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(54) **Command and control console of a weapon system**

(57) A command and control console (1) of a weapon system is described, comprising:

- a support structure (2,3) comprising a base part (2) to support the console (1) on a support surface and a display part (3) bearing a display unit (4), the display part (3) being connected to the base part (2); and
- a first data input unit (6) fitted on the support structure (2, 3).

The base part (2) comprises a first outer protective half-casing (2.1-2.3) and the display part (3) comprises a second outer protective half-casing (3.1-3.3) which said display unit (4) is received in. The display part (3) is selectively movable in relation to the base part (2) to make said console (1) respectively assume an unfolded operating configuration, wherein the support structure (2, 3) is unfolded to permit access to said display unit and first data input unit (4, 6), and a compact transport configuration, wherein the support structure (2, 3) is folded back on itself with said protective half-casings (2.1-2.3, 3.1-3.3) coupled to each other facing each other so as to jointly form an outer protective case (2.1, 2.2, 2.3, 3.1, 3.2, 3.3) inside which at least said display unit (4) is protected.

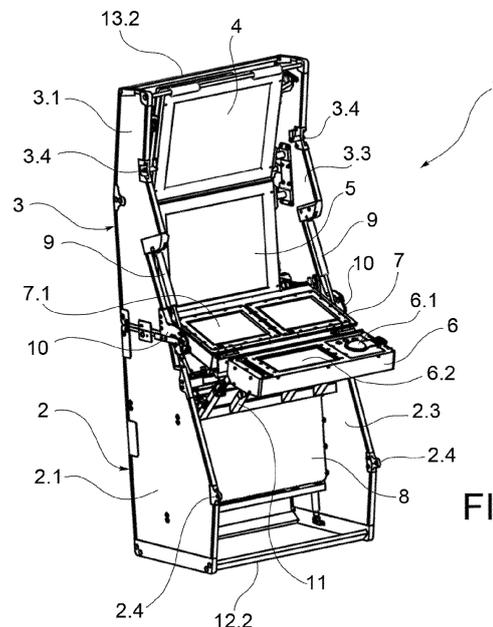


FIG. 1

Description

[0001] The present invention relates to the technical field of command and control apparatus used in the military sphere, and more in particular relates to a command and control console of a weapon system as defined in the preamble of claim 1.

[0002] As is known, command and control consoles are apparatuses of a weapon system which implement various man-machine interface functions showing different types of information to the operator (for example videos, maps, data, static images, weapon system status etc.) and/or making available various types of command to said operator.

[0003] In the case for example of launching a missile, the operator may use the command and control console both for monitoring functions, for example to have video/radar representation of the territory and a series of concise information coming from various sensors which are representative of traces of the objectives being controlled, and to perform aiming at the objective to be struck (for example a plane, missile, a drone, a submarine etc.) and act on the launcher to perform the firing action.

[0004] Command and control consoles are generally used in relatively extreme environments, for example inside a warship or on a battlefield where they are usually installed inside dedicated modular structures known as "shelters". For such reason, the command and control consoles are subject to quite significant stresses, shocks and vibrations, both in the operating phase (consider for example the case of an explosion in the vicinity of the console) and in the transport phase. Such stresses, shocks and vibrations may cause damage to the components of the console, and particularly, damage to the electronic devices such as for example the display devices and the data input devices. This is particularly true in the case of mobile command and control consoles, which are destined to be transported on a land, air or naval means of transport so as to permit the rapid installation thereof for example on a battlefield.

[0005] One drawback of the command and control consoles of the prior art discussed above is represented by the fact that such consoles do not guarantee optimal protection of the console components.

[0006] One purpose of the present invention is to make available a command and control console of a weapon system which is able to overcome or at least partially reduce the drawbacks spoken of above in relation to the prior art.

[0007] These and other purposes are achieved by a command and control console of a weapon system as defined and characterised in the appended claim 1 in its more general form and in the dependent claims in some particular embodiments.

[0008] The invention will be clearer to understand from the following detailed description of its embodiments, made by way of a non-limiting example with reference to the appended drawings, wherein:

- Fig.1 shows a perspective view of a command and control console according to a currently preferred embodiment, the console being shown in a first configuration;
- 5 - Fig.2 shows a lateral plan view of the console in the configuration of Fig. 1, wherein a part of the console has been removed;
- Fig.3 shows a lateral plan view of the console in Fig.1, wherein the console is shown in a second configuration;
- 10 - Fig.4 shows a lateral plan view of the console in Fig. 1, wherein the console is shown in a third configuration;
- Fig. 5 shows a perspective view of the console in Fig. 1, wherein the console is shown in the configuration of Fig. 4;
- Fig.6 shows a perspective view of the console in Fig. 1, wherein the console is shown in a fourth configuration;
- 20 - Fig.7 shows a perspective view of some elements of the console in Fig. 1, wherein such elements are shown in a first configuration; and
- Fig.8 shows a perspective view of the elements in Fig.7, wherein such elements are shown in a second configuration.
- 25

[0009] In the appended drawings, elements which are the same or similar will be indicated using the same reference numerals.

30 **[0010]** Fig. 1 shows a command and control console of a weapon system according to a currently preferred embodiment, globally denoted by reference numeral 1. "Weapon system" is understood to mean in general not a specific weapon but a group of components and/or sub-systems which interact with each other so as to carry out a desired military action against one or more objectives (for example a plane, a missile, a drone, a submarine etc.). For example, in the case of a missile launcher, a typical weapon system may comprise the following elements:

- at least one sensor;
- a command and control section (where the command and control console is situated);
- 45 - at least one launcher;
- one or more missiles.

[0011] As is known, the console 1 is a weapon system apparatus which implements various man-machine interface functions showing different types of information to the operator (such as for example videos, maps, data, static images, system status etc.) and/or making available various types of command to said operator. Typically a command and control section comprises more than one command and control console 1, for example two command and control consoles, each of which is assigned a specific role. For example, one console 1 may have a control role (also known as "engagement opera-

tions") and another console 1 may have a command role (also known as "force operations"). In any case it is preferable for each console 1 to be able to assume both roles in the case in which a malfunction or damage of the other console 1 should occur.

