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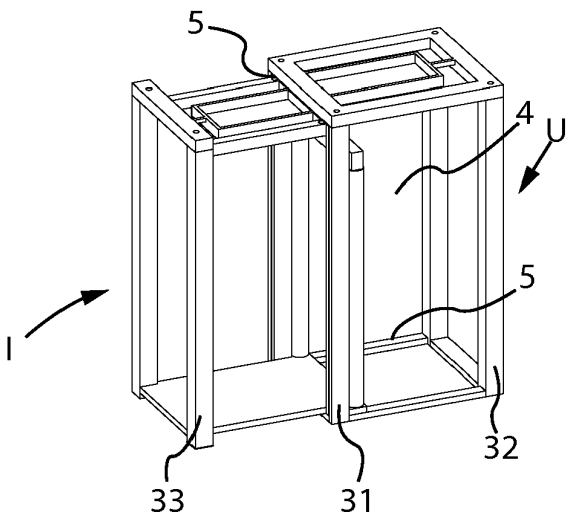
(54) AUTOMATIC SYSTEM FOR IDENTIFYING AND CONTROLLING PEOPLE AND FOR REGULATING ACCESS TO RESTRICTED AREAS

(57) An 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 such module.

Such module comprises a plurality of inverted "U" shaped props, which determine the formation of a substantially parallelepiped structure, having an entrance gate I and an exit gate U equipped with doors, opposing side panels being arranged between the props, which determine the formation of side walls of the module, a fixed central prop and at least a movable one so as to form such substantially parallelepiped structure in the operational or open configuration, having on opposite sides, such entrance gate I and such exit gate U, and, in a closed configuration, substantially a compact "cube", smaller in size than the open configuration.

Fig. 1d



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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 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 include for example courts, airports, public offices, exhibition centres, historical monuments such as churches, museums, etc..

[0004] In general, restricted areas include all those areas where, for a certain period, it is necessary to identify and control all 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, which only become restricted areas for limited periods of time, for example sheds used for exhibitions or trade fairs, which can host events requiring access control for a certain period. 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 and requires a significant number of people appointed to create the installation.

[0006] The applicant set out to solve the problem of how to create an installation for a system for identifying and controlling persons, which is simple and quick to create and place in an operating position. In particular, the applicant has further set out to solve the problem of how to make the disassembled structure easy to carry and how to be able to assemble it quickly in situ.

[0007] One aspect of the present invention regards an automatic system for identifying and controlling persons and regulating access to restricted areas having the features in claim 1. The solution identified according to the present invention allows the structure to be made operational in a simple manner and in the shortest time possible.

[0008] The features and advantages of the present invention will become more apparent from the following description of more embodiment of the invention, provided by way of a non-limiting example, with reference to the attached schematic drawings, wherein:

- figures 1a-1d illustrate a first embodiment of an identification module of the system according to the present invention in a front side view from above and a perspective view in an operational position respectively;
- figures 2a-2d illustrate such first embodiment of an identification module of the system according to the present invention in a closed position;
- figures 3a-3d illustrate a second embodiment of an identification module of the system according to the present invention in a front side view from above and a perspective view in an operational position respectively;
- figures 4a-4d illustrate such second embodiment of an identification module of the system according to the present invention in a closed position;
- figures 5a-5d illustrate a third embodiment of an identification module of the system according to the present invention in a front side view from above and a perspective view in an operational position respectively;
- figures 6a-6d illustrate such third embodiment of an identification module of the system according to the present invention in a closed position;
- figures 7a-7d illustrate a fourth embodiment of an identification module of the system according to the present invention in a front side view from above and a perspective view in an operational position respectively;
- figures 8a-8d illustrate such fourth embodiment of an identification module of the system according to the present invention in a closed position.

[0009] With reference to the described figures, the system according to the present invention comprises an identification module and a plurality of electronic identification devices associated with such module.

[0010] The module comprises a plurality of inverted "U" shaped props, which determine the formation of a substantially parallelepiped structure, having an entrance gate I and an exit gate U provided with doors, which are preferably automatic, for example, double-leaf doors, or made in another equivalent manner.

