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(54) A BALCONY OR AN ATTACHED TERRACE

(57) A balcony has a supporting structure of the platform (1) attached to at least two load-bearing pillars (2) located on foundations outside the building and running along all balcony floors. The balcony balustrade is suspended on load-bearing pillar (2) through longitudinal handles (4) finished on one side with profiles with a profile adapted to the cut (8) in the pillar (2) and on the other side with the brackets (5) securing the filling (6) of the balustrade. Between the load-bearing pillars (2) there are balustrade pillars (3) leaning against the supporting structure (1) and connected on both sides with the same handles (4) through the cuts (7). Another variant of the balcony has a balustrade suspended with a filling (17) on the profile (18) connected to load-bearing pillars (2) and balustrade pillars (19), which are attached to the supporting structure (1) of the platform, wherein the profile (18) is placed inside the railing (20) of the balustrade. The balcony has at least two handles (13) with guides attached to the inner side of the supporting structure (1) for the T-bar (14) connecting the balcony to the façade (15) of the building. Water drainage gutter (26) is located on the inner side of the balustrade (27) and the drainage (28) is located in the side part of the supporting structure (1) under the platform (29). Individual balcony columns are mounted using the connectors (31) to the load-bearing pillars (2).

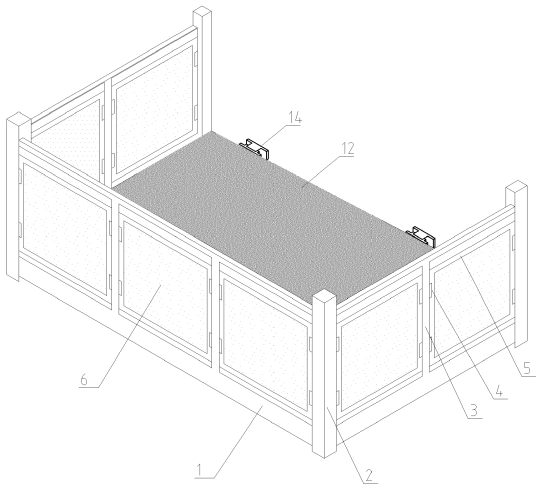

FIG. 6

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Description

[0001] The subject of this invention is a structure of a balcony or an attached terrace to be installed outside the existing or newly constructed buildings without interfering in the internal structure of the building.

[0002] Protective description of the Polish utility model Ru. 65644 discloses "A balcony for mounting on the existing building, especially built in a large-frame system". In a top view the support frame of this balcony has the shape of a rectangular letter "C" with connection nodes made at the ends of the side arms. The nodes have feet with holes for anchors, which are embedded with a chemically hardening joint in the roof beam of the building. The floor panel is glued along three edges to the inwardly extending three sides of the support frame of the horizontal bracket. It is made of a composite board, having a core of insulating material and a sheathing. Moreover, at the side ends of the balustrade upper arms vertical plates are mounted, with an opening for the anchor fixed with a chemically hardened joint in the vertical element, which is connected to the tie beams or floor slabs of adjacent floors.

[0003] Another known solution according to the patent description PL170056 concerns a balcony with a supporting structure whose brackets are fixed at least in one place with beams in the inter-storey ceiling, with a floor panel, placed on a supporting structure and with a cladding from the bottom made of aluminium sheet metal. A balcony is characterized in that it has a frame bracket, framing the whole floor, made of an aluminium section, having a number of rectangular, closed channels and a floor with a slab floor laid on aluminium channel sections, arranged parallel, side by side and connected to each other. The frame support consists of several segments of the section, juxtaposed with each other diagonally, connected by means of bent angular connectors, embedded in rectangular channels of the section segments.

[0004] Still another solution according to the European Patent description EP0939172 entitled "An external civil structure to be connected to an existing building structure". According to this solution the base plate of the balcony or terrace is connected to the ceiling slab of the building by means of fixing elements formed as anchors, which are fastened with the help of glue in a suitable choice in the ceiling of the building. The anchor has a diameter smaller than the anchor body at its free end and is able to absorb tensile forces. The anchor body and/or projection are connected to the inner wall of the cavity by a multi-component adhesive mixture.

[0005] The above solutions, to be assembled require the interference in the internal structure of the building through various types of anchors supporting the balcony structure and fixed in the ceiling of the building, which makes the balcony assembly longer.

[0006] The object of the invention is the structure of a balcony or terrace which does not require interference in the structure of the building and can be completely manufactured outside the building from prefabricated elements.

[0007] The balcony or terrace according to the invention is characterized in that the supporting structure of its platform is attached to at least two load-bearing pillars located on foundations outside the building and running along all balcony floors.

[0008] The balcony has a balustrade suspended on load-bearing pillars through longitudinal handles finished on one side with profiles with a profile adapted to the cut in the load-bearing pillar and on the other side with a bracket securing the filling of the balustrade. Between the load-bearing pillars there are balustrade pillars leaning against the supporting structure and connected on both sides with the same handles through the cuts in the balustrade pillar.

Another version of the balcony structure has a balustrade suspended with a filling on the profile connected to load-bearing pillars and balustrade pillars, which are attached to the supporting structure of the platform and the profile itself is placed inside the railing of the balustrade.

The balcony has at least two handles with guides attached to the inner side of the supporting structure for the T-bar connecting the balcony to the wall of the building.

In a different version has at least two handles made as angle brackets with a perpendicular plate designed to be stuck in the façade, attached to the inner side of the supporting structure. The balcony on the top floor can have a roof supported on the load-bearing pillars.

