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(54) Type A dual action extinguisher release call point

(57) A call point usable with a fire suppression system includes a housing which supports a separate cover attached thereto. The housing defines a first, glass filled region or deformable plastic element. The cover defines a second region which overlies and is displaced from the glass / plastic filled region. The overlying second region can be broken without breaking the glass / deformable plastic filled region. Subsequently, the glass filled region can be broken to activate the fire suppression system or the flexible element can be deformed to activate the fire suppression system.

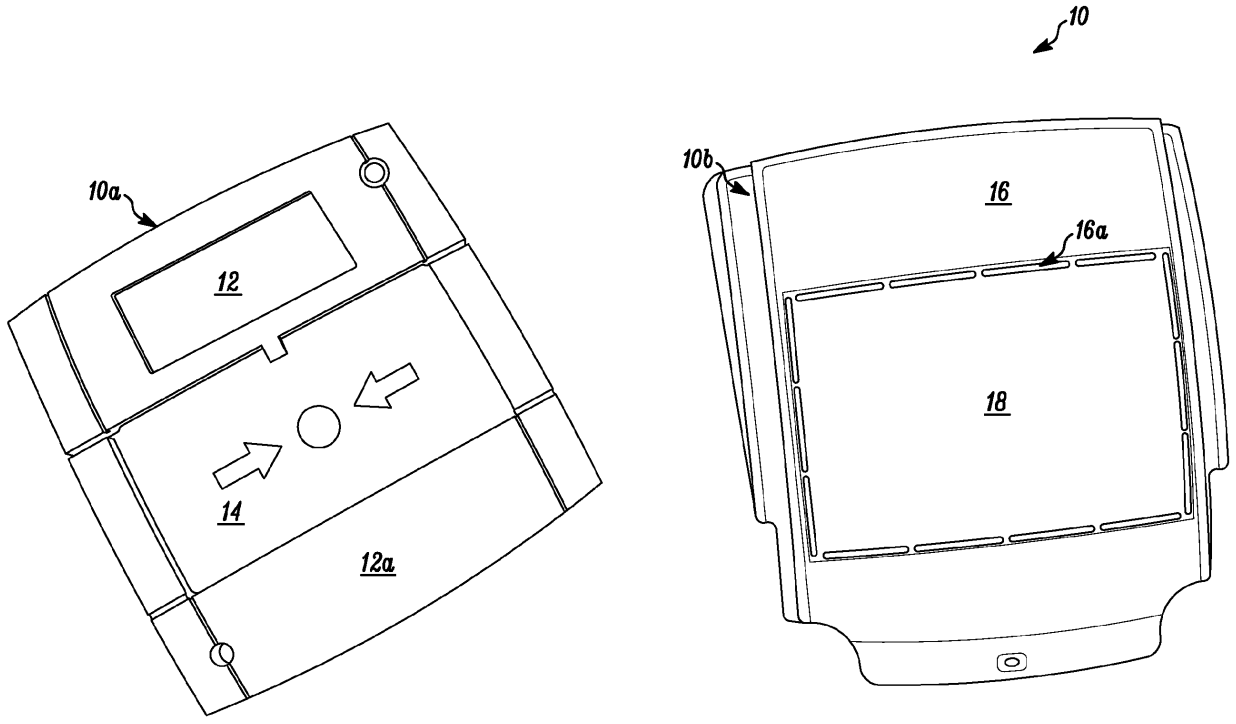

FIG. 1

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Description

FIELD

[0001] The invention pertains to call points to activate fire suppression systems. More particularly, the invention pertains to dual action call points suitable for such systems.

BACKGROUND

[0002] Various types of fire suppression systems are known and provide a useful complement to fire detection systems. Suppression systems, which can release gas or water in the form of a mist or spray can be configured to be activated automatically, in combination, for example with an alarm system, or, activated manually, or both.

[0003] Manual activation requires a user actuable interface device which is easy to use in stressful circumstances. One form of known call point design for extinguisher systems is a "Type B" call point device where there is a break glass 1 st stage which provides access to the 2nd stage push button switch mechanism

[0004] There is a need for dual action suppression system call points of a type A package familiar to end users. Preferably such functionality can be cost effectively provided without needing devices which have a large foot print or require a tool such as a hammer to access the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] Fig. 1 is an overall view of a dual action call point which embodies the invention;

[0006] Fig. 2A is an isometric view of an embodiment of the invention;

[0007] Fig. 2B is a top plan view of the unit of Fig. 2A;

[0008] Fig. 2C is an end elevational view of the unit of Fig. 2A;

[0009] Fig. 2D is an enlarged portion of the unit of Fig. 2A

[0010] Fig. 2E is another enlarged portion of the unit of Fig. 2A;

[0011] Fig. 3A is an isometric view of an exemplary cover usable with the unit of Fig. 2A with a first orientation;

[0012] Fig. 3B is an isometric view of an exemplary cover usable with the unit of Fig. 2A with a second orientation;

[0013] Fig. 4A is an isometric view of another embodiment of the invention;

[0014] Fig. 4B is an enlarged portion of the unit of Fig. 4A;

[0015] Fig. 4C is an enlarged portion of an alternate to the unit of Fig. 4A;

[0016] Fig. 4D is an enlarged portion of another alternate to the unit of fig 4A;

[0017] Fig. 5A is an isometric view of an exemplary cover usable with the unit of Fig. 4A with a first orientation;

[0018] Fig. 5B is an isometric view of an exemplary cover usable with the unit of Fig. 4A with a second orientation;

[0019] Fig. 6 is an isometric view of an alternate embodiment of the invention;

[0020] Fig. 7A is an isometric view of an exemplary cover usable with the unit of Fig. 6 with a first orientation;

[0021] Fig. 7B is an isometric view of an exemplary cover usable with the unit of Fig. 6 with a second orientation;

[0022] Fig. 8A is an isometric, generally front view of an alternate embodiment of the invention;

[0023] Fig. 8B is a view of the embodiment of Fig. 8A generally from the side;

[0024] Fig. 8C illustrates attachment details of the embodiment of Fig. 8A;

[0025] Fig. 9A is an isometric view of an exemplary cover usable with the unit of Fig. 8A with a first orientation; and

[0026] Fig. 9B is an isometric view of an exemplary cover usable with the unit of Fig. 8A with a second orientation.