[0012] The console 1 is fitted with known interface elements (not shown in the drawings) to interface with the weapon system. For example but in a non-limiting manner, in the case of a missile launcher, the console 1 may interface via radio with the launcher and via optic fibre with other components of the weapon system. For example, the console 1 generally interfaces via LAN with some elements of the weapon system which are situated for example inside a shelter. Preferably, devices such as radio devices and adaptors for optic fibre permit dialogue with more remote elements of the weapon system such as for example launchers and sensors.

[0013] Again with reference to Fig.1, according to a preferred embodiment, the command and control console 1 comprises a support structure 2, 3, a first and a second display unit 4, 5, a first and a second data input unit 6, 7, fitted on the support structure and an electronic box 8. The display units 4, 5 comprise in particular two monitors 4, 5, preferably two liquid crystal monitors (LCD) adjustable in inclination. Preferably, the first and second data input units 6, 7 each comprise two data input devices 6.1, 6.2, 7.1. In particular, the unit 6 comprises a trackball 6.1 and a keyboard 6.2 (the latter shown schematically in the drawings) while the unit 7 preferably comprises a pair of "PC panels" 7.1 of the so-called "rugged" type, positioned alongside one another. Preferably, the PC panels 7.1 are of the touch-screen type. According to a preferred embodiment, the electronic box 8 is an electronic box of the so-called "all-in-one" type. In particular the electronic box 8 preferably comprises a data processing unit (not shown) operatively connected to the data input devices 6.1, 6.2, 7.1 and to the monitors 4, 5, and preferably a power supply and interface box. Preferably, the power supply of the power supply box is auto-ranging in the range 100-240 VAC. Preferably, the control logic may be programmed and configured depending on the system requirements.

[0014] In Fig.1 the console 1 is shown in a respective unfolded operating configuration. In Fig.5 the console 1 is shown in a respective compact transport configuration. With cross reference to Figs. 1 and 5 it may be seen that the support structure 2, 3 comprises a base part 2 to support the console 1 on a support surface and a display part 3, bearing the monitors 4, 5 which is connected to the base part 2.

[0015] With cross reference to Figs. 1 and 5 it may be seen that the base part 2 comprises a first external protective half-casing 2.1, 2.2, 2.3, or first external protective structure 2.1, 2.2, 2.3. Similarly, the display part 3 comprises a second external protective half-casing 3.1, 3.2, 3.3, or second external protective structure 3.1, 3.2, 3.3, in which the monitors 4, 5 are contained. To such purpose, it is to be noted that for the purposes of the present

description, the term "half-casing" is to be understood in a relatively broad sense. In other words, the term "half-casing" refers in general to a protective element which is adapted to protect an element to be protected on at least three sides. In addition, it is to be noted that the term "half-casing" is not limited exclusively to a half-casing of the "continuous" type, but may also comprise for example a half-casing of the "discontinuous" type provided with one or more through apertures. Similar considerations also apply to the term "casing" referring to a pair of half-casings facing each other. Again, it is to be noted that the terms "inner" or "outer" referred to a half-casing or a casing, are to be understood as referring to the centre of the console 1 when the latter assumes the transport configuration of Fig. 5.

[0016] Again with reference to Figs. 1 and 5, according to a preferred embodiment, the protective half-casings 2.1-2.3 and 3.1-3.3 each comprise a plurality of interconnected protective panels. In the example the first half-casing comprises three protective panels 2.1, 2.2, 2.3 and the second half-casing comprises three protective panels 3.1, 3.2, 3.3. According to a convenient embodiment, the panels 2.1-2.3 and 3.1-3.3 are sandwich panels each having an inner core in foamed metal and more preferably an inner core in foamed aluminium. To such purpose, it is to be noted that the fact of providing sandwich panels having a core in foamed metal to make the support structure of the console 1, conveniently makes it possible to obtain, thanks to the porosity of such panels, increased lightness and rigidity as well as an improved damping capacity of the vibrating environment, compared to a console in which the support structure comprises protective panels of the conventional type made by means of single metal plates. It is to be noted, moreover, according to a less preferred embodiment, the protective panels (2.1-2.3, 3.1-3.3) may be sandwich panels having an inner metal honeycomb structure instead of sandwich panels having a core in foamed metal.

[0017] Again with reference to Figs. 1 and 5, it may be noted that the aforesaid protective half-casings each comprise a central protective panel 2.2, 3.2 and a pair of lateral protective panels 2.1, 2.3 and 3.1, 3.3 which are connected to respective opposite ends of the central protective panel and are positioned transversally in relation to such panel. In particular each protective half-casing preferably has a transversal cross-section having a "C" shaped, or substantially C-shaped profile.

[0018] The display part 3 of the console 1 is selectively movable in relation to the base part 2 to make the console 1 respectively assume the aforesaid unfolded operating configuration (Fig.1) and the aforesaid compact transport configuration (Fig.5). As may be seen in Fig. 1, in the unfolded operating configuration the support structure 2, 3 is unfolded to permit access to the data input units 6, 7 and to the monitors 4, 5. As may be seen in Fig. 5, in the transport configuration the support structure 2, 3 is folded back on itself with the protective half-casings 2.1-2.3 and 3.1-3.3 coupled to each other facing each

other so as to jointly form an outer protective casing 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 or outer protective shell 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 in which at least the monitors 4, 5 are protected. Preferably, such outer protective casing is adapted to also protect at least partially the electronic box 8 and the data input units 6, 7 inside it. As may be seen in Fig. 5, in the transport configuration the console preferably has an overall box-like conformation, preferably generally a parallelepiped shape. To permit improved protection in the transport configuration, the first and the second protective half-casings are at least partially counter-shaped to each other. It is to be noted that preferably, the display part 3 can be selectively blocked in relation to the base part both in the operating unfolded configuration and in the compact transport configuration by means of suitable blocking elements 2.4, 3.4 (Fig.1) adapted to block the display part and the base part to each other in a releasable manner. For example, to block the display part in the transport configuration, such blocking elements preferably comprise a pair of spring locking pins 3.4 connected to the display part, which are adapted to engage in respective blocking holes provided for example on two shoulders 2.4 provided on the base part. In the operating configuration of the console, the display part may be blocked for example by means of further locking pins, preferably spring locking pins the same as the pins 3.4.

