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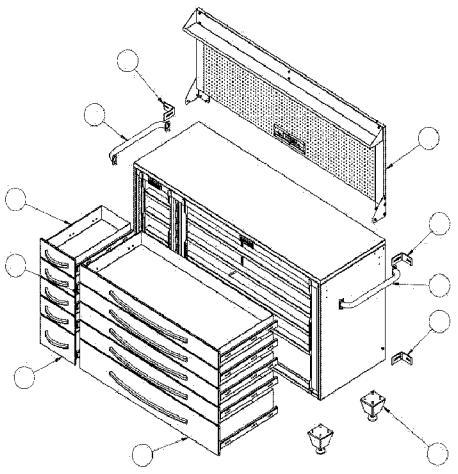


FIG. 2

(57) Abstract: A storage system is provided. The storage system includes an enclosure forming an open side exposing a face of a drawer, the drawer in translatable engagement with an interior of the enclosure. A first arm is secured to the enclosure and configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position. A translatable lever is provided for unlocking the first arm from the locked position. The lever translates a latch through an aperture of the arm, the aperture being housed within the side of the enclosure for security when in the locked position.

GUN CABINET

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application 62/311,912 filed March 23, 2017, the contents each of which are hereby incorporated by reference in their entirety.

TECHNICAL FIELD

[0002] This disclosure is related to a storage system with sliding drawers for secure storage of items, and more particularly a cabinet with sliding drawers for secure, fire-resistant and water-resistant storage of firearms.

BACKGROUND

[0003] The safe storage of valuable and sentimental items is a ubiquitous concern. Storage should not only provide a safe place to store items, but should serve as a theft deterrent as well. Due to the environments in which some items are stored, or the particular nature of the items being stored, some storage systems advantageously provide protection against physical damage, such as is caused by fire, water or corrosion. Past systems have attempted to solve these problems, but have failed to provide sufficient theft deterrent and locking systems that are also easy and quick to operate for the layman, as well as sufficiently protect against physical damage. For example, thin gauges of steel, simple locking mechanisms and the lack of fire and water-resistant insulations are common issues. Further, past systems do not permit the additional functionality of serving as a workbench for handling the items stored therein, nor the ability to be securely bolted to a wall or floor.

[0004] Accordingly, there is a need for an improved storage system that not only serves as a safe place for storage, but also addresses the disadvantages associated with the storage systems of the prior art.

SUMMARY

[0005] This Summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

[0006] According to at least one embodiment, a storage system is provided. The storage system includes an enclosure forming an open side exposing a face of a drawer, the drawer in translatable engagement with an interior of the enclosure; a first arm secured to the enclosure and configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position; and a translatable lever for unlocking the first arm from the locked position.

[0007] According to some embodiments, the storage system further includes a locking plane extending from the first arm and defining a locking aperture for receiving a latch therethrough, the latch translatable by the lever.

[0008] According to some embodiments, the storage system further includes a switch engaged with the lever for controlling the translation thereof.

[0009] According to some embodiments, the switch includes a key, a keyhole, and a rod, wherein the rod is translatable when the key is rotated within the keyhole.

[0010] According to some embodiments, the face of the drawer includes a fire-resistant layer

therein.

[0011] According to some embodiments, the storage system further includes a spring pin engaged with the first arm when the first arm is in the locked position for biasing the first arm into the unlocked position when the first arm is unlocked by the lever.

[0012] According to some embodiments, the storage system further includes a water-resistant layer positioned between the enclosure and the face of the drawer for being compressed and forming a water-resistant seal when the first arm is in a locked position.

[0013] According to some embodiments, the first arm is L-shaped and extends across the face of the drawer and faces of additional drawers.

[0014] According to some embodiments, the storage system further includes a top layer secured to a top of the enclosure for providing a work surface, the top layer defining holes or slats for selectively engaging a firearm mount.

[0015] According to some embodiments, the storage system further includes a second arm pivotably secured to the enclosure and positioned distal to the first arm, wherein the second arm is configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position, and wherein the lever is configured to unlock the second arm from the locked position simultaneously with the unlocking of the first arm from the locked position.

[0016] According to some embodiments, the storage system further includes a partition bisecting the open side, wherein the drawer is positioned on one side of the partition and an additional drawer having an additional face is positioned on the other side of the partition, wherein the additional drawer is in translatable engagement with the interior of the enclosure; a third arm pivotably secured to the enclosure and positioned proximal to the first arm, wherein the third arm is configured to pivot

within the enclosure into a locked position and without the enclosure in an unlocked position; and a second lever for unlocking the third arm from the locked position.

[0017] According to some embodiments, the storage system further includes a fourth arm pivotably secured to the enclosure and positioned distal to the first arm and the third arm, wherein the fourth arm is configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position, and wherein the second lever is configured to unlock the fourth arm from the locked position simultaneously with the unlocking of the second arm from the locked position.

[0018] According to some embodiments, the storage system further includes a locking plane extending from the third arm and defining a locking aperture for receiving a latch therethrough, the latch translatable by the second lever.

[0019] According to some embodiments, the storage system further includes a switch engaged with the second lever for controlling the translation thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The foregoing summary, as well as the following detailed description of preferred embodiments, is better understood when read in conjunction with the appended drawings. For the purposes of illustration, there is shown in the drawings exemplary embodiments; however, the presently disclosed invention is not limited to the specific methods and instrumentalities disclosed. In the drawings:

[0021] FIG. 1 illustrates a front view of the storage system according to one or more embodiments disclosed herein;

[0022] FIG. 2 illustrates a perspective, exploded view of the storage system according to one or

more embodiments disclosed herein;

[0023] FIG. 3 illustrates a side view of the storage system according to one or more embodiments disclosed herein;

[0024] FIG. 4 illustrates a rear view of the storage system according to one or more embodiments disclosed herein;

[0025] FIG. 5 illustrates an exploded view of a drawer of the storage system according to one or more embodiments disclosed herein;

[0026] FIG. 6 illustrates a perspective, exploded view of the enclosure of the storage system according to one or more embodiments disclosed herein.

[0027] FIG. 7 illustrates a top view of the drawers and enclosure according to one or more embodiments disclosed herein;

[0028] FIG. 8 illustrates a side view of the drawers and enclosure according to one or more embodiments disclosed herein;

[0029] FIG. 9 illustrates an exploded view of the backboard according to one or more embodiments disclosed herein;

[0030] FIG. 10 illustrates an exploded view of two arms according to one or more embodiments disclosed herein;

[0031] FIG. 11 illustrates a perspective view of two arms according to one or more embodiments disclosed herein;

[0032] FIG. 12 illustrates a view of the lever system according to one or more embodiments disclosed herein;

[0033] FIG. 13 illustrates a view of two paired lever systems according to one or more

embodiments disclosed herein;

[0034] FIG. 14 illustrates a view of a bolt latch including a lever according to one or more embodiments disclosed herein;

[0035] FIG. 15 illustrates a view of the arm in the locked position using a bolt latch according to one or more embodiments disclosed herein;

[0036] FIG. 16 illustrates a view of a spring pin engaging the arm when in the locked position according to one or more embodiments disclosed herein;

[0037] FIG. 17 illustrates a perspective view of a switch and a rod operating a lever according to one or more embodiments disclosed herein; and

[0038] FIG. 18 illustrates an exploded view of a switch and a rod operating a lever according to one or more embodiments disclosed herein.

DETAILED DESCRIPTION

[0039] The presently disclosed invention is described with specificity to meet statutory requirements. However, the description itself is not intended to limit the scope of this patent. Rather, the inventors have contemplated that the claimed invention might also be embodied in other ways, to include different steps or elements similar to the ones described in this document, in conjunction with other present or future technologies.

[0040] The storage system 10 described herein may be used for storing any number of items, such as weapons, jewelry, sentimental artifacts, documents, photographs, tools, etc. For consistency and simplicity of style, the disclosure will refer to items 1 generally as firearms or guns, without any inten to limit the disclosure thereto. Notably, firearms 1 have qualities that necessitate many features of

the storage system described herein – safe storage and theft deterrence, protection from physical damage and the ability to provide a working platform, for example. In some instances, the storage system 10 may be also referred to as a gun cabinet or firearm cabinet.

[0041] FIG. 1 illustrates a storage system 10 for storing items 1 according to at least one embodiment of the invention. The storage system 10 comprises an enclosure 12 forming an open side 20. The enclosure 12 may define five exterior sides – a top, a bottom, a left side, a right side, and a back – and may be comprised of a metal. The metal may be a standard or galvanized steel and may varying from fourteen to twenty gauge. The open side 20 of the enclosure 12 may be front-facing and may expose a face 24 of at least one drawer 22 and/or at least one additional drawer 26. Further, the drawer(s) 22, 26 may be translatably engaged with an interior 14 of the enclosure. In some embodiments, the interior 14 may include any combination of the sides of the enclosure 12, while in other embodiments, the interior 14 may further include the surfaces of partitions 50 within the enclosure 12.

[0042] As seen in the exploded view of FIG. 2, the storage system 10 may include a plurality of drawers 22 and additional drawers 26 separated by a vertical partition 30Y and translatable fully within the interior 14 of the enclosure 12 through the open side 20. In some embodiments, the storage system 10 may be secured to a floor or wall or other surface using at least one securing bracket 70 or by sliding a fastener through the enclosure 12 to the floor or wall or other surface. For example, as depicted in FIG. 2, a securing bracket 70 may be an L-shaped bracket coupled to the left and right side of the enclosure 12. In some embodiments, the storage system 10 may include legs, casters or some other support 80, static or moveable, affixed to the bottom side of the enclosure 12. Although FIG. 2 depicts stationary legs 80, legs 80 with wheels may be included. Further, the legs or other support 80

may be secured to the floor using a bolt, bracket or some other fastener. Rack arms 82 may be coupled to the enclosure for hanging material or objects, providing support during work, or providing support when translating the storage system 10.

[0043] In some embodiments of the present invention, the storage system 10 further includes a top layer 66 secured to a top of the enclosure 12 for providing a work surface. The top layer 66 may be comprised of wood, metal, plastic, rubber or a combination thereof. The top layer 66 may be selectively engageable with a firearm mount for positioning a firearm during cleaning and/or repair. For example, the top layer may include pre-drilled holes or slats 84 for securedly fastening a firearm mount. A side view of one embodiment of the storage system 10 is depicted in FIG. 3. A rear view of one embodiment of the storage system 10 is depicted in FIG. 4.

[0044] According to some embodiments, at least one drawer 22 may be included in the storage system 10. In at least one embodiment, a plurality of drawers 22 may be provided in a parallel, stacked arrangement. In another embodiment, an additional drawer 26 may be provided parallel and adjacent to the at least one drawer 22, or, alternatively, a plurality of additional drawers 26 in a parallel, stacked arrangement may be provided adjacent and parallel with the plurality of drawers 22 similarly arranged. In some embodiments, the number of drawers 22 and additional drawers 26 are equal, while in other embodiments, the number differs.

[0045] Referring to FIGS. 2, 5, 7 and 8, each of the drawers 22, 26 may be slidingly engaged with the enclosure 12 using any number of drawer slides available. In some embodiments, the drawers 22, 26 are slidingly engaged with the interior of the sides of the enclosure 12, while in other embodiments the enclosure 12 includes a vertical partition 50Y which is also in sliding engagement with at least one or more drawers 22, 26. The vertical partition(s) 50Y may extend the entire height of

the open side 20 at any point along the width of the open side 20 and also may extend the entire depth of the interior of the enclosure, thereby effectively partitioning the interior of the enclosure 12 into two. In some embodiments, a drawer 22 or plurality of drawers 22 may be positioned on one side of the partition 50Y while an additional drawer 26 or plurality of additional drawers 26 may be positioned on the other side of the partition 50Y. In some embodiments, the additional drawers 26 may be smaller in width than the drawers 22 for housing smaller items in comparison to the larger items capable of storage in the larger drawers 22. In an embodiment of the storage system 10 comprising a vertical partition 50Y of the enclosure 12, an arm 30 or two arms 30 may be pivotedly secured thereto, as described *supra*.

[0046] The enclosure 12 of the storage system 10 may further include one or more horizontal partitions 50X for partitioning the enclosure horizontally. The horizontal partition(s) 50X may extend the entire width of the enclosure 12 or may extend from one side of the enclosure 12 perpendicularly into engagement with the vertical partition 50Y. In some embodiments, the horizontal partitions 50X may be an L-shaped bracket running a length along the open side 20. In some embodiments, multiple horizontal partitions 50X may be provided, at least one extending from one side of the enclosure 12 to the vertical partition(s) 50Y, at least one extending from the other side of the enclosure 12 to the vertical partition(s) 50Y, at least one extending between vertical partitions 50Y, and/or at least one extending across the entire width of the enclosure 12.

