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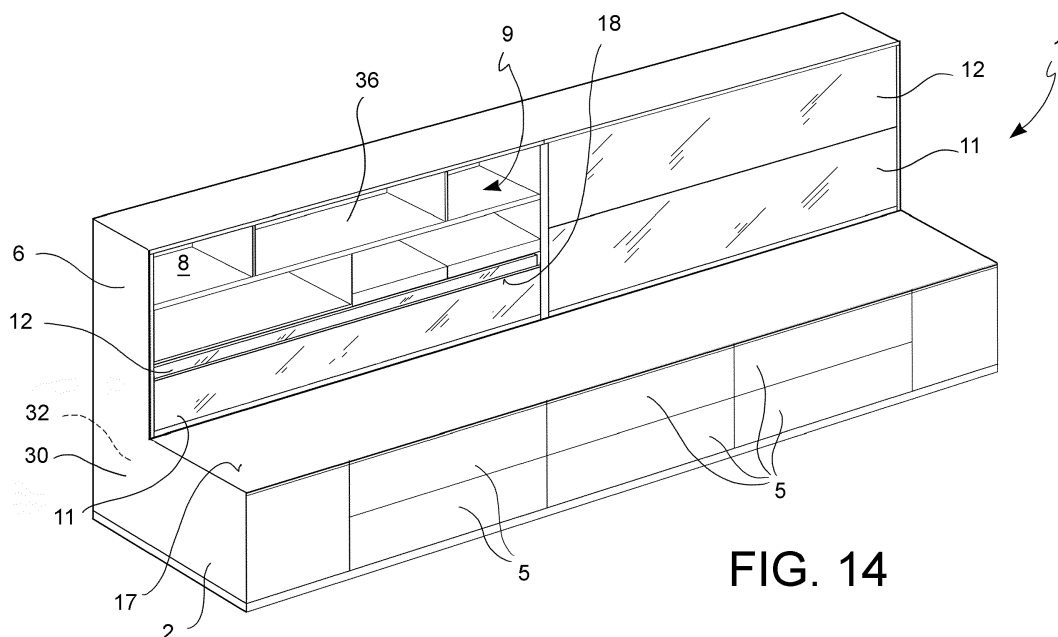
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(54) **OPENABLE ASSEMBLY AND FURNITURE ELEMENT, IN PARTICULAR FOR KITCHENS**

(57) A piece of furniture or a piece of kitchen furniture (10) comprising an openable assembly (1), said openable assembly (1) comprising a first compartment (4) accessible by means of at least one first opening and a second compartment (8) accessible by means of at least one second opening (9); wherein a closing device comprises at least one first closing element (11) and at least one second closing element (12); and wherein said openable assembly (1) comprises at least one seat (16), which at least partially receives both said one first closing element (11) and said one second closing element (12); and wherein, when in said at least one opening position, said

first closing element (11) and said second closing element (12) are housed in said one seat (16), and wherein said at least one first closing element (11) and said at least one closing element (12) are housed said seat (16) keep said first compartment (4) accessible; said openable assembly (1) comprises at least one synchronization device, which connects said first closing element (11) and said second closing element (12); and wherein said openable assembly (1) comprises at least one third compartment (32) which communicates with said second compartment (8), so that said third compartment (32) is accessible when said second opening (9) is open.

**FIG. 14****EP 3 228 800 A1**

Description

. Field of the invention

[0001] The present invention relates to an openable assembly.

[0002] The present invention also relates to a furniture element comprising said assembly, a piece of kitchen furniture comprising said assembly and a method for opening an openable assembly.

. Prior art

[0003] A modular furniture element solution comprising a retractable, in particular horizontally sliding, door is known from document US-3567302, for example. A further example of piece of furniture comprising horizontally sliding doors is given in DE-9317794.

[0004] Pieces of furniture generally comprising one or more retractable, in particular sliding, doors adapted to be superimposed in order not to increase the dimensions of the piece of furniture itself when it is open, are known. For example, furniture solutions comprising one or more vertically sliding doors are shown in documents BE-1002679 and EP-2821576. However, such furniture solutions have the disadvantage of providing an upper compartment which is always inaccessible.

[0005] From patent EP-0953713 it is known to make a piece of furniture having two doors sliding vertically in synchronous manner to make a first compartment or a second compartment alternatively accessible, wherein the size of said second compartment is double that of the first compartment and said second compartment is under said first compartment. By ascending, the sliding doors make the second compartment accessible, whilst closing the first compartment. Such solution, although advantageous in allowing the two sliding doors to be superimposed, make alternatively accessible either a first compartment or a second compartment, forcing to alternatively always close either said first compartment or said second compartment. Indeed, such solution is entirely unsuitable to make both said first and second compartment simultaneously accessible and to close them simultaneously both. Furthermore, the moving system of the sliding doors described by EP-0953713 is rather laborious to actuate because, in order to make the second compartment accessible, it requires to release one of the two sliding doors to make it ascend on a rail having the tortuous path, forcing to provide a handle which protrudes from the visible face of the door, in which said handle is made so as to be gripped by a hand to allow users to release the door and actuate the moving system by pulling the handle towards themselves. The necessary provision of such handle makes the appearance of sliding door less agreeable.

[0006] From international patent application WO-2009-113118 by the same Applicant, a system is known for concealing a foldaway element from sight, by pushing

it downwards, from a raised position, in which it closes a compartment, to a lowered position, in which it is hidden behind a front portion of a piece of furniture. Although advantageous, such solution can only be applied to low pieces of furniture, because the single foldaway element, which must be pushed from its upper edge, must be necessarily reachable by a normal user, e.g. a person of average height, when the foldaway element is in the raised position, also considering the dimension of said front portion of furniture which forces the user to act at a given distance from the foldaway element. Concurrently, such single foldaway element must be sufficiently small in size to be concealed behind the front portion of the piece of furniture and is therefore adapted to close compartments of limited extension.

[0007] The need is thus felt to provide a solution to the drawbacks of the prior art reported here.

[0008] The need is felt to provide an openable and closable solution for applications as furniture element, e. g. for kitchens, comprising closing elements, suitable for closing an opening of considerable dimensions, without because of this being difficult to manoeuvre.

[0009] Thus, the need is strongly felt to provide a compact, openable and closable solution for applications as furniture elements, e.g. for kitchens, comprising closing elements, adapted to close a piece of furniture of considerable height yet easily manoeuvrable by a normal user and which such closing elements, when are open, avoid to close-off some compartments of the piece of furniture.

. Solution

[0010] It is an object of the present invention to devise a solution for the needs of the prior art mentioned above.

[0011] It is an object of the present invention to provide an openable assembly and a furniture element and a piece of kitchen furniture, which has improved functionality with respect to the known solutions and at the same time has a pleasant appearance.

[0012] It is an object of the present invention to provide an openable furniture element solution.

[0013] It is an object of the present invention to provide an openable furniture element solution, adapted to be used in kitchens.

[0014] It is a further particular object of the present invention to provide a closable furniture element solution, adapted to be used in kitchens, such as, for example, a piece of kitchen furniture.

[0015] This and other objects are achieved by an openable assembly according to claim 1, by a furniture element according to claim 12, by a piece of kitchen furniture according to claim 13, and by a method according to claim 14.

[0016] Some advantageous embodiments are the object of the dependent claims.

. Figures

[0017] Further features and advantages of the assembly, of the furniture element, of the piece of kitchen furniture and of the method according to the invention will be apparent from the description provided below of preferred embodiments thereof, given by way of non-limiting examples, with reference to the accompanying drawings, in which:

- figure 1A is a diagram which illustrates a section view of an openable assembly, according to an embodiment;
- figure 1B is a diagram which illustrates a section view of an openable assembly, according to an embodiment;
- figure 1C is a diagram which illustrates a section view of an openable assembly, according to an embodiment;
- figure 1D is a diagram which illustrates an axonometric view of an openable assembly, according to a variant embodiment;
- figure 1E is a diagram which illustrates an axonometric view of an openable assembly, according to a variant embodiment;
- figure 2 is a front view which shows an openable assembly according to an embodiment wherein the closing elements are in the closing position;
- figures 3, 4, 5 and 6 are front views which show an openable assembly according to an embodiment, in which some closing elements are at least partially open;
- figure 7 is a section view taken along the line VII-VII shown in figure 4;
- figure 8 is a section view taken along the line VIII-VIII shown in figure 5;
- figure 9 is a section view taken along the line VII-VII shown in figure 6;
- figure 10 is a section view from the top which illustrates a piece of kitchen furniture, according to an embodiment;
- figure 11 is an axonometric view which shows a portion of a piece of kitchen furniture, according to an embodiment;
- figure 12 is a perspective diagram which diagrammatically illustrates a synchronization device, according to an embodiment;
- figure 13 is a perspective diagram which diagrammatically illustrates a synchronization device, according to an embodiment;
- figure 14 is a perspective view of a kitchen piece of furniture, according to an embodiment.

. Description of some preferred embodiments

[0018] According to a general embodiment, an openable assembly 1 is provided.

[0019] By way of non-limiting example, said openable

assembly 1 is adapted to be used in a furniture element, as well as in a piece of kitchen furniture 10, although the use of an openable assembly 1 according to the invention is not limited to a furniture element. Indeed, an openable assembly according to the invention can be used in all types of containers.

[0020] Said openable assembly 1 comprises at least one first container 2, comprising first container walls which at least partially delimit at least one first compartment 4.

[0021] Said at least one first compartment 4 is accessible through at least one first opening.

[0022] According to an embodiment, said openable assembly 1 comprises at least one first opening closing device 5, which closes and opens at least one portion of said first opening. For example, said first opening closing device 5 comprising swing doors, sliding doors or at least one drawer.

[0023] According to a variant embodiment, said first opening is always at least partially open. In other words, said first compartment 4 is always accessible. For example, said first compartment 4 is an open compartment.

[0024] Said openable assembly 1 comprises at least one second container 6, comprising second container walls, which at least partially delimit at least one second compartment 8.

[0025] In the description above and that follows, and in the appended claims, the word "compartment" indicates a volume of space inside a container, even if said container comprises shelves or uprights or shelving which divide such a compartment into portions of compartment.

[0026] Said at least one second compartment 8 is accessible through at least one second opening 9.

[0027] According to an embodiment, said first container 2 is at least partially by the side of said second container 6.

[0028] According to an embodiment, said first container 2 is at least partially laid on said second container 6.

[0029] According to an embodiment, said first opening and said second opening make frontally accessible said first compartment 4 and said second compartment 9, respectively. According to an embodiment, said first compartment 4 and said second compartment 9 are frontally accessible. According to an embodiment, said first opening and said second opening are disjoined in respect of one another.

[0030] Said openable assembly 1 comprises at least a second opening closing device, which closes and opens at least one portion of said second opening 9.

[0031] Said second opening closing device comprises at least one first closing element 11 and at least one second closing element 12. In the description and in the claims, the words "said closing elements 11, 12" or the words "said at least one first closing element 11 and said at least one second closing element 12" will be used to indicate the whole of said at least one first closing element 11 and said at least one second closing element 12.

[0032] According to an embodiment, said at least one first closing element 11 and said at least one second closing element 12 are sliding doors. According to an embodiment, said at least one first closing element 11 and said at least one second closing element 12 are retractable doors. According to an embodiment, said at least one first closing element 11 and said at least one second closing element 12 are retractable sliding doors.

[0033] Said at least one first closing element 11 and said at least one second closing element 12 are movable in at least one closing position, or closed position, in which they close said second opening 9, and at least one opening position, or open position, in which they at least partially open said second opening 9, making said second compartment 8 accessible.

[0034] Said openable assembly 1 comprises at least one seat 16, which at least partially receives both said at least one first closing element 11 and said at least one second closing element 12.

[0035] Advantageously, when in said at least one opening position, said at least one first closing element 11 and said at least one second closing element 12 are housed in said at least one seat 16.

