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(54) AUTOMATIC SYSTEM FOR IDENTIFYING AND CONTROLLING PERSONS AND REGULATING ACCESS TO RESTRICTED AREAS

AUTOMATISCHES SYSTEM ZUR IDENTIFIZIERUNG UND KONTROLLE VON PERSONEN UND ZUR REGELUNG DES ZUGANGS ZU GESCHÜTZTEN BEREICHEN

SYSTÈME AUTOMATIQUE PERMETTANT D'IDENTIFIER ET DE CONTRÔLER DES PERSONNES ET DE RÉGULER L'ACCÈS À DES ZONES RESTREINTES

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(73) Proprietor: **Leonardo S.p.A.**
00195 Roma (IT)

(72) Inventors:
- **MICHIELAN, Gianni**
  31021 Mogliano Veneto (TV) (IT)
- **CEGLIA, Giovanni**
  33030 MAJANO (UD) (IT)
- **SAMIOLO, Riccardo**
  31046 Oderzo (TV) (IT)
- **PANDOLFI, Marco**
  00152 Roma (IT)
- **CALABRO', Francesco**
  00125 Roma (IT)

(74) Representative: **Di Gennaro, Sergio**
Barzano & Zanardo Milano S.p.A.
Via Borgonuovo 10
20121 Milano (IT)

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Description

[0001] The present invention relates to an automatic system for identifying persons and regulating access to restricted areas.

[0002] In particular, the present invention can be used to identify and check all the persons who need to access restricted areas that are such for a temporary or unlimited period.

[0003] Typical restricted areas where controlled access takes place are for example courts, airports, public offices, exhibition centres, historical monuments such as churches, museums, etc...

[0004] In general, restricted areas are all those areas in which for a certain period it is necessary to identify and control all the persons having access thereto. Some of these places, for example courts and airports, are equipped with fixed stations provided with personal metal detectors and scanners for luggage and bags in the presence of dedicated personnel.

[0005] Then there are other places that only become restricted areas for limited periods of time, for example sheds used for exhibitions or trade fairs that for a certain period can host events that require access control. Such places are normally not equipped with control and identification systems. Therefore, during such events it is necessary to install barriers with control stations. This type of installation is often complicated, expensive and time consuming, requiring a significant number of people appointed to perform the installation.

[0006] Document WO2012052808 A1 discloses a system of modular mobile gates.

[0007] Document US2009074138 A1 discloses a portable control station for the inspection of people and luggage including a portable, container-like room module.

[0008] Document US2009188540 A1 discloses a collapsible truss assembly.

[0009] The applicant therefore set out to solve the problem of how to create an installation for a system for identifying and controlling persons that is simple and quick to perform.

[0010] An aspect of the present invention relates to an automatic system for identifying and controlling persons and regulating access to restricted areas having the characteristics of claim 1. Further additional aspects of the invention are presented in the attached dependent claims.

[0011] The characteristics and advantages of the present invention will become more apparent from the following description of an embodiment of the invention, provided by way of non-limiting example, with reference to the schematic attached drawings, wherein:

- Figure 1 illustrates a perspective view of an identification module of the system according to the present invention in the operating position;
- Figure 2 illustrates a perspective view of the removable parts of the identification module of the system according to the present invention;
- Figure 3 illustrates the frame of the module of Figure 1, during the folding step;
- Figure 4 illustrates the frame completely folded up;
- Figure 5 illustrates the module in the closed position arranged on a conventional transport pallet;
- Figure 6 illustrates a schematic top view of the module showing the access operations.

[0012] With reference to the mentioned figures, the system according to the present invention comprises an identification module and a plurality of electronic recognition devices associated with such module.

[0013] The module comprises a frame 2 provided with wheels 21 at the bottom for mobility purposes, preferably arranged at the lower end of the supporting props 3 of the frame. Such wheels can be retracted into the prop, so as to allow the module to be stationary when they are inside the prop and to be movable with the wheels pulled out. Opposing side panels 4 are arranged between the props and constitute the formation of side walls of the module; they are advantageously removable, for example they can be inserted into guides placed on the props (not shown). A roof 5, formed by one or more slabs, said roof being also removable, integrally covers the module.

