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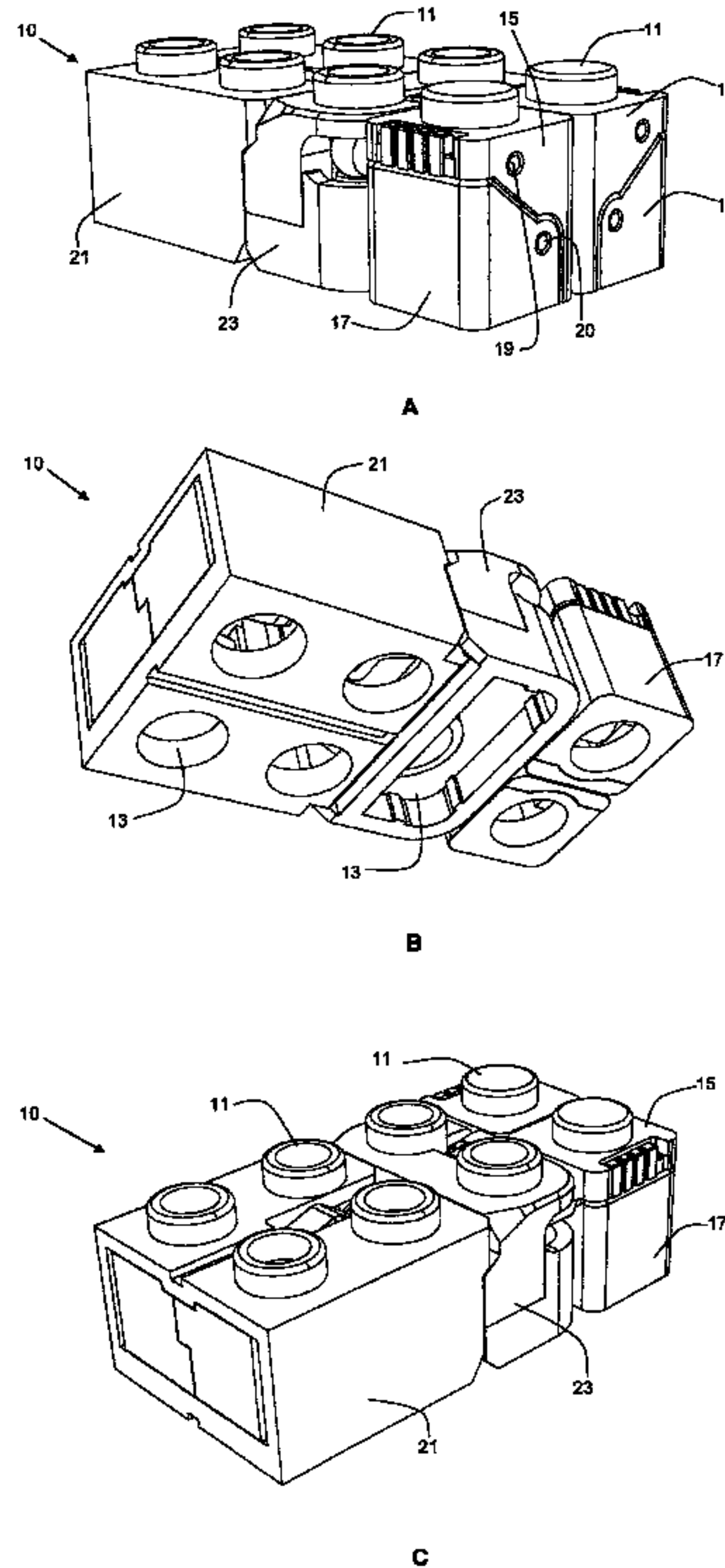
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(54) Title: INTERCONNECTABLE AND TRANSFORMABLE TOY BUILDING ELEMENT



(57) Abrégé/Abstract:

A transformable toy building element which is interconnectable with other toy building elements is provided. The transformable toy building element includes at least one coupling connector and a plurality of movable members. Manipulation of the movable members can transform the transformable toy building element into at least one interconnectable toy figure.



ABSTRACT

A transformable toy building element which is interconnectable with other toy building elements is provided. The transformable toy building element includes at least one coupling connector and a plurality of movable members. Manipulation of the movable members can transform the transformable toy building element into at least one interconnectable toy figure.

INTERCONNECTABLE AND TRANSFORMABLE TOY BUILDING ELEMENT

FIELD OF THE INVENTION

[0001] The present invention relates generally to interconnectable toy blocks, and more specifically, to an interconnectable and transformable toy building element which is transformable into at least one interconnectable toy figure.

BACKGROUND OF THE INVENTION

[0002] Regular non-transformable toy blocks, such as LEGO® blocks, usually come in the form of basic geometric shapes such as a cube or rectangular parallelepiped, disc or plate, polyhedron, and the like. They can be connected together by inserting one or more studs of a toy block into corresponding mating recesses of another toy block. Simple or complex play structures such as those that resemble the shape of a building, a train, and the like can be formed depending on the way these toy blocks are connected together. However, these toy blocks are not themselves physically transformable into other toy figures such as a robot-like toy figure, a plane-like toy figure, etc.

[0003] Also known in the art are block toys with at least one segment being movable between retracted and extended positions, enabling children to transform a block toy into at least one predetermined toy figure. U.S. Patent Number 5,019,010 describes one such example of a block toy. However, this type of block toy is not connectable to other toy blocks or other block toys, thereby limiting children's play options.

[0004] It is therefore desirable to provide interconnectable and transformable toy building elements that offer a variety of play options, allowing children to play with the toy building elements as regular toy blocks to form simple play structures, or to manipulate and transform the toy building elements into other interconnectable toy figures such as robot-like toy figures, plane-like toy figures, vehicle-like toy figures, or the like. This way, interconnectable and transformable toy building elements can offer play options of varying levels of challenge and complexity that are suitable for children of different ages.

SUMMARY OF THE INVENTION

[0005] One aspect of the invention provides a transformable toy building element which is interconnectable with one or more other toy building elements. The transformable toy building element includes one or more coupling connectors and a plurality of movably

attached members and the toy building element is transformable between a contracted state and one or more expanded states upon manipulation of one or more of the movably attached members. In the contracted state, the transformable toy building element has the form of a block and in at least one of the expanded states, the transformable toy building element has a form of a toy figure. The transformable toy building element is interconnectable with one or more other toy building elements when the transformable toy building element is in at least one of the contracted state and the one or more expanded states.

[0006] Another aspect of the present invention provides a kit containing a plurality of interconnectable toy building elements including at least one transformable toy building element as described herein. In at least one embodiment, the kit further includes instructions for transforming the transformable toy building element between the contracted state and at least one of the expanded states. In at least one embodiment, the kit further includes instructions for connecting the transformable toy building element to other interconnectable toy building elements when the transformable toy building element is in at least one of the contracted state and the one or more expanded states.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Further features of the present invention will become apparent from the following written description and the accompanying drawings and the appended claims in which:

[0008] Figure 1A is a side perspective view of an embodiment of the present transformable toy building element in the form of a block.

[0009] Figure 1B is a bottom perspective view of the embodiment of Figure 1A in the form of a block.

[0010] Figure 1C is a top perspective view of the embodiment of Figure 1A in the form of a block.

[0011] Figure 2 is a series of front perspective views of the embodiment of Figure 1A showing the transition from the form of a block to the form of a robot.

[0012] Figure 3A is a top perspective view of the embodiment of Figure 1A in the form of a robot.

[0013] Figure 3B is a front perspective view of the embodiment of Figure 1A in the form of a robot.

[0014] Figure 3C is a rear perspective view of the embodiment of Figure 1A in the form

of a robot.

[0015] Figure 4A is an end perspective view of another embodiment of the present transformable toy building element in the form of a block.

[0016] Figure 4B is a side perspective view of the embodiment of Figure 4A in the form of a block.

[0017] Figure 5 is a series of top perspective views of the embodiment of Figure 4A showing the transition from the form of a block to the form of an airplane.

[0018] Figure 6A is a top perspective view of the embodiment of Figure 4A in the form of an airplane.

[0019] Figure 6B is a bottom perspective view of the embodiment of Figure 4A in the form of an airplane.

[0020] Figure 7A is a side perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0021] Figure 7B is a bottom perspective view of the embodiment of Figure 7A in the form of a block.

[0022] Figure 8 is a series of front perspective views of the embodiment of Figure 7A showing the transition from the form of a block to the form of a vehicle.

[0023] Figure 9A is a top perspective view of the embodiment of Figure 7A in the form of a vehicle.

[0024] Figure 9B is a bottom perspective view of the embodiment of Figure 7A in the form of a vehicle.

[0025] Figure 10A is an end perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0026] Figure 10B is a side perspective view of the embodiment of Figure 10A in the form of a block.

[0027] Figure 11A is a front perspective view of the embodiment of Figure 10A in the form of a robot.

[0028] Figure 11B is a rear perspective view of the embodiment of Figure 10A in the form of a robot.

[0029] Figure 12A is an end perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0030] Figure 12B is a side perspective view of the embodiment of Figure 12A in the form of a block.

[0031] Figure 13 is a side perspective view of the embodiment of Figure 12A in the form of a weapon.

[0032] Figure 14 is a front perspective view of the embodiment of Figure 10A in the form of a robot connected to the embodiment of Figure 12A in the form of a weapon.

[0033] Figure 15A is an end perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0034] Figure 15B is a side perspective view of the embodiment of Figure 15A in the form of a block.

[0035] Figure 16A is a front perspective view of the embodiment of Figure 15A in the form of a block, partially disassembled.

[0036] Figure 16B is a bottom perspective view of the embodiment of Figure 15A in the form of a block, partially disassembled.

[0037] Figure 17A is a side perspective view of the leg region of the embodiment of Figure 15A in the form of a block.

[0038] Figure 17B is a side perspective view of the leg region of the embodiment of Figure 15A in the form of a robot.

[0039] Figure 18A is a front perspective view of the embodiment of Figure 15A in the form of a robot.

[0040] Figure 18B is a side perspective view of the embodiment of Figure 15A in the form of a robot.

[0041] Figure 18C is a rear perspective view of the embodiment of Figure 15A in the form of a robot.

[0042] Figure 19A is a side perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0043] Figure 19B is a side perspective view of the embodiment of Figure 19A in the form of a block.

[0044] Figure 20 is a side perspective view of the embodiment of Figure 19A in the form of a weapon.

[0045] Figure 21 is a front perspective view of the embodiment of Figure 15A in the form of a robot connected to the embodiment of Figure 19A in the form of a weapon.

[0046] Figure 22A is a side perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0047] Figure 22B is an end perspective view of the embodiment of Figure 22A in the form of a block.

[0048] Figure 23A is a front perspective view of the embodiment of Figure 22A in the form of a robot.

[0049] Figure 23B is a rear perspective view of the embodiment of Figure 22A in the form of a robot.

[0050] Figure 24A is a side view of the head and torso region of the embodiment of Figure 22A in the form of a block.

[0051] Figure 24B is a side view of the head and torso region of the embodiment of Figure 22A in the form of a robot.

[0052] Figure 25A is a side perspective view of the leg region of the embodiment of Figure 22A in the form of a block.

[0053] Figure 25B is a side perspective view of the leg region of the embodiment of Figure 22A in the form of a robot.

[0054] Figure 26 is a front perspective view of the embodiment of Figure 22A in the form of a robot connected to the embodiment of Figure 12A in the form of a weapon.

[0055] Figure 27A is a top perspective view of yet another embodiment of the present transformable toy building element in an expanded form.

[0056] Figure 27B is a side perspective view of the embodiment of Figure 27B in the form of a weapon.

[0057] Figure 28A is a top perspective view of yet another embodiment of the present transformable toy building element in the form of a block.

[0058] Figure 28B is a side perspective view of the embodiment of Figure 28B in the form of a weapon.

[0059] Figures 29A to 29C illustrate a playset in which embodiments of the present transformable toy building element in the form of blocks grouped to present the form of a Trojan horse are transformed to individual embodiments of the present transformable toy building element in the form of robots.

DETAILED DESCRIPTION OF THE INVENTION

[0060] The present transformable toy building element includes one or more coupling connectors so as to be interconnectable with one or more other toy building elements having complementary coupling connectors. In at least one embodiment, the coupling connectors are each independently chosen from a stud and a recess shaped to releasably couple with the stud with a snug friction fit. In at least one embodiment, the stud is a flattened, disc-shaped protrusion with a round profile, which may be hollow or solid. However, the studs and recesses can take any shape that will allow for complementary fit, as will be understood by the skilled person. Each stud is adapted to releasably couple with a complementary recess on another toy building element and each recess is adapted to releasably couple with a complementary stud on another toy building element, as is well known in the art.

[0061] It is contemplated that a stud can be immovably fixed to, or unitary with, a surface of the transformable toy building element. Alternatively, it is envisioned that a stud can be movable. For example, it is possible that a stud can be retracted within the transformable toy building element or, once retracted, re-extended therefrom.

[0062] In at least one embodiment, the studs are located on one face of the transformable toy building element and the recesses are located on a different face of the transformable toy building element. However, it is contemplated that a particular face of the transformable toy building element can have both studs and recesses. In at least one embodiment, a face bearing one or more studs is opposite to a face bearing one or more recesses, such that the face bearing one or more studs and the face bearing one or more recesses define an angle of about 360°. This allows the toy building elements to couple with other toy building elements in a stacking fashion as is well known. However, it is contemplated that a face bearing one or more studs and a face bearing one or more recesses can define another angle, as long as at least one of the one or more studs or the one or more recesses can be available for coupling with at least one other toy building element. It is also contemplated that the transformable toy building element can have a plurality of faces each bearing studs and/or a plurality of faces each bearing recesses, oriented at any angle that will allow for coupling with at least one other toy building element.

[0063] The transformable toy building element also includes a plurality of movably attached members. The members can be attached to each other by any of a wide variety

of mechanisms known in the art such that they can move relative to each other while remaining attached to each other. For example, in at least one embodiment, the members can be attached to each other such that they can be pivoted, rotated, slid, extended, retracted, folded, unfolded, telescoped, bent or tilted with respect to each other. The skilled person will appreciate many ways in which such movable attachment can be accomplished, including but not limited to hinges, pivots, ball and socket joints, flexible expandable tubes, and rotating, sliding and telescoping mechanisms. It is also contemplated that the movement of a movable stud can be linked to the movement of another movably attached member in the transformable toy building element such that, for example, retraction or extension of the stud can actuate, or be actuated by, movement of another movable member.

[0064] The toy building element can exist in a contracted state and in one or more expanded states. The toy building element is transformable between the contracted state and the one or more expanded states by manipulating one or more of the movably attached members. In at least one embodiment, the members can be manipulated by at least one of pivoting, rotating, sliding, extending, retracting, folding, unfolding, telescoping, bending and tilting. In at least one embodiment, the transformable toy building element has the form of a block in the contracted state. In at least one embodiment, the transformable toy building element has a form of a toy figure in at least one of the one or more expanded states. In at least one embodiment, the transformable toy building element can be manipulated such that the one or more movably attached members rearrange to form a toy figure. In at least one embodiment, the transformable toy building element can be manipulated such that it opens or expands to reveal one or more members which form a toy figure or which can rearrange to form a toy figure.

[0065] A person skilled in the art will appreciate that toy figures of different appearance may be formed depending on the shapes, colors, and sizes of each movably attached member of the various embodiments of the present toy building element. For example, the toy figure may be in a form including but not limited to the form of a robot-like, plant-like, animal-like or human-like figure; a vehicle-like figure, including but not limited to a flying vehicle-like figure, an aquatic vehicle-like figure or a ground-traveling vehicle-like figure; a building-like toy figure; an accessory-like figure, including but not limited to a tool-like figure or weapon-like figure; or any other toy figures apparent to the skilled person which can represent objects or beings found in life, in play or in imagination.

[0066] In at least one of the contracted state and the one or more expanded states, the

transformable toy building element has at least one coupling connector available for coupling to at least one other toy building element. Thus, the transformable toy building element is interconnectable with one or more other toy building elements having complementary coupling connectors, when the transformable toy building element is in at least one of the contracted state and the one or more expanded states. In at least one embodiment, the transformable toy building element is interconnectable with one or more other toy building elements having complementary coupling connectors when the transformable toy building element is in the contracted state and in at least one of the expanded states.

[0067] The transformable toy building element can be interconnectable with one or more other toy building elements having complementary coupling connectors when the transformable toy building element is in an expanded state in which it has the form of a toy figure. Alternatively, the transformable toy building element can be interconnectable with one or more other toy building elements having complementary coupling connectors when the transformable toy building element is in an expanded state in which it does not have the form of a toy figure, but in which surfaces bearing coupling connectors (interconnectable surfaces) are presented for interconnection. For example, in at least one expanded state, the transformable toy building element can present interconnectable surfaces at different angles and levels than those at which such interconnectable surfaces are presented when the transformable toy building element is in the contracted state. This can provide added interest in play, as the transformable toy building element can provide different options for interconnection in the one or more expanded states compared to the options for interconnection available in the contracted state.

[0068] The other toy building elements which can interconnect with the present transformable toy building element can themselves be transformable. Alternatively, the other toy building elements which can interconnect with the present transformable toy building element can be standard interconnectable building blocks such as are well known in the art, as long as they have coupling connectors complementary to those on the present transformable toy building element.

[0069] The present transformable toy building elements can be made of suitable materials well known in the art, including but not limited to plastic, wood, metal, rubber, silicone or composite materials. The plastic can be rigid or deformable and can include plastic foam. It is also contemplated that the present transformable toy building elements

can be decorated with one or more decorative finishes including but not limited to paint, stickers, tampon printing, coating or other finishes well known in the art.

[0070] It is envisioned that at least one embodiment of the present transformable toy building element can be transformed into two or more interconnectable toy figures by selectively manipulating certain movable members while keeping others in their retracted positions, or by pivoting movable members in different directions to form different interconnectable toy figures. It is also contemplated that a toy figure can be made to assume different poses, including but not limited to sitting, standing, attacking, flying, and the like, by manipulating one or more movable members.

[0071] In addition, to increase the level of challenge and complexity when playing with the present transformable toy building elements, at least one embodiment of the present transformable toy building element, when manipulated, can be transformable into a component which forms a part of a larger interconnectable toy figure. It is contemplated that two or more of the present transformable toy building elements, which can be the same as or different from each other, can be manipulated and connected together, in the contracted state and/or in one or more of the expanded states, to form an interconnectable composite toy figure. For example, a robot-like toy figure can be constructed by connecting at least one embodiment of the present transformable toy building element which can be transformed into an expanded form of one or more lower body members to at least one other embodiment of the present transformable toy building element which can be transformed into an expanded form of one or more upper body members. The skilled person will appreciate that such a feature provides the possibility of creating custom toy figures by mixing and matching various embodiments of the present transformable toy building elements, thereby increasing enjoyment in play.

[0072] It is also contemplated that various embodiments of the present transformable toy building element can be combined to create playsets. For example, in one embodiment, the present transformable toy building element can be transformed into a robot-like toy figure, while, in another embodiment, the present transformable toy building element can be transformed into a weapon-like toy figure which can interconnect with the robot-like toy figure, such that the robot-like toy figure appears to be wielding the weapon-like toy figure. In at least one other embodiment, the present transformable toy building element in the form of a toy figure can be connected to a building-like figure made from toy building elements with complementary connectors, such that the toy figure appears to be standing on the building-like figure, for example.

Other options for playsets will be readily apparent to the person of skill in the art.

[0073] The level of skill required in transforming a transformable toy building element into different interconnectable toy figures can vary depending on a number of factors. These factors include but are not limited to the number of movable members, the various ways movable members can be manipulated, and the number of transformable toy building elements involved to form an interconnectable toy figure or a play set. Various embodiments of the present transformable toy building elements can therefore offer different play options and different levels of challenge that are appropriate to the skills of users of different ages.

[0074] A kit may also be provided, containing a plurality of interconnectable toy building elements including at least one transformable toy building element as described herein. In at least one embodiment, the kit further includes instructions for transforming the transformable toy building element between the contracted state and at least one of the expanded states. In at least one embodiment, the kit further includes instructions for connecting the transformable toy building element to other interconnectable toy building elements when the transformable toy building element is in at least one of the contracted state and the expanded states.

[0075] Figures 1A to 1C show one embodiment of the present transformable toy building element in the form of a block. The transformable toy building element 10 includes studs 11 and complementary recesses 13. Studs 11 can be solid or hollow, as long as they can be removably received in recesses 13 with a snug fit. Recesses 13 can be any shape that will snugly and removably receive studs 11.