[0047] According to at least one embodiment, each of the drawers 22, 26 may include a face 24. The face 24 will be positioned on the side of the drawer facing the outwardly from the open side 20 of the enclosure 12. The face 24 may extend beyond the interior volume of the drawer 22 in both the vertical and horizontal direction, thereby defining a lip 62 around the drawer 22. In at least one

embodiment, a leftmost and/or rightmost portion of the face 24 may be sealingly engaged with an inset portion of the side of the enclosure 12 when the arm is in a locked position P1.

[0048] Any or each of the drawers may include a handle 64 for translating the drawer 22 with respect to the enclosure 12. The handle 64 may be recessed within the face 24 or may extend from the face 24. For example, the handle 64 may have a plane extended from the face 24 at an angle for a certain distance, with a triangular portion of the handle 64 extending between each edge of the plane to the face 24 of the drawer 22. The handle 64 may be secured to the face 24 using any fastener(s), such as threaded bolt(s) with a rubber washer. The handle 64 may arch away from the drawer face 24.

[0049] Referring to FIG. 5, the drawer 22, 26 may define a drawer interior 25 in which items 1 may be stored. The face 24 of the drawer may include a face back 27 and a face front 29. When fully assembled, the face 24 may extend beyond the size of the interior 25 in both the horizontal and vertical directions for permitting the extended portions of the face 24 to come into contact with material positioned without the drawer interior 25.

[0050] FIGS. 6-8 illustrate embodiments of the storage system 10 containing resistant materials 52, 54. The enclosure 12, or a portion thereof, and/or the drawer(s) 22, 26, or portions thereof, may include fire-resistant materials 52 and/or water-resistant materials 54 for providing protection against physical damage to the items 1 stored within the storage system 10. FIG. 5 illustrates blanket panels 90 positioned within the interior 14 of the enclosure 12 for accepting a positioning fire-resistant layers of materials 52. Therefore, in the event of a fire, the fire-resistant materials 52 would seal the enclosure 12, protecting the items housed therein from damage.

[0051] In at least one embodiment, the face of at least one drawer 22, 26 may include a fire-resistant layer of materials 52 (also known as fireboard or fire blankets) therein (see FIG. 5). The fire-

resistant layer 52 may also serve as an insulating layer. In other embodiments, any or each of the sides of the enclosure 12 – top, bottom, left side, right side, and back may include a fire-resistant layer therein. Further, the vertical partition 50Y may include a fire-resistant layer of materials 52 positioned proximal to the open side 20 of the enclosure 12.

[0052] In some embodiments, water-resistant layers of material 54 may be provided for protecting the items 1 stored in the storage system 10 from water damage (see FIG. 7). The water-resistant layer 54 may be compressible such that compression of the water-resistant layer 54 enhances its water-resistant protection qualities by becoming denser. In some embodiments, the water-resistant layer 54 may also function as a fire-resistant layer 52 and/or an insulating layer. In other embodiments, the fire-resistant layer 52 may also function as a water-resistant layer 54 and/or an insulating layer. The water-resistant layer 54 may be comprised of rubber, foam, plastic, silicone or a combination thereof. A water-resistant layer 54 may positioned between the enclosure 12 and the face 24 of the drawer 22 for being compressed and forming a water-resistant seal when an arm 30 is in a locked position P1. In one embodiment, the water-resistant layer 54 may be positioned on an interior-facing side of the face 24 of the drawer 22. The water-resistant layer 54 may run substantially the entire length and height of the face 24 such that a closed rectangle is formed around the drawer body. As the drawer 22 is translated by engagement of an arm 30 with the drawer face 24, the interior-facing side of the drawer face 24 containing the strips of water-resistant layers 24 may be compressed against the corresponding portions of the enclosure 12, such as the horizontal partition(s) 50X, vertical partition(s) 50Y, sides of the enclosure 12, a lip or inset of the sides of the enclosure 12, and/or any other part of the enclosure 12. In an alternative embodiment, the water-resistant layer 54, or a portion thereof, is positioned on at least a part of the enclosure 12 onto which the drawer face 24 is being compressed. In some

embodiments, the water-resistant layer 54 is duplicated on both the drawer face 24 and the enclosure portions.

[0053] FIG. 8 illustrates a stop 92 positioned below a horizontal partition 50X for ceasing translation of a drawer 22, 26 when the drawer 22, 26 is being translated without the enclosure 12. A rear of the drawer may contain a stop compliment 94 for contacting the stop when the drawer is translated.

[0054] Referring to FIG. 9, the storage system 10 may further include a backboard 72 secured, or selectively engaged to, the enclosure 12. The backboard 72 may extend substantially parallel to the back or rear side of the enclosure 12, extending upwards and away from the enclosure 12. The backboard 72 may be a pegboard, a shelving system or any other structure. The backboard 72 may include a lighting element, outlets, and/or other electronic fixtures affixed thereto.

[0055] FIGS. 10 and 11 illustrate embodiments of the storage system including at least one arm 30. The at least one arm 30 may be pivotably secured to the enclosure 12. The storage system 10 may include a first arm 30A, a second arm 30B, a third arm 30C, a fourth arm 30D, and/or additional arms 30X. The arms 30 may be substantially straight or may be L-shaped. The arms 30 may extend the entire height, or substantially the entire height, of the open side 20 of the enclosure 12. Further, the arms 30 may define a handgrip 42 for pivoting the arm 30. The handgrip 42 may extend away from the plane of the arm's surface to provide room for gripping the arm and moving the arm between a locked position P1 and an unlocked position P2. The arms 30 may be pivotally secured to the enclosure 12 using a fastener, such as a cylindrical rod and a pivot hinge, or a piano hinge. The arms 30 may be pivotally secured to the enclosure 12 at one or more points.

[0056] In some embodiments of the invention, each arm 30 may define an engaging plane 73, a

pivoting plane 74, a gripping plane 75 and a locking configuration 76. The engaging plane 73 may be secured to the enclosure 12. The pivoting plane 74 may be pivotally secured to the engaging plane 73 using, for example, a piano hinge. The gripping plane 75 may be any surface extending from the pivoting plane 74 for permitting the arm 30 to be gripped or maneuvered. The gripping plane 75 may define or include the handgrip 42. The arms 30 may define a locked position P1 when the pivoting plane 74 is substantially parallel with the open side 20 of the enclosure 12. Whenever the pivoting plane 74 pivots away from the open side 20, into any non-parallel position, the arm will define an unlocked position P2.

[0057] The arms 30 of FIGS. 10 and 11 define a locking configuration 76 extending between a topmost edge of the gripping plane 75 and the pivoting plane 74. In some embodiments, the topmost edges of the gripping plane 75 and the pivoting plane 74 are substantially perpendicular to each other. The locking configuration 76 may include a horizontal portion 77 extending between the topmost edges of the gripping and pivoting planes 74, 75. The locking configuration 76 may further include a vertical portion 78 extending from an edge of the horizontal portion most distal from the pivoting plane 74, the vertical portion 78 extending substantially parallel to the pivoting plane for resting engagement with a top side of the enclosure 12 when the arm 30 is in a locked position P1. A locking portion 79 may bisect both the horizontal and vertical portions 77, 78, be positioned substantially perpendicular to the pivoting plane 74, and extend from the vertical portion 78 and towards the plane formed by the pivoting plane 74. A locking aperture 37 may extend through the locking portion 79 for accepting a locking latch 35.

[0058] Notably, as is depicted in FIGS. 10 and 11, when two arms 30 having locking configurations 76 are positioned proximal to each other, pivoting planes 74 of each arm may extend

away from each other towards the gripping plane 75 when in the locked position P1. In such instances, the length of the pivoting plane 74 of one arm 30 may be greater than the length of the pivoting plane 74 of a second arm 30 for ensuring that the pivoting planes 74 of both arms may pivot towards each other and permit free translation of the drawers 22, 26 therebeside. The gripping plane 75 and locking configuration of the arm 30 having the shorter pivoting plane 74 may rest between the enclosure 12 and the gripping plane 75 and locking configuration 76 of the arm 30 having the longer pivoting plane 74.

[0059] In some embodiments of the invention, as is depicted in FIGS. 12 and 13, the arm 30 may define a receptacle 32. The receptacle 32 may be positioned anywhere along the arm 30 and may be cylindrically shaped. Further, the receptacle 32 may house a translatable latch 34 therein. The latch 34 may be biased to protract from the receptacle 32, for example, by the use of a spring housed within the receptacle 32 and in engagement with a base of the receptacle 32. The receptacle 32 may be positioned on a top most portion of the pivoting plane 74 on a side distal from the enclosure 12, as depicted in FIGS. 12 and 13. Further, the arm 30 may or may not include an engaging plane. Instead, the pivoting plane 74 of the arm may be engaged with the enclosure 12 itself.

[0060] Any of the arms 30 may have at least two positions – a locked position P1 and an unlocked position P2. The arm 30 may be in a locked position P1 when the latch 34 protracts through an enclosure aperture 36 of the enclosure 12, when the pivoting plane 74 engages one or more drawers 22, 26 and is substantially parallel with the open side 20 of the enclosure 12, and/or when a latch 34 extends through the locking aperture 37 of the locking configuration 76. The enclosure 12 may define any number of enclosure apertures 36 for receiving the latch 34 of any number of arms 30 and/or the locking portion 79 of a locking configuration 76. The enclosure apertures 36 may be defined by the

interior 14 of the enclosure 12.

[0061] When the latch 34 protracts through the aperture 36 or the locking portion 79 extends into the aperture 36, the arm 30 may be engaged with the face 24 of any number of drawers 22, thereby locking the arm 30 into engagement with the face 24 of the drawer(s) 22, positioning the arm 30 in a locked position P1. Notably, when the arm 30 is in a locked position P1, the drawer(s) 22 are inset within the enclosure 12 in a locked position as well. When inset, the locked position of the drawer(s) 22 provide the additional security of not allowing a pry bar or some other leverage to be positioned behind the face 24 of the drawer(s) 22, thereby further preventing any unwanted person from accessing the drawer's contents, such as firearms 1.

[0062] In addition to the locked position P1, the arm(s) 30 may be in an unlocked position P2. In some embodiments, the arm(s) 30 may be released from the locked position P1 through the manipulation of a lever 44 positioned proximal to the aperture 36. The lever 44 may translate the latch 34 to retract within the receptacle 32 in one embodiment or may retract a latch 35 from extension through a locking aperture 37 according to another embodiment. When the latch 34, 35 retracts, the arm 30 is permitted to disengage from the face 24 of the drawer 22, rotate away from the face 24, and be placed in an unlocked position P2. In the unlocked position P2, according to one embodiment, the latch 34 may again protract or extend out from the receptacle 32 of the arm 30, but will not protract through an aperture 36 of the enclosure 12.

[0063] The lever 44 may be any number of unlocking shapes and sizes. Several embodiments are depicted in FIGS. 12 and 13, where the lever 44 is shaped similar to a boomerang, with a convex side and a concave arcuate side meeting at their two ends. A central point of the boomerang lever 44A may be pivotedly secured to the enclosure 12. In a locked position P1, the boomerang lever 44A

defines a central surface of the convex side for engaging the latch 34. When the boomerang lever 44A is rotated, the point at which the concave and convex sides meet is rotated towards and into proximal position to the latch 34, thereby translating the latch 34 back into the receptacle 32 and permitting the arm 30 to be disengaged from the enclosure 12 (through disengagement of the latch 34 from the aperture 36) and pivoted into an unlocked position P2.

[0064] In at least another embodiment, a threaded gear lever 44B is provided. The threaded gear lever 44B may generally be cylindrically shaped with threads covering an upper portion. By rotating the threaded gear lever 44B via the threads, the lever 44B is translated along a vertical axis, for retracting the latch 34 and permitting the latch 34 protract. In yet another embodiment, a slotted (or serrated) gear lever 44C is provided. Like the boomerang lever 44A, the slotted gear lever 44C may be pivotedly secured to the enclosure 12 about a central point. Rotation of the slotted gear lever 44C, through selective engagement and translation of the slots, retracts the latch 34 and permits the latch 34 to protract, as the edge of the lever 44C is shaped to engage the latch 34 at different heights.