[0036] By providing said at least one seat 16 it is possible to keep said assembly equally compact when said second opening 9 is closed and when said second opening 9 is open, thus avoiding to configure said closing elements 11, 12 so as to increase the dimensions of said openable assembly 1.

[0037] According to a preferred embodiment, said at least one seat 16 is single seat 16. In this manner, when in said at least one opening position, said at least one first closing element 11 and said at least one second closing element 12 are both housed in said one seat 16.

[0038] According to an embodiment, said first container 2 delimits a portion of said at least one seat 16 with at least one of its walls.

[0039] With further advantage, when said at least one first closing element 11 and said at least one second closing element 12 are housed in said at least one seat 16, they keep said at least one first compartment 4 accessible through said at least one first opening.

[0040] In other words, said first closing element 11 and said second closing element 12 are unsuited to close said first opening when they open said second opening 9.

[0041] In this manner, said first opening closing device 5 is always uncoupled from said second opening closing device, thus making it possible to close said first opening and said second opening 9 simultaneously, and to open said first opening and said second opening 9 simultaneously, and to open either said first opening and said second opening 9, avoiding to open the other.

[0042] According to an embodiment, as shown for example in **figure 1 B**, said second container 6 partially delimits an open compartment 81, accessible through an open compartment opening 82, in which said open compartment opening 82 is unsuited to be closed and when said closing elements are in an opening position 11, 12,

said open compartment 81 is joined to said second compartment 8 and second open compartment opening 82 makes it possible to access said second compartment 8.

[0043] According to an embodiment, said open compartment 81 is unsuited to be closed. According to an embodiment, said closing elements 11, 12, separate said second compartment 8 and said open compartment 81 when they are in closing position.

[0044] According to an embodiment, said second container 6 comprises a portion of second compartment 8 accessible by means of swing doors.

[0045] Advantageously, said openable assembly 1 comprises at least one synchronization device.

[0046] Said synchronization device connects said first closing element 11 and said second closing element 12, so that, by moving said at least one first closing element 11, the movement of both said at least one first closing element 11 and of said second closing element 12 is obtained, thus avoiding to handle said second closing element 12.

[0047] According to an embodiment, said synchronization device connects said first closing element 11 to said second closing element 12, so that the simultaneous movement of said at least one first closing element 11 and of said second closing element 12 is obtained by moving said at least one first closing element 11.

[0048] Advantageously, said synchronization device synchronizes the relative movement of said first closing element 11 and of said second closing element 12, thus making it possible to obtain the movement of said first closing element 11 and of said second closing element 12, usually acting on either said first closing element 11 or said second closing element 12.

[0049] By providing said synchronization device, a user can open and close said second opening 9, avoiding to act on said second closing element 12. In this manner, said second closing element 12 is adapted to close second openings 9 of considerable extension in height or second openings 9 arranged in positions which are difficult to access by a normal user, e.g. a user of average height.

[0050] By providing said synchronization device, a user can make entirely available said second opening 9 with a single opening control. In this manner, uncomfortable manoeuvres are not forced on the user and no need auxiliary devices are needed to open and/or close said second opening 9.

[0051] According to an embodiment, said synchronization device determines the simultaneous movement of said first closing element 11 and of said second closing element 12, by at least partially superimposing said at least one first closing element and said second closing element.

[0052] According to a preferred embodiment, said openable assembly 1 comprises at least one third container 30 comprising third container walls which at least partially delimit at least one third compartment 32. Preferably, said at least one third compartment 32 commu-

nicates with said second compartment 8, so that said at least one third compartment 32 is accessible, preferably accessible through said second opening 9, when said second opening 9 is open. According to an embodiment, said third container walls at least partially delimit at least one third opening 33, or third compartment opening 33, facing said second opening 9.

[0053] According to an embodiment, said third container 30 at least partially penetrates in said second container 6. According to an embodiment, the walls of said third container 32 are made in a single piece with the walls of said second container 6 and/or with the walls of said first container 2. In this way, said second container walls at least partially delimit at least one third opening 33, facing said second opening 9.

[0054] According to an embodiment, for a normal user said second opening 9 is frontally accessible and said third opening 33 is accessible from said second compartment 8. In such way, said second compartment 8 is frontally accessible and said third compartment 32 is accessible from said second compartment 8.

[0055] Advantageously, moving said first closing element 11 towards said seat 16 makes simultaneously accessible both said at least one second compartment 8 and said at least one third compartment 32, avoiding to make said at least one first compartment 4 inaccessible.

[0056] This makes it possible with a single opening movement to make a plurality of compartments simultaneously accessible.

[0057] Thanks to the provision of said at least one third compartment 32 is possible to use a further volume, namely the third compartment 32, which is designated to, for example, to a service compartment in prior solutions of piece of furniture.

[0058] According to an embodiment, said at least one third container 30 is arranged aside said first container 2. According to an embodiment, said at least one third container 30 is arranged behind said first container 2. According to an embodiment, said at least one third container 30 is arranged behind said first container 3 and below said second container 6. According to an embodiment, said at least one third compartment 32 is arranged behind said first compartment 4 and below said second compartment 8.

[0059] According to an embodiment, said at least one third container 30 is arranged behind said seat 16, wherein said seat 16 is arranged behind said first container 2. According to an embodiment, said at least one third compartment 32 is arranged behind said seat 16, wherein said seat 16 is arranged behind said first compartment 4. In this way, it is possible to maintain said third compartment 32 accessible when said closing elements 11, 12 are received in said seat 16.

[0060] According to an embodiment, said third container 30 delimits a plurality of third compartments 32.

[0061] According to an embodiment, said at least one third compartment 32 comprises at least one third compartment closing device which closes and opens said

third compartment 32.

[0062] According to an embodiment, said at least one third compartment 32 closing device comprises at least one movable element for opening and closing said third compartment 32.

[0063] The provision of said third compartment closing element allows to make selectively accessible said at least one third compartment 32 from said second compartment 8.

[0064] According to an embodiment, said synchronization device moves said at least one first closing element 11 and said second closing element 12 substantially in the same direction and in the same sense, or movement sense 100. In this manner, said at least one first closing element 11 and said at least one second closing element 12 can be housed in the same seat 16.

[0065] Preferably, said movement sense 100 is directed in substantially vertical direction 100, when said openable assembly is in operating conditions. Preferably, said movement sense 100 is the opening sense of said closing elements 11, 12. According to a preferred embodiment, said synchronization device moves said at least one first closing element 11 and said second closing element 12 substantially downwards. In other words, said movement sense 100 is directed downwardly. According to an embodiment, said movement sense 100 is directed upwardly. According to a preferred embodiment, said synchronization device moves said at least one first closing element 11 and said second closing element 12 substantially upwards.

[0066] This makes it possible to develop said openable assembly 1 vertically and to make accessible at least a third compartment 32 favourably located lower than said second compartment 8 when said closing elements 11, 12 are in open position. At the same time, it makes it possible to easily manoeuvre the openable assembly 1 even if the extension in height of said openable assembly 1 is greater than the height of a user.

[0067] According to a preferred embodiment, said movement sense 100 is directly upwards during the step of closing of said opening elements 11, 12, and is directed downwards during the step of closing of said opening elements 11, 12.

[0068] According to an embodiment, said movement sense 100 is directly substantially in horizontal direction. In other words, said synchronization device moves said at least one first closing element 11 and said second closing element 12 substantially in horizontal direction.

[0069] According to an embodiment, said third container 30 comprises at least one working surface 38 facing said second compartment 8.

[0070] According to an embodiment, said at least one third compartment 32 can be accessed through at least one third compartment opening 33, or third opening 33, of smaller size than said at least one second opening 9.

[0071] According to an embodiment, said second container 6 opens by lowering said closing elements 11, 12 and taking them behind said first container 2. In this man-

ner, said closing elements 11, 12 are concealed from sight when the second container 6 is open. Preferably, said closing elements 11, 12 are frontally concealed for a normal user.

[0072] According to an embodiment, said second container 6 closes by raising said closing elements 11, 12, taking them out from said seat 16, hidden by said first container 2.

[0073] According to an embodiment, illustrated for example in **figure 1 D**, said movement sense 100 is directed sideways.

[0074] According to a variant embodiment, said movement sense 100 is directly substantially upwards. This makes it possible to develop said openable assembly vertically and when said closing elements 11, 12 are in open position, makes accessible a third compartment 32 located higher than said second compartment. For example, said third compartment 32 may comprise an extractable hanging element which extends downwards.

[0075] According to an embodiment, said synchronization device determines that said second closing element 12 moves at a faster speed than said first closing element 11. In this manner, it allows said first closing element 11 and said second closing element 12 to be completely housed in the seat 16 either at the same time or simultaneously. Furthermore, in this manner, said at least one first closing element 11 and said at least one second closing element 12 are at least partially superimposed when they are housed in said seat 16.

[0076] According to an embodiment, said first closing element 11 and said second closing element 12 have substantially the same extension. In other words, said first closing element 11 and said second closing element 12 are adapted to close an equal portion of said opening second 9. This feature is particularly advantageous when provided in combination with the provision of said synchronization device, which determines that said second closing element 12 moves at speed substantially double that of said first closing element 11. In this manner, said at least one first closing element 11 and said at least one second closing element 12 are completely superimposed when they are housed in said seat 16. This makes it possible to minimize the dimension of said seat 16, the extension of said opening 9 being equal, which opening can be closed by means of said first closing element 11 and second closing element 12, and at the same time to optimize the movement synchronism of said first closing element 11 and second closing element 12 to be housed in the seat 16.

[0077] According to a preferred embodiment, said synchronization device comprises at least one flexible connection element 22, which extends between said first closing element 11 and said second closing element 12.

[0078] According to an embodiment, said flexible connection element 22 is a cable, i.e. a stranded wire.

[0079] According to an embodiment, said synchronization device comprises at least one counterweight 24, connected by means of a first traction element to at least

either said first closing element 11 or said second closing element 12, and adapted to eliminate the effect of gravity from said closing elements 11, 12. In this manner, the opening and closing action of said openable assembly 1 by manoeuvring said first closing element 11 is made particularly easy and accurate. An appropriate dimensioning of said counterweight 24 makes it possible to manufacture said closing elements 11, 12 having significant surface, so as to close and open large first and second openings, despite requiring the application of a light control force and determining a controlled movement of the closing elements. Indeed, the closing elements immediately stop as soon as the application of the force ceases, thus avoiding to continue their movement by inertia. This makes it possible to manoeuvre said openable assembly 1 safely.

[0080] According to an embodiment, said first traction element is mainly adapted to working in traction. For example, said traction element is a belt or a cable or a cord or a rope.

[0081] According to an embodiment, said synchronization device comprises a plurality of sheave elements. For example, said sheave elements are pulleys of the fixed type or of the movable type.

[0082] According to a preferred embodiment, said synchronization device comprises one or more traction elements 41, which cooperate with a plurality of sheave elements 42 and with at least one counterweight 24, configured to form a hoist, by determining that a double length movement of said second closing element 12 corresponds to a movement of said first closing element 11. The dimensioning and configuration of said sheave elements 42 make it possible to modulate the relative speed of said first closing element 11 and of said second closing element 12.

[0083] In this manner, said at least one first closing element 11 and said at least one second closing element 12 are at least partially superimposed when said second opening is completely open. According to an embodiment, said first closing element 11 and said second closing element 12 overlap when said second opening is fully open.

[0084] According to an embodiment, said traction elements 41, said plurality of sheave elements 42 and said at least one counterweight 24 are arranged in portions of said openable assembly 1 which are at least partially concealed from a user's sight. For example, they may be inserted in at least one boxed profile.

[0085] According to an embodiment, said first closing element 11 and said second closing element 12 are completely overlap when said second opening is completely open.

[0086] According to an embodiment, said synchronization device comprises a second traction element which connects said first closing element 11 and said second closing element 12 to each other with a path guided by at least one pulley, so that said second closing element 12 travels a double distance with respect to that covered

by said first closing element 11.

