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(54) DECORATIVE AND / OR CONSTRUCTION FRAME

(57) The decorative and/or structural frame **characterized in that** it is made of a single sheet of three-layer or two-layer material through rectangular or square-shaped cuts forming at least one central support part and cutting the sheet to form trapezoidal leaves over the entire length of each side of the central support part with two cuts to form three folding strands, and the middle strand is provided at each end with at least one through hole for fixing the angle connector and in the middle with a hanging hole, while each outer strand has at least one locking leaf and preferably two locking leaves symmetrically arranged at the ends of the strands, the cuts between have the shape of a groove in the middle support part and the inner strand in which the angle between the walls is not less than 135°, on the other hand, the cuts between the inner strand and the middle strand have the shape of a groove in which the angle between the walls is not less than 90°, and the central support part has a recess provided with fastening leaves, preferably trapezoidal and preferably along the entire inner circumference, and fastened to the recess is an inner plate shaped like a recess in the central support part, also provided with fastening leaves, preferably trapezoidal and preferably formed on the entire inner circumference by a groove-shaped cut in which the angle between the walls is not less than 90°.

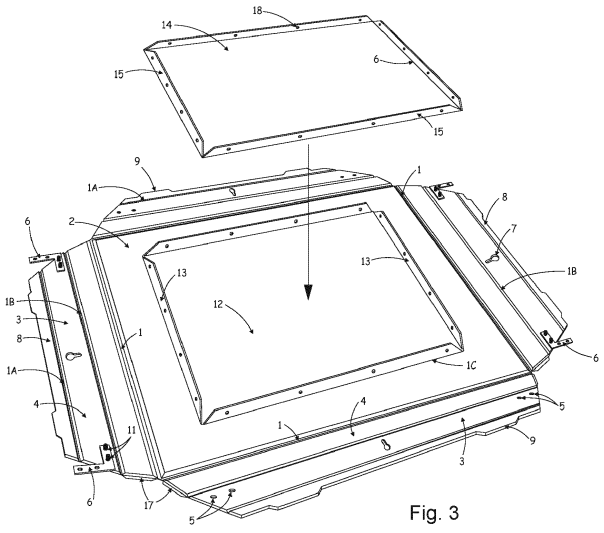

Fig. 3

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Description

[0001] The subject of the invention is a decorative and/or structural frame constituting a fastening element for pictures made by any technique and on any substrate, mirrors, as well as monitor screens or any type of displays, as well as for placing various decorative and ornamental objects, vases, flowers, etc. therein.

[0002] The picture or pictures frame known from EP3056119 patent description is a folded sheet of cardboard or any other suitable material and comprises a central rectangular or square picture receiving part and comprises leaf parts formed on the sides of the central rectangular part and each of the leaf parts comprises four parallel lines, cuts to form four folding strands parallel to the sides. The four leaf parts are folded backwards along the fold line into a folded position resting on the four side margins of the central rectangular picture part on its rear face, thus forming four tubular frame parts of rectangular cross section. The pair of second, externally opposing leaf strands have extensions which are placed inside the second pair of opposing leaves after they are folded, thus joining the leaves together when folded to form a frame. The pairs of third strands of leaves have alternately pairs of leaves and slots arranged so that after folding the leaves, the respective leaves move into appropriate slots, thus securing the frame elements against disassembly and falling together.

[0003] The disadvantage of this structure is the inability to place and stick pictures of greater weight, for example glass or metal, and also its instability with a significant rectangular or square cutout.

[0004] The essence of the rectangular or square frame structure according to the invention is that. It is made of a single sheet of three-layer or two-layer material through rectangular or square-shaped cuts forming at least one central support part and cutting the sheet to form trapezoidal leaves over the entire length of each side of the central support part with two cuts to form three folding strands. The middle strand is provided at each end with at least one through hole for fixing the angle connector and in the middle with a hanging hole, while each outer strand has at least one locking leaf and preferably two locking leaves symmetrically arranged at the ends of the strands, the cuts between have the shape of a groove in the middle support part and the inner strand in which the angle between the walls is not less than 135°, on the other hand, the cuts between the inner strand and the middle strand have the shape of a groove in which the angle between the walls is not less than 90°, and the central support part has a recess provided with fastening leaves, preferably trapezoidal and preferably along the entire inner circumference. Fastened to the recess is an inner plate shaped like a recess in the central support part, also provided with fastening leaves, preferably trapezoidal and preferably formed on the entire inner circumference by a groove-shaped cut in which the angle between the walls is not less than 90°.

[0005] Preferably, the inner plate with a recess-shaped central support part is made of a transparent or translucent material.

[0006] Preferably, the inner strand has narrow leaves on the sides, formed by the removal of the inner layer of a three-layer or two-layer material, leaving the outer layer.

[0007] Preferably, the fastening leaves of the middle support part and the fastening leaves of the inner plate are provided with corresponding holes for the detachable fastening elements.

[0008] Preferably, the masking plate with longitudinal cuts at the edge is applied to the inner plate in the number and length corresponding to the leaves of the outer strand of the trapezoidal leaves.

[0009] Preferably, rectangular pates, preferably of wood or a wood-like material, most preferably of HDF or plywood, connected by side edges to form shelves, are detachably attached to the fastening leaves of the central support part, perpendicular to the middle surface of the support part.

[0010] Preferably, the rectangular plates are detachably attached to the attachment leaves of the central support part by their lower edges or upper edges or at their central part.

[0011] Preferably, the central support part has a recess provided with elongated fastening leaves, preferably trapezoidal, with a total area similar to the recess of the central support part, between which oblong holes are formed, and preferably along the entire inner periphery, having double, parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

[0012] Preferably, the central support part has a recess provided with two rectangular leaves on two opposite sides provided with fixing lugs with holes formed by parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

[0013] Preferably, the central support part has a recess provided with one rectangular leaf on one side having two parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

[0014] Preferably, the three-layer or two-layer material is a metal-plastic plate in which the material layer has a thickness several times greater than that of the metal layer.

[0015] Most preferably, the three-layer material is an ACP board with an aluminum layer thickness of 0.015 mm to 0.5 mm and a PE or LDPE layer of 0.5 mm to 5 mm thickness.

[0016] The invention is illustrated in the drawing by way of example, but is not intended to be limiting in any way, in which Fig. 1 shows an example of a sheet of aluminum composite pate cut to assemble a single decorative frame in rear view,

Fig. 1A is an enlarged view of Fig. 1 from circle 9
Fig. 1B is an enlarged view of Fig. 1 from circle 9
Fig. 2 shows an element filling a decorative frame

for placing photos, pictures, etc.
Fig. 3 shows the element of Fig. 1 ready to be mounted in the decorative frame shown in Fig. 1,
Fig. 4 shows a view of the plate masking the interior of the decorative frame,
Fig. 5 shows the decorative frame of Fig. 3 with the connected filler piece of Fig. 2 and the back plate of Fig. 4 ready for installation.
Fig. 6 shows an assembled, ready-to-hang single decorative frame in a rear view,
Fig. 7 shows an example of a square decorative frame in front view,
Fig. 8 shows an example of a rectangular decorative frame in front view,
Fig. 9 shows an example of a sheet of aluminum composite pate cut to assemble a single decorative frame, for placing mirrors, photos and pictures behind glass, in rear view,
Fig. 10 shows the folded and assembled cut sheet of Fig. 9 without rear locking plate,
Fig. 11 shows the partially folded and assembled cut sheet of Fig. 9 with the ready-to-close rear locking plate of Fig. 4,
Fig. 12 shows the fixing of a mirror or a rigid one by pressing or pasting,
Fig. 13 shows an example of a sheet of aluminum composite pate cut to assemble a single decorative frame to create shelves and cabinets,
Fig. 14 shows a partially folded cut sheet of the aluminum composite panel of Fig. 13 prepared to be closed and to be attached to a shelf.
Fig. 15 shows the fastening of the shelf to the frame before the final assembly of the frame,
Fig. 16 shows the frame of Fig. 15 after completing the assembly with the shelf attached,
Fig. 17 shows an example of a frame with an installed shelf in the middle position in side view,
Fig. 18 shows an example of a frame with an installed shelf on the front of the shelf in side view,
Fig. 19 shows an example of a frame with an installed shelf on the back of the shelf in side view,
Fig. 20 is a front view of the frame with an installed shelf of Fig. 17 or Fig. 18 or Fig. 19,
Fig. 21 is a front view of the frame with an installed shelf of Fig. 17 or Fig. 18 or Fig. 19 with a decorative surface,
Fig. 22 shows the front view of a rectangular frame with an installed shelf,
Fig. 23 shows a rectangular elongated decorative frame with three installed shelves,
Fig. 24 shows the example of Fig. 23 in side view,
Fig. 25 shows the example of Fig. 23 in front view,
Fig. 26 shows an example of a rectangular elongated frame with a decorative surface with three installed shelves in front view,
Fig. 27 shows an example of a rectangular elongated frame with several shelves mounted in side view,
Fig. 28 shows an example of a rectangular elongated frame with several shelves mounted in front view,
Fig. 29 shows an example of a decorative frame with an installed cabinet in front view,
Fig. 30 shows an example of a single decorative frame with two triangular shelves mounted in the front view,
Fig. 31 shows an example of a decorative and structural frame cut from a sheet of aluminum composite plate for shelves and cabinets and with cuts,
Fig. 32 shows an example of the ready for assembly decorative and structural frame of Fig. 31 with mounted angles and central leaves bent towards the inside and prepared for assembly of furniture boards,
Fig. 33 shows the decorative and structural frame of Fig. 32 and a set of furniture boards ready to be joined,
Fig. 34 shows an example of the decorative and structural frame of Fig. 33 joined with furniture boards,
Fig. 35 shows an example of the installed, ready-to-hang decorative and structural frame of Fig. 34 made of a single sheet of Fig. 31,
Fig. 36 shows an example of the installed, ready-to-hang decorative and structural frame of Fig. 34 made of a single sheet of Fig. 31, with extended side furniture boards, enabling the frame to be placed,
Fig. 37 shows an example of the ready decorative and structural frame of Fig. 35 with shelves made of furniture board in front view,
Fig. 38 shows an example of the ready decorative and structural frame of Fig. 35 for a single shelf
Fig. 39 shows an example of the ready decorative and structural frame of Fig. 35 with shelves made of furniture board in front view, in a horizontal arrangement,
Fig. 40 shows an example of the assembled and finished decoration and structural frame of Fig. 36 in front view,
Fig. 41 shows an example of a cut-out from a sheet of aluminum composite plate for making a single decorative and structural frame with a shelf and one slanted side wall with folding cuts made.
Fig. 42 shows an example of the frame of Fig. 41 after bending the slanted side wall and leaves with attached fasteners,
Fig. 43 shows an example of the frame of Fig. 42 after the leaves are bent inwards and ready to be joined with furniture boards,
Fig. 44 is a sectional view of the frame with the shelf of Fig. 43 with one slanted side wall after folding and twisting,
Fig. 45 is a sectional view of the example of the frame with the shelf of Fig. 43 with one slanted side wall after folding and twisting, in perspective view,
Fig. 46 is a sectional view of the example of the frame with the shelf of Fig. 43 with one slanted side wall after folding and twisting, in front view.

