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(54) **CAR FOR LIFT AND SIMILAR, HAVING ENHANCED COMMUNICATION AND INTERACTIVE FEATURES**

AUFZUGSKABINE FÜR AUFZUG UND DERGLEICHEN MIT VERBESSERTER KOMMUNIKATION UND VERBESSERTEN INTERAKTIVEN FUNKTIONEN

WAGON DE LEVAGE ET TÂCHES ANALOGUES, PRÉSENTANT DE MEILLEURES CARACTÉRISTIQUES INTERACTIVES ET DE COMMUNICATION

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Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a car for lift and similar having enhanced communication and interactive features.

[0002] The field of the invention is the field of cars for lifts and goods lifts (Lift Directive No. 2014/33/EU) and the field of carriers for lifting platforms (Machinery Directive No. 2006/42/EC). In the description below, cars for lifts and goods lifts and carriers for lifting platforms are all referred to as "lift cars".

[0003] Lift cars are traditionally equipped with push-button systems and similar to control the lift operation and to manage emergencies.

[0004] However, these well-known cars have the drawback of limiting communications between the user and the operational centre merely to an audio system.

[0005] Furthermore, warnings, messages, information and similar, are traditionally displayed in the lift car by means of posting notices or using closed-circuit screens, exclusively devoted to this function.

[0006] In addition, the simultaneous presence of a pushbutton panel and other auxiliary communication means affect the appearance and design of the space inside the car. The document US2007/124694A1 describes a design wherein in a mirror for an elevator uses a multimedia display.

[0007] This said, it should be added that in traditional lift systems, car and landing doors are passive, i.e. they lack means suitable for communication, able to provide the user with audio and video signals or similar.

SUMMARY OF THE INVENTION

[0008] As a result, the main object of this invention is to provide a lift car where, unlike traditional equipment of this type, communication is not limited to audio signals but also includes video signals and Internet connection, in order to provide features allowing the user to interact with the outside world and vice versa.

[0009] It is another object of the invention to provide a car, of the above mentioned type, having, within a single system of communication, the function of displaying notices and general information messages, both useful for the user and commercially relevant, whose dimensions do not affect the interior design or are undesirable in the smallest cars.

[0010] It is a still further object of the invention to provide car doors and doors at each landing with a communication and interactive feature for the user.

[0011] These and other objects are achieved through the car for lift according to claim 1. There are preferred embodiments of the invention resulting from the remaining claims.

[0012] Compared to the well-known cars for lifts and similar, the car of the invention offers the benefit of adding

video signals to the communication audio signals of the user to the outer world.

[0013] In addition, the car of the invention offers the maintenance operator the advantage of real-time communications with the service centre so as to receive audio and video instructions needed to carry out system maintenance.

[0014] Furthermore, the car of the invention allows the building manager where the lift is installed (airports, shopping centres, hotels and similar), to send the user real-time messages about services, events, as well as general and useful information (safety and more).

[0015] In addition, the car of the invention offers the advantage of providing landing and car doors with the mentioned communication and interactive features, like those available within the car.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] These and other objects, benefits and features result from the following description of a preferred embodiment of the car of the invention illustrated, without limitation, in the figures of the attached drawings.

[0017] Where:

figure 1 is a perspective view of an inner section of the car of the invention;

figure 2 is an exploded view of the communication system components of the car of the invention;

figure 3 is a horizontal section view of the car in figure 1;

figure 4 is a vertical section view of the car in figure 1;

figures 5 and 6 show, respectively, an example of car and landing doors of the system of the invention;

figures 7 and 8 show a version of the invention for panoramic lifts.

DESCRIPTION OF PREFERRED EMBODIMENTS

[0018] The car of the invention is indicated as a whole with 1 in figure 1 and includes walls 2, 18 and 19, a floor 16 and a ceiling 17, where wall 2 features at least one multimedia display 3.

[0019] According to the invention the said multimedia display 3 includes a screen 4, for example a TV-type screen, with LCD, LED and similar technology.

[0020] Furthermore, a frame 5, e.g. in aluminium, plastic or other material, is provided for embedding the screen 4, fixing it inside a relevant recess 6 of the wall 2, the floor or the ceiling of the lift car.

[0021] The external or in-sight part of the multimedia display 3 consists of a glass pane 7 covering the screen 4 with interposition of a touch-sensitive film or another suitable automatic pointing system 8.

[0022] The frame 5 of the system of the invention consists of profiles 9, glued to the surface of the said glass pane 7 facing the recess 6 of car 1 and housed inside the same recess 6, together with the screen 4 and rele-

vant electronics.

[0023] According to the invention the glass pane 7 has a reflective treatment providing a mirror-like effect when the screen is dark or turned off, while it is transparent when the screen is lit, i.e. turned on.

[0024] Advantageously, the multimedia display 3 features a camera 10, suitable for providing a two-way video communication system.

[0025] According to the invention, the multimedia display 3 can also be applied to the lift car doors with the same methods described above and as shown in figure 5. Figure 6 instead shows a similar application of the multimedia display 3 to landing doors 12.