[0065] In yet another embodiment, the lever 44 may be included as part of a modified bolt latch, as depicted in FIG. 14. The lever 44 may be angled to receive the locking configuration 76, such that the locking portion 79, when pivoting into the locked position P1 and entering the enclosure aperture 36, may translate the lever 44 against the spring of the bolt latch until the spring force successfully translates the lever 44 through the locking aperture 37, securing the arm 30 into the locked position P1, as is depicted in FIG. 15.

[0066] FIG. 16 depicts a spring pin 93 positioned within the enclosure 12 for engaging the arm 30 when in the locked position P1. When the lever 44 is translated, and the arm 30 is released from the locked position P1, the spring pin 93 forces the arm 30 to pivot away from the enclosure 12. In this

manner, the arms 30 may translate away from the enclosure 12 immediately upon release from the locked position P1 so that the drawers 22, 26 may be translated immediately for use. In some embodiments, the spring pin 93 may be engaged with the locking plane 79 when the arm 30 is in the locked position P1.

[0067] The movement of the lever 44, whether it be a boomerang lever 44A, a threaded gear lever 44B, a slotted gear lever 44C or any other type of suitable lever 44, may be controlled by a switch 46. As is depicted in FIGS. 17 and 18, the switch 46 may be engaged with the lever 44 for controlling the movement thereof. The switch 46 may include a key, a keyhole, and a rod 60 engaged with the lever 44. In other embodiments, the switch 46 may include a fingerprint scanner, digital keypad, or some other digital lock (e.g., near field communication device, eye reader, voice activated reader, etc.). In at least another embodiment, the switch 46 may include a dial lock or some other type of mechanical lock. Any switch 46 may be engaged with a rod 60 for translating the rod 60. For example, engaging and rotating the proper key within a keyhole may cause translation of the rod 60 or rods 60, which may, in turn pivot, translate or rotate the lever 44 upon translatable interaction therewith. In other embodiments of the storage system 10, a lever 44 and/or a lever system 45 may be housed within the right side and/or left side of the enclosure 12.

[0068] In some embodiments, the rod 60 may extend along the width of the open side 20 of the enclosure 12. For example, the rod 60 may extend from a switch 46 positioned in the center of the top side of the enclosure 12 and facing outward from the open side 20 to the lever 44 positioned proximal the vertical partition 50Y and onward to a lever 44 positioned proximal to the left or right side of the enclosure 12. The lever 44 may be part of a lever system 45, and the lever system 45 may include one or more stabilizing arms for aiding in the precise and controlled translation of the rod 60. Further, the

rod 60 may define a lever tab 61 for aiding in the pivoting rotation of the lever 44. For example, the lever 44 may define a cavity 47 for accepting the lever tab 61 for controlled and precise rotation of the lever 44 through translation of the rod 60.

[0069] While the embodiments have been described in connection with the preferred embodiments of the various figures, it is to be understood that other similar embodiments may be used or modifications and additions may be made to the described embodiment for performing the same function without deviating therefrom. Therefore, the disclosed embodiments should not be limited to any single embodiment, but rather should be construed in breadth and scope in accordance with the appended claims.

CLAIMS

The invention claimed is:

1. A storage system comprising:

an enclosure forming an open side exposing a face of a drawer, the drawer in translatable engagement with an interior of the enclosure;

a first arm secured to the enclosure and configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position; and

a translatable lever for unlocking the first arm from the locked position.

2. The storage system of claim 1, further comprising a locking plane extending from the first arm and defining a locking aperture for receiving a latch therethrough, the latch translatable by the lever.

3. The storage system of claim 2, further comprising a switch engaged with the lever for controlling the translation thereof.

4. The storage system of claim 3, wherein the switch includes a key, a keyhole, and a rod, wherein the rod is translatable when the key is rotated within the keyhole.

5. The storage system of claim 1, wherein the face of the drawer includes a fire-resistant layer therein.

6. The storage system of claim 1, further comprising a spring pin engaged with the first arm when the first arm is in the locked position for biasing the first arm into the unlocked position when the first arm is unlocked by the lever.

7. The storage system of claim 1, further comprising a water-resistant layer positioned between the enclosure and the face of the drawer for being compressed and forming a water-resistant seal when the first arm is in a locked position.

8. The storage system of claim 1, wherein the first arm is L-shaped and extends across the face of the drawer and faces of additional drawers.

9. The storage system of claim 1, further comprising a top layer secured to a top of the enclosure for providing a work surface, the top layer defining holes or slats for selectively engaging a firearm mount.

10. The storage system of claim 1, further comprising:

a second arm pivotably secured to the enclosure and positioned distal to the first arm,

wherein the second arm is configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position, and

wherein the lever is configured to unlock the second arm from the locked position simultaneously with the unlocking of the first arm from the locked position.

11. The storage system of claims 1 or 10, further comprising:

a partition bisecting the open side, wherein the drawer is positioned on one side of the partition and an additional drawer having an additional face is positioned on the other side of the partition, wherein the additional drawer is in translatable engagement with the interior of the enclosure;

a third arm pivotably secured to the enclosure and positioned proximal to the first arm,

wherein the third arm is configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position; and

a second lever for unlocking the third arm from the locked position.

12. The storage system of claim 11, further comprising:

a fourth arm pivotably secured to the enclosure and positioned distal to the first arm and the third arm,

wherein the fourth arm is configured to pivot within the enclosure into a locked position and without the enclosure in an unlocked position, and

wherein the second lever is configured to unlock the fourth arm from the locked position simultaneously with the unlocking of the second arm from the locked position.

13. The storage system of claims 11 or 12, further comprising a locking plane extending from the third arm and defining a locking aperture for receiving a latch therethrough, the latch translatable by the second lever.

14. The storage system of claims 11 or 12, further comprising a switch engaged with the second lever for controlling the translation thereof.