[0014] The supporting plane of the module is formed by plates 6, which are locked by joints to the frame, in particular to the props 2, and can be folded along a straight line cutting across the module. In this way the same module from the operating open position can be brought into a closed position by releasing the panels 4 and the roof 5 from the frame, then pulling out the wheels and accordion-folding the same frame and the base plates 6 closes it and reduce its dimensions. Finally, positioning the panels and the roof vertically next to the accordion-closed frame a small-sized, easy-to-carry compact "cube" is obtained, for example that can be palletized as shown in Figure 5 positioned on a pallet P.

[0015] The supporting plane and in particular such plates are provided with an adjustment mechanism adapted to create a floor that is always substantially horizontal.

[0016] The module further comprises automatic doors 7 on the sides orthogonal to those of the panels, for example double doors, or made in another way, that constitute the module's entry and exit points.

[0017] In this way the module can be easily transported constituting an access control system to areas that are not normally provided with such devices on a permanent basis.

[0018] The materials with which the module is realised are compatible with its use outdoors, therefore they are materials that are resistant to rain and other atmospheric events in general.

[0019] The identification devices placed inside the module can comprise television cameras, loudspeakers, monitors, interfaces for communication with users U inside the module (such as small keyboards or "touch

screens"), retinal or facial recognition scanners, devices for detecting the presence of drugs or explosives, smart card readers, Qr code bar codes etc..

[0020] Furthermore, solar panels can advantageously be mounted on the roof 5 to contribute to the supply of power for all of the module's electronic and/or mechanical devices.

[0021] The module further comprises also sound and/or light alarm devices that are activated if a potential danger is recognized inside the module or simply an identification failure.

[0022] Advantageously, the module can be equipped, at its entry in the proximity of the automatic entrance door, with a metal detector and/or with an access counting device for counting the people entering the module.

[0023] Finally, the module can be equipped with a WIFI system for communication with the outside and also for connection with the electronic devices present.

[0024] The module is also provided with controlled lighting devices so as to maintain constant lighting inside, also in the presence of light variation outside.

Claims

1. Automatic system for identifying and controlling persons and regulating access to restricted areas comprising an identification module and a plurality of electronic identification devices associated with said identification module, said identification module comprising a frame (2) consisting of supporting props (3) equipped with retractable wheels (21) at the bottom for mobility purposes, **characterized in that** said identification module further comprises opposing removable side panels (4) arranged between said props (3) to constitute the side walls of the identification module; and a roof (5), also removable, covering the identification module integrally, the supporting plane of the identification module being formed by base plates (6), which are locked by joints to the frame and can be folded along a straight line cutting across the identification module, the identification module also comprising automatic doors (7), placed on the sides at right angles to those of the panels, constituting the identification module's entry and exit points, wherein said identification module can be moved from an operative open position to a closed position by releasing the panels (4) and the roof (5) from the frame, pulling out the wheels (21) and accordion-folding the said frame (2) and the base plates (6), positioning the panels and the roof vertically next to the accordion-closed frame obtaining a small-sized, easy-to-carry compact "cube".

2. System according to claim 1, in which the wheels (21) are arranged at the lower end of the supporting props (3) of the frame (2) and can be retracted inside the supporting props (3), so as to allow the identification module to be fixed when the wheels are inside the supporting props (3) and to be movable when they are pulled out.

3. System according to claim 1, in which the side panels (4) are inserted into rails placed on the supporting props (3).

4. System according to claim 1, in which the base plates (6) can be folded with respect to the supporting props (3).

5. System according to claim 1, in which the automatic doors (7) are of the double-leaf type.

6. System according to claim 1, in which the identification module in the closed position can be loaded on a pallet (P).

7. System according to claim 1, in which solar panels are mounted on the roof (5) to contribute to the supply of power for all of the identification module's electronic and/or mechanical devices.

8. System according to claim 1, in which said electronic identification devices are placed inside the identification module and comprise at least one of the following:
video cameras, loud speakers, monitors, user interfaces, such as small keyboards or "touch screens", retinal or facial recognition scanners, devices for detecting the presence of drugs or explosives, smart card readers, Qr code reader or bar code reader.

9. System according to claim 1, in which the identification module comprises sound and/or light alarm devices.

10. System according to claim 1, in which the identification module is equipped, at its entry in the proximity of the automatic entrance door (7), with a metal detector and/or with an access counting device for counting the people entering said identification module.