DETAILED DESCRIPTION

[0027] While embodiments of this invention can take many different forms, specific embodiments thereof are shown in the drawings and will be described herein in detail with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention, as well as the best mode of practicing same, and is not intended to limit the invention to the specific embodiment illustrated.

[0028] In one embodiment of the invention a breakable cover is added to a single action "Type A" call point therefore making it a dual action device usable in fire suppression systems. In one aspect of the invention, a polycarbonate translucent cover with a weakened front window can be combined with a single action "Type A" call point. The weakened front window can be broken out when the device needs to be activated.

[0029] The act of breaking out the window is the first action requirement. By breaking out the window the underlying call point is exposed to the user. The user can break the glass element or displace the plastic flexible element providing the second action which sets off the fire suppression, or, extinguishant system.

[0030] In an advantageous aspect of the invention, existing single action devices can be upgraded. The cover to turn the device into a dual action extinguishant product can be retrofitted. Further, that cover is replaceable and does not discourage the use of the call point in the event of an emergency.

[0031] In yet another aspect of the invention, the cover has a breakable polycarbonate region that is displaced, with an intervening air gap, from the breakable glass or flexible element of the associated single action call point. In the event of an emergency the user depresses the

cover to break it, the broken out portion of the cover falls away and thus gives access to the call point which can now be accessed and activated by breaking the glass or displacing the flexible element thereby providing a dual action for activation. The cover could then have to be replaced as it does not have any reset mechanism.

[0032] Fig. 1 illustrates a dual action call point 10 for suppression systems which embodies the invention. Unit 10 includes a single action call point 10a. The call point 10a includes a housing 12 and cassette 12a. Housing 12 and cassette 12a defies a central region 12b. The region 12b is closed with a glass or plastic member 14 that is breakable or deflectable to activate the call point 10a. Such units are well known to those of skill in the art and do not need to be discussed further in detail. It will be understood that the invention is not limited by the characteristics of such call points, other than as discussed below.

[0033] The unit 10 also includes a separate, molded plastic cover 10b. Cover 16 defines a central region 16a. The region 16a is closed with a plastic member 18 which is breakable to provide access to the glass member 14. The cover 10b is attachable to call point 10a and is discussed in more detail subsequently.

[0034] Figs. 2A-2E illustrate exemplary details of another double action call point 20 which embodies the invention. Call point 20 has a housing 22 to which is rotatably attached a cover 24 generally like the cover 10b.

[0035] Cover 24 which is molded, for example a polycarbonate plastic, and includes first and second protrusions 26 (best seen in Fig. 2D),, which could be cylindrical or depressions, which also could be cylindrical to match depressions or protrusions molded into the housing 22. As those of skill will understand, this arrangement will rotatably lock the cover 24 to the housing or base 22. Further, when the cover has been broken, as discussed below, it can subsequently be replaced on the housing 22.

[0036] The housing 22 defines a central glass or flexible plastic filled region 22a, similar to glass / flexible plastic filled region 14 of Fig. 1. The cover 24 defines a larger central plastic, molded, break away region, or window, 28, with a perforated break away perimeter 28a, which overlies the underlying glass region 22a. The fact that the window 28 is larger than the region 22a results in the break out window 28 when broken free of housing 24 bottoming out on the outer top surface 22b of the housing 22 and not on the activating glass element 22a thus insuring a double action function.

[0037] Preferable cover 24 will be displaced from the upper surface 22b and define an air gap 30 there between, see Fig. 2C. This configuration enables the first state element, the member 28, to break away from the remainder of the cover 24 in response to a user or individual in the area pressing the member 28 toward the housing 22 in the event of a fire condition.

[0038] The cover 24 can be securely latched to the housing 22 by deflectable clips 32 which can slidably engage three dimensional recessed regions, such as 34, molded into housing 22, with a snap fit. Depending on the size and shape of prongs 32 and the recessed regions 34, the cover 24 will be releasable from the housing 22 only for maintenance or testing, best seen in Fig. 2E. Figs. 3A, 3B illustrated additional details of the cover 24.

[0039] Figs. 4A-4D illustrate a variation in locking a cover, such as a cover 40, to a housing 42 of a single action call point. Instead of deflectable prongs 32, the cover/housing combination 40/42 incorporates a threaded fastener 46, best seen in Fig. 4B, The fastener 46 extends through a hole in molded tab such as 48a,b and then into the housing 42. To facilitate coupling the fastener 46 to the respective housing, a slot 50 (see Fig. 4C) or a tapered depression 52 (see Fig. 4D) can be molded into a respective housing such as 42-1 or 42-2.

[0040] Figs. 5A, 5B illustrate additional details of cover 40. Elements of cover 40 which have been previously discussed have been assigned the same identification numerals as previously used.

[0041] Figs. 6, 7A, 7B illustrate aspects of an alternate double action call point 60. Unit 60 has a cover 40-1, comparable to covers 24, 40 and a single action call point with a housing 42-1, comparable to housings 42 and 22. As illustrated in Fig. 6, the cover 40-1 of the device 60 is locked to the housing 42-1 by a plastic lanyard 62. In this embodiment no prongs or fasteners are needed. The unit 60 can be readily opened and then securely reclosed by removing and replacing lanyard 62 for testing and maintenance.

[0042] Figs. 8A, 8B, 8C 9A and 9B illustrate aspects of an alternate double action call point 70. Unit 70 has a cover 74 which has a break away, or break out section 76. In contrast to previously discussed embodiments, the unit 70 incorporates a "pull" as opposed to a "push" type mechanism in combination with a single action call point 72 comparable to call point 10a. As illustrated in Fig. 8C, the cover 74 of the device 70 is locked to the unit 72 by a plastic lanyard 62. In this embodiment no prongs or fasteners are needed. The unit 70 can be readily opened and then securely reclosed by removing and replacing lanyard 62 for testing and maintenance.

[0043] From the foregoing, it will be observed that numerous variations and modifications may be effected without departing from the spirit and scope of the invention. It is to be understood that no limitation with respect to the specific apparatus illustrated herein is intended or should be inferred. It is, of course, intended to cover by the appended claims all such modifications as fall within the scope of the claims.

Claims

1. A double acting extinguisher release call point having a housing and a single action call point carried by the housing, the housing defines an open region closed by one of a glass or plastic flexible element

member, the member is breakable or deformable to provide an activation indicium, **characterized by**:

a cover separate from but attachable to the housing, the cover defines a second open region, larger than the open region, the second open region is closed by a plastic member; and at least one latching element that latches the cover to the housing.