[0017] The frame has rectangular or square-shaped cuts **1** forming the central support part **2** and a cut from the sheet to form trapezoidal leaves **3** along the entire length of each side of the central support part **2** with two cuts to form three folding strands. The middle strand **4** is provided at each end with at least one through hole **5** for fixing the angle connector **6** and in the middle with a hanging hole **7,** while each outer strand **8** has at least one locking leaf **9** and preferably two locking leaves **9** symmetrically arranged at the ends of the strands, the cuts **1** between have the shape of a groove in the middle support part and the inner strand in which the angle between the walls is not less than 135°, on the other hand, the cuts **1A. 1B. 1C. 1D. 1E and 1F** have the shape of a groove in which the angle between the walls is not less than 90°. By means of screws **11** of angle connectors **6,** the trapezoidal leaves **3** and the central strands **4** are fixed together after they are bent towards the inside of the frame. The central support part **2** has a recess **12** provided with fastening leaves **13**, preferably trapezoidal and preferably along the entire inner circumference. Fastened to the recess is an inner plate **14** shaped like a recess in the central support part **2**, also provided with fastening leaves **15**, preferably trapezoidal and preferably formed on the entire inner circumference by a groove-shaped cut **16** in which the angle between the walls is not less than 90°. The inner strand **4** has narrow leaves **17** on the sides, formed by the removal of the inner layer of a three-layer or two-layer material, leaving the outer layer.

[0018] In the embodiment in Fig. 9 Fig. 10, Fig. 11 and Fig. 12 fixing leaves 13 they have the form of elongated trapeziums and have two cuts **1D** and **1E** near the base of the trapezoid. The fastening leaves **13** of the central support part **2** and the fastening leaves **15** of the inner plate **14** are provided with corresponding holes **5** for the screws **19.** The masking plate **20** with longitudinal cuts **21** at the edge is applied to the inner plate **14** in the number and length corresponding to the leaves **9** of the outer strand **8** of the trapezoidal leaves.

[0019] In the embodiments in Fig. 13 or Fig. 30 rectangular pates of wood or a wood-like material, most preferably of laminated rectangular or plywood, connected by side edges to form shelves, are detachably attached to the fastening leaves of the central support part **2**, perpendicular to the middle surface of the support part **2.**

[0020] In the embodiment in Fig. 31 to Fig. 40 the central support part **2** has fastening leaves **23** having a rectangular shape and folded to the inside of the frame and forming the side or top and bottom walls of the shelves, and narrow leaves **24** folded inward of the frame to support the plates **22** provided with pin-like fasteners **25** connecting the plates through holes **26** corresponding to them.

[0021] In the embodiment in Fig. 41 to Fig. 46, the central support part **2** has a rectangular leaf **27** double incised to form an internal inclined wall after the plates **22** are installed and the remaining frame elements are joined.

[0022] This structure allows for a very original and visually attractive spatial form surrounding pictures, mirrors, photos or shelves, allowing for a significant increase in the aesthetics of these items, relatively easy to manufacture, which is characterized by an easy change of size and change of the type of surface finish, which it offers the possibility of quick and relatively cheap production and manufacture to order in accordance with the customer's needs.

Claims

1. The decorative and/or structural frame **characterized in that** it is made of a single sheet of three-layer or two-layer material through rectangular or square-shaped cuts forming at least one central support part and cutting the sheet to form trapezoidal leaves over the entire length of each side of the central support part with two cuts to form three folding strands, and the middle strand is provided at each end with at least one through hole for fixing the angle connector and in the middle with a hanging hole, while each outer strand has at least one locking leaf and preferably two locking leaves symmetrically arranged at the ends of the strands, the cuts between have the shape of a groove in the middle support part and the inner strand in which the angle between the walls is not less than 135°, on the other hand, the cuts between the inner strand and the middle strand have the shape of a groove in which the angle between the walls is not less than 90°, and the central support part has a recess provided with fastening leaves, preferably trapezoidal and preferably along the entire inner circumference, and fastened to the recess is an inner plate shaped like a recess in the central support part, also provided with fastening leaves, preferably trapezoidal and preferably formed on the entire inner circumference by a groove-shaped cut in which the angle between the walls is not less than 90°.

2. The frame according to claim 1 **characterized in that,** the inner plate with a recess-shaped central support part is made of a transparent or translucent material.

3. The frame according to claim 1, **characterized in that,** the inner strand has narrow leaves on the sides, formed by the removal of the inner layer of a three-layer or two-layer material, leaving the outer layer.

4. The frame according to claim 1, **characterized in that,** the fastening leaves of the middle support part and the fastening leaves of the inner plate are provided with corresponding holes for the detachable fastening elements.

5. The frame according to claim 1, **characterized in that,** the masking plate with longitudinal cuts at the edge is applied to the inner plate in the number and length corresponding to the leaves of the outer strand of the trapezoidal leaves.

6. The frame according to claim 1, **characterized in that,** rectangular pates, preferably of wood or a wood-like material, most preferably of HDF or plywood, connected by side edges to form shelves, are detachably attached to the fastening leaves of the central support part, perpendicular to the middle surface of the support part.

7. The frame according to claim 6, **characterized in that,** the rectangular plates are detachably attached to the mounting leaves of the central support part by their lower edges or upper edges or at their central part.

8. The frame according to claim 1, **characterized in that,** the central support part has a recess provided with elongated fastening leaves, preferably trapezoidal, with a total area similar to the recess of the central support part, between which oblong holes are formed, and preferably along the entire inner periphery, having double, parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

9. The frame according to claim 1, **characterized in that,** the central support part has a recess provided with two rectangular leaves on two opposite sides provided with fixing lugs with holes formed by parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

10. The frame according to claim 1, **characterized in that,** the central support part has a recess provided with one rectangular leaf on one side having two parallel cuts having the shape of a groove, in which the angle between the walls is not less than 90°.

11. The frame according to claim 1, **characterized in that,** the three-layer or two-layer material is a metal-plastic plate in which the material layer has a thickness several times greater than that of the metal layer.

12. The frame according to claim 1, **characterized in that** when three-layer material is the three-layer material is an ACP board with an aluminum layer thickness of 0.015 mm to 0.5 mm and a PE or LDPE layer of 0.5 mm to 5 mm thickness.

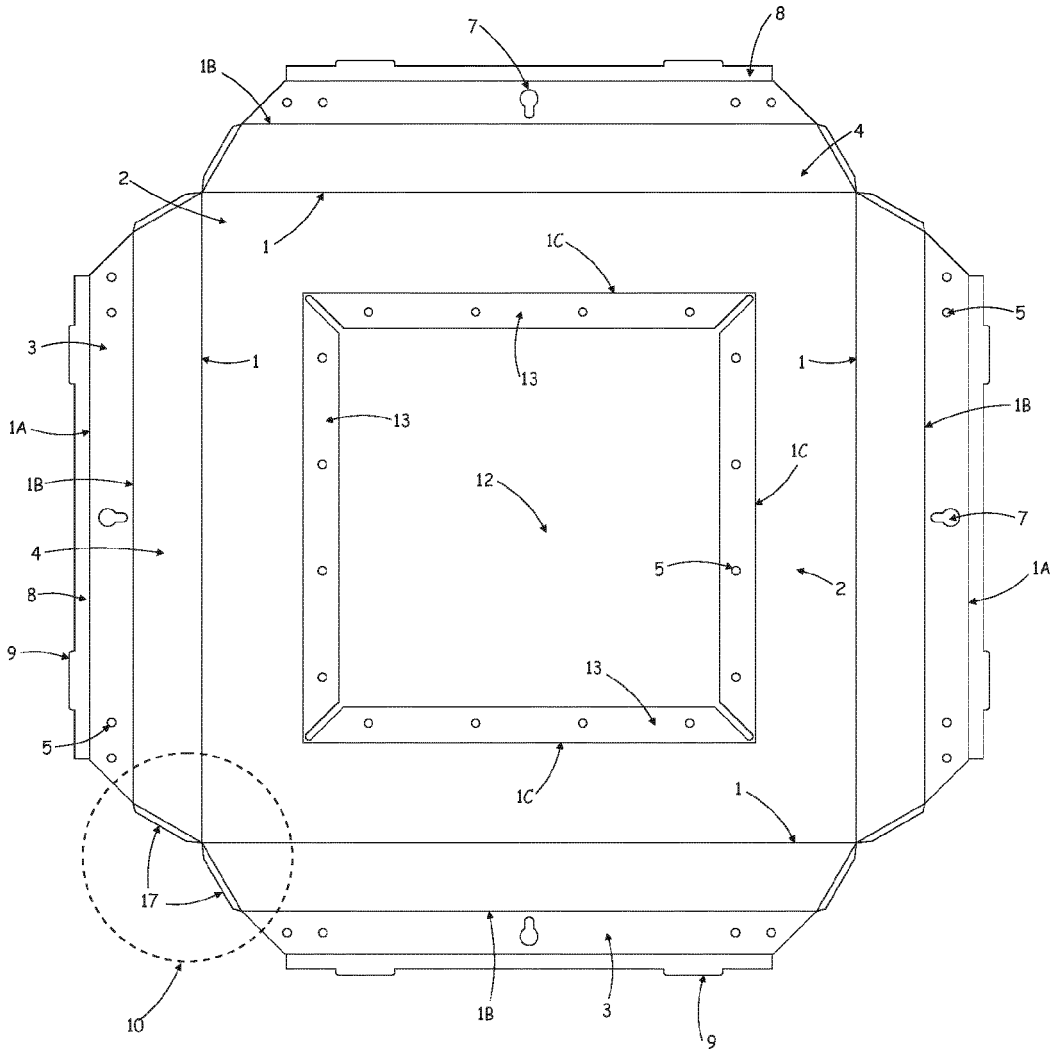

Fig. 1

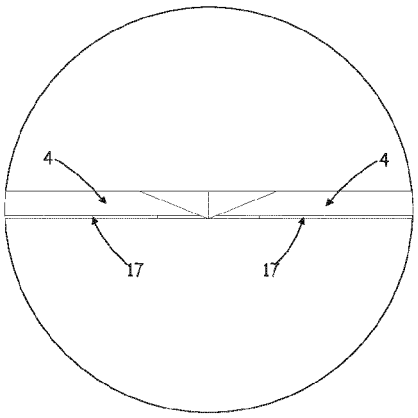

Fig. 1A

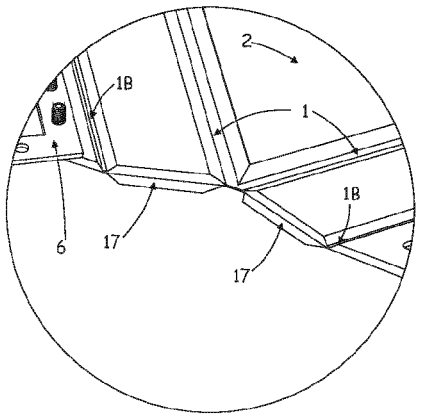

Fig. 1B

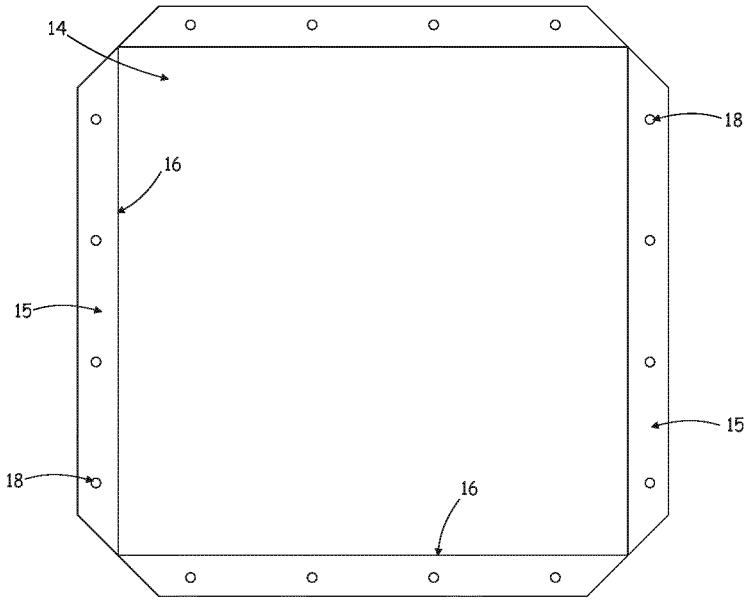
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Fig. 2