Patentansprüche

1. Automatisches System zur Identifizierung und Kontrolle von Personen und zur Regelung des Zugangs zu gesperrten Bereichen, das ein Identifizierungsmodul und eine Vielzahl von elektronischen Identifizierungsvorrichtungen umfasst, die dem Identifizierungsmodul zugeordnet sind, wobei das Identifizierungsmodul einen Rahmen (2) umfasst, der aus tragenden Stützen (3) besteht, die an der Unterseite mit einziehbaren Rädern (21) für Mobilitätszwecke ausgestattet sind, **dadurch gekennzeichnet, dass**

das Identifizierungsmodul ferner gegenüberliegende abnehmbare Seitenplatten (4) umfasst, die zwischen den Stützen (3) angeordnet sind, um die Seitenwände des Identifizierungsmoduls zu bilden; und ein Dach (5), das ebenfalls abnehmbar ist und das Identifizierungsmodul zur Gänze abdeckt, wobei die Stützebene des Identifizierungsmoduls durch Grundplatten (6) gebildet wird, die durch Gelenke am Rahmen verriegelt sind und entlang einer geraden Linie, die das Identifizierungsmodul durchschneidet, gefaltet werden können, wobei das Identifizierungsmodul auch automatische Türen (7) umfasst, die an den Seiten rechtwinklig zu denen der Platten angeordnet sind, und die Eingangs- und Ausgangspunkte des Identifikationsmoduls bilden, **dadurch gekennzeichnet, dass** das Identifikationsmodul von einer offenen Betriebsposition in eine geschlossene Position bewegt werden kann, indem die Paneele (4) und das Dach (5) von dem Rahmen gelöst werden, die Räder (21) herausgezogen werden und der Rahmen (2) und die Bodenplatten (6) akkordeonartig gefaltet werden, wobei die Paneele und das Dach vertikal neben dem akkordeonartig geschlossenen Rahmen positioniert werden, wodurch ein kleiner, leicht transportierbarer kompakter "Würfel" entsteht.

2. System nach Anspruch 1, bei dem die Räder (21) am unteren Ende der Stützen (3) des Rahmens (2) angeordnet sind und in die Stützen (3) eingefahren werden können, so dass das Identifikationsmodul fixiert ist, wenn sich die Räder im Inneren der Stützen (3) befinden, und beweglich ist, wenn sie herausgezogen werden.

3. System nach Anspruch 1, bei dem die Seitenteile (4) in Schienen eingesetzt sind, die auf den Stützen (3) angeordnet sind.

4. System nach Anspruch 1, bei dem die Grundplatten (6) gegenüber den Stützen (3) einklappbar sind.

5. System nach Anspruch 1, bei dem die automatischen Türen (7) vom zweiflügeligen Typ sind.

6. System nach Anspruch 1, bei dem das Identifikationsmodul in der geschlossenen Position auf eine Palette (P) geladen werden kann.

7. System nach Anspruch 1, bei dem Solarkollektoren auf dem Dach (5) montiert sind, um zur Stromversorgung aller elektronischen und/oder mechanischen Geräte des Identifikationsmoduls beizutragen.

8. System nach Anspruch 1, bei dem die elektronischen Identifizierungsvorrichtungen im Inneren des Identifizierungsmoduls angeordnet sind und mindestens eine der folgenden Vorrichtungen umfassen: Videokameras, Lautsprecher, Monitore, Benutzerschnittstellen, wie kleine Tastaturen oder "Touchscreens", Netzhaut- oder Gesichtserkennungsscanner, Vorrichtungen zur Erkennung des Vorhandenseins von Drogen oder Sprengstoffen, Smartcard-Leser, Qr-Code-Leser, oder Barcode-Leser.

9. System nach Anspruch 1, bei dem das Identifikationsmodul Ton- und/oder Lichtalarmvorrichtungen umfasst.

10. System nach Anspruch 1, bei dem das Identifikationsmodul an seinem Eingang in der Nähe der automatischen Eingangstür (7) mit einem Metalldetektor und/oder mit einer Zugangszählvorrichtung zum Zählen der Personen, die das Identifikationsmodul betreten, ausgestattet ist.