[0026] According to the version shown in figures 7 and 8, the screen 4 of the multimedia display 3 is replaced by at least one transparent display 13 embedded between two glass panes 14 and 15, optionally together with a touch-sensitive film 8. The said transparent display 13 differs from the multimedia display 3 especially because it lacks backlighting, thus it is transparent and objects and images behind can be seen. The system can therefore be advantageously used in panoramic lift cars.

[0027] Also in this version, the transparent display 13 can be fitted with a camera 10, suitable for providing a two-way video communication system.

[0028] Thanks to the invention, the multimedia display 3 and the transparent display 13 offer the user the option of interactive multimedia communication, which is not limited only to audio signals but it also includes video signals. This allows the user to receive in real time the required safety information and any warning messages from the operational centre by talking to the operator also in video mode.

[0029] In addition, the user can access additional information and instructions on proper use of the system and how to behave when using a lift in emergency.

[0030] On the other hand, the system manager can interact with the user, check passengers' conditions inside the car and give instructions for example in case of lift failure.

[0031] Similarly, it is possible to take advantage of a system maintenance mode where the maintenance operator is able to communicate through audio and video signals with the operational centre.

[0032] Furthermore, the invention allows the manager to monitor the lift system using it as a means to check users' behaviour, to provide service and commercial information, and more.

[0033] The user can also ask and receive customised information, optionally focused on the user's needs within the services provided by the manager. The manufacturer of the system of the invention can also monitor and check the lift use by talking directly to the maintenance operator in audio and video mode (programmed and predictive maintenance service).

[0034] The invention, as described above and shown in the figures of the attached drawings, can be modified in order to create some versions which nonetheless fall

within the scope of the following claims.

[0035] In the same way, for example, the multimedia display 3 and the transparent display 13 could be fitted to all the walls 2, 18 and 19 of the car of the invention, as well as to the floor 16 and ceiling 17.

Claims

- 10 1. Car for lift and similar including walls (2,18,19), a floor (16), a ceiling (17) and car doors (11), **characterized in that** it comprises at least one multimedia display (3) and at least one transparent display (13), having communication and interactive features in audio and video mode, wherein said multimedia display (3) comprises a screen (4), a frame (5) for supporting and fixing said screen (4) to the said walls (2,18,19), to the floor (16) or to the ceiling (17) of the car (1) and a glass pane (7) with reflective treatment providing a mirror-like effect when the screen is dark or turned off, while it is transparent when the screen is lit, said car further comprising an automatic pointing system (8) applied either to the surface of the glass pane (7) facing the screen (4) of the multimedia display (3), or between said glass panes (14,15) of the transparent display (13).
- 25 2. Car according to claim 1, **characterized in that** the said multimedia display (3) is applied also to the doors (11) of the car (1).
- 30 3. Car according to claims 1 or 2, **characterized in that** the said frame (5) is consisting of profiles (9) inserted in a relevant recess (6) provided on the said walls (2,18,19), on the floor (16), on the ceiling (17) and on the doors (11) of the same car (1), the said profiles (9) being glued to the surface of the said glass pane (7) facing the inner part of the said recess (6).
- 35 4. Car according to claim 1, **characterized in that** the said transparent display (13) is embedded between two glass panes (14, 15).
- 40 5. Car according to one of claims 1 to 4, **characterized in that** the said multimedia display (3) and the said transparent display (13) include a camera (10).
- 45 6. Lift system with car according to one or more of the preceding claims, **characterized in that** it further comprises landing doors (12) having said multimedia display (3) and/or said transparent display (13).
- 50

Patentansprüche

- 55 1. Kabine für einen Aufzug und ähnliches, die Wände (2, 18, 19), einen Fußboden (16), eine Decke (17) und Kabinentüren (11) einschließt, **dadurch ge-**

