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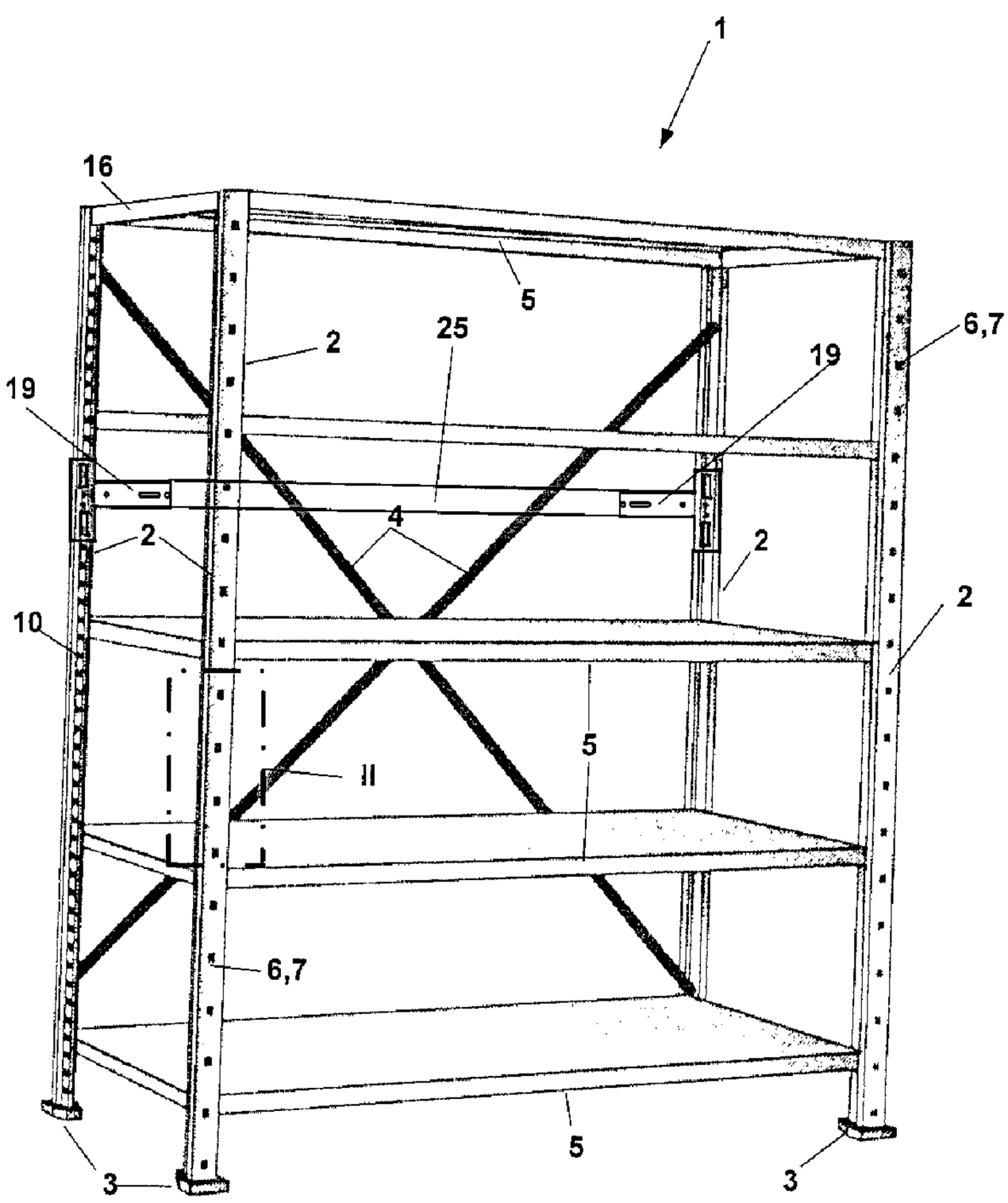

(57) Abrégé/Abstract:
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(57) Abrégé(suite)/Abstract(continued):
(10), for housing pairs of hooks (18) of the cross braces (15) and slot-like recesses (6), for housing additional shelf parts. The aim of the invention is to provide a shelf system with high stability and load capacity, which thus allows storage of a large plurality of objects of different type with regard to the size, form and weight thereof. Said aim is achieved, whereby the system comprises an insertion node (19), provided with hooks (22), and/or a stabiliser profile (28) which can be inserted into the slot-like recesses (6) of the longitudinal upright (2), an angular plate (38) which can be inserted into the longitudinal upright (2) at the end thereof and can be linked to a base (37), a pair of spacer brackets (34), for assembling several shelves (1) and/or a base (37) as well as a suspension (30) for a suspended rail (31), which can be introduced into the cross brace (15).

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(54) Title: SHELF SYSTEM FOR STORING AND ARCHIVING OBJECTS

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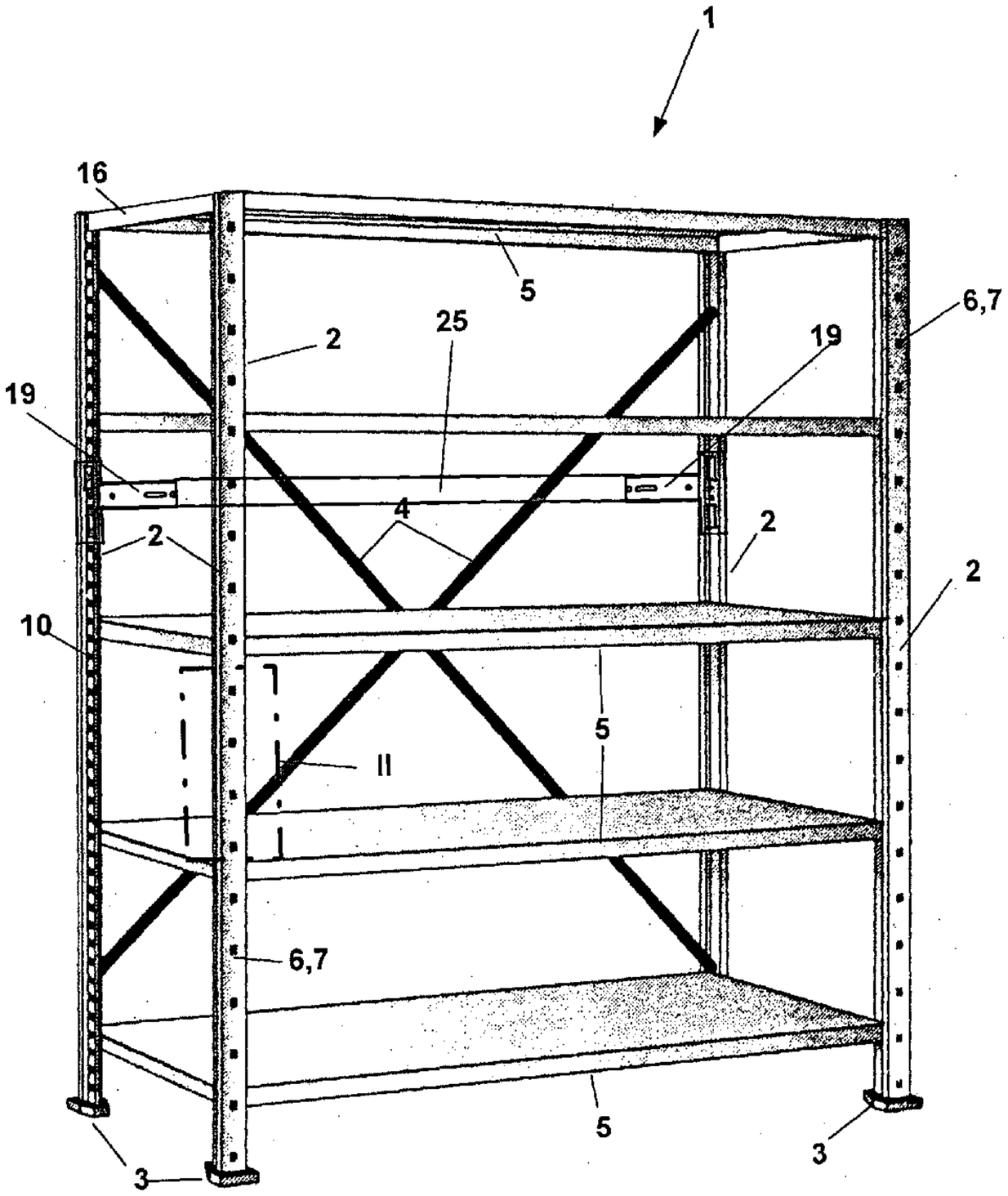

(57) Abstract: The invention relates to a shelf system for objects, comprising at least one shelf (1) with vertical longitudinal uprights (2), on which pocket-like cross braces (15) can be mounted, for fixing at least support boards (5). Said longitudinal uprights (2) have recesses (10), for housing pairs of hooks (18) of the cross braces (15) and slot-like recesses (6), for housing additional shelf parts. The aim of the invention is to provide a shelf system with high stability and load capacity, which thus allows storage of a large plurality of objects of different type with regard to the size, form and weight thereof. Said aim is achieved, whereby the system comprises an insertion node (19), provided with hooks (22), and/or a stabiliser profile (28) which can be inserted into the slot-like recesses (6) of the longitudinal upright (2), an angular plate (38) which can be inserted into the longitudinal upright (2) at the end thereof and can be linked to a base (37), a pair of spacer brackets (34), for assembling several shelves (1) and/or a base (37) as well as a suspension (30) for a suspended rail (31), which can be introduced into the cross brace (15).

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— *mit internationalem Recherchenbericht*

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

(57) Zusammenfassung: Ein Regalsystem für Gegenständenumfasst mindestens ein Regal (1) mit vertikalen Längspfosten (2), an die taschenartige Traversen (15) zur Befestigung von zumindest Auflageboards (5) anbringbar sind. Die Längspfosten (2) weisen Aussparungen (10) zur Aufnahme von Hakenpaaren (18) der Traversen (15) sowie rasterartige Ausnehmungen (6) zur Aufnahme von zusätzlichen Regalteilen auf. Durch das Regalsystem soll eine hohe Stabilität und Belastbarkeit gewährleistet und dabei eine grosse Vielfalt von aufzubewahrenden Gegenständen unterschiedlicher Art hinsichtlich Grösse, Form und Gewicht ermöglicht werden. Dazu besitzt das System einen mit Haken (22) versehener Einsteckknoten (19) und/oder Stabilisatorprofil (28), der in die schlitzartigen Ausnehmungen (6) des Längspfostens (2) einsetzbar ist, eine endseitig in den Längspfosten (2) einsteckbare Winkelplatte (38) zur Verbindung mit einer Basis (2,37), ein Paar von Abstandswinkeln (34) zur Verbindung von mehreren Regalen (1) und/oder einer Basis (37) und eine in die Traverse (15) einsetzbare Aufhängung (30) für eine Pendelschiene (31).

SHELF SYSTEM FOR STORING AND ARCHIVING OBJECTS

Description

The invention concerns a shelf system for storage and archiving of objects, consisting of at least one shelf with a rectangular plan view, on the corners of which vertical columns with a T-section are arranged, whereat between each two end columns horizontal, pocket-like traverses for the support of shelves can be mounted, which can be clamped between the traverse and its supporting column of the shelf system by lifting the shelf, and the column having reliefs arranged in a grid pattern to retain the downward pointing pairs of hooks of the traverses as well as slot-like recesses arranged in a grid pattern to retain additional shelf system components.

A large number of shelves and shelf systems are known, the individual parts of which, such as columns, side ladders or traverses and shelves are interconnected with various methods of attachment. As a rule, such shelf systems have several columns at the corner points of the shelf systems, where at certain vertical distances one or more horizontal shelves are attached, on which objects or bulk goods are stored.

The disadvantage of such shelves or shelf systems is that these, depending on the type of connection used, such as welding or bonding, can no longer be disassembled or adapted to the needs of the user. Therefore, while these shelves or shelf systems provide a high level of stability, a variation in size and number of shelves in the shelf system is severely limited. Further to that, these shelves or shelf systems are difficult to transport due to their fixed connections and required space.

In addition, a large number of peg systems for shelf systems are known, where the shelf system components, such as shelves, columns, traverses etc., are connected, for example, but tongue and groove connections. In some systems the shelves simply rest on webs or pins at the traverses. However, this results in a high level of instability of the shelf systems. Shelf systems that are screwed together or assembled with special connecting elements require considerable effort for assembly or disassembly, creating a challenge for the persons required to do the job. Further to that, connecting elements with complicated designs are frequently required to connect the shelves, posing production-related problems.

From DE 101 48 174 A1 and DE 101 60 364 A1 a shelf system is known, consisting of at least one shelf system, in which pocket-like traverses for the attachment of shelves are mounted between two end columns. The columns are quipped with reliefs to retain vertically and horizontally distanced, downward pointing pairs of hooks at the traverses. Here, one downward pointing end bracket of the shelf is pressed in between the traverses and the columns of the shelf system supporting these, clamping them tight against lifting of the shelves. Aside from shelves, suspended parts can also be mounted in the retaining pockets of the traverse in self-clamping fashion.

In this way, a shelf system is realized that can be completely assembled without the necessity of welded, screwed or similar connections and is easy to assemble. In spite of this, the shelf system is not stable enough for all application cases. For example, in case of very high, very wide or very deep shelf systems, or if the shelf systems is loaded with very heavy objects to be stored, particularly in industrial applications, the shelf system becomes increasingly unstable. Fur-

thermore, there is a lack of means for storing specific objects, such as vehicle tires, hanging files and other large and heavy and/or bulky objects requiring special holders or supporting parts on the shelf system. Thus, the variety for storage of objects is limited.

Further to that, from FR 2,725,350 A1 a shelf system is known, in which the traverses are formed as U-profiles. In these, maintaining certain distances, several horizontal longitudinal braces are inserted. In addition, the side surfaces of the center leg of each column have grid-like arranged reliefs to retain the downward pointing pairs of hooks of the U-profile traverses.

Therefore, it has been the objective of the invention to create a shelf system of the above described type for storing and archiving of objects, which guarantees high stability and load capacity while still allowing a wide variety of stored objects of varying kinds with regard to size, shape and weight.

According to the invention, this problem is solved by

- an insert node and/or stabilizing profile equipped with a hook, which can be inserted in the slot-like recesses of the column for the attachment with connecting braces,
- an angle plate that can be inserted in and attached to the column for the connection witn the base,
- a pair of interconnectable spacer angles for the connection of several shelf systems and/or for the connection to the base, and
- a suspension insertable in the traverse to support a hanging rail for hanging files or similar items.

In the sense of the invention, base is to be understood as floor, wall or ceiling of a room and in certain cases may also

refer to the column of the shelf system.