Revendications

1. Système automatique pour identifier et contrôler des personnes et pour réguler un accès à des zones restreintes comprenant un module d'identification et une pluralité de dispositifs d'identification électroniques associés audit module d'identification, ledit module d'identification comprenant un cadre (2) constitué d'étais de support (3) équipés de roues rétractables (21) au fond pour des raisons de mobilité, **caractérisé en ce que** ledit module d'identification comprend en outre des panneaux latéraux amovibles (4) disposés entre lesdits étais (3) pour constituer les parois latérales du module d'identification ; et un toit (5), aussi amovible, couvrant entièrement le module d'identification, le plan de support du module d'identification étant formé par des plaques de base (6), qui sont verrouillées par des joints au cadre et peuvent être pliées le long d'une ligne droite coupant à travers le module d'identification, le module d'identification comprenant également des portes automatiques (7), placées sur les côtés à des angles droits par rapport à ceux des panneaux, constituant les points d'entrée et de sortie du module d'identification, dans lequel ledit module d'identification peut être déplacé d'une position opérationnelle ouverte à une position fermée en libérant les panneaux (4) et le toit (5) du cadre, en sortant les roues (21) et en pliant en accordéon ledit cadre (2) et les plaques de base (6), en positionnant les panneaux et le toit verticalement à côté du cadre fermé en accordéon obtenant un "cube" compact, de petite taille et facile à transporter.

2. Système selon la revendication 1, dans lequel les roues (21) sont disposées au niveau de l'extrémité inférieure des étais de support (3) du cadre (2) et peuvent être rétractées à l'intérieur des étais de sup-

port (3), de manière à permettre au module d'identification d'être fixe lorsque les roues sont à l'intérieur des étais de support (3) et d'être mobile lorsqu'elles sont sorties.

3. Système selon la revendication 1, dans lequel les panneaux latéraux (4) sont insérés dans des glissières placées sur les étais de support (3).

4. Système selon la revendication 1, dans lequel les plaques de base (6) peuvent être pliées par rapport aux étais de support (3).

5. Système selon la revendication 1, dans lequel les portes automatiques (7) sont du type à deux vantaux.

6. Système selon la revendication 1, dans lequel le module d'identification dans la position fermée peut être chargé sur une palette (P).

7. Système selon la revendication 1, dans lequel des panneaux solaires sont montés sur le toit (5) pour contribuer à l'alimentation en énergie pour tous les dispositifs mécaniques et/ou électroniques du module d'identification.

8. Système selon la revendication 1, dans lequel lesdits dispositifs d'identification électroniques sont placés à l'intérieur du module d'identification et comprennent au moins l'un des dispositifs suivants : des caméras vidéo, des haut-parleurs, des moniteurs, des interfaces utilisateur, telles que des petits claviers ou des "écrans tactiles", des scanners de reconnaissance rétinienne ou faciale, des dispositifs pour détecter la présence de drogues ou d'explosifs, des lecteurs de cartes à puce, un lecteur de codes QR ou un lecteur de codes à barres.

9. Système selon la revendication 1, dans lequel le module d'identification comprend des dispositifs d'alarme sonore et/ou lumineuse.

10. Système selon la revendication 1, dans lequel le module d'identification est équipé, au niveau de son entrée à proximité de la porte automatique d'entrée (7), d'un détecteur de métaux et/ou d'un dispositif de comptage d'accès pour conter les personnes entrant dans ledit module d'identification.

