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a Patent has been granted to the proprietor(s) for an invention entitled "**A closed system for placing installations, especially electrical ones**" disclosed in an application filed **3 September 2019**.

Dated 13 July 2022

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A closed system for placing installations, especially electrical ones

### Technical field

The invention relates to the installation systems, in particular to a closed system intended to place electrical installations in particular.

### Background of the invention

Closed systems are used to place electrical installations, including lighting systems used mainly in industrial plants. This is due to the safety requirements applicable in various industrial environments. These closed systems consist of interconnected chamber modules. Different electrical devices are situated in the modules in accordance with the purpose of installation- LED lighting, splitters, transformers, etc. At the same time, the modules serve as a passage of the respective connecting cables.

The so-far known electrical installation systems use screws to connect the modules, which means that the appropriate number of threaded holes in the modules is required. The same applies to joining parts that make up modules. Given the larger number of screw connections used, the time required for the production of modules and their installation in systems is increased.

The problem of the above-mentioned known systems for the placing the electrical installations is also to ensure the permanent functionality of the described screw connections and thus to ensure high operational reliability and functionality of the systems.

### Brief summary of the invention

The goal of the invention is to provide a closed system for placing installations, in particular electrical ones, which is reliable in terms of functionality with respect to the required safety in industrial operations, where the system should remain relatively simple in terms of both manufacture and assembly.

This said goal is achieved through a closed system for placing installations, in particular electrical ones, which is formed by interconnected chamber modules according to the invention, which is characterized in that the chamber modules have a polygonal, in particular rectangular shape and in the area of their connection adjacent modules are provided with lowered overlapping edges, and in the overlap area vertical through holes are provided for the module fasteners. This eliminates the need for threads in module housings.

Advantageously, the lowered edges are provided in the horizontal abutting surfaces with horizontal coaxial passages connecting the chambers of adjacent modules.

The fasteners are appropriately formed by screws and nuts.

To prevent damage to the cables, the passages connecting the chambers of adjacent modules are provided with a grommet.

Preferably, the grommet is made of a resilient material, thereby sealing.

A threaded gland may also be used.

The chamber modules consist of two caps attached to each other.

### Brief description of the drawings

Fig. 1 is an example of linear assembly of S-modules and end modules,

Fig. 2 shows the X-module, S-module, T-module and A-module assembly,

Fig. 3 shows the connecting part of two S-modules in the diagram,

Fig. 4 is a sectional view of the two S-modules overlapping at the connection opening,

Fig. 5 is a sectional view of the two S-modules overlapping at the point of passage.

### Examples of invention embodiment

The closed system for placing electrical installations is, according to Fig. 1, formed by interconnected three chamber S-modules 1 and two end modules 5. According to Fig. 2, the closed system consists of one chamber X-module 4, four chamber S-modules 1, two chamber T-modules 3 a two chamber A-modules 2. All modules 1, 2, 3, 4, 5 are formed by two adjacent caps 7, 8 and feature a rectangular shape in top view. This shape may be polygonal or even circular within the scope of the invention. In the connection area, adjacent modules 1, 2, 3, 4, 5 are provided with lowered edges that overlap. The connection areas thus provided have S-modules 1 a A-modules 2 on two opposite sides, T-modules 3 on three sides, X-modules 4 on all four sides and the end module 5 on only one side. The modules contain their own electrical installation, as well as lighting elements, measuring instruments, computer equipment, etc. according to the required use.

As apparent from Figures 3 and 4, vertical through holes 9 are formed in the overlap area for fasteners, which are screws 11 and nuts 12. They are used to connect the adjacent modules 1, 2, 3, 4, 5 together, as well as the caps 7, 8.

In the horizontal abutting areas of the overlap, passages 10 are formed between the chambers 6 of adjacent modules and cables pass through these passages 10 - as shown in Figs. 3 and 5. The passages 10 connecting the chambers 6 of the adjacent modules 1, 2, 3, 4, 5 are provided with a sealing grommet 13, which also protects the cables from damage due to sharp edges of the passages 10. A different grommet may also be used within this invention, e.g. standard threaded grommet.

Figs. 4 and 5 show unmarked seals between the caps 7 and 8. These seals may also be formed by other known methods within the scope of the invention.

Modules 1, 2, 3, 4, 5 are designed as castings of metal alloys, or they may be made of plastics alternatively.

#### Industrial application

The closed system for placing the installation according to the invention is particularly intended for electrical installations. It is mainly useful in the environments requiring high security, for the lighting of internal and external industrial operations, storages, wells, docks, airports or as public lighting, both outdoors and in buildings. The closed system according to the invention is also resistant to various weather conditions.