[0087] According to an embodiment, said synchronization device comprises at least one electric motor 40, which can be connected to at least one moving element 43 so as to tension said traction element 41. For example, said moving element 43 comprises a pulley fitted on a drive shaft of said electric motor 40, so as to move a traction element 41. For example, said electric motor 40 is a stepper motor.

[0088] Providing said electric motor 40 makes it possible to improve the control of the movement of said closing elements 11, 12. Providing said electric motor 40 makes it possible to move said closing elements 11, 12 in controlled manner. Providing said electric motor 40 makes it possible to provide the first moving pulse.

[0089] According to an embodiment, said electric motor 40 moves two actuating elements 43 so as to tension a traction element 41.

[0090] According to an embodiment, said electric motor 40 cooperates with an activation device 44 provided on an easily accessible portion of said openable assembly 1. For example, said activation device 44 comprises a button, e.g. a button of the dead-man type.

[0091] According to an embodiment, said electric motor 40 and the supply of said electric motor are located in portions of said openable assembly 1 either hidden or concealed from a user's sight.

[0092] According to an embodiment, said synchronization device comprises at least one hydraulic actuator or at least one mechanical actuator.

[0093] According to an embodiment, said synchronization device comprises a control system comprising a control and actuating control unit.

[0094] According to an embodiment, said openable assembly 1 comprises at least one structural element 39 comprising at least one guiding device to guide the sliding of at least either said first closing element 11 or said second closing element 12.

[0095] According to an embodiment, said openable assembly 1 comprises two structural elements 39 facing each other, wherein each structural element comprises at least one guiding element 40 for guiding the sliding of at least either said first closing element 11 or said second closing element 12. For example, said structural elements 39 may be uprights which at least partially delimit said second compartment 8.

[0096] According to an embodiment, said guiding device comprises at least one rail, which guides the sliding of at least either said first closing element 11 or said second closing element 12.

[0097] According to an embodiment, said guiding device comprises a first rail and a second rail, wherein said first rail guides the sliding of said first closing element 11 and said second rail guides the sliding of said second closing element 12. This make the path of said first closing element 11 different from the path of said second closing element 12.

[0098] According to an embodiment, said first rail is

substantially parallel to said second rail.

[0099] Providing said parallel rails makes it possible for said closing elements 11, 12 to remain mutually parallel avoiding them from being coplanar. In this manner, when said closing elements 11, 12 are in closing position, they are not coplanar thus making the opening manoeuvre particularly easy.

[0100] According to an embodiment, said at least one seat 16 is obtained in a portion of said openable assembly 1, which is substantially either hidden or concealed from sight by at least one portion of said first container 2.

[0101] The terms "hidden" and/or "concealed from sight" means that said seat 16 is substantially invisible for a normal user.

[0102] Providing said seat 16 hidden or concealed from sight by at least one portion of said first container 2 substantially makes it possible to either hide or conceal from sight also said first closing element 11 and said second closing element 12 when they are accommodated in said seat 16.

[0103] According to a preferred embodiment, said first closing element 11 and said second closing element 12 are substantially hidden or concealed from sight by at least one portion of said first container 2 when they are accommodated in said seat 16.

[0104] According to an embodiment, said first container 2 comprises at least one front wall 26 which extends substantially parallel to the direction of movement of said first closing element 11 and which at least partially delimits said at least one housing 16.

[0105] According to an embodiment, said front wall 26 substantially conceals at least one seat 16 from the user's sight. According to an embodiment, said at least seat 16 is arranged behind said front wall 26 of said first container 2.

[0106] According to an embodiment, said first closing element 11 is associated with a manoeuvre portion 18 which remains visible when said first closing element 11 is received in said seat 16. In this manner, an easy closing of the second opening 9 is permitted by acting on said manoeuvre portion 18 which remains accessible when said first closing element 11 is housed in said seat 16.

[0107] According to an embodiment, said manoeuvre portion 18 projects at least partially cantilevered from said first closing element 11, so that when said first closing element 11 enters into said seat 16, said manoeuvre portion 18 abuts against a seat lead-in wall 19, thus avoiding said manoeuvre portion 18 from being inaccessible by a user.

[0108] According to an embodiment, said first container 2 comprises a first container free surface 17 opposite to said first compartment 4 and which extends transversally with respect to said first closing element 11, wherein said free surface of said first container 17 comprises said seat lead-in portion 19.

[0109] According to an embodiment, said first container 2 comprises a ridge 15 which extends from said first container free surface 17, wherein said ridge 15 compris-

es said seat lead-in wall 19.

[0110] According to an embodiment, said seat 16 is hidden or concealed from sight both when said first opening is open and when said first opening is closed.

[0111] According to an embodiment, said second container 6 comprises at least one shelf 36, which divides said second compartment 8 into at least two second compartment portions 8.

[0112] According to an embodiment, said second container 6 comprises at least one upright 37, which divides said second compartment 8 into at least two second compartment portions 8.

[0113] According to a general embodiment, a furniture element comprises at least one openable assembly 1 according to any one of embodiments described above. By way of non-limiting example, a furniture element comprising an openable assembly 1 is diagrammatically shown in **figures 1 D** and **1 E**, in which the movement direction 100 is substantially horizontal.

[0114] According to an embodiment, said furniture element comprises a plurality of openable assemblies 1.

[0115] According to an embodiment, said furniture element is a wardrobe or the like. According to an embodiment, said furniture element is a modular furniture element.

[0116] According to a general embodiment, a furniture element 10 comprises at least one openable assembly 1 according to any one of embodiments described above.

[0117] According to an embodiment, said first container free surface 17 extends in a substantially horizontal plane.

[0118] According to an embodiment, said first container 2 comprises a cook top. Preferably, said cook top extends on at least one portion of said first container free surface 17. According to an embodiment, said first compartment 4 is accessible by means of said first opening, preventing said opening from interrupting said first container free surface 17.

[0119] According to an embodiment, said piece of kitchen furniture 10 comprises at least one extractable hood 34. For example, said extractable hood 34 is shown in its extended configuration in **figure 9**. According to an embodiment, said extractable hood 34 is housed in said second compartment 8, so as to be hidden or concealed from sight when said closing elements 11, 12 are in closing position.. According to an embodiment, said extractable hood 34 is housed in said at least one third compartment 32, so as to be hidden or concealed from sight when said closing elements 11, 12 are in closing position.

[0120] According to an embodiment, said first container 2 comprises a cavity adapted to accommodate a vessel for a kitchen sink 35.

[0121] According to an embodiment, said second compartment 8 comprises a plurality of functional elements, adapted to be concealed from sight when said closing elements 11, 12 are in closed position. According to an embodiment, said at least one third compartment 32 comprises a plurality of functional elements, adapted to

be concealed from sight when said closing elements 11, 12 are in closed position. By way of non-limiting example, said functional elements comprise an extractable hood 34 and/or a kitchen sink 35 and/or a bottle holder and/or a refrigerator, or the like.

[0122] According to an embodiment, said piece of kitchen furniture 10 is a modular piece of kitchen furniture.

[0123] A method for opening an openable assembly 1 is described below.

[0124] A method for opening an openable assembly 1 comprises the following steps:

- A- providing at least one openable assembly 1 according to any one of the embodiments described above. According to a possible mode of operation, said step -A- foresees the provision of at least one piece of furniture according to any one of the embodiments described above. According to a possible mode of operation, said step -A- foresees the provision of at least one piece of kitchen furniture 10 according to any one of the embodiments described above.
- B- opening substantially the entire height of said second compartment 8 by lowering said first closing element 11 from an easily accessible portion. Preferably, said movement sense 100 is directed vertically, and preferably downwardly.
- C- lowering the first closing element 11, making said second closing element 12 descend, maintaining said first compartment 4 accessible and taking said first closing element 11 and said second closing element 12 behind said first container 2. Step -C- makes said at least one third compartment 32 accessible.

[0125] According to a possible mode of operation, a method comprises the further step -D- of completely lowering said first closing element 11, thus also making said second closing element 12 descend behind said first container 2.

[0126] According to a possible mode of operation, a method comprises the further step -E- of making simultaneously accessible a plurality of compartments 4, 8, 32 of the opening assembly 1, and specifically said first compartment 4, said second compartment 8 and said third compartment 32.

[0127] According to a possible mode of operation, a method comprises the further step -F- of making simultaneously inaccessible a plurality of compartments 8, 32 of the opening assembly 1, and specifically said second compartment 8 and said third compartment 32.

[0128] According to a possible mode of operation, said step -D- is carried out with a single movement or a single manipulation.

[0129] According to a possible mode of operation, said step -B- is carried out with a single movement or a single manipulation.

[0130] According to a possible mode of operation, said

steps -B- and -C- are both carried out with a single movement or a single manipulation.

[0131] According to a possible mode of operation, said steps -B-, -C- and -D- are all carried out with a single movement or a single manipulation.

[0132] . According to a possible mode of operation, said steps -B-, -C-, -D- and -E- are all carried out with a single movement or a single manipulation

[0133] According to a possible mode of operation, at least one of said step -B- and said step -C- makes it possible to make said second compartment 8 completely accessible.

[0134] By virtue of the features described above, either mutually separately or jointly in particular embodiments, it is possible to obtain an openable assembly 1, as well as a piece of furniture, as well as a piece of kitchen furniture 10, as well as a method, which at the same time satisfies the aforesaid mutually contrasting needs and the aforesaid desired advantages, and in particular:

- it is allowed to making accessible a plurality of compartments of the openable assembly 1, as well as of the piece of furniture, as well as of the piece of kitchen furniture 10, with a single manipulation directed to move only one of the closing elements 11, 12 from a portion thereof which is easily reachable for a normal user;
- said openable assembly 1 can be opened by acting on a portion thereof which is easily accessible by a normal user, and at the same time at least portions of compartment of said openable assembly 1 arranged in positions which cannot be reached by a normal user, i.e. which are very high, are made accessible;
- it is provided an openable assembly 1 which has a pleasant appearance and is functioning yet compact;
- it is provided an openable assembly 1 having closing elements 11, 12, suitable for closing an opening of remarkably dimensions, and at the same time when they are in close position are suitable for being both received, for example stacked or overlapped, in a seat 16 of modest size or anyhow of noticeably decreased dimensions in respect of the dimensions of the opening closed by said closing elements 11, 12, when in closed position;
- a seat 16 can be realized, said seat 16 being concealed yet suitable for housing said closing elements 11, 12 when in an open position, at the same time preventing that said closing elements 11, 12 from closing-off other compartments of the openable assembly 1;
- when needed, said openable assembly 1 can be completely opened while concealing the opening elements 11, 12 from an observer's sight and exclusively showing the inner compartments of said openable assembly 1, as well as completely closing said openable assembly 1, thus obtaining a openable assembly which has a pleasant appearance and is

functioning at the same time as result;

- it is allowed to realize a piece of furniture, for example a piece of kitchen furniture, having retractable door wings, even door wings being simultaneously retractable, said retractable door wings when open avoid to closing-off a compartment also accessible when said retractable door wings are closed.

[0135] A person skilled in art may make many changes, adaptations and replacements to the embodiments described above or may replace elements with others which are functionally equivalent in order to satisfy contingent needs without however departing from the scope of protection of the appended claims.