Fig. 1

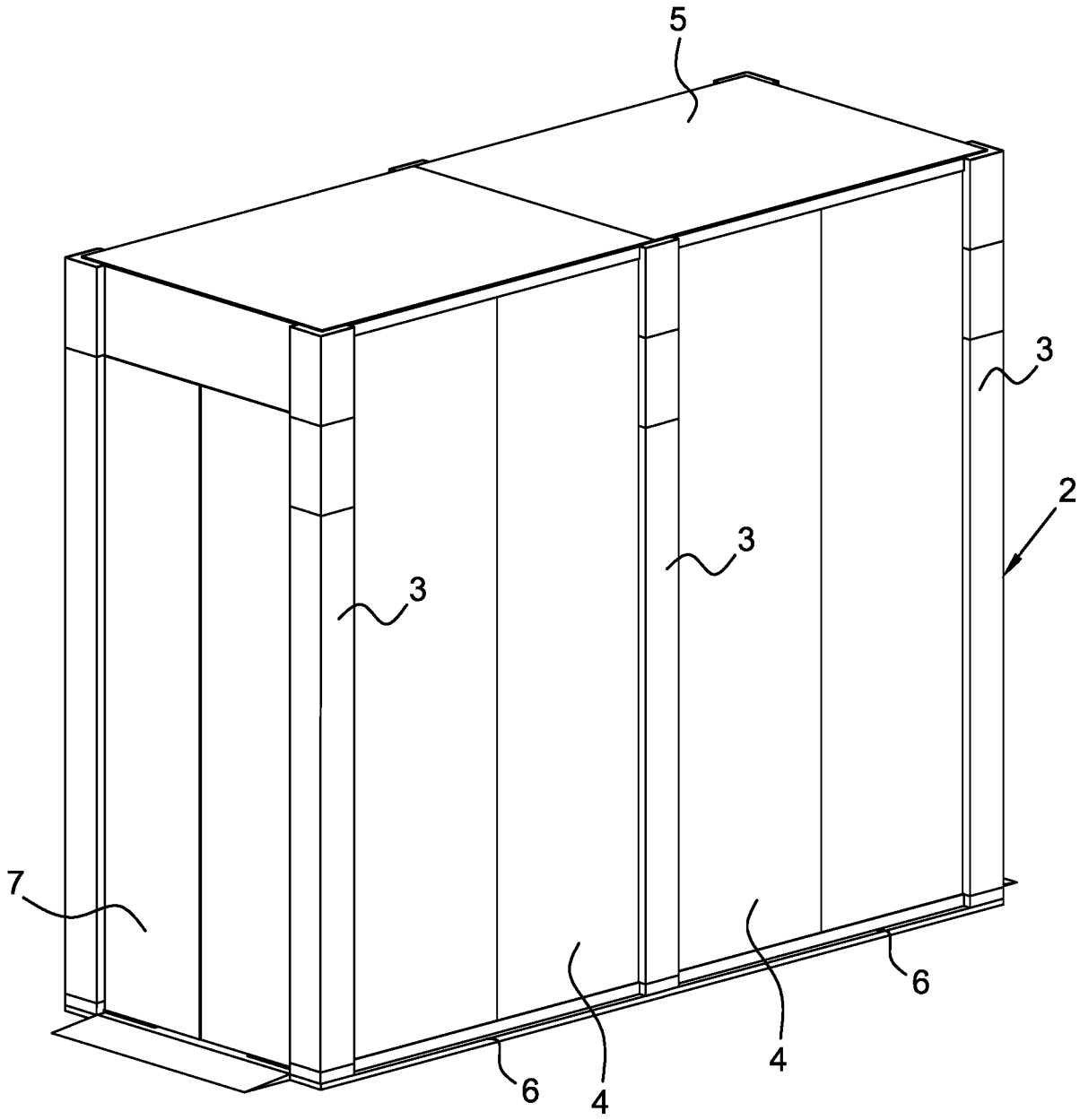


Fig. 2

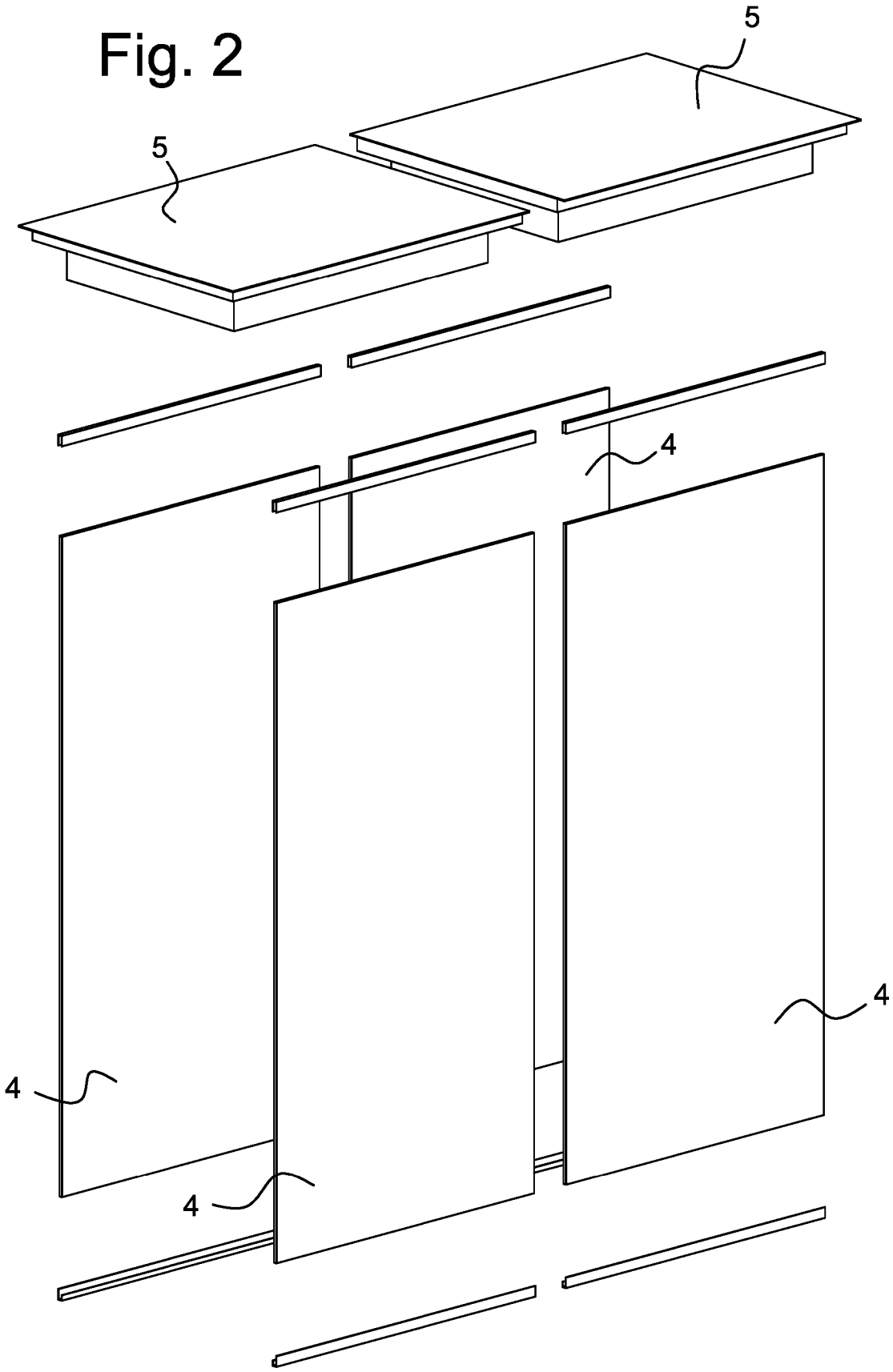


Fig. 3