[0011] Opposing side panels, advantageously transparent, are arranged between the props and determine the formation of side walls of the module.

[0012] The props are provided with wheels (not shown) at the bottom, which guarantee the mobility of the module. Advantageously, such wheels can be retracted into the prop, so as to allow the module to be stationary when they are inside the prop and movable with the wheels pulled out. Preferably, a roof, formed by one or more sheets or other, also removable, integrally covers the module.

[0013] Such module comprises at least one fixed central prop and at least one movable prop so as to form such substantially parallelepiped structure in the operational or open configuration, having such an entrance gate I and such exit gate U on opposite sides, and, in a closed configuration, a substantially a compact "cube", smaller in size than the open configuration.

[0014] In the first embodiment illustrated in figures 1-2 the module comprises a pair of fixed props 31 and 32 joined by fixed side panels 4, forming a fixed frame. On at least one side of such fixed frame, which does not have panels 4, a movable prop 33 is present, equipped

at the side with similar panels 4 forming a movable frame, which can slide telescopically with respect to the fixed frame. A door is installed on such movable prop so as to form an entrance gate (for entering or exiting) while a door is installed on the fixed prop placed on the opposite side where the movable frame slides so as to form another entrance gate (exit or entrance).

[0015] The movable frame slides with respect to the fixed frame through guides 5 obtained close to the base and the top of the fixed props. The movable frame can slide away from the fixed frame until reaching the operational position forming such substantially parallelepiped structure, or approaching until it is substantially completely inserted therein forming such compact "cube".

[0016] In the second embodiment illustrated in figures 3-4 the module comprises two movable frames, each formed by a respective prop 33 or 33', arranged one on each side of the fixed frame, while the doors are placed on the movable props of the movable frames.

[0017] The movable frames slide with respect to the fixed frame through similar guides 5 obtained close to the base and the top of the fixed props. The movable frames can slide away from the fixed frame until reaching the operational position forming such substantially parallelepiped structure, or approaching until both are substantially completely inserted therein forming such compact "cube".

[0018] In the third embodiment illustrated in figures 5-6, the module comprises at least three props, of which at least a central 31 one, among the others at least one pair of opposing side props 33 and 33', which move relatively to each other by means of pantograph mechanisms 6 arranged therebetween, preferably both on the top and at the base of the props. A door is installed on each of the side props 33 and 33', so as to form an entrance gate on one side and an exit gate on the other of the module when it is in an operational position.

[0019] The movable props move with respect to one another by means of the pantograph mechanisms 6. In particular, they move away from one another until reaching the operational position, forming such substantially parallelepiped structure, and approaching until they are side by side, next to one another, forming such compact "cube".

[0020] Side panels 4 of the module are associated with such pantograph mechanisms obtained so as to fold on each other similarly to such mechanism 6.

[0021] In the fourth embodiment illustrated in figures 7-8 the module comprises a pair of fixed props 31 and 32 joined by fixed side panels 4, forming a fixed frame. On at least one side of such fixed frame, which does not have panels 4, at least one pair of opposing side props 33 and 33' is present, forming respective movable frames, which move with respect to one another and with respect to the fixed frame by means of pantograph mechanisms 6 arranged between the fixed and movable props on at least on one side of the module, preferably on both sides.

[0022] A door is installed on such movable props so as to form an entrance gate (for entering or exiting).

[0023] The movable frames can slide away from the fixed frame until reaching the operational position forming such substantially parallelepiped structure, or approaching until they are substantially completely inserted therein, forming such compact "cube".

[0024] When the module is in the closed position it can easily be carried by means of the wheels and also loaded onto a pallet, as shown in figures 2d 4d and 6d and 8d.

[0025] Advantageously, the wheels can be used during the step of passing from the open configuration to the closed configuration and vice versa.

[0026] In this way, the module can be brought from the operational open position to a closed position optionally releasing the roof and an optional separate base (where present). Such components can be positioned vertically, by the side of the module, which is closed again, obtaining a compact "cube".