. List of references:

[0136]

20	1	Openable assembly
	2	First container
	4	First compartment
	5	First opening closing device
	6	Second container
25	8	Second compartment
	9	Second opening
	10	Piece of kitchen furniture
	11	First closing element
	12	Second closing element
30	15	Ridge
	16	Seat
	17	Free surface of first container
	18	Manoeuvre portion
	19	Seat lead-in wall
35	24	Counterweight
	26	Front wall of first container
	30	Third container
	32	Third compartment
	33	Third compartment opening
40	34	Extractable hood
	35	Kitchen sink
	36	Shelf
	37	Upright
	38	Working surface
45	39	Structural element
	40	Electric motor
	41	Traction element
	42	Sheave element
	43	Moving element
50	44	Actuating device
	100	Movement sense

Claims

1. An openable assembly (1) comprising:

- at least one first container (2), comprising first

container walls, which at least partially delimit at least one first compartment (4), said at least one first compartment (4) being accessible through at least one first opening;

- at least one second container (6), comprising second container walls, which at least partially delimit at least one second compartment (8), said at least one second compartment (8) being accessible through at least one second opening (9);
- at least a second opening closing device, which closes and opens at least one portion of said second opening (9);

wherein said second opening closing device comprises at least one first closing element (11) and at least one second closing element (12);

and wherein said at least one first closing element (11) and said at least one second closing element (12) are movable between at least one closing position, in which they close said second opening (9), and at least one opening position, in which they at least partially open said second opening (9) making said second compartment (8) accessible;

and wherein said openable assembly (1) comprises at least one seat (16), which at least partially receives both said at least one first closing element (11) and said at least one second closing element (12);

and wherein, when in said at least one opening position, said at least one first closing element (11) and said at least one second closing element (12) are housed in said at least one seat (16),

and wherein, when said at least one first closing element (11) and said at least one second closing element (12) are housed in said at least one seat (16), they keep said at least one first compartment (4) accessible through said at least one first opening;

and wherein said openable assembly (1) comprises at least one synchronization device, which connects said first closing element (11) and said second closing element (12), so that, the movement of both said at least one first closing element (11) and of said second closing element (12) is obtained by moving said at least one first closing element (11), avoiding to manipulate said second closing element (12);

and wherein said openable assembly (1) comprises at least one third container (30) comprising third container walls, which at least partially delimit at least one third compartment (32), wherein said at least one third compartment (32) communicates with said second compartment (8), so that said third compartment (32) is accessible when said second opening (9) is open.

2. An openable assembly (1) according to claim 1, wherein said at least one seat (16) is obtained in a portion of said openable assembly (1) which is substantially either hidden or concealed from sight by at

least one portion of said first container (2), so that said first closing element (11) and said second closing element (12), when they are received in said seat (16), are substantially either hidden or concealed from sight by at least one portion of said first container (2).

3. An openable assembly (1) according to claim 1 or 2, said seat (16) is hidden or concealed from sight both when said first opening is open and when said first opening is closed.

4. An openable assembly (1) according to any one of the preceding claims, wherein moving said first closing element (11) towards said seat (16) makes simultaneously accessible both said at least one second compartment (8) and said at least one third compartment (32), avoiding to make said at least one first compartment (4) inaccessible.

5. An openable assembly (1) according to any one of the preceding claims, wherein said synchronization device moves said at least one first closing element (11) and said second closing element (12) substantially in the same direction and in the same sense, or movement sense (100).

6. An openable assembly (1) according to claim 5, wherein said movement sense (100) is directed substantially in vertical direction; and/or wherein said movement sense (100) is directed downwardly.

7. An openable assembly (1) according to any one of the preceding claims, wherein said third container (30) at least partially penetrates in said second container (6); and/or wherein said at least one third container (30) is arranged aside said first container (2); and/or wherein said at least one third container (30) is arranged behind said first container (2); and/or wherein said at least one third container (30) is arranged behind said first container (3) and below said second container (6); and/or wherein said first compartment (4) and said second compartment (8) are frontally accessible.

8. An openable assembly (1) according to any one of the preceding claims, wherein said synchronization device determines that said second closing element (12) moves at a faster speed than said first closing element (11), so that it allows said first closing element (11) and said second closing element (12) to be housed completely in the seat (16) at the same time or simultaneously.

9. An openable assembly (1) according to any one of the preceding claims, wherein said synchronization device comprises one or more traction elements

(41), which cooperate with a plurality of sheave elements (42) and with at least one counterweight (24), configured so as to form a hoist, determining that a double length movement of said second closing element (12) corresponds to a movement of said first closing element (11). 5

10. An openable assembly (1) according to any one of the preceding claims, wherein said synchronization device comprises at least one electric motor (40) connectable to at least one moving element so as to tension said traction element (41). 10
11. An openable assembly (1) according to any one of the preceding claims, wherein said at least one third compartment (32) comprises a plurality of functional elements, adapted to be concealed from sight when said closing elements (11, 12) are in closed position; and/or wherein said third container (30) comprises at least one working surface (38) facing said second compartment (8); and/or wherein 15
both said at least one first closing element (11) and said at least one second closing element (12) are sliding doors. 20
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12. A piece of furniture comprising at least one openable assembly (1) according to any one of the preceding claims.
13. A piece of kitchen furniture (10) comprising at least one openable assembly (1) according to any one of claims from 1 to 11. 30
14. A method for opening an openable assembly (1) comprising the following steps: 35
 - A- providing at least one openable assembly (1) according to any one of claims from 1 to 11,
 - B- opening substantially the entire height of said second compartment (8) by lowering said first closing element (11) from an easily accessible portion; 40
 - C- lowering the first closing element (11), making said second closing element (12) descend, maintaining said first compartment (4) accessible and taking said first closing element (11) and said second closing element (12) behind said first container (2), making said at least one third container (32) accessible. 45
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15. A method according to claim 14, comprising the further step -D- of completely lowering said first closing element (11), thus also making said second closing element (12) descend behind said first container (2); and/or wherein 55
said step -D- is carried out with a single movement.

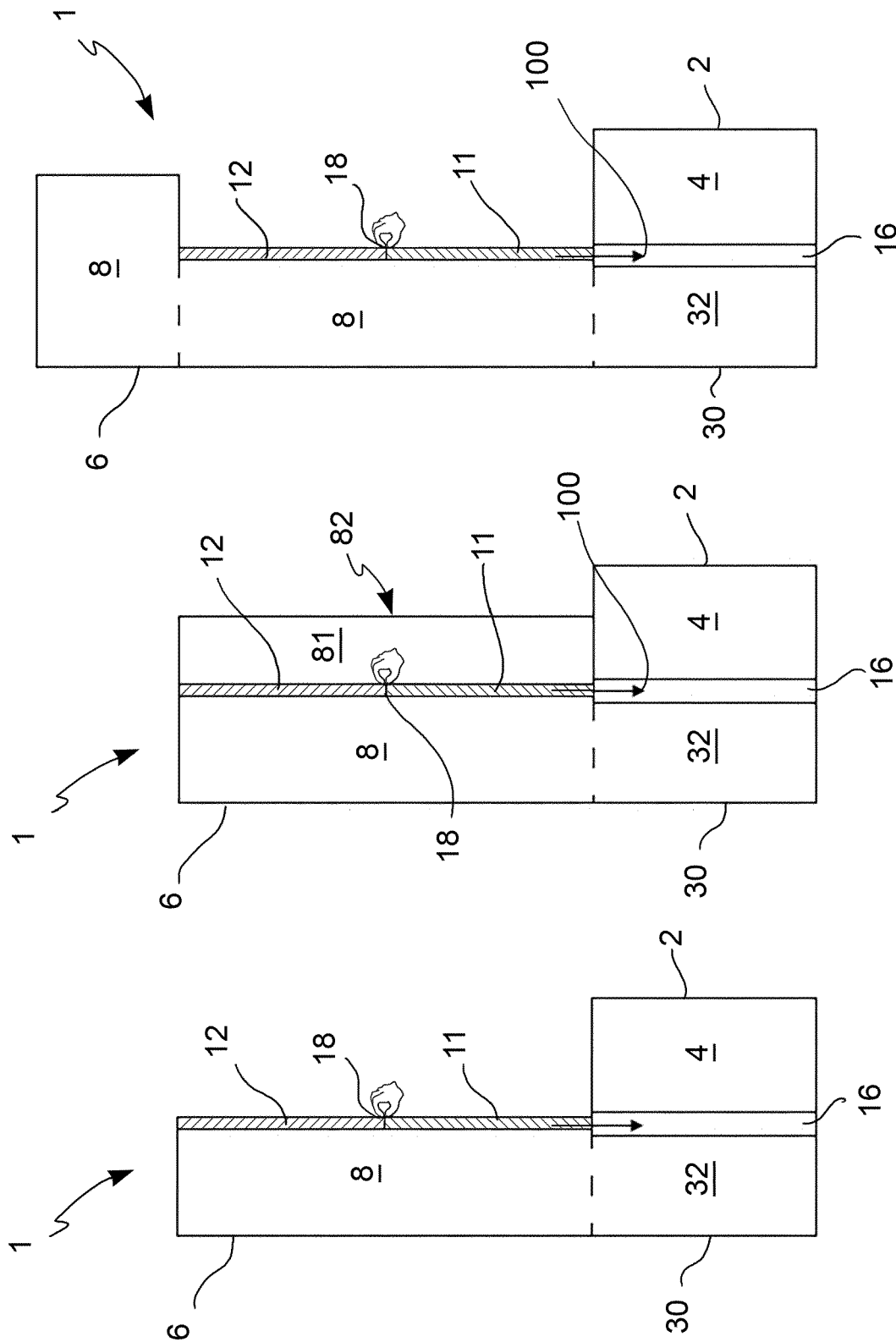
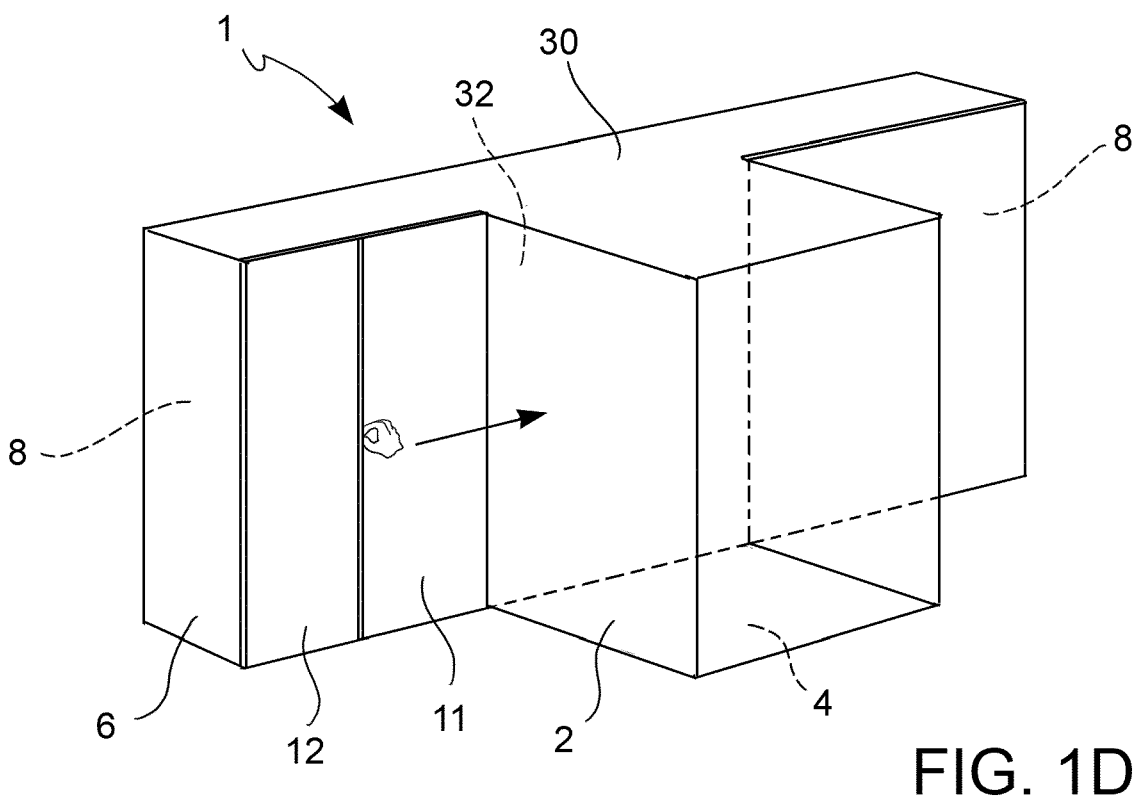
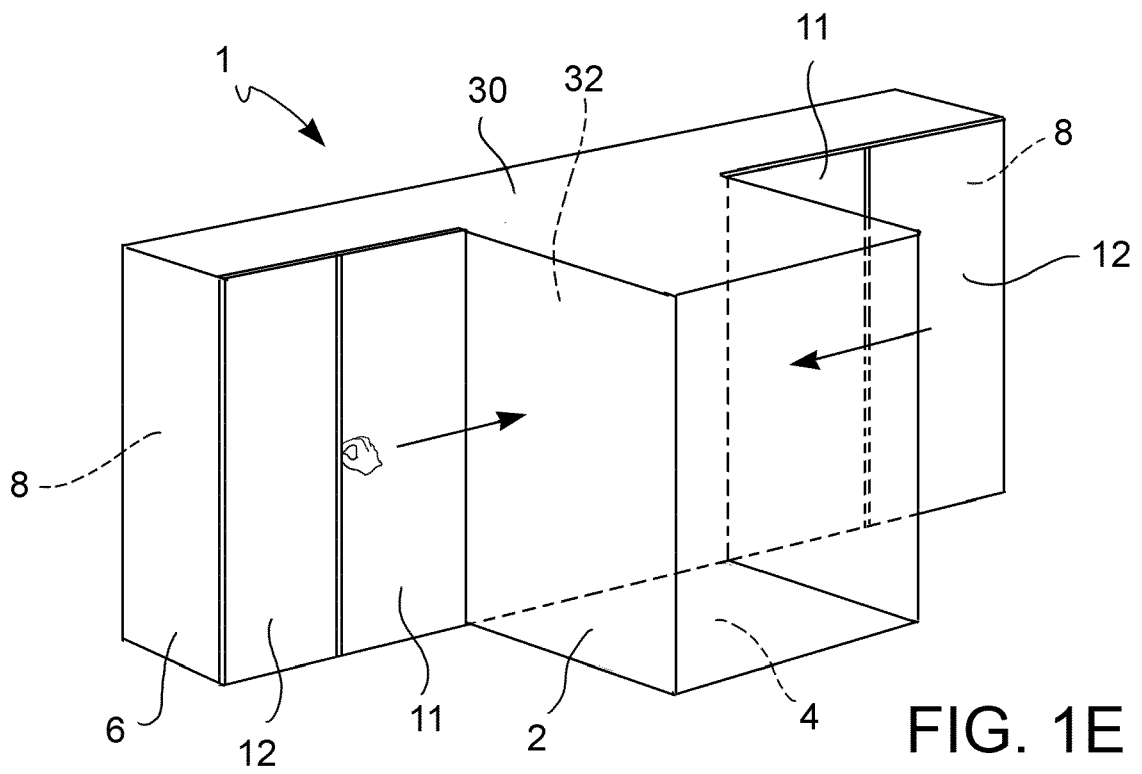