PATENT CLAIMS

1. A closed system for placing electrical installations, comprising interconnected chamber modules (1,2,3,4,5) characterized in that the chamber modules (1,2,3,4,5) have a polygonal shape and in the area of their connection adjacent modules are provided with lowered overlapping edges, and in the overlap area vertical through holes (9) are provided for the module (1,2,3,4,5) fasteners and the lowered edges are provided in horizontal abutting surfaces with horizontal coaxial passages (10) connecting the chambers (6) of adjacent modules (1,2,3,4,5), where the chamber modules (1,2,3,4,5) consist of two caps (7, 8) attached to each other.

2. A closed system according to claim 1, characterized in that the fasteners are formed by screws (11) and nuts (12).

3. A system according to claim 1, characterized in that the passages (10) connecting the chambers (6) of adjacent modules (1,2,3,4,5) are provided with a grommet (13).

4. A system according to claim 3, characterized in that the grommet (13), made of a resilient material, performs the sealing function.

5. A system according to claim 3, characterized in that the grommet (13) is threaded.

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Figure 1

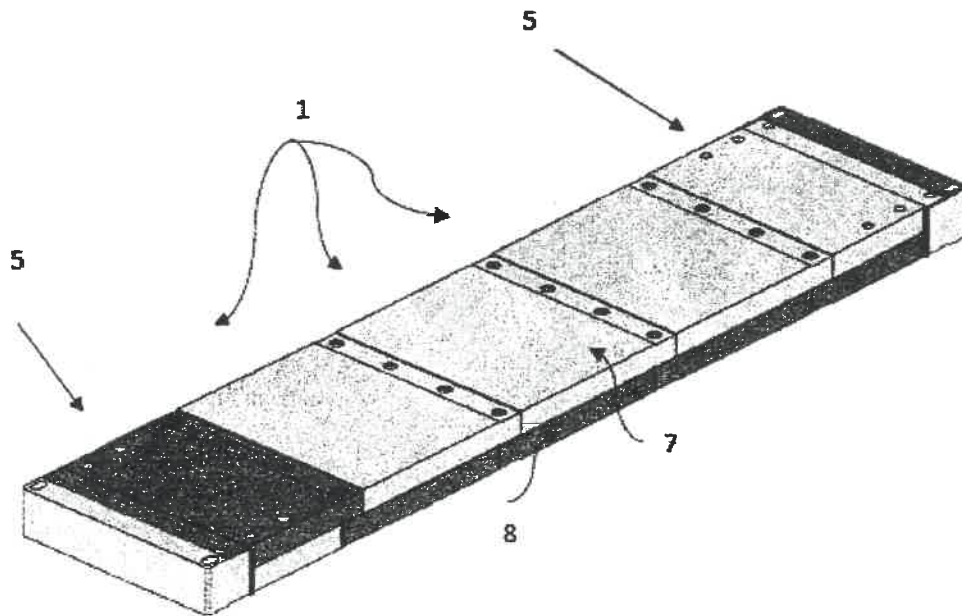


Figure 2

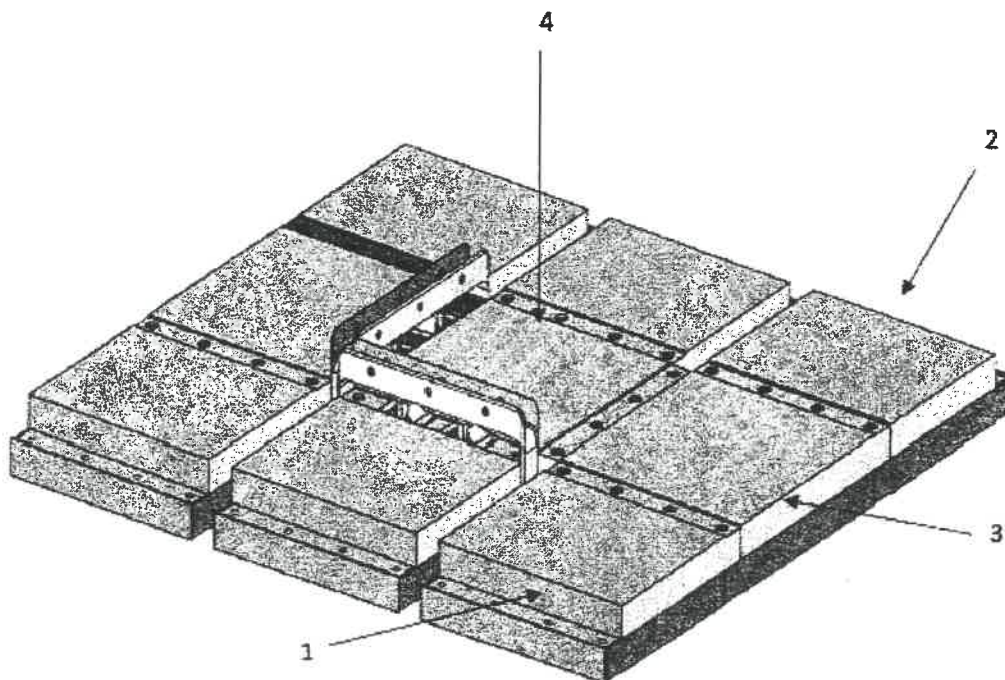




Figure 3

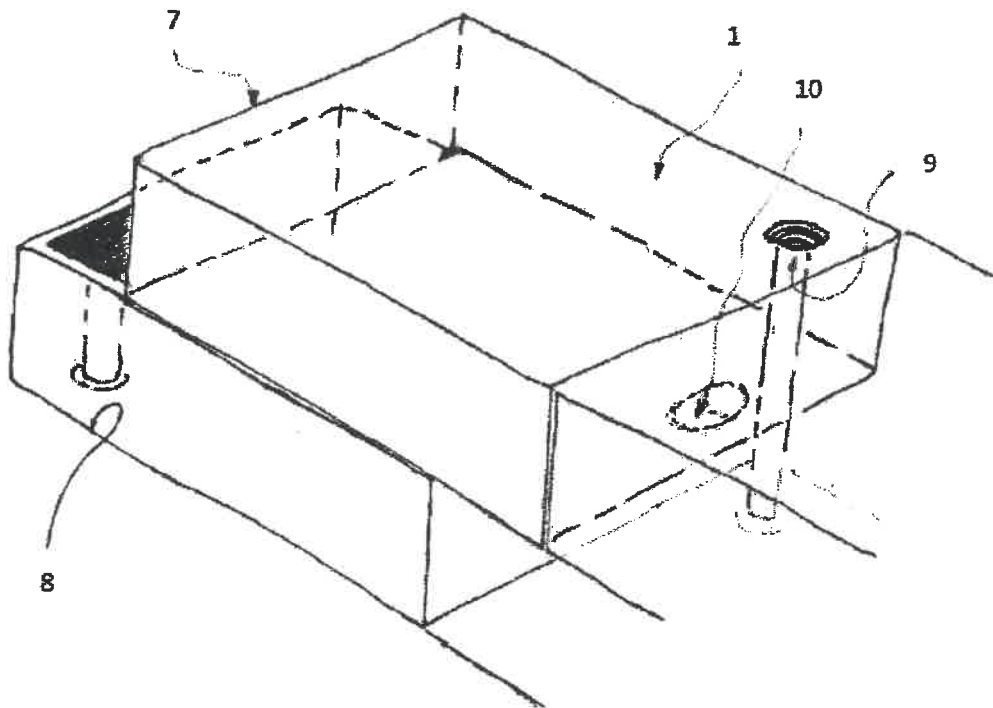


Figure 5

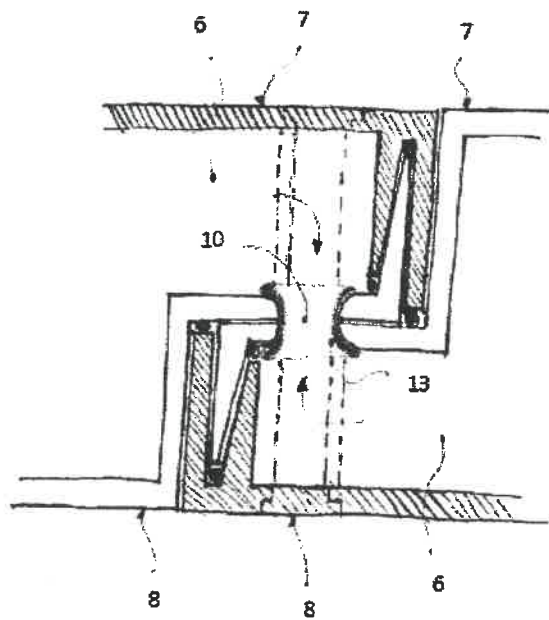


Figure 4