2. A call point as in claim 1 where the housing defines at least one cover attachment feature.

3. A call point as in claim 2 where the cover attachment feature is selected from a class which includes at least one of a protrusion, a slot or a depression.

4. A call point as in claim 3 where the cover is hingedly attached to the housing by the protrusion and is rotatable relative to the housing.

5. A call point as in claim 3 or 4 where the latching element comprises at least one of a deflectable barbed element carried by one of the housing or the cover and an engagement slot defined on the other of the housing or the cover.

6. A call point as in claim 3 or 4 where the latching element comprises at least one of a rotatable fastener or an elongated strap to tie the cover to the housing.

7. A call point as in any one of claims 3-6 where the plastic member overlies the glass / plastic member when the cover is attached to the housing.

8. A call point as in claim 7 where the plastic member is displaced from the glass / plastic member with an air-gap there between.

9. A call point as in claim 8 where the plastic member is one of, deflectable toward and breakable without breaking the underlying glass/plastic member of the call point, or, deflectable away from and breakable without breaking the underlying glass/plastic member of the call point.

10. A call point as in claims 9 where the glass member is breakable or the plastic member is deformable once the plastic cover member has been broken out.

11. A call point as in claim 2 where the cover rotatably engages the housing with a snap fit.

12. A call point as in claim 11 where the cover is locked to the housing precluding relative motion there between.

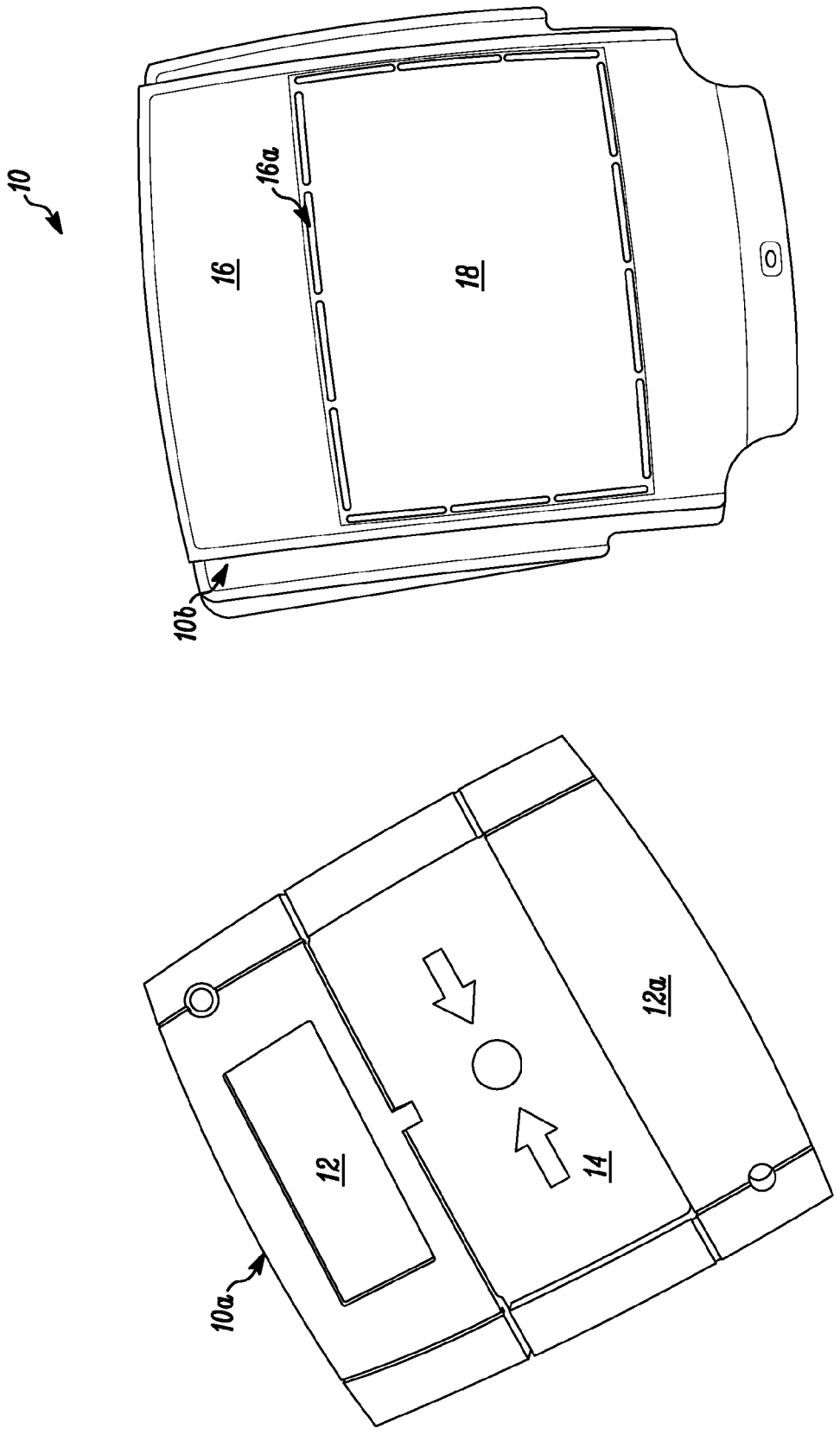

FIG. 1

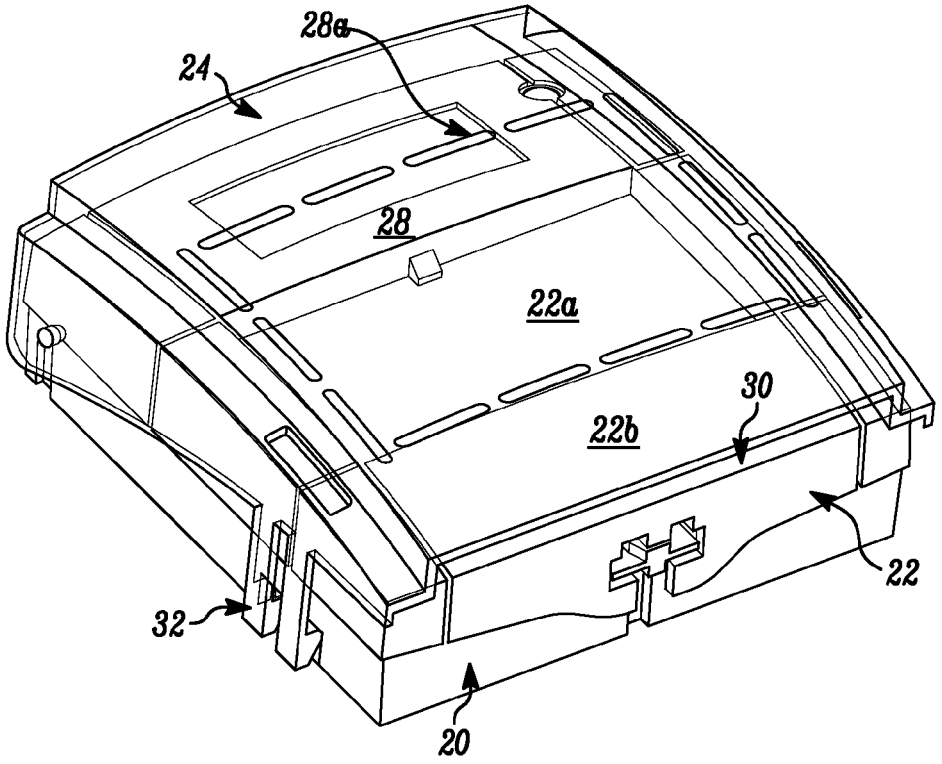

FIG. 2A

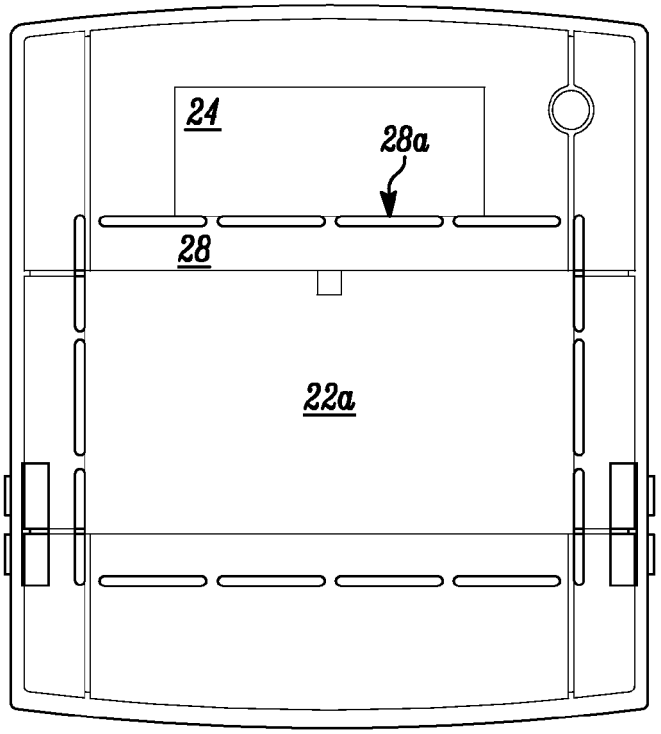

FIG. 2B

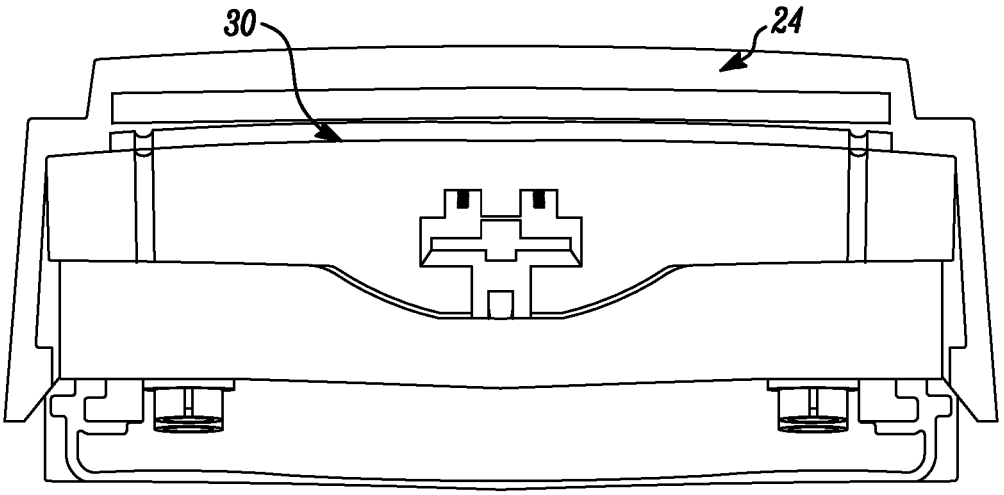

FIG. 2C

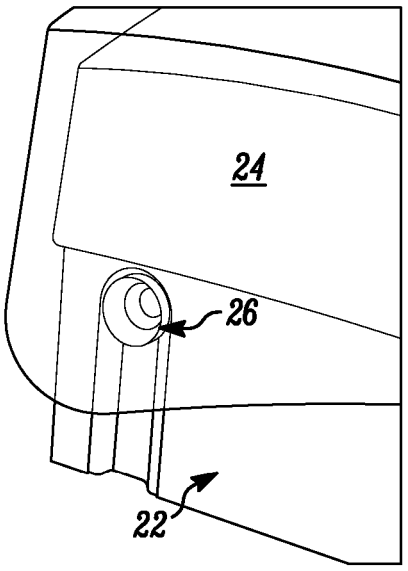

FIG. 2D

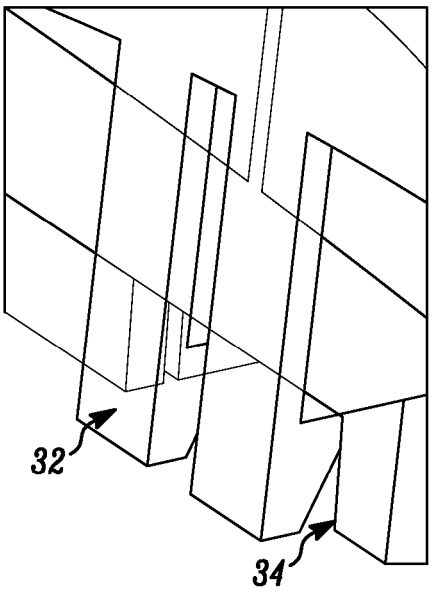

FIG. 2E

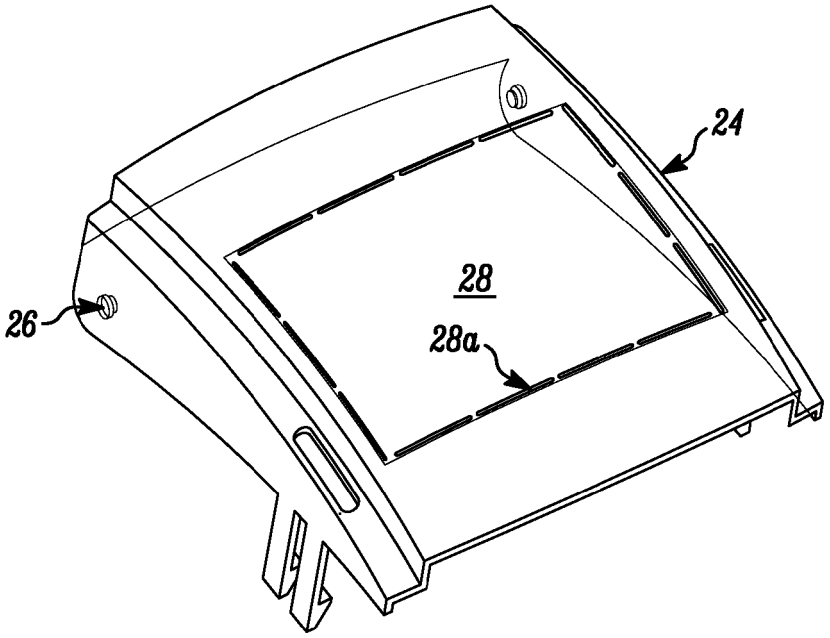

FIG. 3A

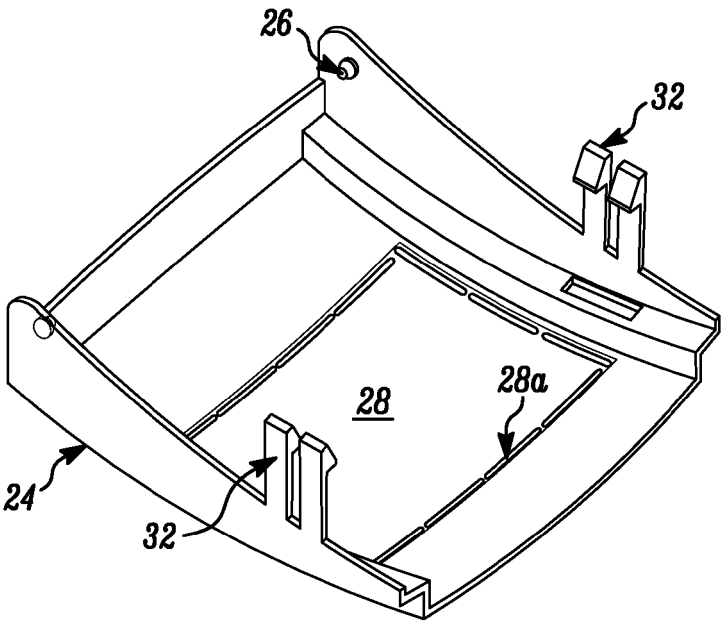

FIG. 3B

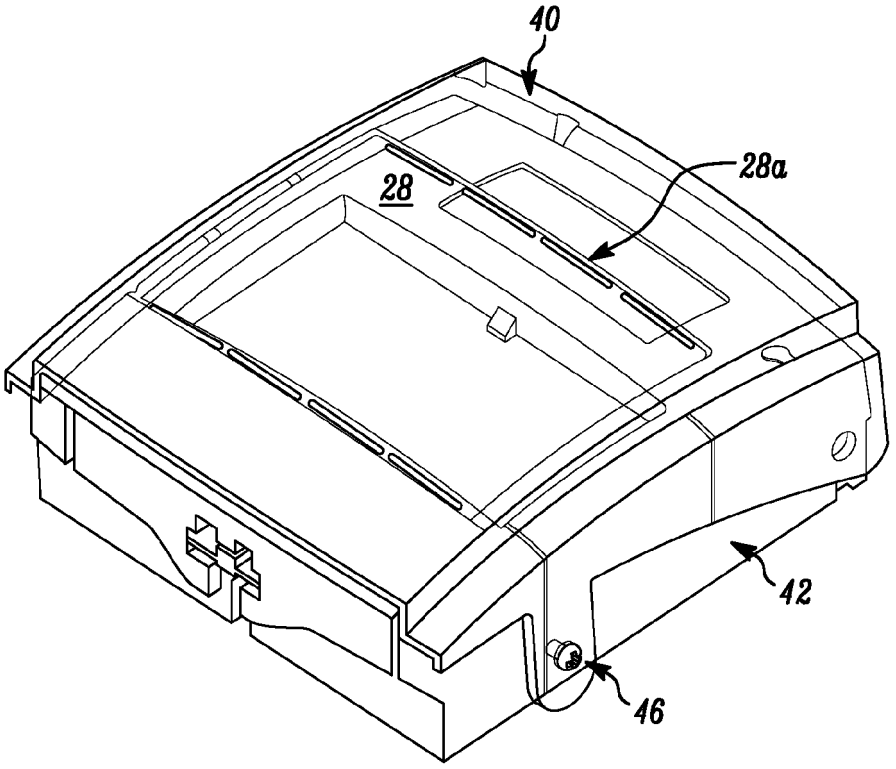

FIG. 4A

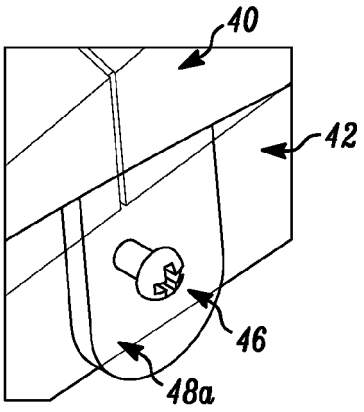

FIG. 4B

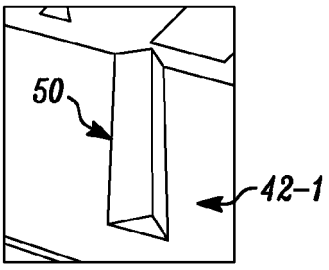

FIG. 4C

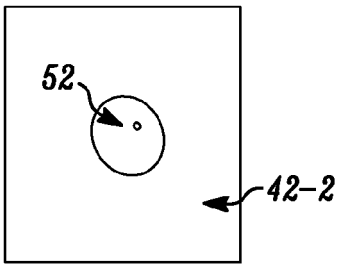

FIG. 4D