[0009] The main advantage of the solution is that there is no need to interfere in the structure of the building in order to mount the balcony. This makes it possible to significantly shorten the assembly because the entire balcony is assembled from prefabricated elements outside the building, for example in a workshop or factory. Assembly at the building takes about 2-3 days.

The invention will now be further described in embodiments presented in the drawings.

In the first embodiment fig. 1. shows a perspective view of a balcony, fig. 2 - is a perspective view of a balcony corner, fig3 - a horizontal section of a corner with separated elements, fig. 4 -perspective view of the platform, fig. 5 - a horizontal section of a platform, fig.6 -a perspective view of a balcony with connecting elements, fig. 7 - connecting elements, fig 8- a horizontal section of a set of the connecting elements.

In this embodiment the balcony structure comprises a frame supporting structure **1** including the platform, attached to the load-bearing pillars **2.** Balustrade pillars **3** together with the balustrade handles **4** and attached balustrade bracket **5** which houses the balustrade filling **6** are supported on the supporting structure **1.** The handle **4** engages with the load-bearing pillar **2** through the profiles adapted to the cut **8** in the pillar **2.** The same handles **4** are connected to intermediate balustrade pillars **3** through the cuts **7.** The platform comprises the supporting structure in the form of parallel profiles **10** supported

on the bottom slab **9,** on which the floor is laid in the form of panels **11** or ceramic tiles. Handles **13** with guides are attached to the inner side **12** of the balcony for the T-bar **14** connecting the balcony to the façade of the building **15.** In order to match the unevenness of the façade the bracket **14** may have a telescopic retractable core **16.**

In the second embodiment fig. 9 shows a perspective view of a balcony for the second variant of the balustrade structure, fig. 10 - is a perspective view of a balcony corner for the second variant, fig. 11 - a horizontal section of a corner with separated elements for the second variant, fig. 12 - a perspective view of a balcony with connecting elements for the the second variant, fig. 13 - connecting elements for the second variant, fig 14- a horizontal section of a set of the connecting elements for the second variant.

In the variant shown in the second example, the supporting structure of the platform together with load-bearing pillars is made in the same way as in the first example. The structure of the balustrade is different. Namely, the balustrade is suspended together with the filling **17** on the profile **18** connected to load-bearing pillars **2** and balustrade pillars **19,** which are attached to the supporting structure **1** of the platform and the profile **17** itself is placed inside the railing **20** of the balustrade.

Another figures of the drawing show the detailed solutions of the individual components of the balcony. Figures 12, 13, 14, 15 show the second variant of mounting the balcony to the façade, figures 16, 17 - drainage solution, fig. 18-assembly of balcony columns, fig. 19 - a balcony with a roof, fig. 20 - a set of balcony columns mounted on 4 load-bearing pillars, fig. 21 - a set of balcony columns mounted on 2 load-bearing pillars.

Mounting the balcony to the façade **15** according to the second variant has an angle bracket **21,** whose base **22** is fastened with screws 23 to the supporting structure and bottom slab of the platform. An arm **24** with a plate **25** attached to it at the right angle designed for anchoring in the façade is vertically extended to the base **22.**

Drainage is carried out with a gutter **26** located on the inside of the balustrade **27** of the balcony. Therefore, the drainage **28** is running under the platform **29.**

The assembly of the balcony starts from mounting the lowest segment of the load-bearing pillars **2** and connecting the façade parts **30** of the brackets **21** to the façade 15. Then the connectors **31** are mounted inside the load-bearing pillars **2** and the supporting structure 1 together with the platform **29** is put on the load-bearing pillars Having connected the platform with the façade of the building using the brackets **30,** another segment of the load-bearing pillars **2** together with the balustrades is out on the supporting structure **1** and next connectors are mounted **31.** These activities are repeated until the entire column is constructed, wherein the highest located balcony may have a roof, as shown in fig. 19. The roof **33** is supported on the extended segment of the load-bearing pillars **2.**

The balcony column shown in fig. 20 has four load-bearing pillars **2,** while the column shown in fig. 21 is supported on two load-bearing pillars **2** and angle brackets **21.** This structure is used with fewer storeys and lighter structures of the balconies in the column.

The fillings **6** of the balustrades may be made of various materials including photovoltaic panels and energy-saving lighting, which as an additional effect will bring savings in energy consumption.

The list of designations

[0010]

1. Supporting structure
2. Load-bearing pillar
3. Balustrade pillar
4. Balustrade handle
5. Balustrade bracket
6. Balustrade filling
7. Cuts in the balustrade pillar 3
8. Cuts in the load-bearing pillar 2
9. Bottom slab
10. Profiles
11. Panels
12. Inner side
13. Connecting handle
14. T-bar
15. Façade
16. Core of the bracket
17. Balustrade filling variant 2
18. Balustrade profile
19. Balustrade pillar variant 2
20. Balustrade railing
21. Angle bracket
22. Bracket base
23. Screws
24. Arm of the bracket
25. Plate of the bracket
26. Gutter
27. Balustrade
28. Drain
29. Platform
30. Bracket
31. Connector
32. Balustrades in assembly
33. Roof

Claims

1. A balcony or attached terrace comprising the frame supporting structure including the platform with the floor laid on metal, parallel channel sections, **characterized in that** the supporting structure of the platform (1) is attached to at least two load-bearing pillars (2) located on foundations outside the building and running along all balcony floors.

2. A balcony or attached terrace according to 1, **char-**

acterized in that the balustrade is suspended on the load-bearing pillar (2) through longitudinal handles (4) finished on one side with profiles with a profile adapted to the cut (8) in the pillar (2) and on the other side with the brackets (5) securing the filling (6) of the balustrade and between the load-bearing pillars (2) there are balustrade pillars (3) leaning against the supporting structure (1) and connected on both sides with the handles (4) through the cuts (7).