FIG. 1C

FIG. 1B

FIG. 1A



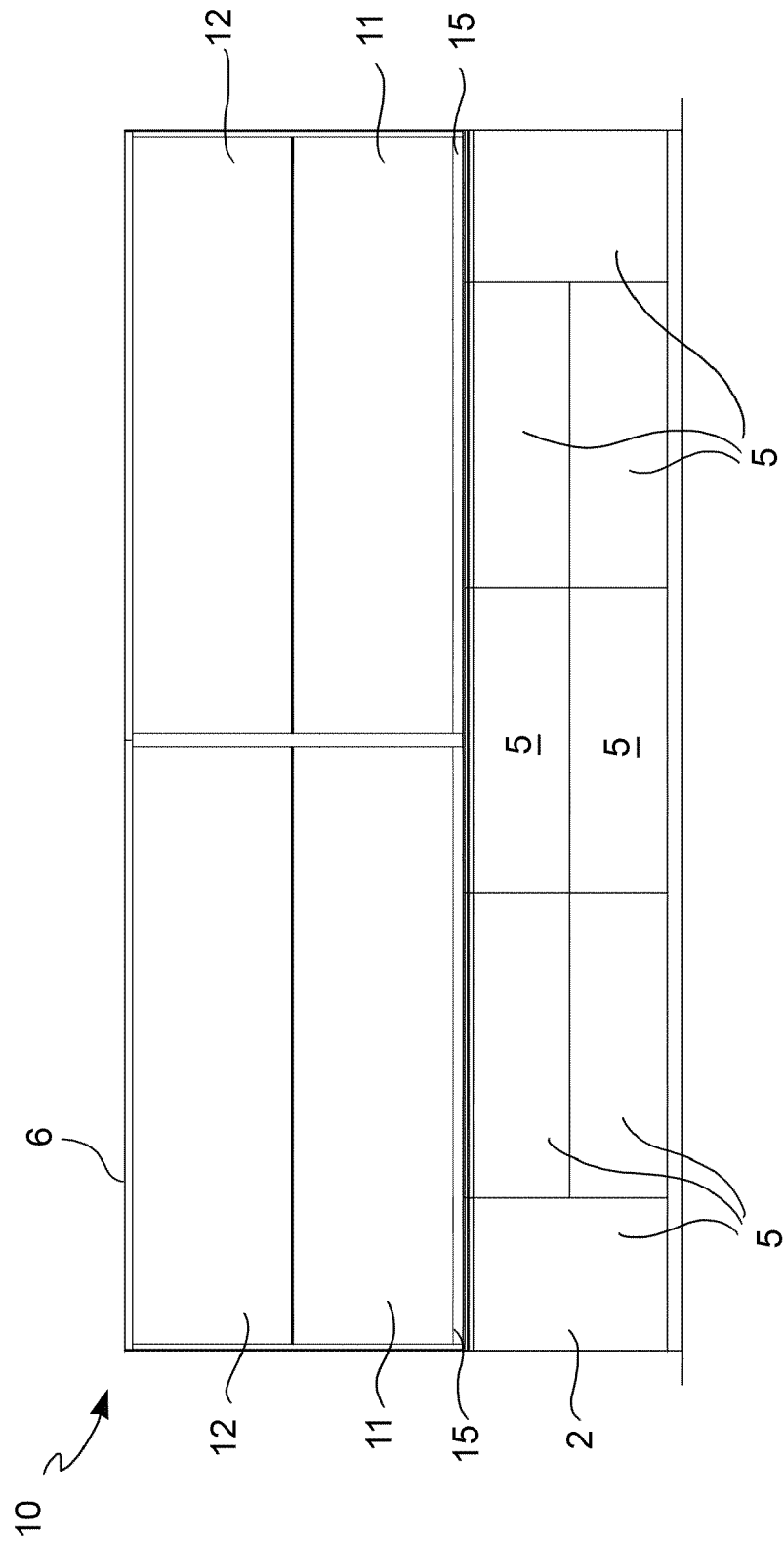


FIG. 2

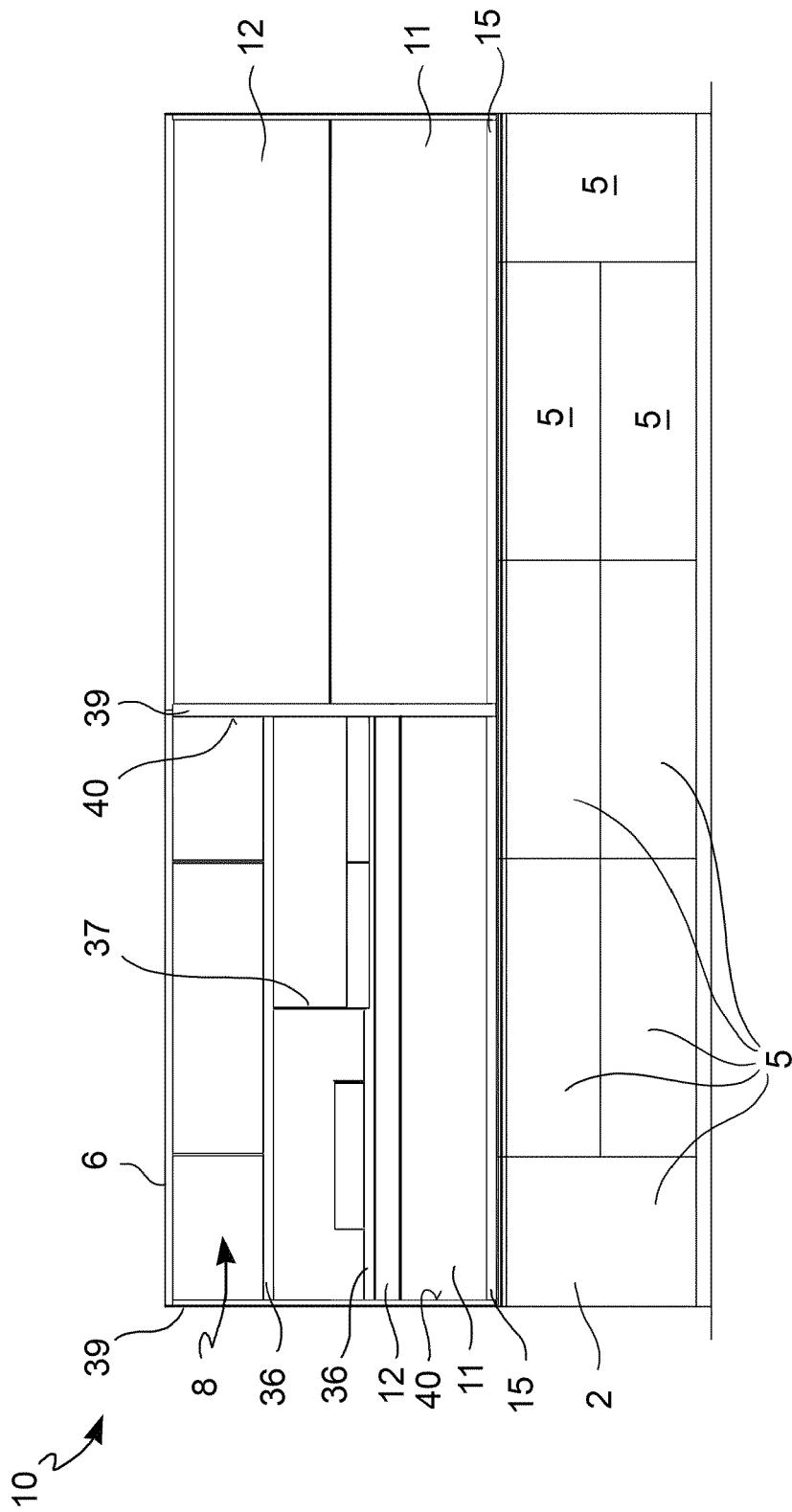


FIG. 3

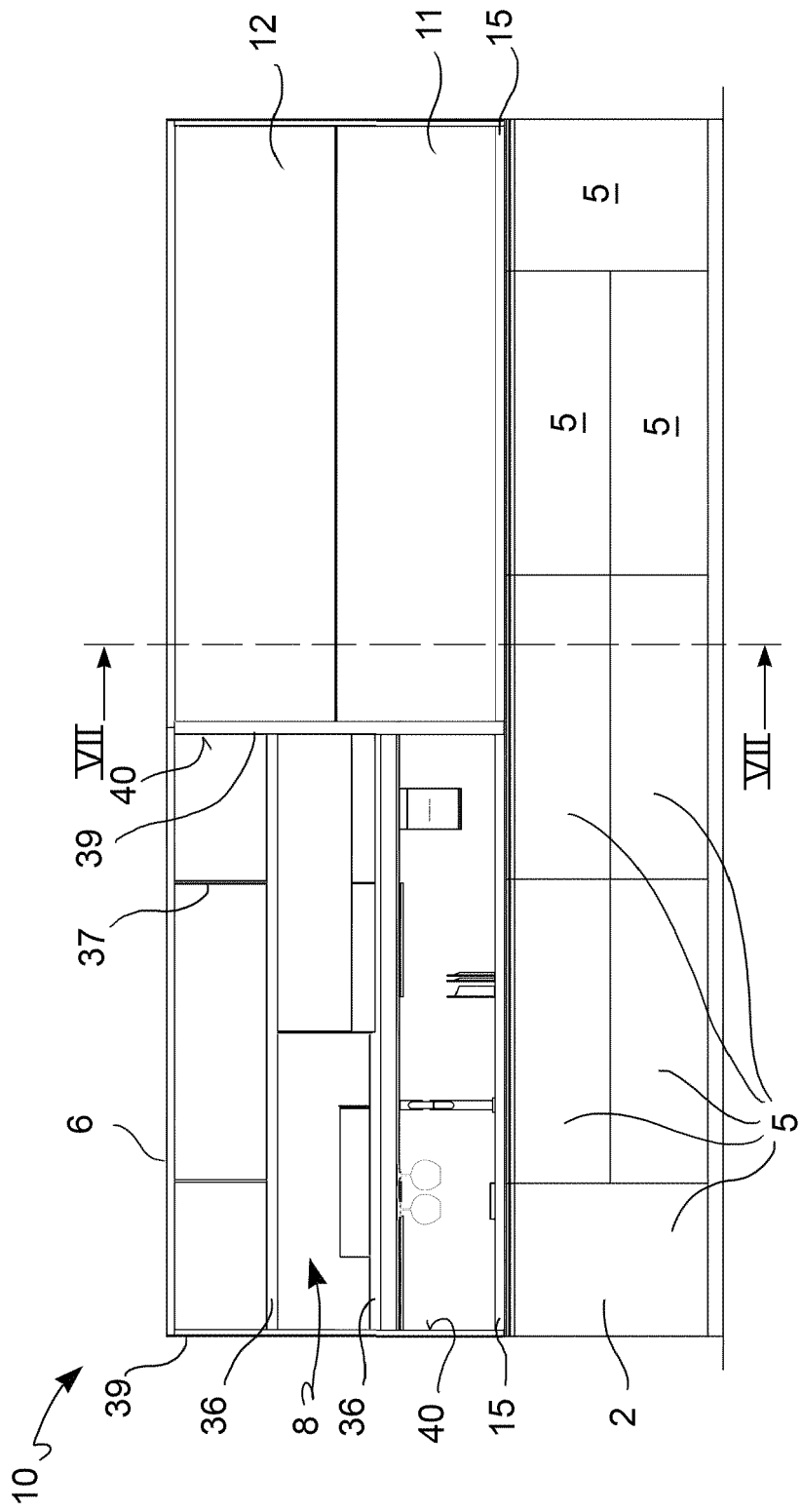


FIG. 4

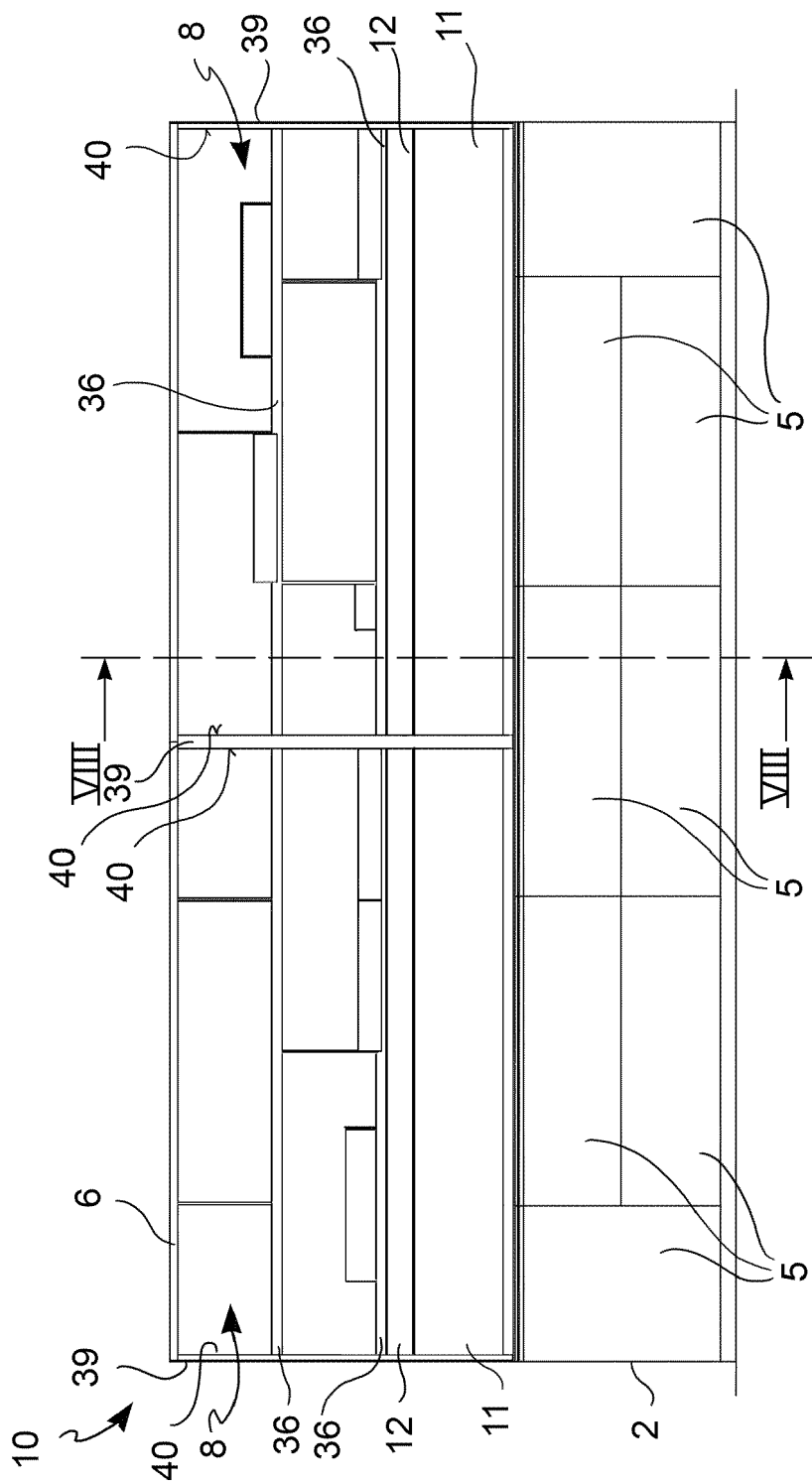


FIG. 5