The hooks of the insert nodes or stabilizing profiles are simply inserted in the slot-like recesses of the column and connected to further braces, e.g. cross braces or diagonal braces. These braces, on the one hand, may serve to stabilize the shelf system and, on the other hand, be used for storage of large, bulky objects resting against the braces and are supported by them. Depending on the design of the insert nodes or stabilizing profiles. they may also be used for the purpose of connecting two adjacent shelf systems of the same type, which are then stabilizing each other. In addition, the braces connected to the insert nodes or stabilizing profiles provide a wide variety of arrangement possibilities for the storage of objects, in particular heavy, large and bulky objects, such as, for example, are stored in large industrial warehouses, e.g. automobile parts in the automobile industry.

The angle plate that can be inserted or attached to the side of the column serves, on the one hand, as a foot for the column of the shelf system and, on the other hand, can be used as an overhead attachment on the upper end of the column to a base, such as the ceiling of the room. This stabilizes the shelf system and fixes it in place and secures it against tipping over.

Another means of stabilizing the shelf system consists in that one spacer angle at the column of a shelf system and another spacer angle at the column of an adjacent shelf system are connected as well as both spacer angles are connected to each other with screws. Another possibility is that the second spacer angle is attached to a base, e.g. the wall of a room. The pair of spacer angles also permits, if desired, the realization of uneven distances between adjacent shelf systems, re-

spectively their distances from the walls of the room. Thus, the pair of spacer angles provides a stabilizing function as well as helping to locate the shelf system within the room, therefore extraordinarily enhancing their load bearing capability.

The suspension for a hanging rail, in particular for hanging files, folders, pockets etc. for hanging registers for use in offices and archives considerably expands the variety of storage possibilities and utilization of the shelf system. The suspension of the hanging rail is simply inserted in the pocket-like traverse, where it is held securely.

Mounting and attachment of the insert nodes, stabilizing profiles, angle plate and interconnectable spacer angle using the grid-pattern cutouts, reliefs and slots of the column in connection with traverses mounted grid-like on the column results in a complex shelf system which is stable, able to carry heavy loads and extremely versatile. In addition, all of these components are designed as single parts and thus can be manufactured simply and cost effectively, since they only have to be punched out and bent.

In accordance with another embodiment of the invention, the insert node and the stabilizing profile are designed as a T-shaped, left or right pointing or cross-shaped sheet metal profile, whereat a pair of hooks is provided at least on one leg and the other leg is equipped with at least one perforation.

The left or right pointing insert nodes and stabilizing profiles serve the purpose of attaching additional braces to a shelf system or to an adjacent shelf system. The leg of the insert node or stabilizing profile provided with at least one

pair of hooks is simply suspended from the corresponding slots at the column. The other leg projects from the column and serves to receive and attach a brace. The component designed as a cross-shaped sheet metal profile may also be used for the connection of an adjacent shelf system. A continuous leg, as described above, is inserted in the column and additional braces are attached to the two remaining parts of the cross legs. In this way, one column of the adjacent shelf system can be omitted, since its additional braces are connected to the insert node or stabilizing profile.

Further to that, the hooks at the insert node and the stabilizing profile are arranged in a grid-like pattern in vertical and/or horizontal alignment to each other. The grid-like alignment of the hooks or pairs of hooks corresponds with the grid-like arranged slots of the column, so that a vertical and/or horizontal arrangement of the hooks at the insert node and the stabilizing profile is possible.

In order to design the insert node or the stabilizing profile itself with sufficient stability and load bearing capacity for the braces to be attached, the longitudinal sides of the leg of the insert nodes and stabilizing profiles may be designed with a canted edge, so that the cross-section of the legs form a U-profile which clamps the brace as well as the column together.

Further to that, the legs of the insert nodes and the stabilizing profiles may be equipped with additional means of arresting to engage in the column and/or the connecting braces.

Such additional means of arresting may be in form of naps, beads, creases, bumps, recesses etc. which engage in corresponding opposite means of arresting at the column and/or con-

necting braces. These means of arresting provide further stabilization of the shelf system.

In a further advantageous embodiment of the shelf system according to the invention, the angle plate consists of a base plate and a perpendicular web, which can be inserted in the hollow profile at the open end of the column with T-shaped cross-section and fixed in place with screws. Thus, the upright web is inserted into the hollow space resulting from cross beam of the T-profile. This web, that is equipped with at least one perforation, is attached with screws to the column, which also has grid-like aligned perforations on opposite longitudinal sides.

Further to that, the base plate of the angle plate can be connected to the floor or ceiling of the room in order to fix the shelf system in place.

In a further embodiment of the solution according to the invention, the spacer angle legs are preferably provided with different lengths, in which at least one perforation is present, whereat the perforation of one spacer angles matches that of the other spacer angle. The difference in length o the legs of the spacer angles allows a variable distance between the shelf systems or in relation to the base, e.g. the wall of a room, since the spacer angles, due to their matching, grid-like perforations can be screwed to each other in various different ways, depending on locally existing circumstances. Here, the perforations ma preferably consists of boreholes or elongated holes.

In order to realize a suspension for the hanging rail, this consists of a sheet metal plate having at least one projection to retain the hanging rail. The number of projections protrud-

ing from the sheet metal plate depends on the type of hanging rail. For example, the hanging rail may be designed with a single track or double track and have a cross-section that determines the number and shape of projections at the suspension. The free end of the hanging rail is simply placed onto the corresponding projections of the suspension until it is flush with the sheet metal plate.

For the stabilization of the suspension for the hanging rail, the side ends of the sheet metal plate of the suspension may be formed into protruding bracket that lie flat against the column.

The shelf system is preferably designed in a creating grid pattern which determines the width, height and depth of the shelf system, but also the distances between the pairs of hooks, the perforations and arresting means of the traverses and other attaching parts and corresponding receptacle cut-outs, perforations and slot-like recesses in the column, resulting in an overall coherent shelf system concept.

It is understood that the above described and in the following explained characteristics can be used not only in the respective described combination, but also in other combinations or as a stand-alone design, without leaving the scope of the present invention.

The idea on which the invention is based is explained in greater detail in the following description with the aid of application examples represented in drawings. The individual figures show:

Fig. 1 a perspective view of a shelf system in the basic form of the shelf system in accordance with the invention,

Fig. 2 a partial front view II of a column of the shelf system according to Fig. 1,

Fig. 3 a side view of the column according to Fig. 2,

Fig. 4 a rear view of the column according to Fig. 2,

Fig. 5 a cross-section view along the line V-V of the column according to Fig. 4,

Fig. 6 a perspective side view of a shelf for a shelf system according to Fig. 1,

Fig. 7 a perspective end view of a shelf according to Fig. 6,

Fig. 8 a schematic side view of a traverse for a shelf system according to Fig. 1,

Fig. 9 a schematic side view of the traverse according to Fig. 8 with installed shelf,

Fig. 10 a schematic side view of the traverse according to Fig. 9 with installed shelf and attachment on a column,

Fig. 11 a front view of the traverse according to Fig. 8,

Fig. 12 a front view of an insert node in a first design shape,

Fig. 13 a front view of an insert node in another design shape,

Fig. 14 a side view of the insert node according to Fig. 13,

Fig. 15 a front view of the insert node according to Fig. 13 with attachment on a column and attached brace,

Fig. 16 a front view of a stabilizing profiles,

Fig. 17 a perspective partial view of a stabilizing profile according to Fig. 16,

Fig. 18 a front view of a suspension for a hanging rail,

Fig. 19 a side view of a suspension for a hanging rail according to Fig. 18,

Fig. 20 a side view of a traverse with installed suspension according to Fig. 19 with attached hanging rail,

Fig. 21 ea front view of a spacer angle,

Fig. 22 a side view of a spacer angle according to Fig. 21,

Fig. 23 a plan view of a spacer angle according to Fig. 21 with attachment on a column,

Fig. 24 - 26 schematic views of application examples of a pair of interconnectable spacers,

Fig. 27 a side view of an angle plate,

Fig. 28 a plan view of an angle plate according to Fig. 27,

Fig. 29 a front view of an angle plate that can be inserted in a column, and

Fig. 30 a plan view of two angle plated on top of each other in connection with two columns.

Fig. 1 shows a shelf 1 of a shelf system having a rectangular plan view and preferably being made completely from sheet metal. At each corner of shelf 1 there is a vertical column 2 with a foot 3 on its lower end. The two rear columns 2 are interconnected by two diagonal braces 4 crossing each other, thus providing longitudinal stability to shelf 1.

Further to that, the respective pairs of columns 2 at each end are interconnected by several horizontal shelves 5 at certain distances to each other, on which object of any kind are stored (objects not shown). The upper shelf 5 acts as a top cover shelf, while the bottom shelf is installed at a certain distance from the floor.

Figs. 2 to 5 show enlarged views of area II according to Fig. 1 of a column 2. This exhibits at its front according to Fig. 2 pairs of recesses 6 at certain distances to one another,

which are designed in the shape of slots 7. Suspended parts (not shown) can be inserted in he slots 7, for example, cover panels or special holders for certain stored objects, etc. In addition, interspaced perforations 8 are provided. At the rear side of the column 2 according to Fig. 4, further perforations or boreholes 9 are provided, which line up with the perforations 8 at the front side of the column 2. These perforations 8 and boreholes 9 can be used for the attachment of random parts with of screws and/or to attach the column 2 on a wall.

Further to that, the column 2 is equipped with a number of interspaced reliefs 10, which are essentially intended to reduce weight of the columns 2 by reducing the material volume as well as to act as receptacles for other parts to be described later. The slots 7, the perforations 8, the boreholes 9 and the reliefs 10 are arranged on the column 2 in a grid pattern.

Furthermore, as shown in Figs. 4 and 5, the column 2 is designed as a rolled hollow profile made from band steel, so that the finished column 2 has a gap 11 at its rear side. Thus, the cross-section of the column 2 essentially has the shape of a T according to Fig. 5.

Fig. 6 shows a perspective side view and Fig. 7 a perspective end view of shelf 5. Each of its longitudinal sides has downward protruding a side wall 12t. The bottom free end of the side wall 12 has a trough-shaped canted edge 13, as shown in Fig. 7.

A downward protruding end bracket 14 is attached to each end of shelf, which is intended to fix the end of the shelf by clamping it between the columns 2 of shelf 1 and the traverses 15.

Figs. 9 to 11 show various view of a traverse 15 for a shelf 1, which are inserted between two columns 2, which are arranged at the end of shelf 1.

A basic component 16 with an upper horizontal support edge 17, on which the underside of shelf 5 is resting when installed, is attached to traverse 15.

Each end of traverse 15 is equipped with a pair of hooks 18 at a vertical distance to each other, as shown in Fig. 11. The hooks 18 engage in the reliefs 10 of column 2 of shelf 1 according to Fig. 11. In this way, the end bracket 15 of shelf 5 is securely clamped in place between traverse 15 and column 2.

The insert node 19 shown in Fig. 12 has two legs, i.e. one horizontal leg 21 branches off on either side of the vertical leg 20. In contrast, the insert node 19 shown in Figs. 13 and 14 in a front and side view has only one leg. Thus, the insert node 19 is designed as a cross-shaped left- or right-hand sheet metal profile. Fig. 13 illustrates the right-hand insert node 19. The left-hand insert node 19 corresponds to a mirror image of the right-hand insert node 19. The vertical leg 20 of the insert nodes have a pair of hooks 22 located in cutouts 23. Within a pair of hooks 22, these may be aligned in line with each other according to Fig. 12 or offset to each other according to Fig. 13, since they engage in pairs in the correspondingly spaced pairs of recesses 6 of column 2, as shown in Fig. 15, whereat the arrangement of hooks 22 corresponds to the grid-like pattern of recesses 6.

The longitudinal sides of legs 20 and 21 of the insert nodes 19 are equipped with canted edges 26 to retain the connecting braces 25. Several circular boreholes or elongated holes 24

are provided on the horizontal legs 21 and on leg 20 of insert node 19, which serve the purpose of attaching the connecting braces 25, for example, by means of screw connections, to insert node 19. Further to that, the legs 20 and 21 are provided with nap-like arresting means 27, which engages in corresponding counterparts (not shown) in braces 25 and/or column 2, in order to obtain increased positional stability of the insert nodes 19.

The stabilizing profile 28 according to Figs. 16 and 17 is designed similarly to insert node 19. The stabilizing profile 28 consists of an angle profile and has a U-shaped cross-section. In the are of the corner the stabilizing profile 28 has a semicircular recess 29, which is lined up with a perforation 8 of column 2. By means of a screw (not shown) and a special canted washer, it is possible to additionally screw the stabilizing profile 28 to column 2, after the pair of hooks 22 has engaged in the corresponding recesses 6 of column 2.

Figs. 18 to 20 show a suspension 30 for a two-track hanging rail 31 for hanging office files and similar items. The hanging rail 31 is indicated in dashed lines in Figs. 18 and 20. The suspension 30 is insertable in traverse 15 which, in turn, as already described, is inserted in column 2, as shown in Fig. 20.

Furthermore, suspension 30 for the hanging rail 31 consists of a sheet metal plate and is equipped with two projections 32, which are formed by bending them out of the plate, to retain one end of the hanging rail 31. The oblique arrangement of the projections 32 to each other results from the shape of the hanging rail 31. In addition, at the ends of the sheet metal plate of suspension 30 there are protruding brackets 35 to rest against two spaced columns 2.

Figs. 21 to 23 show a spacer angle 34 with two legs 35 and 36 running perpendicular to each other and are of different lengths. Two of these spacer angles 34 are connected to each other, e.g. by screws and nuts, as schematically shown Figs. 24 to 26. A pair of interconnected spacer angles 34 serves the purpose of connecting several shelf systems 1 or to connect to a base 37, e.g. the wall of a room. For that purpose, the legs 35 and 36 of the spacer angle 34 are provided with circular and elongated holes 24 in a grid pattern matching the perforations 8 of the column 2. For this purpose, the perforation 24 of one spacer angle 34 is in line with that of the other spacer angle 34.

Figs. 24 to 26 show a number of possible applications of a pair of interconnectable spacer angles 34 with a base 37 and/or shelf systems 1, whereat the legs 35 and 36 of different lengths can be interconnected in several different ways.

Figs. 27 to 29 show an angle plate 38 that can be inserted in the column 2 of a shelf 1. This angle plate 38 is inserted at the side of column 2 and attached to said column and serves the purpose of connecting to a base 37, for example, to the floor or ceiling of a room, in order to stabilize the shelf 1 and fix it in place.

Angle plate 38 consists of a base plate 39 and a web 40 perpendicularly protruding from it, so that the web stands at a right angle to base plate 39. Web 40 is provided with an elongated perforation 24, which is lined up with an opening 8 in column 2 in order to attach web 40 to column 2 with screws. Further to that, the lower section of the web 40, where it is attached to the base plate 39, is of narrower width. The base plate 39 of angle plate 38 has 4 boreholes 41 in its corners,

which are executed in form of elongated holes and are provided for the purpose of connecting to the floor or the ceiling of a room.