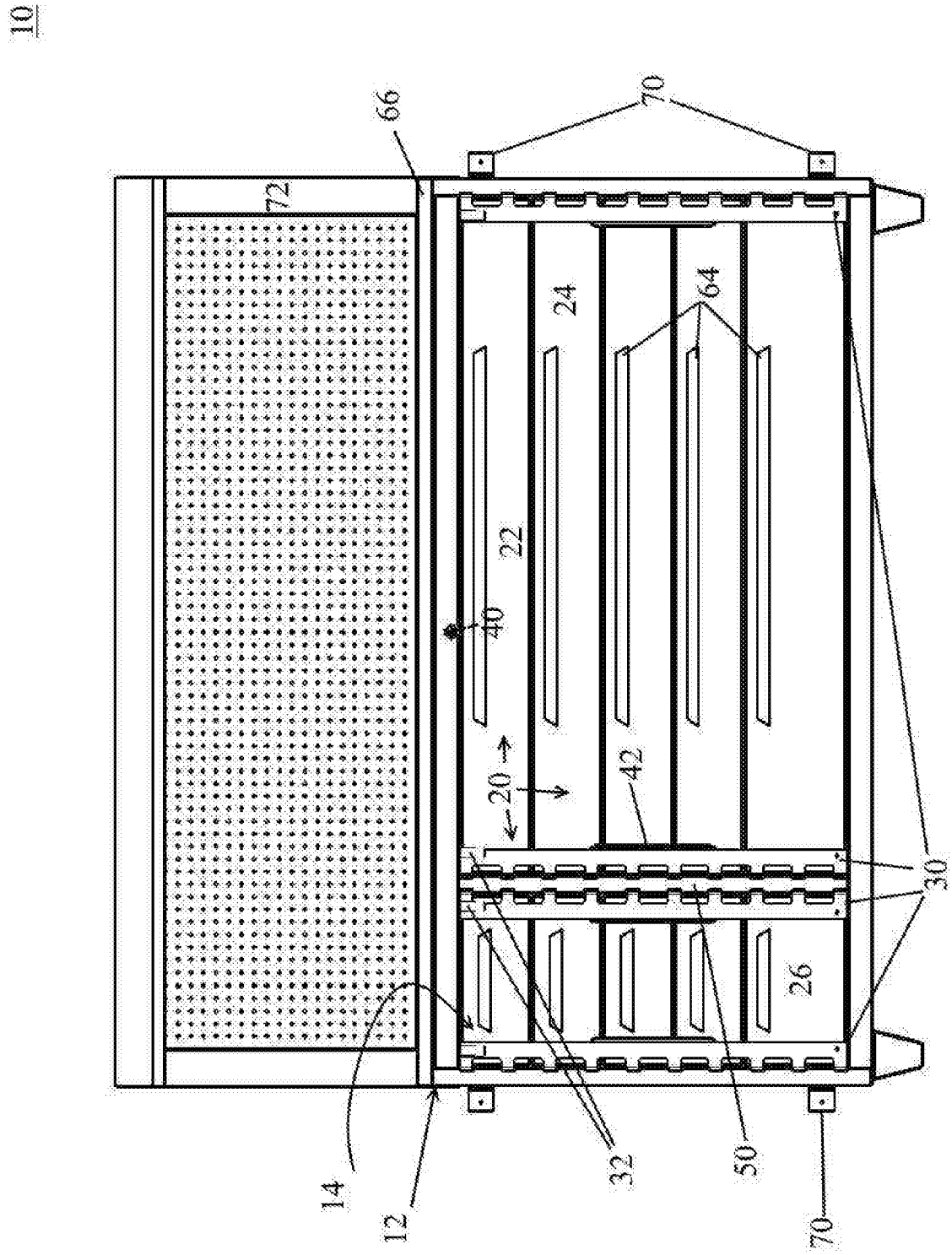


FIG. 1

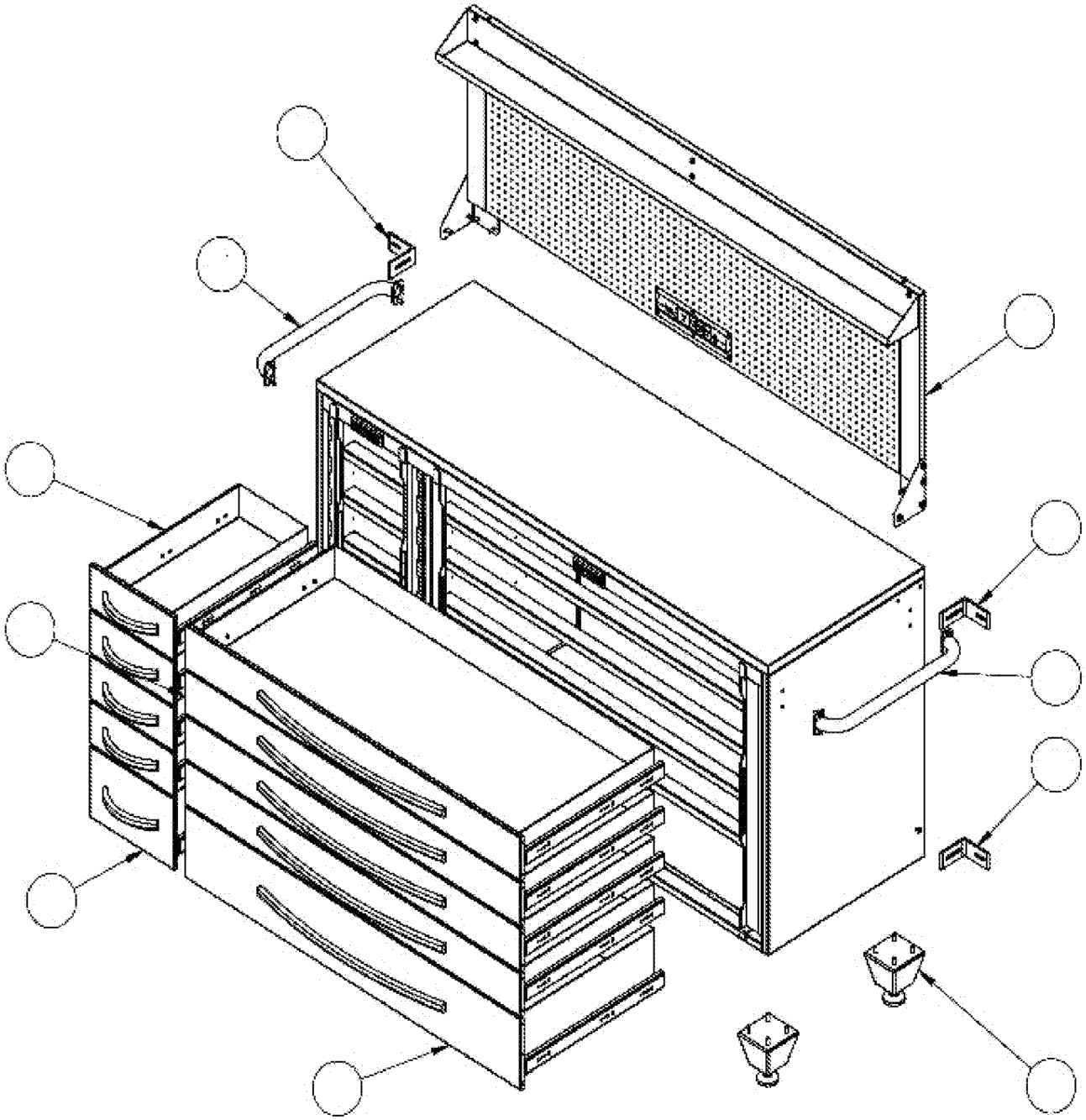


FIG. 2

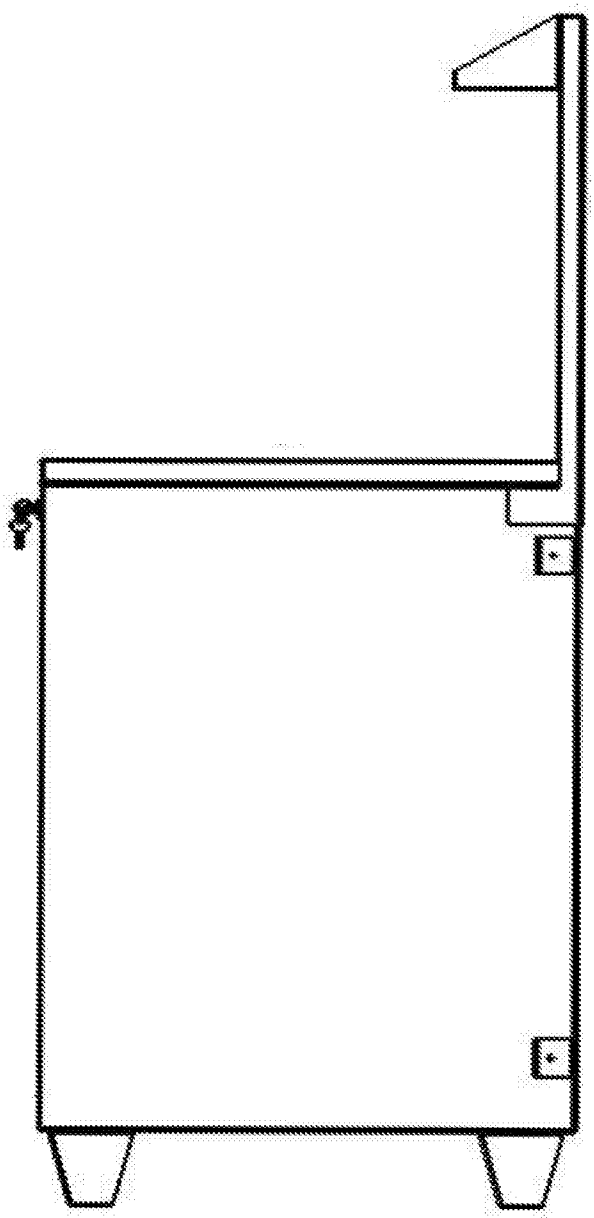


FIG. 3

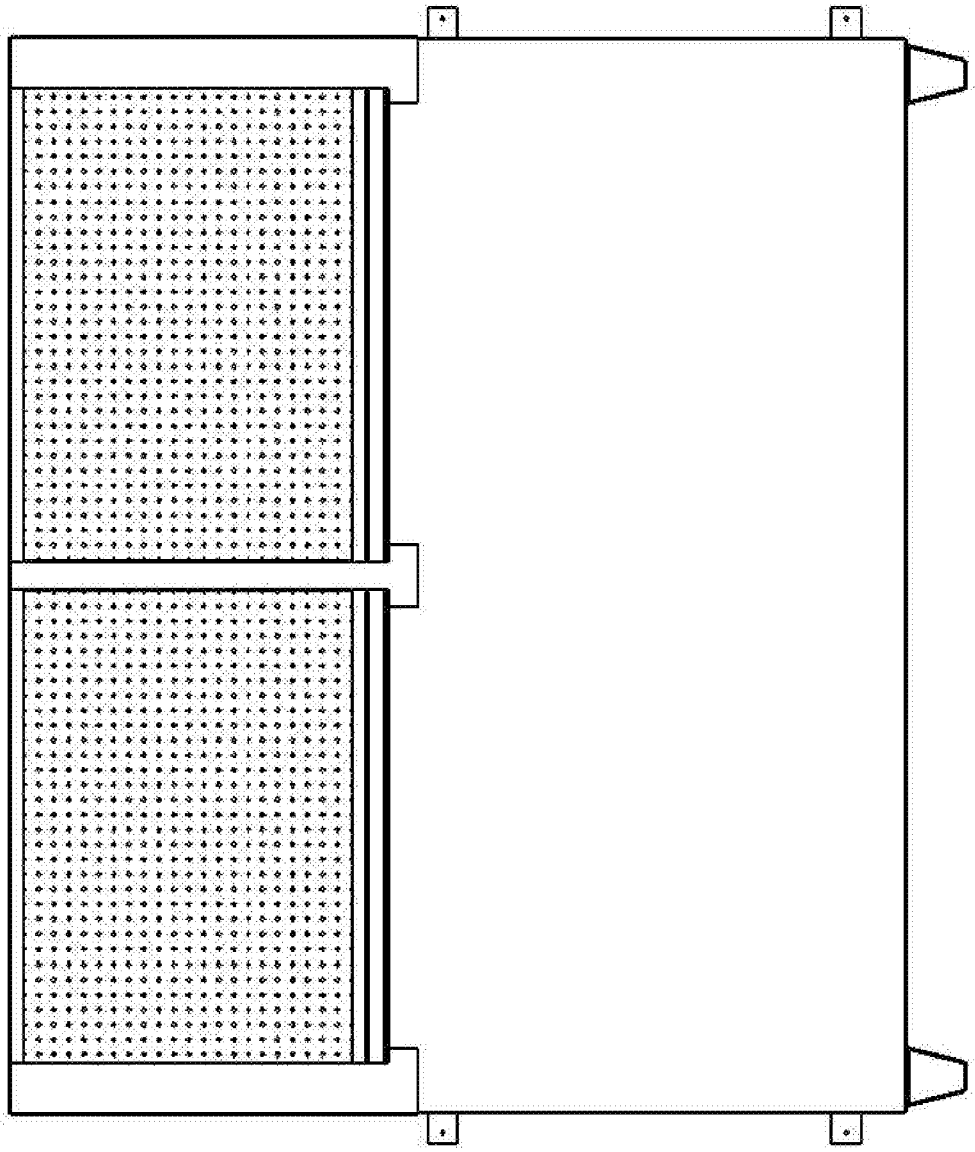


FIG. 4

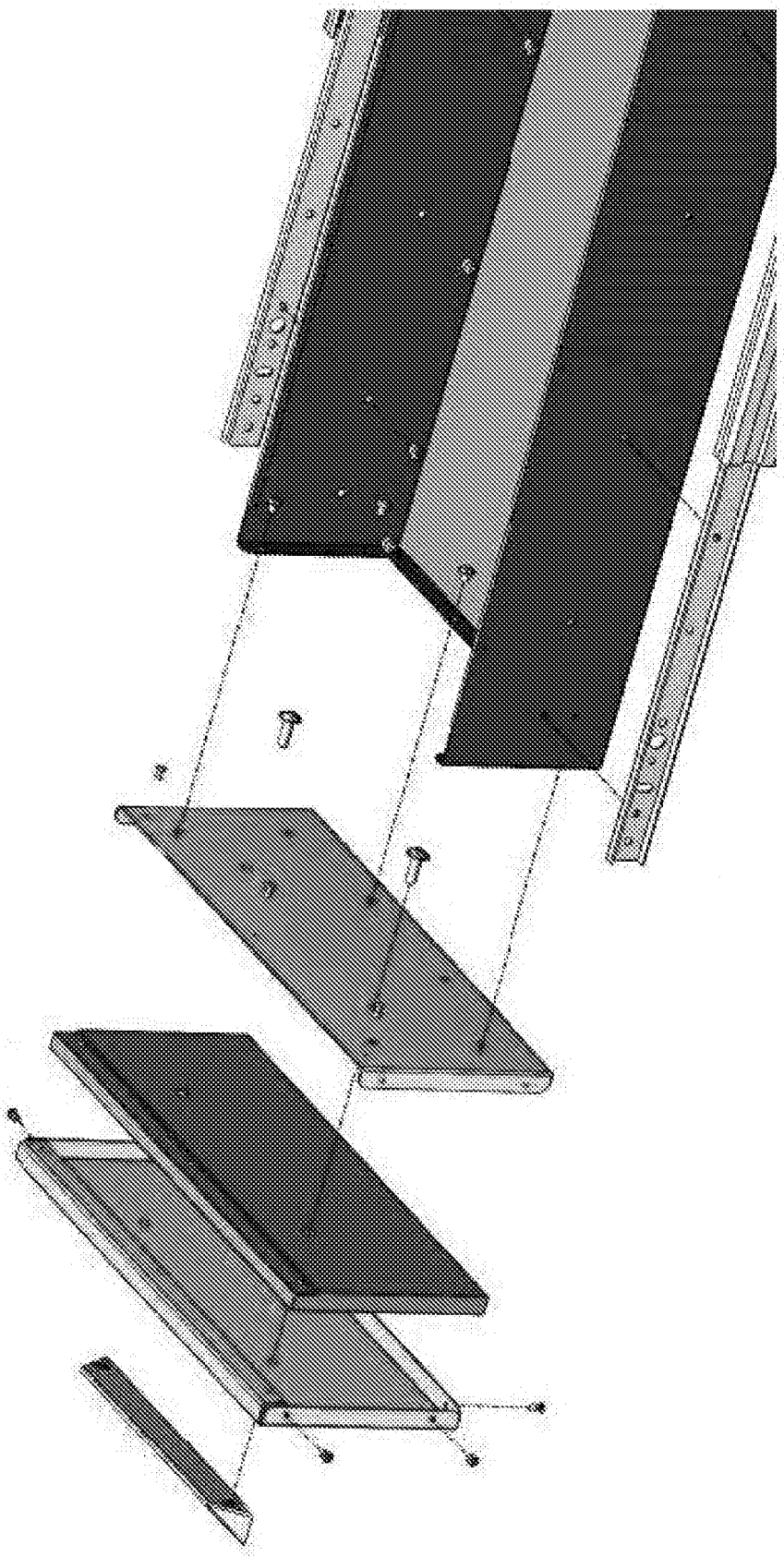


FIG. 5

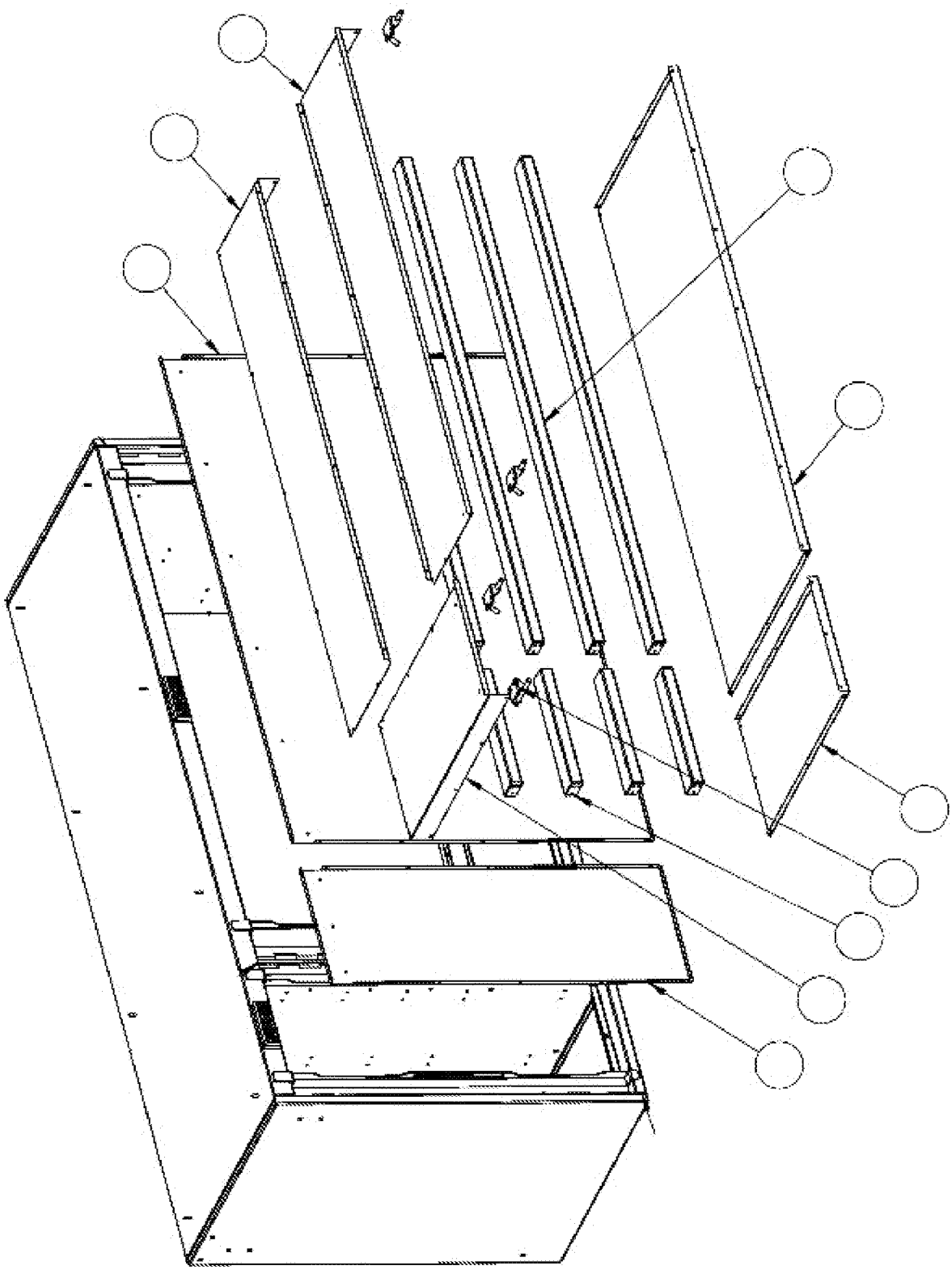


FIG. 6

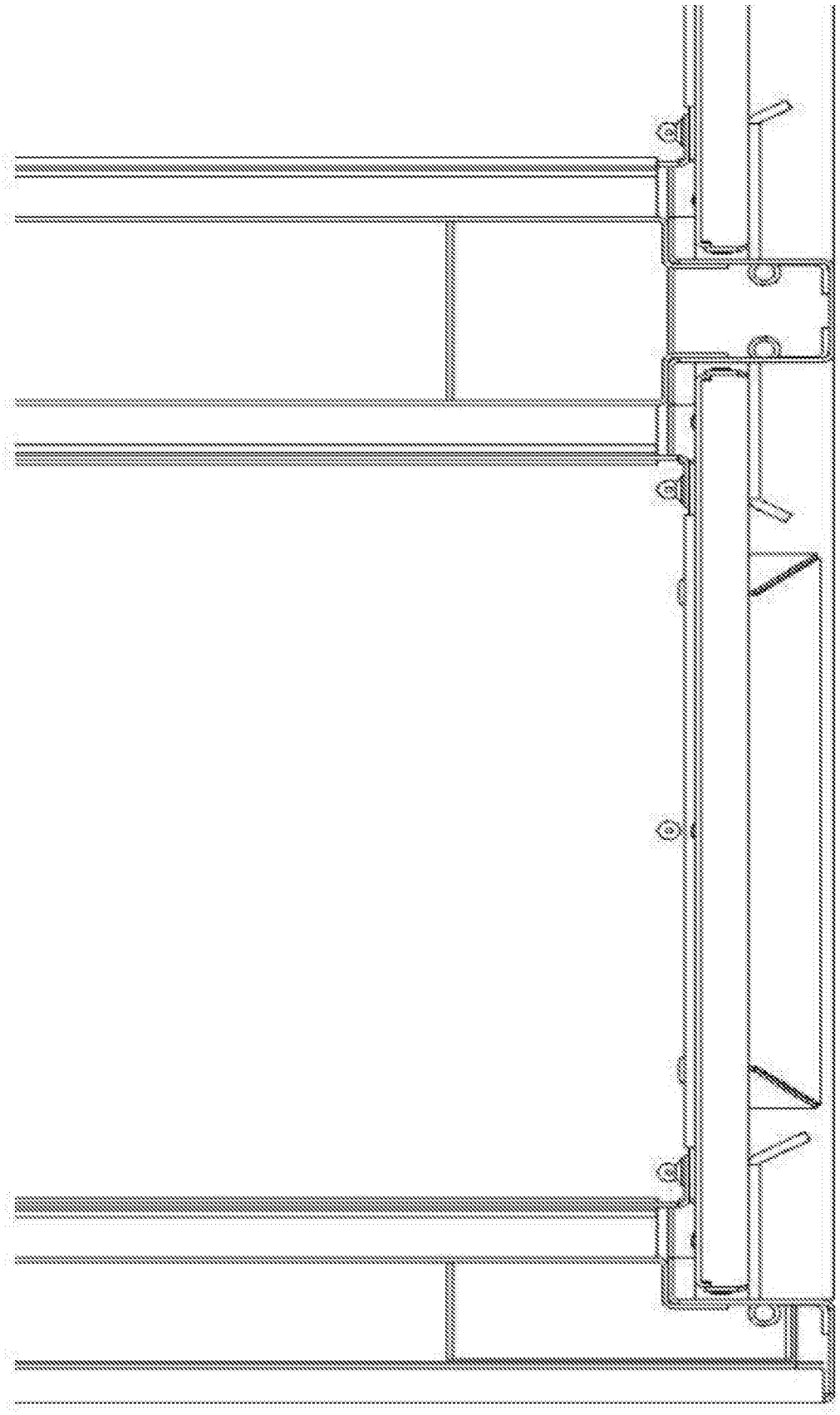


FIG. 7

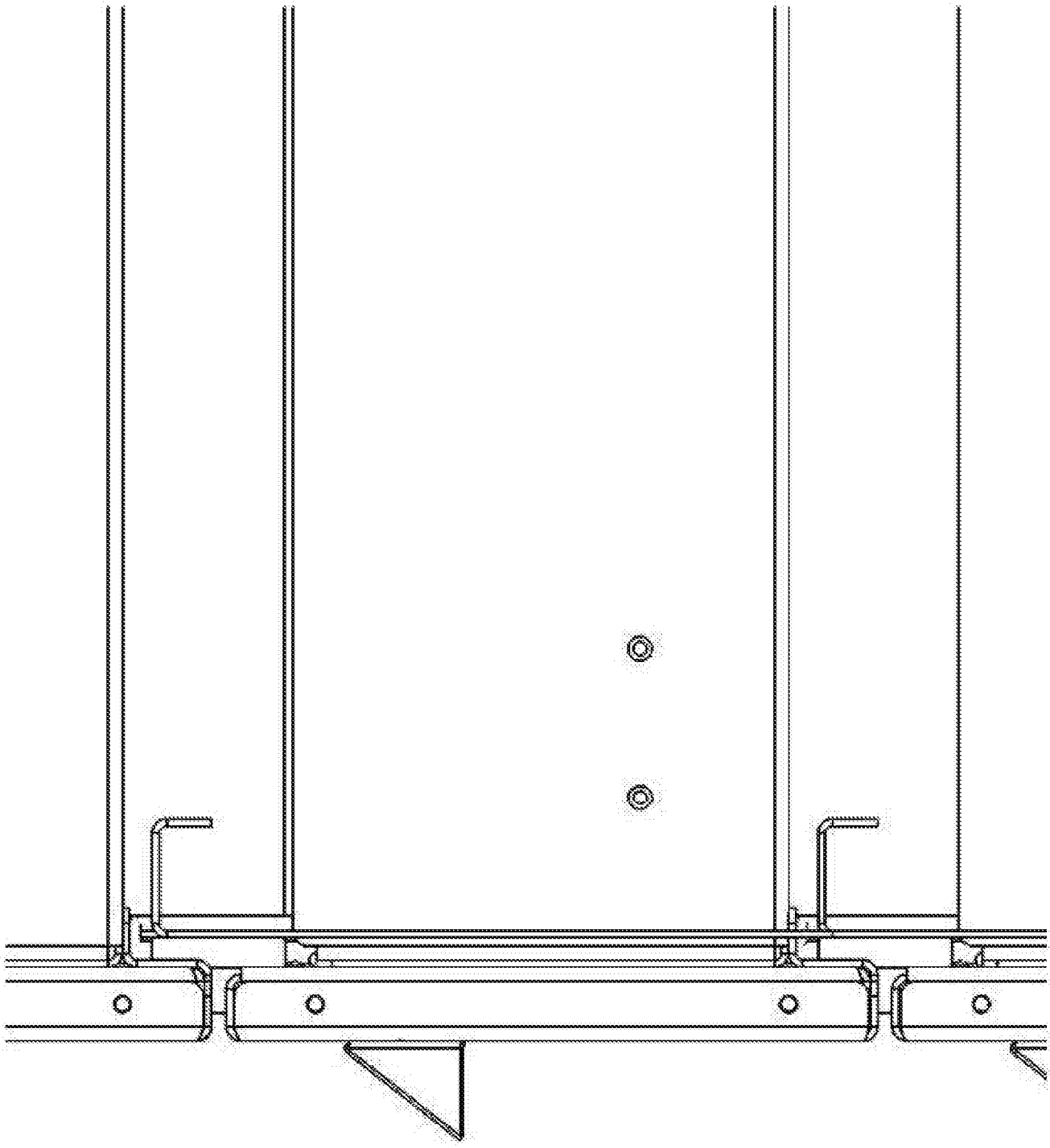


FIG. 8

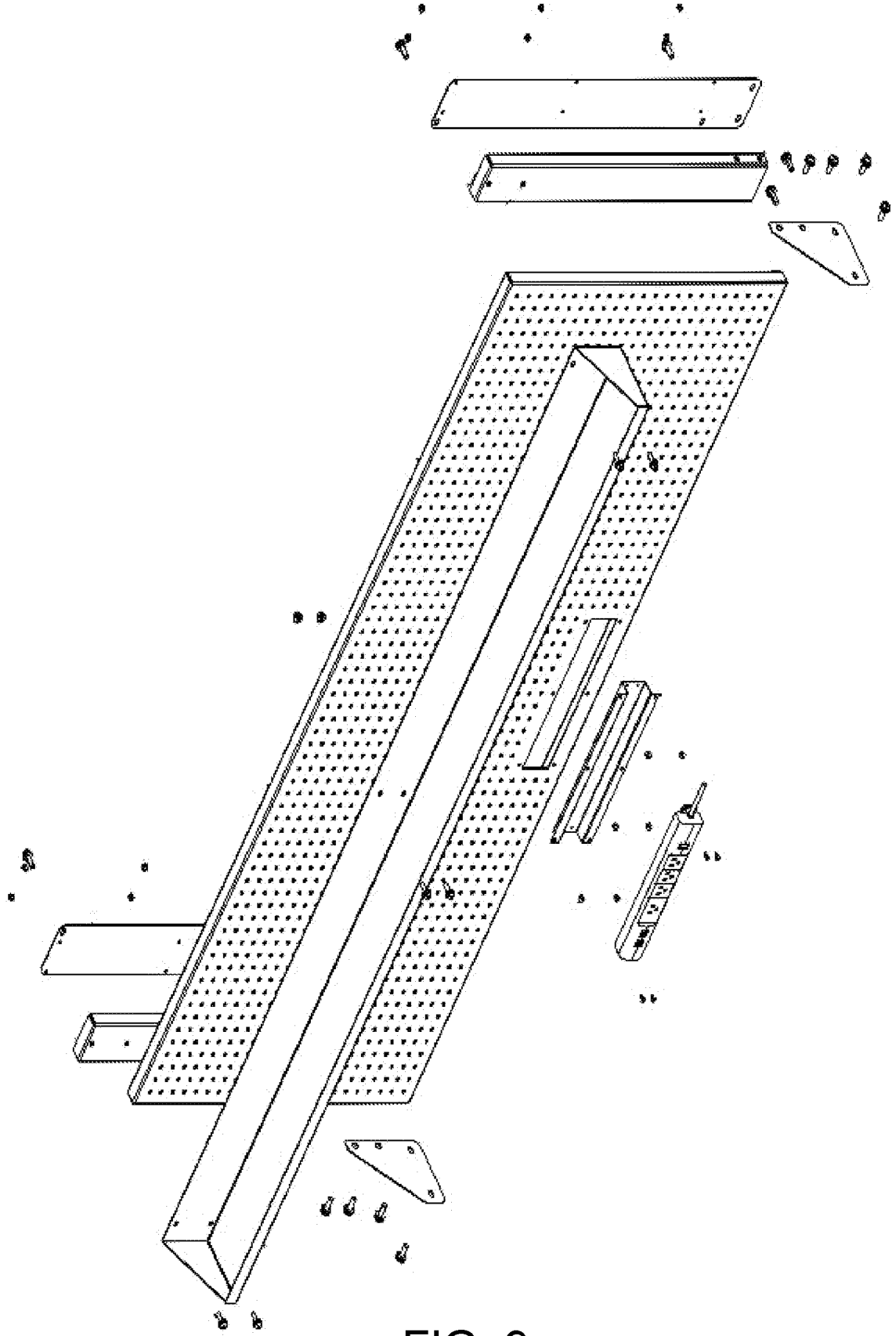


FIG. 9

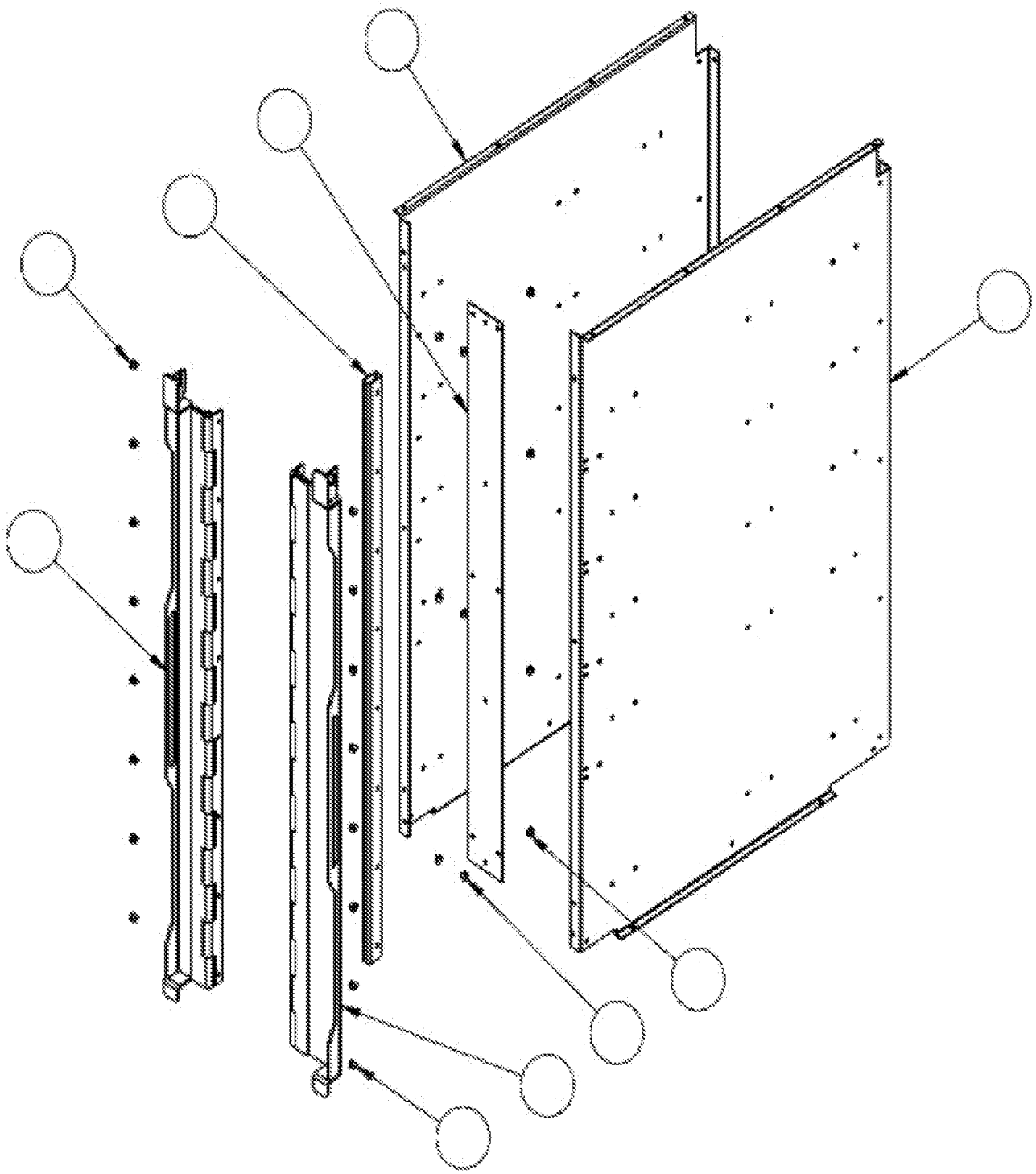