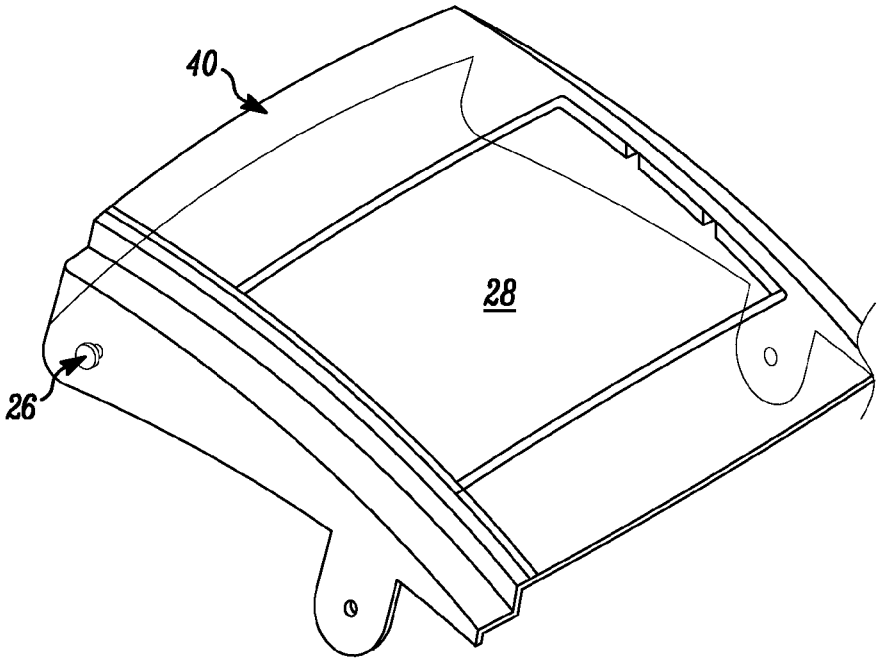

FIG. 5A

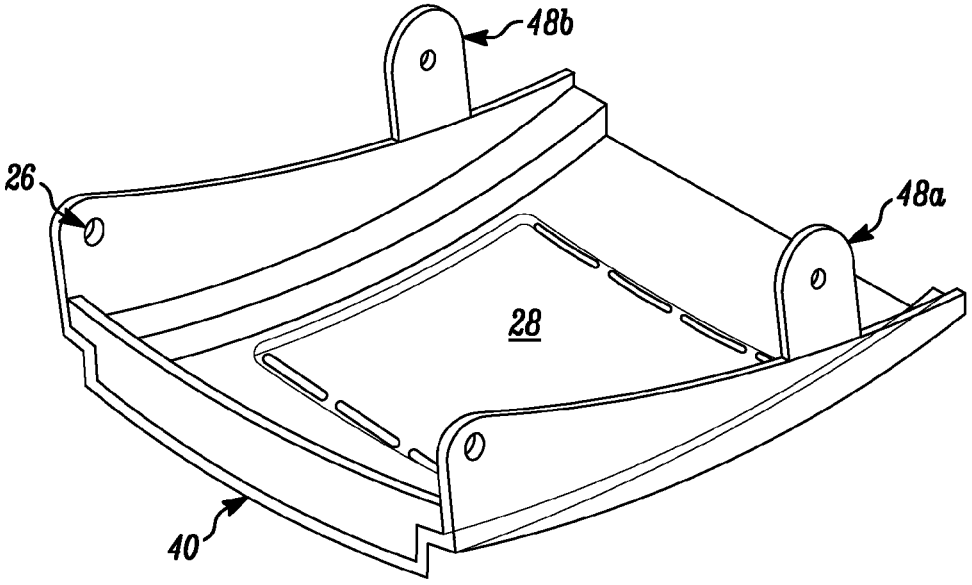

FIG. 5B

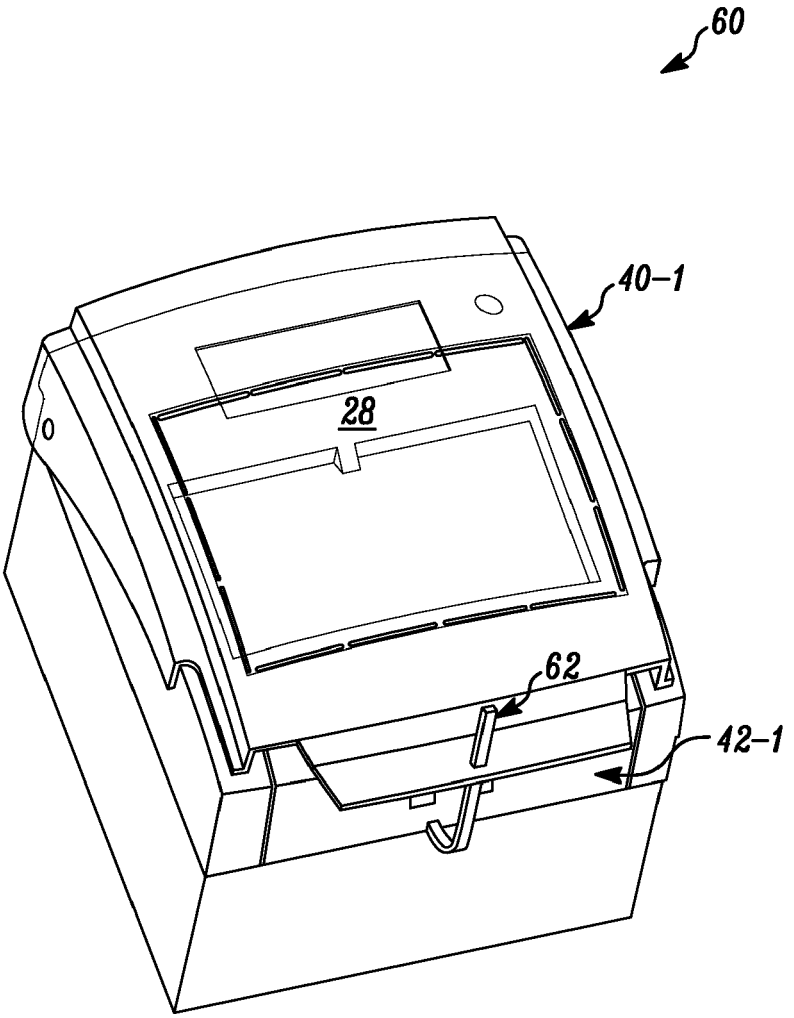

FIG. 6

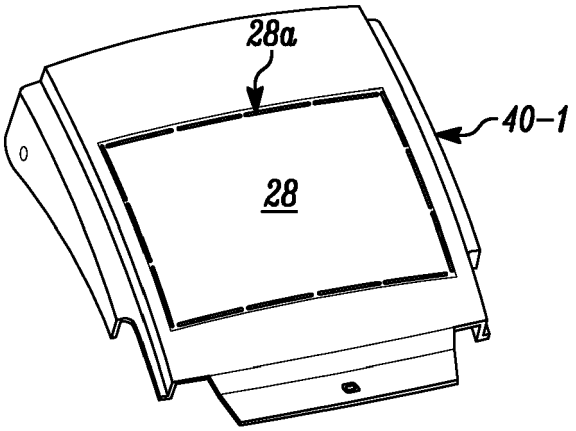

FIG. 7A

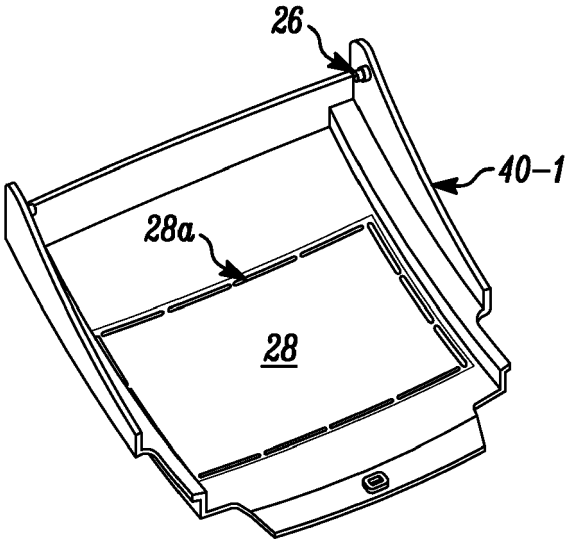

FIG. 7B

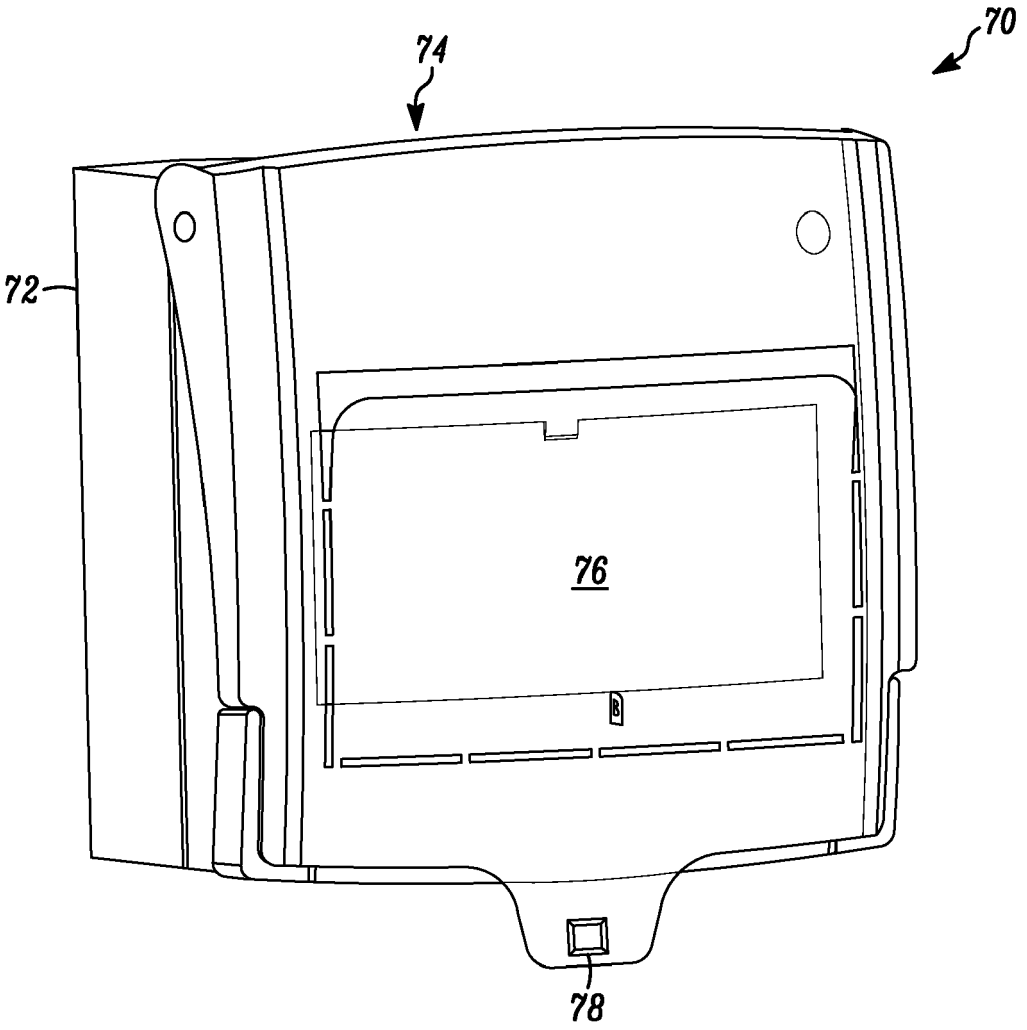

FIG. 8A

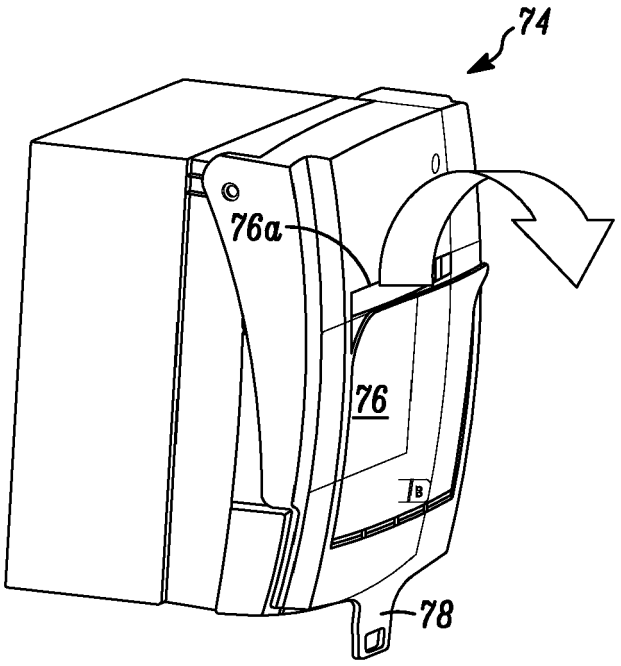

FIG. 8B

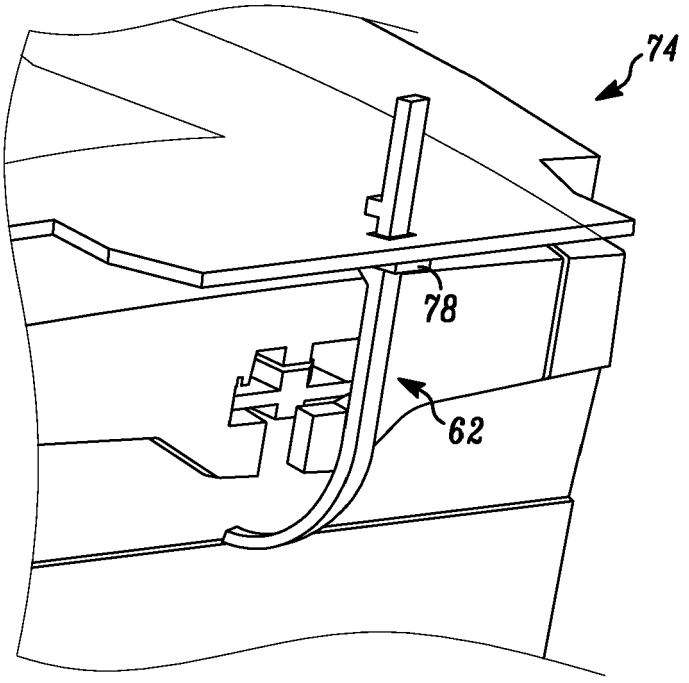

FIG. 8C

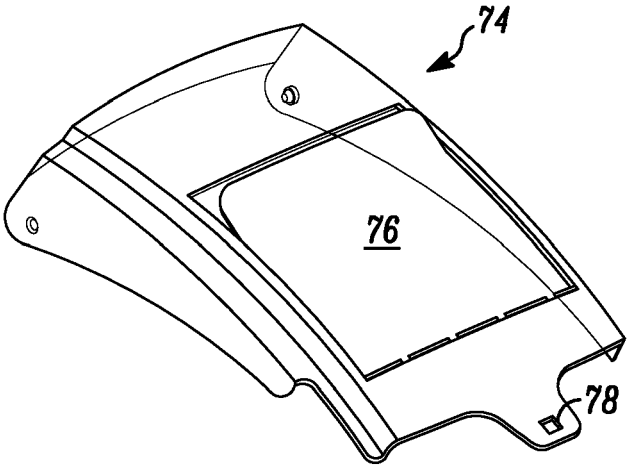

FIG. 9A

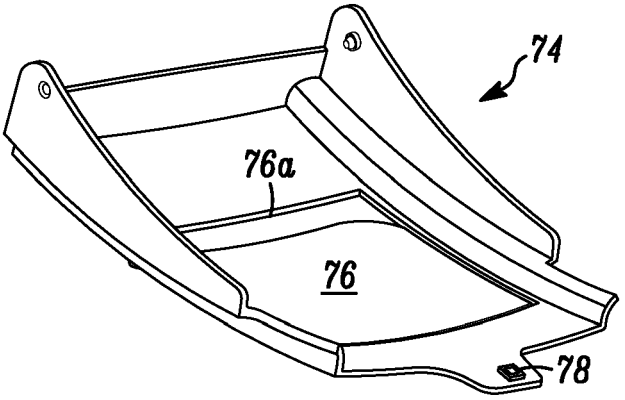

FIG. 9B

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EUROPEAN SEARCH REPORT

Application Number
EP 10 15 9079

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 198 45 913 A1 (BOSCH GMBH ROBERT [DE]) 18 May 2000 (2000-05-18) * column 3, line 4 - line 52; figures 1-3 * -----	1-12	INV. G08B25/12