3. A balcony or an attached terrace according to claim 1, **characterized in that** the balustrade is suspended with a filling (17) on the profile (18) connected to load-bearing pillars (2) and balustrade pillars (19), which are attached to the supporting structure (1) of the platform, wherein the profile (18) is placed inside the railing (20) of the balustrade.

4. A balcony or an attached terrace according to claim 1, 2 or 3, **characterized in that** it has at least two handles (13) with guides attached to the inner side of the supporting structure (1) for the T-bar (14) connecting the balcony to the façade (15) of the building.

5. A balcony or an attached terrace according to claim 1, 2 or 3, **characterized in that** it has at least two handles (13) made as angle brackets (21) with a perpendicular plate (25) designed to be stuck in the façade (15), attached to the inner side of the supporting structure (1).

6. A balcony or an attached terrace according to any one of claims 1-5, **characterized in that** the water drainage gutter (26) is located on the inner side of the balustrade (27) and the drainage (28) is located in the side part of the supporting structure (1) under the platform (29).

7. A balcony or an attached terrace according to any one of claims 1-6, **characterized in that** it has a roof supported on the load-bearing pillars (2) extended to the roof height (33).

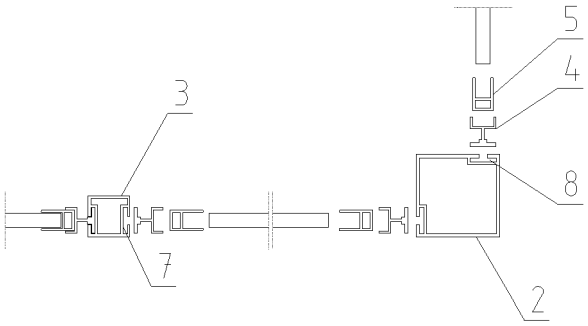

FIG. 3

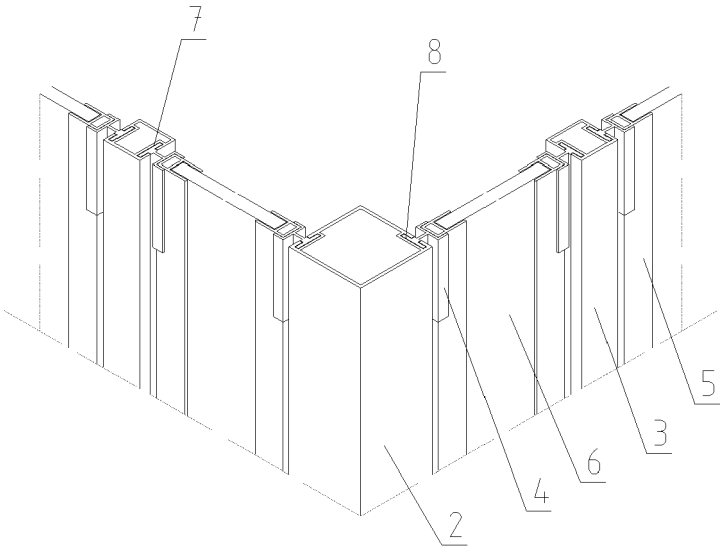