[0027] In this way the module can be easily carried and constitute a system for controlling access to areas, which are not normally provided with such devices on a permanent basis.

[0028] The materials with which the module was realized are compatible with a use thereof outdoors, therefore they are materials, which are resistant to rain and other atmospheric conditions in general.

[0029] The identification devices placed inside the module can comprise television cameras, loudspeakers, monitors, interfaces for communicating with users U inside the module (such as small keyboards or "touch screens"), retinal or facial recognition scanners, devices adapted to detect the presence of drugs or explosives, smart card readers, Qr code bar codes etc..

[0030] Furthermore, advantageously, solar panels can be provided on the roof 5 to contribute to the supply of power for all of the module's electronic and/or mechanical devices.

[0031] The module further comprises also sound and/or light alarm devices, which are activated if a potential danger is recognized inside the module or simply an identification failure.

[0032] Advantageously, at the entrance to the module, close to the automatic entrance door, a metal detector and/or an access counting device can be provided for counting the people entering the module.

[0033] Finally, the module can be equipped with a WI-FI system for external communication and also for connection with the electronic devices present.

[0034] The module is also provided with controlled lighting devices so as to keep a constant lighting inside, also in the presence of light variation outside.

Claims

1. An automatic system for identifying and controlling persons and regulating access to restricted areas

comprising an identification module and a plurality of electronic recognition devices associated with said module,
characterised in that such module comprises

• a plurality of props shaped as an inverted "U", which determine the formation of a substantially parallelepiped structure, having an entrance gate I and an exit gate U provided with doors,
• opposing side panels being arranged between the props, which determine the formation of side walls of the module,
• at least one central fixed prop and at least one movable prop, so as to form, in the operational, or open configuration, such substantially parallelepiped structure having such entrance gate I and such exit gate U on opposite sides, and, in a closed configuration, substantially a compact "cube", smaller in size than the open configuration.

2. A system according to claim 1, wherein the module comprises a pair of fixed props (31,32) joined by fixed side panels (4) which form a fixed frame on at least one side of such fixed frame, which does not have panels (4), a movable prop (33) being present laterally provided with similar panels (4) which forms a movable frame able to slide telescopically with respect to the fixed frame.

3. A system according to claim 2, wherein a door is installed on such movable prop so as to form an entrance gate while, on the fixed prop, placed on the opposite side where the movable frame slides, a door is installed so as to form a further entrance gate.

4. A system according to claim 3, wherein the module comprises two movable frames arranged one on each side of the fixed frame, while the doors are arranged on the movable props of the movable frames.

5. A system according to claim 3, wherein the movable frames slide with respect to the fixed frame through guides (5) obtained close to the base and the top of the fixed props.

6. A system according to claim 1, wherein the module comprises at least three props, of which at least a central one (31) and among the others at least one pair of opposing side props (33,33'), which move relatively to each other by means of pantograph mechanisms (6) arranged therebetween, a door being installed on each of the side props (33,33'), so as to form an entrance gate on one side and an exit gate on the other side to the module when it is in the operational position.

7. A system according to claim 1, wherein the pantograph mechanisms (6) are arranged both on the top and at the base of the props themselves.

8. A system according to claim 1, wherein the module comprises a pair of fixed props (31,32) joined by fixed side panels (4) which form a fixed frame, on at least one side of such fixed frame, which does not have panels at least one pair of opposing side props (33,33') being present, which form respective movable frames, which move relatively to each other and with respect to the fixed frame by means of pantograph mechanisms (6) arranged between the fixed and movable props on at least one side of the module.

9. A system according to claim 8, wherein the pantograph mechanisms (6) are arranged on both sides of the module.

10. A system according to claim 1, wherein side panels (4) of the module are associated with such pantograph mechanisms so as to fold on each other similarly to such mechanism (6).

11. A system according to claim 1, wherein the wheels are arranged at the lower end of support props.

12. A system according to claim 1, wherein the doors (7) are of the double-leaf type.

13. A system according to claim 1, wherein, in the closed position, the module can be loaded onto a pallet.

14. A system according to claim 1, wherein the identification devices placed inside the module can 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 adapted to detect the presence of drugs or explosives, smart card readers, Qr code bar codes, etc....