[0076] As shown in Figure 2, this embodiment of the transformable toy building element 10 is transformable into the form of a robot-like toy figure, shown in Figures 3A to 3C. The two opposed movable shoulder members 15 can be pivoted outwardly so as to form the shoulders of the robot-like toy figure. Movable hand-arm members 17 can then be pivoted about pivot points 19 and 20 so as to extend away from shoulder members 15. Leg member 21 can be extended by sliding away from torso member 23 so as to expose lower body member 25 previously retracted inside leg member 21. Lower body member 25 is adapted to pivot around pivot point 26, such that the robot-like toy figure can assume, for example, a standing or a sitting position. In addition, head member 27 can be extended from its recess within torso member 23. It will be clear to the skilled person that the transformable toy building element 10 can be transformed from the form of a

robot-like toy figure to the form of a block by reversing the above-described steps.

[0077] Transformable toy building element 10 is interconnectable to other toy building elements with complementary coupling connectors, both in the form of a block and in the form of a robot-like toy figure. As seen in Figures 1A-1C and 3A-3C, coupling connectors in the form of both studs 11 and recesses 13 are available for coupling to other toy building elements in both the block and robot-like toy figure forms.

[0078] Figures 4A to 6B show another embodiment of the present transformable toy building element 30 which is transformable into a airplane-like toy figure. Transformable toy building element 30 has studs 31 and complementary recesses 33 (best seen in Figure 6B). It will be clear to the skilled person that studs 31 and recesses 33 are analogous to studs 11 and recesses 13 and, in at least one embodiment, can be complementary such that studs 31 can be removably and snugly received in recesses 13 and recesses 33 can snugly and removably receive studs 11.

[0079] As seen in Figure 5, the transformable toy building element 30 can be transformed from the block form seen in Figures 4A and 4B to the airplane-like toy figure form seen in Figures 6A and 6B. Front body member 35 can be pivoted away from rear body member 37 by pivoting hinge 39 around pivot points 40, 41. Cockpit member 43 can then be pivoted away from front body member 35. Rear wing members 45 can be rotated outwards around pivot points 46 to abut rear body member 37, and wing tip members 47 can be extended from cavities inside rear wing members 45. It will be clear to the skilled person that the transformable toy building element 30 can be transformed from the form of a airplane-like toy figure to the form of a block by reversing the above-described steps. Whether transformable toy building element 30 is in the form of a block or in the form of an airplane-like toy figure, studs 31 and recesses 33 are available for coupling to other toy building elements, as seen in Figures 4A, 4B, 6A and 6B.

[0080] Figures 7A to 9B show yet another embodiment of the present transformable toy building element 50 which is transformable into a vehicle-like toy figure. Transformable toy building element 50 has studs 51 and complementary recesses 53. The person of skill in the art will appreciate that studs 51 and recesses 53 are analogous to studs 11 or 31 and recesses 13 or 33 and, in at least one embodiment, can be complementary such that studs 51 can be removably and snugly received in recesses 13 or 33 and recesses 53 can snugly and removably receive studs 11 or 31.

[0081] As seen in Figure 8, the transformable toy building element 50 can be

transformed from the block form seen in Figures 7A and 7B to the vehicle-like toy figure form seen in Figures 9A and 9B. Fender members 55 bearing wheels 56 can be rotated sideways, thereby rotating ball joints 57 sideways within body member 59, such that fender members 55 abut the sides of body member 59. Further longitudinal pivoting of fender members 55, so as to rotate ball joints 57 frontward or rearward within body member 59, allow wheels 56 to make contact with the ground surface while moving body member 59 out of contact with the ground surface. Tail member 61 can then be extended from a cavity within body member 59. It will be clear to the skilled person that the transformable toy building element 50 can be transformed from the form of a vehicle-like toy figure to the form of a block by reversing the above-described steps. Whether transformable toy building element 50 is in the form of a block or in the form of a vehicle-like toy figure, studs 51 and recesses 53 are available for coupling to other toy building elements, as seen in Figures 7A, 7B, 9A and 9B.

[0082] Figures 10A to 11B show yet another embodiment of the present transformable toy building element 70 which is transformable into a robot-like toy figure. Transformable toy building element 70 has studs 71 and complementary recesses 73. The person of skill in the art will appreciate that studs 71 and recesses 73 are analogous to studs 11, 31 or 51 and recesses 13, 33 or 53 and, in at least one embodiment, can be complementary such that studs 71 can be removably and snugly received in recesses 13, 33 or 53 and recesses 73 can snugly and removably receive studs 11, 31 or 51.

[0083] The transformable toy building element 70 can be transformed from the block form seen in Figures 10A and 10B to the robot-like toy figure form seen in Figures 11A and 11B. Pelvis member 74 can be rotated about hinge members 75 to abut torso member 76. Boot members 77 can be extended away from pelvis member 74, and toe members 78 pivoted about pivot point 79 to abut the front of boot members 77. Rotating ball joint members 80 with respect to torso member 76 can swing shoulder members 81 sideways to abut the sides of torso member 76. Forearm members 82 can be extended from shoulder members 81, and hand members 83 can be pivoted away from forearm members 82 about pivot point 84. Head member 85 can be pivoted to align with torso member 76, and backpack member 86 can be pivoted around pivot point 87 to abut the back of torso member 76. It will be clear to the skilled person that the transformable toy building element 70 can be transformed from the form of a robot-like toy figure to the form of a block by reversing the above-described steps. It will be appreciated that, whether transformable toy building element 70 is in the form of a block or in the form of a

robot-like toy figure, at least studs 71 are available for coupling to other toy building elements, as seen in Figures 10A to 11B.

[0084] Figures 12A to 13 show yet another embodiment of the present transformable toy building element 90 which is transformable into a weapon-like toy figure. Transformable toy building element 90 has studs 91 and complementary recesses 93. The person of skill in the art will appreciate that studs 91 and recesses 93 are analogous to studs 11, 31, 51 or 71 and recesses 13, 33, 53 or 73 and, in at least one embodiment, can be complementary such that studs 91 can be removably and snugly received in recesses 13, 33, 53 or 73 and recesses 93 can snugly and removably receive studs 11, 31, 51 or 71.

[0085] The transformable toy building element 90 can be transformed from the block form seen in Figures 12A and 12B to the weapon-like toy figure form seen in Figure 13. Barrel members 94 can pivot outward to abut base member 95. Handle base member 96 can rotate outwards about hinge member 97, allowing handle member 98 to pivot further about pivot point 99. It will be clear to the skilled person that the transformable toy building element 90 can be transformed from the form of a weapon-like toy figure to the form of a block by reversing the above-described steps. It will be appreciated that, whether transformable toy building element 90 is in the form of a block or in the form of a weapon-like toy figure, studs 91 and recesses 93 are available for coupling to other toy building elements, as seen in Figures 12A to 13. As seen in Figure 14, toy building element 70 in the form of a robot-like figure is also adapted to connect with toy building element 90 in the form of a weapon-like figure, such that robot-like figure 70 appears to be holding and pointing weapon-like figure 90.

[0086] Figures 15A to 18C show yet another embodiment of the present transformable toy building element 100 which is transformable into a robot-like toy figure.

Transformable toy building element 100 has studs 101 and complementary recesses 103. The person of skill in the art will appreciate that studs 101 and recesses 103 are analogous to studs 11, 31, 51, 71 or 91 and recesses 13, 33, 53, 73 or 93 and, in at least one embodiment, can be complementary such that studs 101 can be removably and snugly received in recesses 13, 33, 53, 73 or 93 and recesses 103 can snugly and removably receive studs 11, 31, 51, 71 or 91.

[0087] The transformable toy building element 100 can be transformed from the block form seen in Figures 15A to 15B to the robot-like toy figure form seen in Figures 18A to

18C. Front plate 104 can swing forward from bottom plate 105 by pivoting about pivot point 106. Bottom plate 105 can then swing downward and rearward, by rotation about hinge 107, best seen in Figure 15B, and front plate 104 can be collapsed against bottom plate 105, as shown in Figure 18B. Torso member 108 and leg assemblies 110 are then exposed, as best seen in Figures 16A and 16B. As seen in Figures 16B, 17A and 17B, extension of leg assemblies 110 can be effected by pivoting pelvis member 111 forward to abut torso member 108. Thigh members 112 can then pivot forward and downward, and rotate around the longitudinal axis of thigh members 112. Shin members 113 can be pivoted about pivot points 114, from a position recessed within thigh members 112, and boot members 115 can be positioned by rotating boot members 115 about ankle members 116. Head member 117 can then be rotated outwards from a cavity within torso member 108 by lifting head plate 118, as seen in Figures 16A and 18A. Arm members 119 can also be extended.

[0088] It will be clear to the skilled person that the transformable toy building element 100 can be transformed from the form of a robot-like toy figure to the form of a block by reversing the above-described steps. It will be appreciated that, whether transformable toy building element 100 is in the form of a block or in the form of a robot-like toy figure, studs 101 and recesses 103 are available for coupling to other toy building elements, as seen in Figures 15A, 15B and 18A to 18C.

[0089] Figures 19A to 20 show yet another embodiment of the present transformable toy building element 130 which is transformable into a weapon-like toy figure. Transformable toy building element 130 has studs 131 and complementary recesses 133. The person of skill in the art will appreciate that studs 131 and recesses 133 are analogous to studs 11, 31, 51, 71, 91, or 101 and recesses 13, 33, 53, 73, 93 or 103 and, in at least one embodiment, can be complementary such that studs 131 can be removably and snugly received in recesses 13, 33, 53, 73, 93 or 103 and recesses 133 can snugly and removably receive studs 11, 31, 51, 71, 91, or 101.

[0090] The transformable toy building element 130 can be transformed from the block form seen in Figures 19A and 19B to the weapon-like toy figure form seen in Figure 20. Side members 134 and 135 can be rotated about hinge member 136, such that studs 131 are received within recesses 133. Handle member 137 can be rotated about pivot point 138 to emerge from a cavity in side member 134. It will be clear to the skilled person that the transformable toy building element 130 can be transformed from the form of a weapon-like toy figure to the form of a block by reversing the above-described

steps. It will be appreciated that, when transformable toy building element 130 is in the form of a block, studs 131 and recesses 133 are available for coupling to other toy building elements, as seen in Figures 19A and 19B.

[0091] As seen in Figure 21, transformable toy building element 100 in the form of a robot-like figure is also adapted to connect with transformable toy building element 130 in the form of a weapon-like figure, such that robot-like figure 100 appears to be holding and pointing weapon-like figure 130. Furthermore, it will be apparent that transformable toy building element 70 in the form of a robot is adapted to connect with transformable toy building element 130 in the form of a weapon, and transformable toy building element 100 in the form of a robot is adapted to connect with transformable toy building element 90 in the form of a weapon.

[0092] Figures 22A to 23B show yet another embodiment of the present transformable toy building element 140 which is transformable into a robot-like toy figure.

Transformable toy building element 140 has studs 141 and complementary recesses 143. The person of skill in the art will appreciate that studs 141 and recesses 143 are analogous to studs 11, 31, 51, 71, 91, 101 or 131 and recesses 13, 33, 53, 73, 93, 103 or 133 and, in at least one embodiment, can be complementary such that studs 141 can be removably and snugly received in recesses 13, 33, 53, 73, 93, 103 or 133 and recesses 143 can snugly and removably receive studs 11, 31, 51, 71, 91, 101 or 131.

[0093] The transformable toy building element 140 can be transformed from the block form seen in Figures 22A and 22B to the robot-like toy figure form seen in Figures 23A and 23B. Arm and shield members 145 can be rotated around ball hinge members 146 to abut the sides of torso member 147. Head member 149 can be pivoted to abut the top of torso member 147 as best seen in Figures 24A and 24B. As further seen in Figures 24A and 24B, central chest member 151 can be pivoted to abut the front of torso member 147, thereby extending pelvis member 153 downwards and away from torso member 147. Rotation of pelvis member 153 by about 180 degrees positions plate member 155 at the back of the robot-like toy figure, and positions leg assemblies 160, which are mounted on ball joints 154. As seen in Figures 25A and 25B, leg assemblies 160 can be further extended by rotating ankle members 162 about pivot points 163, and rotating toe members 164 away from foot member 166 about pivot points 165.

[0094] It will be clear to the skilled person that the transformable toy building element 140 can be transformed from the form of a robot-like toy figure to the form of a block by

reversing the above-described steps. It will be appreciated that, whether transformable toy building element 140 is in the form of a block or in the form of a robot-like toy figure, studs 141 and recesses 143 are available for coupling to other toy building elements, as seen in Figures 22A to 23B.

[0095] As seen in Figure 26, transformable toy building element 140 in the form of a robot-like figure is also adapted to connect with transformable toy building element 90 in the form of a weapon-like figure, such that robot-like figure 140 appears to be holding and pointing weapon-like figure 90. Furthermore, it will be apparent that transformable toy building element 140 in the form of a robot is also adapted to connect with transformable toy building element 130 in the form of a weapon.

[0096] Figures 27A and 27B show yet another embodiment of the present transformable toy building element 170 which is transformable into a weapon-like toy figure.

Transformable toy building element 170 has studs 171 and complementary recesses (not shown). The person of skill in the art will appreciate that studs 171 and the complementary recesses are analogous to studs 11, 31, 51, 71, 91, 101, 131 or 141 and recesses 13, 33, 53, 73, 93, 103, 133 or 143 and, in at least one embodiment, can be complementary such that studs 171 can be removably and snugly received in recesses 13, 33, 53, 73, 93, 103, 133 or 143 and the complementary recesses can snugly and removably receive studs 11, 31, 51, 71, 91, 101, 131 or 141.

[0097] The transformable toy building element 170 can be transformed from a block form to an expanded form seen in Figure 27A and to the weapon-like toy figure form seen in Figure 27B. Rear members 175 can be pivoted about hinge members 176 to abut each other or to abut sides 177 of body member 182. When rear members 175 abut each other as shown in Figure 27B, cover members 178 can be pivoted about hinge members 179 to reveal weapon member 180, best seen in Figure 27B. Weapon member 180 can be extended away from body member 182 by pivoting arm member 184 about pivot point 186. Barrel member 188 can also be extended outwards from weapon member 180.

[0098] It will be clear to the skilled person that the transformable toy building element 170 can be transformed from the form of a weapon-like toy figure to the form of a block by reversing the above-described steps. It will be appreciated that, whether transformable toy building element 170 is in the form of a block or in the form of a weapon-like toy figure, studs 171 and complementary recesses are available for

coupling to other toy building elements, as seen in Figures 27A and 27B.

[0099] Figures 28A and 28B show yet another embodiment of the present transformable toy building element 190 which is transformable into a weapon-like toy figure.

Transformable toy building element 190 has studs 191 and complementary recesses (not shown). The person of skill in the art will appreciate that studs 191 and the complementary recesses are analogous to studs 11, 31, 51, 71, 91, 101, 131, 141 or 171 and recesses 13, 33, 53, 73, 93, 103, 133 or 143 and, in at least one embodiment, can be complementary such that studs 191 can be removably and snugly received in recesses 13, 33, 53, 73, 93, 103, 133 or 143 and the complementary recesses can snugly and removably receive studs 11, 31, 51, 71, 91, 101, 131, 141 or 171.

[00100] The transformable toy building element 190 can be transformed from a block form seen in Figure 28A to the weapon-like toy figure form seen in Figure 28B. Cover members 195 can be pivoted about hinge members 197 to reveal weapon members 199, best seen in Figure 28B. It will be clear to the skilled person that the transformable toy building element 190 can be transformed from the form of a weapon-like toy figure to the form of a block by reversing the above-described steps. It will be appreciated that, whether transformable toy building element 190 is in the form of a block or in the form of a weapon-like toy figure, studs 191 and complementary recesses are available for coupling to other toy building elements, as seen in Figures 28A and 28B.

[00101] As seen in Figures 29A to 29C, the present transformable toy building elements can be interconnected and combined to form composite toy figures and playsets. Playset 200 comprises composite toy figure 210 in the form of a Trojan horse, which is formed from, and can be disassembled into, embodiments of the present transformable toy building elements 220 which can be transformed to the form of robots.

[00102] The embodiments of the present transformable toy building element described herein are intended to be illustrative and non-limiting. Various modifications which are readily apparent to the person of skill in the art are intended to be included. The scope of the claims should not be limited by the specific embodiments described herein, but should be given the broadest interpretation consistent with the description as a whole.

WHAT IS CLAIMED IS:

1. A transformable toy building element being interconnectable with one or more other toy building elements, wherein the one or more other toy building elements comprise a standard interconnectable building block; the transformable toy building element comprising one or more coupling connectors and a plurality of movably attached members;
 wherein the toy building element is transformable between a contracted state and one or more expanded states upon manipulation of one or more of the movably attached members, the transformable toy building element having a form of a block in the contracted state and having a form of a toy figure in at least one of the one or more expanded states; and
 wherein the transformable toy building element is interconnectable with the one or more other toy building elements when the transformable toy building element is in at least one of the contracted state and the one or more expanded states;
 wherein the one or more coupling connectors are each independently selected from a stud and a recess shaped to releasably couple with the stud with a snug friction fit;
 wherein the stud is adapted to releasably couple with a complementary recess on the one or more other toy building elements and the recess is adapted to releasably couple with a complementary stud on the one or more other toy building elements.
2. The transformable toy building element according to claim 1 wherein the stud is a flattened disc-shaped protrusion with a round profile.
3. The transformable toy building element according to claim 1 or 2, wherein the manipulation comprises at least one of pivoting, rotating, sliding, extending, retracting, folding, unfolding, telescoping, bending and tilting.
4. The transformable toy building element according to any one of claims 1 to 3, wherein the manipulation effects rearrangement of the one or more movably attached members to form the toy figure.

5. The transformable toy building element according to any one of claims 1 to 3, wherein the manipulation effects opening or expansion of the transformable toy building element to reveal the form of the toy figure.
6. The transformable toy building element according to any one of claims 1 to 5, wherein the toy figure is a robot-like figure, a plant-like figure, an animal-like figure, a human-like figure, a vehicle-like figure or an accessory-like figure.
7. The transformable toy building element according to any one of claims 1 to 6, wherein the transformable toy building element is interconnectable with the one or more other toy building elements when the transformable toy building element is in the contracted state and in at least one of the one or more expanded states.
8. A kit comprising a plurality of interconnectable toy building elements including at least one transformable toy building element according to any one of claims 1 to 7.
9. A method of assembling a transformable toy building element according to any one of claims 1 to 7, the method comprising mutually attaching a plurality of members to form the transformable toy building element, wherein the plurality of members comprises one or more attachment mechanisms for mutual movable attachment, and wherein at least one of the plurality of members is movably attached to at least one other of the plurality of members.
10. The method according to claim 9, wherein the at least one of the plurality of members is adapted to be pivoted, rotated, slid, extended, retracted, folded, unfolded, telescoped, bent or tilted with respect to the at least one other of the plurality of members.
11. The method according to claim 9 or 10, wherein the one or more attachment mechanisms are each individually selected from a hinge, a pivot, a ball and socket joint, a flexible expandable tube, a rotating mechanism, a sliding mechanism and a telescoping mechanism.

12. The method according to claim 9 or 10 wherein the one or more attachment mechanisms comprise one or more ball and socket joints.
13. A kit for assembly of a transformable toy building element according to any one of claims 1 to 7 by the method according to any one of claims 9 to 12, the kit comprising a plurality of members and one or more attachment mechanisms for mutual movable attachment of the plurality of members.
14. The kit according to claim 13 further including instructions for the assembly of the transformable toy building element.