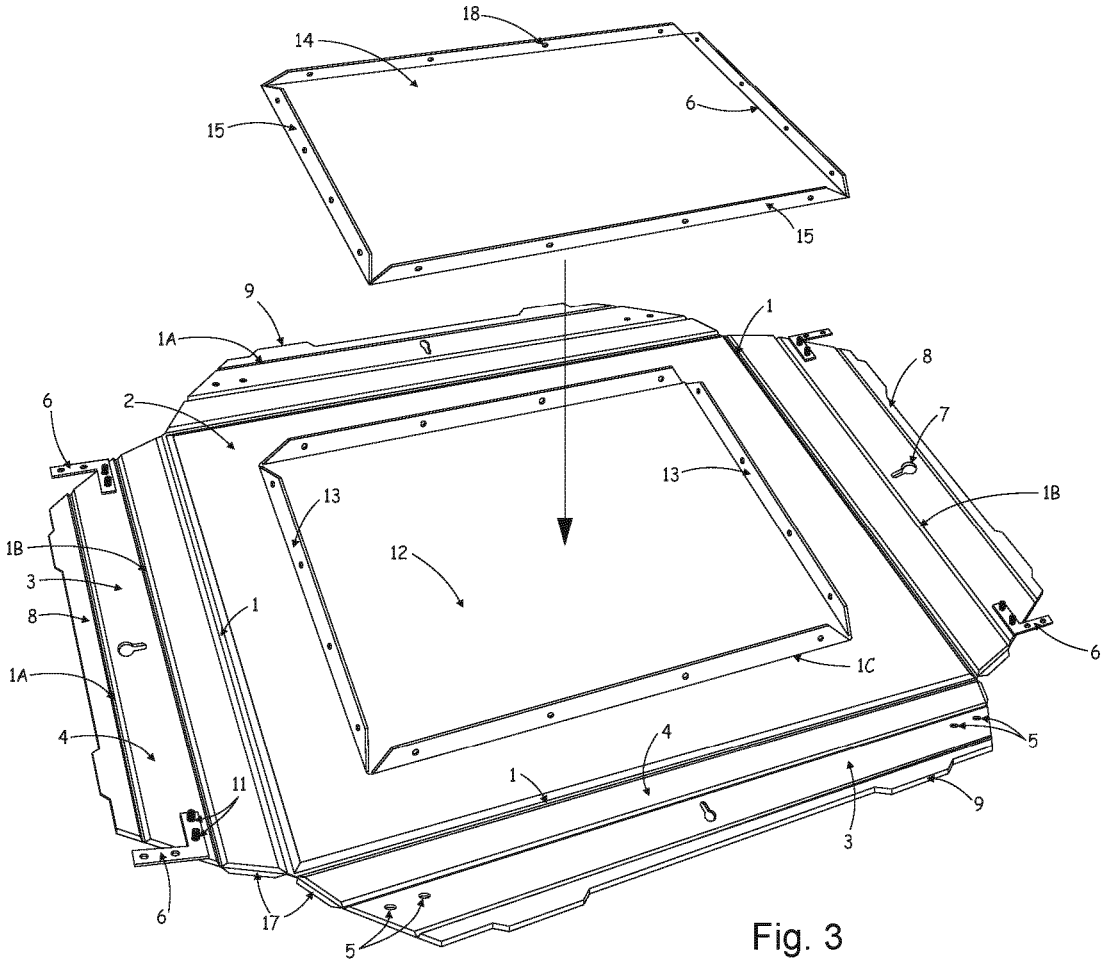
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Fig. 3

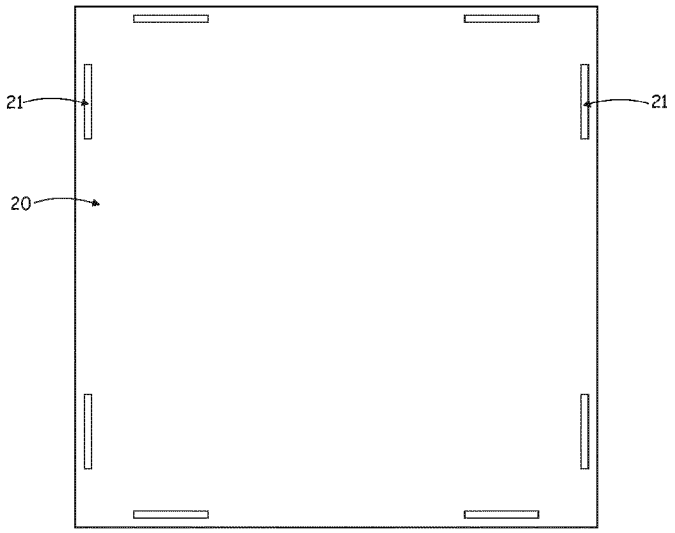
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Fig. 4

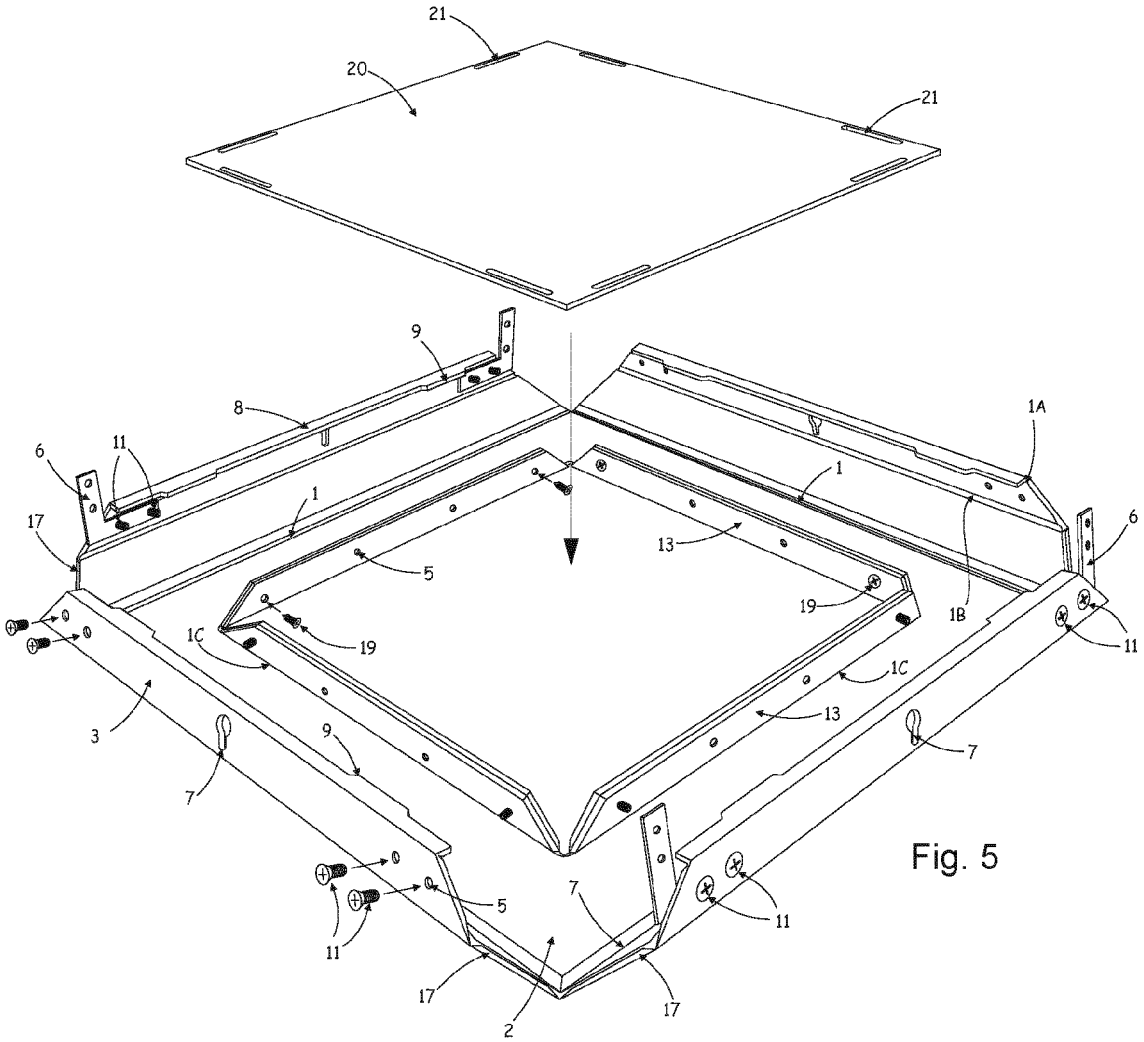
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Fig. 5