15. A system according to claim 1, wherein the module comprises sound and/or light alarm devices.

16. A system according to claim 1, wherein, at the entrance to the module, close to the automatic entrance door, the module can be provided with a metal detector and/or an access counting device for counting the people entering the same module.

Fig. 1a

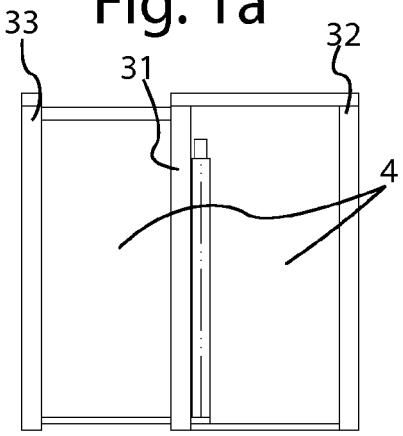


Fig. 1b

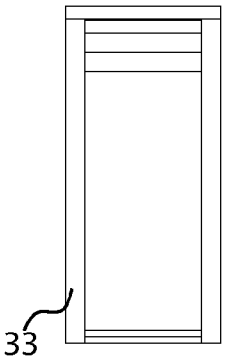


Fig. 1d

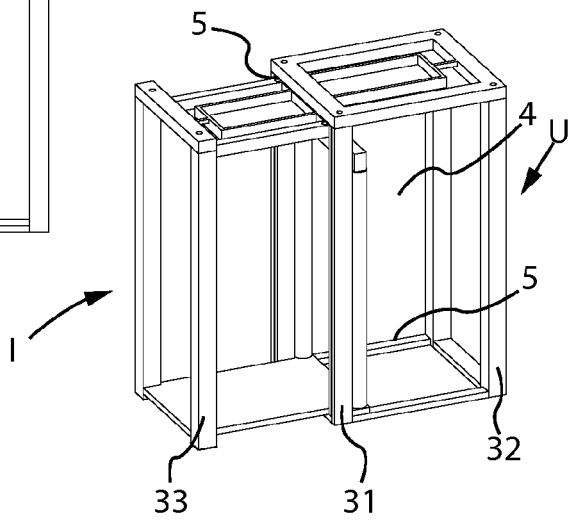


Fig. 1c

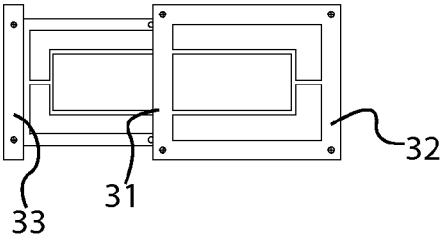


Fig. 2a

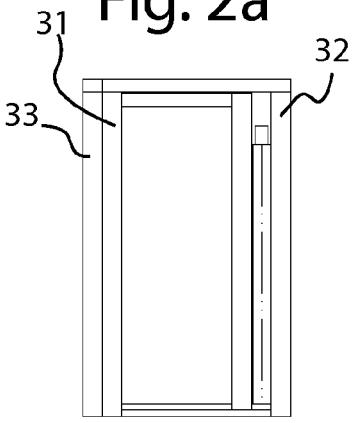


Fig. 2a

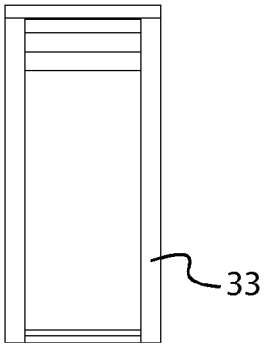
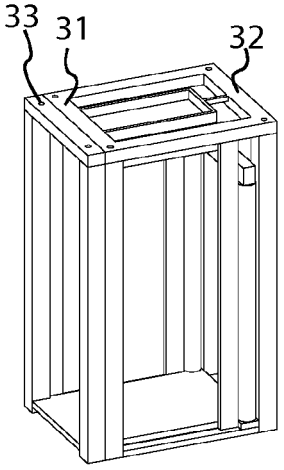