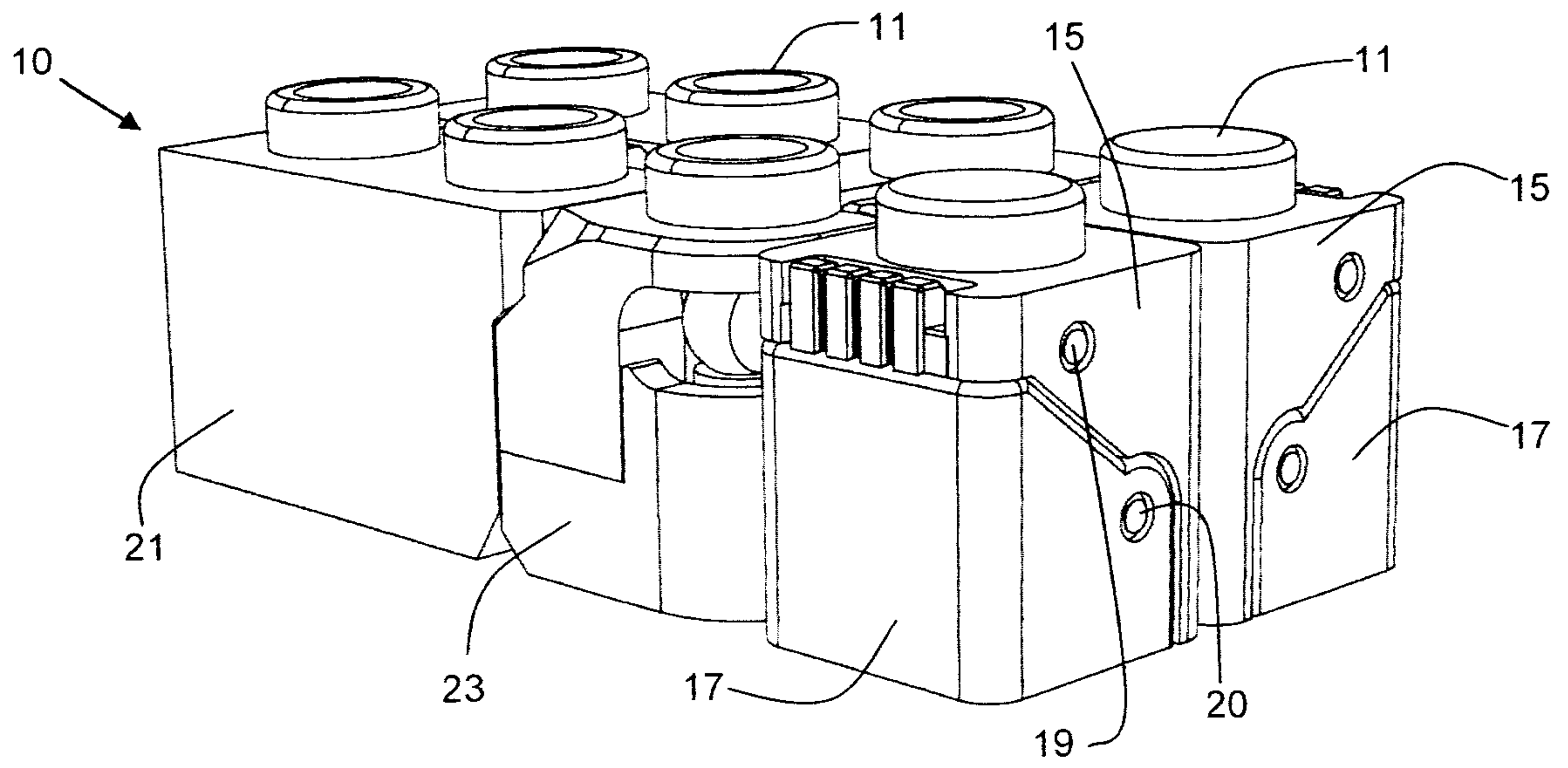


FIG. 1A

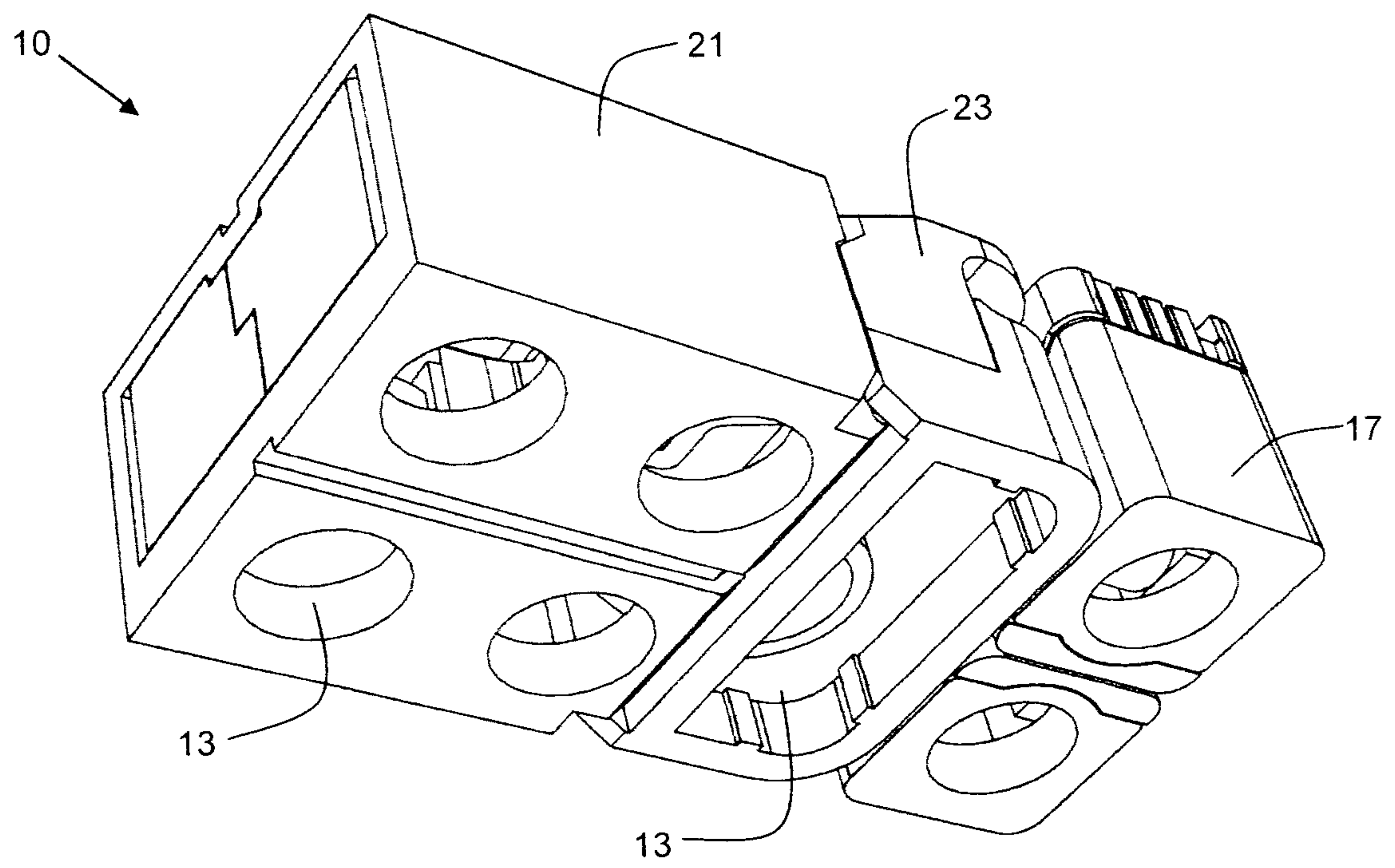


FIG. 1B

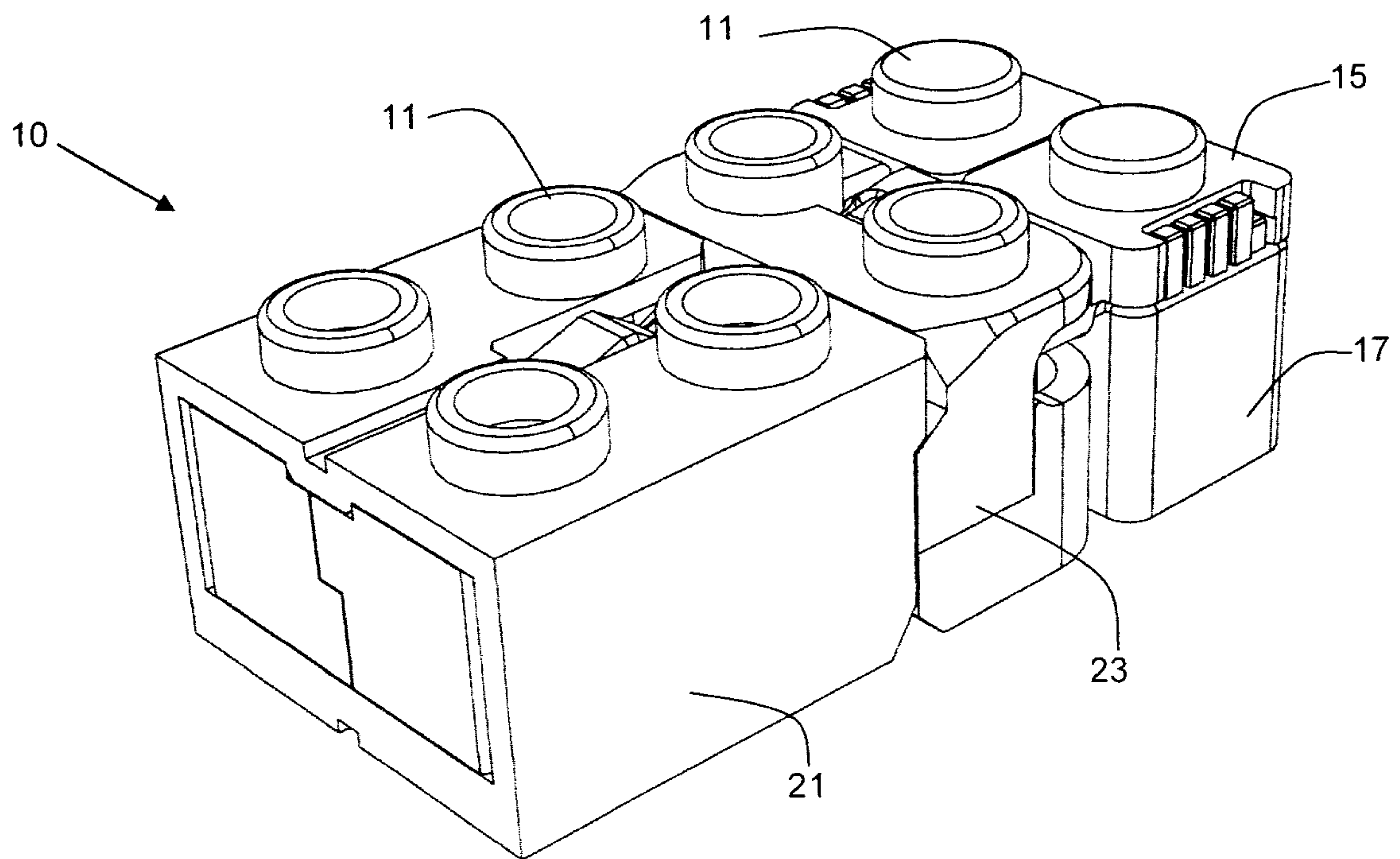


FIG. 1C

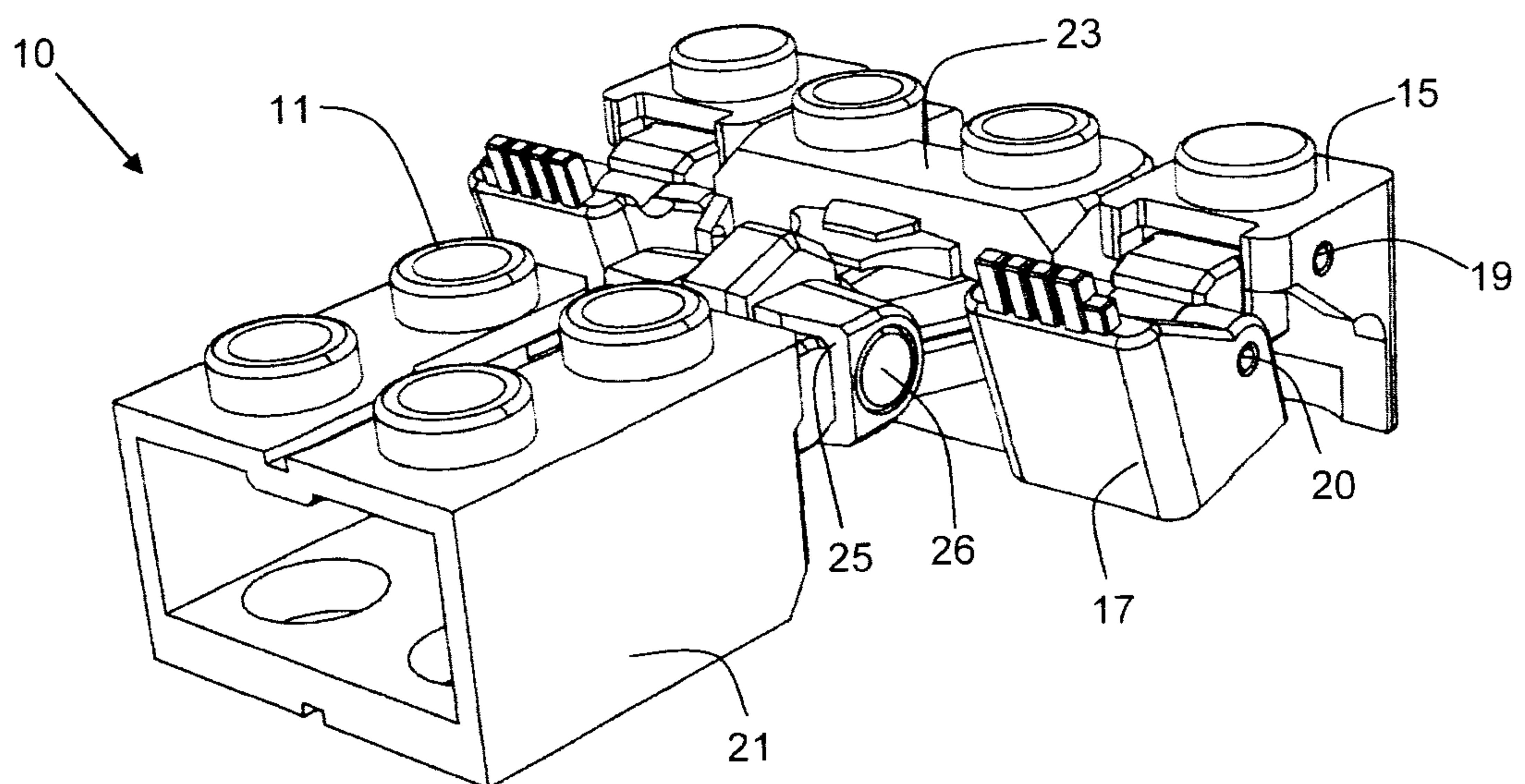


FIG. 3A

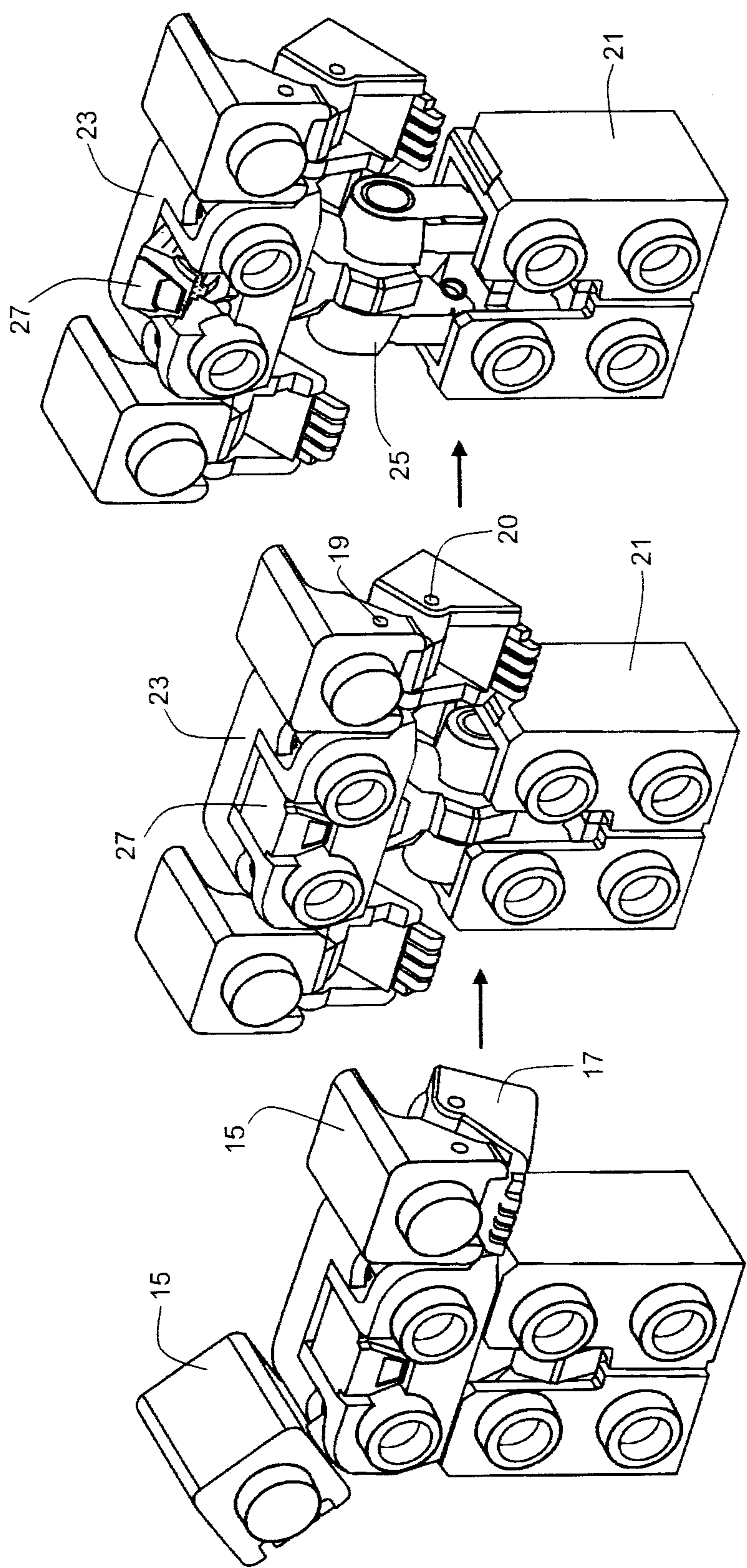


FIG. 2