- kennzeichnet, dass** sie mindestens eine Multimedia-Anzeige (3) und mindestens eine transparente Anzeige (13) umfasst, die Kommunikations- und interaktive Merkmale im Audio- und Videomodus aufweisen, wobei die Multimedia-Anzeige (3) einen Bildschirm (4), einen Rahmen (5) zum Stützen und Befestigen des Bildschirms (4) an den Wänden (2, 18, 19), an dem Fußboden (16) oder an der Decke (17) der Kabine (1) und eine Glasscheibe (7) mit einer reflektierenden Behandlung, die eine spiegelartige Wirkung bereitstellt, wenn der Bildschirm dunkel oder ausgeschaltet ist, während sie transparent ist, wenn der Bildschirm erleuchtet ist, umfasst, wobei die Kabine ferner ein automatisches Zeigesystem (8) umfasst, das entweder auf die Oberfläche der Glasscheibe (7) gegenüber dem Bildschirm (4) der Multimedia-Anzeige (3) oder zwischen den Glasscheiben (14, 15) der transparenten Anzeige (13) aufgebracht ist.
2. Kabine nach Anspruch 1, **dadurch gekennzeichnet, dass** die Multimedia-Anzeige (3) ebenfalls auf die Türen (11) der Kabine (1) aufgebracht ist.
 3. Kabine nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Rahmen (5) aus Profilen (9) besteht, die in einer entsprechenden Aussparung (6) eingesetzt sind, die an den Wänden (2, 18, 19), an dem Fußboden (16), an der Decke (17) und an den Türen (11) der gleichen Kabine (1) bereitgestellt wird, wobei die Profile (9) an die Oberfläche der Glasscheibe (7) gegenüber dem inneren Teil der Aussparung (6) geklebt sind.
 4. Kabine nach Anspruch 1, **dadurch gekennzeichnet, dass** die transparente Anzeige (13) zwischen zwei Glasscheiben (14, 15) eingebettet ist.
 5. Kabine nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** die Multimedia-Anzeige (3) und die transparente Anzeige (13) eine Kamera (10) einschließen.
 6. Aufzugsanlage mit Kabine nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** sie ferner Fahrschachttüren (12) umfasst, welche die Multimedia-Anzeige (3) und/oder die transparente Anzeige (13) aufweisen.
- interactifs dans un mode audio et vidéo, dans lequel ledit affichage multimédia (3) comprend un écran (4), un cadre (5) destiné à supporter et à fixer ledit écran (4) auxdites parois (2, 18, 19), au plancher (16) ou au plafond (17) de la cabine (1) et un panneau de verre (7) avec un traitement réfléchissant fournissant un effet du genre miroir lorsque l'écran est sombre ou éteint, tandis qu'il est transparent lorsque l'écran est éclairé, ladite cabine comprenant en outre un système de pointage automatique (8) appliqué sur la surface du panneau de verre (7) tournée vers l'écran (4) de l'affichage multimédia (3), ou entre lesdits panneaux de verre (14, 15) de l'affichage transparent (13).
2. Cabine selon la revendication 1, **caractérisée en ce que** ledit affichage multimédia (3) est également appliqué sur les portes (11) de la cabine (1).
 3. Cabine selon les revendications 1 ou 2, **caractérisée en ce que** ledit cadre (5) consiste en des profilés (9) insérés dans une cavité correspondante (6) disposée sur lesdites parois (2, 18, 19), sur le plancher (16), sur le plafond (17) et sur les portes (11) de la même cabine (1), lesdits profilés (9) étant collés sur la surface dudit panneau de verre (7) tournée vers la partie intérieure de ladite cavité (6).
 4. Cabine selon la revendication 1, **caractérisée en ce que** ledit affichage transparent (13) est incorporé entre deux panneaux de verre (14, 15).
 5. Cabine selon l'une des revendications 1 à 4, **caractérisé en ce que** ledit affichage multimédia (3) et ledit affichage transparent (13) incluent une caméra (10).
 6. Système de levage avec une cabine selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce qu'**il comprend en outre des portes palières (12) présentant ledit affichage multimédia (3) et/ou ledit affichage transparent (13).

Revendications

1. Cabine pour ascenseur et tâches analogues, incluant des parois (2, 18, 19), un plancher (16), un plafond (17) et des portes de cabine (11), **caractérisée en ce qu'**elle comprend au moins un affichage multimédia (3) et au moins un affichage transparent (13), présentant des éléments de communication et