X	DE 10 2004 042573 B3 (NOVAR GMBH [DE]) 13 October 2005 (2005-10-13) * paragraph [0029] - paragraph [0046] * -----	1-3,5-10	
X	US 4 280 120 A (TRAFFORD LARRY F ET AL) 21 July 1981 (1981-07-21) * column 4, line 50 - line 68 * * column 5, line 13 - column 8, line 52 * * column 11, line 15 - column 12, line 62 * * figures 1,2 * -----	1-12	
A	US 6 380 846 B1 (HOHLFELDER ERIC W [US]) 30 April 2002 (2002-04-30) * abstract * * column 1, line 66 - column 2, line 10 * * column 4, line 40 - line 52; figures 1,2 * -----	1,4,11, 12	TECHNICAL FIELDS SEARCHED (IPC) G08B A62C
A	US 5 952 919 A (MERRILL JOSEPH [US]) 14 September 1999 (1999-09-14) * column 4, line 21 - line 65 * -----	1	
A	EP 1 465 132 A1 (SIRE S P A [IT]) 6 October 2004 (2004-10-06) * paragraphs [0001] - [0003] * -----	1	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	13 October 2010	La Gioia, Cosimo

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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1 EPO FORM 1503 03.82 (P04C01)

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13-10-2010

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19845913 A1	18-05-2000	NONE	
DE 102004042573 B3	13-10-2005	AT 448534 T	15-11-2009
		EP 1632921 A2	08-03-2006
		ES 2335672 T3	31-03-2010
US 4280120 A	21-07-1981	CA 1171935 A1	31-07-1984
US 6380846 B1	30-04-2002	US 6632108 B1	14-10-2003
US 5952919 A	14-09-1999	NONE	
EP 1465132 A1	06-10-2004	AT 313135 T	15-12-2005
		DE 602004000231 T2	22-06-2006
		ES 2252720 T3	16-05-2006

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82