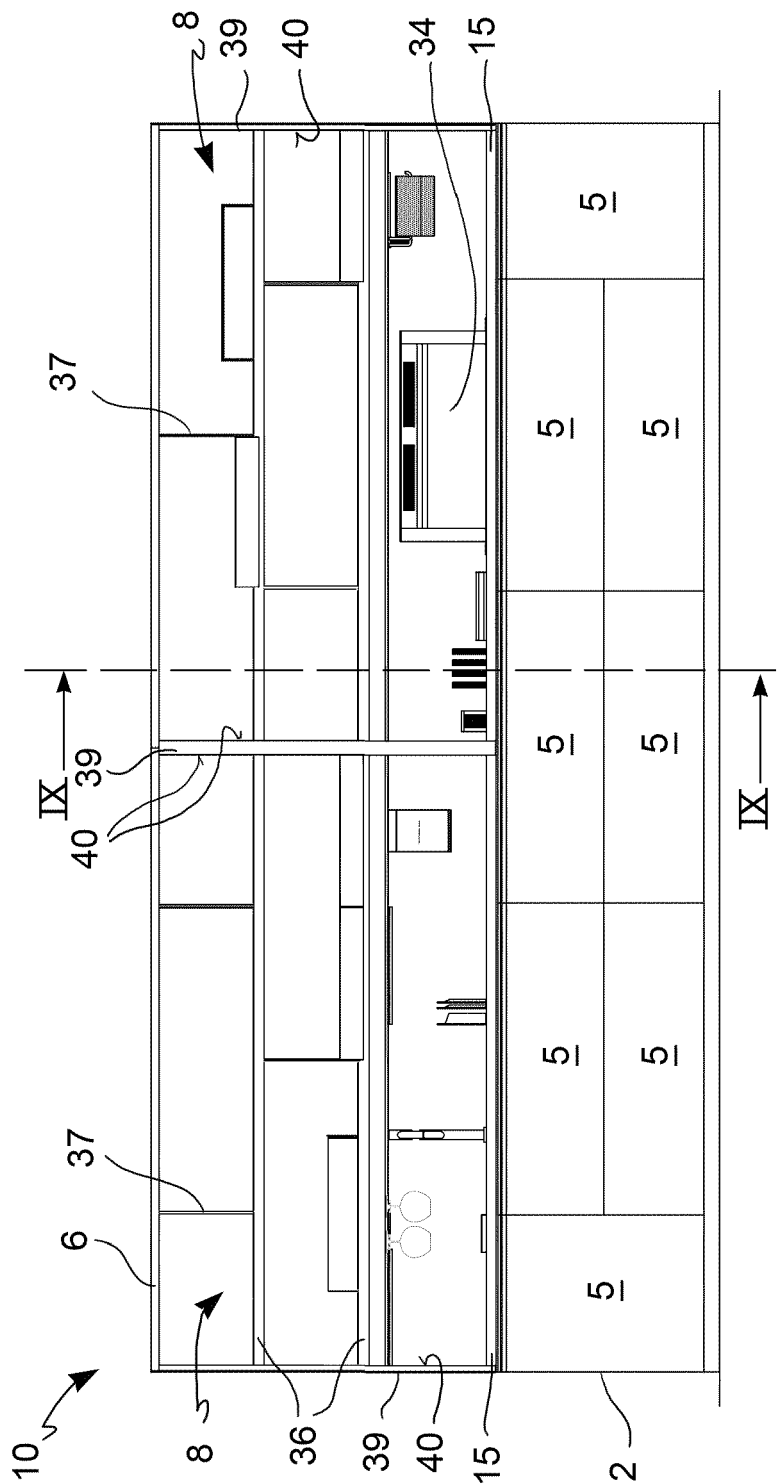


FIG. 6

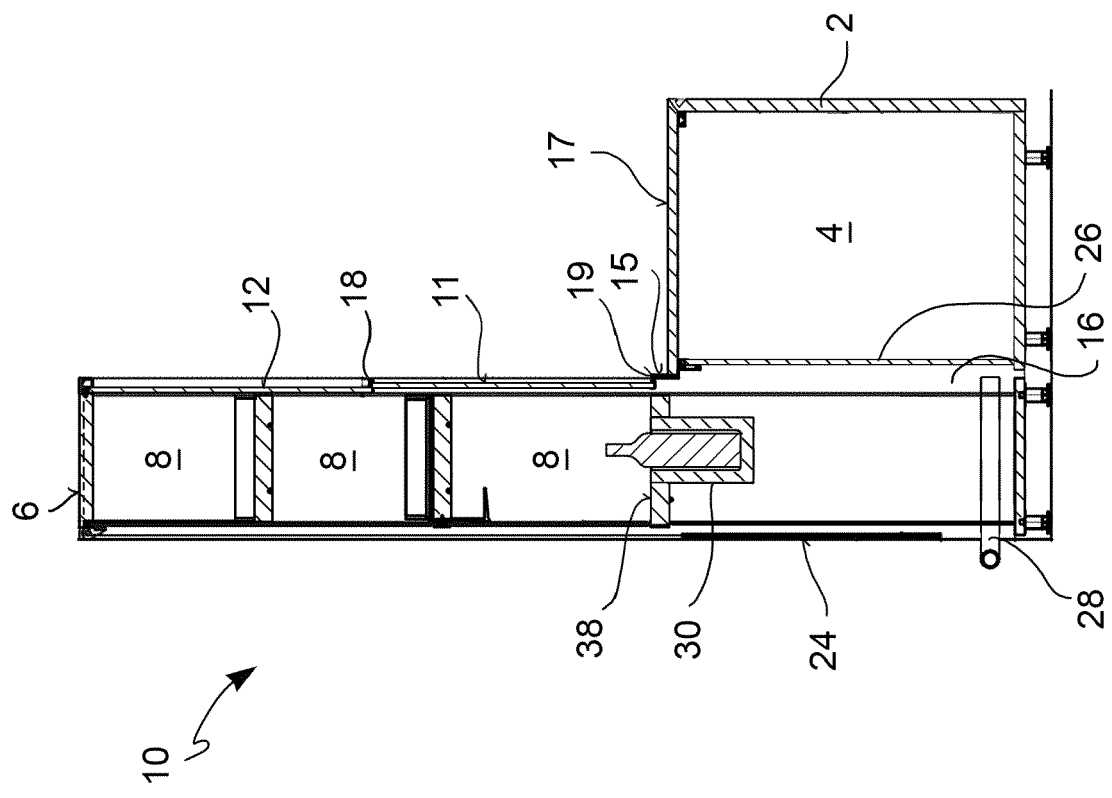
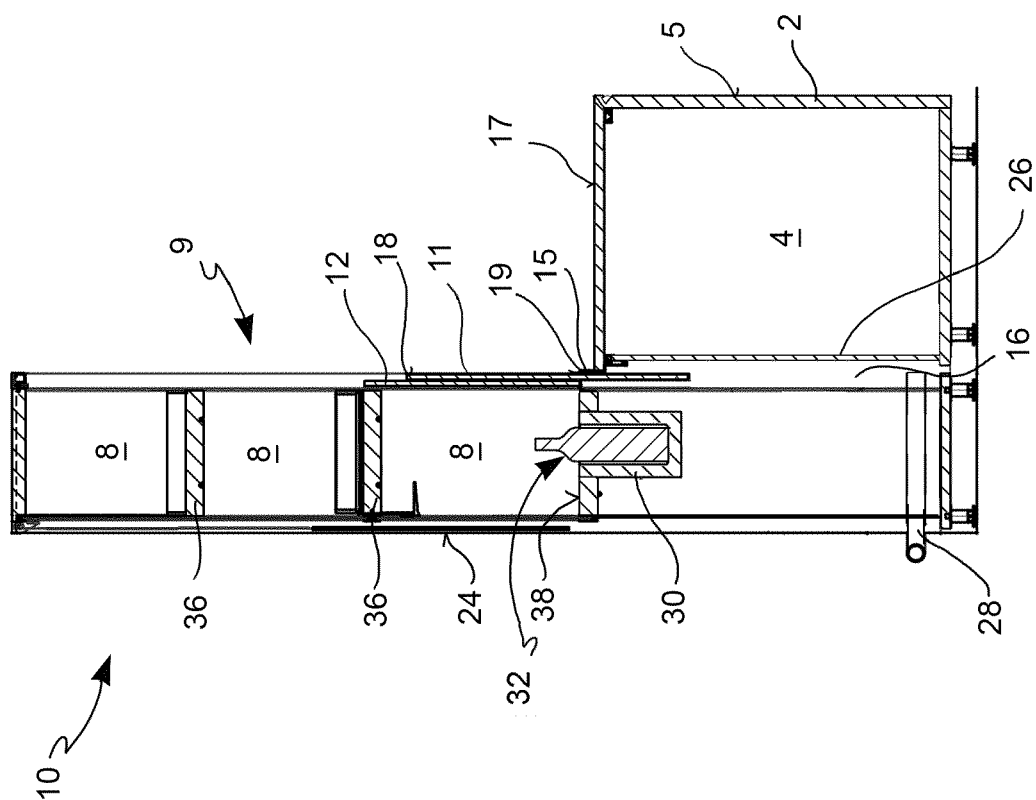


FIG. 7



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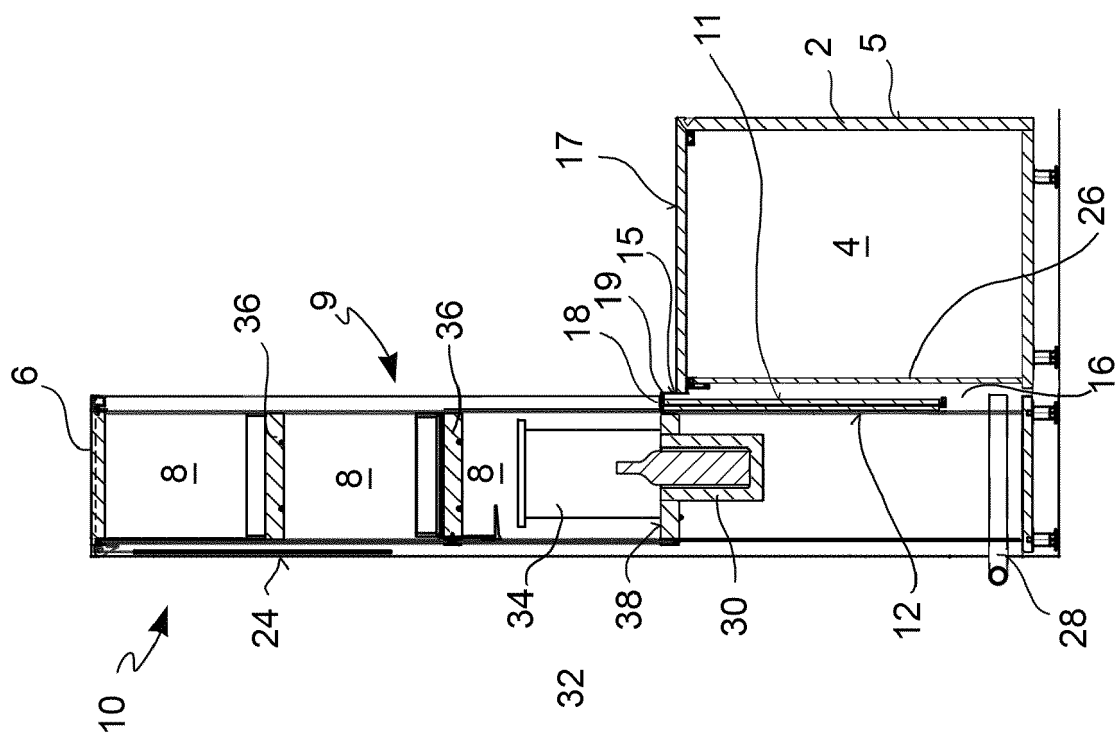