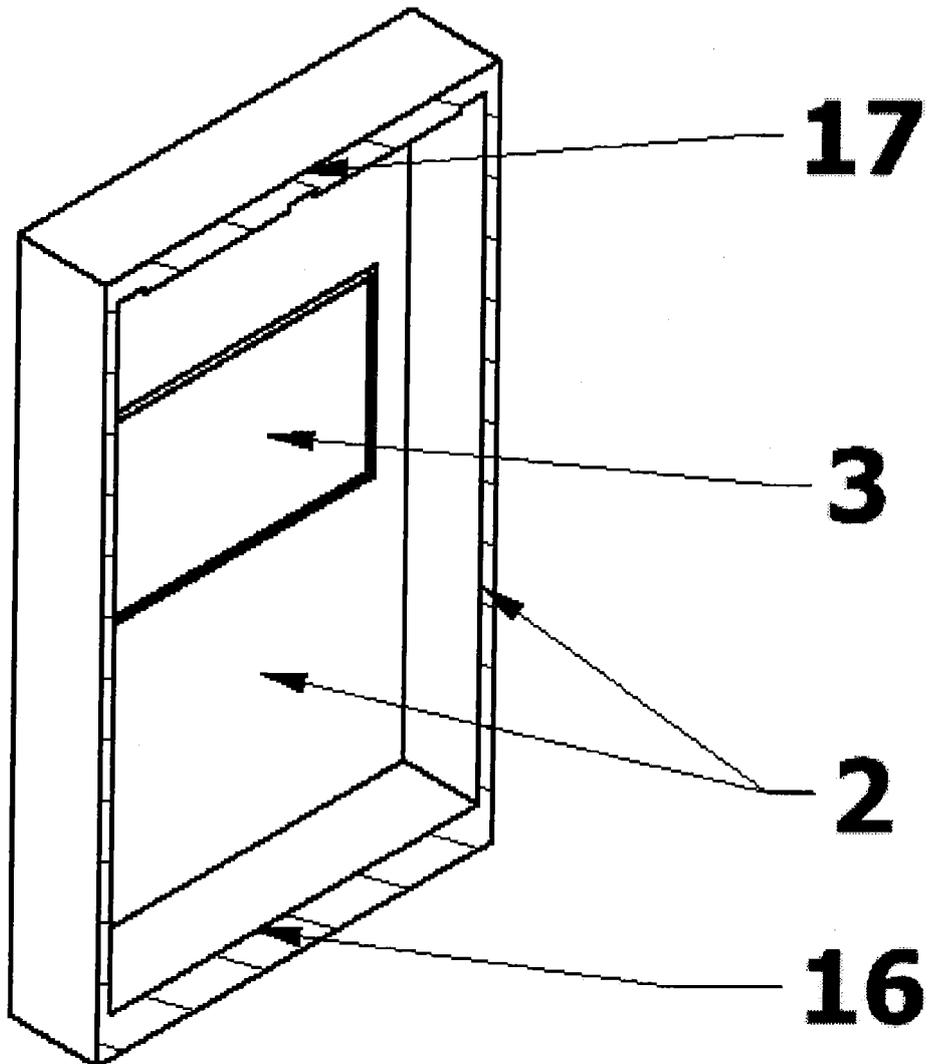


FIG. 1

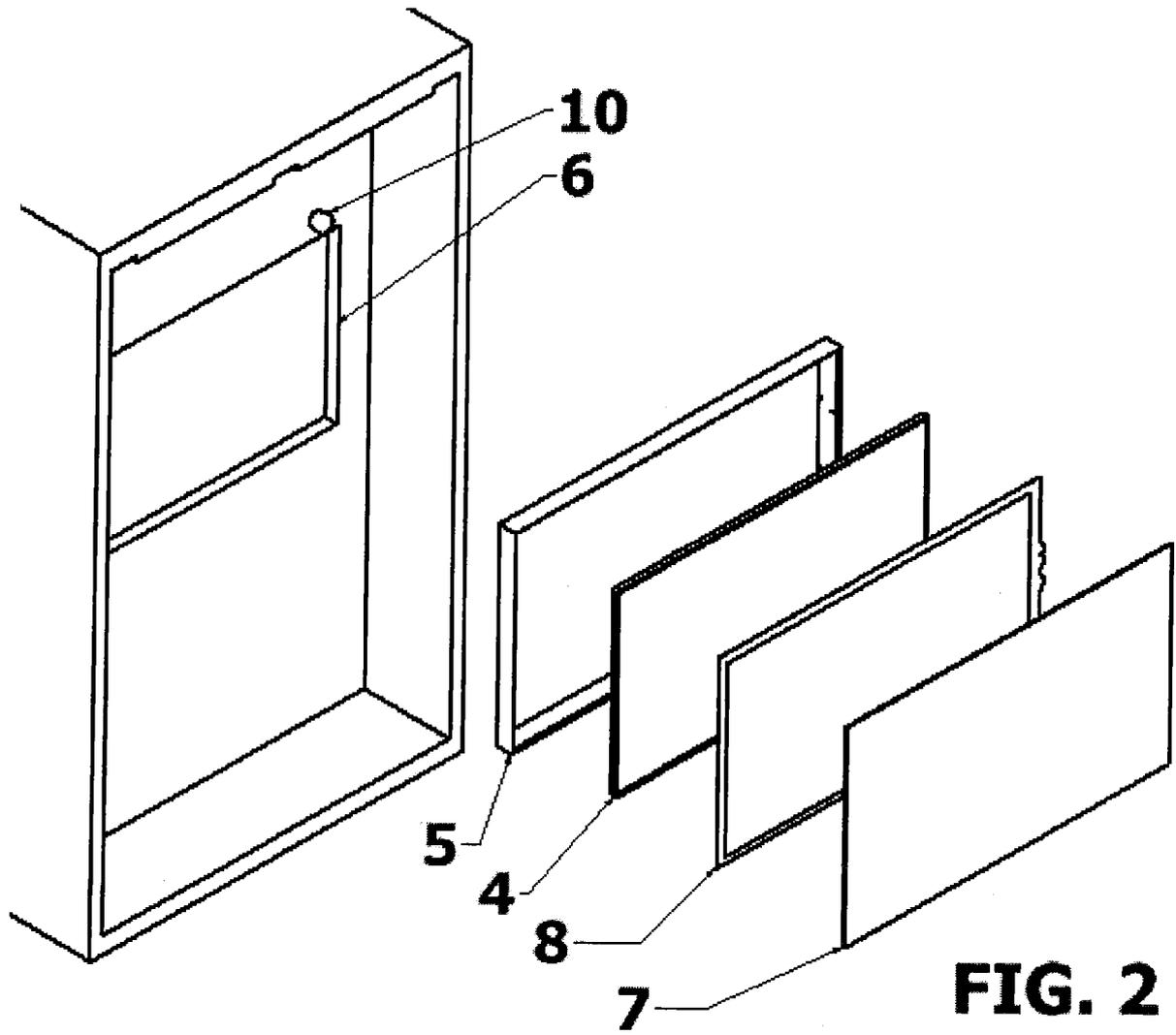