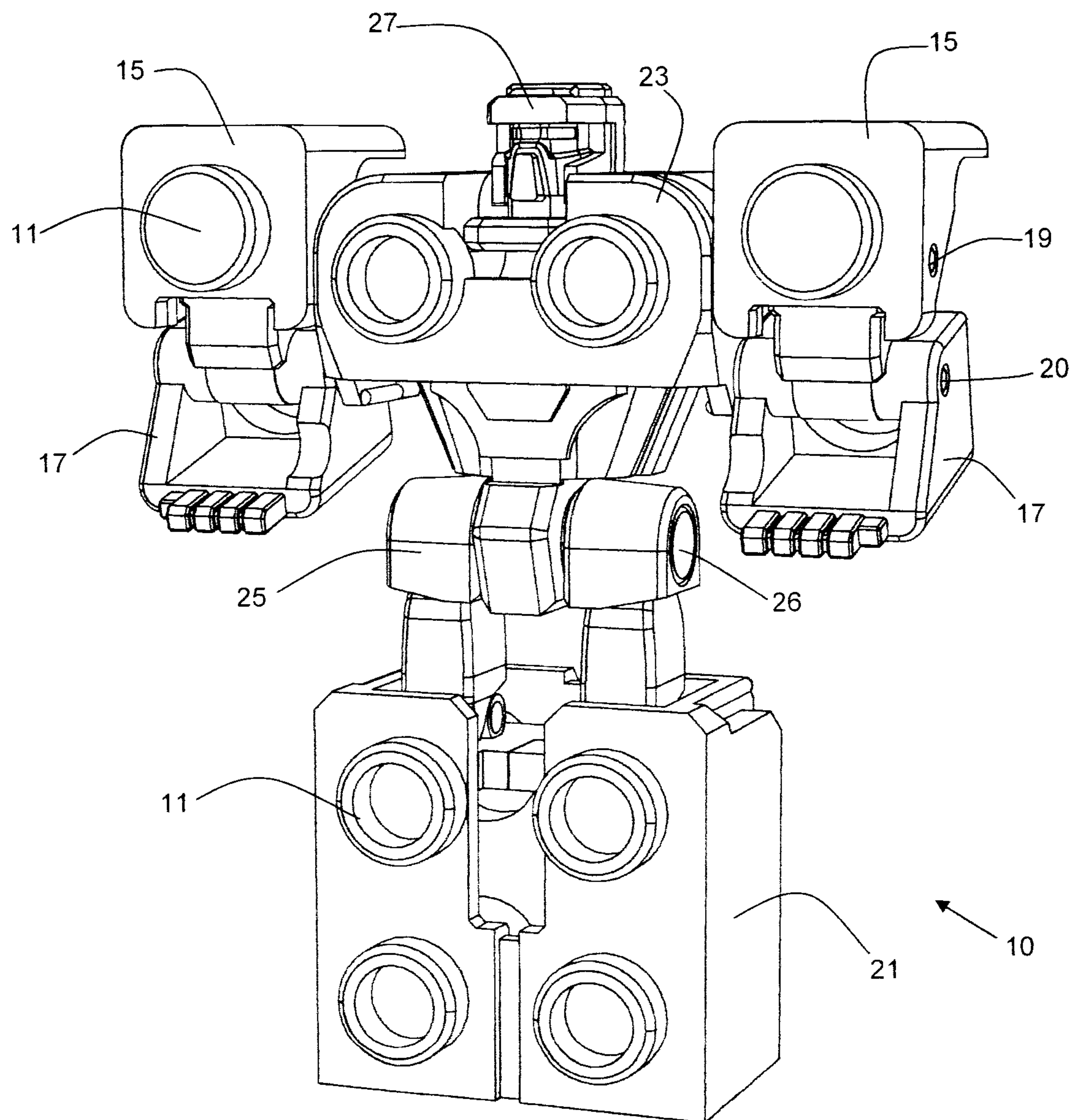


FIG. 3B

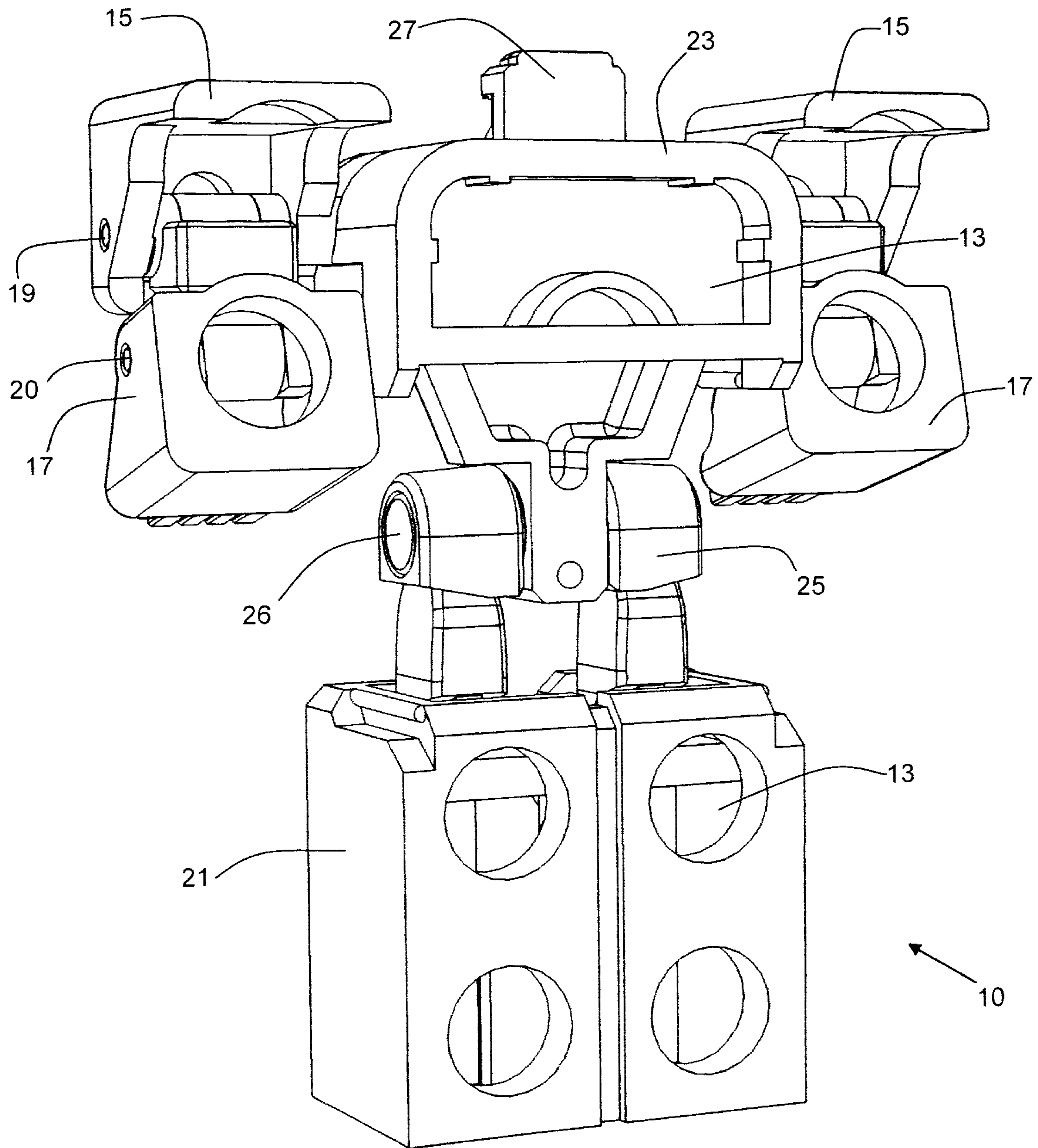


FIG. 3C

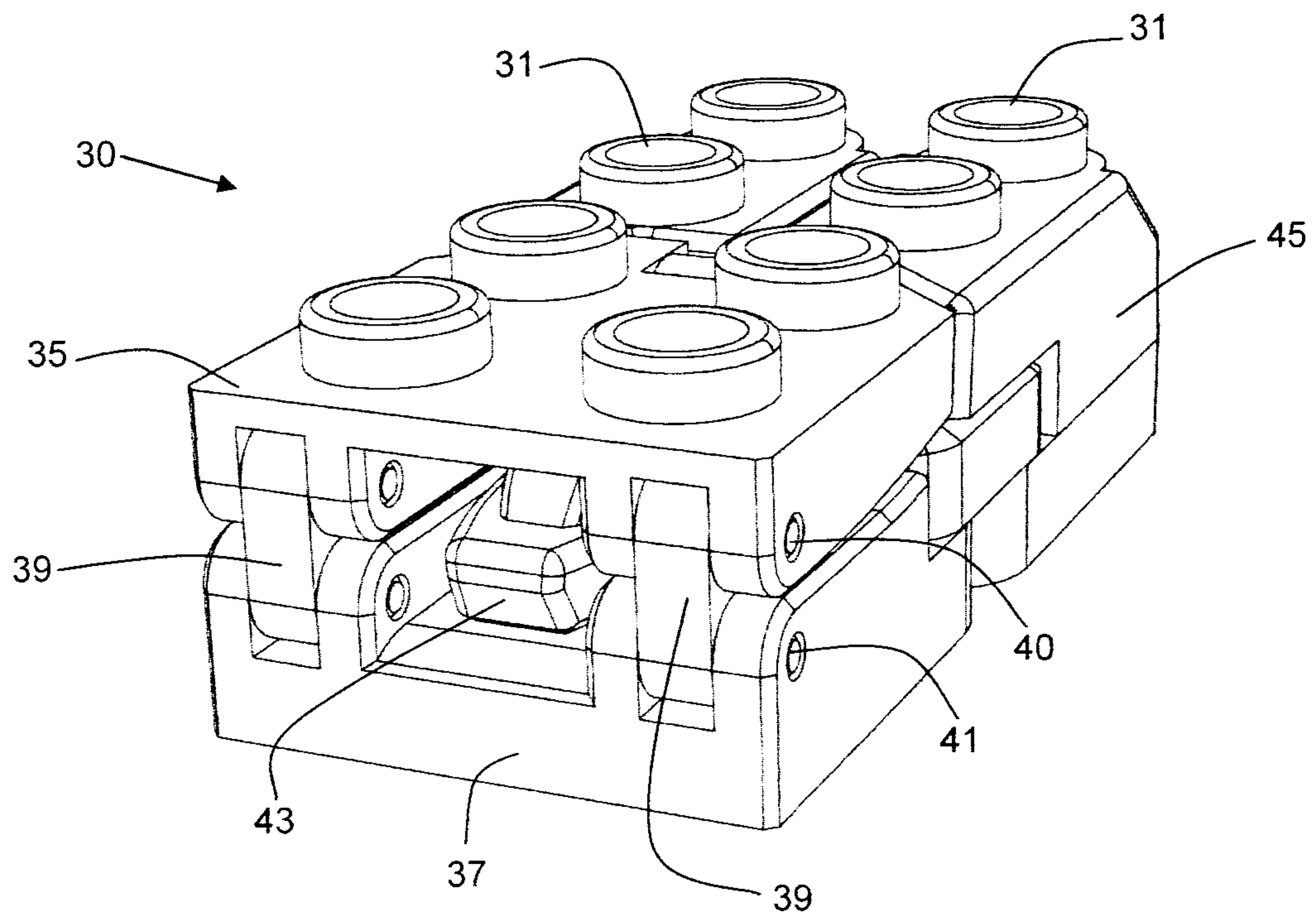


FIG. 4A

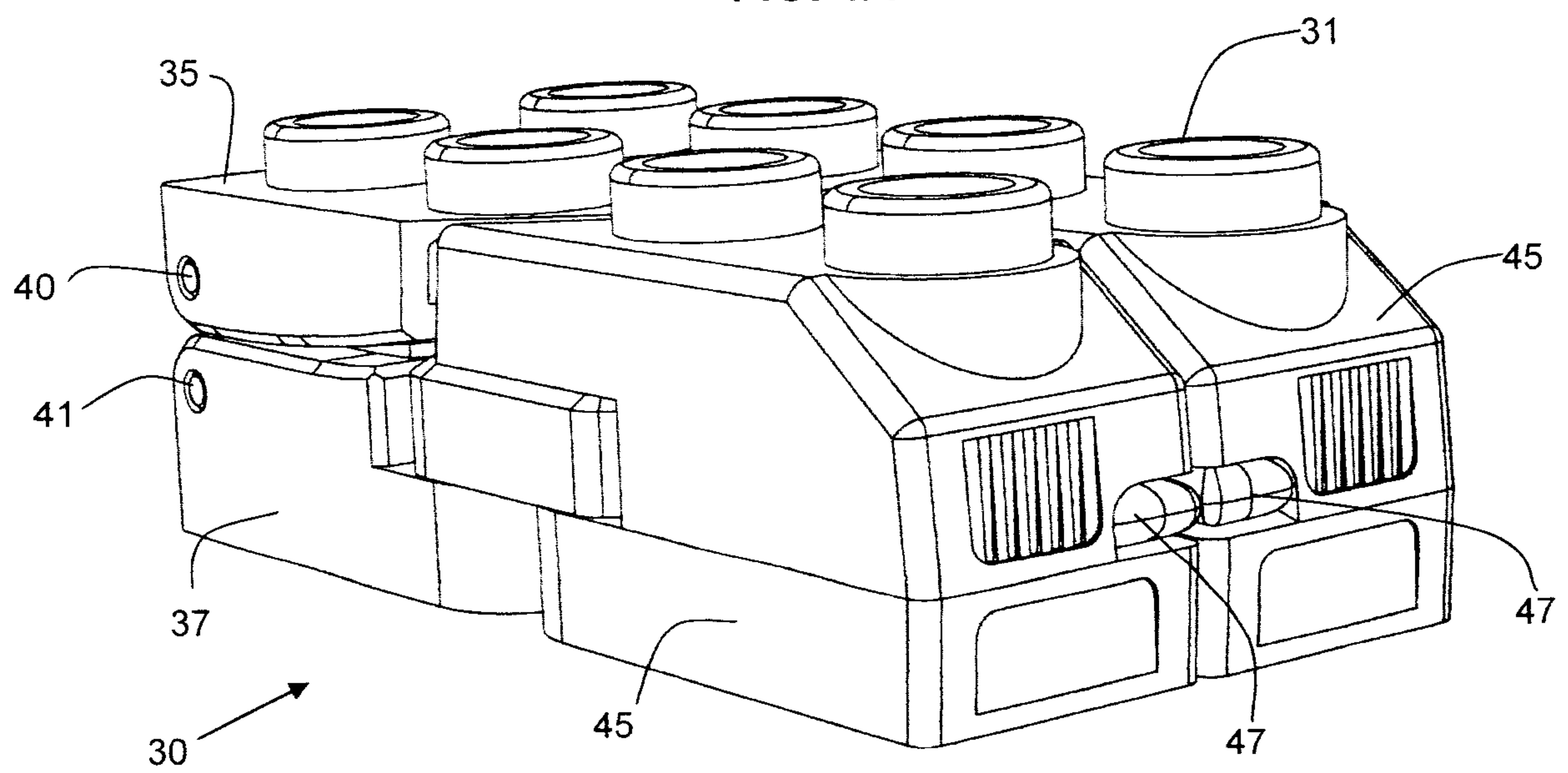


FIG. 4B

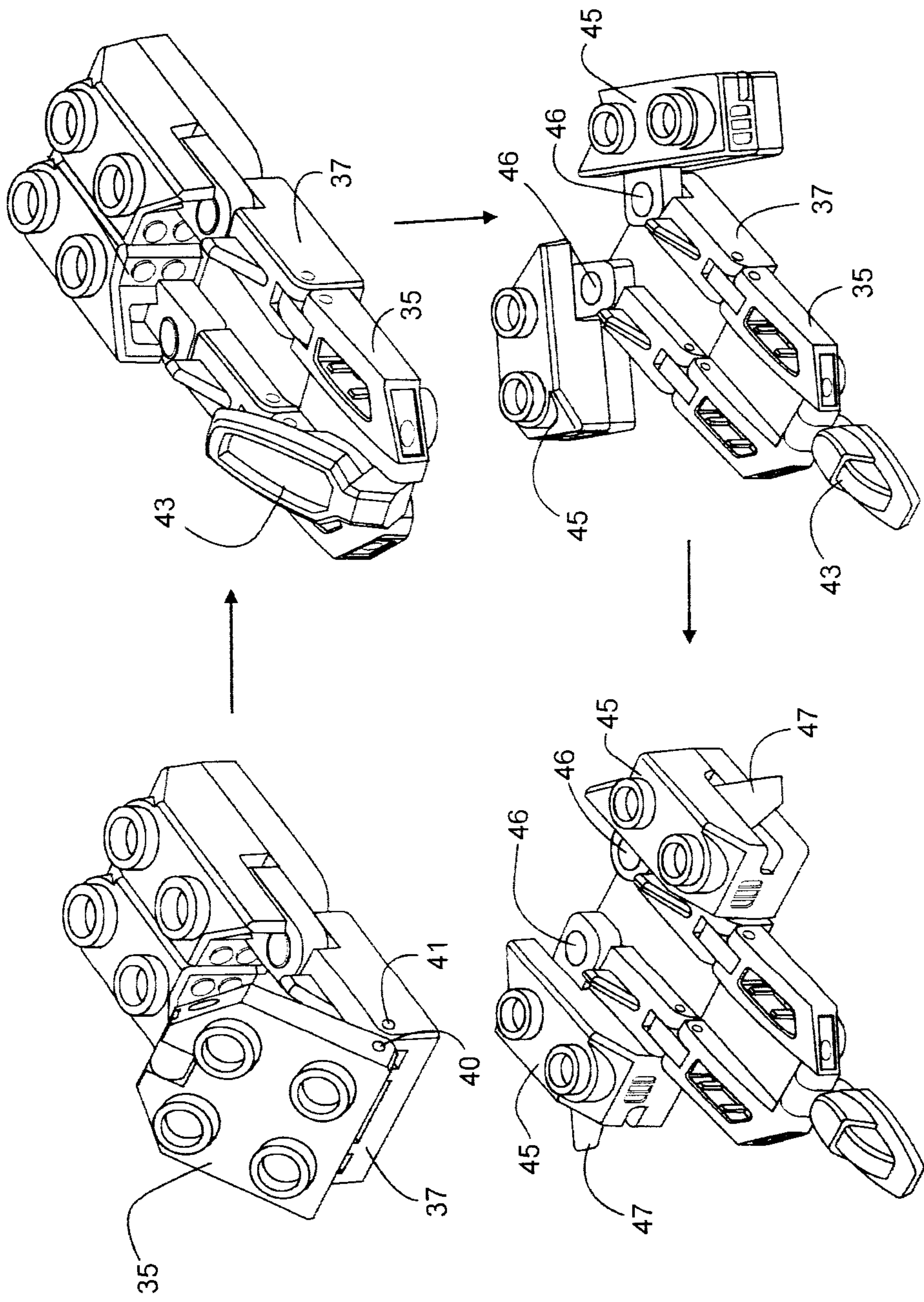


FIG. 5

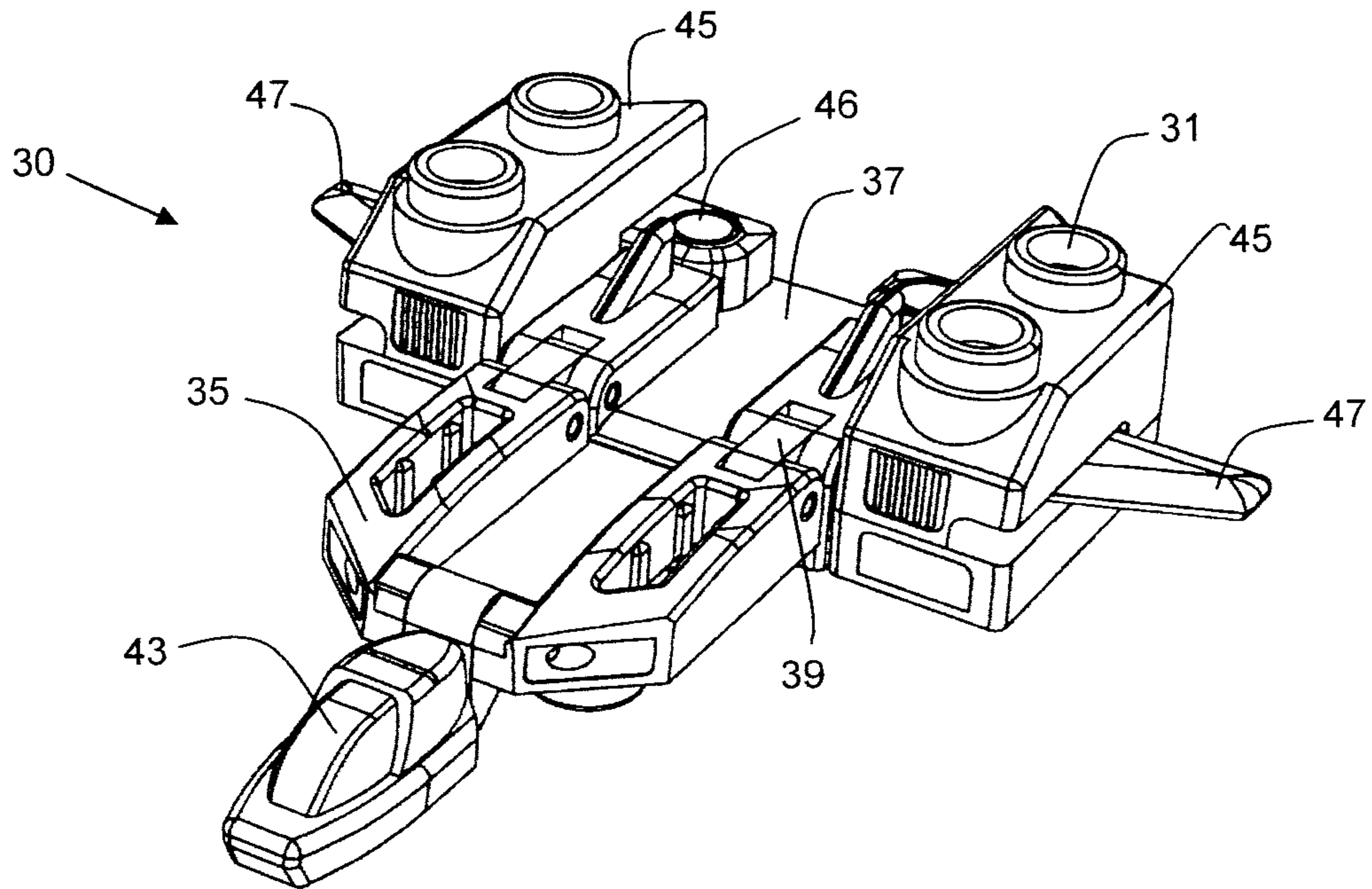