It is also possible to join two such angle plates 38 in opposite directions in such a way that their base plates 39 are nearly aligned on top of each other and their upright webs 40 are positioned opposite each other forming a gap. This is made possible by the narrower section of the web 40. In this way, it is possible, for example, to connect two adjacent columns 2, into which one of each of the webs 40 protrudes. For that purpose, the overlapping base plates 39 are screwed to the floor or ceiling of the room using their elongated holes 41. Furthermore, the elongated perforations 24 in the upright webs 40 can be connected by screws to the perforations 8 of column 2.

Legend

1 Shelf system
2 Column
3 Foot
4 Brace
5 Shelf
6 Recess
7 Slot
8 Perforation
9 Borehole
10 Relief
11 Gap
12 Side wall
13 Canted edge
14 End bracket
15 Traverse
16 Basic component
17 Support edge
18 Hook
19 Insert node
20 Leg
21 Leg
22 Hook
23 Cutout
24 Perforation
25 Connecting brace
26 Canted edge
27 Arresting means
28 Stabilizing profile
29 Recess
30 Suspension
31 Hanging rail
32 Projection
33 Bracket
34 Spacer angle
35 Leg
36 Leg
37 Base
38 Angle plate
39 Base plate
40 Web
41 Borehole

Claims

1. Shelf system for storage and archiving of objects, consisting of at least one shelf system (1) with a rectangular plan view with vertical columns (2) with a T-shaped cross-section arranged at the corners, whereat pocket-like traverses (15) for the support of at least shelves (5) can be mounted between two end columns (2), which are clamped in place between the traverse (15) and the supportinq columns (2) of the shelf system (1) to prevent lifting of the shelf (5), and the columns (2) having grid-like arranged reliefs (10) to retain downward pointing pairs of hooks (18) of the traverses (15) as well as grid-like interspaced slot-like recesses (6) for the support of additional shelf system components, **and further consisting of**

- an insert node (19) and/or stabilizing profile (28) equipped with hooks (22), which are designed to engage in the slot-like recesses (6) of the columns (2) for the attachment with connecting braces (25),
- an angle plate (38) which can be inserted at the side of the column (2) for the purpose of connecting to a base (2, 37),
- a pair of interconnectable spacer angles (34) to connect several shelf systems (1) and/or to connect to a base (37) and
- a suspension (30) that can be inserted in the traverse (15) for the support of a hanging rail (31) for hanging files and similar items.

2. Shelf system according to claim 1, **characterized in** that the insert node (19) and the stabilizing profile (28) are designed s T-shaped left-hand or right-hand or cross-shaped sheet metal profiles, whereat one leg (20) is provided with at least one air of hooks (22) and the other

leg (21) with at least one perforation (24).

3. Shelf system according to claims 1 and 2, **characterized in** that the hooks (22) at the insert node (19) and the stabilizing profile (28) are arranged to one another in a grid-like pattern in a vertical and/or horizontal direction.

4. Shelf system according to at least one of the claims 1 to 3, **characterized in** that the longitudinal sides of the legs (20, 21) of the insert nodes (19) and the stabilizing profile (28) are each provided with a canted edge (26).

5. Shelf system according to at least one of the claims 1 to 4, **characterized in** that the legs (20, 21) of the insert nodes (19) and the stabilizing profile (28) are provided with additional means of arresting (27), which engage in the column (2) and/or the connecting braces (25).

6. Shelf system according to claim 1, **characterized in** that the angle plate (38) consists of a base plate (39) and a perpendicular upright web (40), which can be inserted in the hollow profile at the open end of the T-shaped cross-section of the column (2) and fixed to the said column with screws.

7. Shelf system according to claim 6, **characterized in** that the base plate (39) of the angle plate (38) can be connected to the floor or ceiling of a room.

8. Shelf system according to claim 1, **characterized in** that the spacer angle (34) are equipped with legs (35, 36), preferably of different lengths, on each of which at least one perforation (24) is provided, whereat the perforation (24) of one spacer angle (34) lines up with that of the

other spacer angle (24).

9. Shelf system according to claims 2 and 8, **characterized in** that the perforations (24) consist of boreholes or elongated holes.

10. Shelf system according to claim 1, **characterized in** that the suspension (30) for the hanging rail (31) consists of a sheet metal plate, which is provided with at least one projection (32) to retain the end of the hanging rail (31).

11. Shelf system according to claim 10, **characterized in** that the side ends of the sheet metal plate of the suspension (30) are provided with protruding brackets (33) to rest against the columns (2).