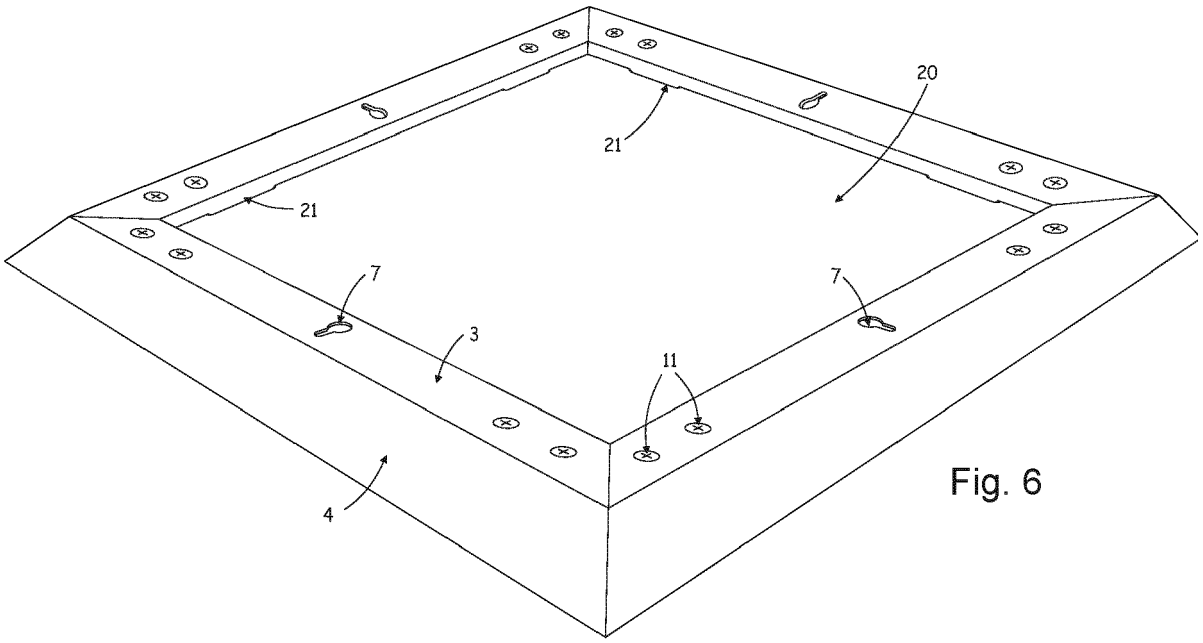

Fig. 6

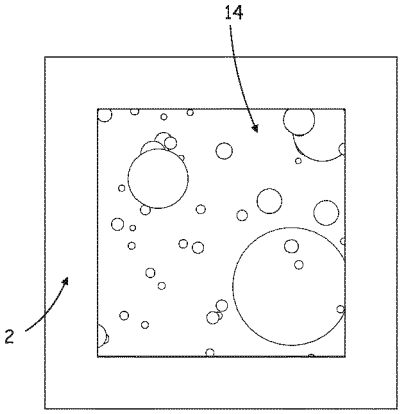

Fig. 7

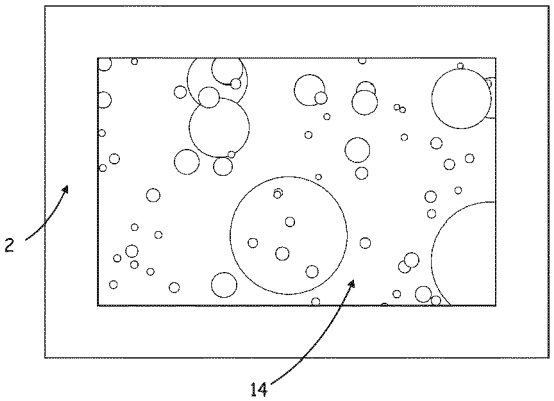

Fig. 8

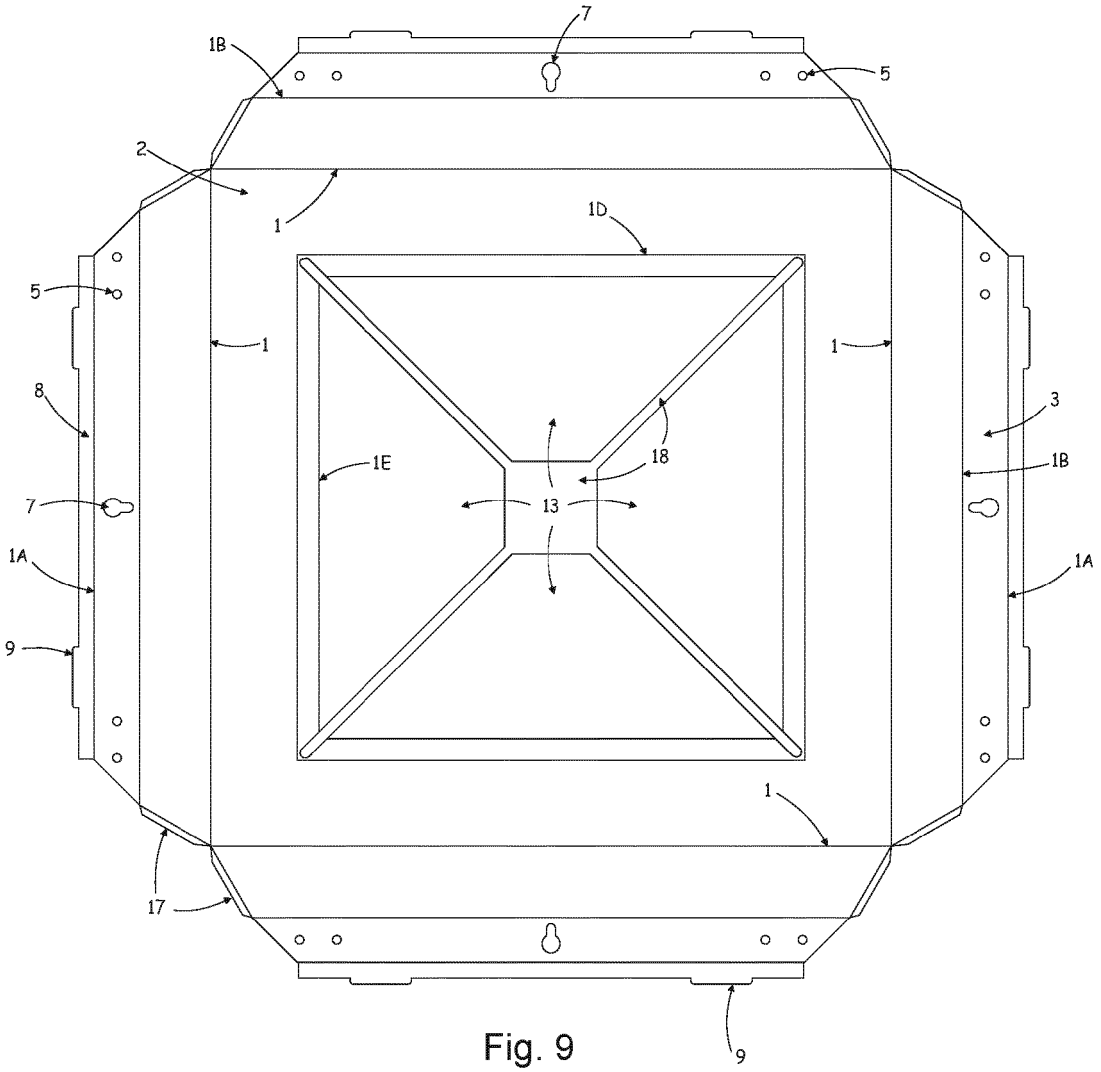

Fig. 9

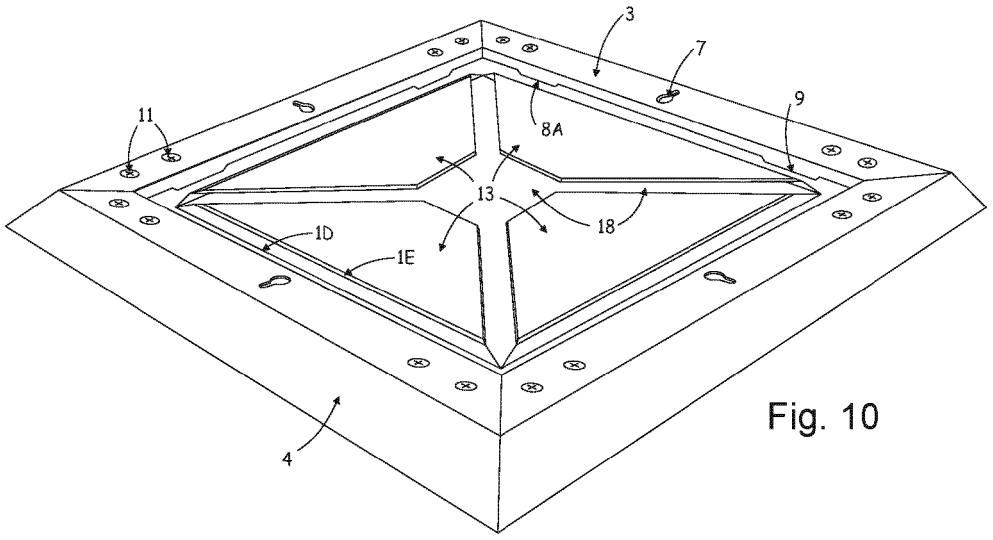

Fig. 10

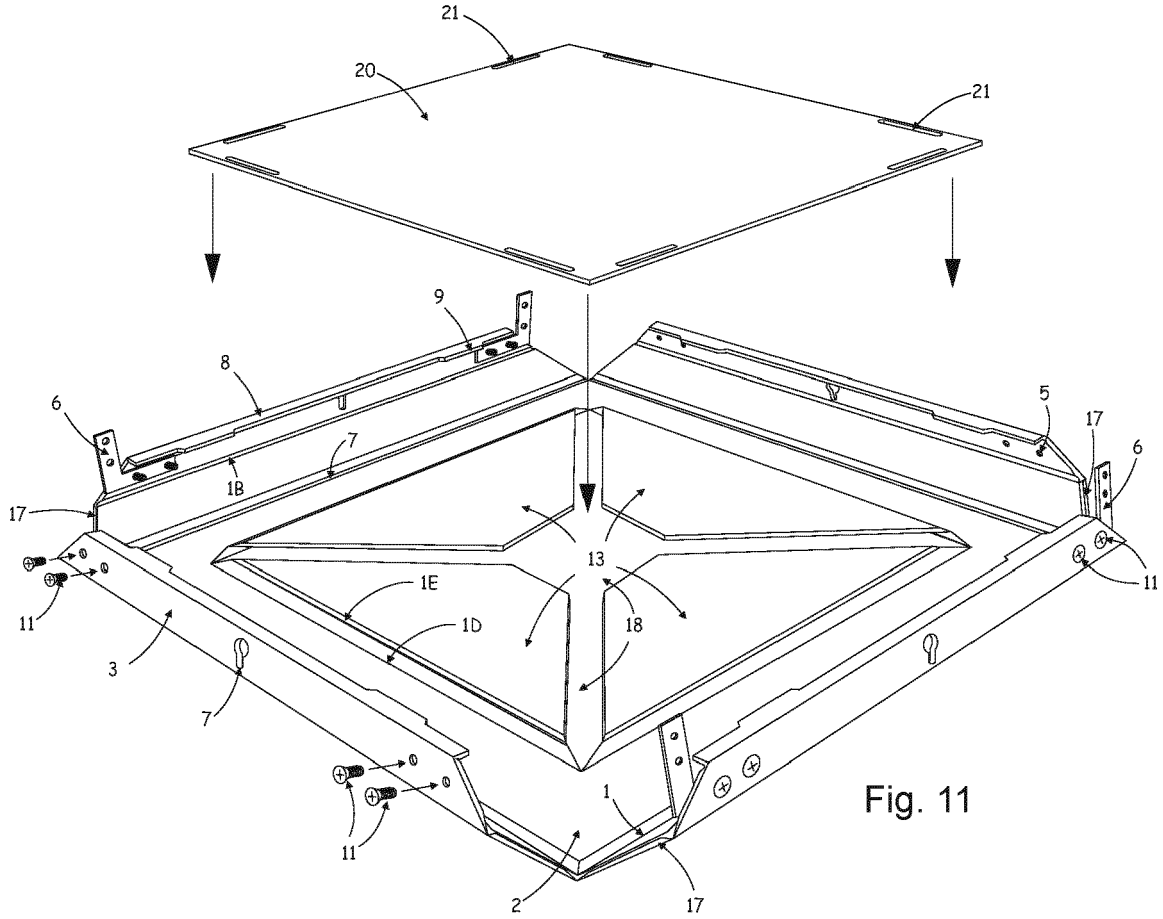

Fig. 11

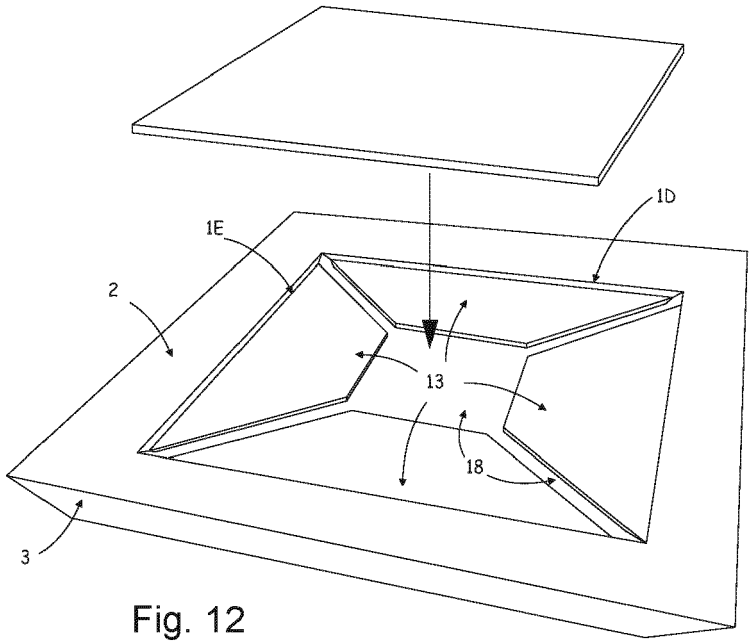

Fig. 12

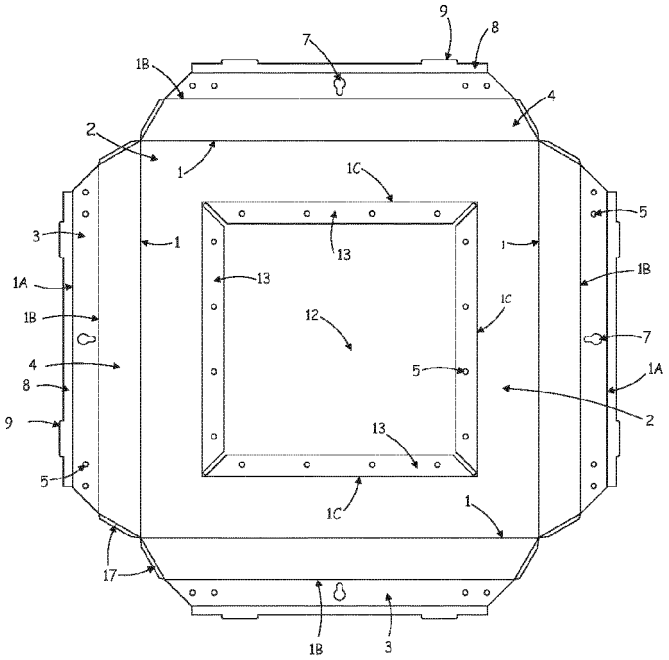