FIG. 2

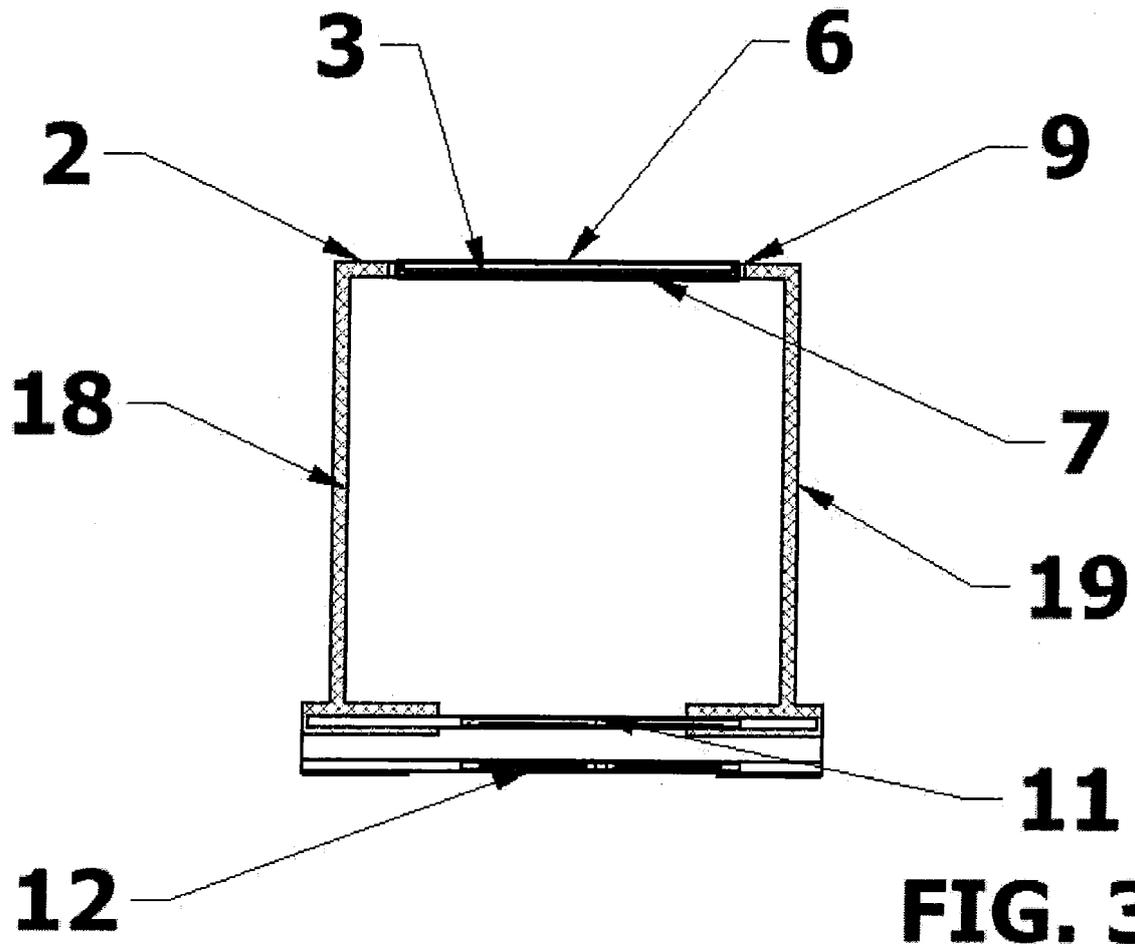


FIG. 3