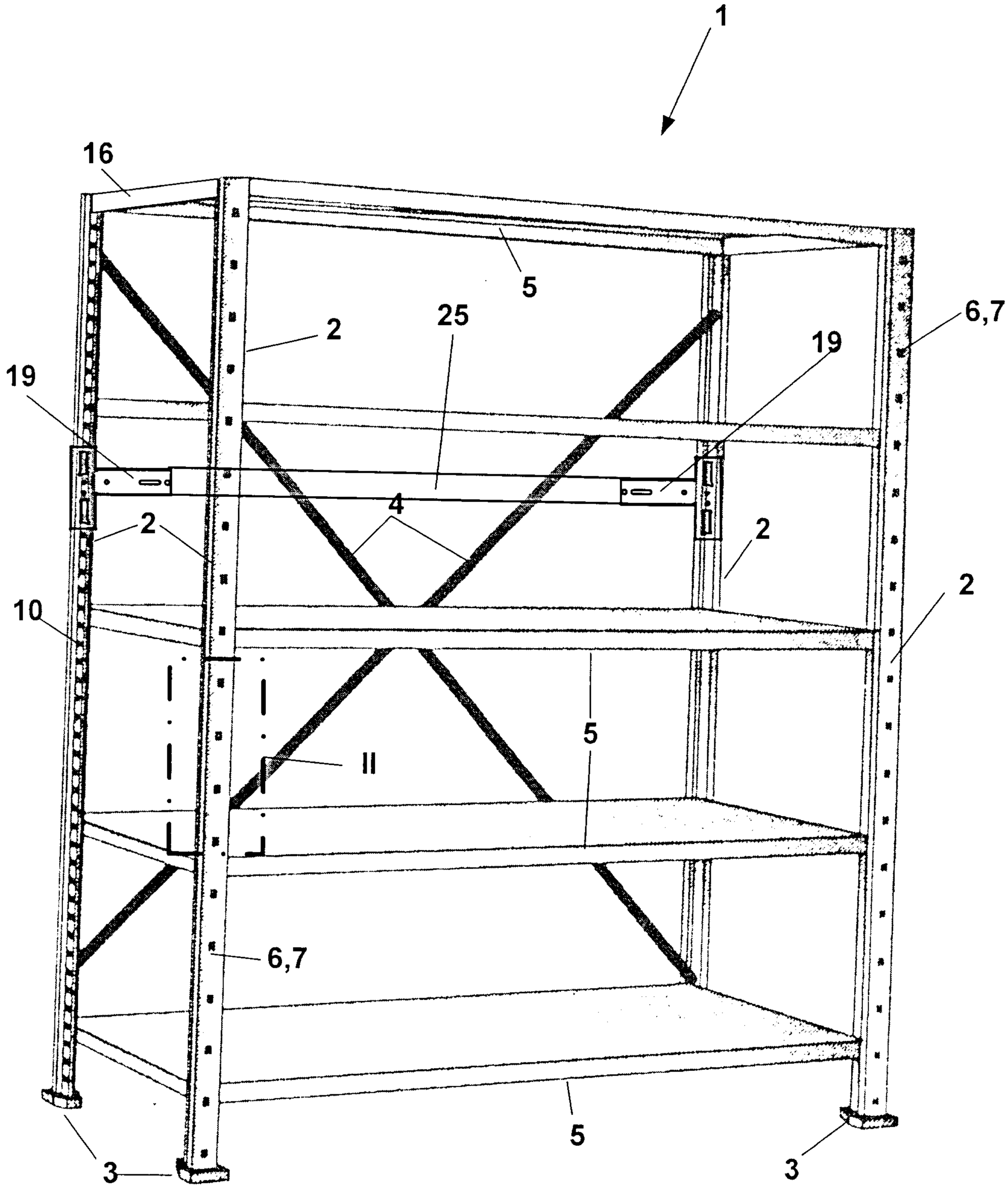


FIG. 1

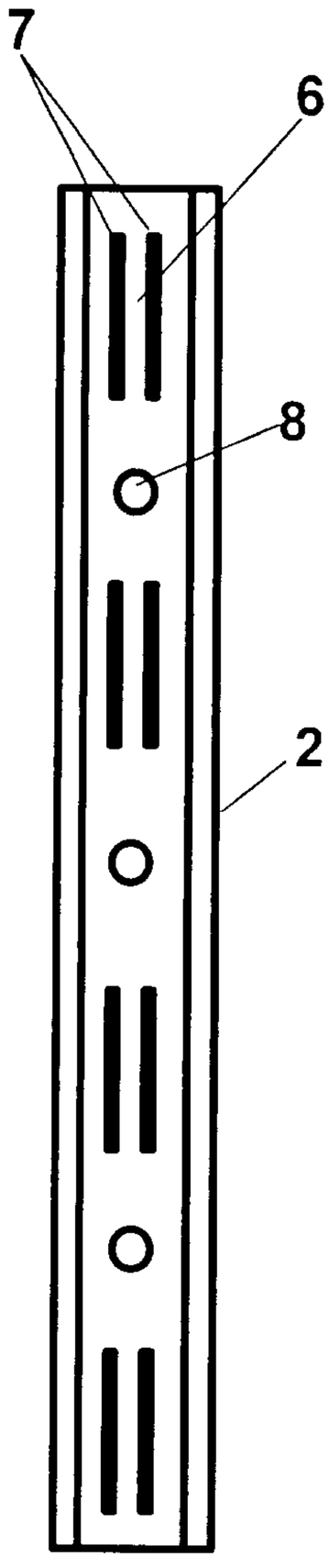


FIG. 2

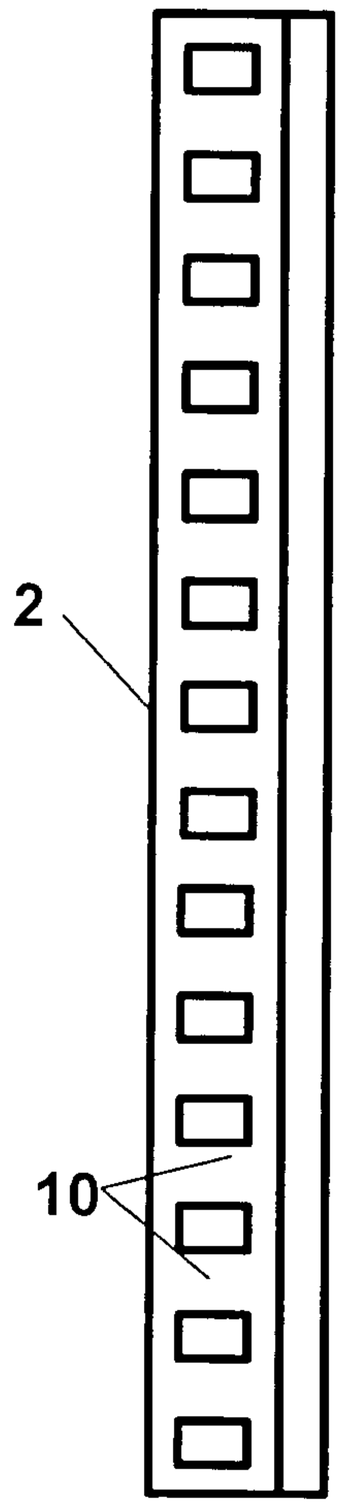


FIG. 3

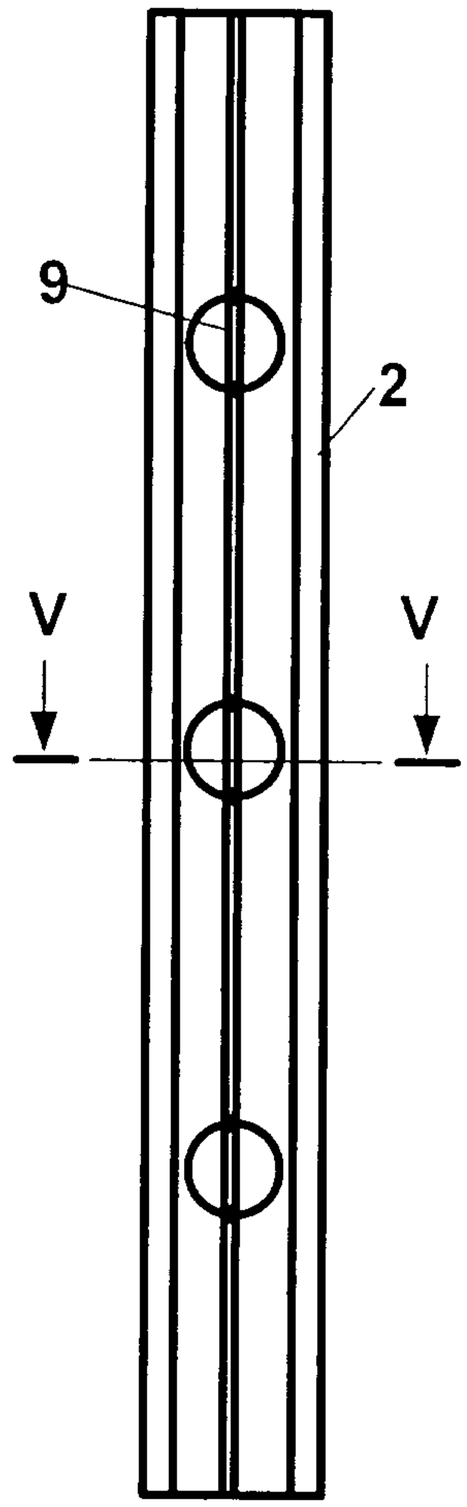


FIG. 4

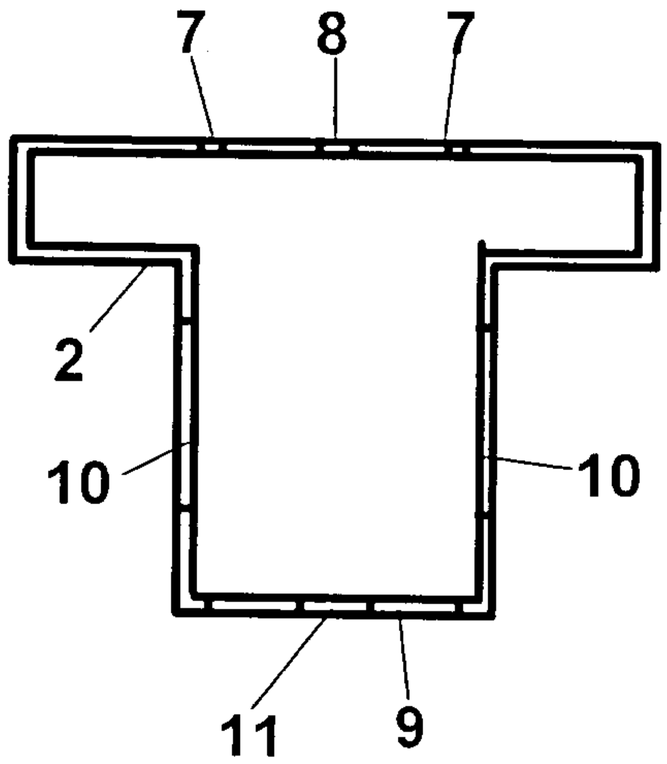
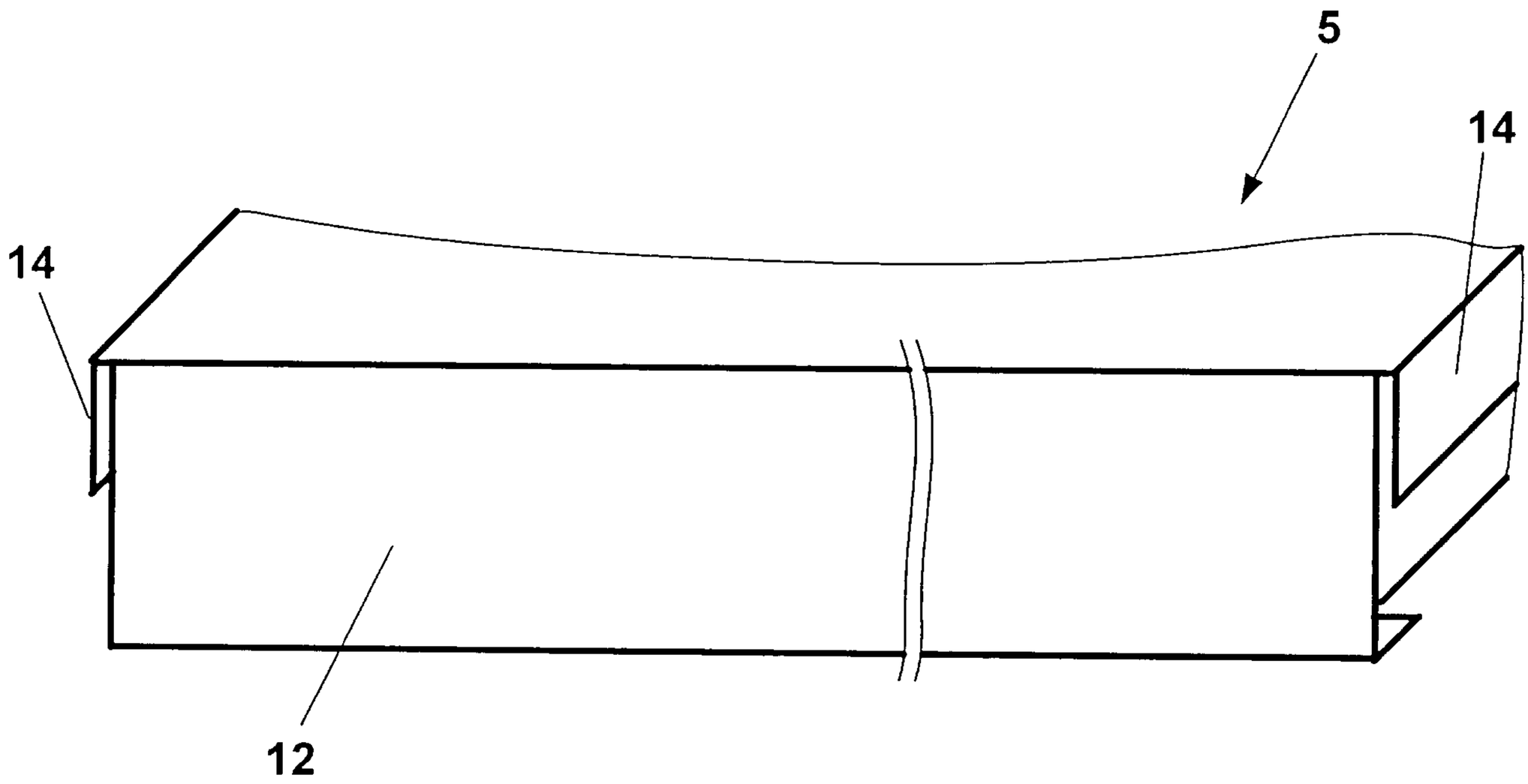


FIG. 5



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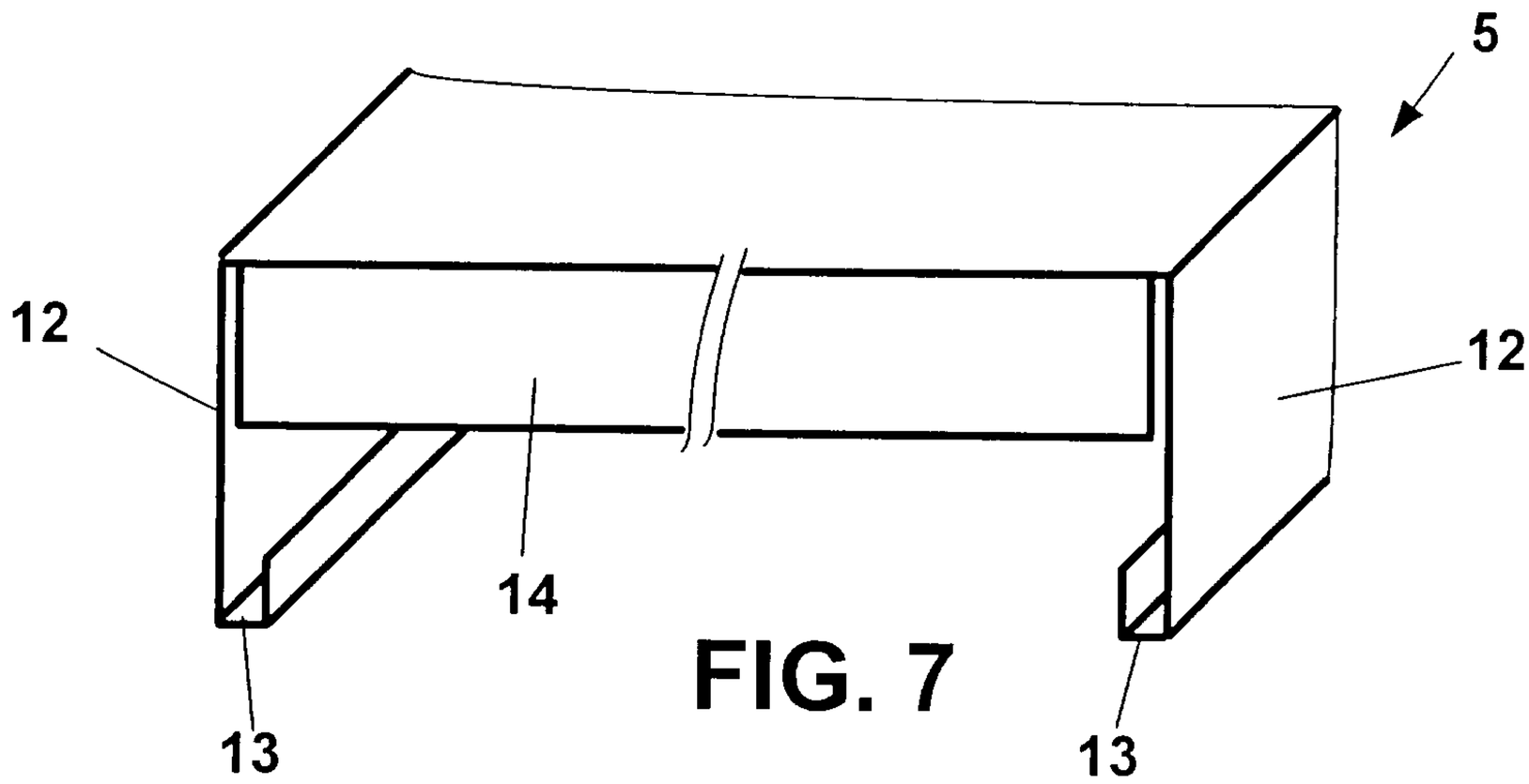