FIG. 6A

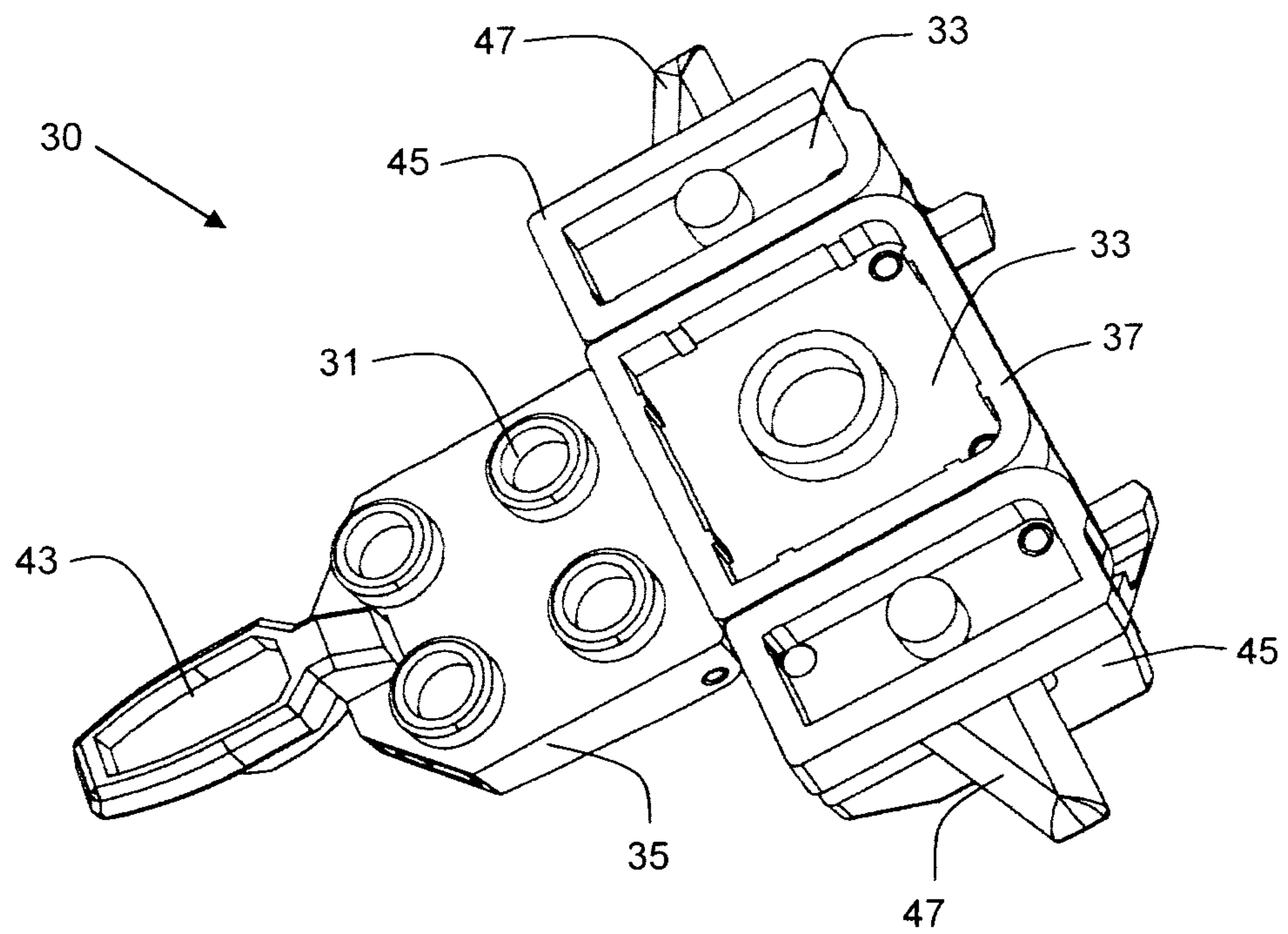


FIG. 6B

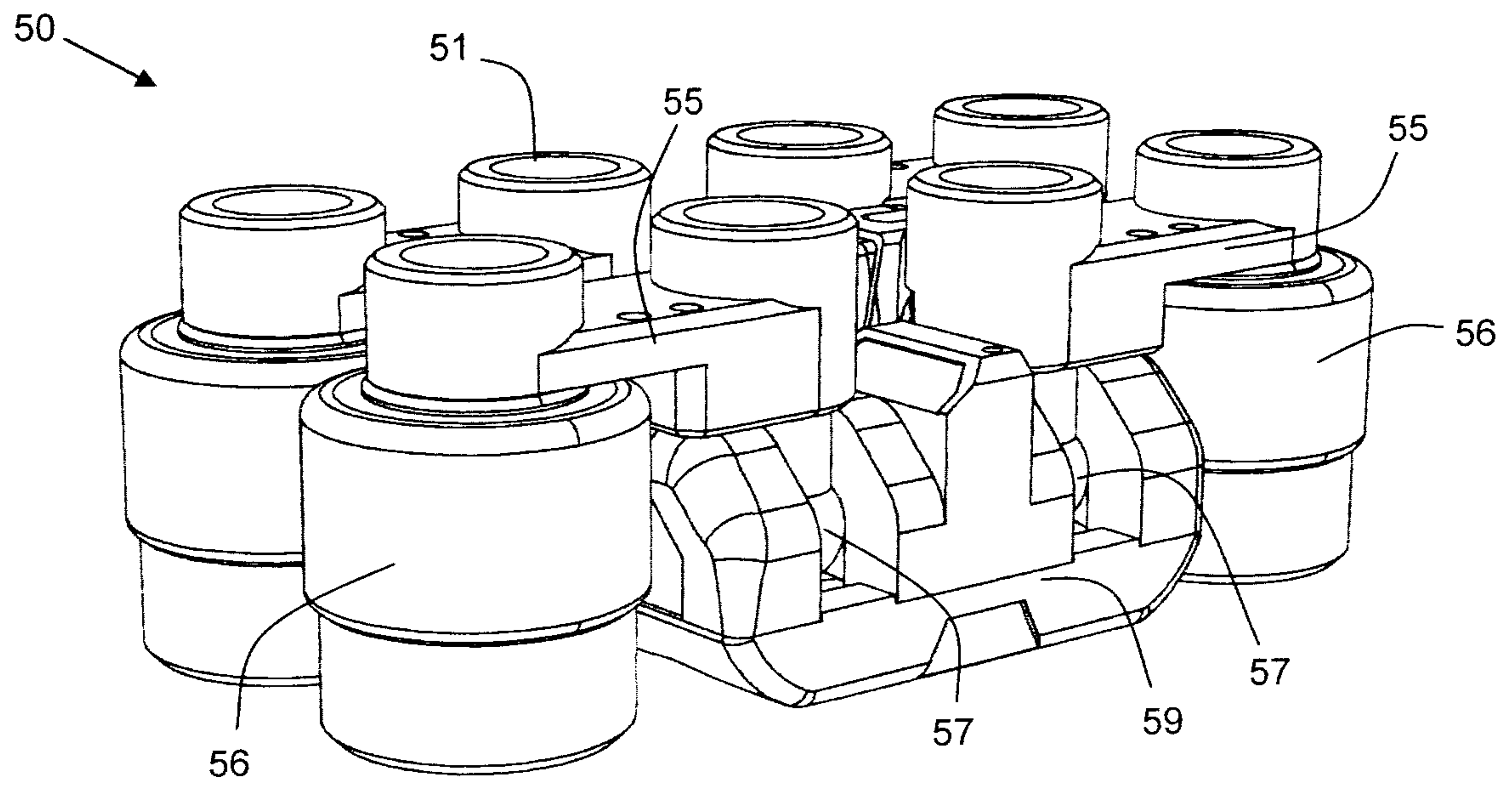


FIG. 7A

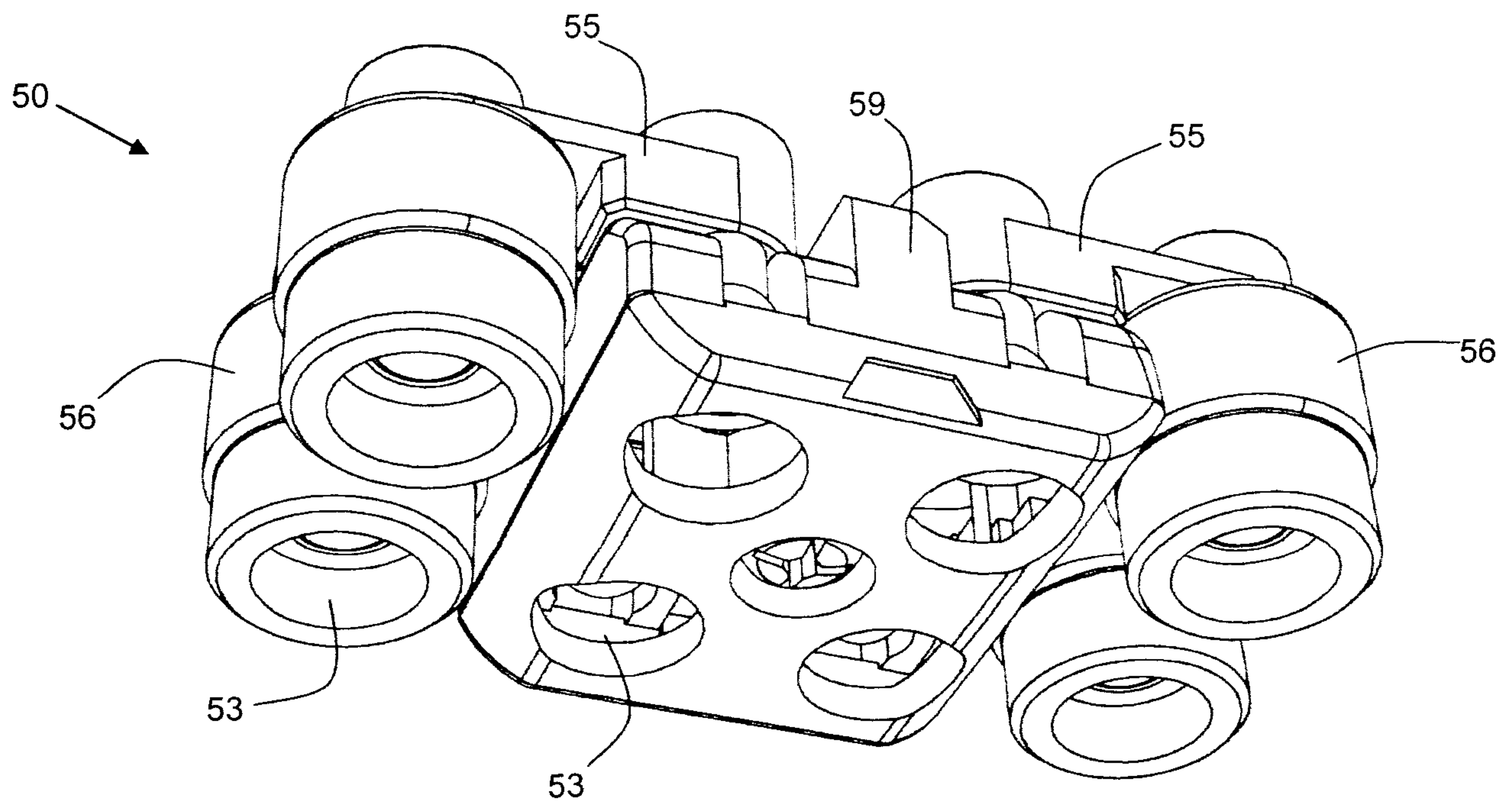


FIG. 7B

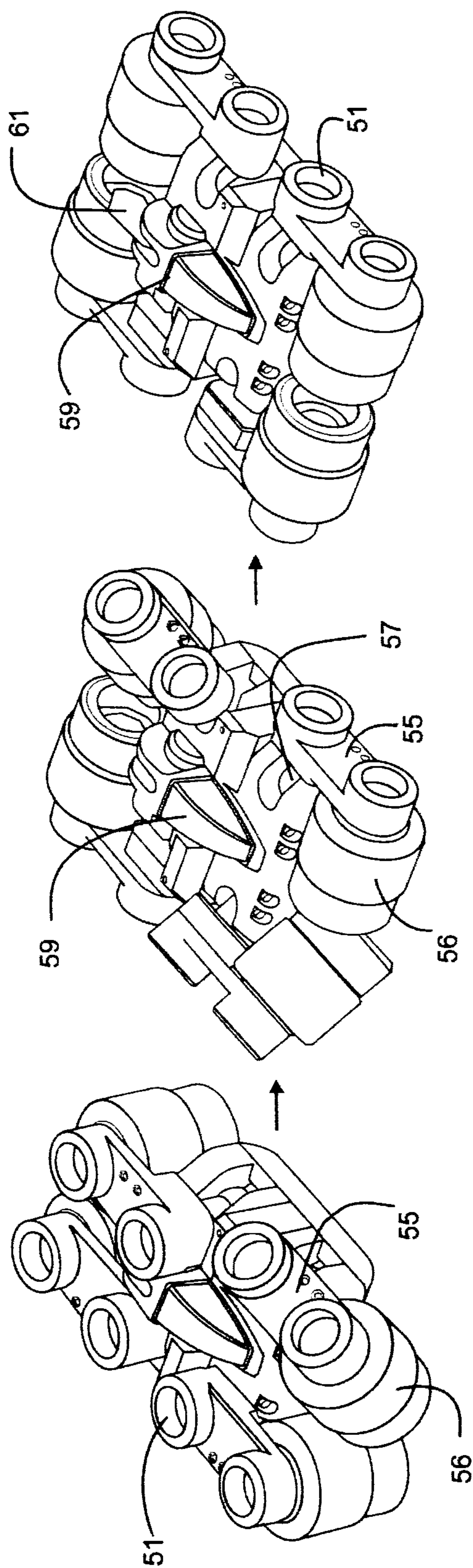


FIG. 8

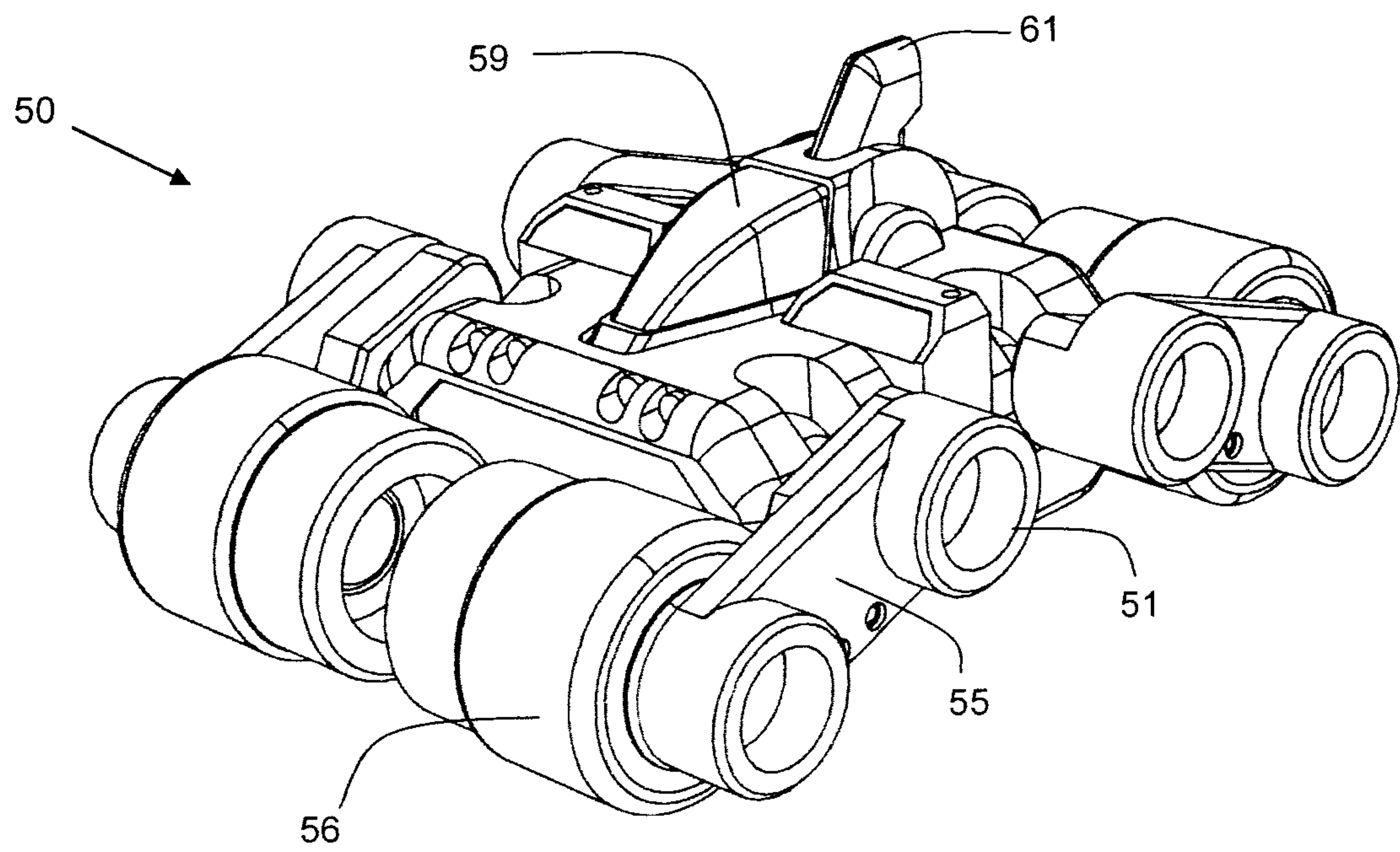


FIG. 9A