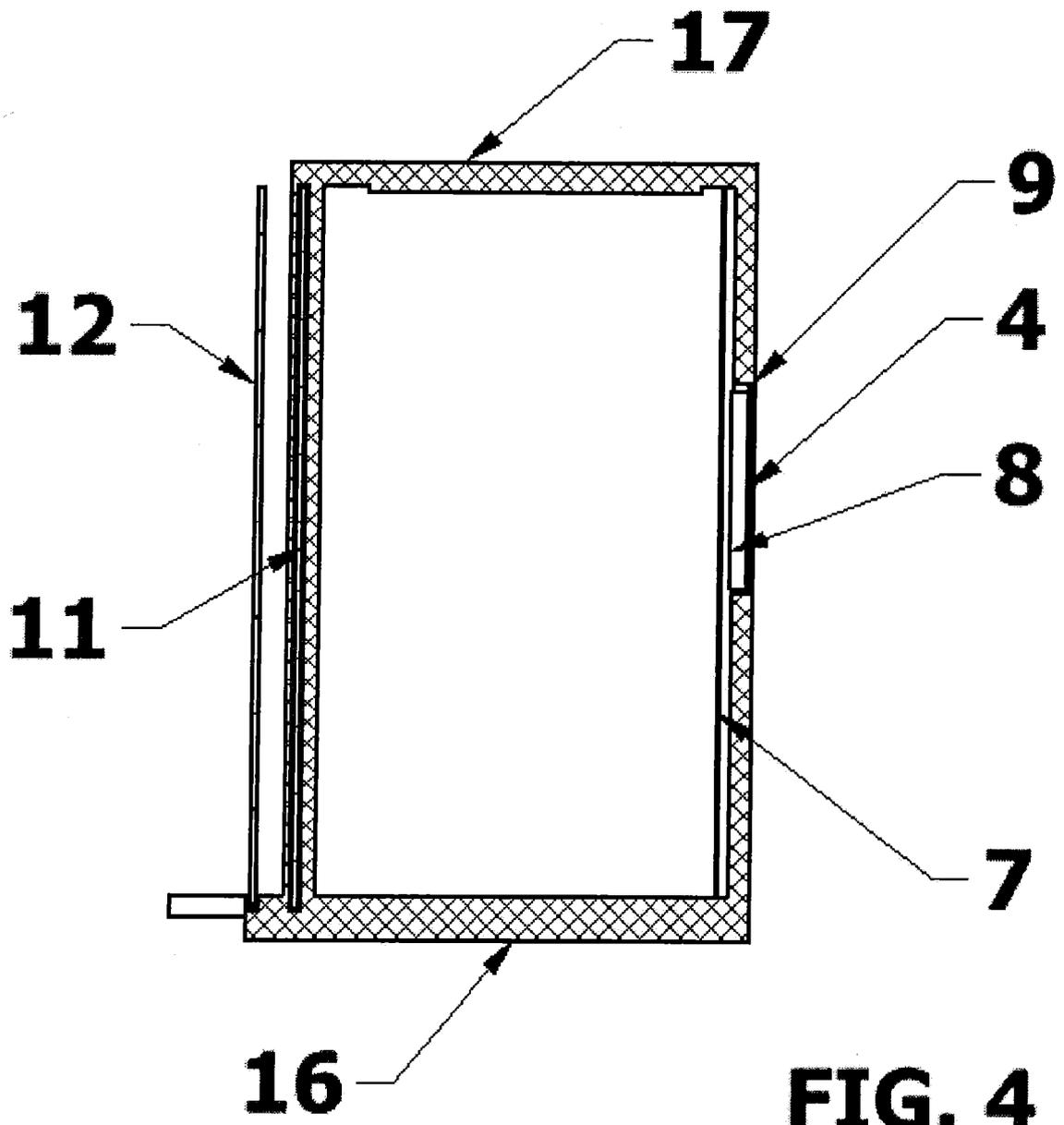
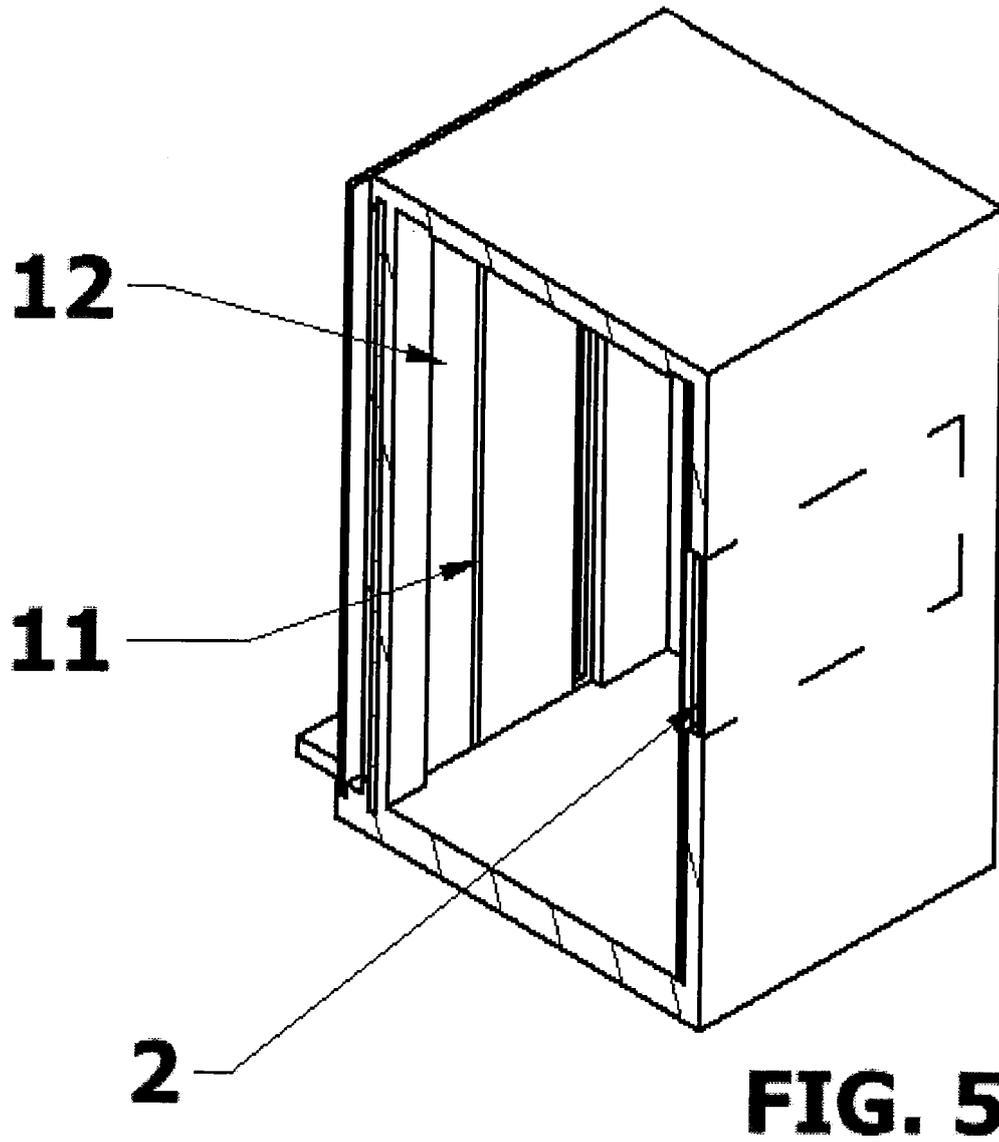