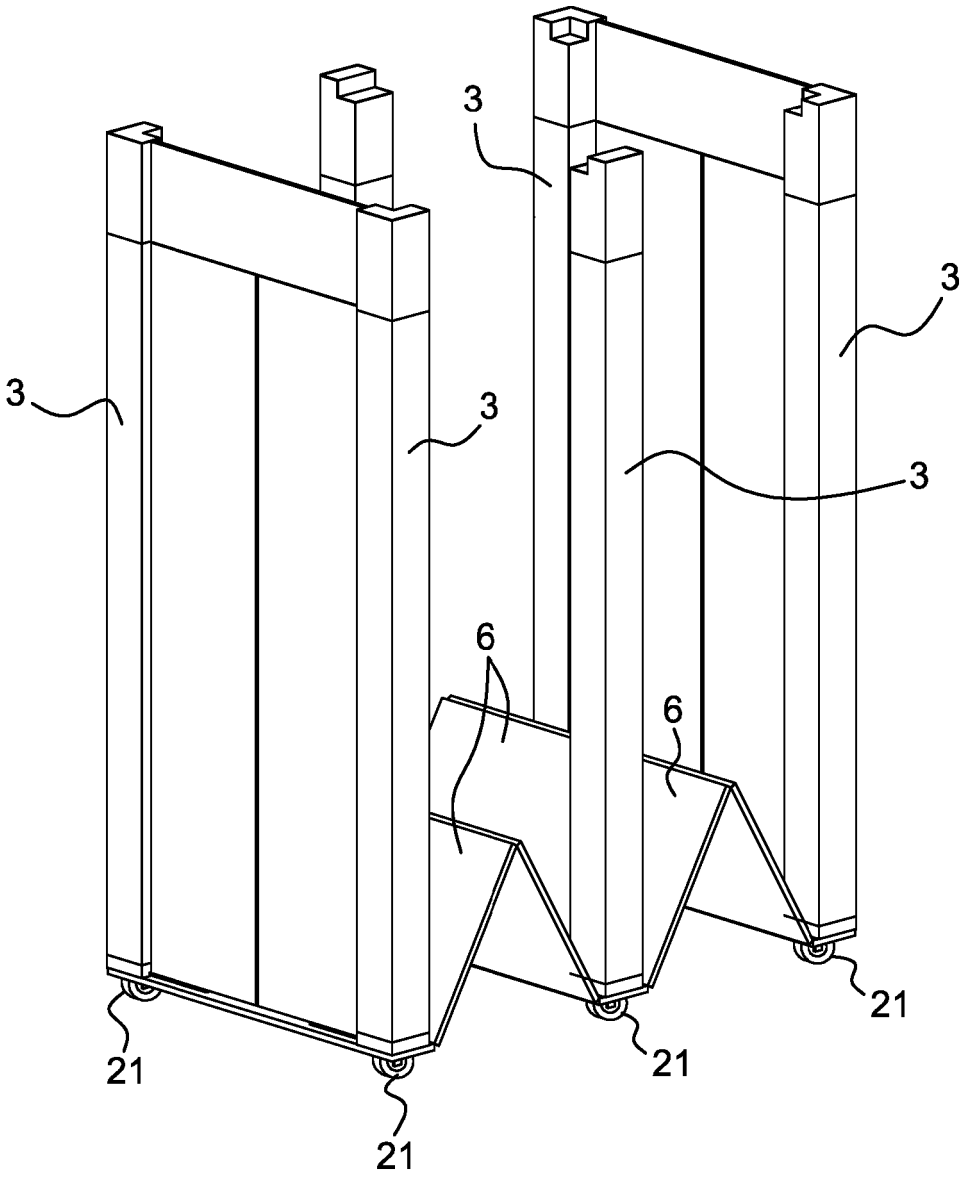


Fig. 4

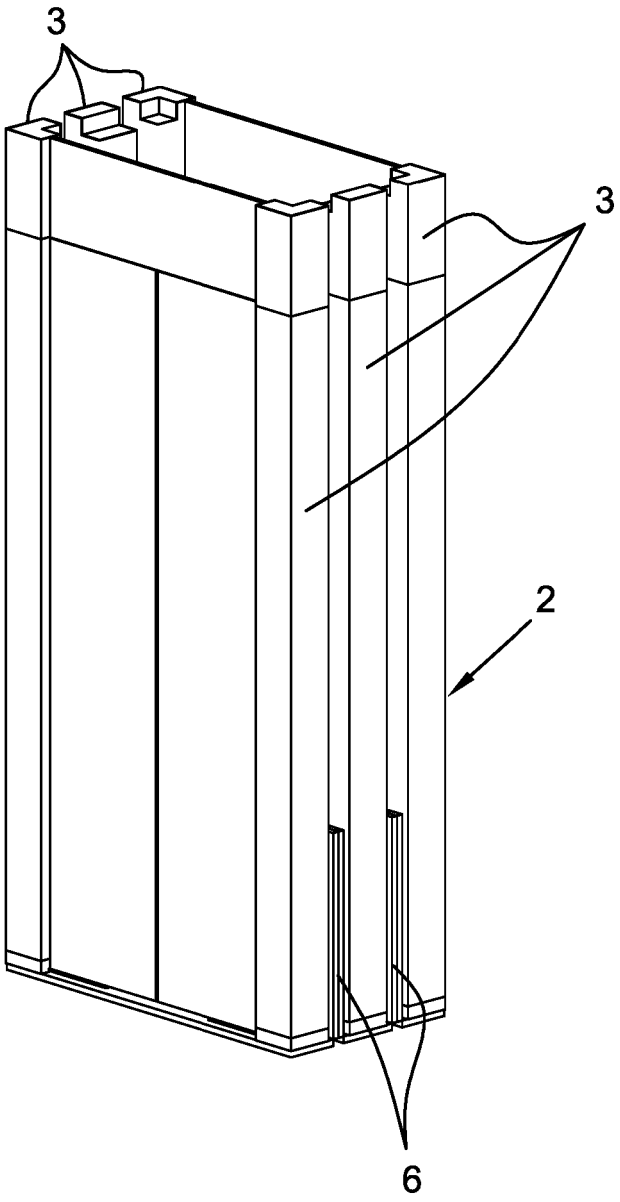