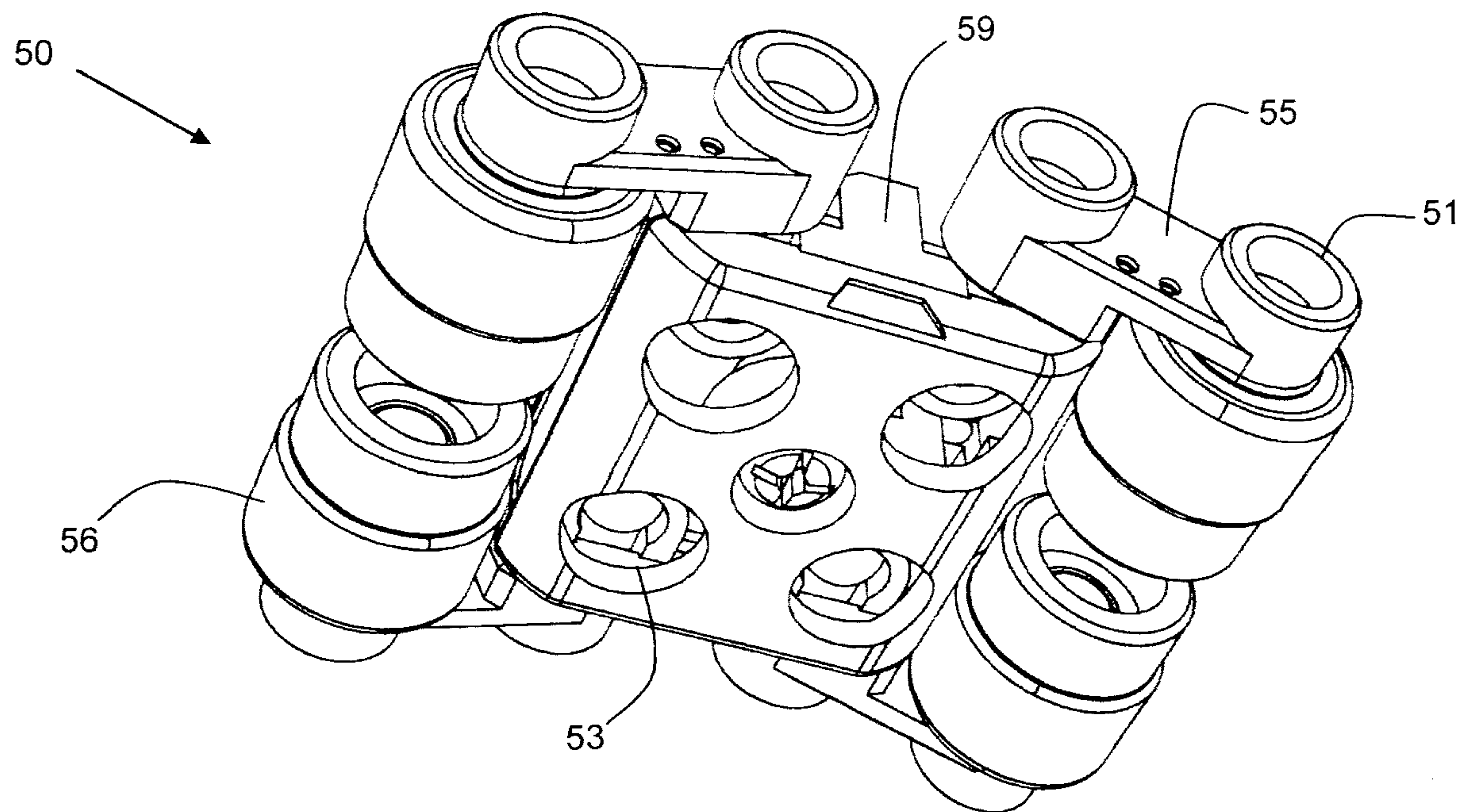


FIG. 9B

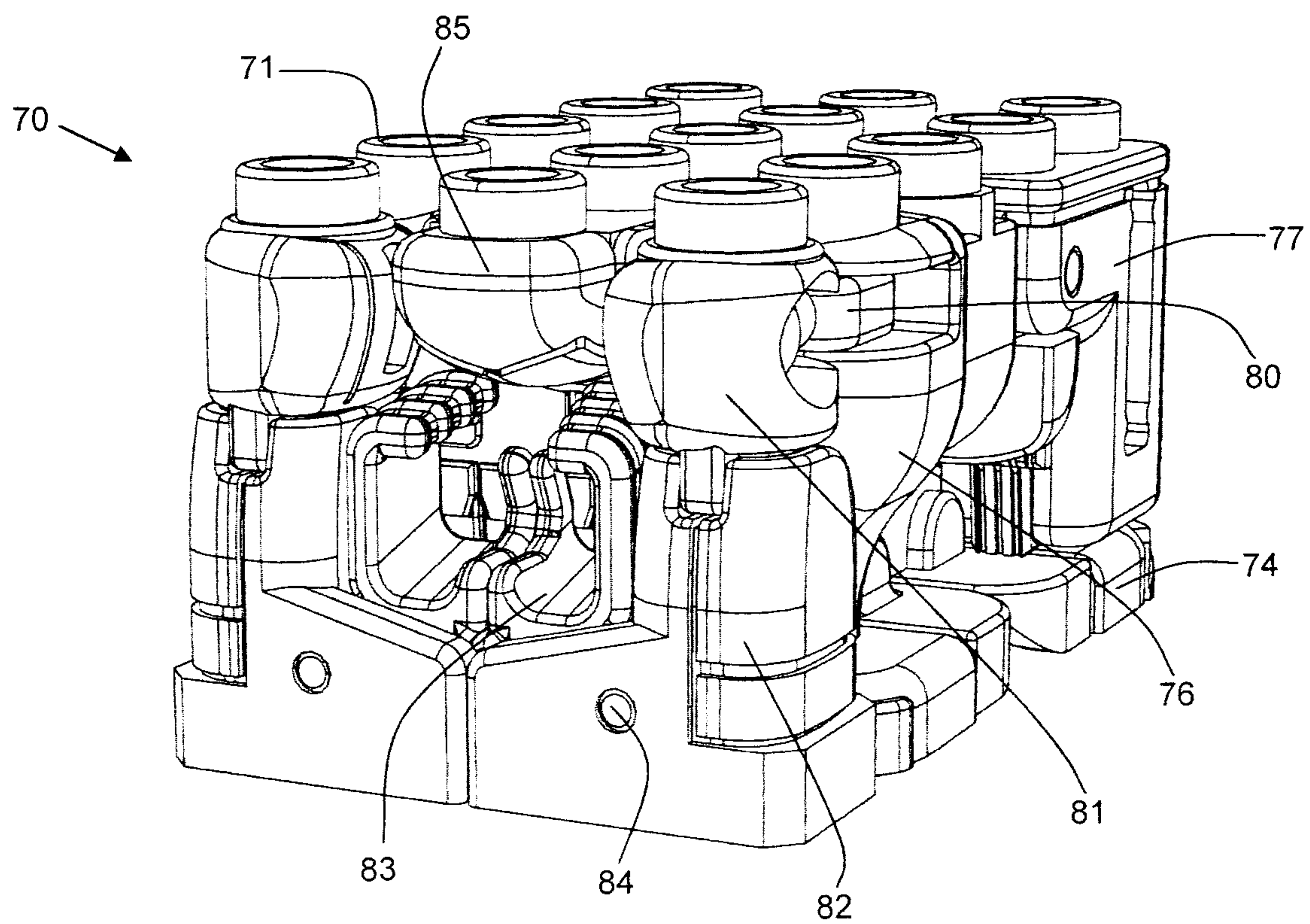


FIG. 10A

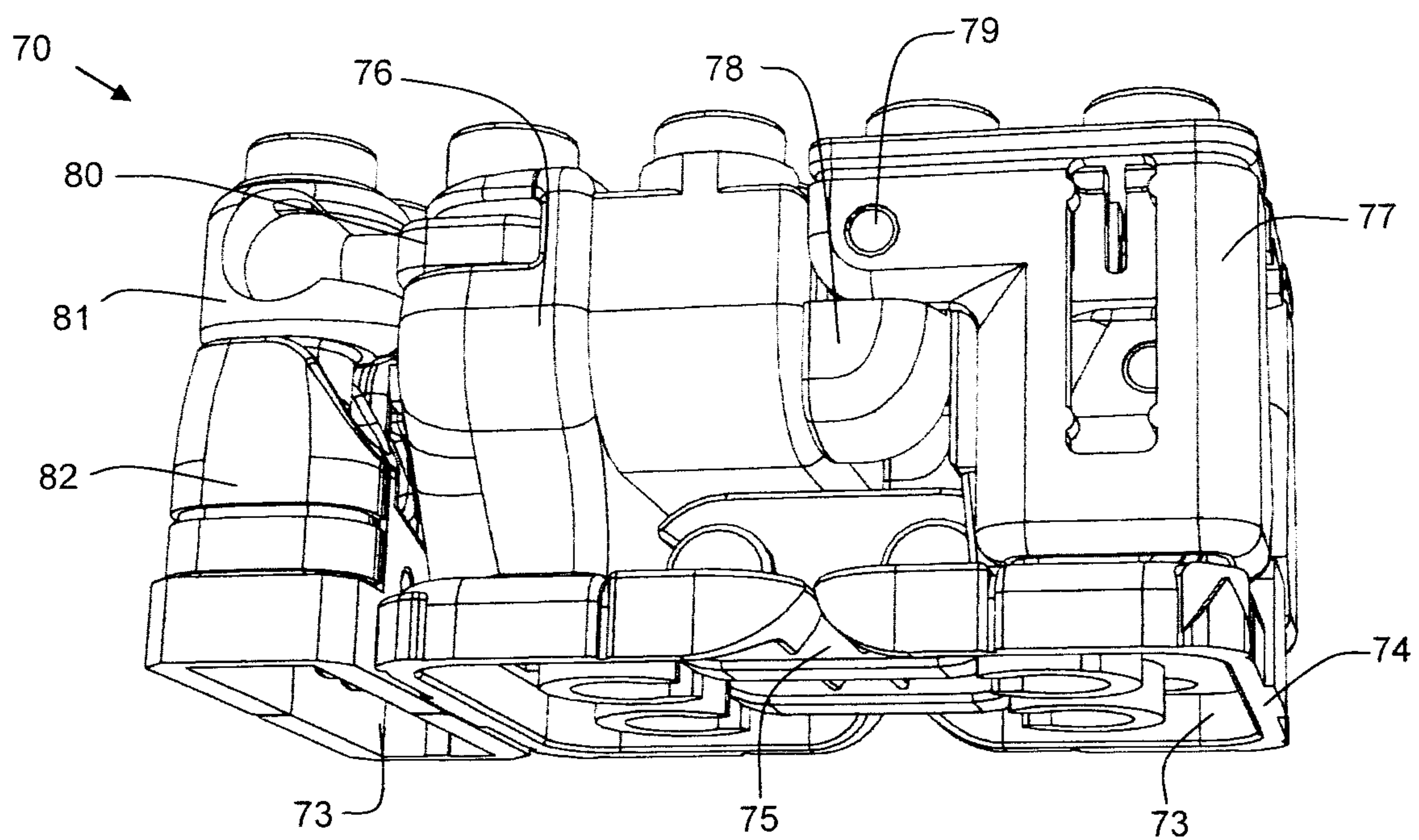


FIG. 10B

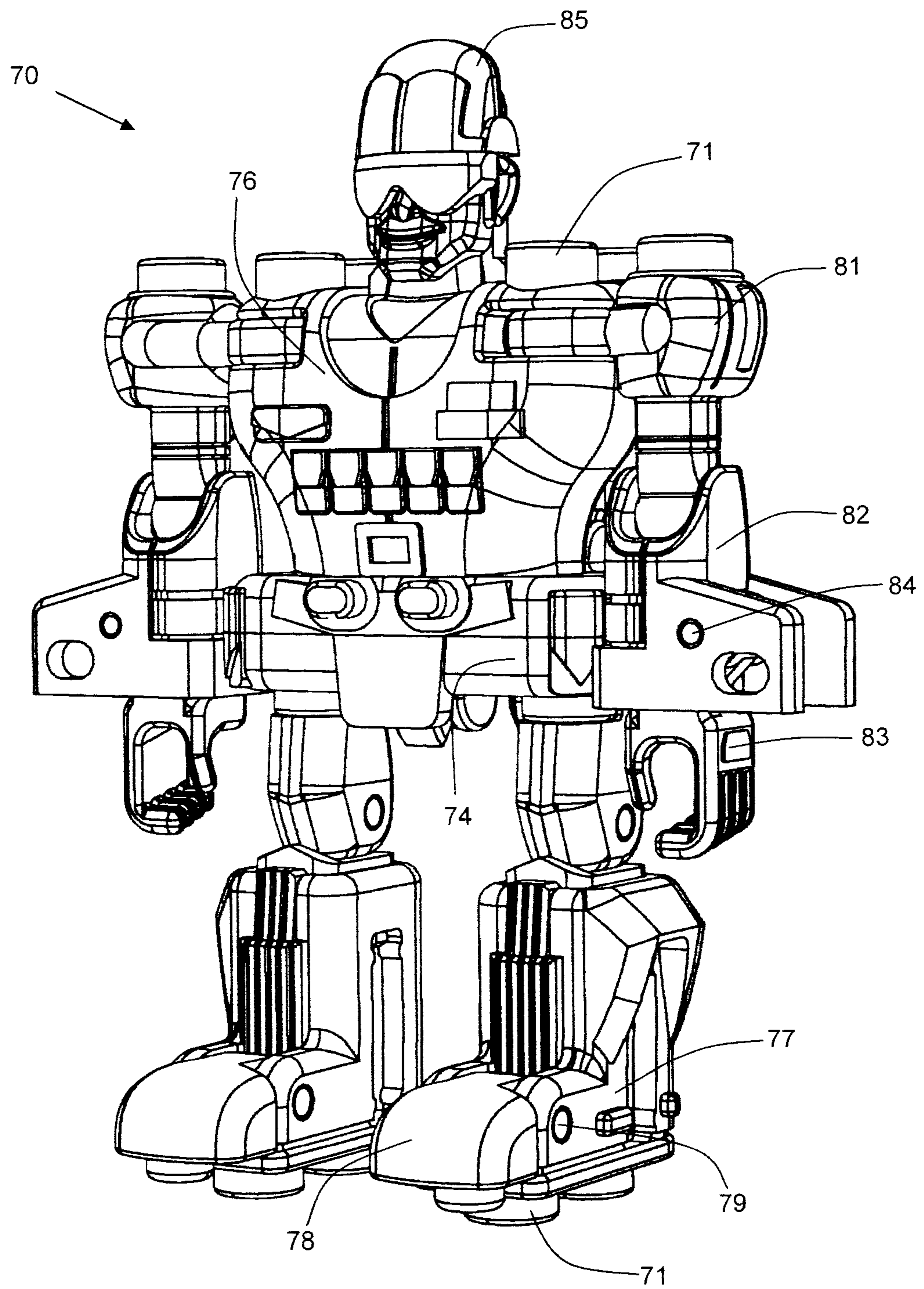


FIG. 11A

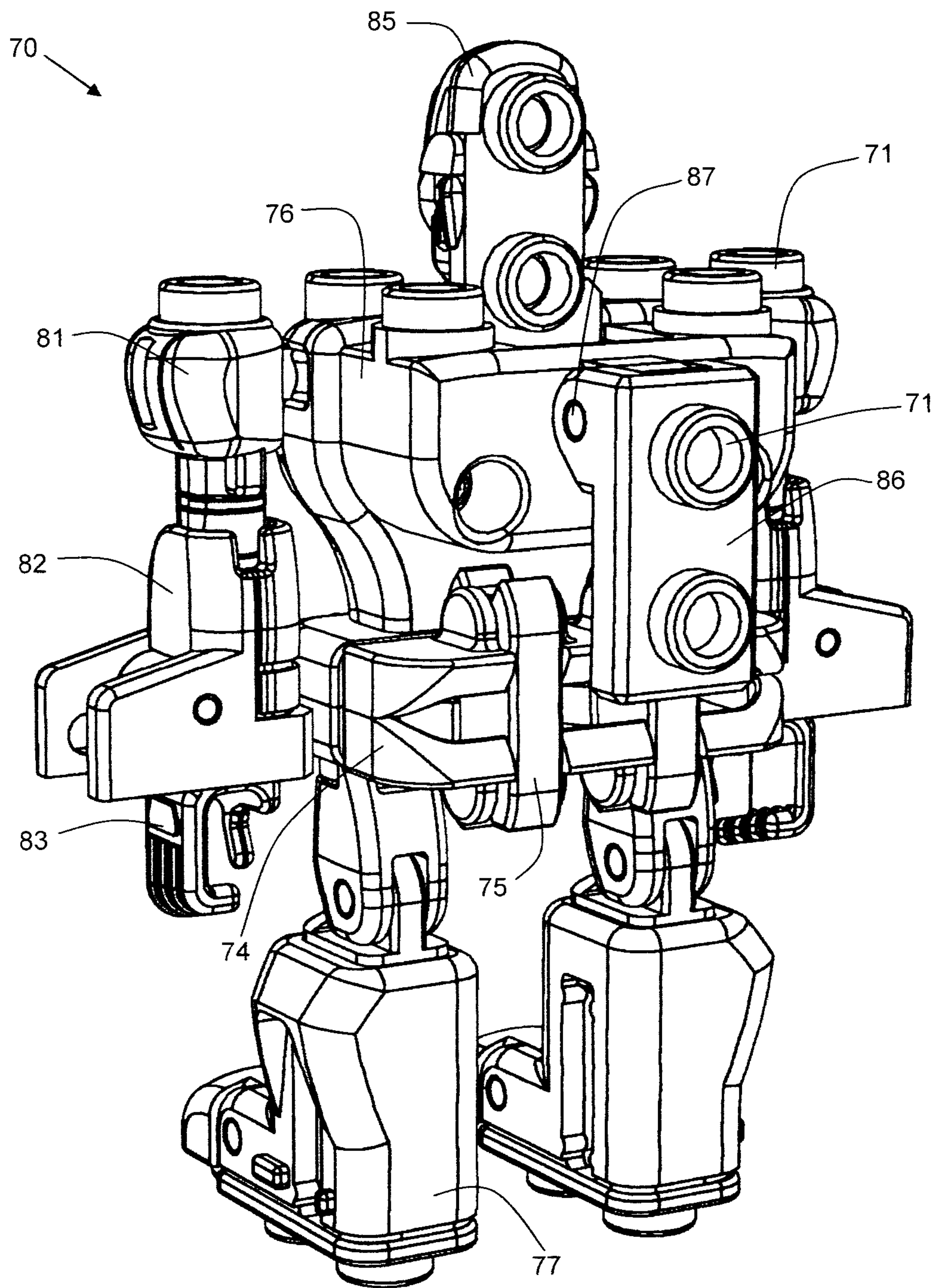


FIG. 11B