[0019] It is to be noted that as said above, when the display part is blocked in relation to the base part in the operating configuration of the console 1, it is in any case possible to regulate the inclination of the monitors 4, 5, preferably rotating each monitor around a respective hinge axis so as to orient it at a desired angle of view.

[0020] Again with reference to Fig.1, the display part 3 is hinged to the base part 2 in such a way as to be able to rotate around a horizontal rotation axis.

[0021] According to a preferred embodiment, in order to assist the movement of the display part 3 two gas springs 9 are provided between the base part and the display part, each of which preferably has one end attached to the display part 3 and an opposite end attached to a portion of hinge 10 which is adapted to permit the rotation of the display part 3. Preferably, the gas springs 9 are each housed in a respective recess provided along a front rim of the second protective half-casing 3.1 -3.3.

[0022] According to a preferred embodiment, the unit 6 is mounted on the support structure 2, 3 so as to swivel, preferably by means of a support bracket 11 of the structure 2, 3. According to a preferred embodiment, the data input unit 6 is selectively movable between an angular operating position (Fig. 1) and an angular transport position (Fig.3) different from each other. In particular, as may be seen in Fig. 4, when the console 1 assumes the transport configuration, the data input unit 6 assumes the angular transport position and is sandwiched between the display part 3 and the base part 2 inside the protective casing 2.1, 2.2, 2.3, 3.1, 3.2, 3.3. It is to be noted that the unit 6 can be selectively blocked in a releasable man-

ner in the operating angular and transport positions. To such purpose, blocking elements are provided preferably adapted to act in conjunction with the bracket 11 to block the unit 6. For example, such blocking elements may comprise spring locking pins substantially similar to the spring locking pins 3.4 used to block the display part. It is to be noted that the unit 6 is preferably hinged to the support structure by means of hinges (not shown) which are respectively glued to the unit 6 and to the bracket 11. Preferably, each of such hinges comprises a pair of aluminium plates rotatably connected to each other, of which one is glued to the bracket 11 while the other is glued to the unit 6. It is to be noted that the joining technique for gluing used to attach the hinges, entails numerous advantageous aspects, such as for example: i) a reduction of assembly costs thanks to the simplicity of the application; ii) an improvement in the performance and the life of the product thanks to the anti-corrosive properties of the glue; iii) increased freedom of design thanks to the possibility of joining materials having different characteristics to each other (such as for example elastic moduli, heat expansion coefficients etc.).

[0023] With reference to Fig. 3, in which the console 1 is shown in an intermediate configuration between the aforesaid operating and transport configurations, it may be noted that according to a preferred embodiment, the base part 2 of the support structure comprises an upper side 12.1, a lower side 12.2 opposite the side 12.1, a front side 14.1 and a rear side 14.2 opposite the side 14.1. In the same way, the display part 3 comprises a lower side 13.1, an upper side 13.2 opposite the side 13.1, a front side 15.1 and a rear side 15.2 opposite the side 15.1. Preferably, the upper and lower sides 12.1 12.2 of the base part and the lower and upper sides 13.1 and 13.2 of the display part are "open" sides, that is to say sides which are not closed for example by protective panels. When the console 1 assumes the operating configuration (Fig.1) the upper side 12.1 of the base part faces the lower side 13.1 of the display part, and more preferably is coupled to such side along a rim of the respective protective half-casing. In addition, when the console 1 assumes the transport configuration (Figs. 4 or 5), the front side 14.1 faces the front side 15.1 of the display part, and more preferably is coupled to such side along a rim of the respective protective half-casing. To such purpose, it is to be noted that for the purposes of the present description, the terms "lower", "upper", "high", "low", "horizontal", "vertical", "front", "rear", refer to the console 1 in the operating configuration of Fig.1 in which the console is supported in a normal condition of use on a horizontal support surface, that is to say with the lower side 12.2 of the base part facing the horizontal support surface.

[0024] With reference to Fig.5, according to a preferred embodiment, an access aperture 16 is supplied on the upper side 12.1 of the base part. The access aperture 16 is such as to permit access to the electronic box 8, which is preferably housed in the base part 2, when the

console 1 assumes the transport configuration. Preferably, the access aperture 16 is at least partially delimited by an upper end rim 17 of the upper side 12.1 It is to be noted that the fact of providing the access aperture 16 conveniently permits direct access to the electronic circuit boards and to the connector of the electronic box 8 permitting particularly fast and easy maintenance of the electronic box and at the same time keeping the components of the console protected inside the protective casing, particularly the data input devices and display units.

[0025] With reference to Fig.2, a side view of the console 1 is shown in the operating configuration with the panel 2.1 removed so as to show the electronic box 8 housed in the base part 2. Again with reference to Fig.2, according to a preferred embodiment, the console 1 conveniently comprises automatic extraction elements 18, 19 provided preferably in the base part 2. The automatic extraction elements 18, 19 are suitable for being selectively activated to bring the electronic box 8 towards the access aperture 16 (Figs. 5 or 6) when the console assumes the transport configuration. Preferably, the automatic extraction elements 18, 19 comprise an extraction system including gas springs 18 and linear guides 19 adapted to act in conjunction with the electronic box 8. In the example two gas springs 18 and two linear guides 19 are attached on two opposite sides of the support structure at the panels 2.1 and 2.3. It is to be noted that the electronic box 8 can preferably be selectively blocked in a releasable manner in a first housing configuration (Fig.2). To such purpose, blocking elements are preferably provided adapted to act in conjunction with the base part 2 or with the guides 19 to block the electronic box 8. For example, such blocking elements comprise spring locking pins substantially similar to the locking pins 3.4 used to block the display part.