Fig. 2d



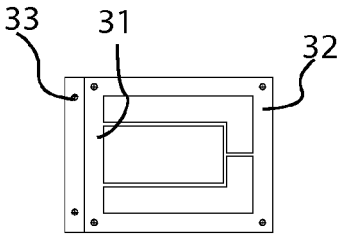


Fig. 2c

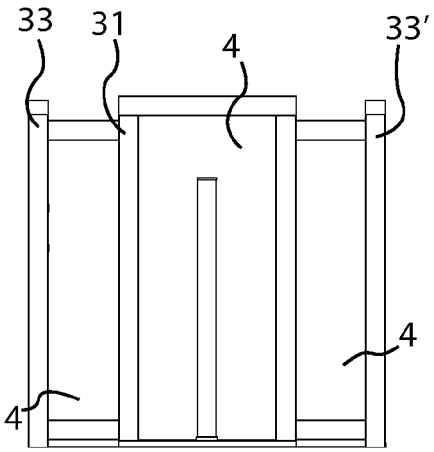


Fig. 3a

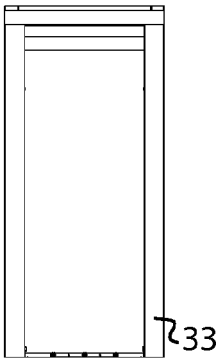


Fig. 3b

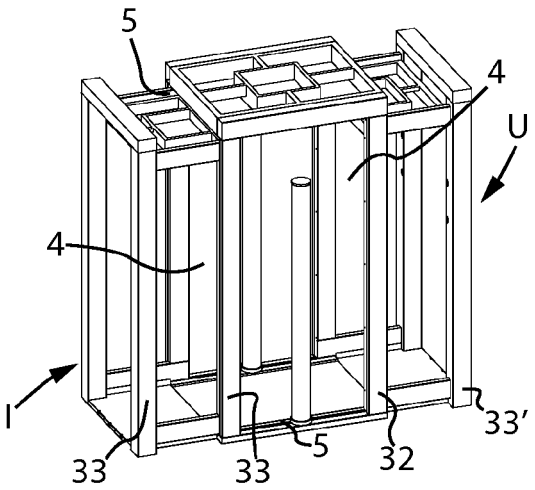


Fig. 3d

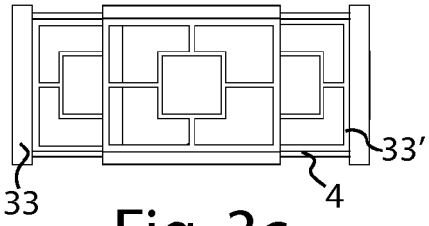


Fig. 3c

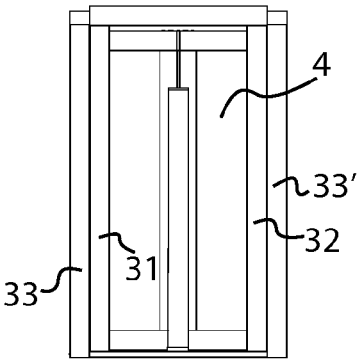


Fig. 4a

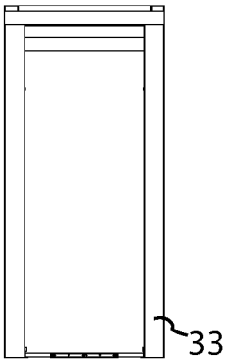


Fig. 4b

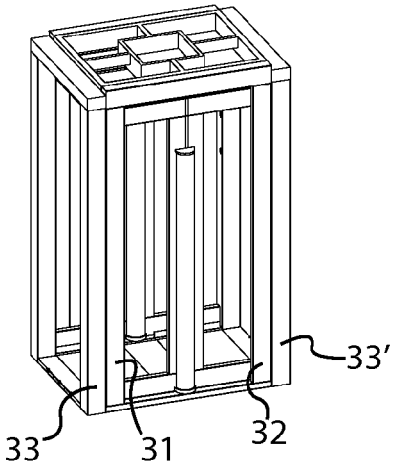


Fig. 4d

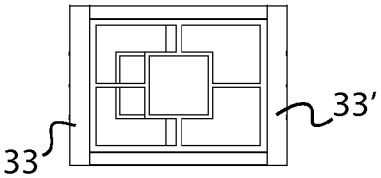


Fig. 4c

Fig. 5a

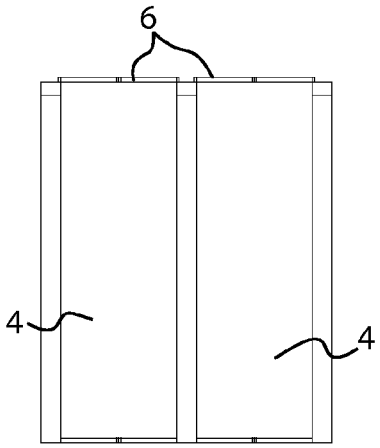