FIG. 2

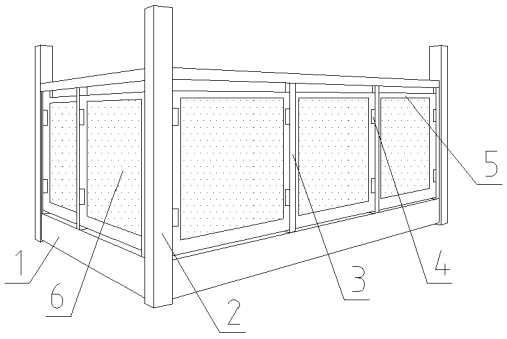

FIG. 1

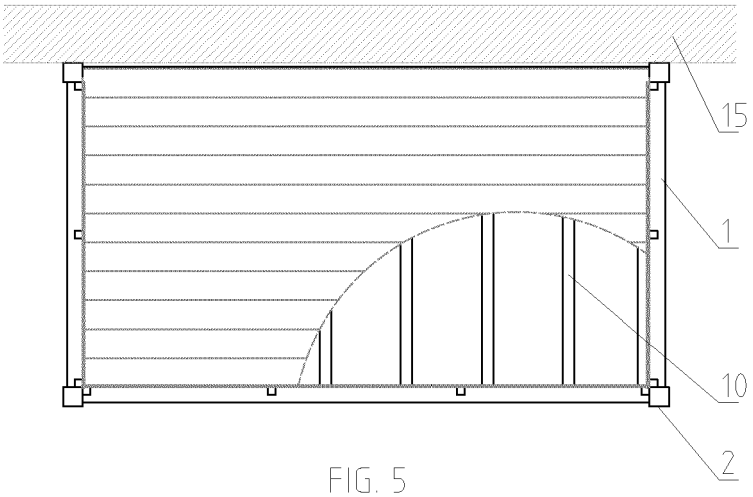

FIG. 5

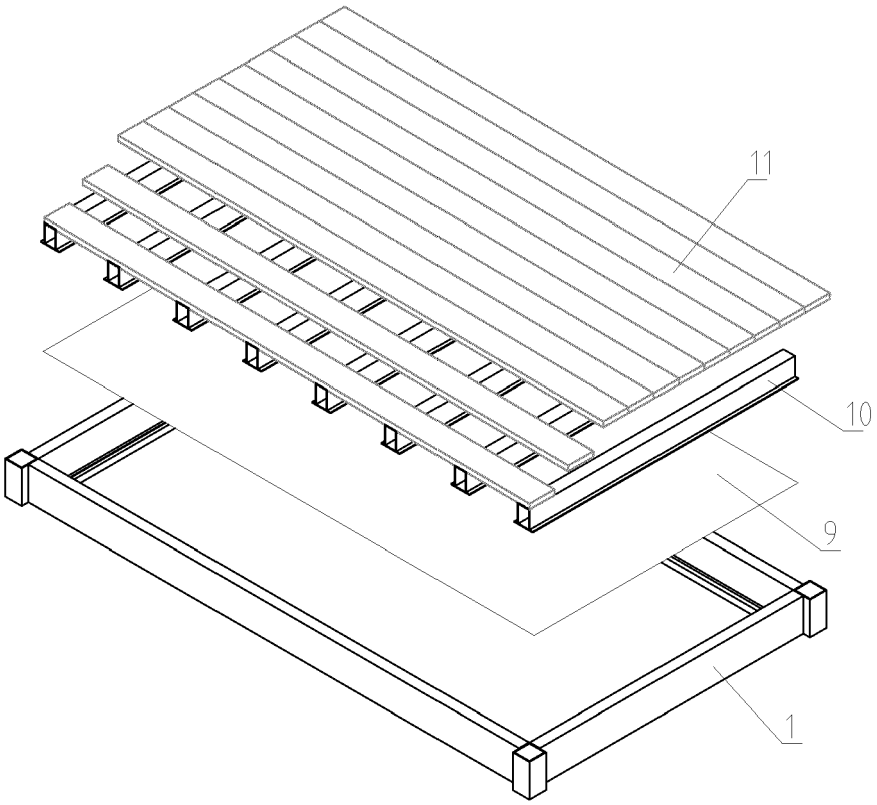

FIG. 4

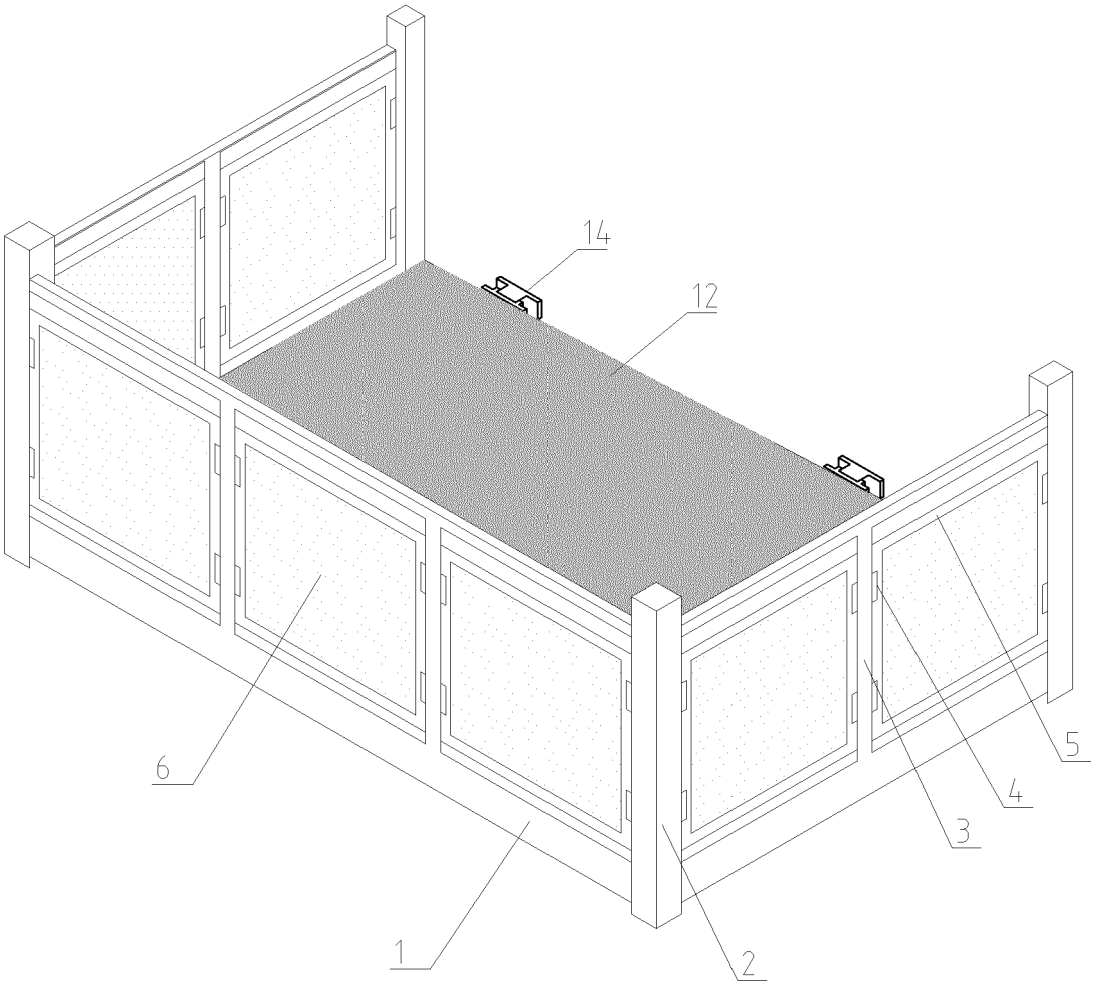

FIG. 6

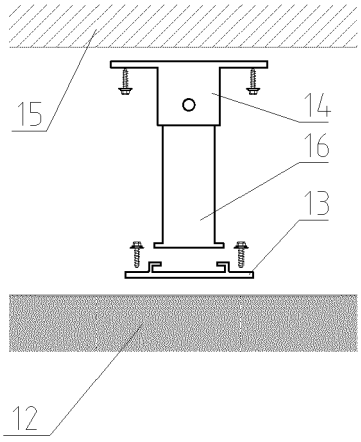

FIG. 8

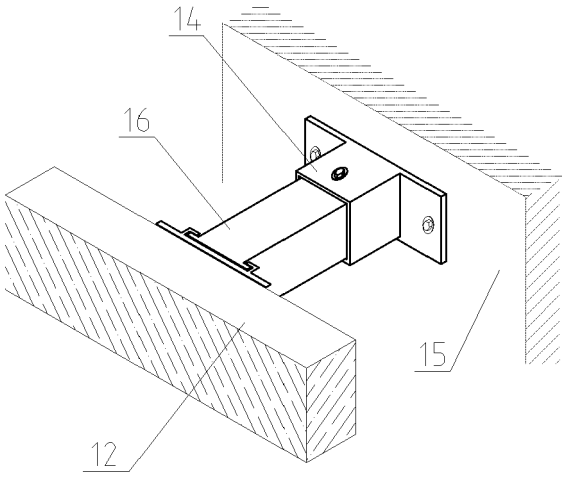

FIG. 7

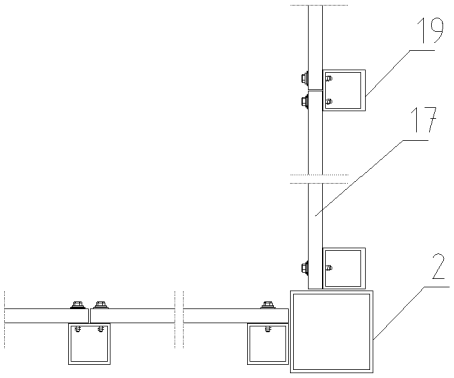

FIG. 11

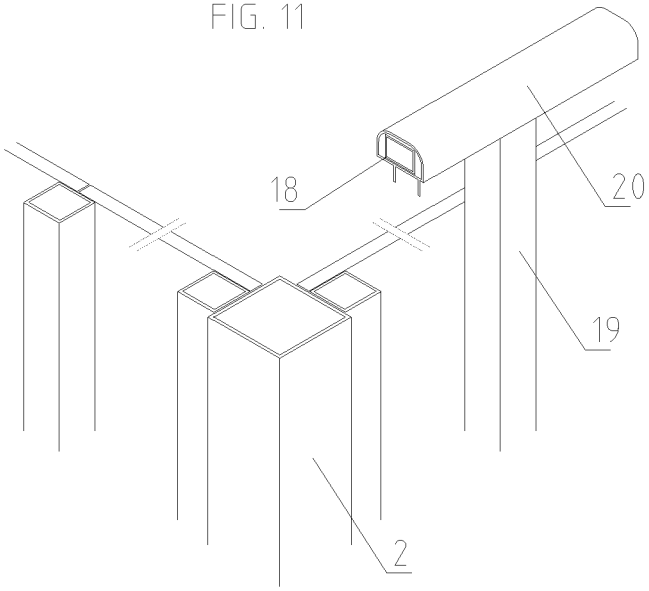

FIG. 10

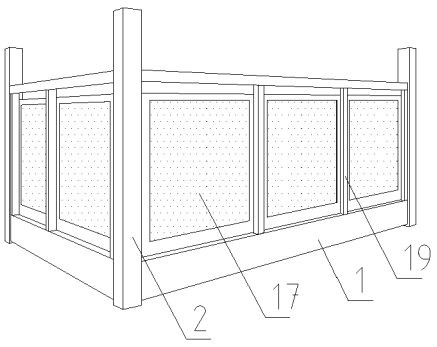

FIG. 9

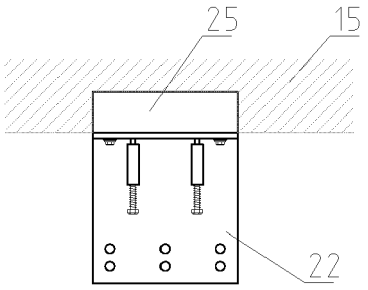