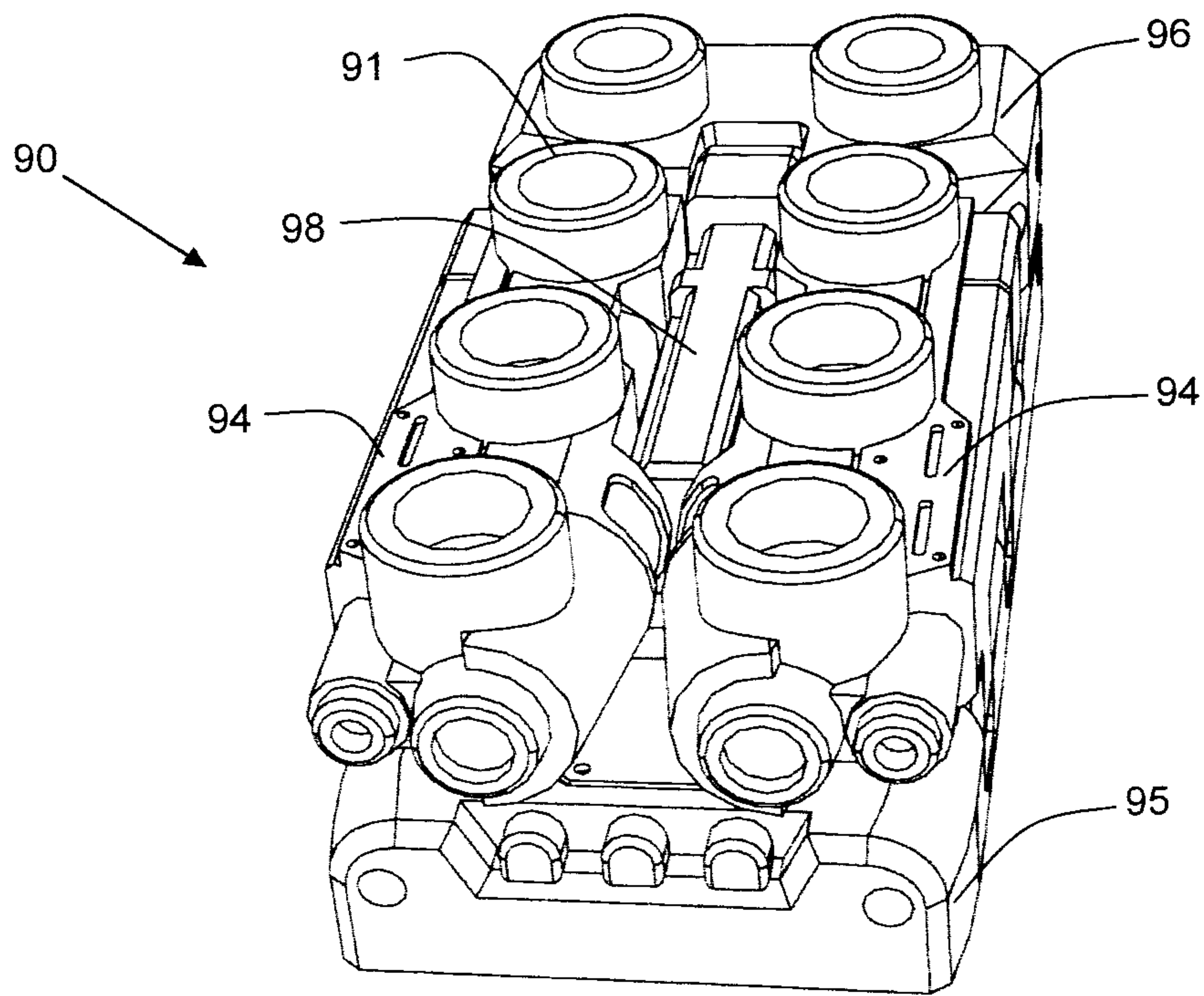


FIG. 12A

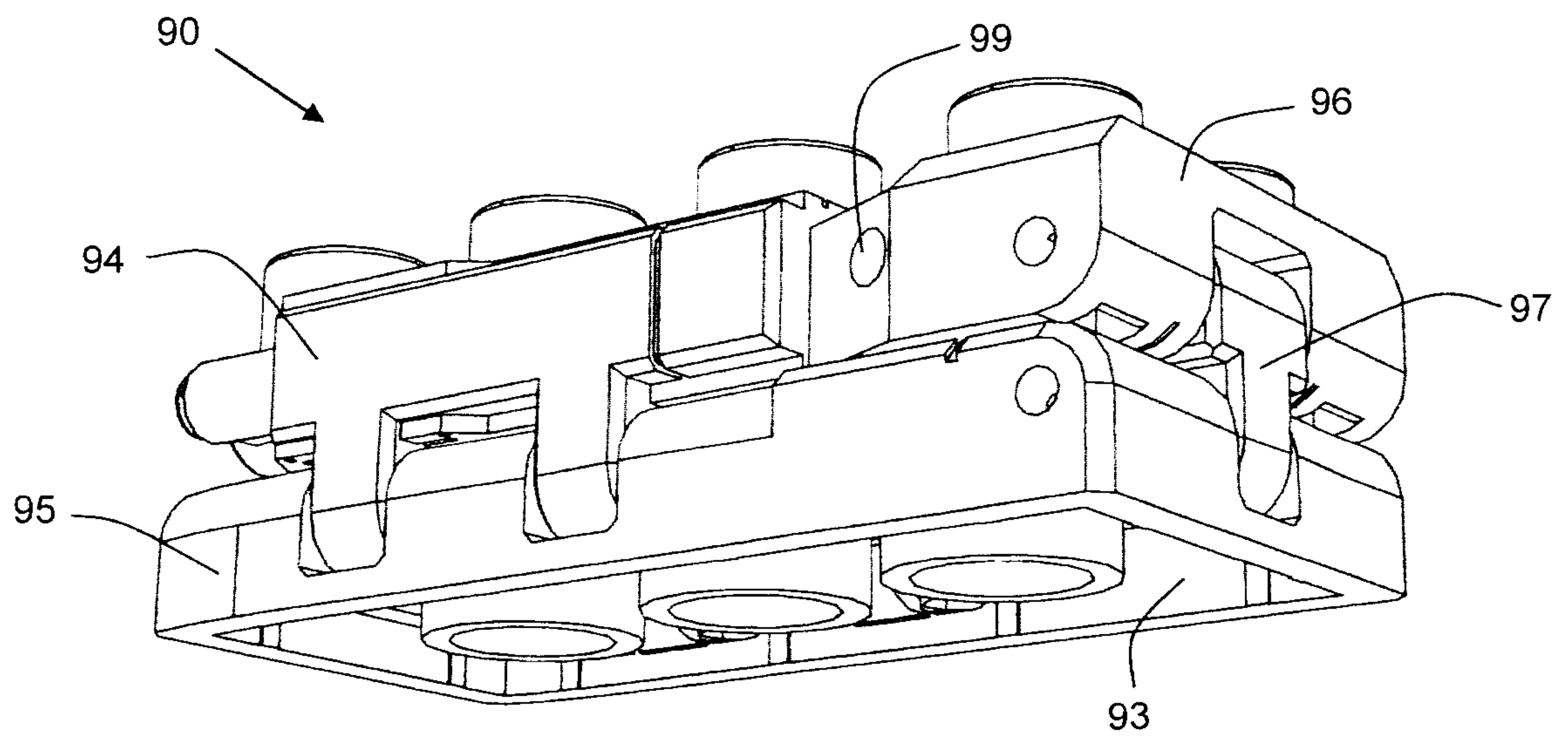


FIG. 12B

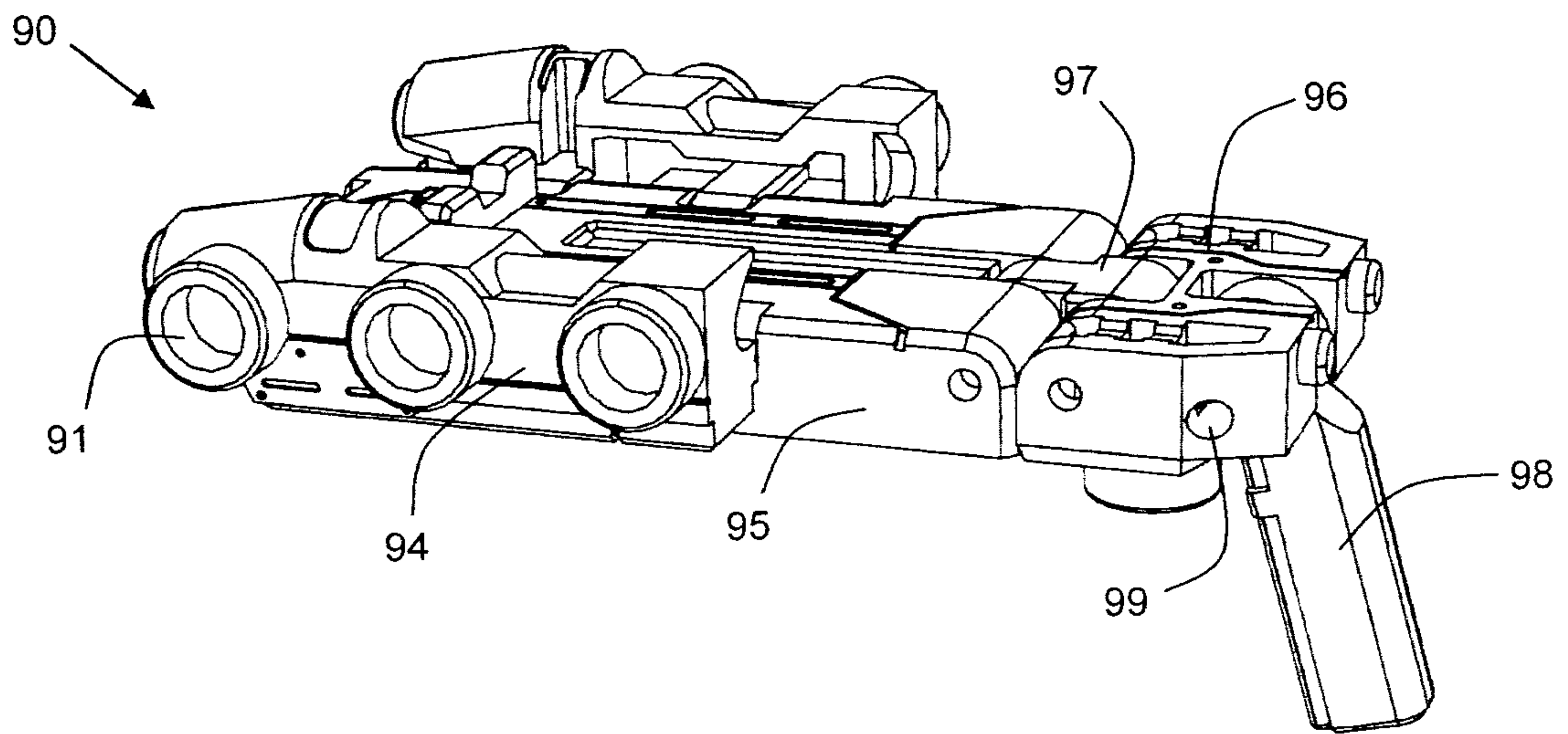


FIG. 13

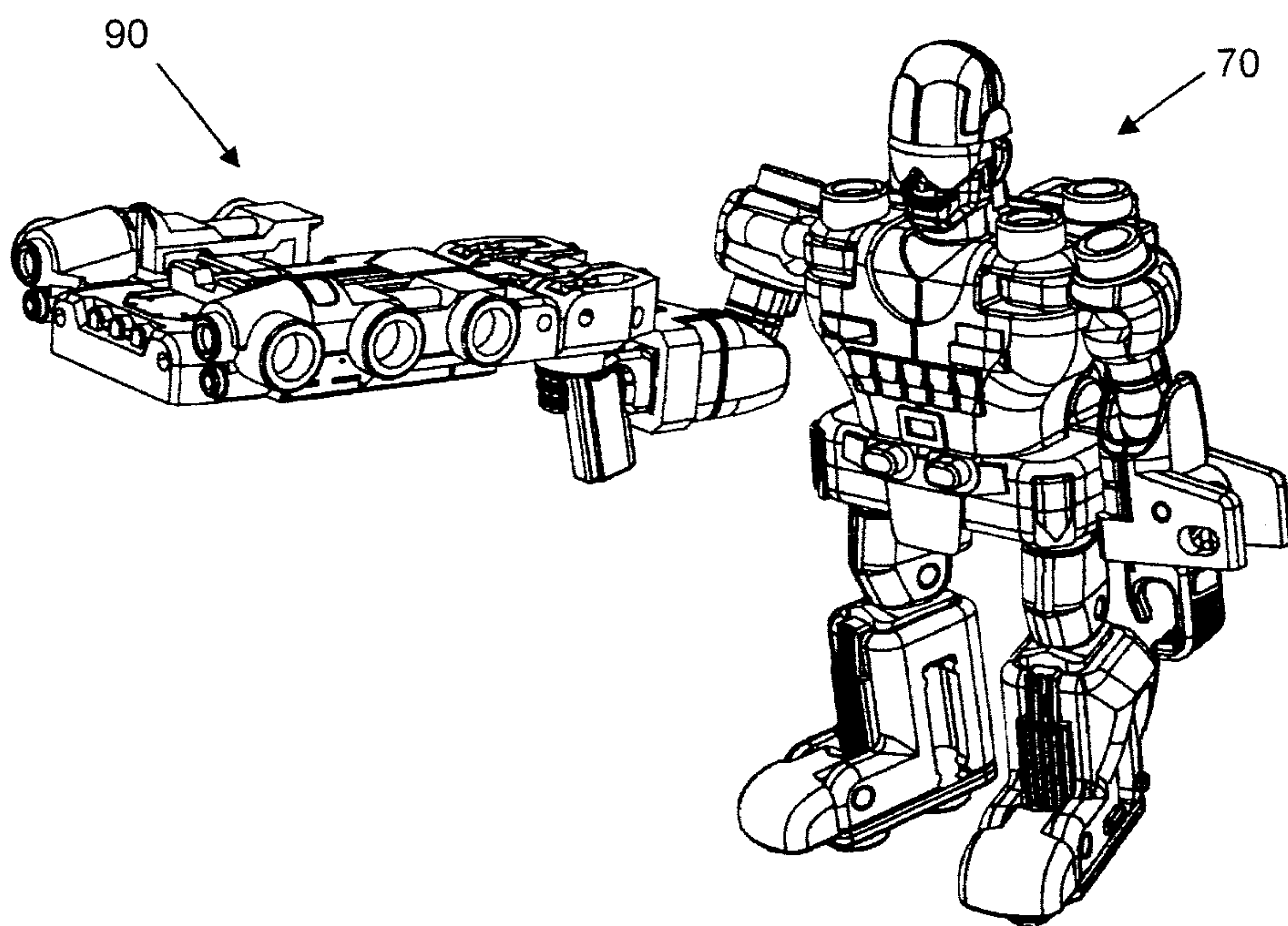
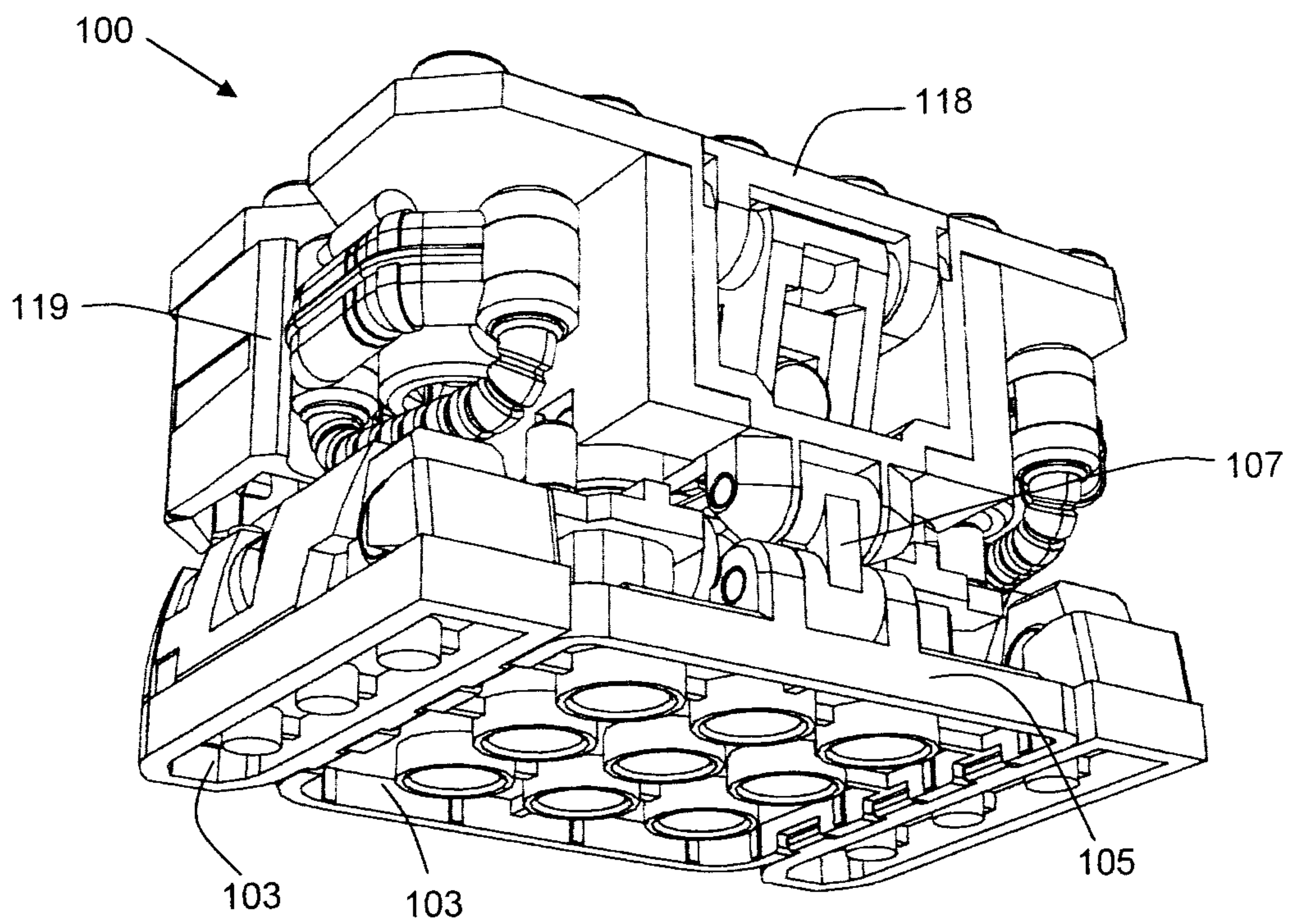
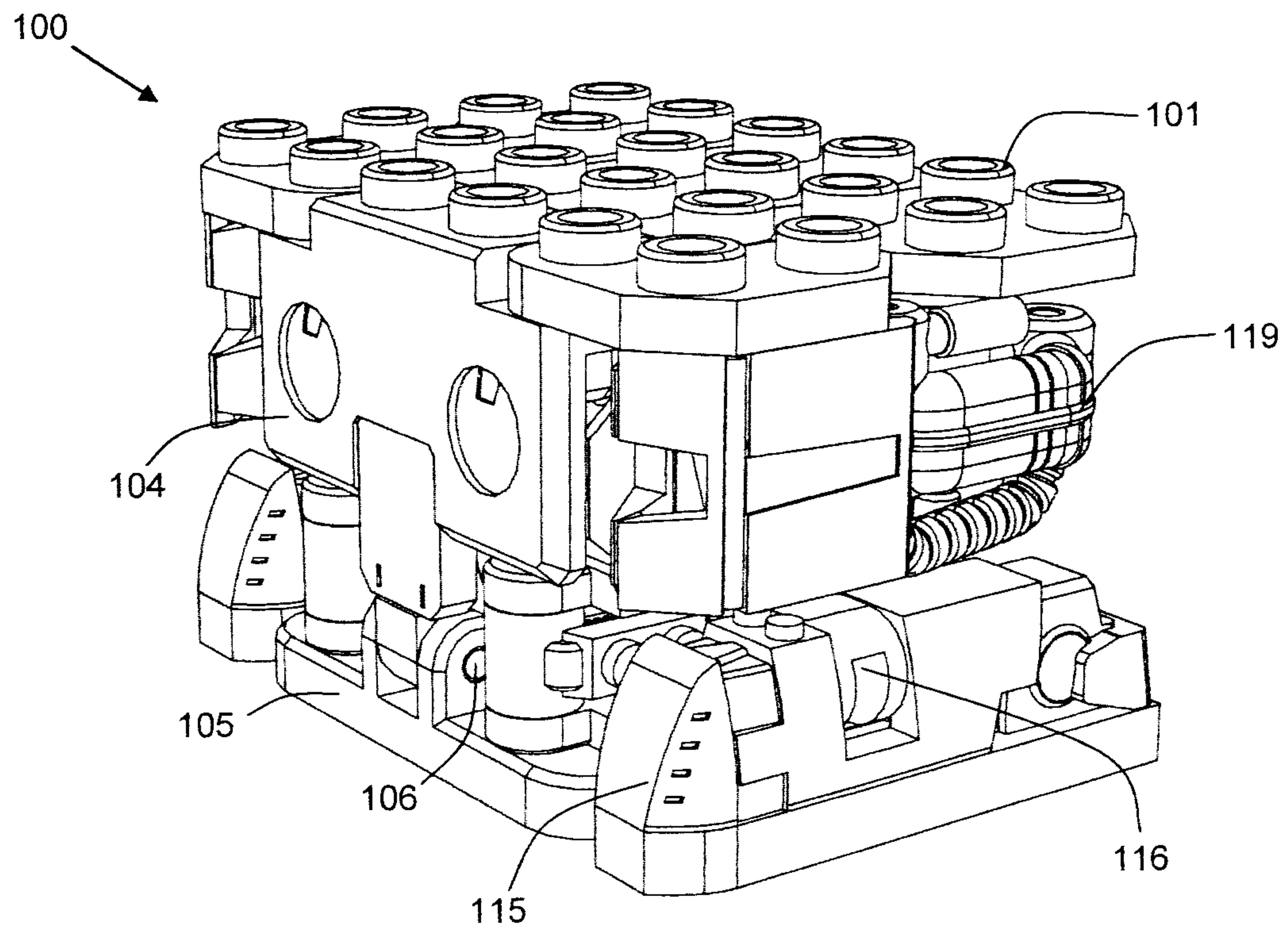