[0026] With reference to Fig. 6. according to a preferred embodiment, the automatic extraction elements 18, 19 are such as to make the electronic box 8 assume an extraction configuration in which the electronic box 8 passes through the access aperture 16 so as to project at least partially outside the protective casing 2.1, 2.2, 2.3, 3.1, 3.2, 3.3.

[0027] With reference to Figs. 5 and 6, according to a preferred embodiment, the second data input unit 7 is fitted so as to swivel on the support structure. In particular, the unit 7 is preferably also fitted to the bracket 11 on the side opposite the first unit 6. Preferably, the unit 7 is also connected to the bracket 11 by means of glued hinges similar to those used to attach the unit 6 to the bracket 11. According to a convenient embodiment, when the console 1 assumes the transport configuration, the unit 7 is selectively movable between an angular rest position (Fig.5) and an angular extraction position (Fig.6). In the rest position, the unit 7 occludes the access aperture 16 at least partially. In the extraction position, the unit 7 is rotated in relation to the rest position to permit the extraction of the electronic box 8 through the access aperture 16. It is to be noted that the unit 7 can preferably

be selectively blocked in a releasable manner in the angular rest and extraction positions. To such purpose, blocking elements are preferably provided adapted to act in conjunction with the bracket 11 to block the unit 7. For example, such blocking elements comprise spring locking pins substantially similar to the locking pins 3.4 used to block the display part.

[0028] With reference now to Figs. 7 and 8, such figures show two enlarged perspective views of the data input units 6, 7. As may be seen in such drawings, according to a preferred embodiment, the unit 6 comprises a restraint arm 20, which is movable between a protective position (Fig.8) and a release position (Fig.7). In the protection position, the restraint arm 20 is blocked and acts in conjunction with the trackball 6.1 to retain the latter in a respective trackball housing seat. In the release position, the restraint arm 20 is adapted to release the trackball to permit use of the trackball. According to a preferred embodiment, the restraint arm 20 is constrained, preferably hinged, to the unit 6, preferably at an end portion of the unit 6. To block the arm 20 in the protection position, blocking elements 21, 22 are provided on the unit 6, adapted to block the arm 20 to the unit 6 in a releasable manner. Such blocking elements 21, 22 for example comprise a coupling tooth 21 provided on the unit 6, which is adapted to snap engage in a coupling aperture 22 provided on the arm 20.

[0029] According to a preferred embodiment, the arm 20 is preferably a plate-shaped arm having a ring-shaped retention portion 23, which is adapted to be crossed by a portion of the trackball when the arm 20 assumes the protection position (Fig.8). Alternatively, according to a less preferred embodiment, the retention portion 23 could be cup-shaped so that the restraint arm would have a general substantially spoon-shaped conformation.

[0030] Having described an example of the structure of the console 1, it is evident that modifications and/or variations may be made to what has been described above and illustrated by way of example.

[0031] To such purpose, it is to be noted, for example that it is not strictly necessary for the console 1 to comprise two display units 4, 5 and two data input units 6, 7. In fact, in general the number and type of display units and of data input units, as also the number and type of data input devices provided on each data input unit, may be varied at will depending on the specific purpose of the console. For example, according to one embodiment, the console 1 may comprise a single display unit and/or a single data input unit. For example, according to one embodiment, the second data input unit 7 may be omitted and in its place the first data input unit 6 may be directly fitted to the support structure 2, 3. In such case, the unit 6 could be fitted in a fixed manner, that is to say not movable, or could be fitted in a similar manner to that described above in relation to the unit 7, that is to say so as to be able to rotate between the aforesaid angular rest and extraction positions.

[0032] It may in addition be noted that in general it is

sufficient for each data input unit 6, 7 to comprise at least one data input device, which may also be a data input device of a different type to those described above, such as for example a joystick.

[0033] The monitors 4, 5 may be monitors of various types such as for example liquid crystal, plasma, cathode tube monitors etc. In general, in place of the monitor 4, 5 any display unit adapted to be used in a command and control console may be used.

[0034] The components of the electronic box 8 may be varied depending on the purpose of the console.

[0035] As regards the support structure, it is to be noted that the display part 3 may also be connected to the base part 2 so as to perform a partially translatory and partially rotary movement instead of being hinged so as to perform a solely rotary movement. In general, it is sufficient for the display part to be generally rotated in relation to the base part so that the console may assume the aforementioned operating unfolded and compact transport configurations.

[0036] To such purpose, it is to be noted that when the console assumes the operating unfolded configuration, the height or in any case the main extension dimension of the console may be designed as needed, and for example may be generally comprised between 1m and approximately 2m, and more preferably between approximately 1.2m and 1.8m. In the example, the console 1 has in particular a height of approximately 1.6m.

[0037] It is to be noted that in order to assist the rotation of the display part counterbalancing elements may be used, operatively placed between the base part and the display part which are of a different type compared to the gas springs 9 but which are adapted to perform a similar counterbalancing function.

[0038] It is to be noted in addition, that in any case it is not strictly essential for the protective half-casings of the support structure to be made of continuous or substantially continuous protective panels. For example, according to an alternative embodiment (not shown), the protective half-casings could be made of metal protection meshes. However such embodiment is less preferred in that the protection offered by half-casings made of metal mesh would be inferior to the protection provided by the aforementioned protective panels.

[0039] As regards the restraint arm 20, it is to be noted that to block such arm in the protection position blocking elements other than the coupling tooth 21 and coupling aperture 22 may be provided. For example, the blocking elements could comprise magnetic blocking elements operatively placed between the arm 20 and a portion of the unit 6.