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Fig. 13

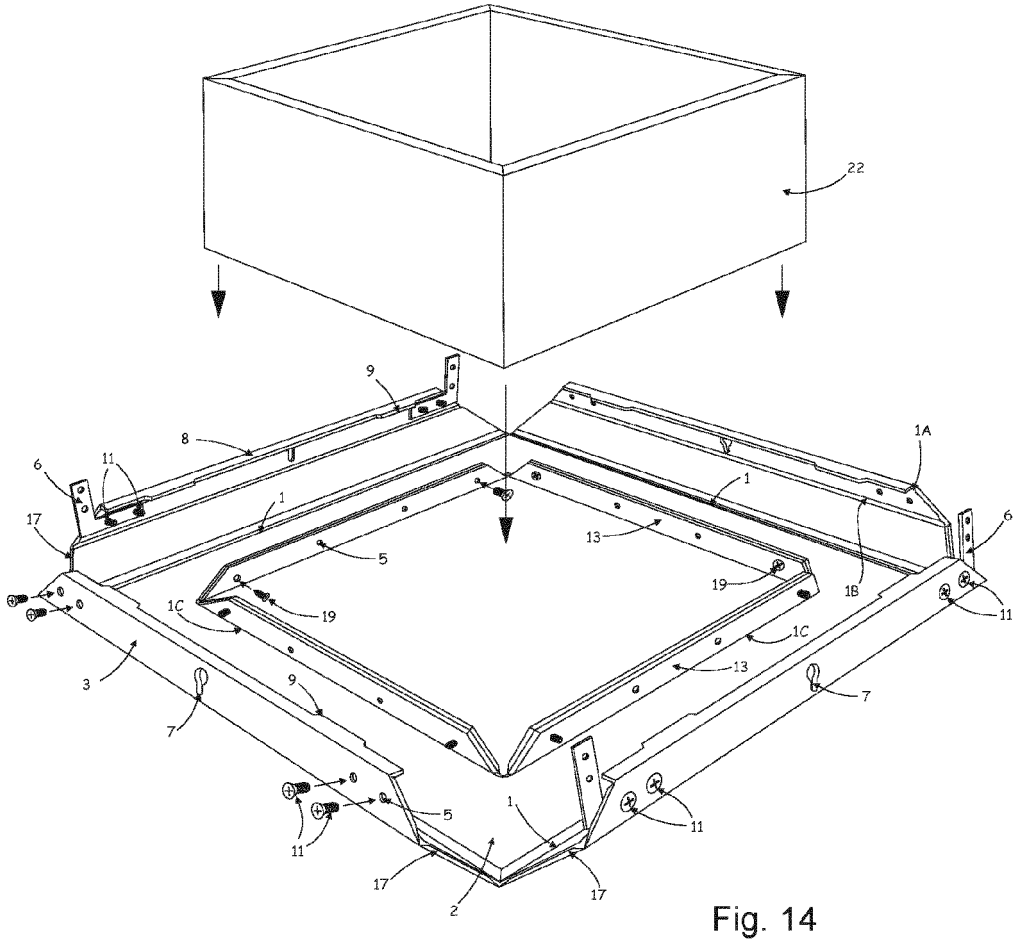
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Fig. 14

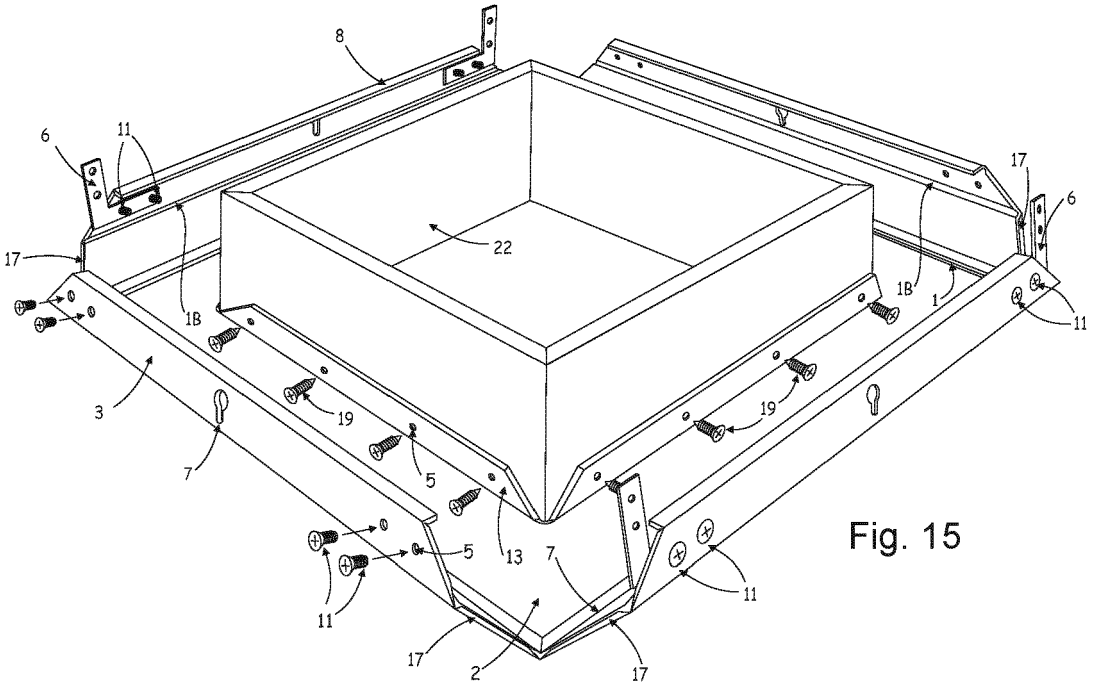


Fig. 15

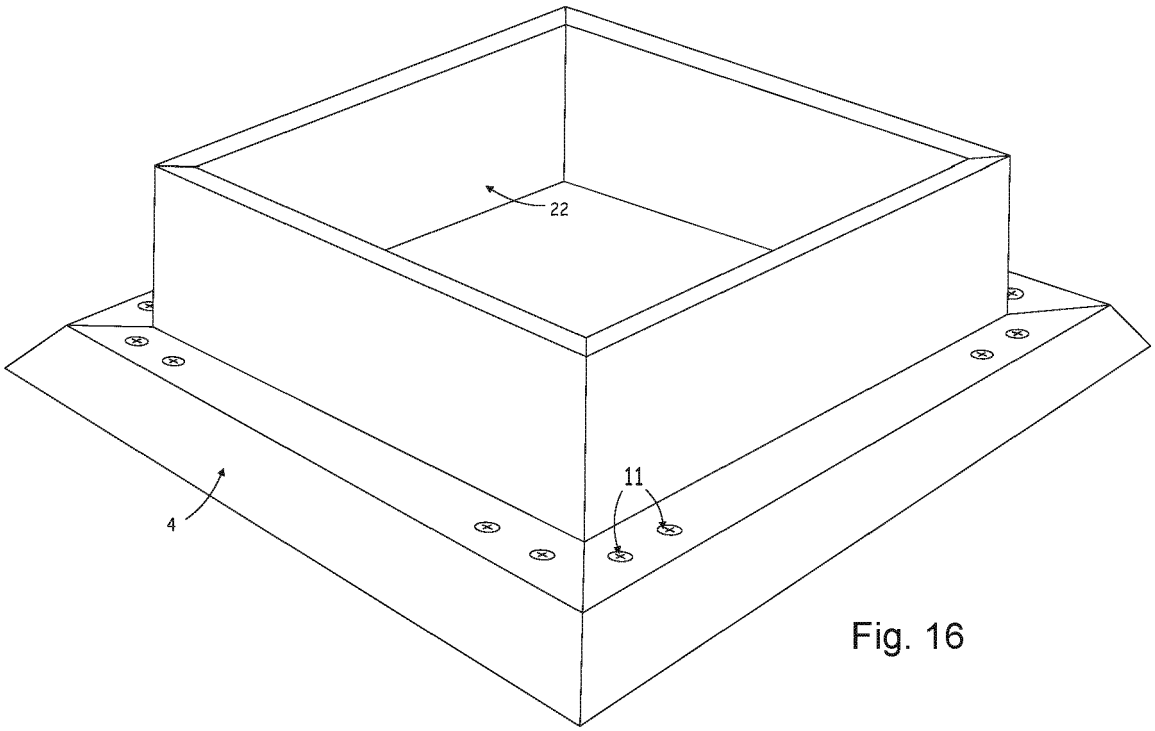


Fig. 16

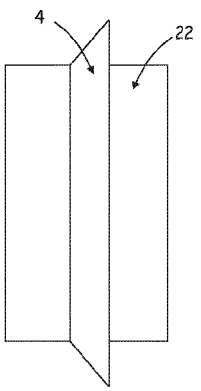


Fig. 17

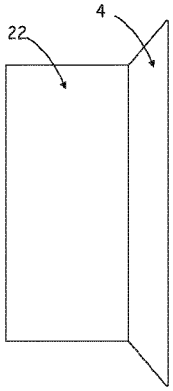
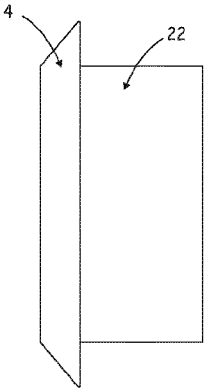