FIG. 14

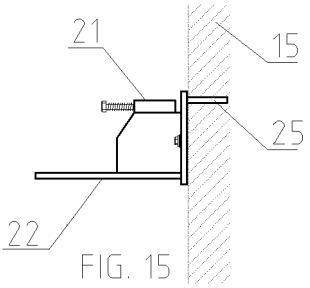

FIG. 15

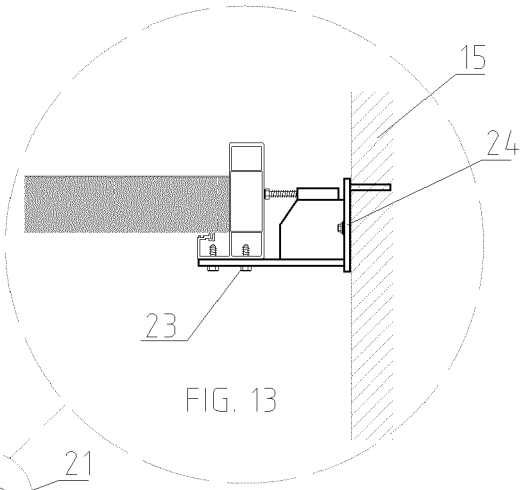

FIG. 13

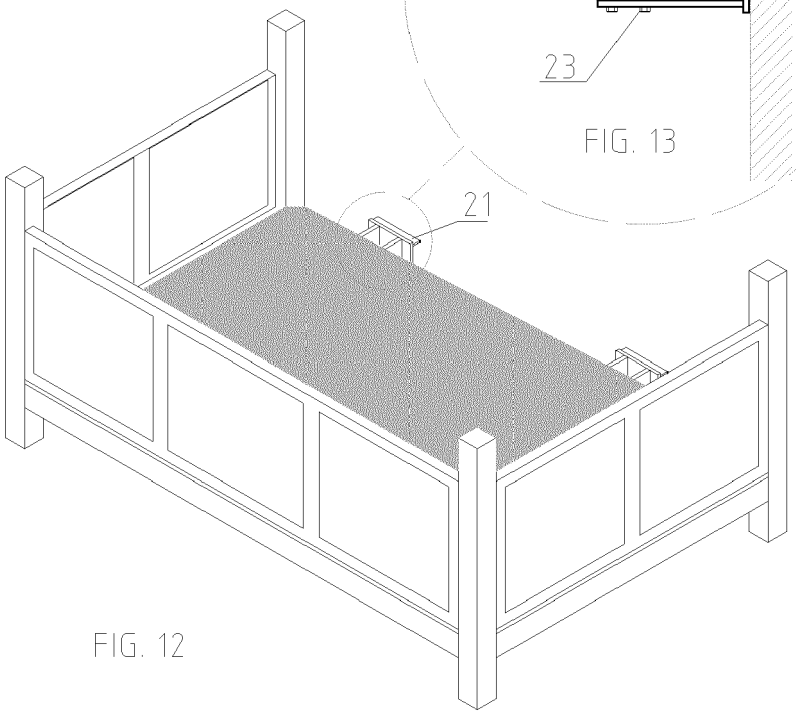

FIG. 12

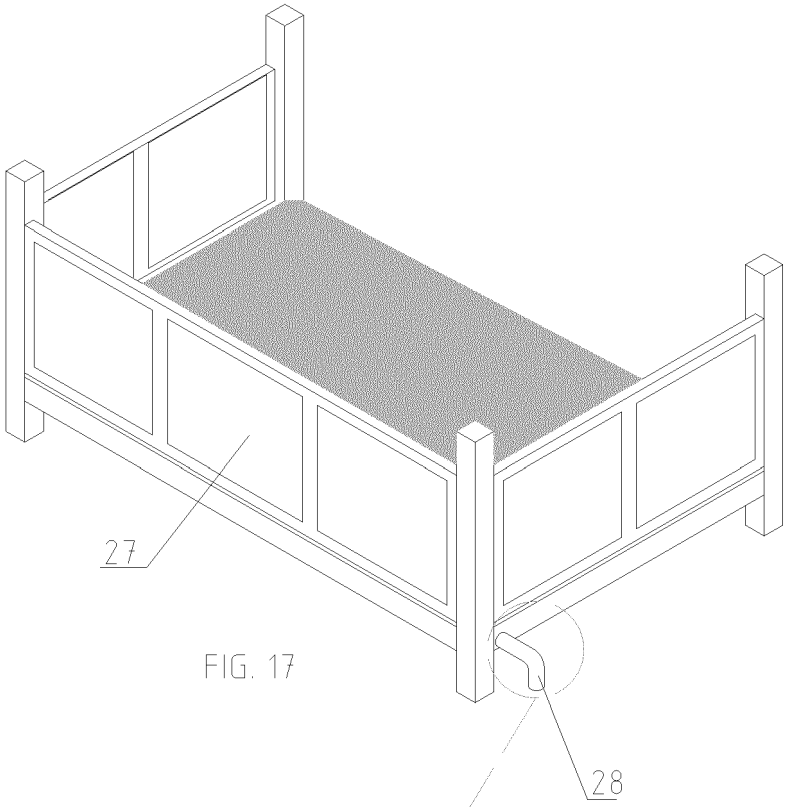

FIG. 17

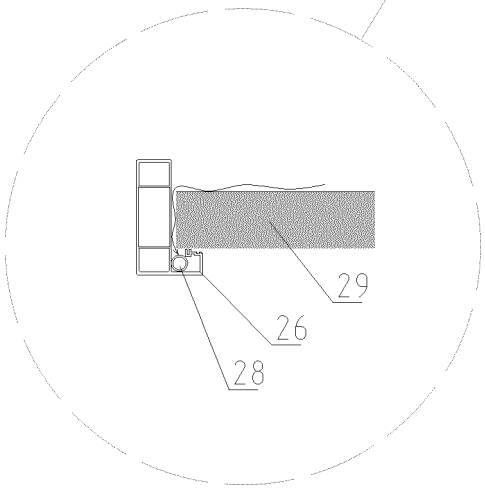

FIG. 16

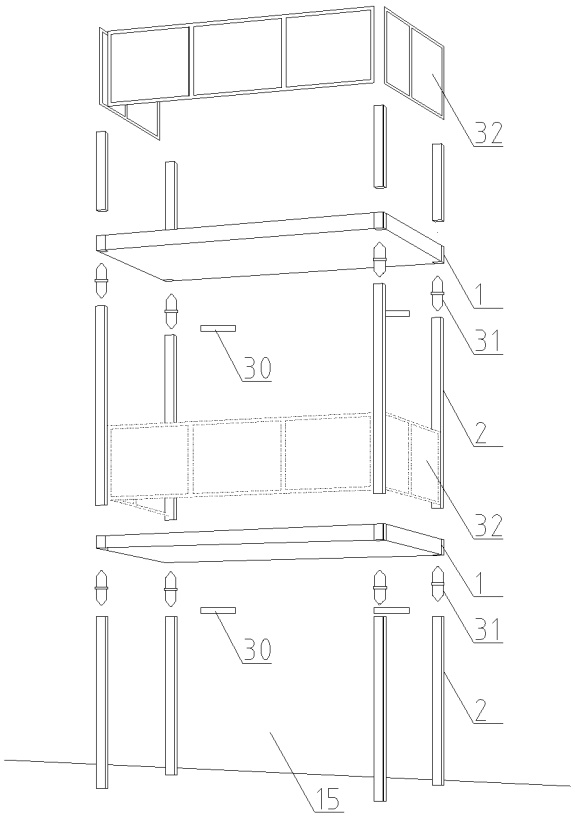

FIG. 18

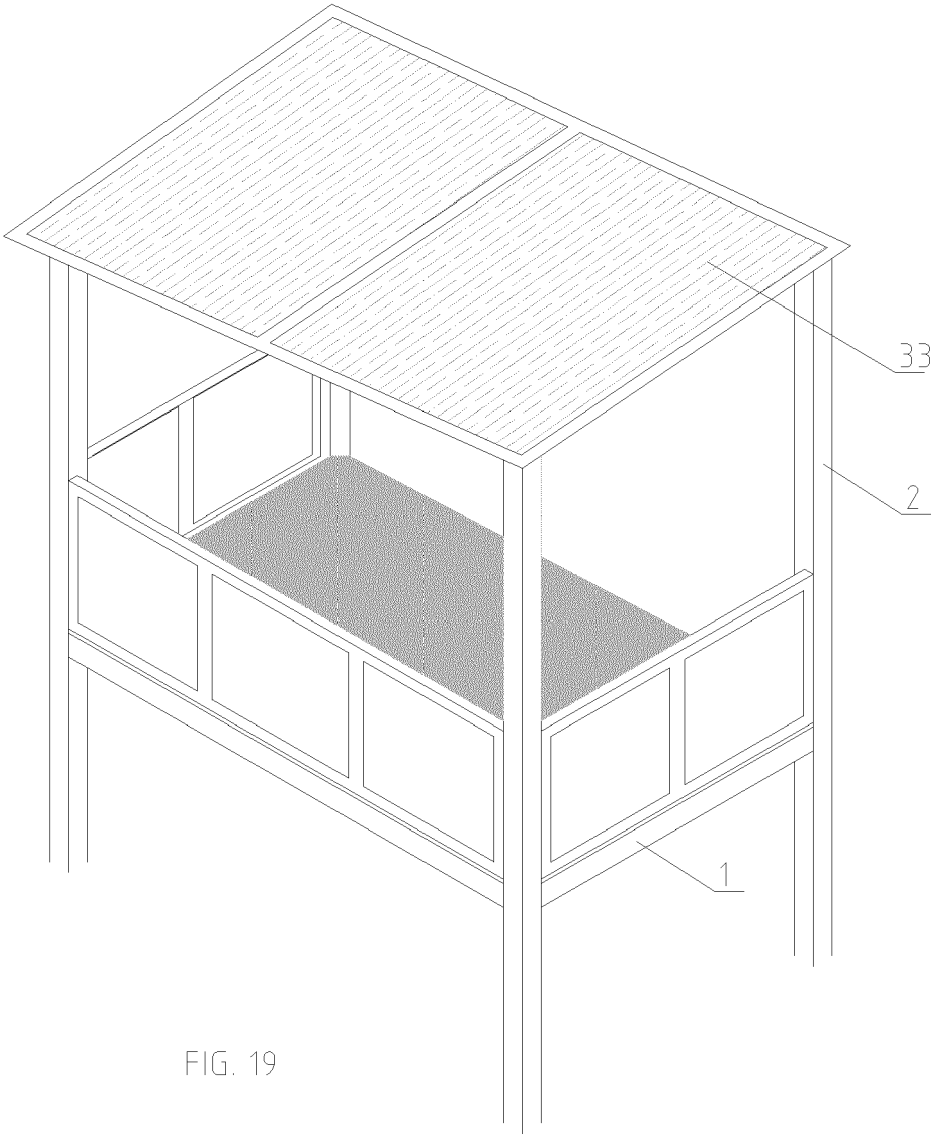

FIG. 19

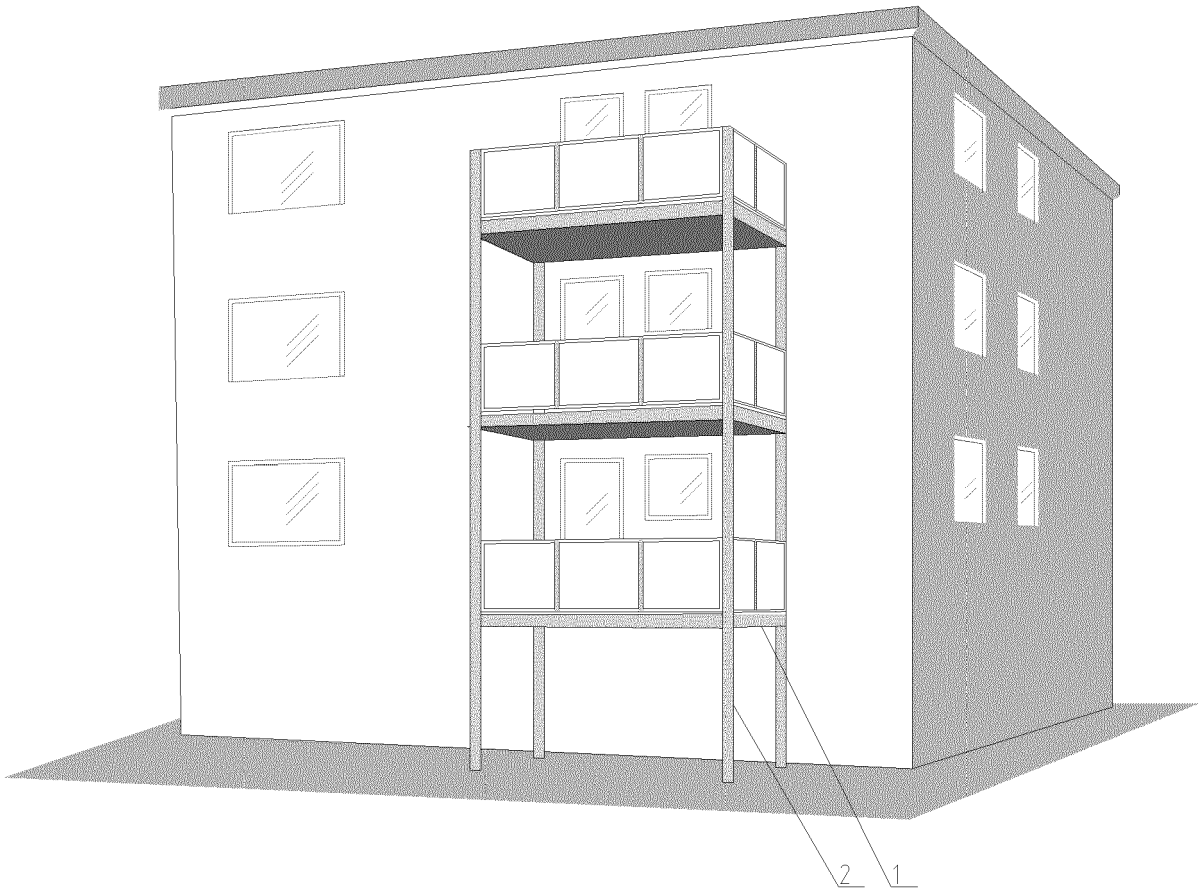

FIG. 20

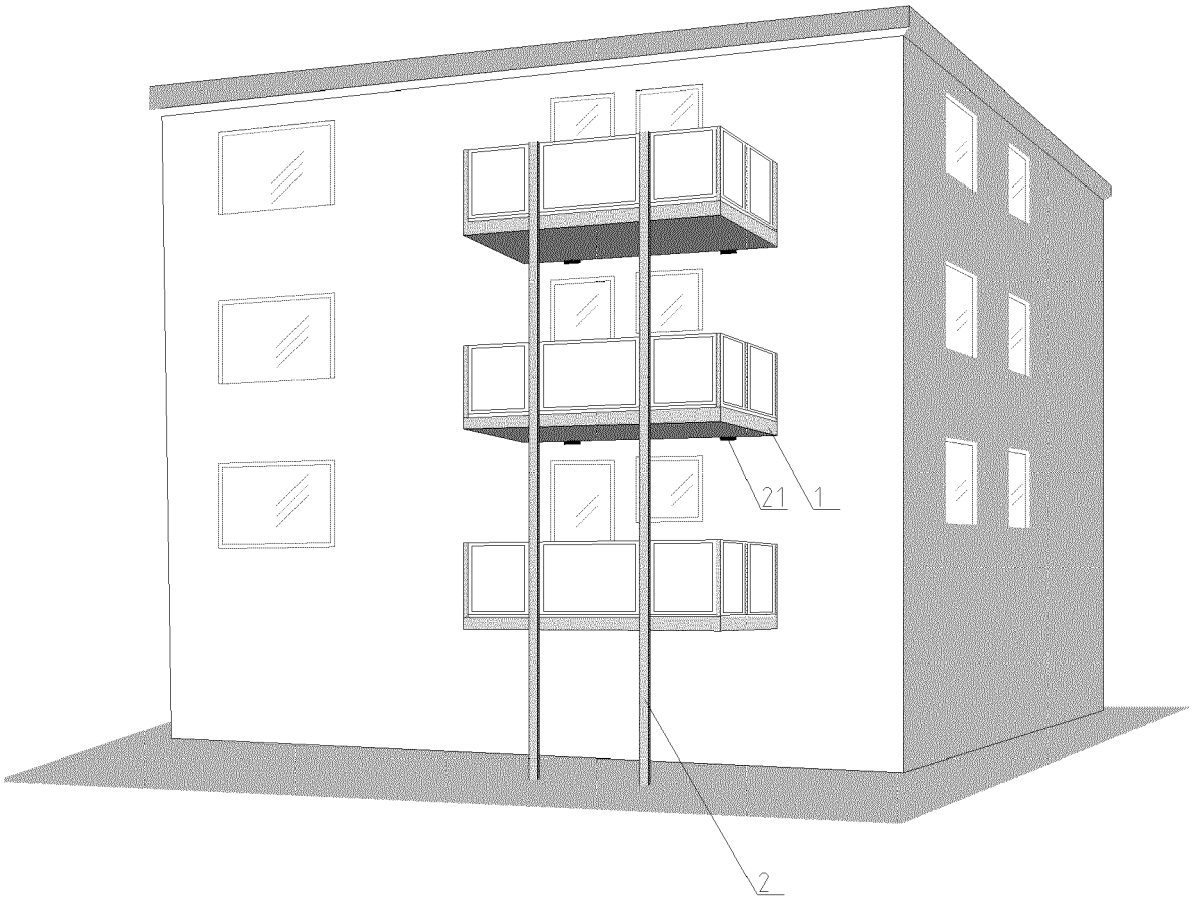

FIG. 21

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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	25 September 2018	López-García, G

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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L : document cited for other reasons

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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 18 17 1687

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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