FIG. 7

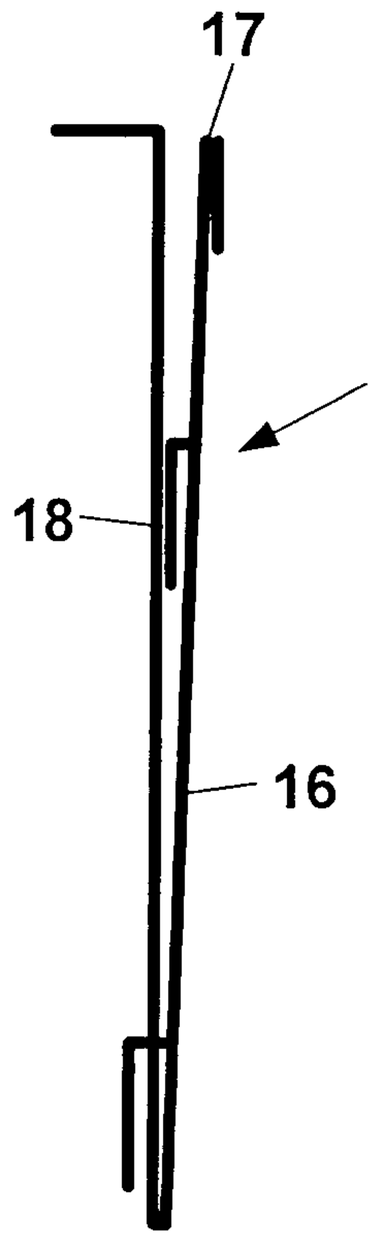


FIG. 8

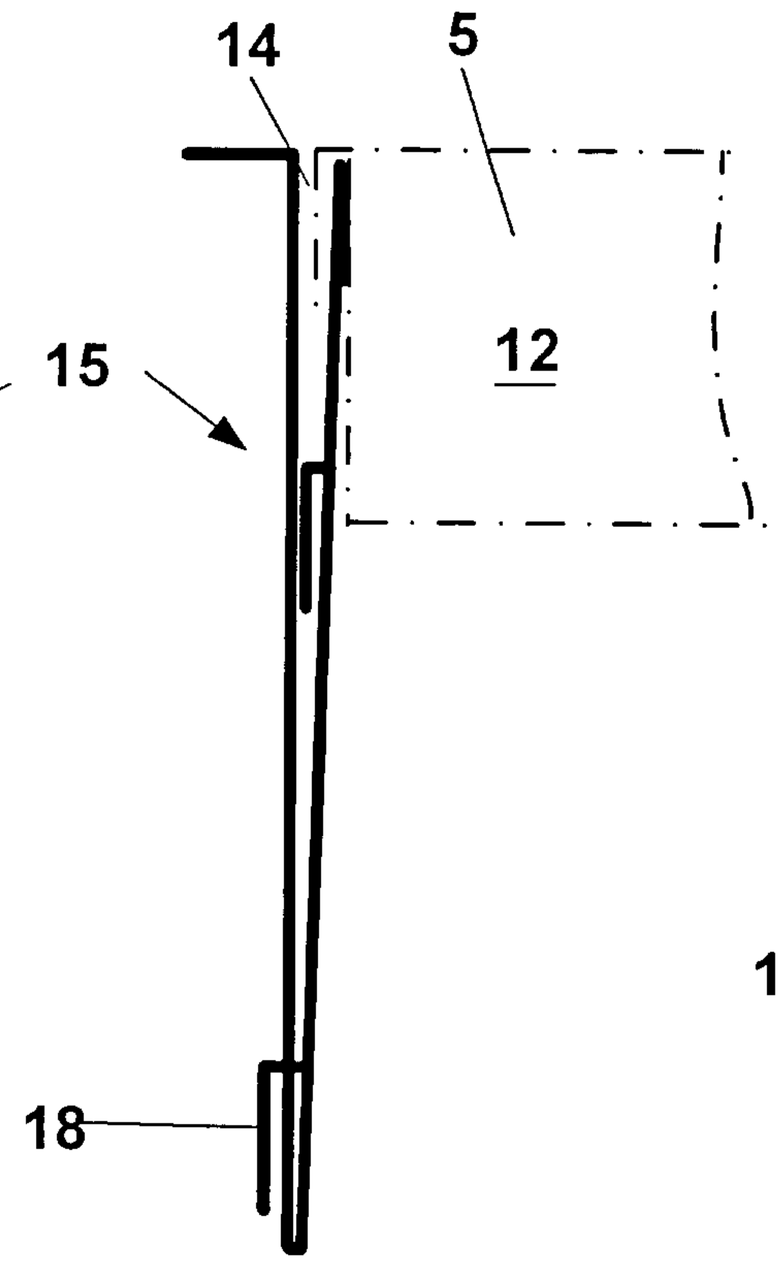


FIG. 9

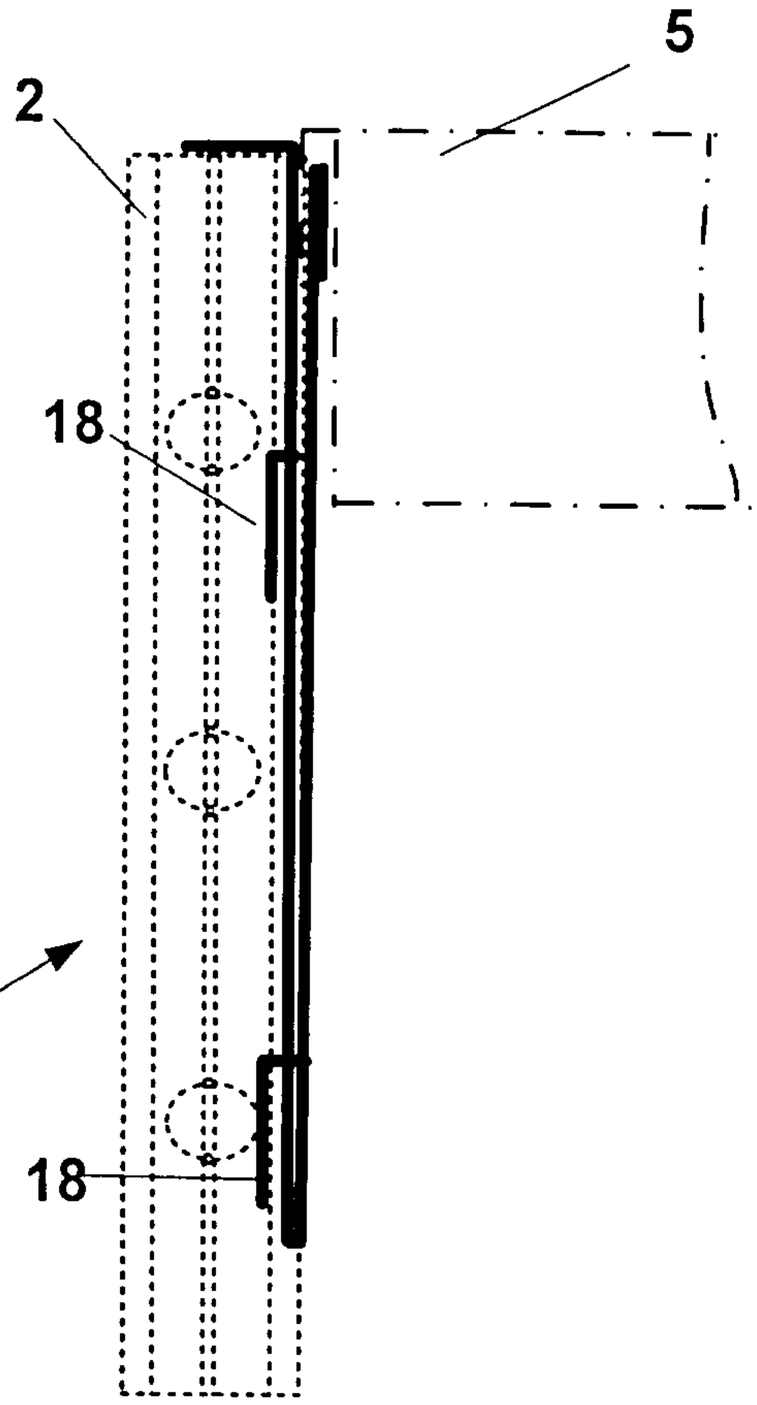
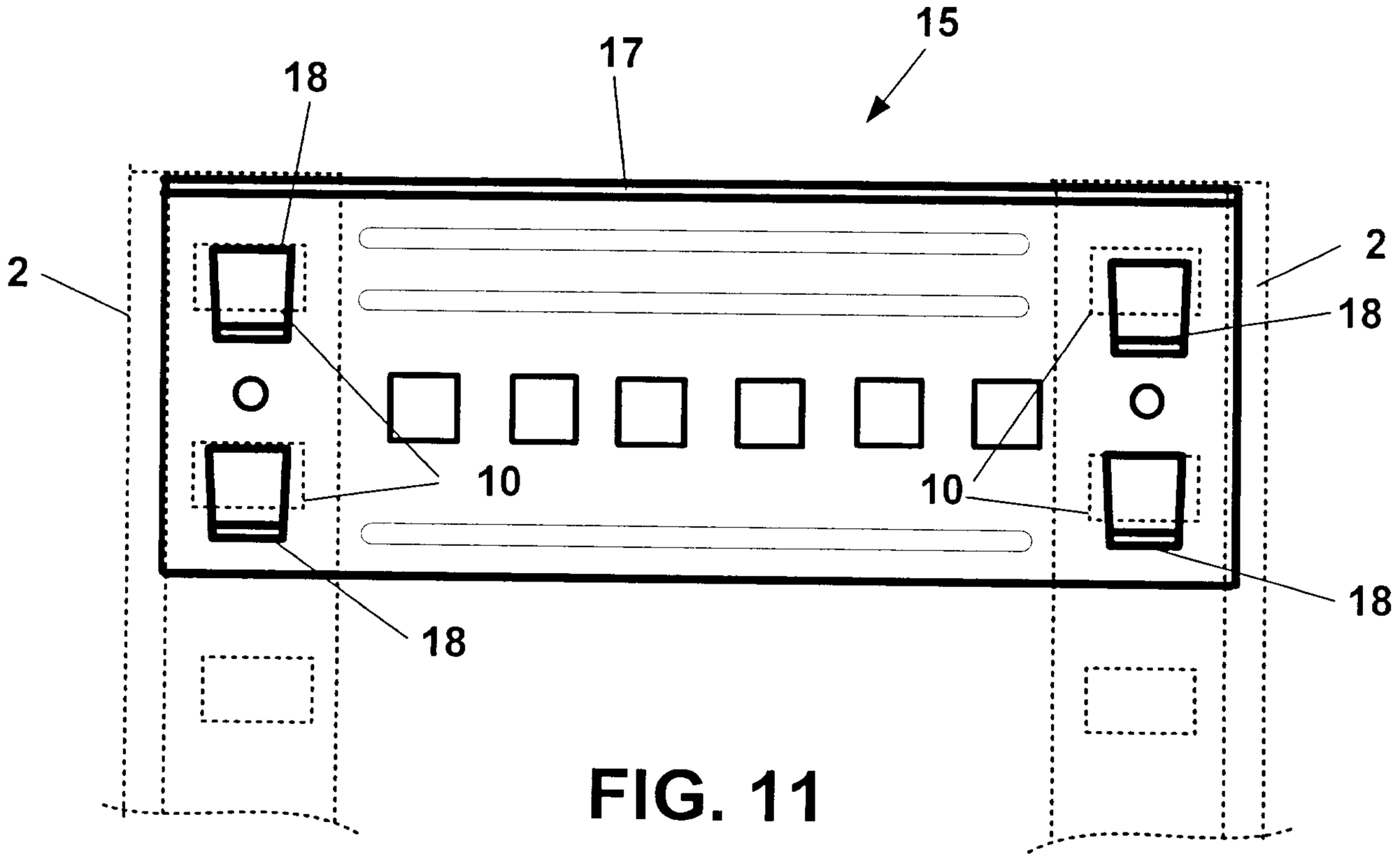


FIG. 10



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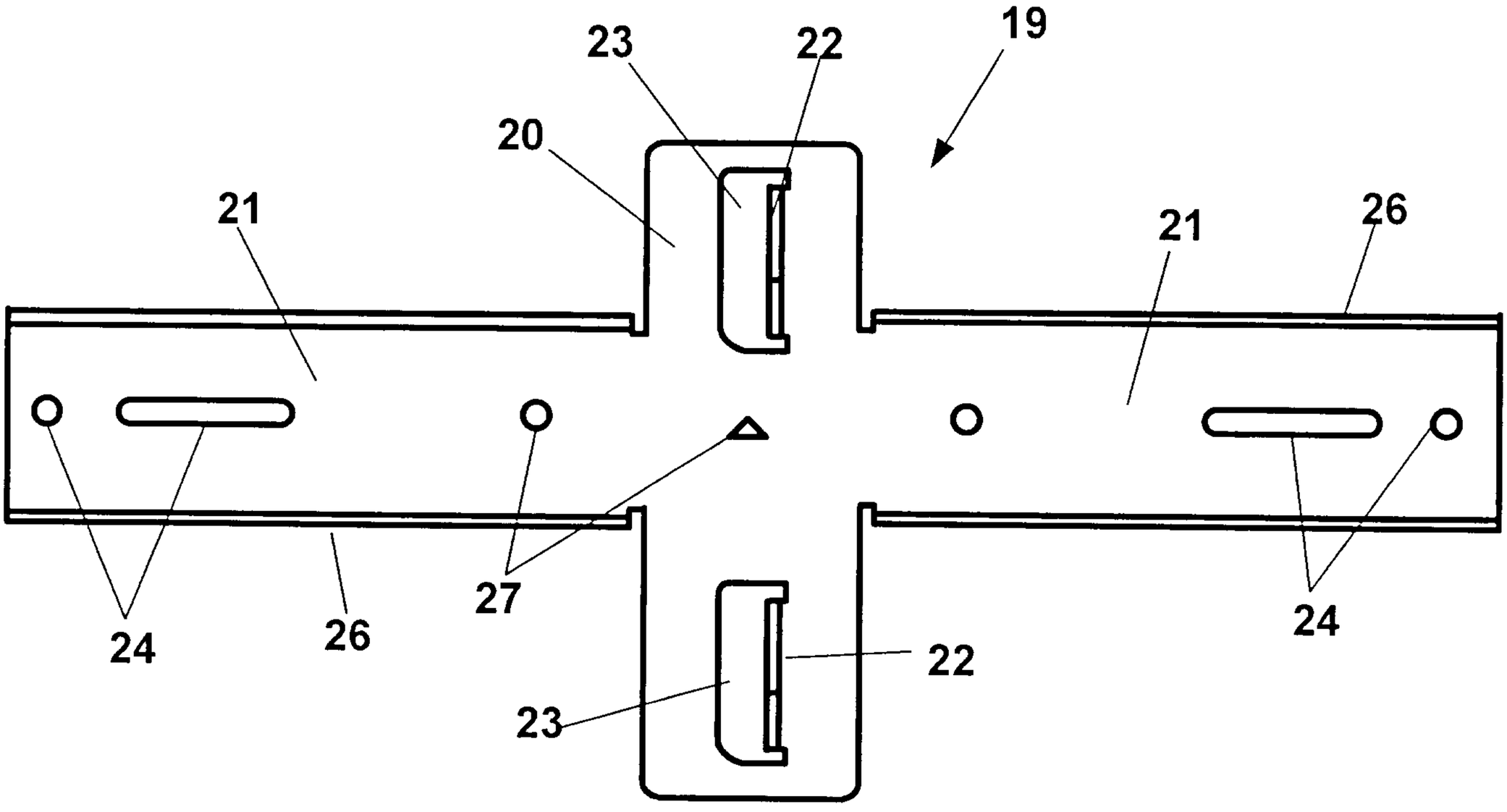