Fig. 18



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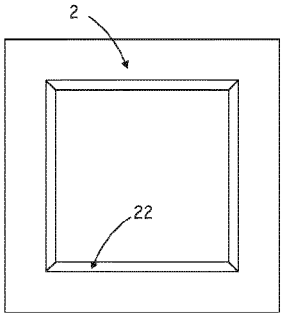

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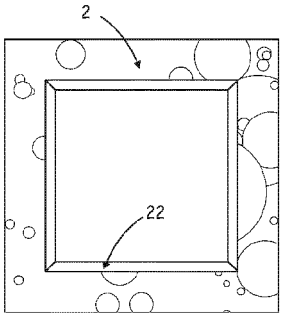

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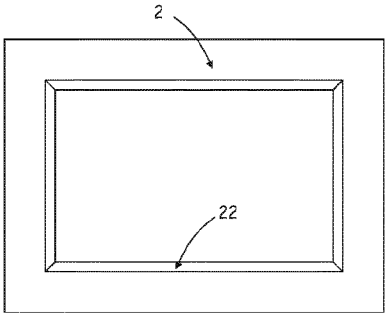

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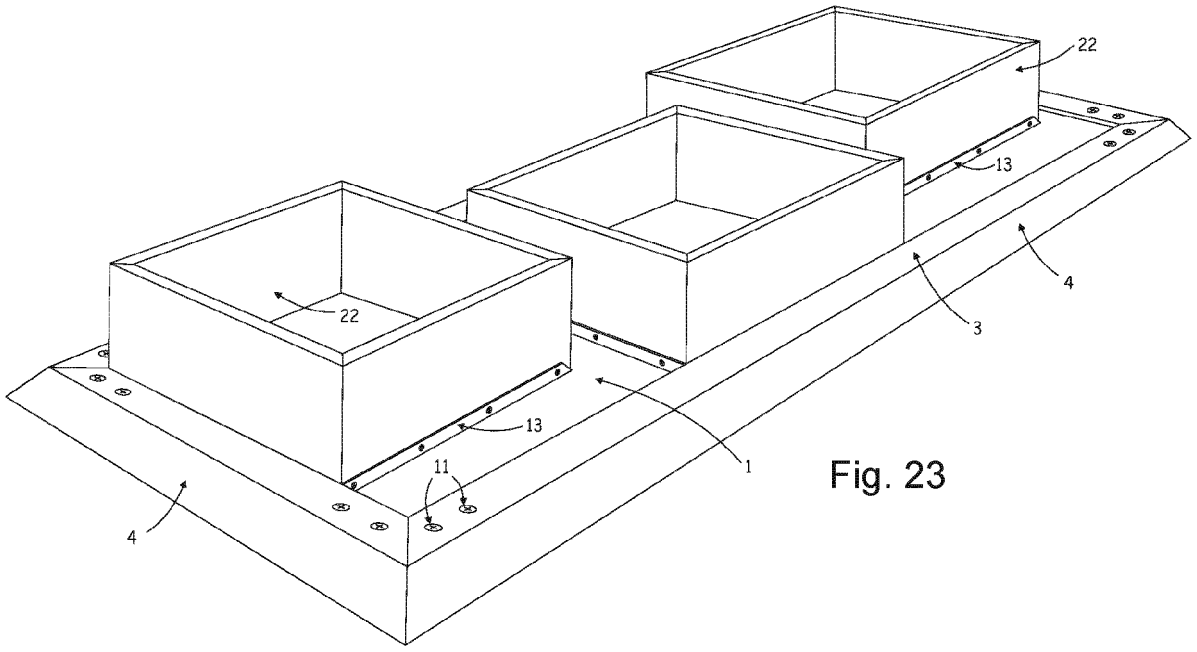

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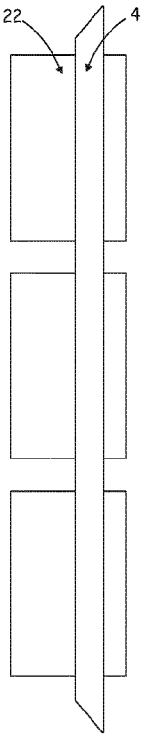

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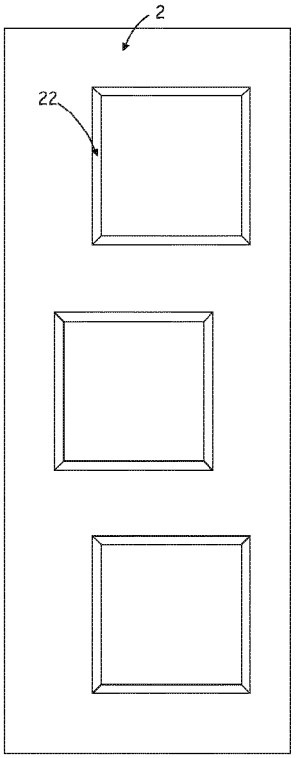

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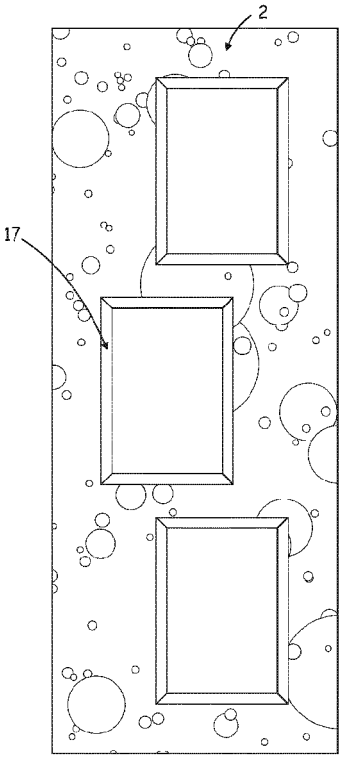

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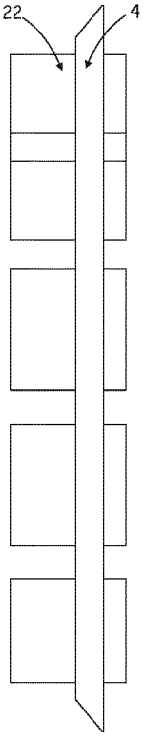

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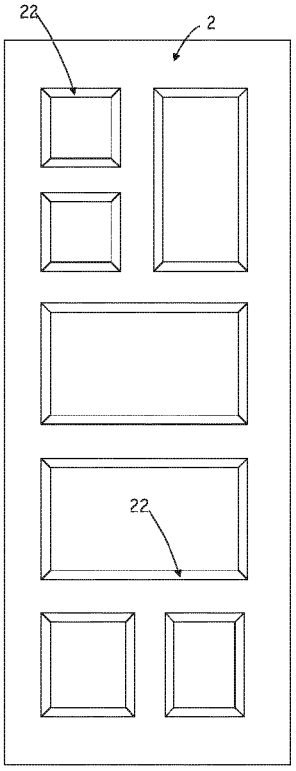

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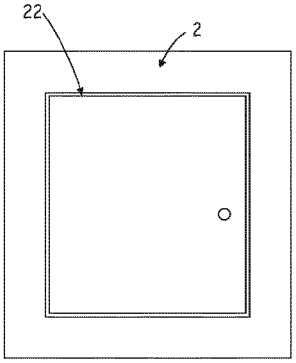

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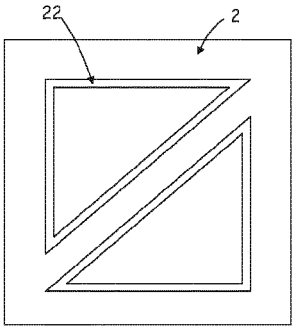

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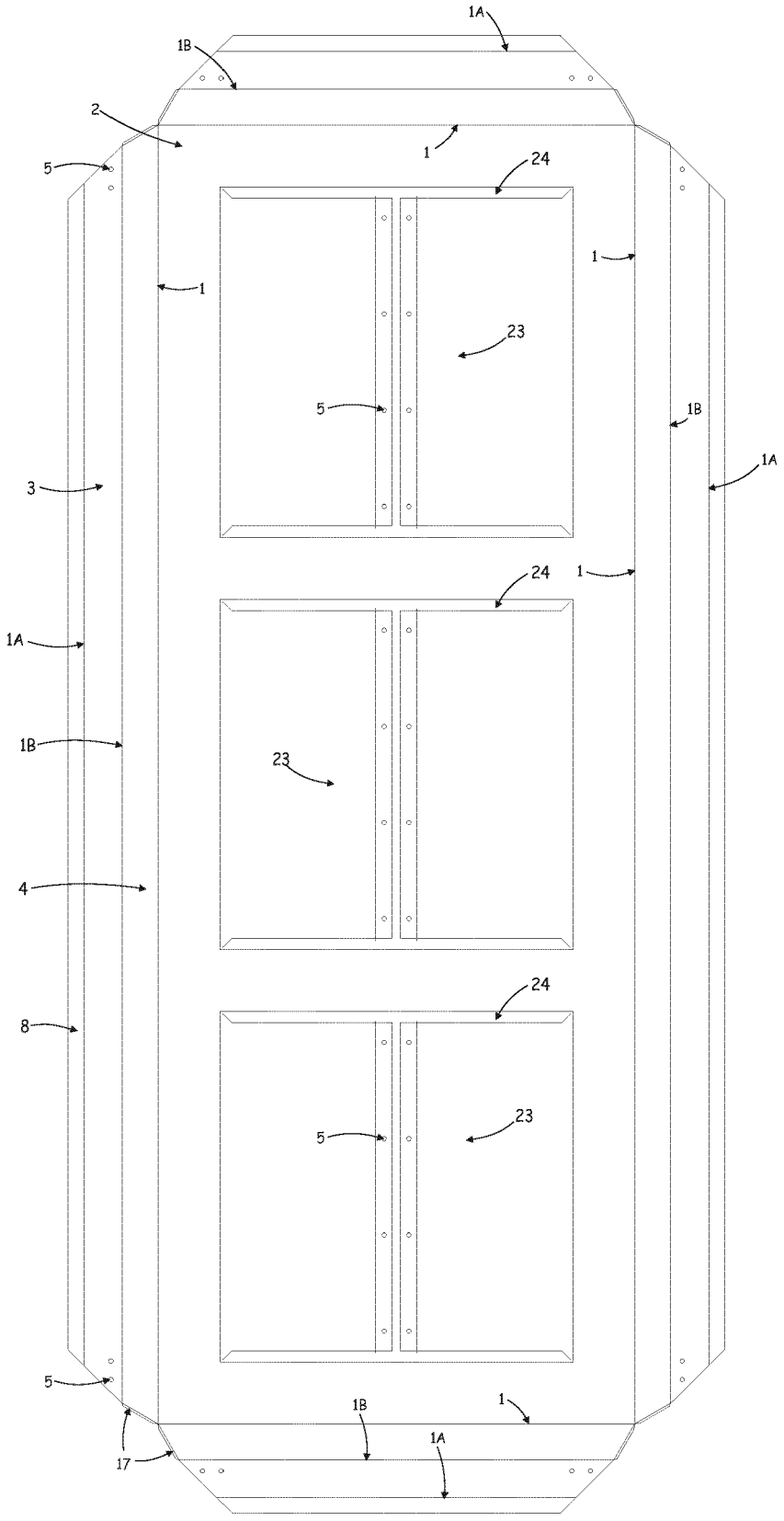