Fig. 5b

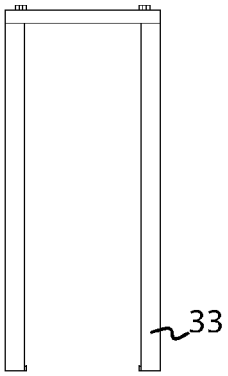


Fig. 5d

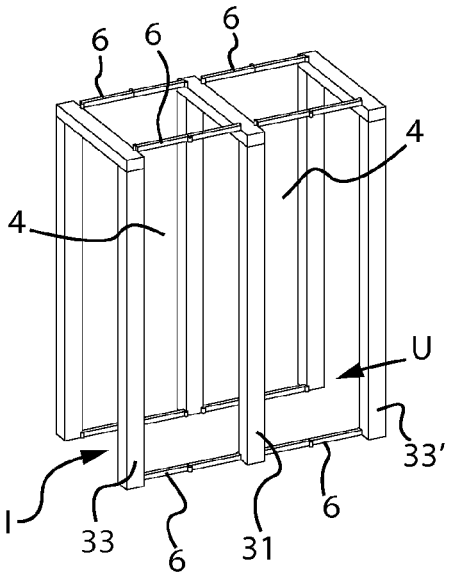


Fig. 5c

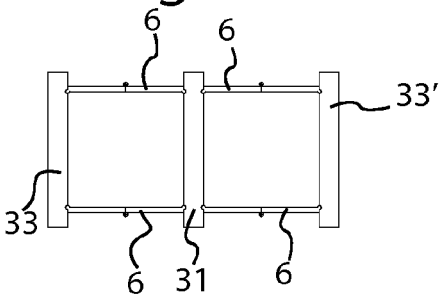


Fig. 6a

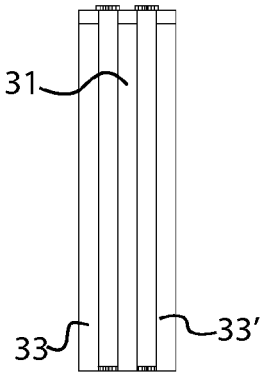


Fig. 6b

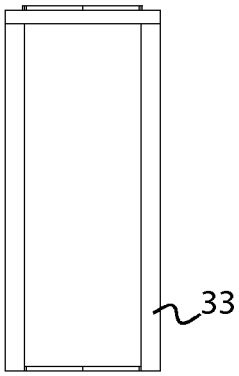


Fig. 6d

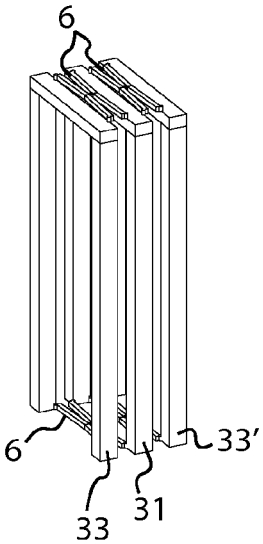


Fig. 6c

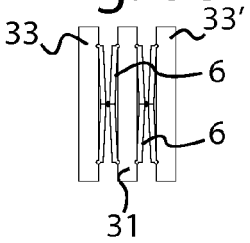


Fig. 7a

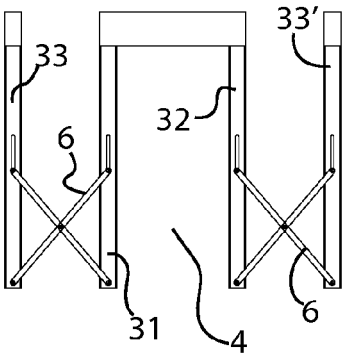


Fig. 7b

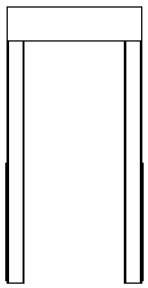


Fig. 7c

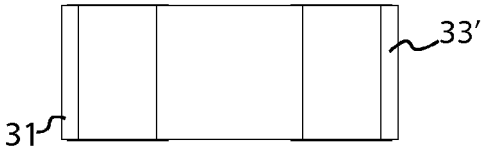