FIG. 12

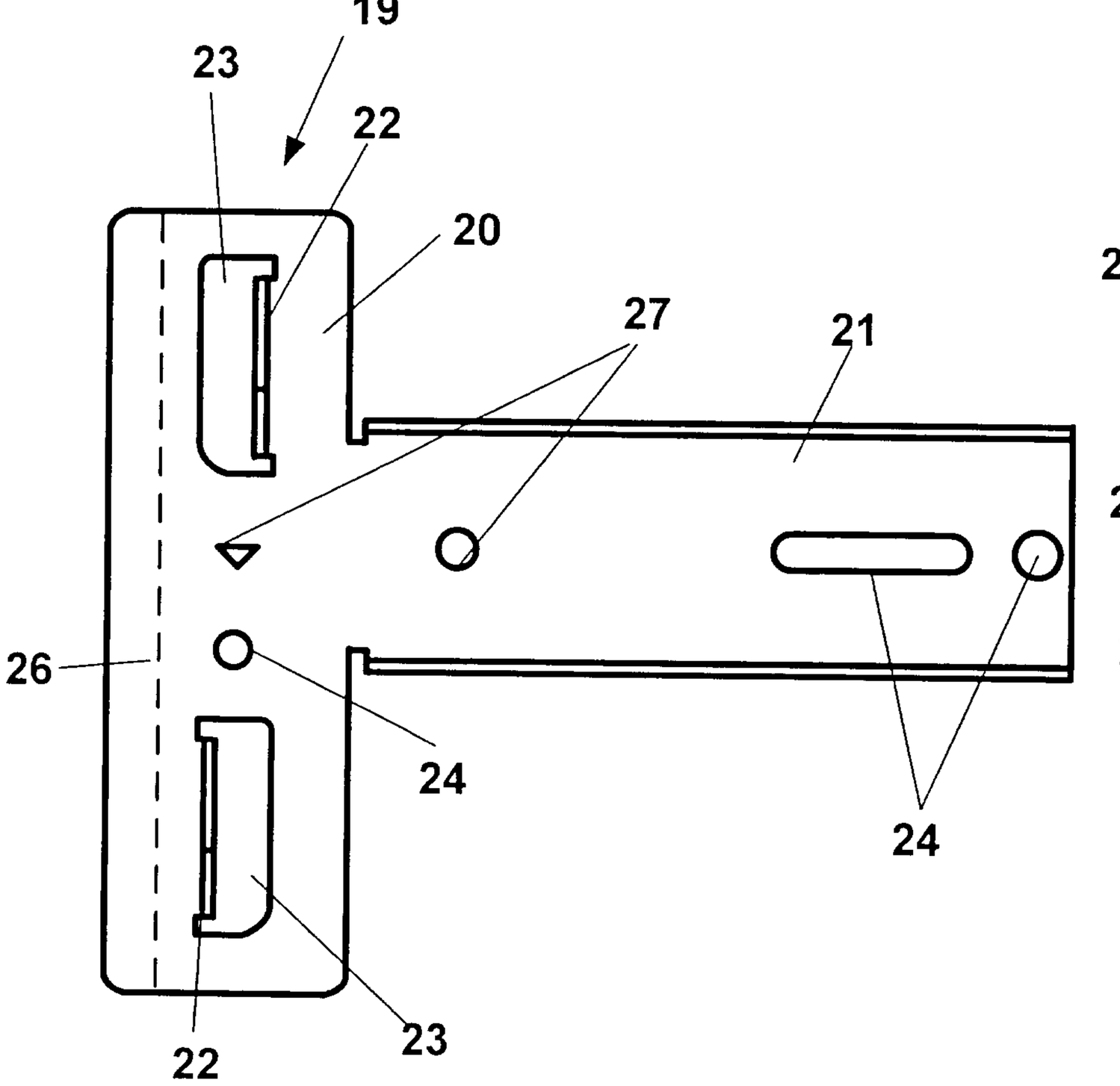


FIG. 13

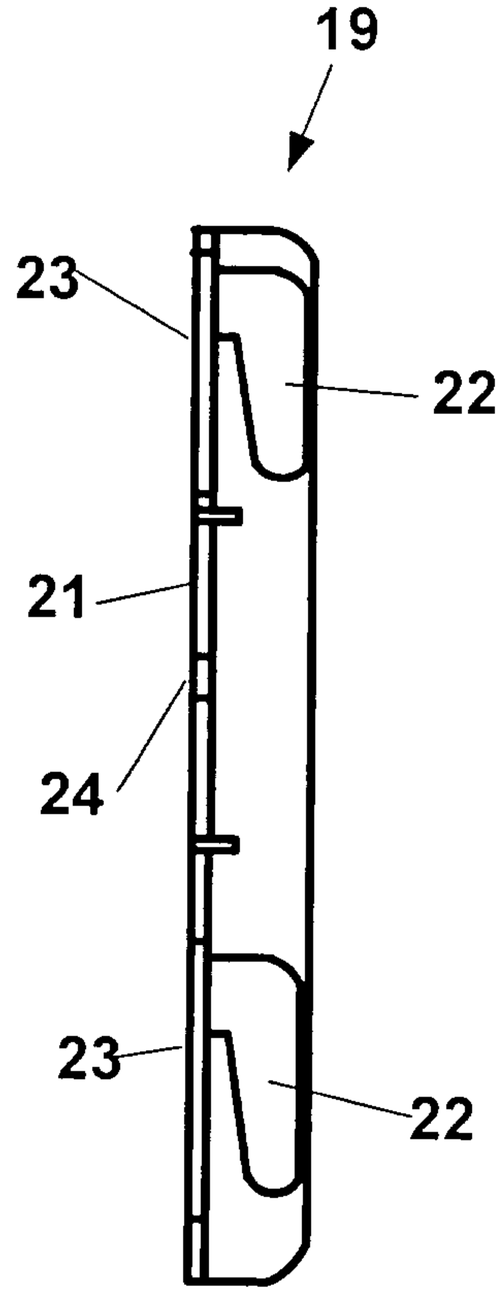
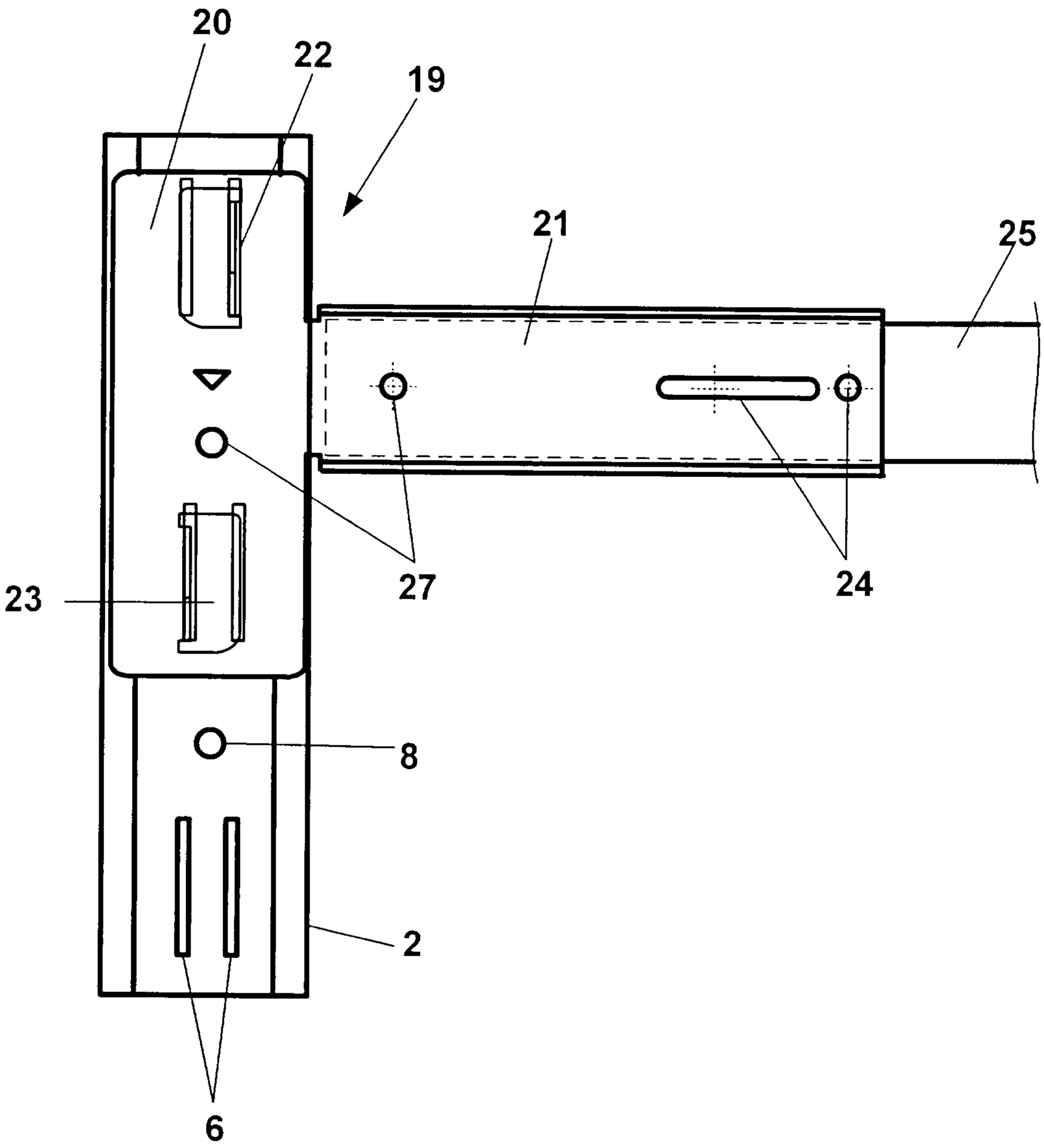


FIG. 14



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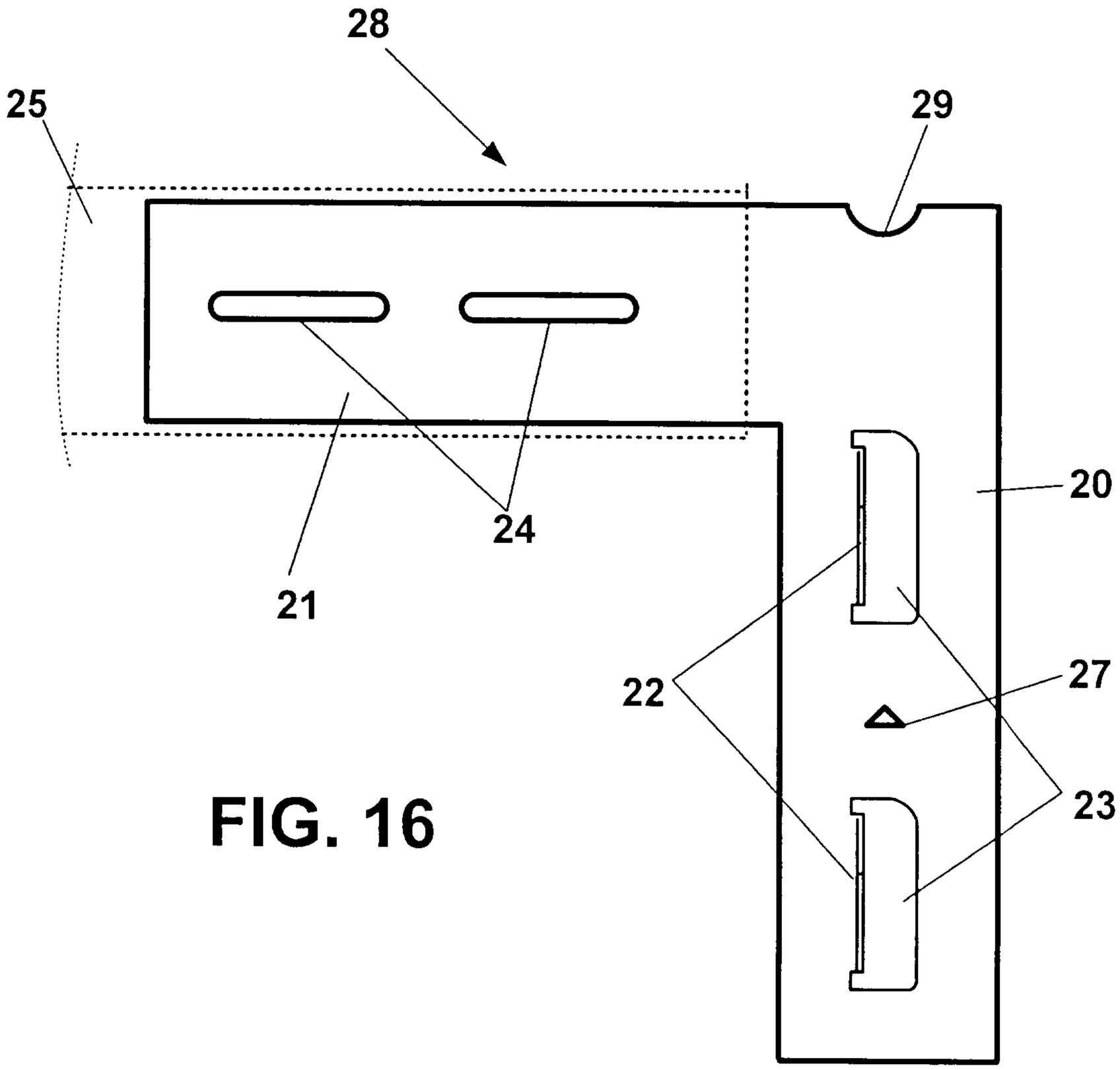