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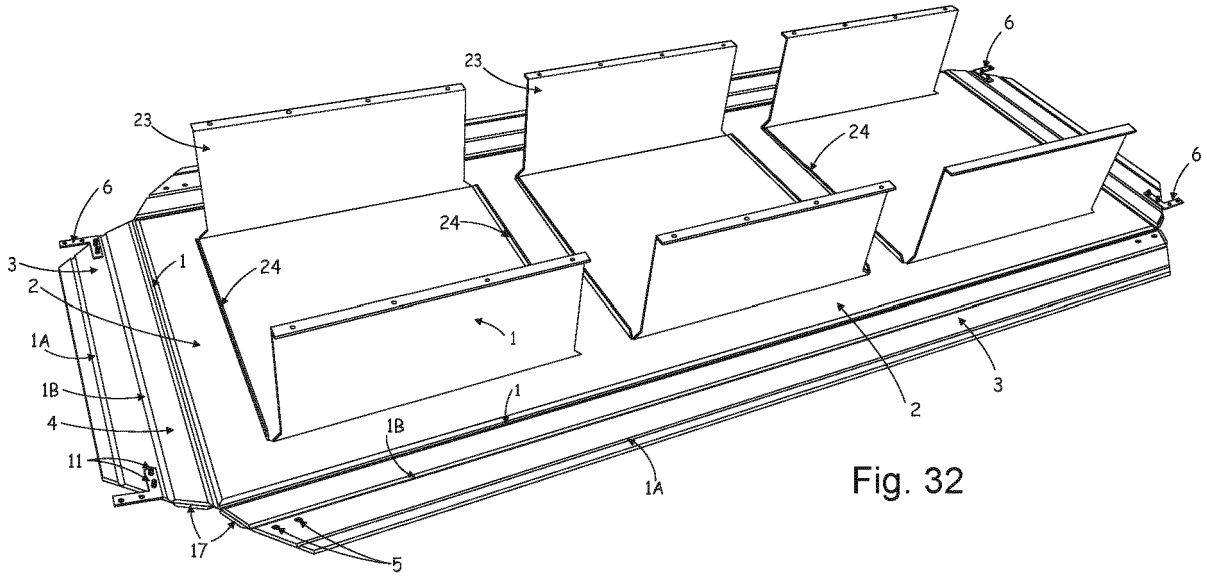
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Fig. 32

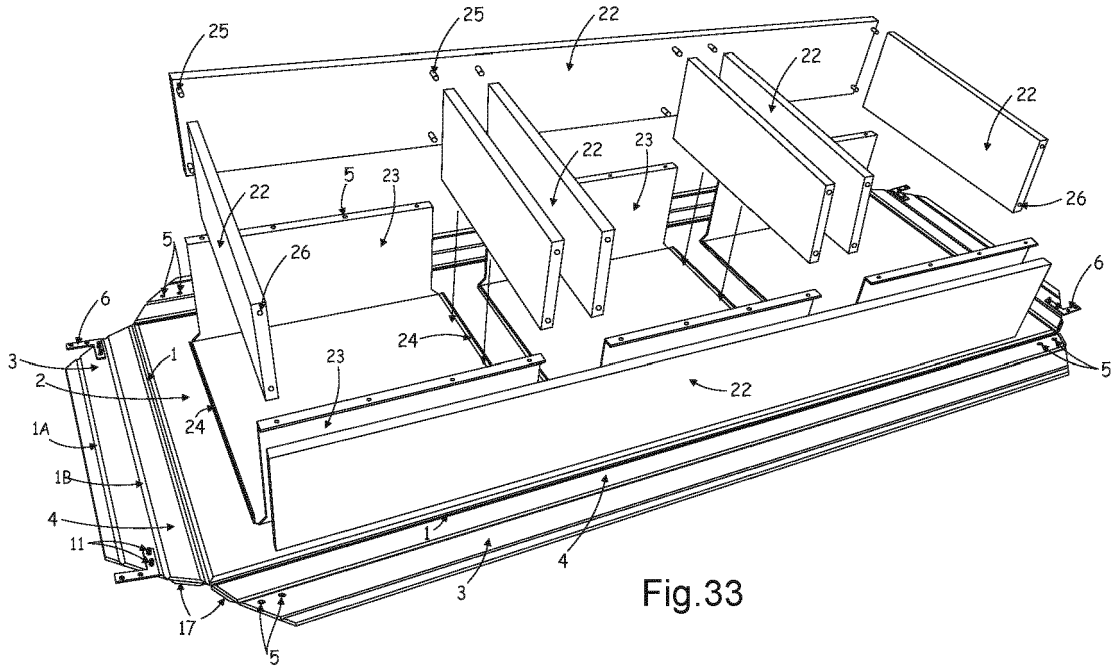
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Fig.33

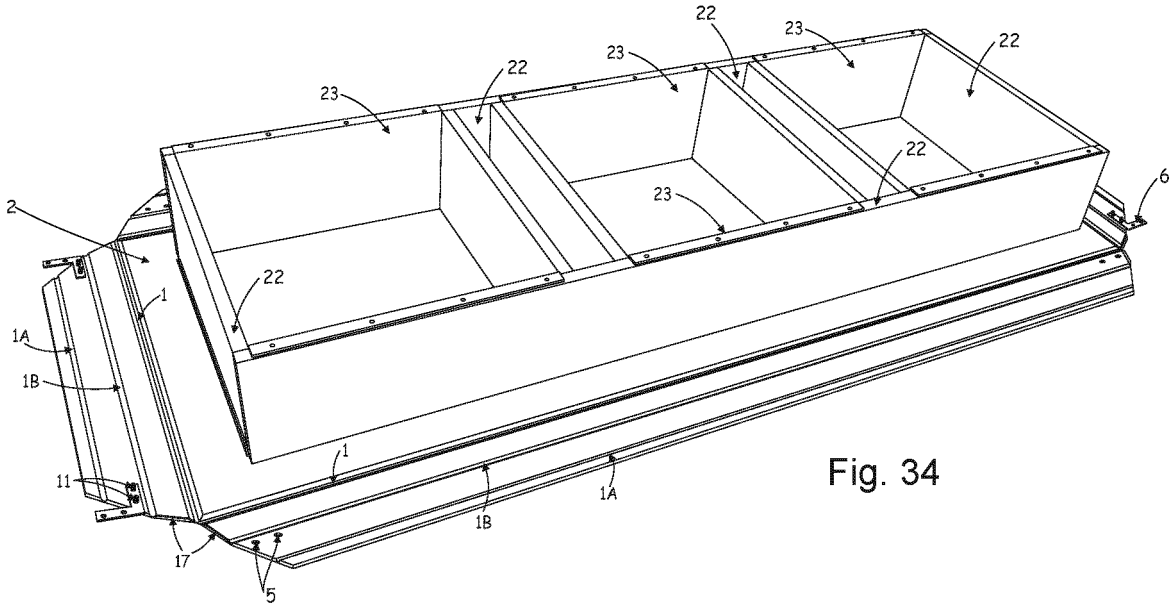
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Fig. 34

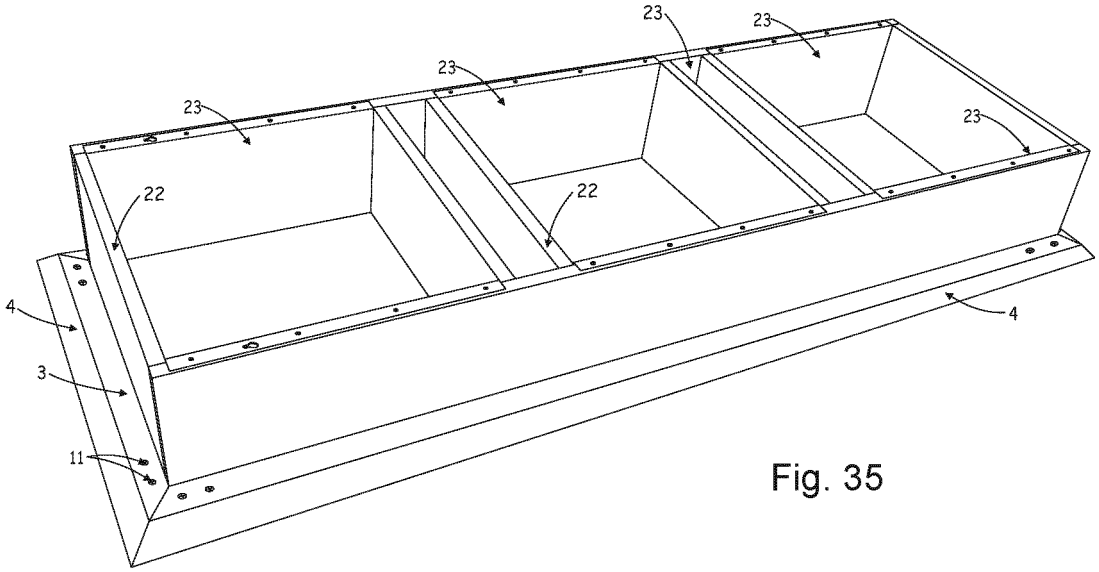
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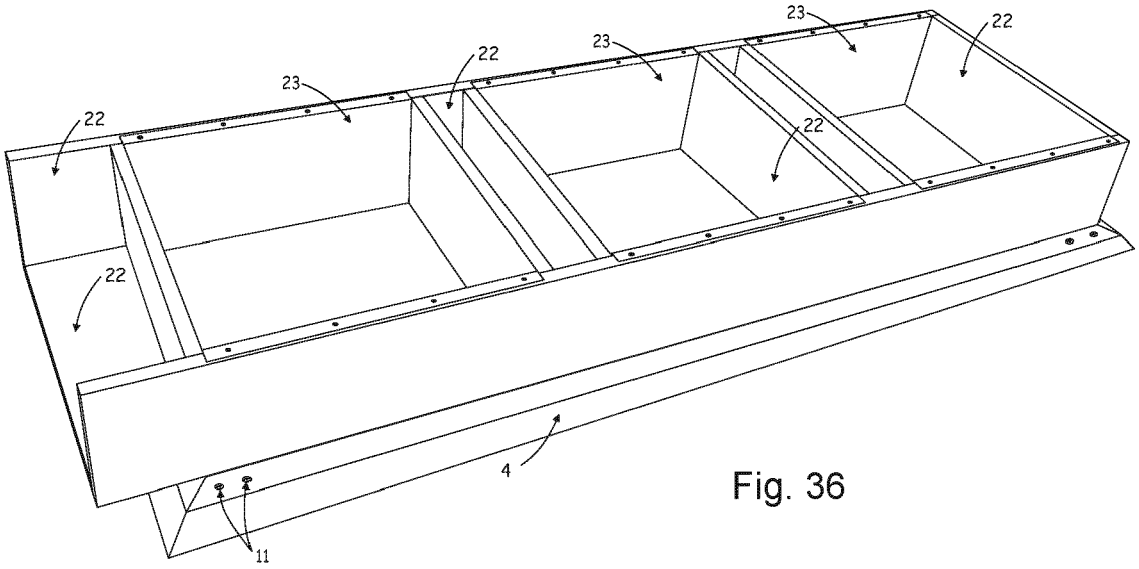
Fig. 35



