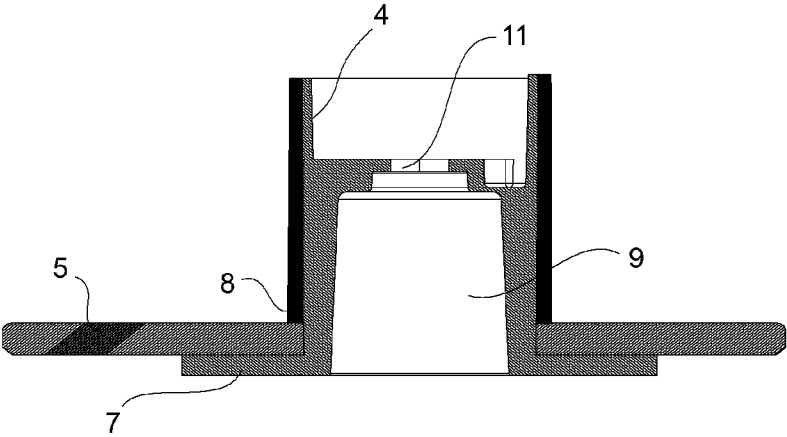


Figure 7

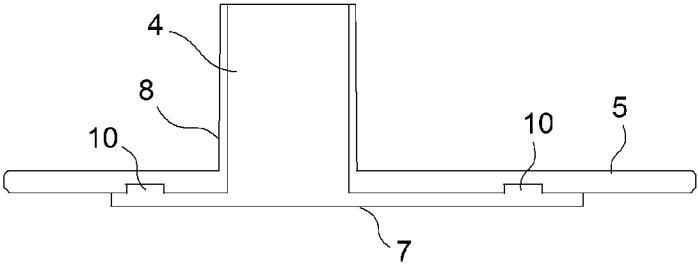
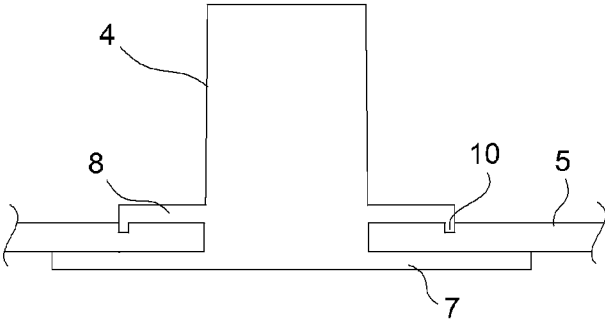


Figure 8



INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2015/061057

A. CLASSIFICATION OF SUBJECT MATTER
 INV. F16M11/02 G06F1/16
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 F16M G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2014/032890 A1 (ARCELIK AS [TR]; DEMIRHAN DOGAN [TR]; FERADOGLU ALEV [TR]; GULER CEMAL) 6 March 2014 (2014-03-06) the whole document -----	1-7
X	US 2010/258691 A1 (ZDANCEWICZ JAMES J [US] ET AL) 14 October 2010 (2010-10-14) the whole document -----	1-3,5,7
A	US 2006/243869 A1 (PETRICK CHRIS [US] ET AL) 2 November 2006 (2006-11-02) abstract; figures 1-5 paragraphs [0003], [0045] -----	1,3,7
A	FR 2 890 432 A1 (THOMSON LICENSING SAS [FR]) 9 March 2007 (2007-03-09) abstract; figures 1-10 page 5, line 21 - line 24 -----	1,2



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

8 September 2015

Date of mailing of the international search report

16/09/2015

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Larrañeta Reclusa, I

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2015/061057

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2014032890 A1	06-03-2014	EP 2891028 A1 WO 2014032890 A1	08-07-2015 06-03-2014
US 2010258691 A1	14-10-2010	NONE	
US 2006243869 A1	02-11-2006	NONE	
FR 2890432 A1	09-03-2007	NONE	