FIG. 16

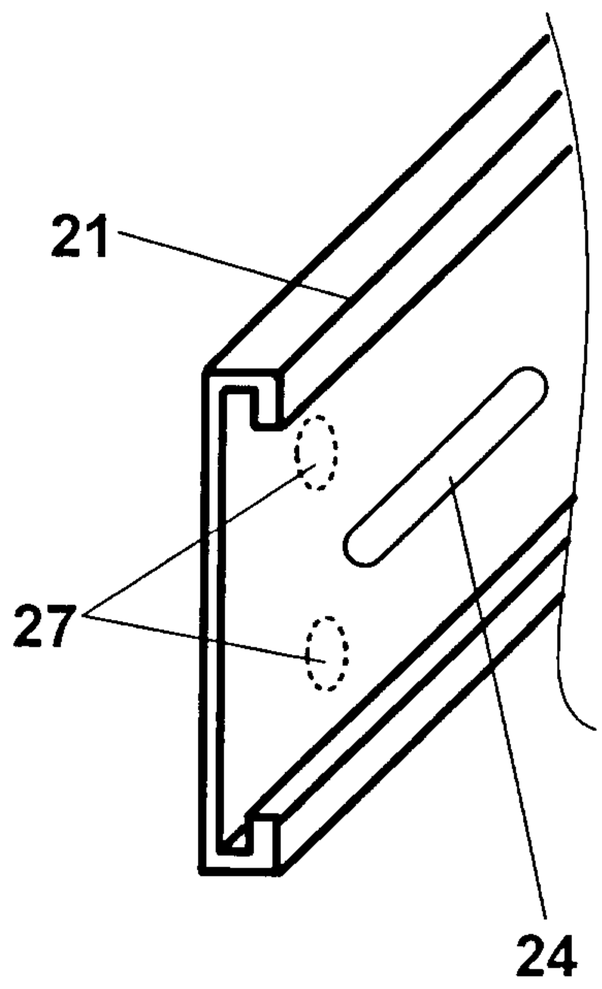


FIG. 17

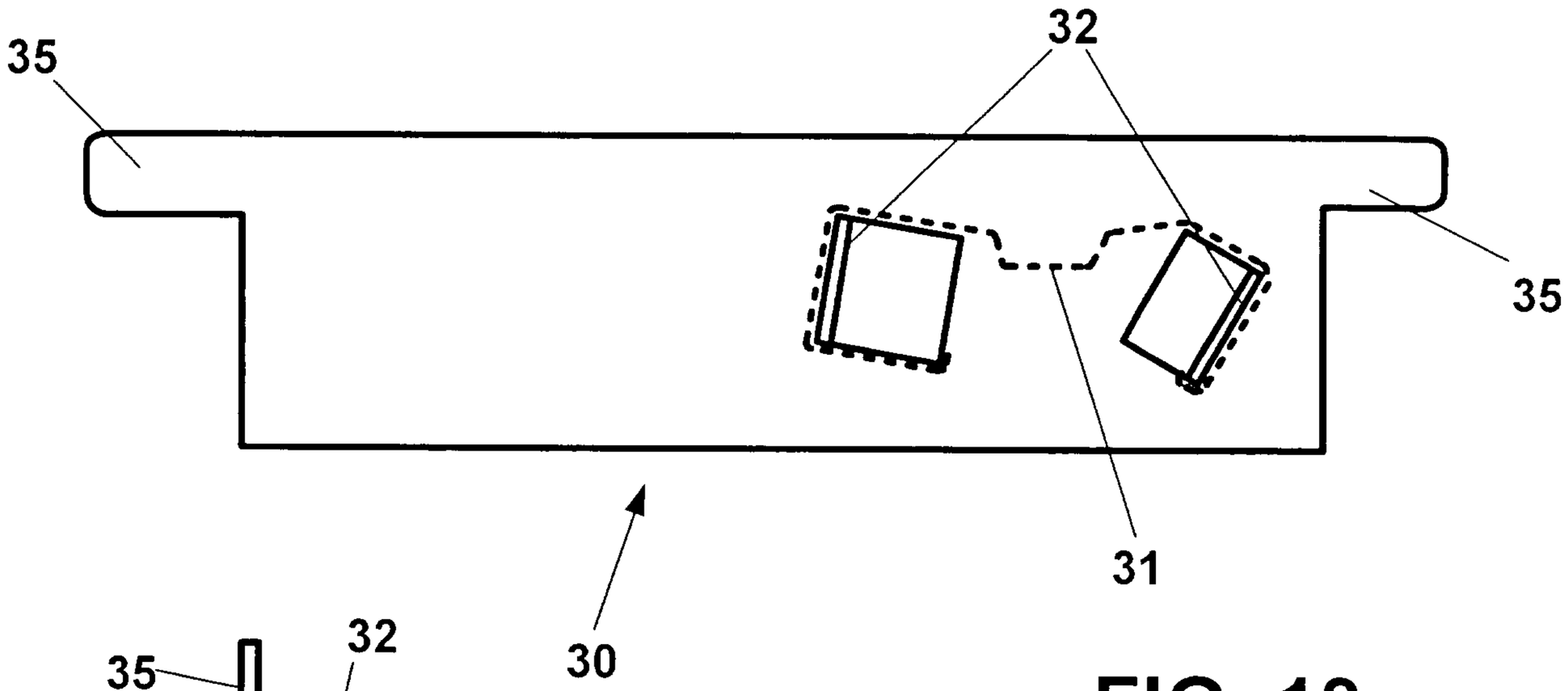


FIG. 18

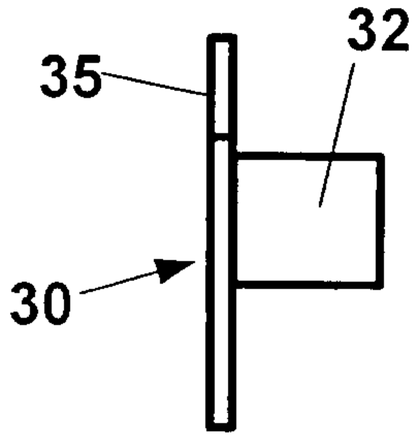


FIG. 19

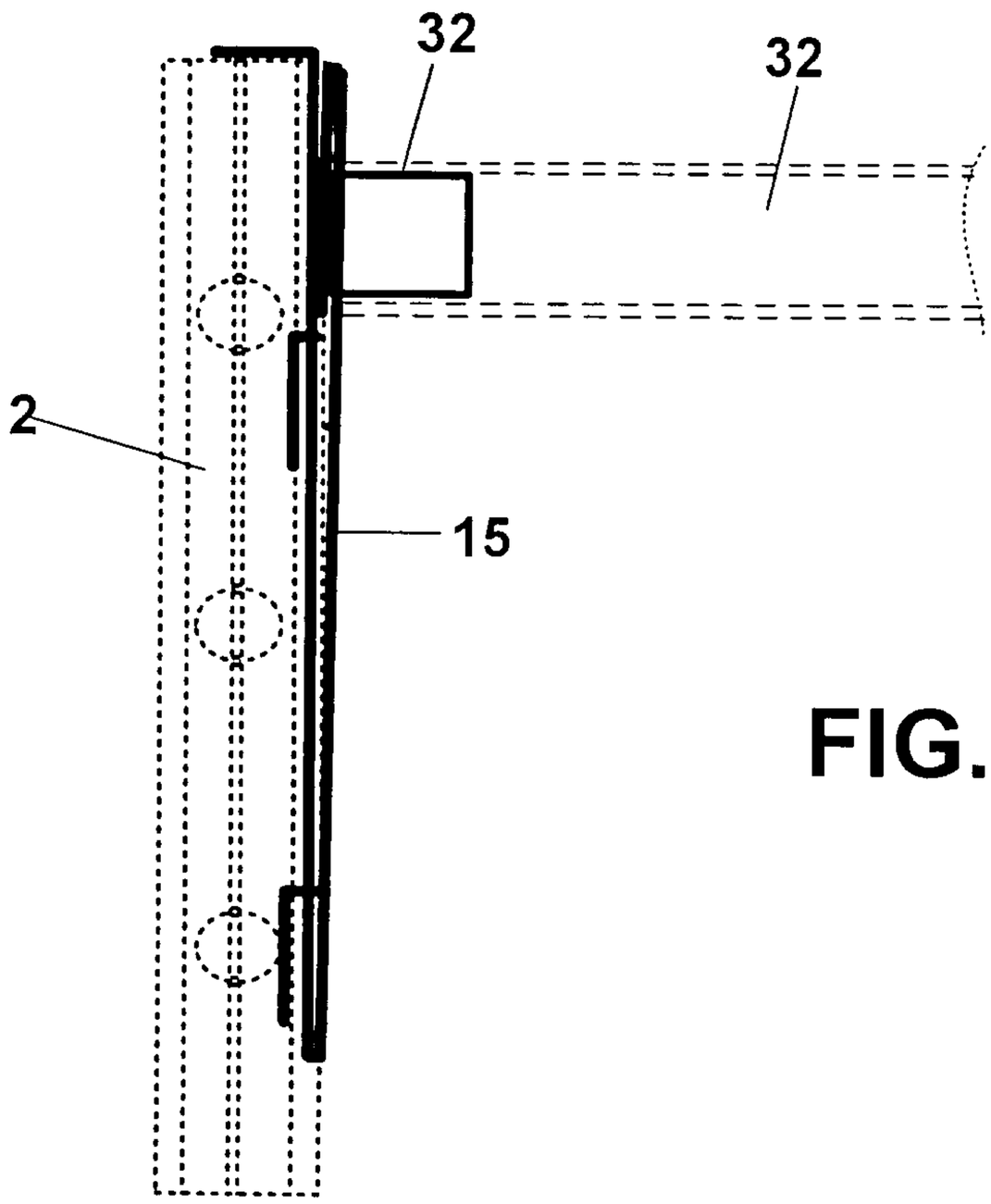


FIG. 20

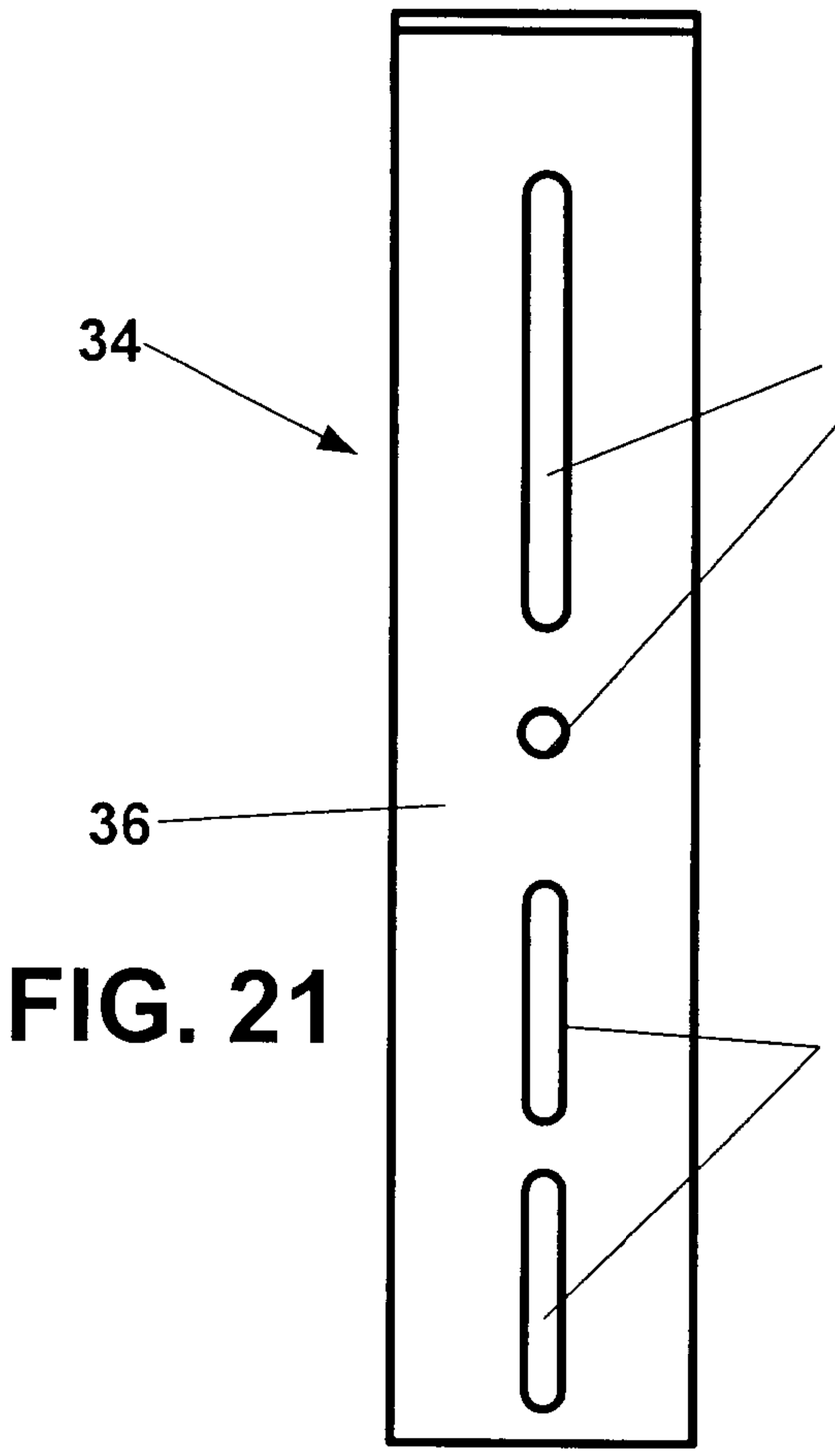


FIG. 21

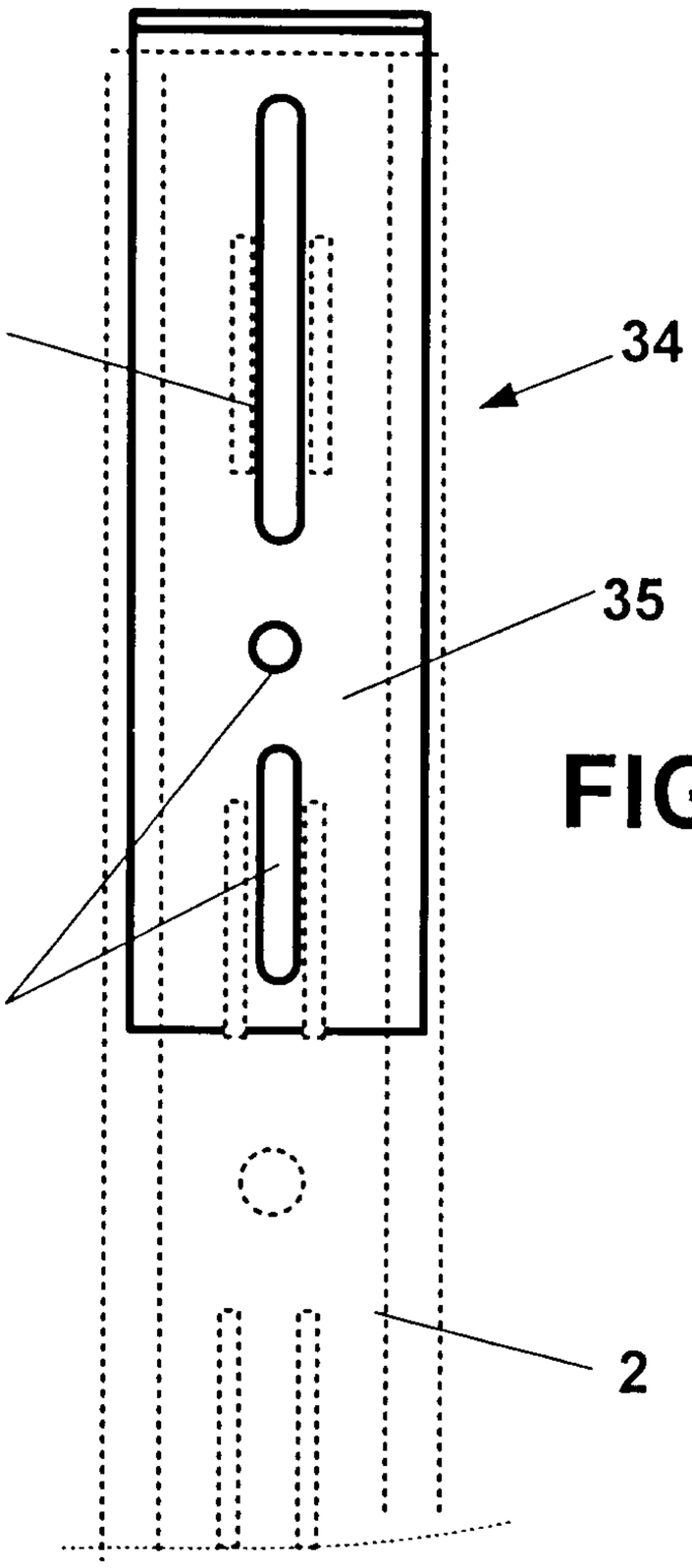


FIG. 23

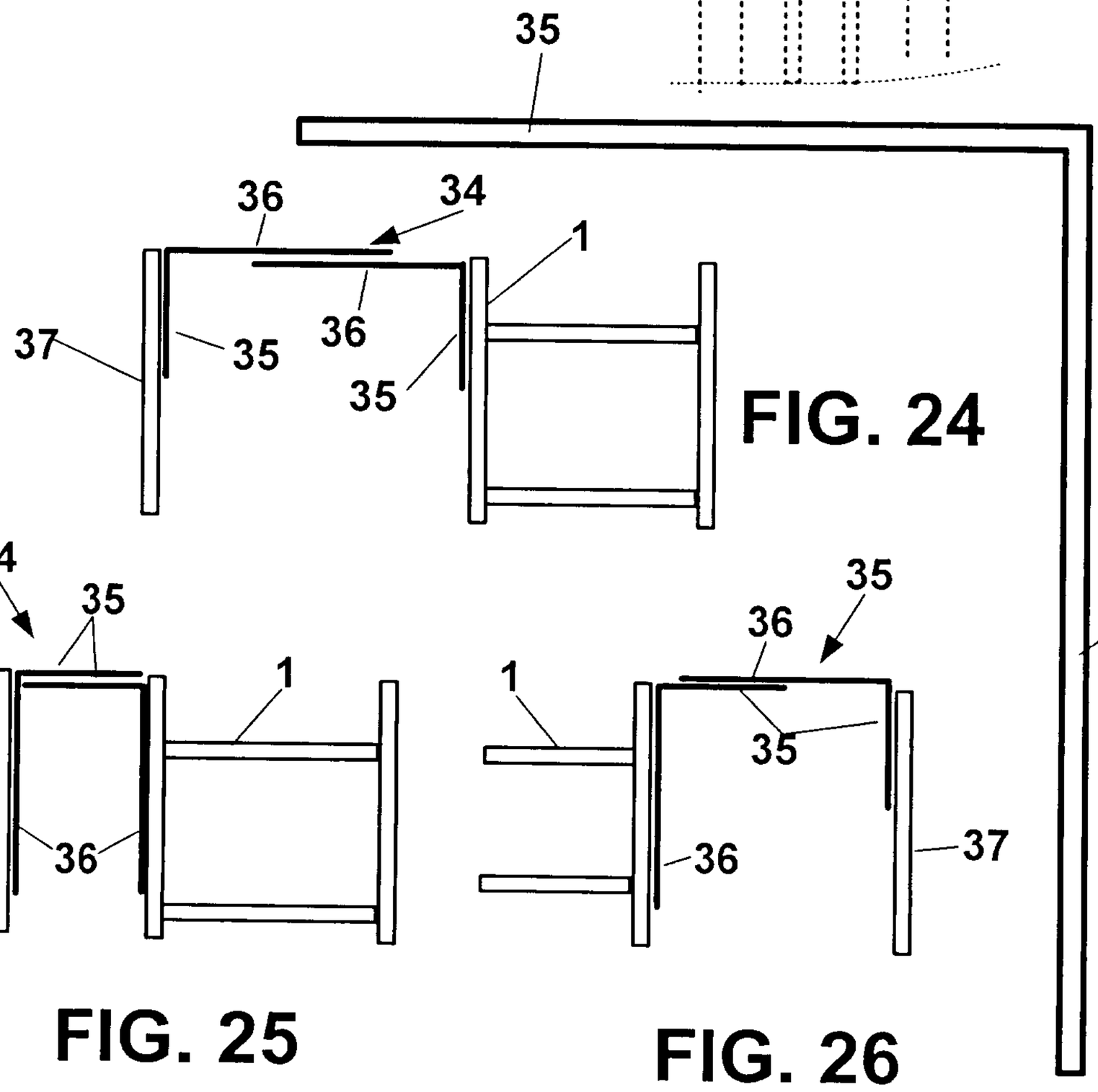


FIG. 24