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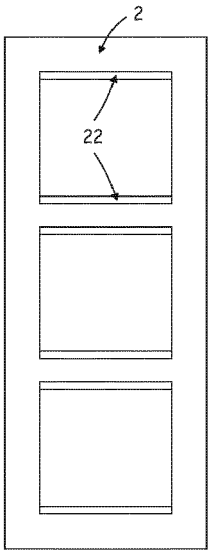

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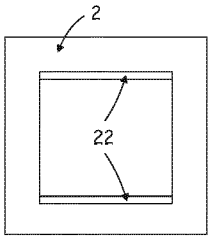

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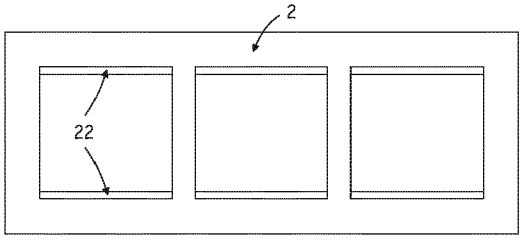

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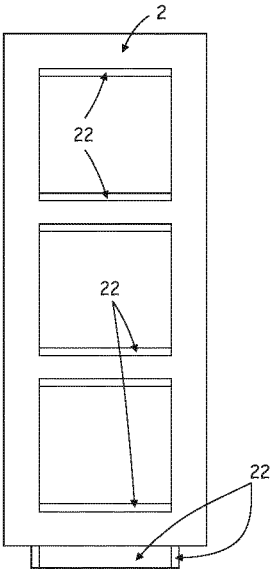

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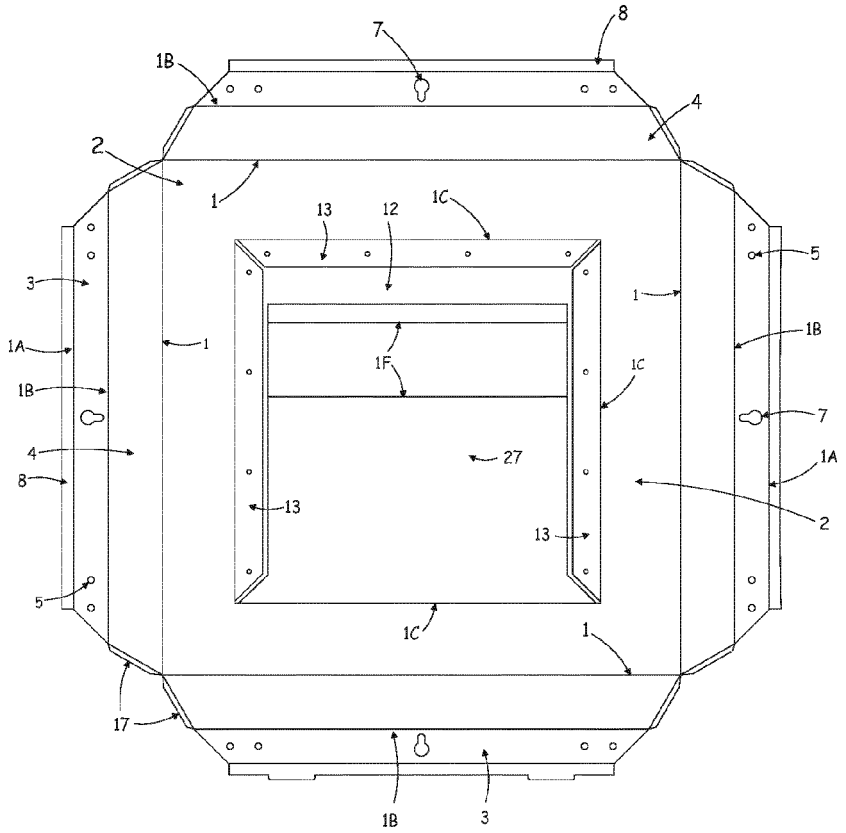
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Fig. 41

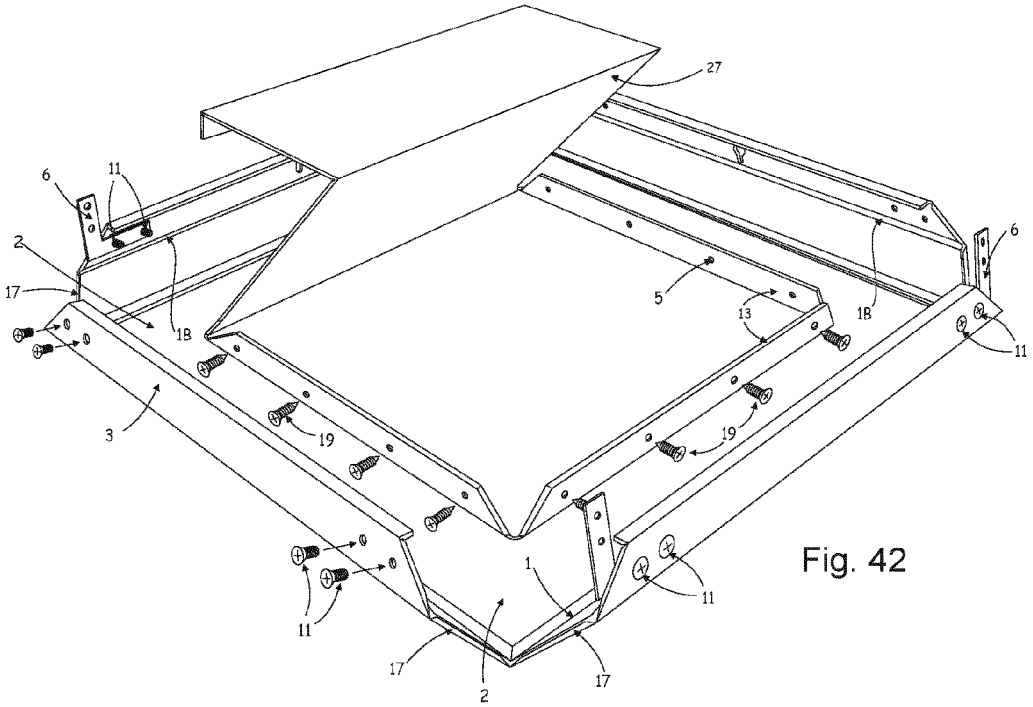
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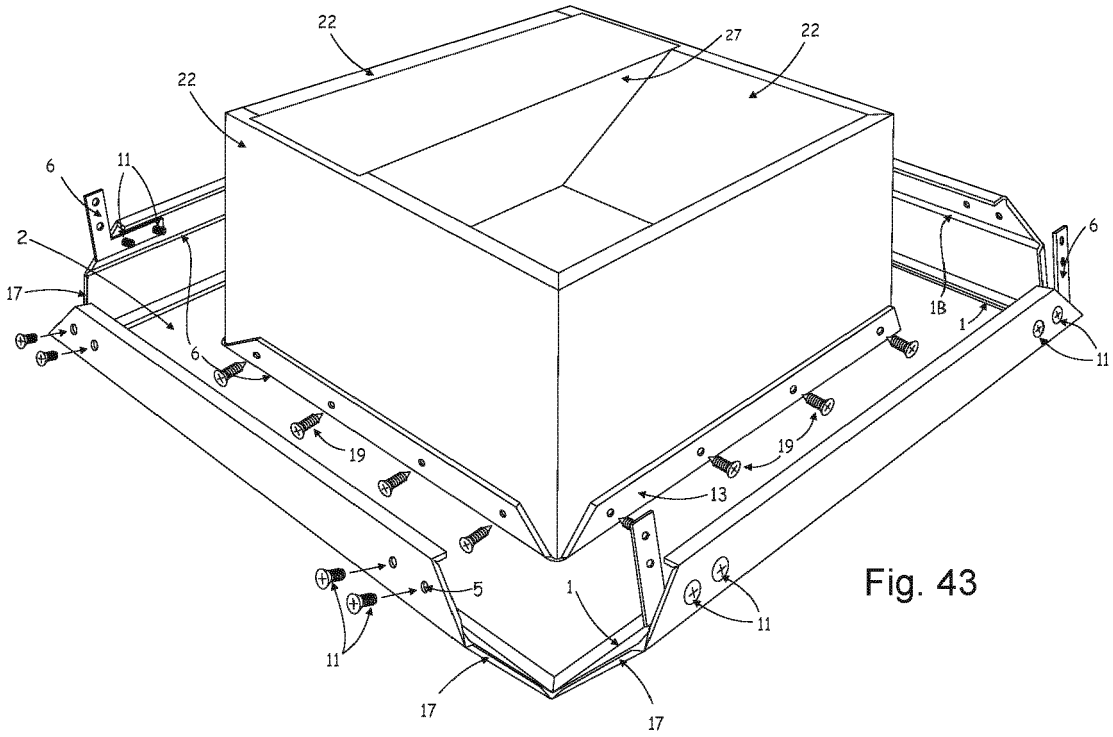
Fig. 42



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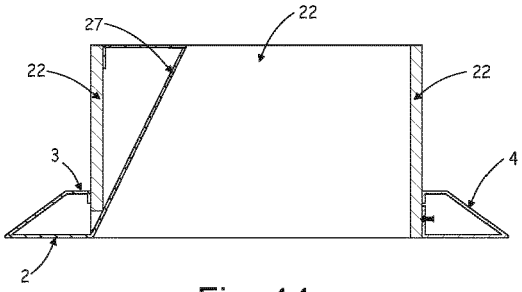

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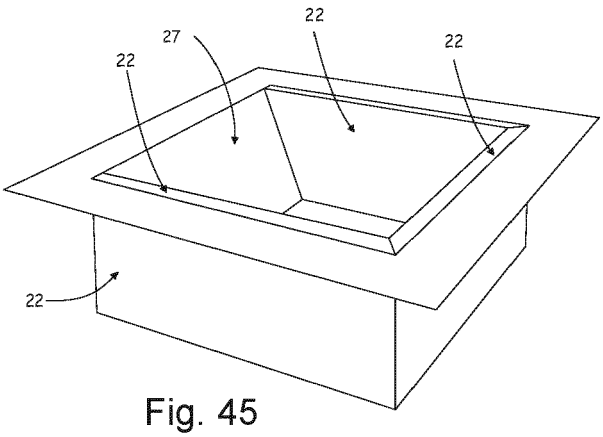

Fig. 45

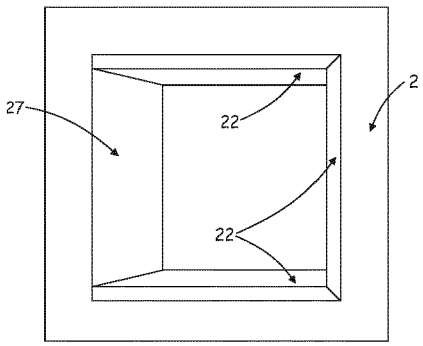

Fig. 46

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EUROPEAN SEARCH REPORT

Application Number
EP 20 02 0288

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 849 111 A (FAIRCHILD ELMER E [US]) 2 April 1907 (1907-04-02) * page 1, line 56 - page 2, line 33; figures *	1-12	INV. A47G1/06 A47G1/12
A	DE 10 2011 011673 A1 (HEYN VESTA [DE]) 16 August 2012 (2012-08-16) * figures *	1-12	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	16 October 2020	Zattoni, Federico

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- EP 3056119 A **[0002]**