FIG. 9

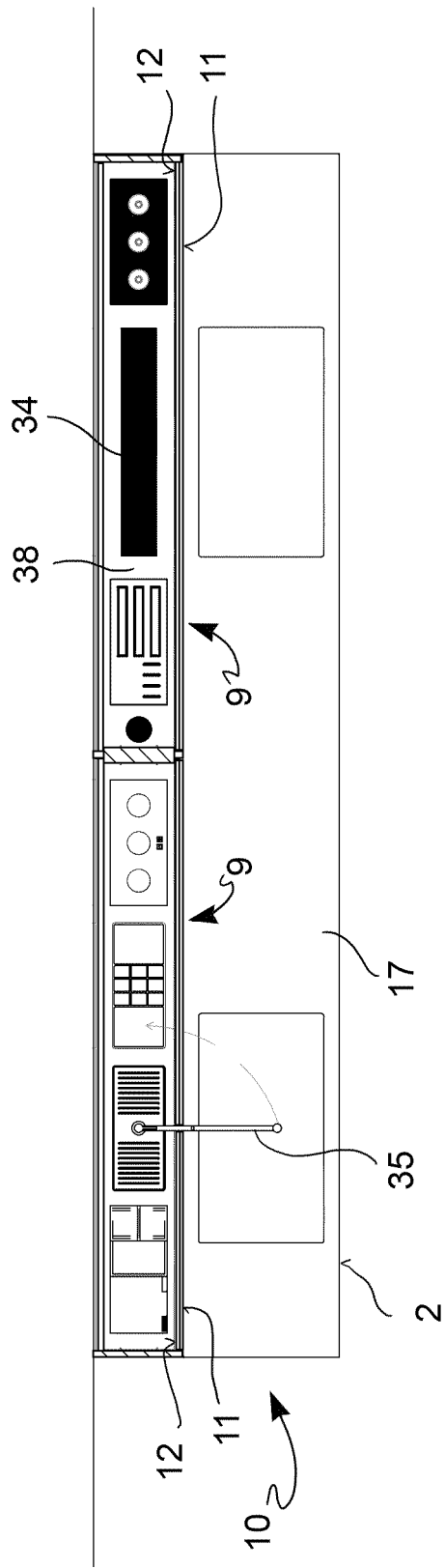


FIG. 10

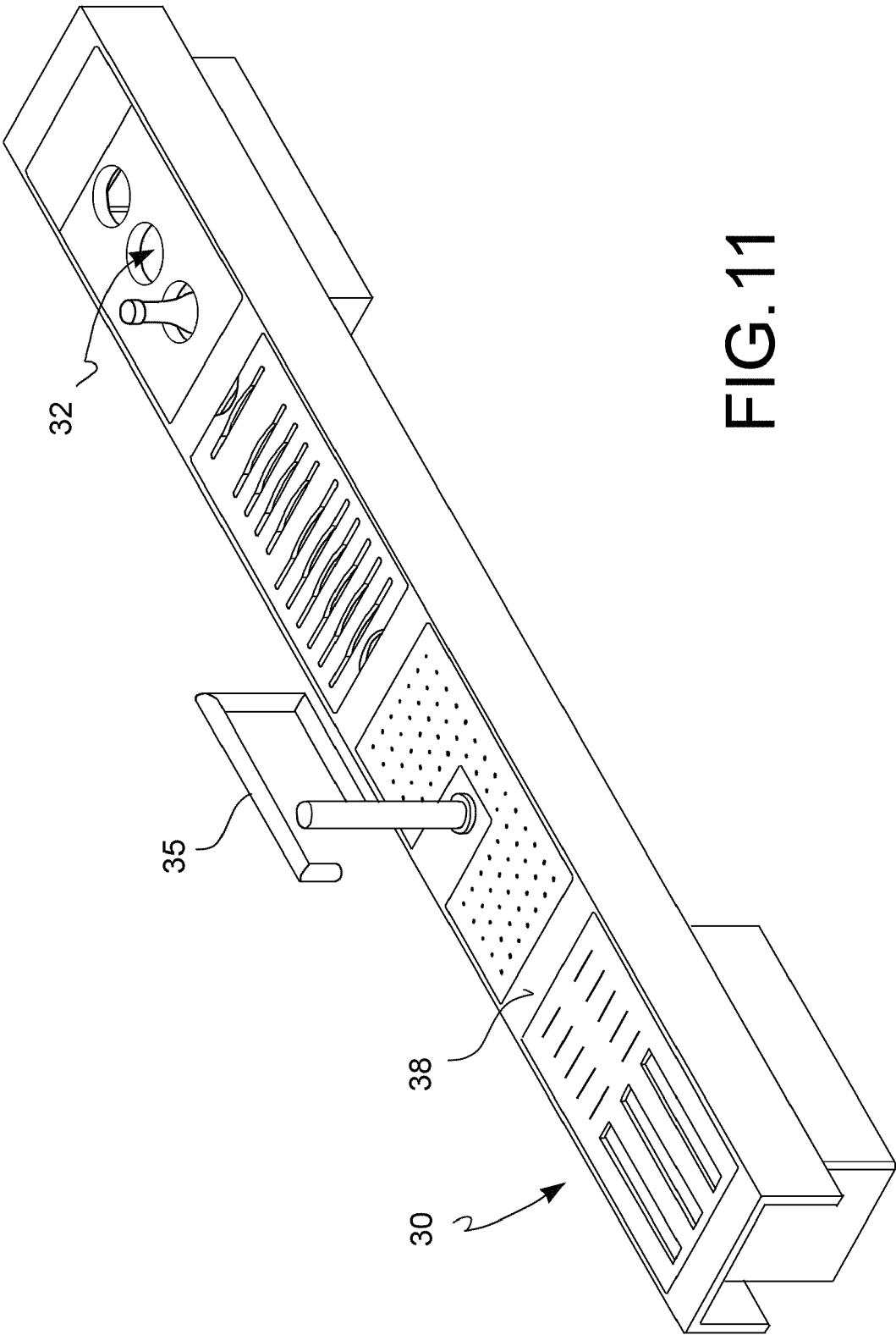


FIG. 11

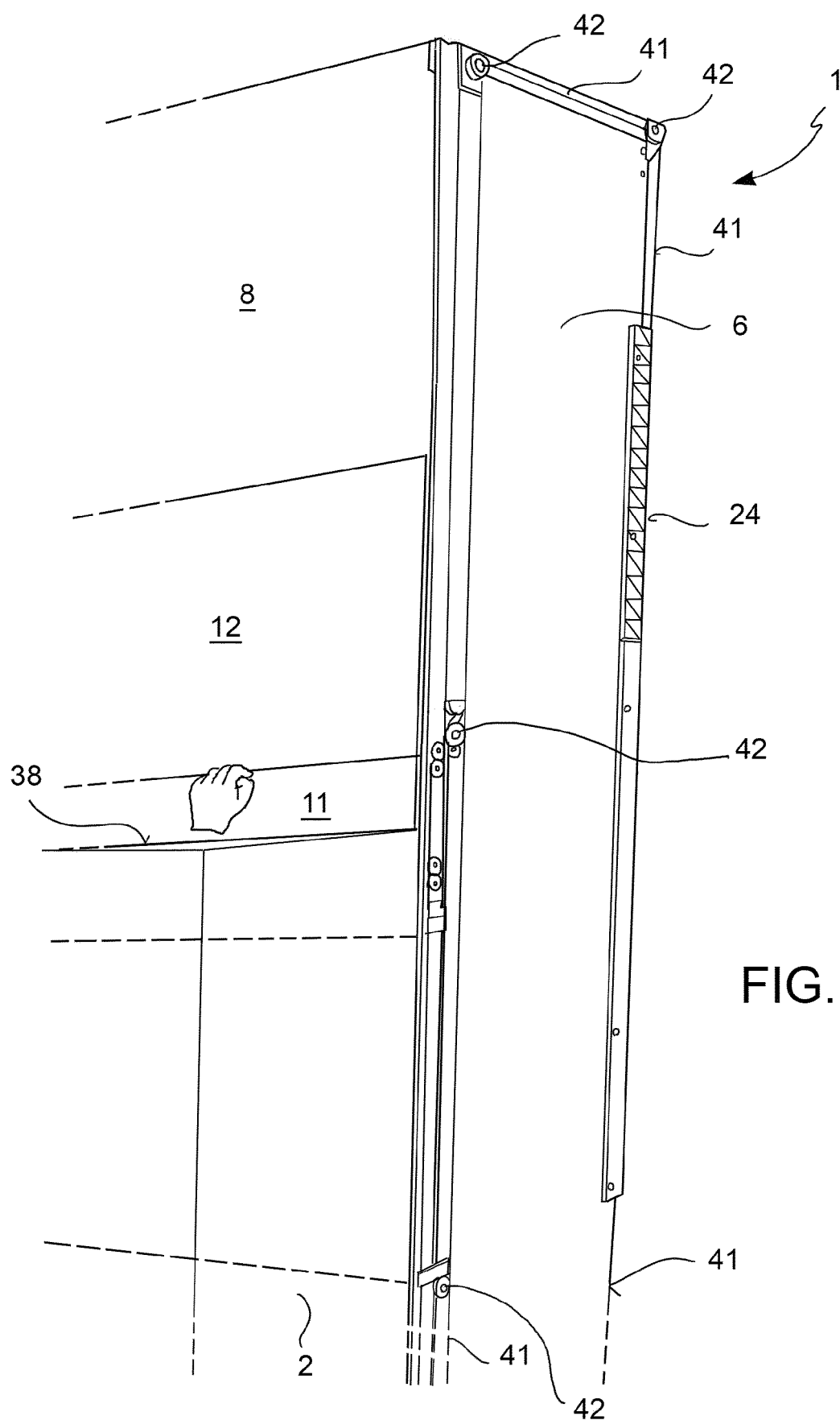


FIG. 12

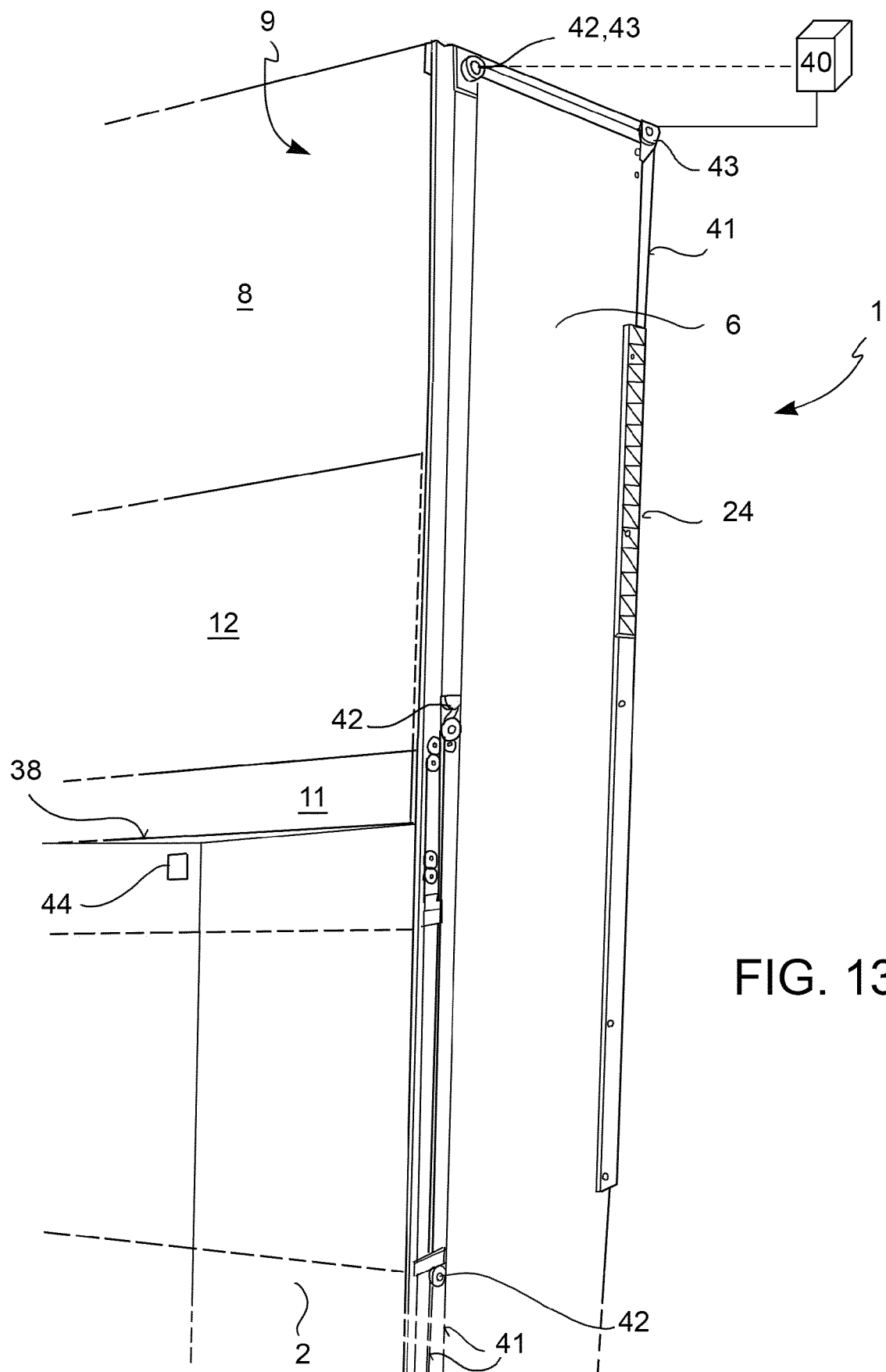


FIG. 13

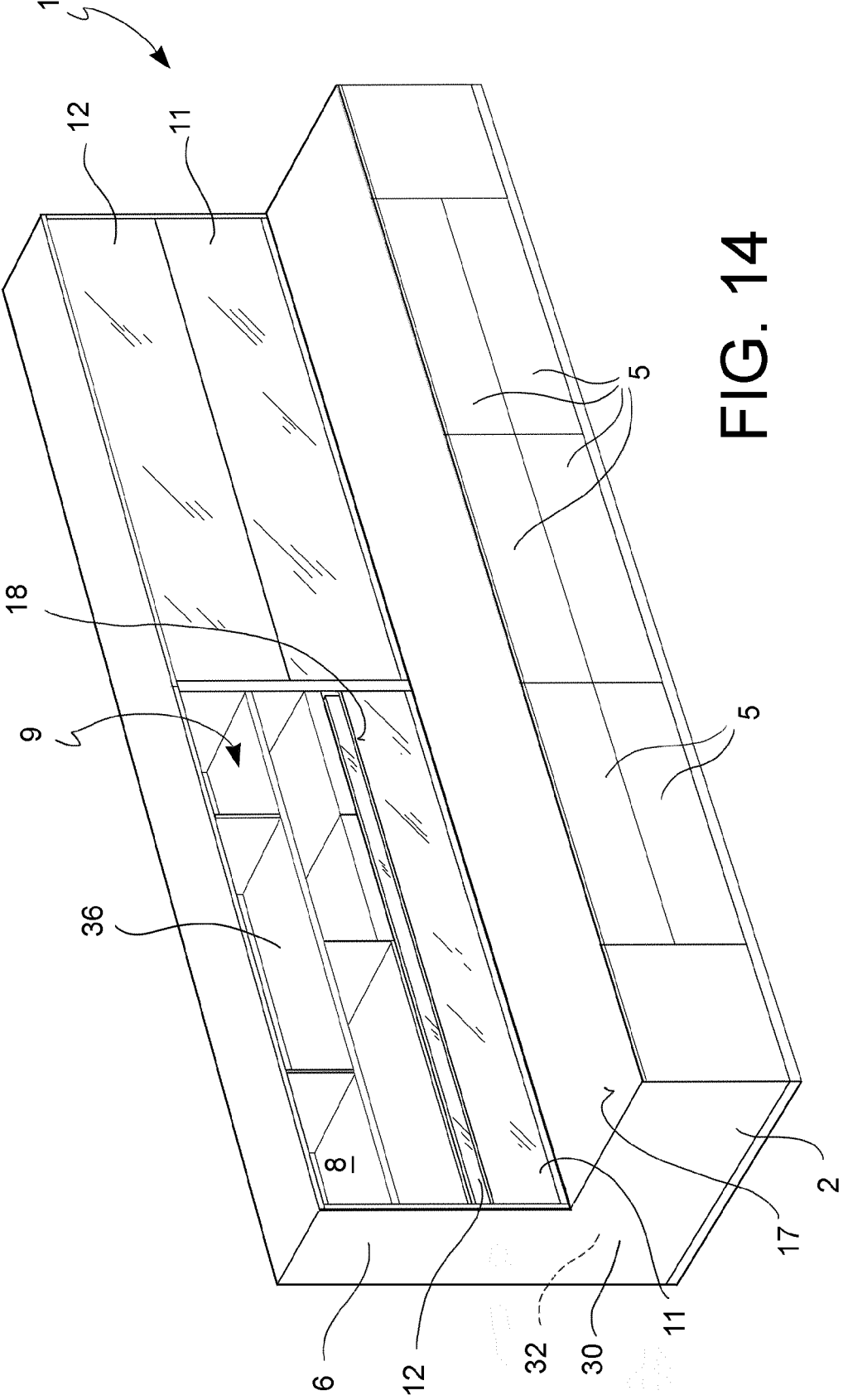


FIG. 14



EUROPEAN SEARCH REPORT

Application Number
EP 17 16 4552

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			E06B E05F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 23 May 2017	Examiner Hellberg, Jan
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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