Fig. 7d

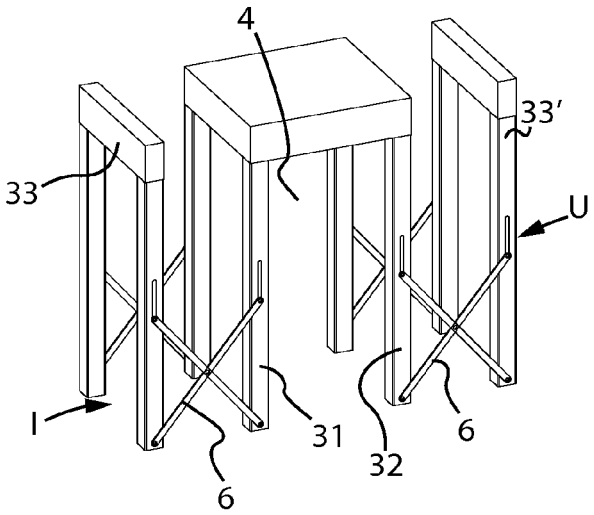


Fig. 8a

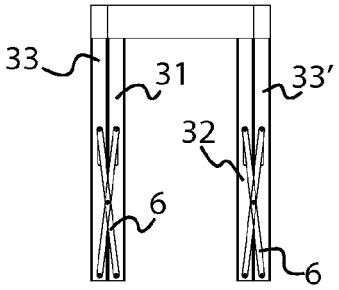


Fig. 8b

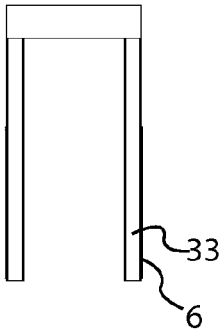


Fig. 8c

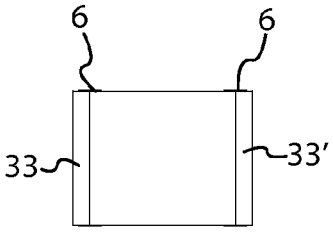
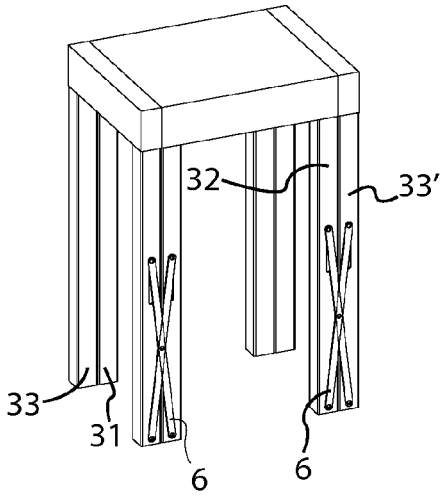


Fig. 8d



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EUROPEAN SEARCH REPORT

Application Number
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	8 August 2019	Pañeda Fernández, J

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