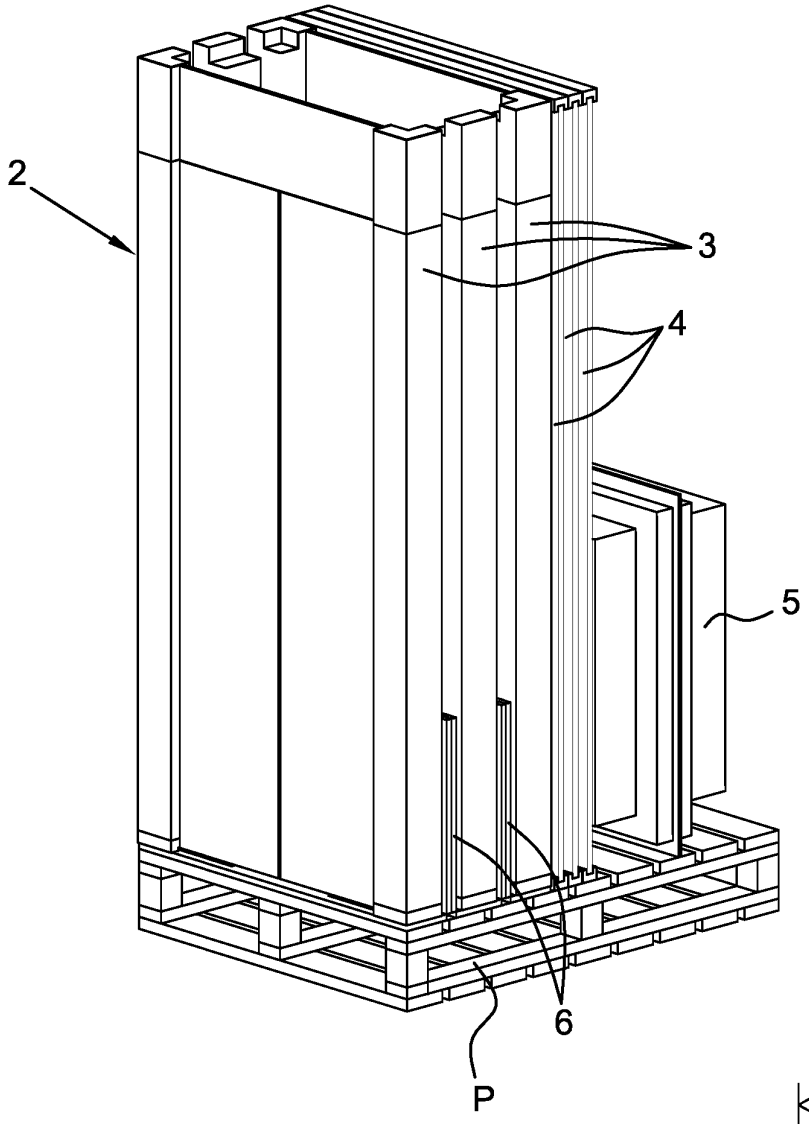


Fig. 5



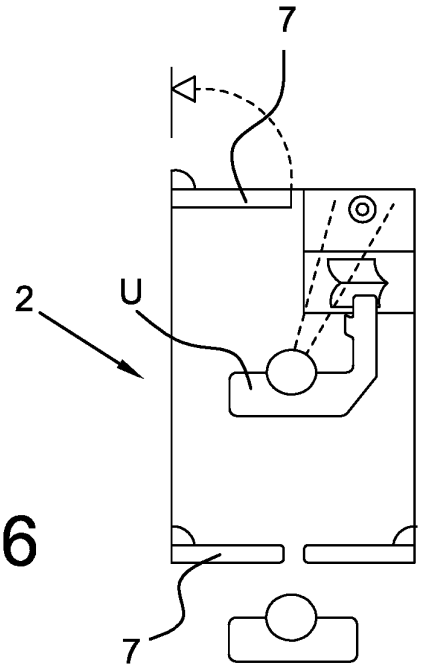


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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- US 2009188540 A1 **[0008]**