[0040] On the basis of the above description it may thus be understood how a command and control console of a weapon system according to the present invention is able to achieve the purposes stated.

[0041] It is to be noted that a console according to the present invention, is characterised by a relatively lightweight structure but at the same time sufficiently sturdy

to resist the stresses to which the console is subjected in the operating and transport phases.

[0042] It may in addition be noted that a console according to the present invention, is able to satisfy the strict dimensional restraints imposed by the various spheres of military use, while maintaining an adequate level of ergonomics, sturdiness and functional capacity.

[0043] Without prejudice to the inventive concept, the implementations and embodiment details may be widely varied from those described and illustrated merely by way of a non-limiting example while remaining within the scope of protection of the invention as defined by the following claims.

Claims

1. Command and control console (1) of a weapon system, comprising:

- a support structure (2, 3) comprising a base part (2) to support the console (1) on a support surface and a display part (3) bearing a display unit (4), the display part (3) being connected to the base part (2); and
- a first data input unit (6) fitted on the support structure (2, 3);

characterised in that:

- the base part (2) comprises a first outer protective half-casing (2.1-2.3) and the display part (3) comprises a second outer protective half-casing (3.1-3.3) which said display unit (4) is received in; and
- the display part (3) is selectively movable in relation to the base part (2) to make said console (1) respectively assume an unfolded operating configuration, wherein the support structure (2, 3) is unfolded to permit access to said display unit and first data input unit (4, 6), and a compact transport configuration, wherein the support structure (2, 3) is folded back on itself with said protective half-casings (2.1-2.3, 3.1-3.3) coupled to each other facing each other so as to jointly form an outer protective case (2.1, 2.2, 2.3, 3.1, 3.2, 3.3) in which at least said display unit (4) is protected.

2. Command and control console (1) according to claim 1, wherein the first data input unit (6) is fitted to the support structure (2,3) so as to swivel and is selectively movable between an angular operating position and an angular transport position different from each other, and wherein when said console (1) assumes the transport configuration the first data input unit (6) assumes the angular transport position and is sandwiched between the display part (3) and the base part (2) inside said protective casing (2.1, 2.2,

2.3, 3.1, 3.2, 3.3).

3. Command and control console (1) according to any of the previous claims, wherein the base part (2) comprises an upper side (12.1) and a front side (14.1), wherein the display part (3) comprises a lower side (13.1) and a front side (15.1) which are respectively facing the upper and front sides (12.1, 14.1) of the base part (2) when said console (1) respectively assumes the operating configuration or the transport configuration; and wherein said console (1) comprises:
- an electronic box (8) housed in the base part (2); and
 - an access aperture (16) provided on the upper side (12.1) of the base part (2), the access aperture (16) being such as to permit access to the electronic box (8) when said console (1) assumes the transport configuration.
4. Command and control console (1) according to claim 3, comprising automatic extraction elements (18, 19) provided in the base part (2) which are suitable for being selectively activated to bring the electronic box (8) towards the access aperture (16) when said console (1) assumes the transport configuration.
5. Command and control console (1) according to claim 4, wherein said automatic extraction elements (18, 19) are such as to make the electronic box (8) assume an extraction configuration in which the electronic box (8) passes through the access aperture (16) so as to project at least partially outside said protective casing (2.1, 2.2, 2.3, 3.1, 3.2, 3.3).
6. Command and control console (1) according to any of the claims from 3 to 5, insofar as dependent on claim 1, wherein the first data input unit (6) is fitted to the support structure (2, 3) so as to swivel, wherein when said console (1) assumes the transport configuration the first data input unit (6) is selectively movable between an angular rest position, in which it occludes the access aperture (16) at least partially, and an angular extraction position, in which it is rotated in relation to the angular rest position to permit the extraction of the electronic box (8) through the access aperture (16).
7. Command and control console (1) according to any of the claims from 3 to 5, comprising a second data input unit (7) fitted to the support structure (2, 3) so as to swivel, wherein when said console (1) assumes the transport configuration the second data input unit (7) is selectively movable between an angular rest position, in which it occludes the access aperture (16) at least partially and an angular extraction position, in which it is rotated in relation to the angular rest position to permit the extraction of the electronic box (8) through the access aperture (16).
8. Command and control console (1) according to any of the previous claims, wherein said first data input system (6) comprises a trackball (6.1) housed in a trackball seat and a restraint arm (20) which is movable between a protective position in which the restraint arm (20) is blocked and acts in conjunction with the trackball (6.1) to retain the latter in the respective trackball seat, and a release position, wherein the restraint arm (20) is suitable for releasing said trackball (6.1) to permit use of the trackball (6.1).
9. Command and control console (1) according to any of the previous claims, wherein said protective half-casings (2.1-2.3, 3.1-3.3) comprise a plurality of sandwich panels 2.1-2.3, 3.1-3.3 interconnected with each other, said sandwich panels (2.1-2.3, 3.1-3.3) having an inner core in foamed metal.
10. Command and control console (1) according to any of the claims from 1 to 8, wherein said protective half-casings (2.1-2.3, 3.1-3.3) comprise a plurality of sandwich panels 2.1-2.3, 3.1-3.3 interconnected with each other, said sandwich panels (2.1-2.3, 3.1-3.3) having a metallic inner honeycomb structure.
11. Command and control console (1) according to claim 1, wherein the first data input unit (6) is hinged to the support structure (2, 3) by means of hinges glued to the support structure (2, 3).