FIG. 10

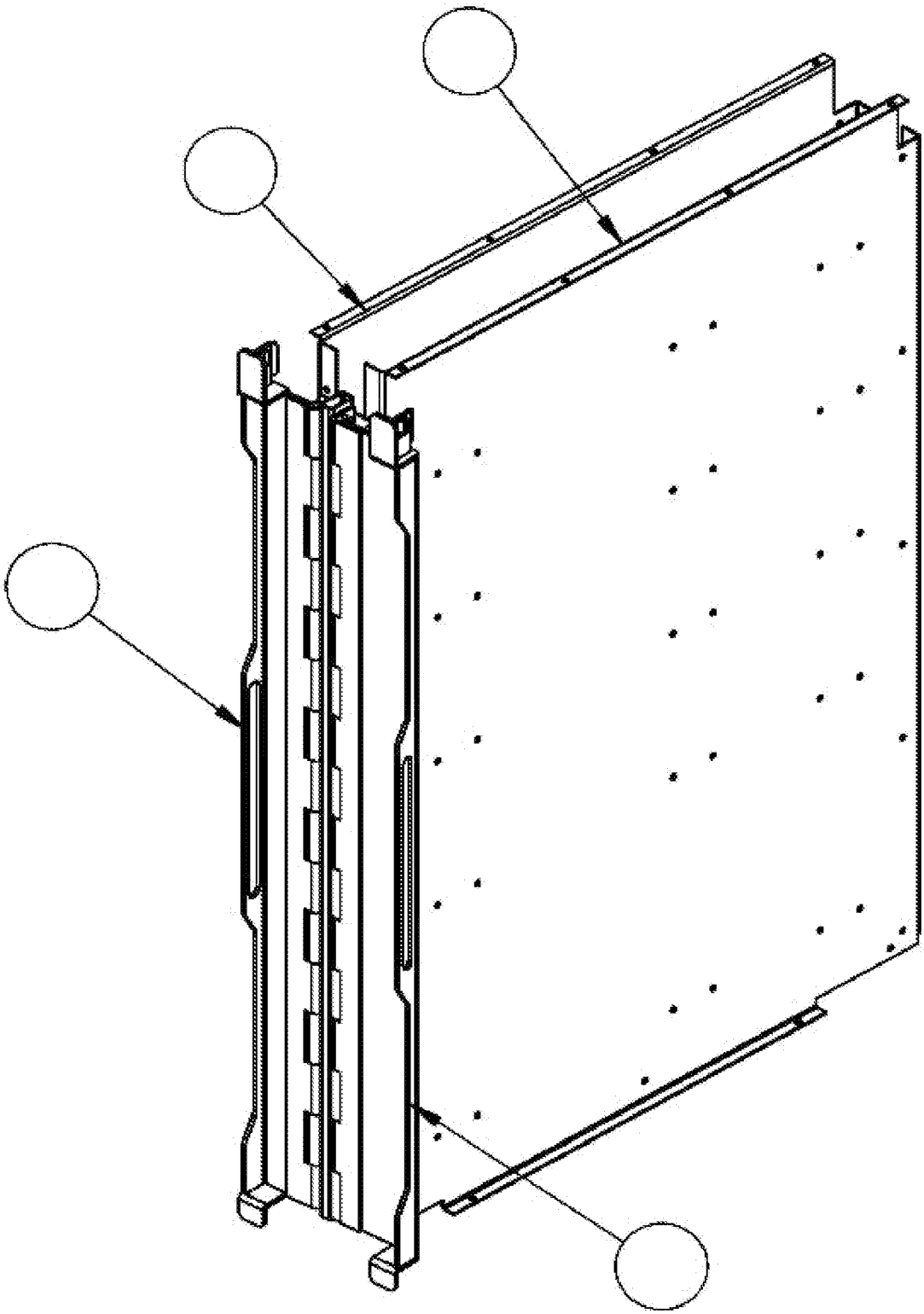


FIG. 11

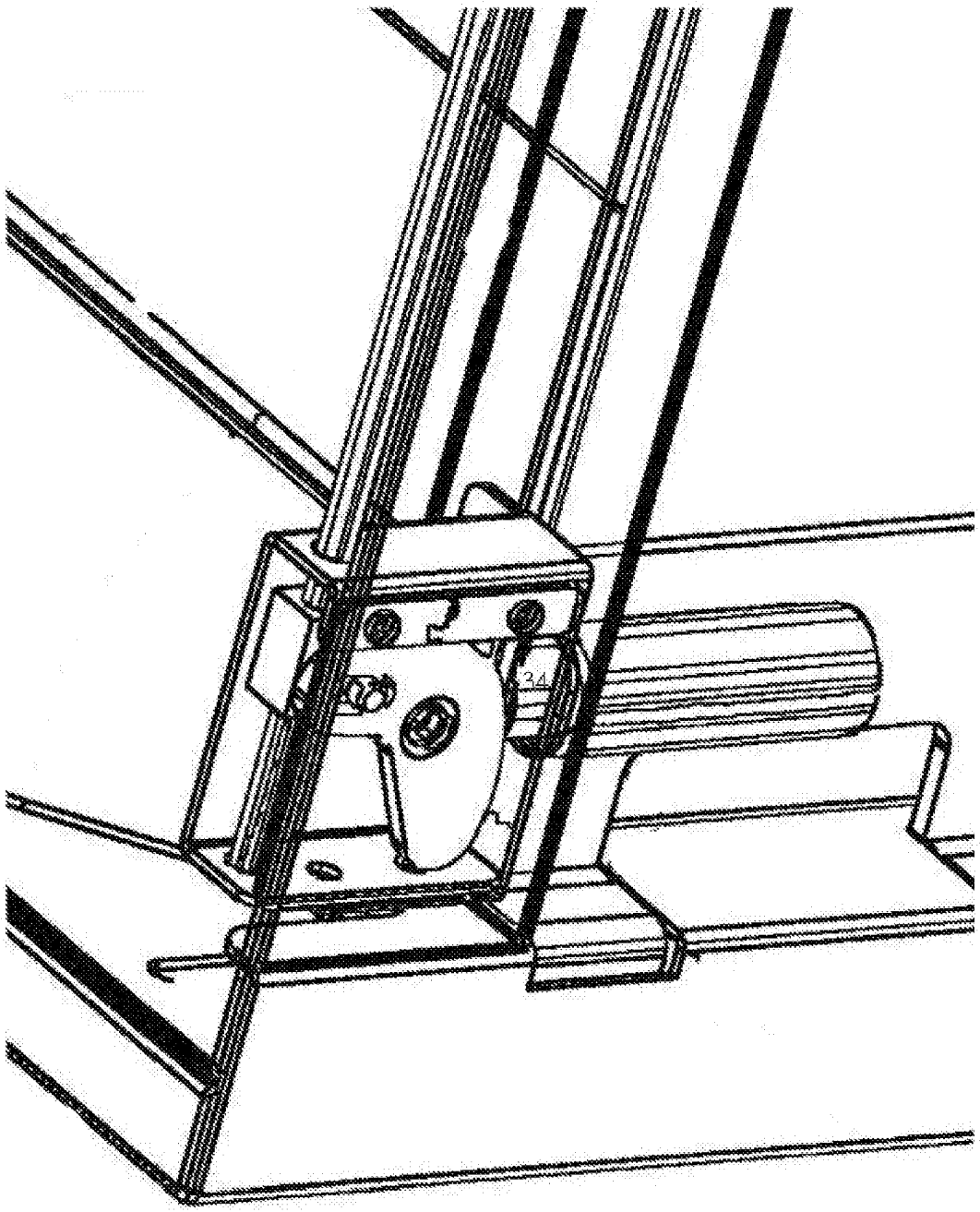


FIG. 12

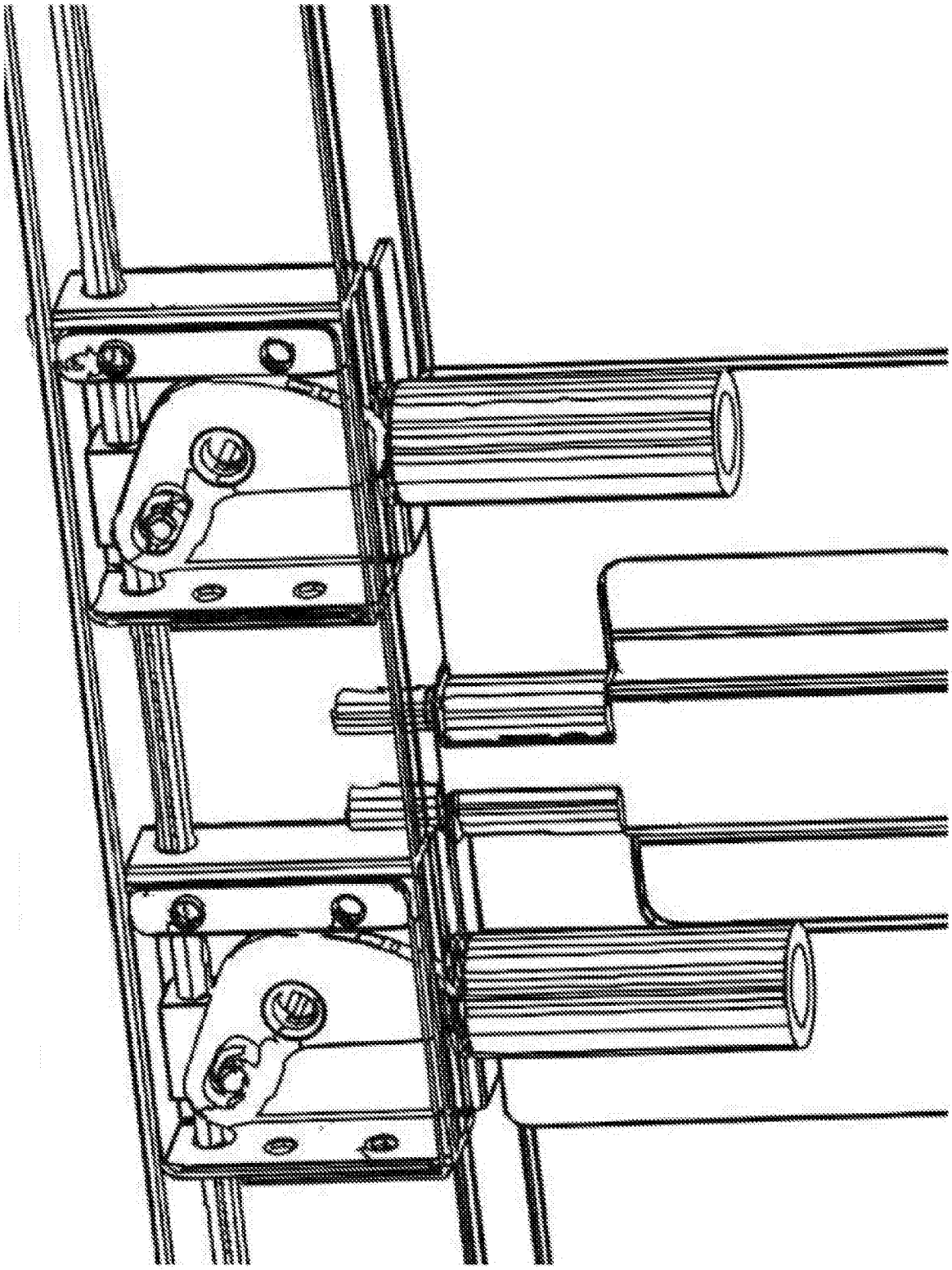


FIG. 13

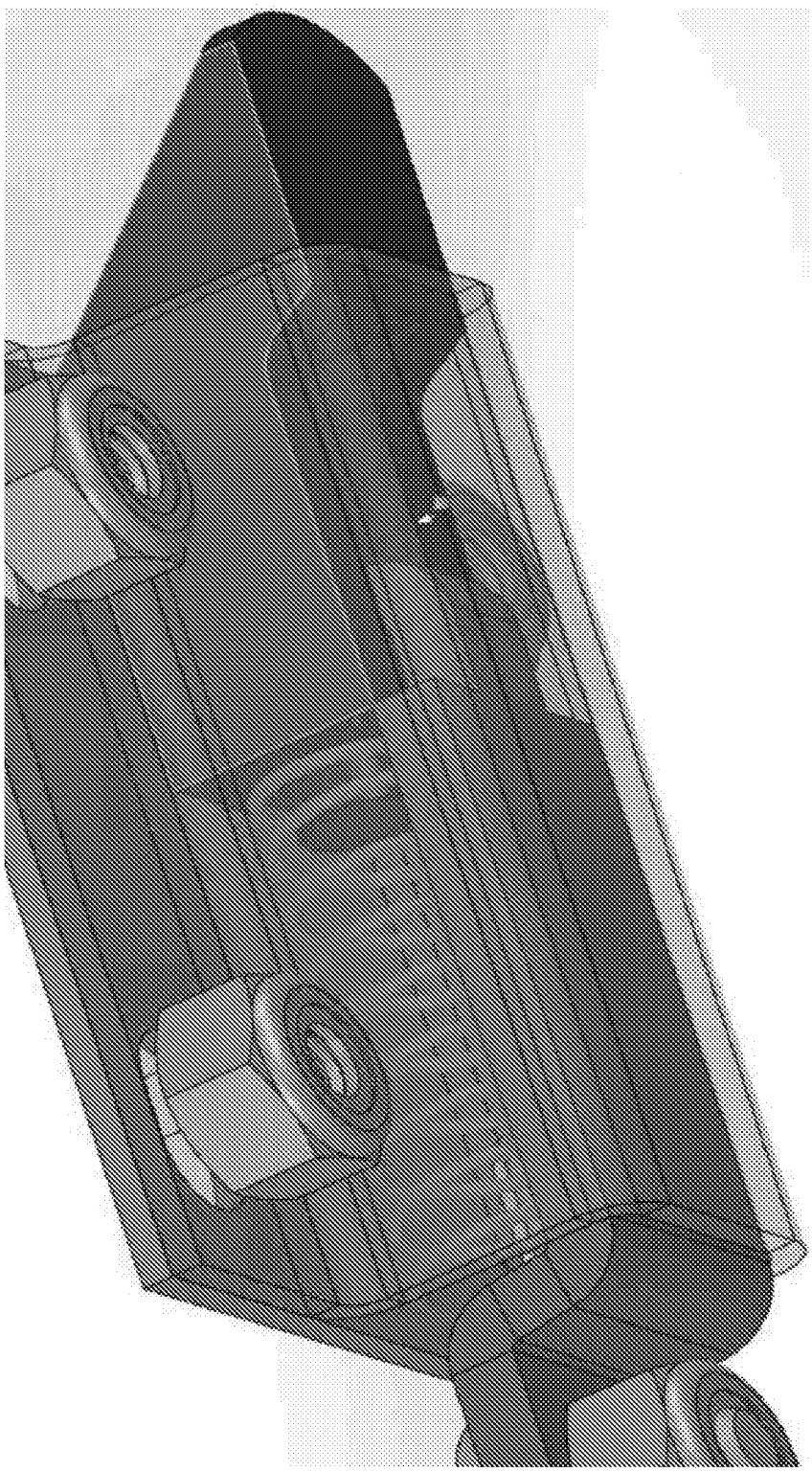


FIG. 14

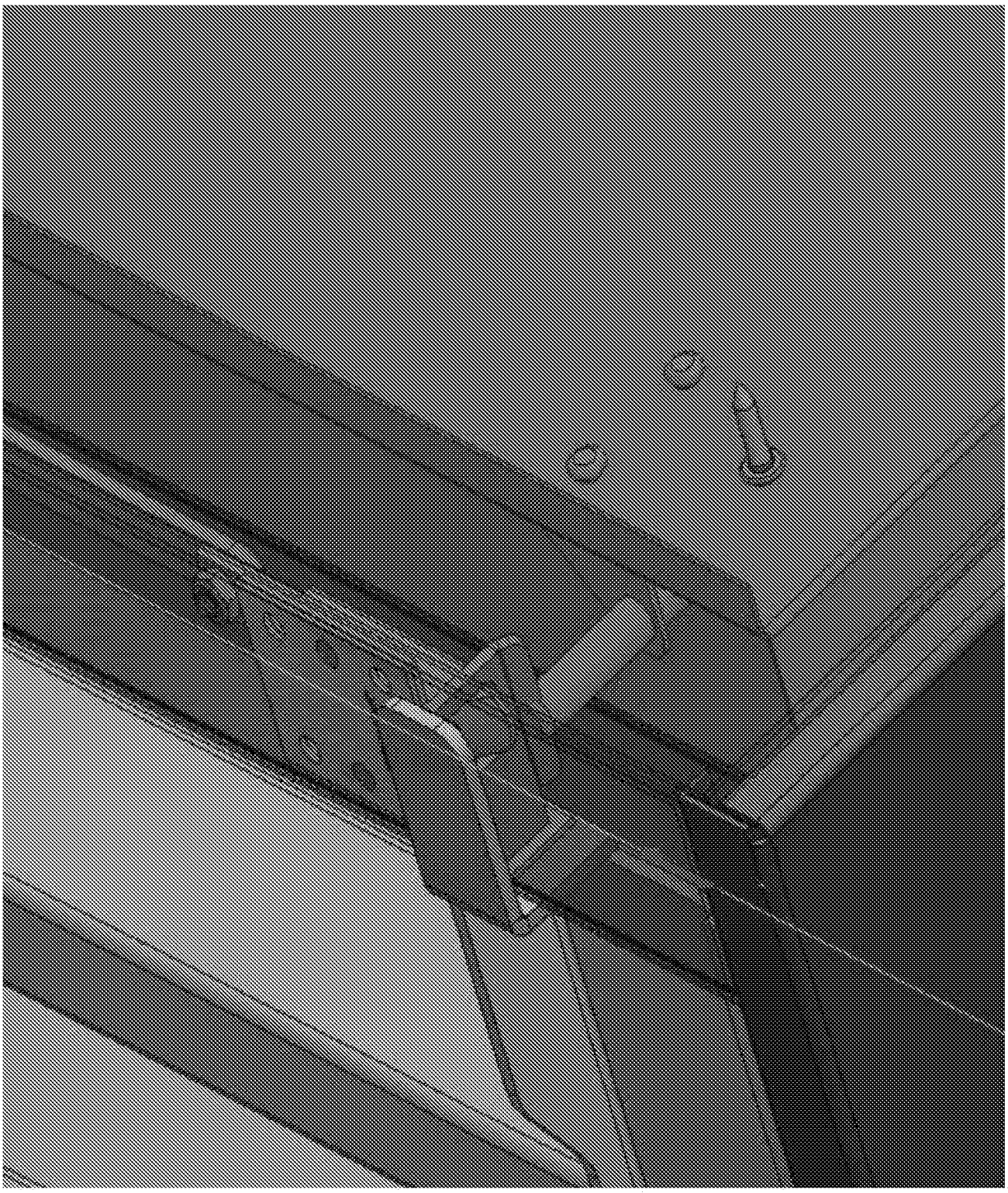


FIG. 15

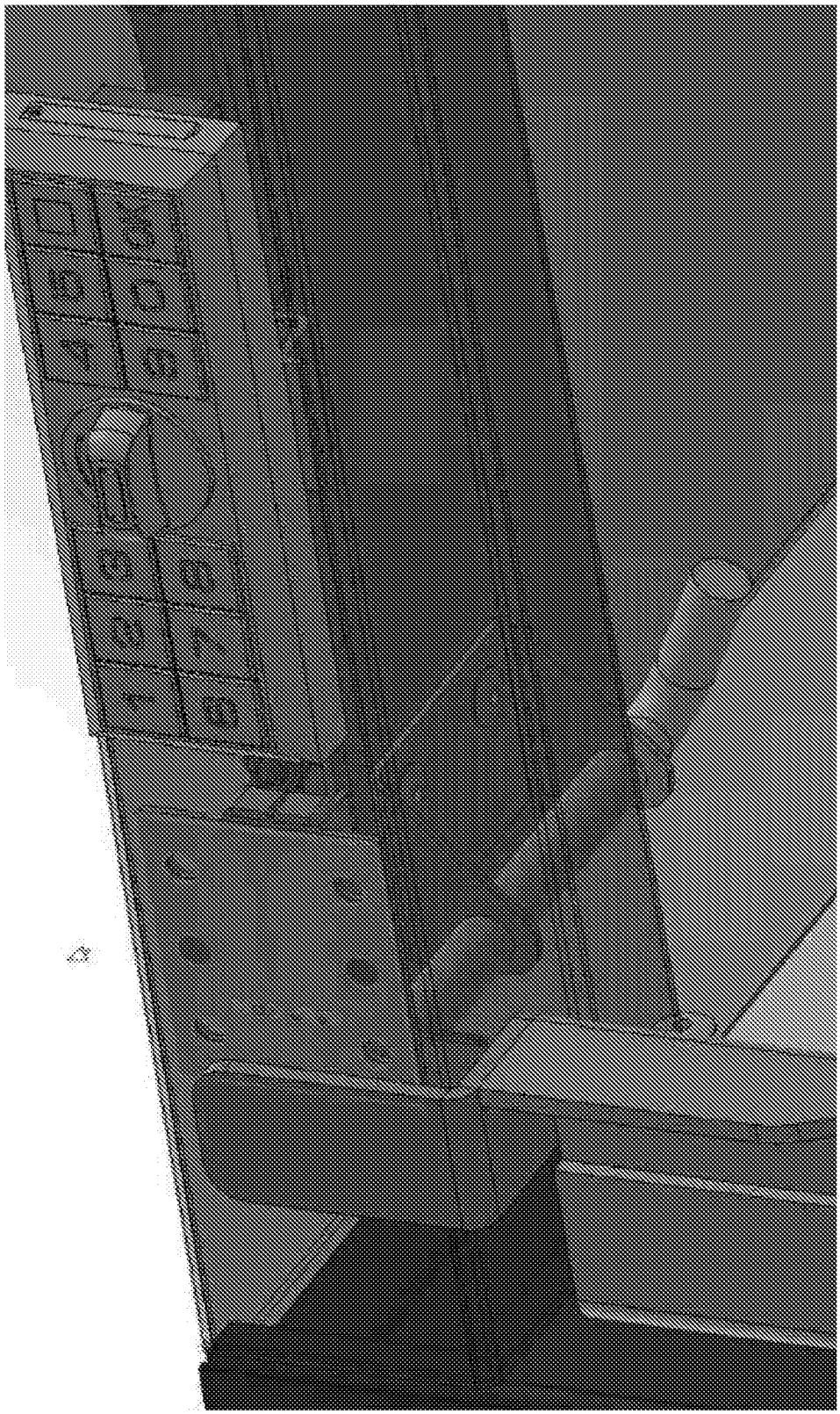


FIG. 16

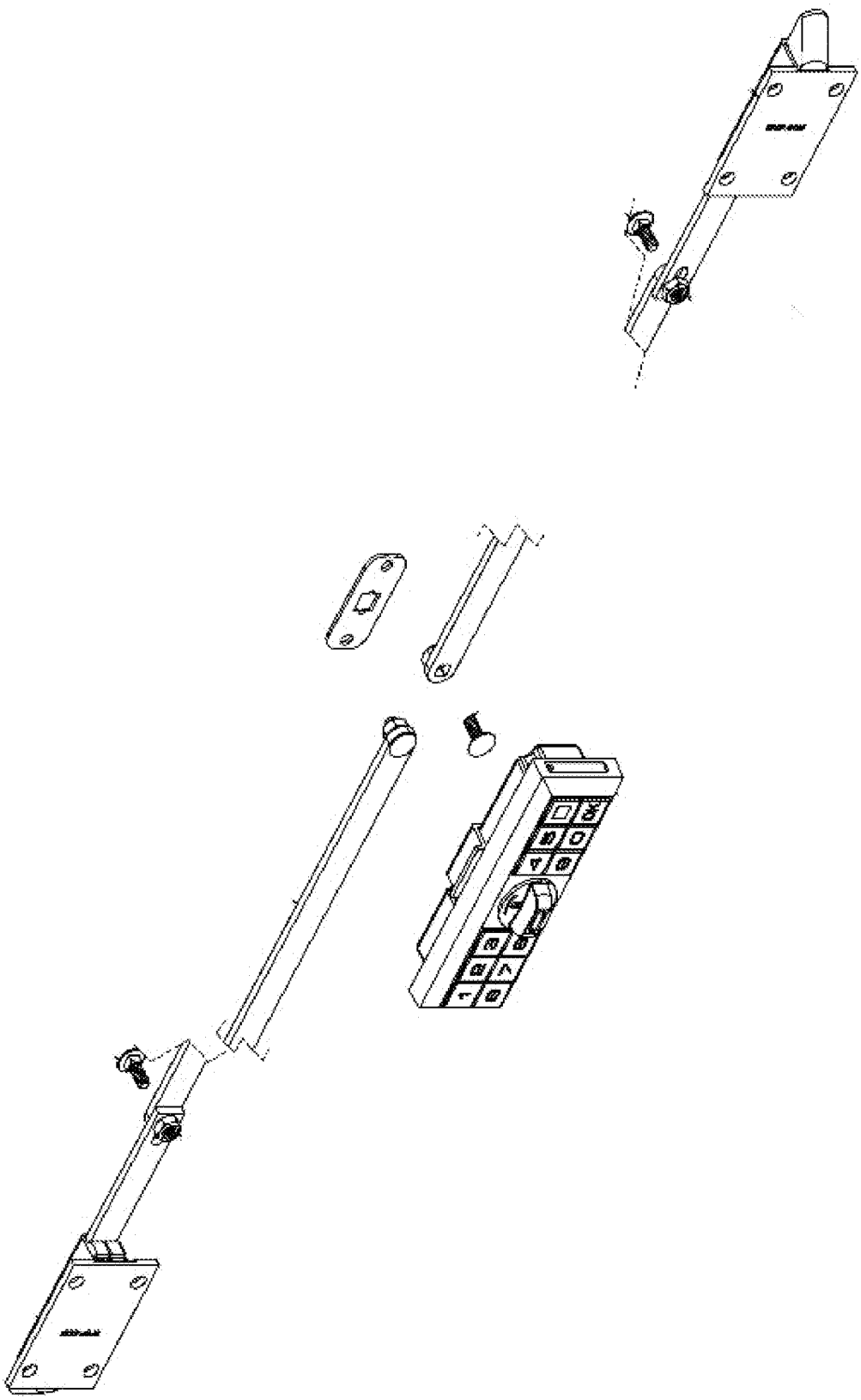


FIG. 17

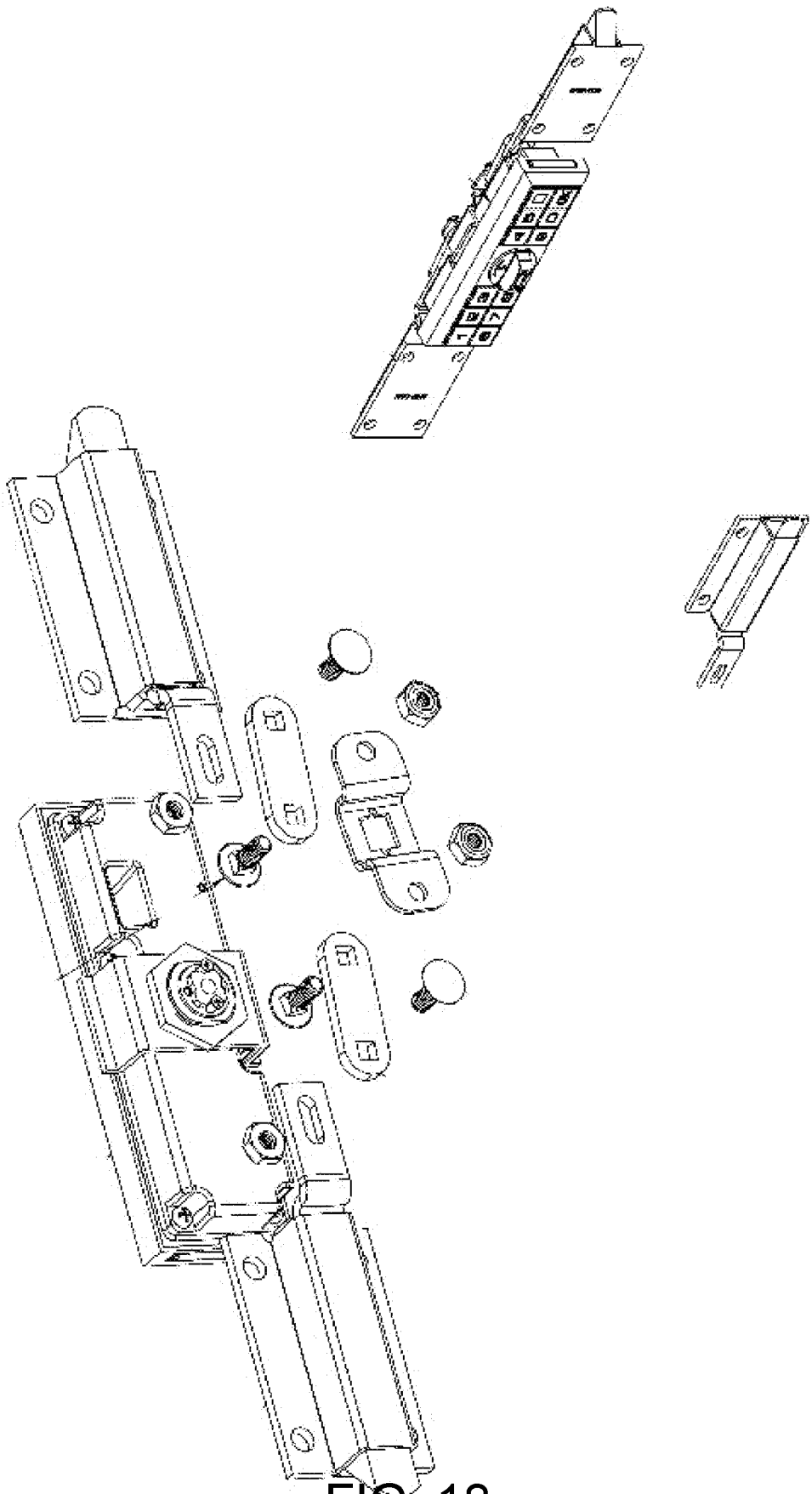


FIG. 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/023917