FIG. 4



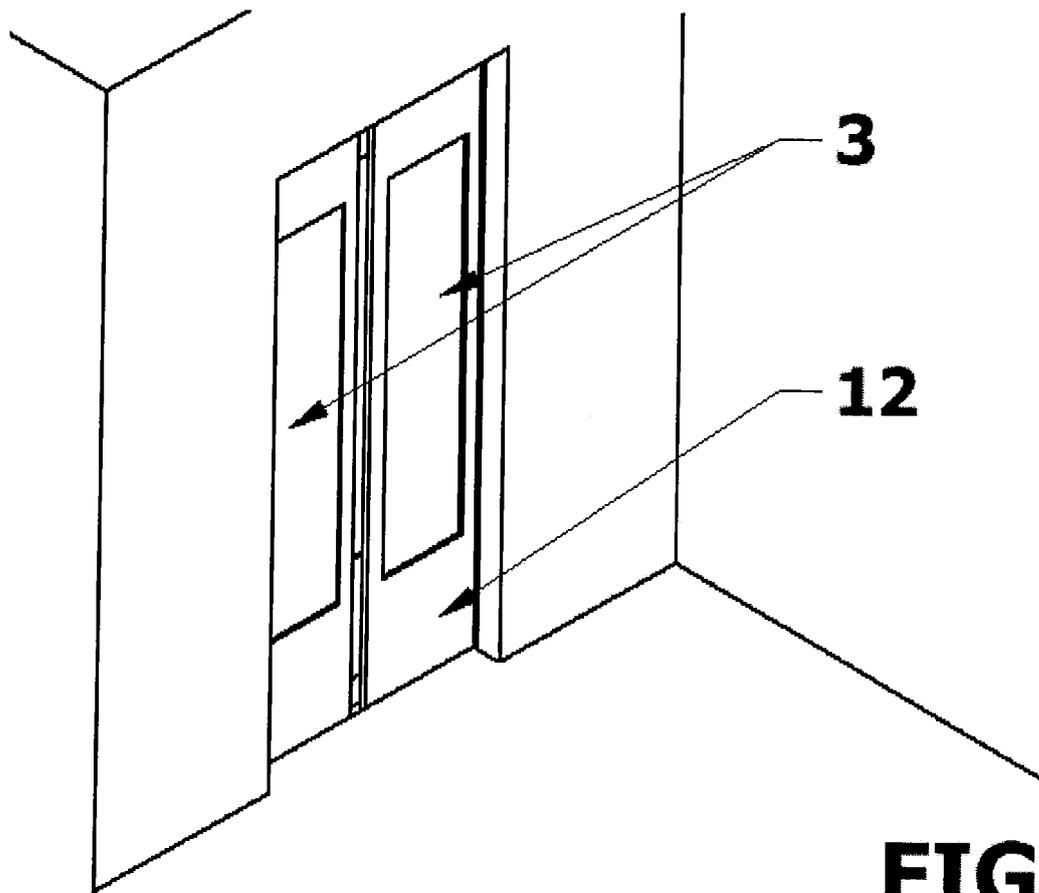


FIG. 6

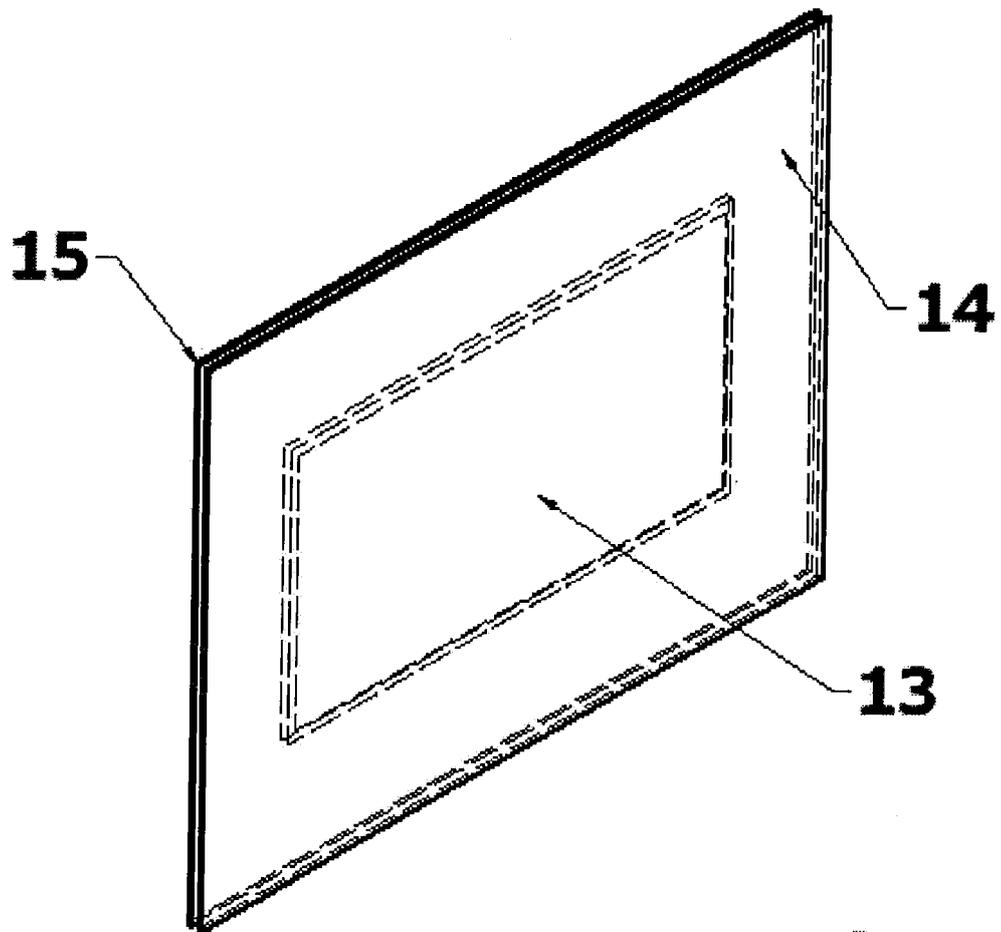


FIG. 7