FIG. 25

FIG. 26

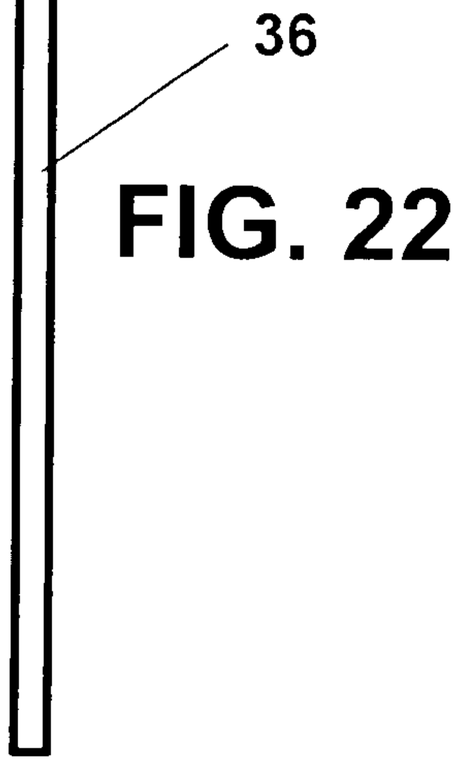


FIG. 22

FIG. 27

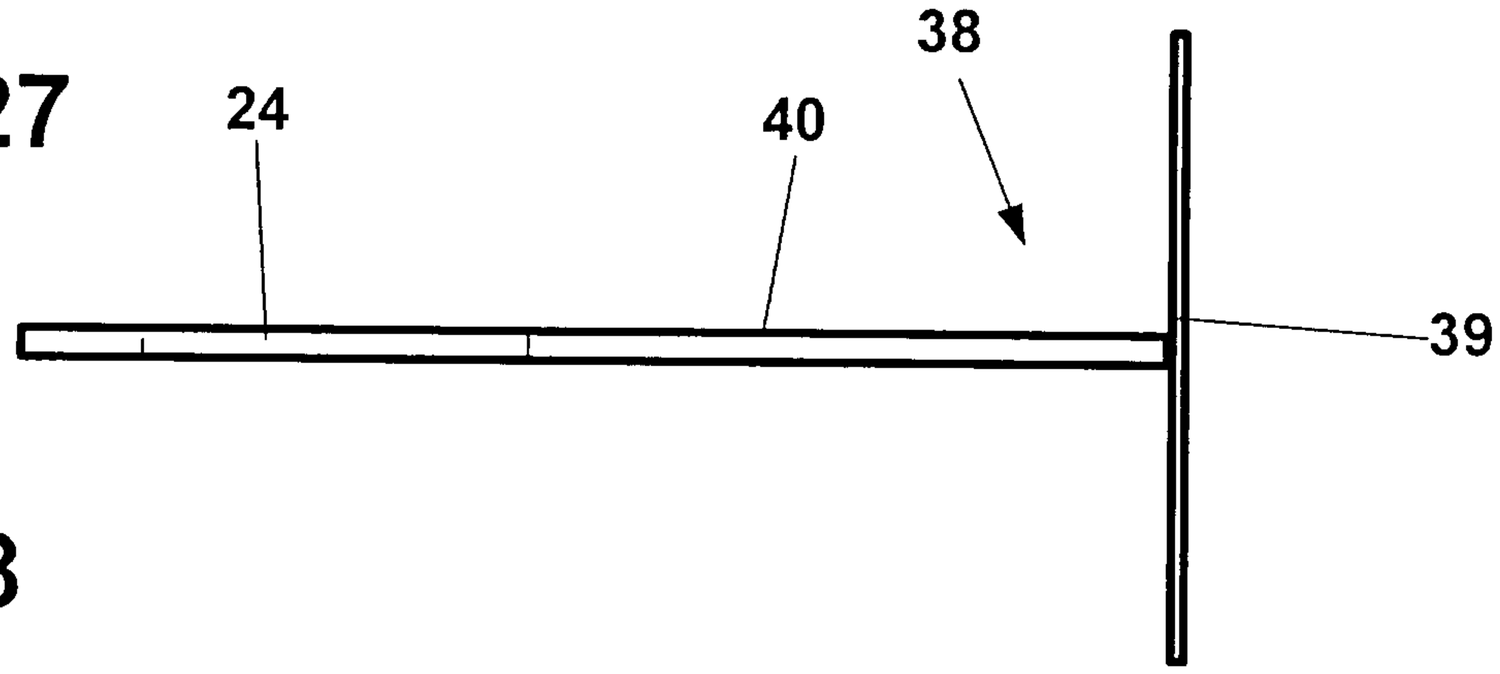


FIG. 28

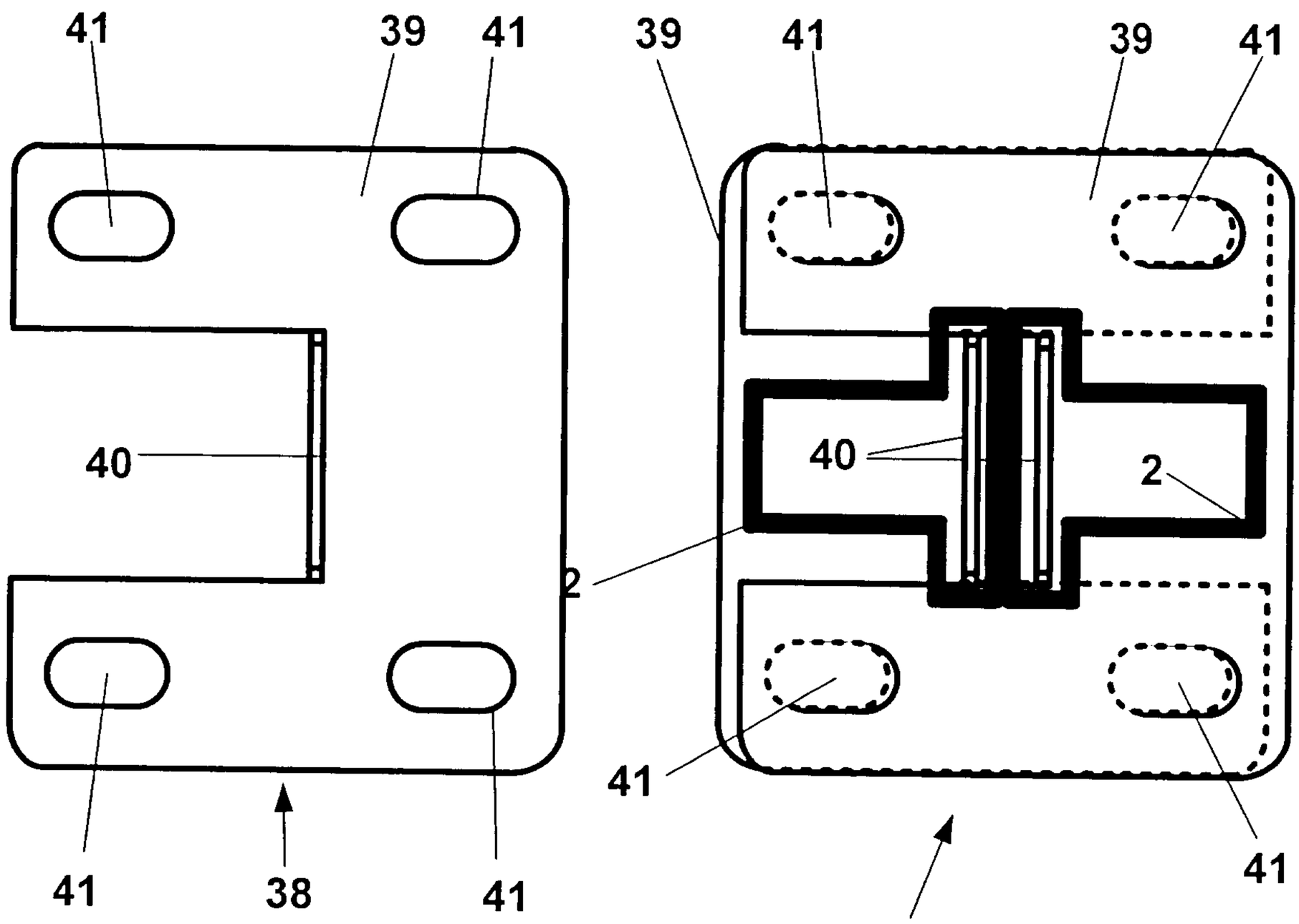
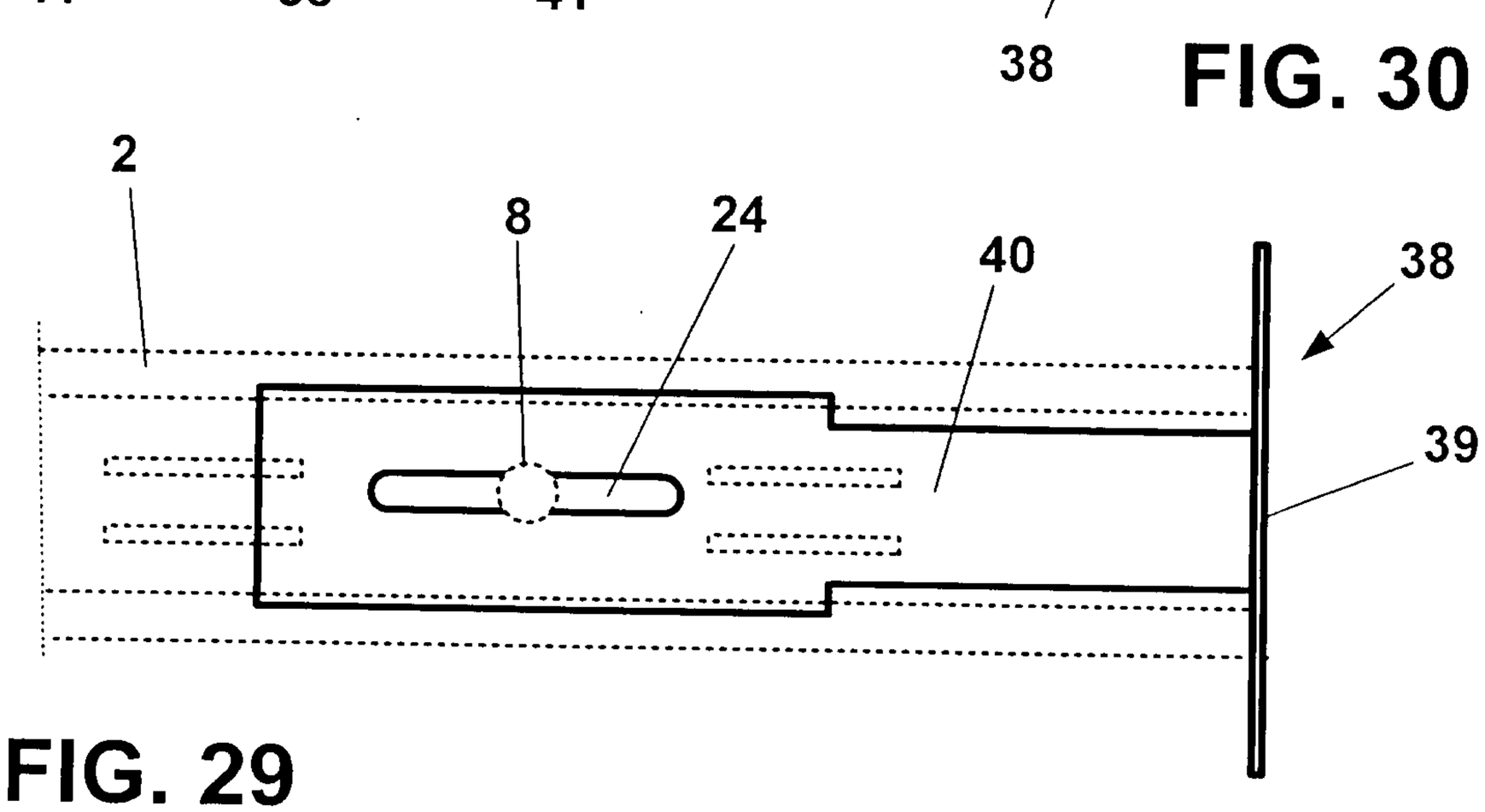


FIG. 30



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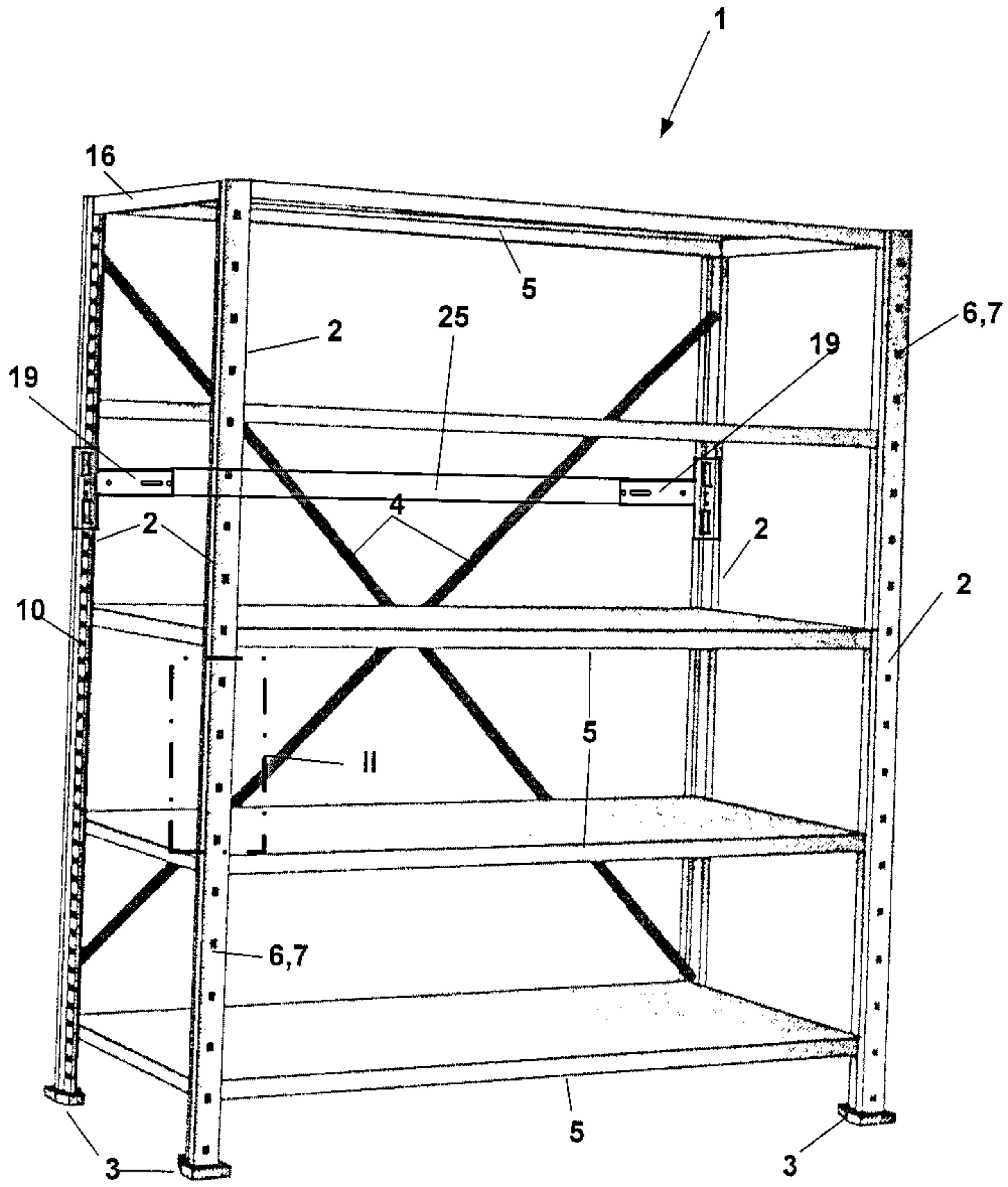
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