A. CLASSIFICATION OF SUBJECT MATTER

A47B 81/00(2006.01)i, A47B 88/40(2017.01)i, E05B 65/462(2017.01)i, E05B 65/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A47B 81/00; A47B 87/00; E05C 7/06; A47B 77/00; A47B 96/04; E05G ; A47B 88/40; E05B 65/462; E05B 65/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: cabinet, weapon, jewelry, firearm, gun, drawer, locking, lever, latch, key, pivot, fire resistant layer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003-0141794 A1 (CLEVELAND et al.) 31 July 2003 See paragraphs [0014]-[0015]; and figures 1-4.	1-9
A		10-14
Y	US 2789876 A (C. C. HEILMAN et al.) 23 April 1957 See column 2, line 29 - column 4, line 28; column 7, line 61 - column 8, line 45; and figures 1-2.	1-9
A	US 9192231 B1 (STEFFEN, DANIEL W.) 24 November 2015 See column 3, line 62 - column 6, line 23; and figures 1-3.	1-14
A	WO 2005-038181 A2 (JOHN D. BRUSH & CO., INC. et al.) 28 April 2005 See paragraphs [0045] [0050]-[0054]; and figures 1-2, 10.	1-14
A	US 2007-0164642 A1 (YOUNGS et al.) 19 July 2007 See paragraphs [0057]-[0060]; and figures 22-25.	1-14

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 June 2017 (27.06.2017)	**27 June 2017 (27.06.2017)**

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HWANG, Chan Yoon
Telephone No. +82-42-481-3347

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2017/023917

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