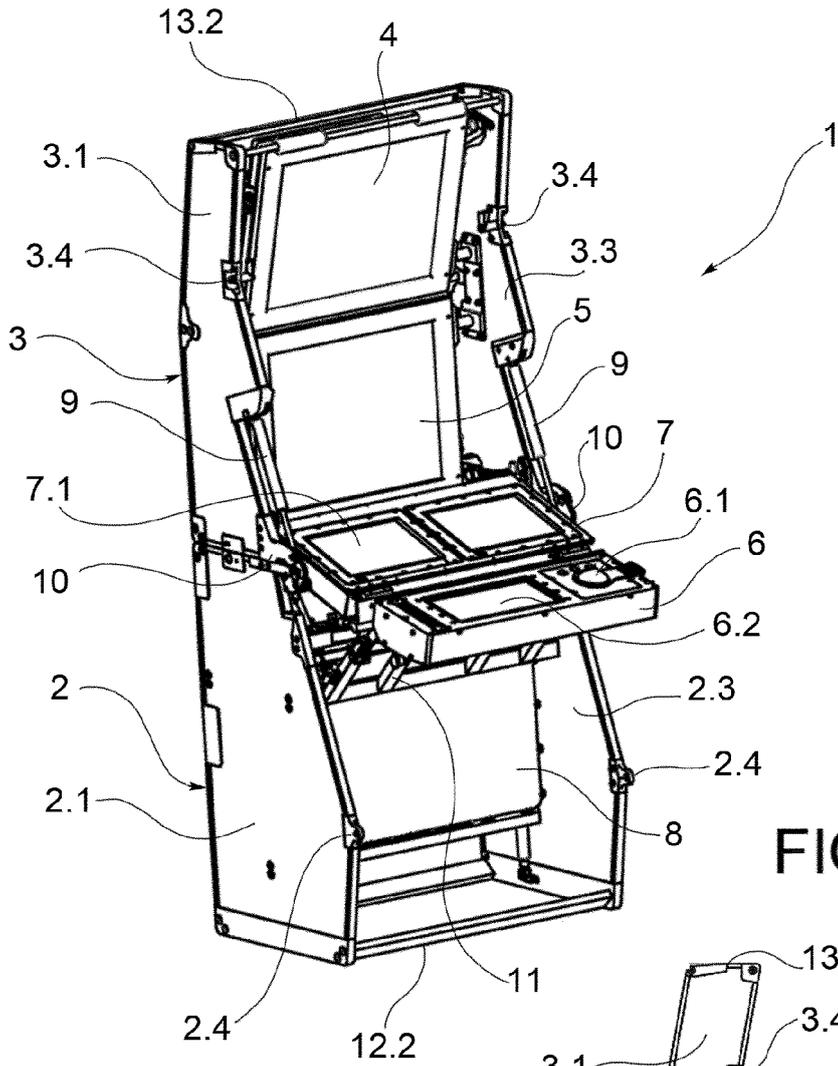


FIG. 1

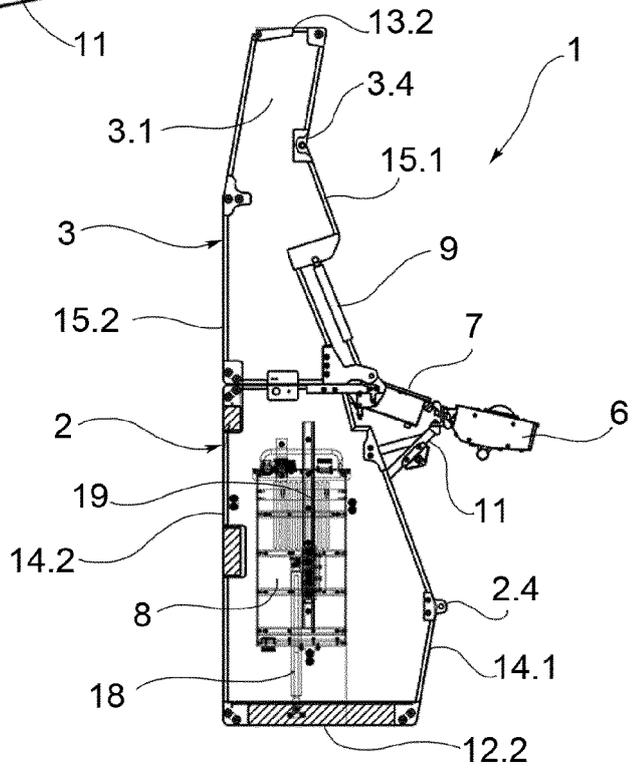


FIG. 2

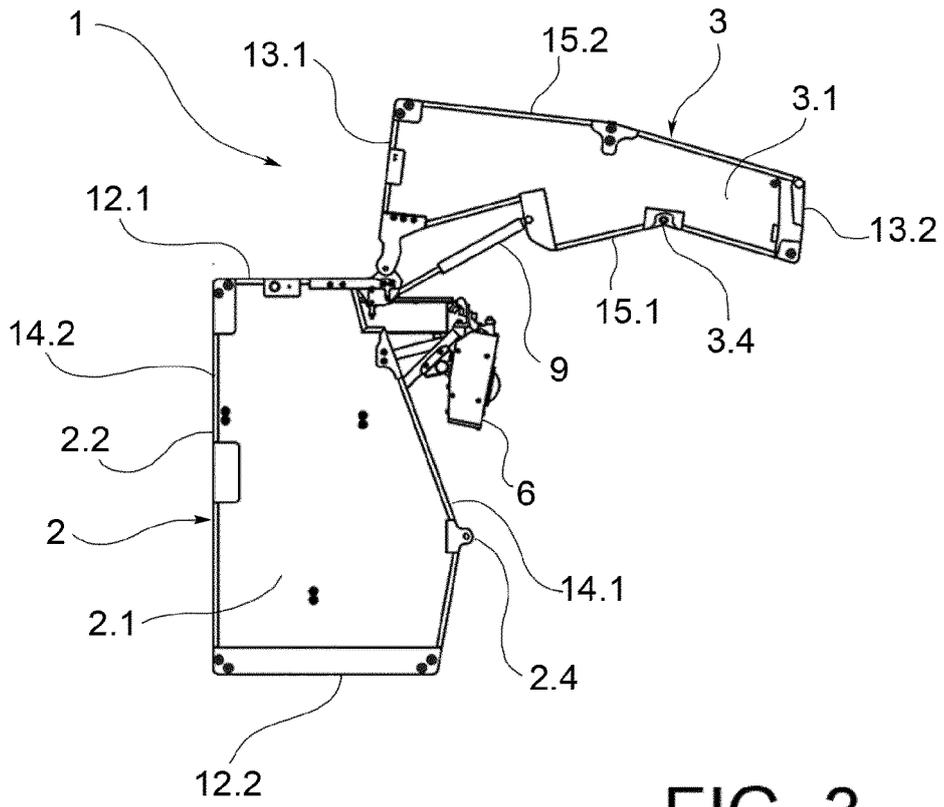


FIG. 3

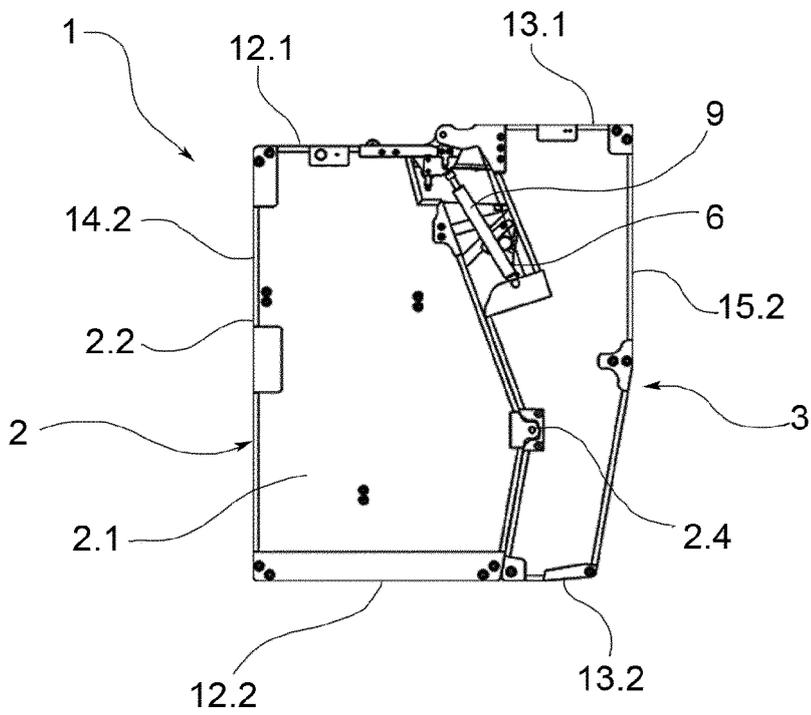


FIG. 4