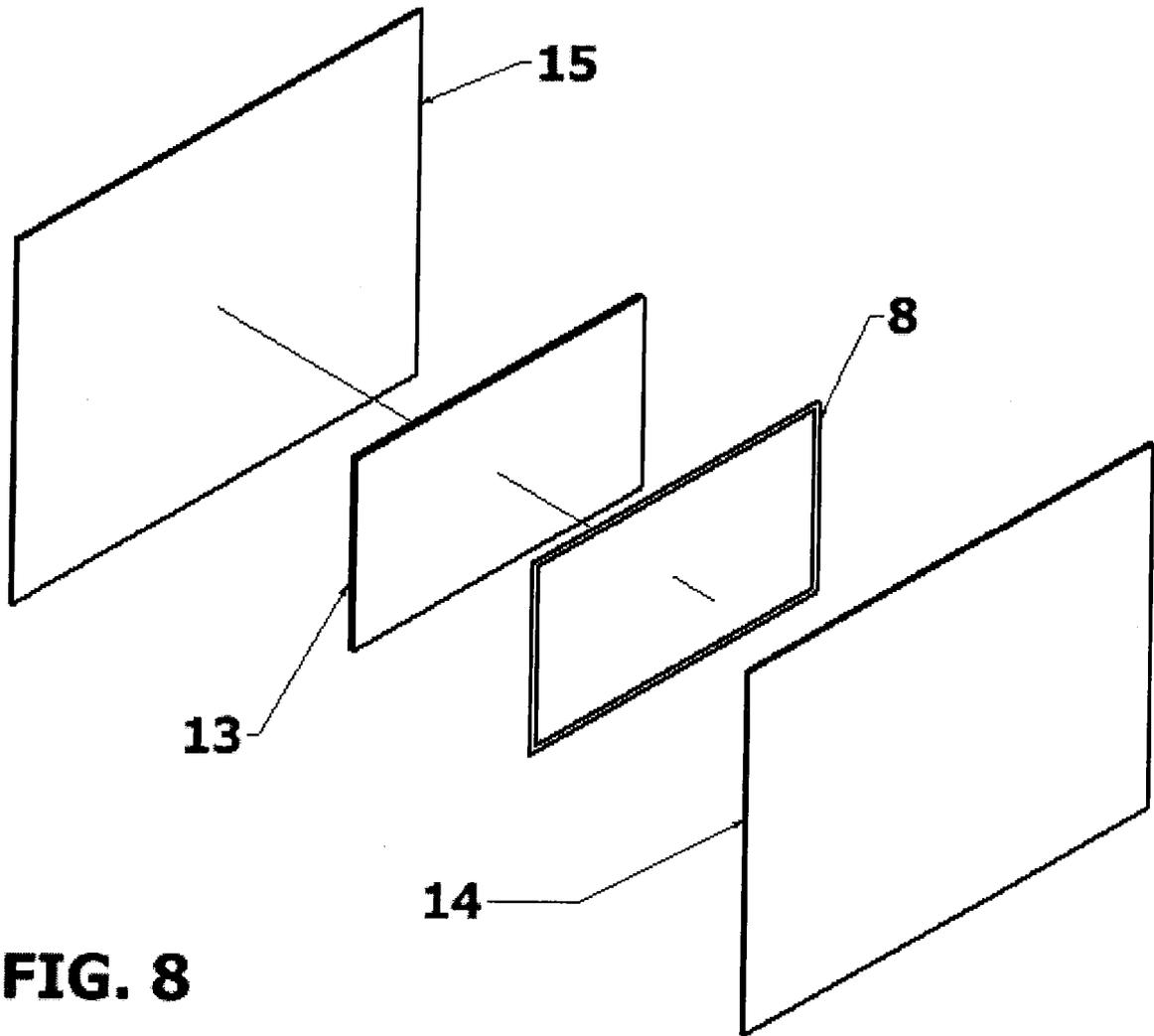


FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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