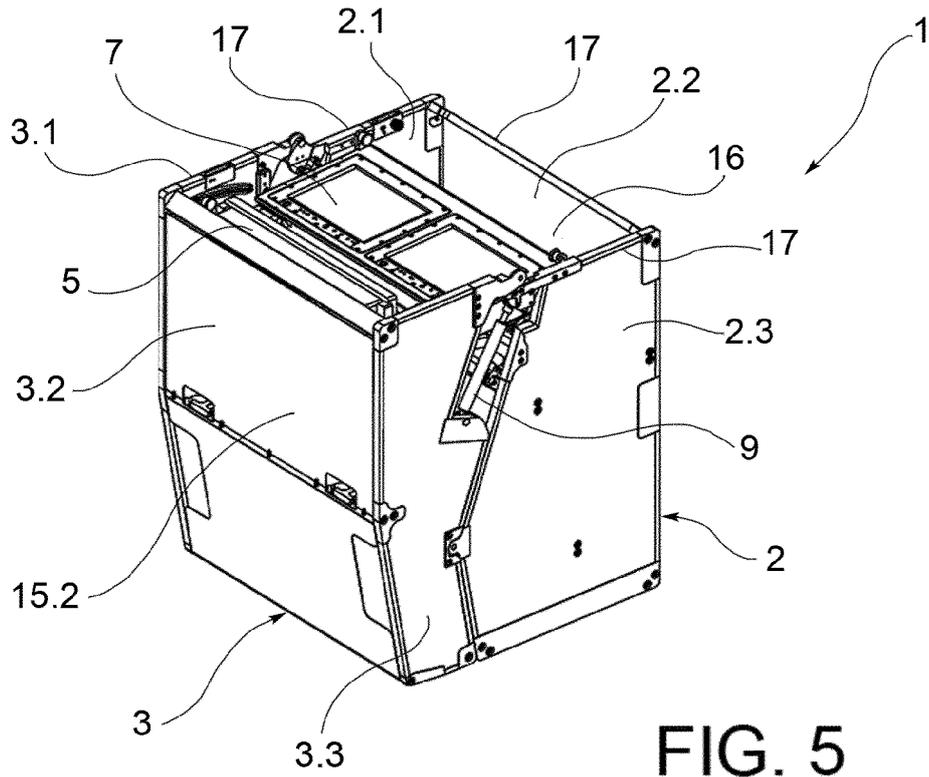


FIG. 5

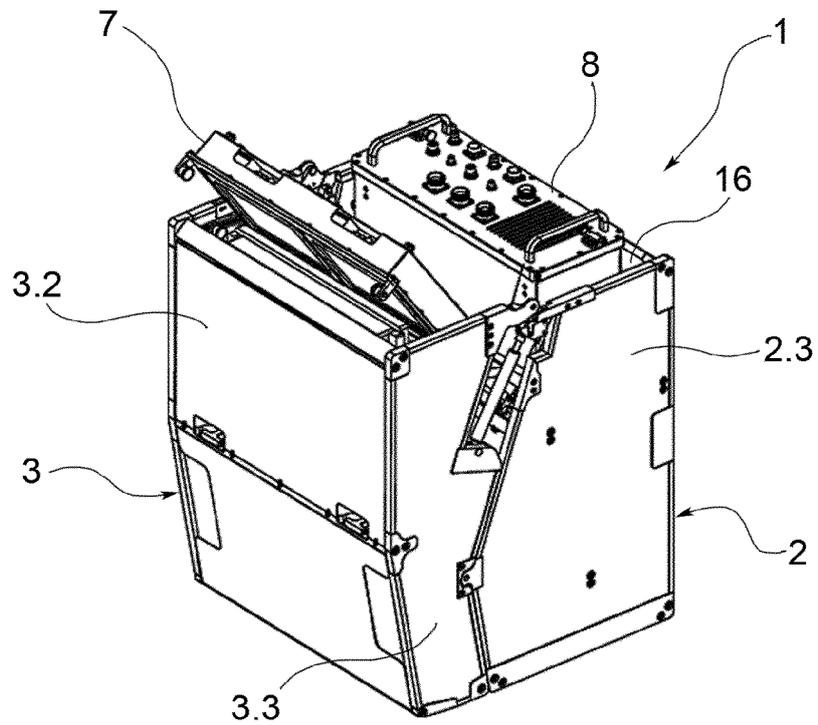


FIG. 6

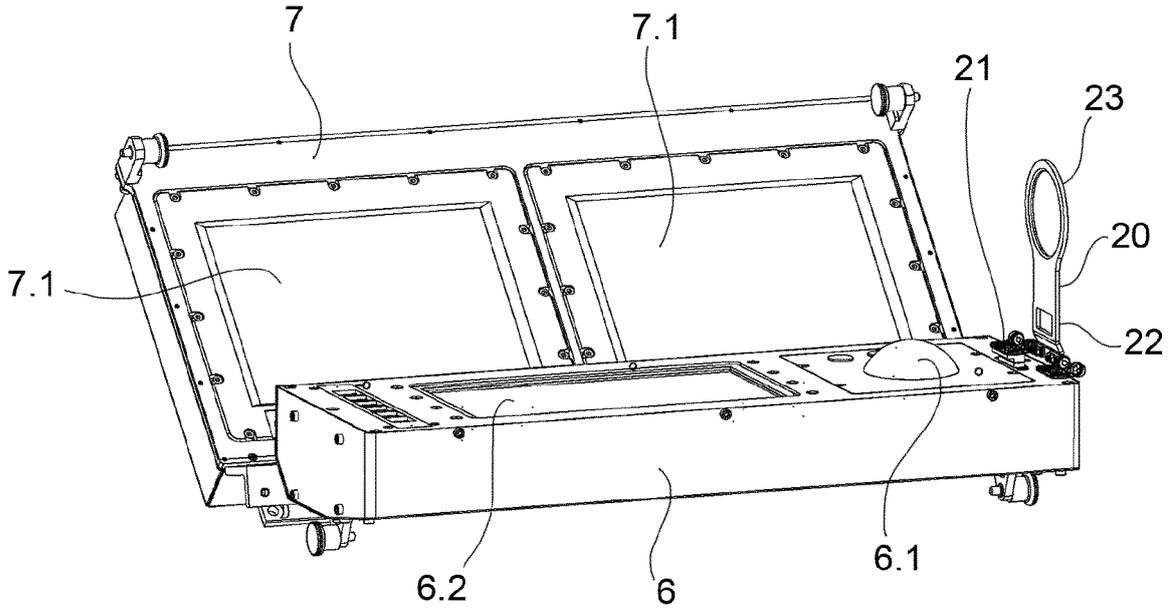


FIG. 7

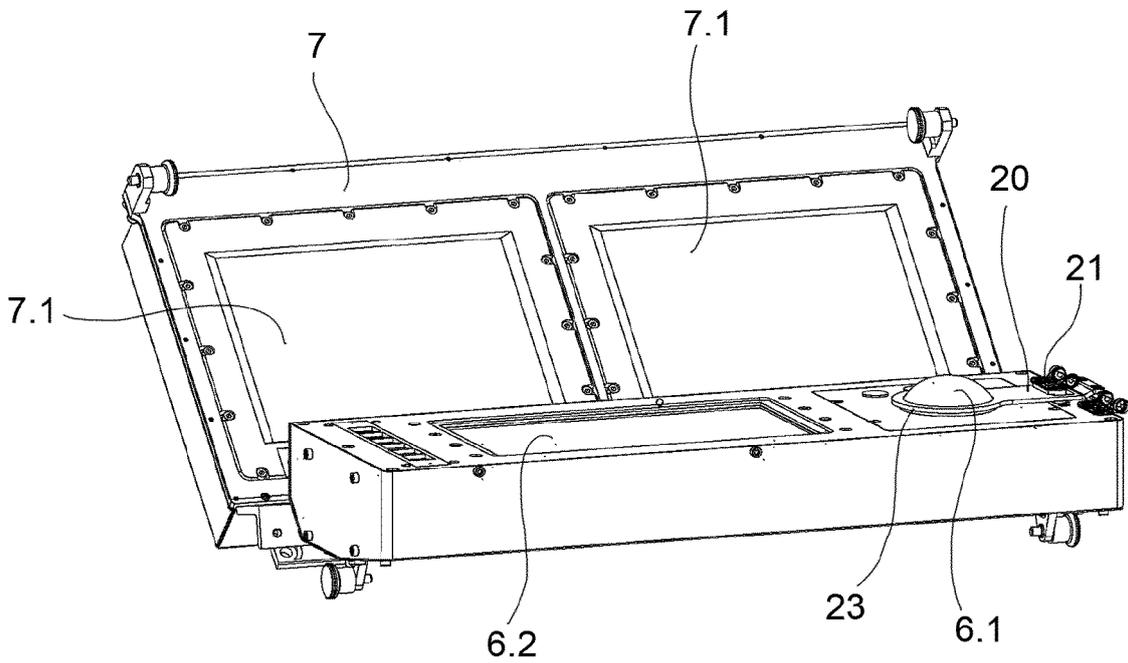


FIG. 8



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			G06F F41G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 March 2014	Examiner Limacher, Rolf
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