FIG. 14



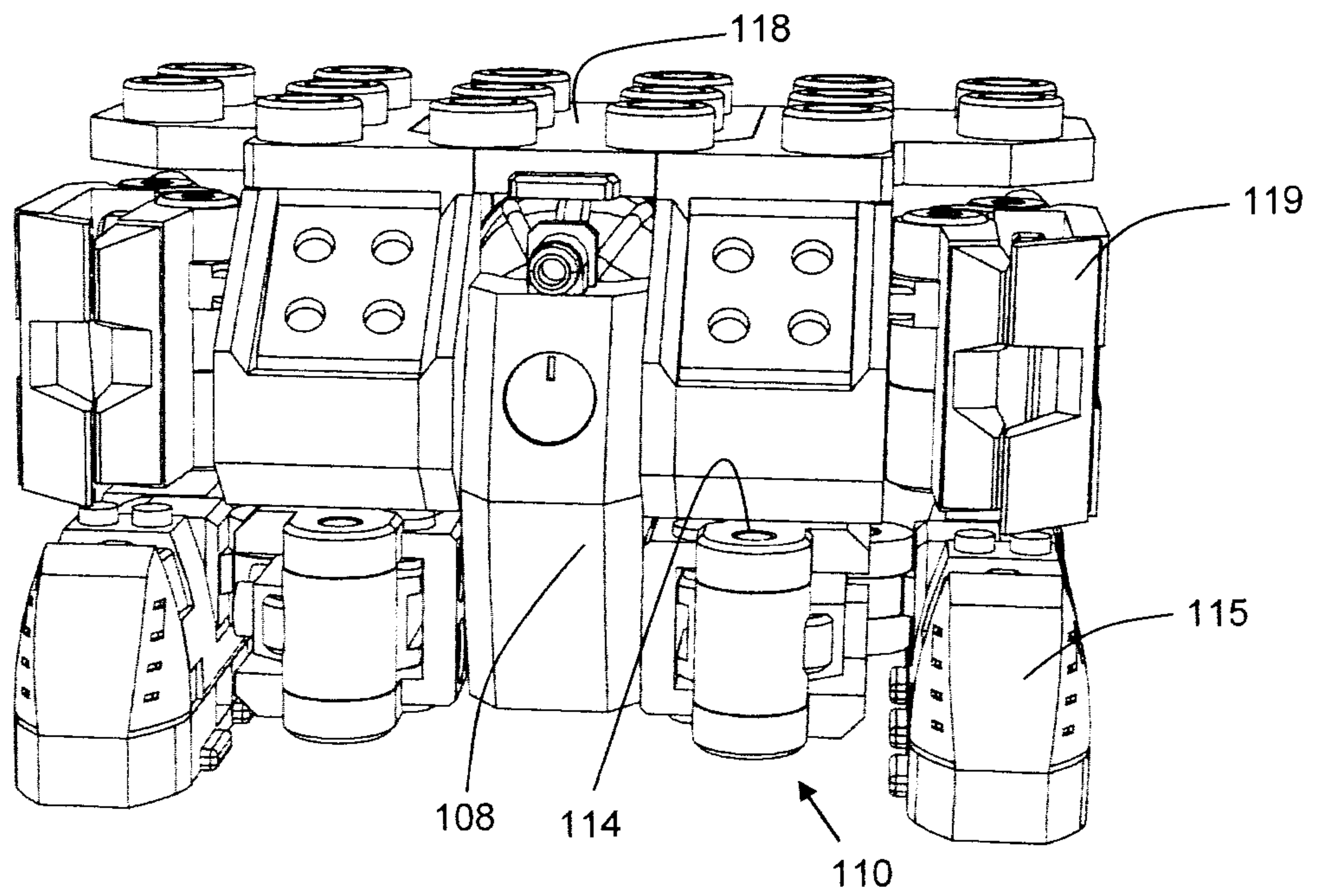


FIG. 16A

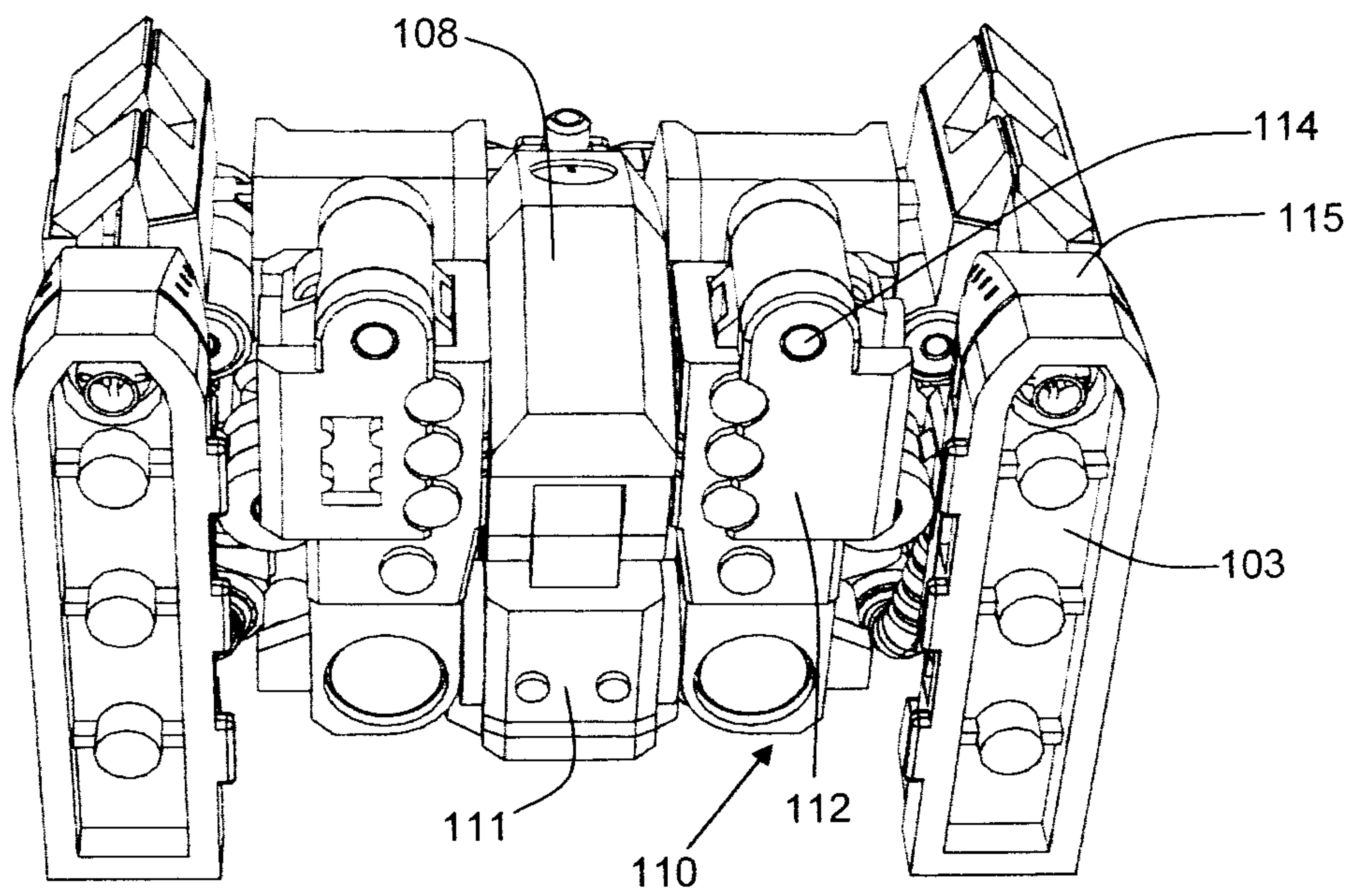


FIG. 16B

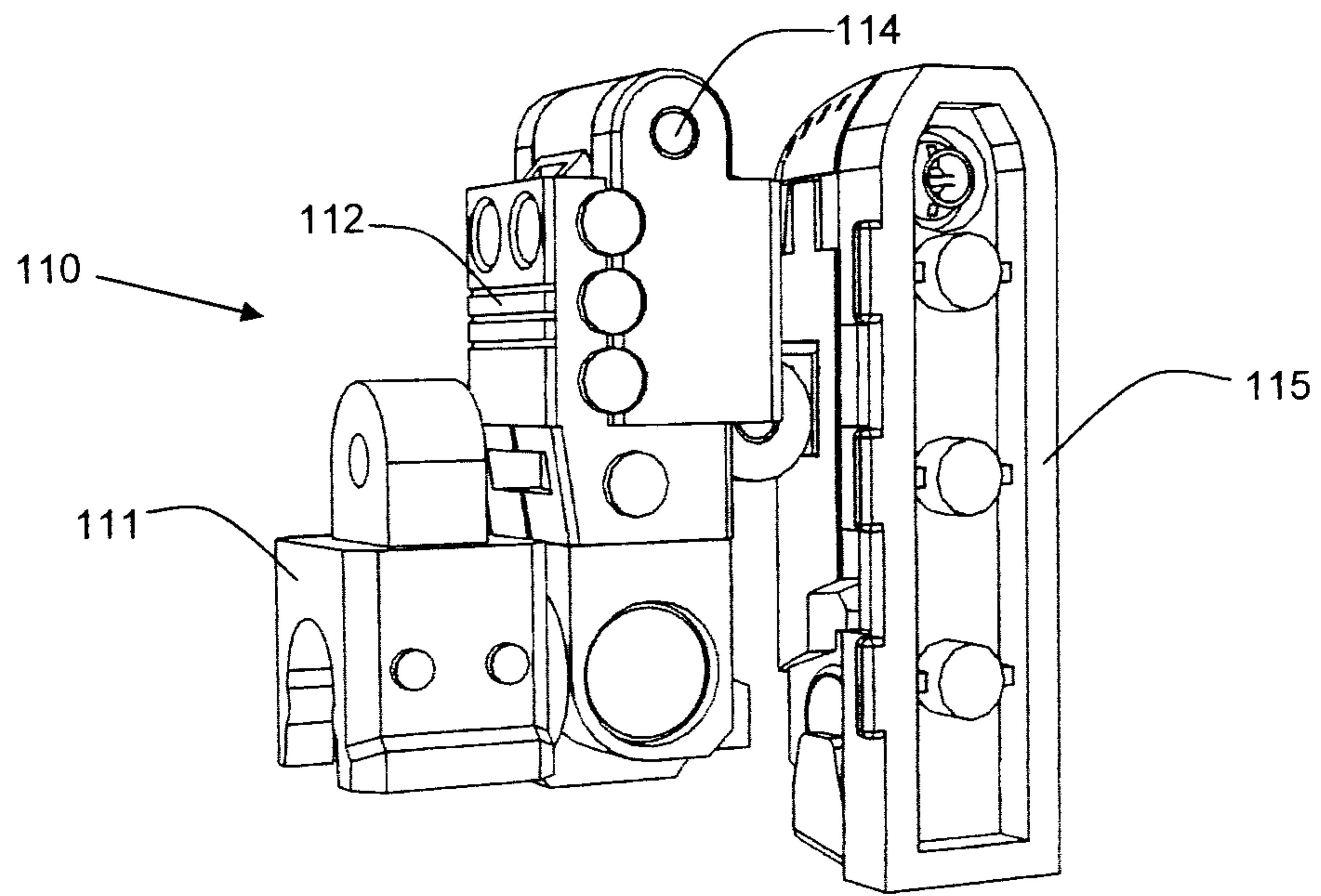


FIG. 17A

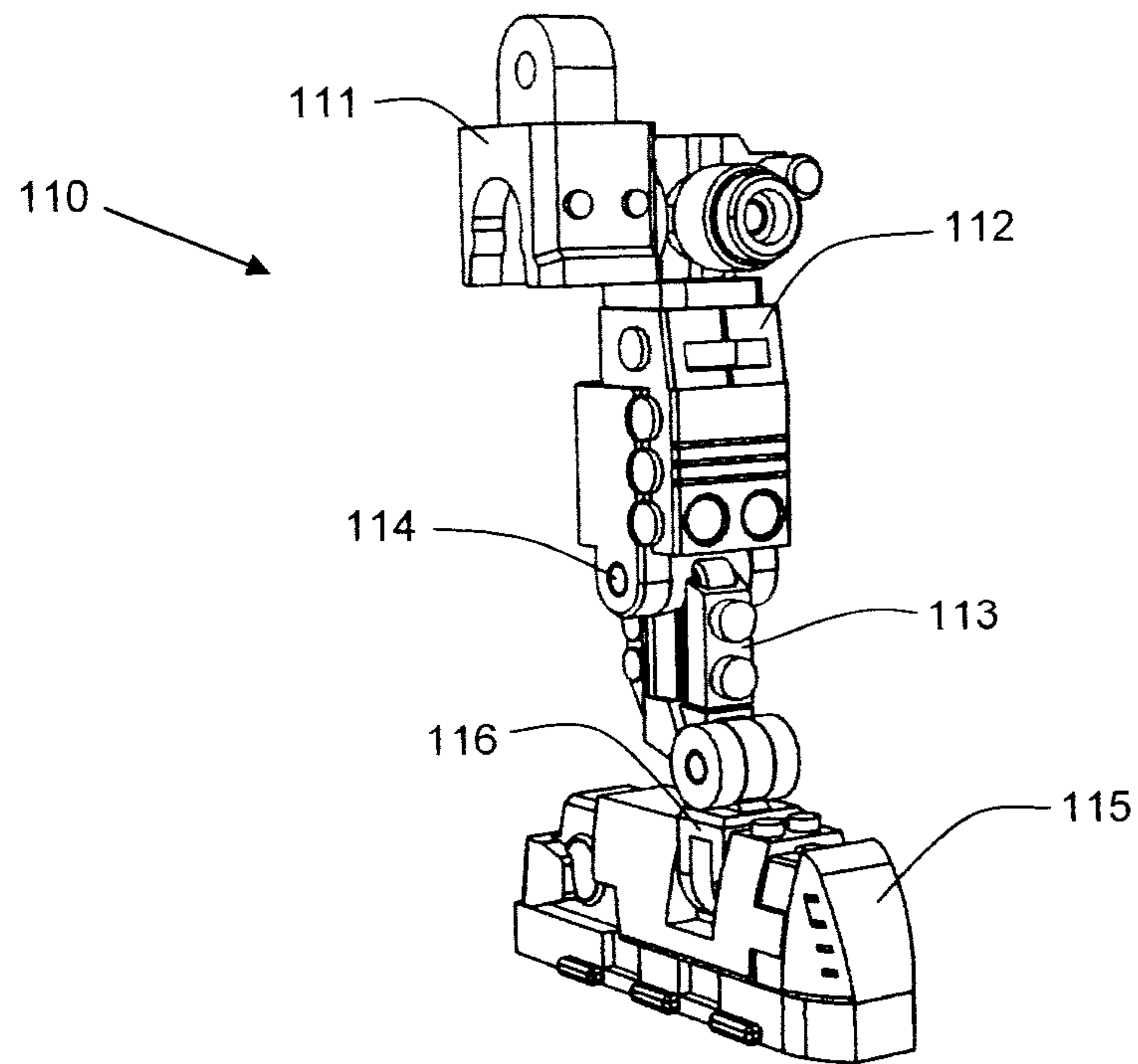


FIG. 17B

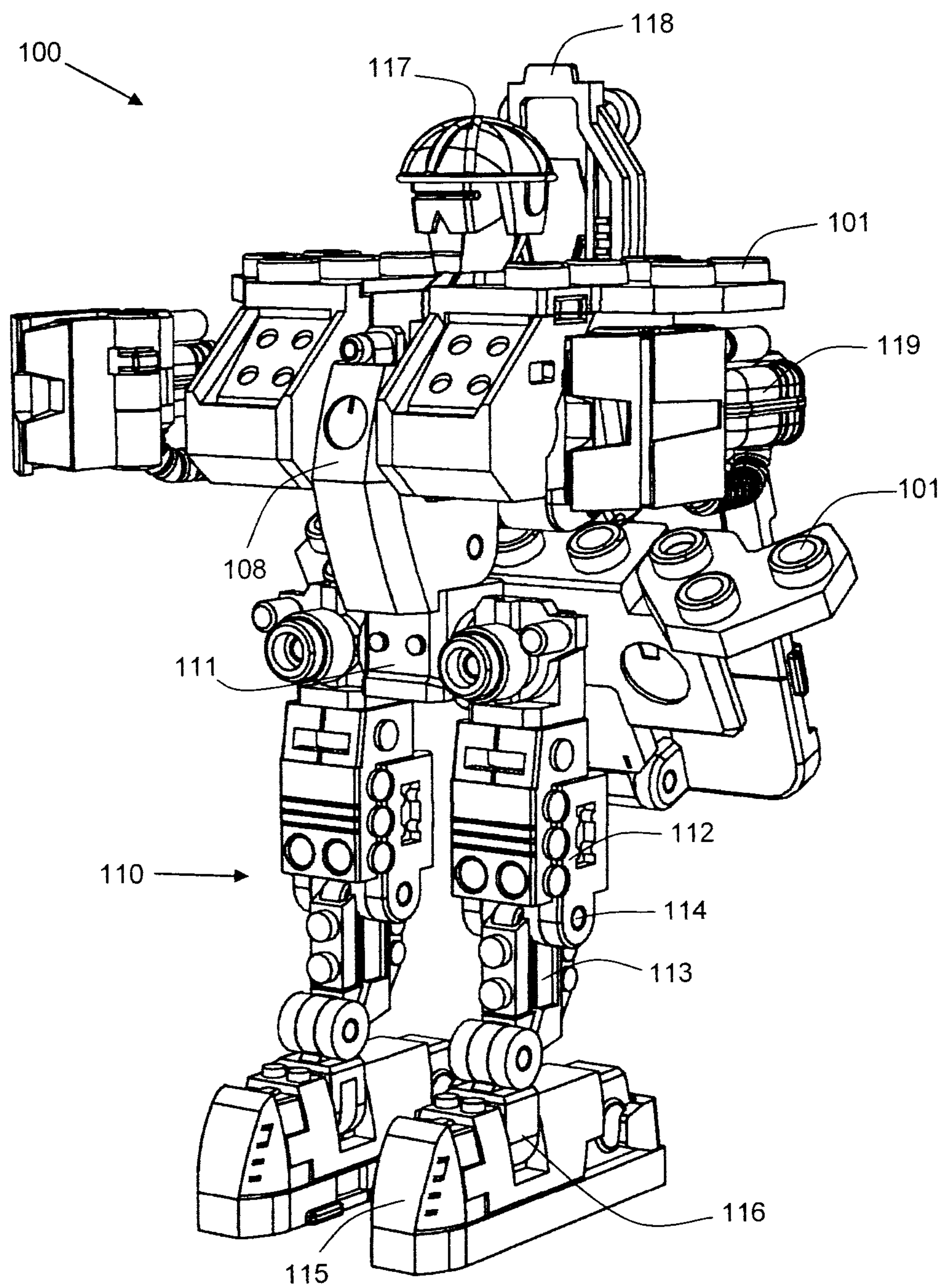


FIG. 18A

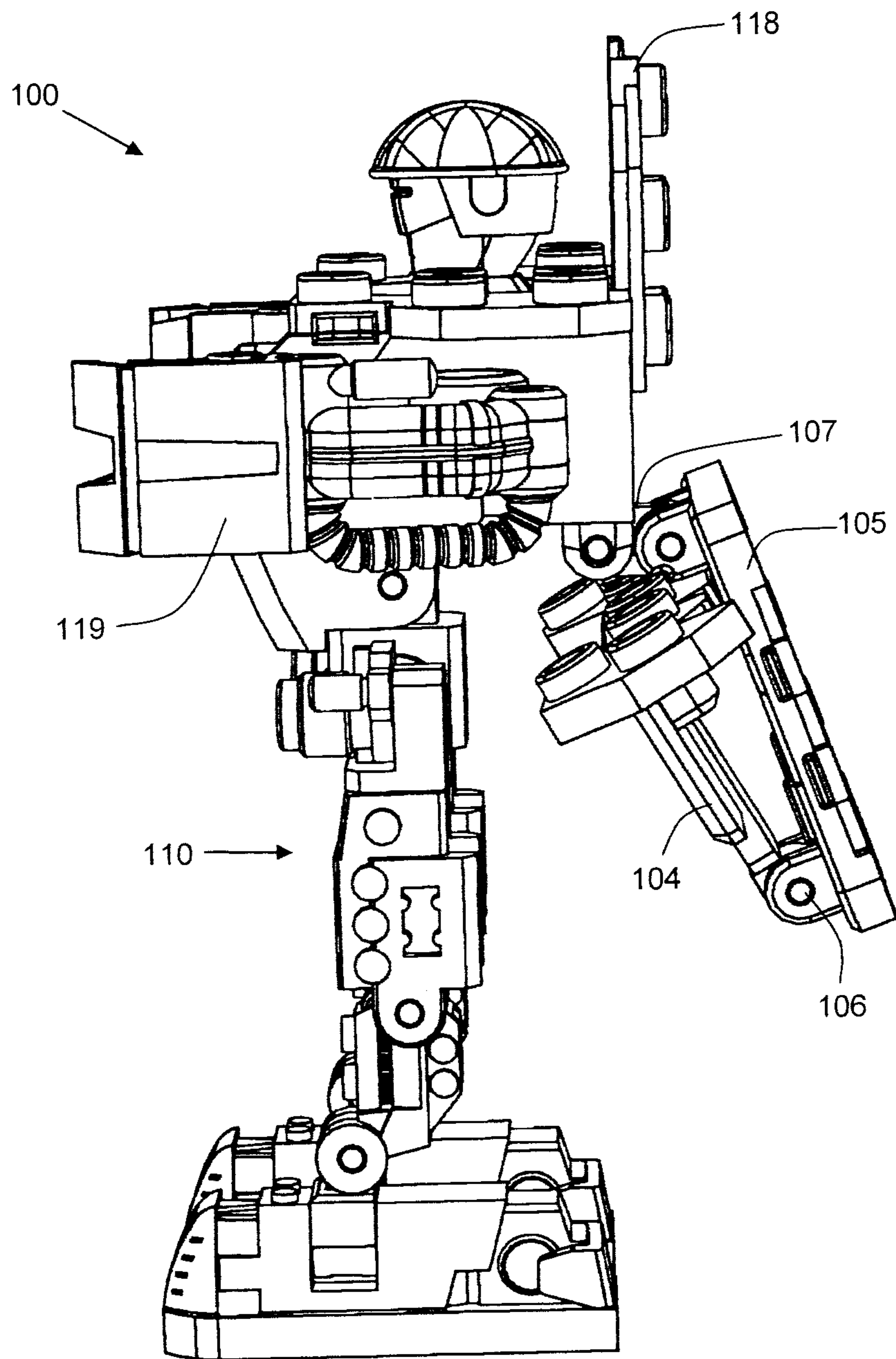


FIG. 18B

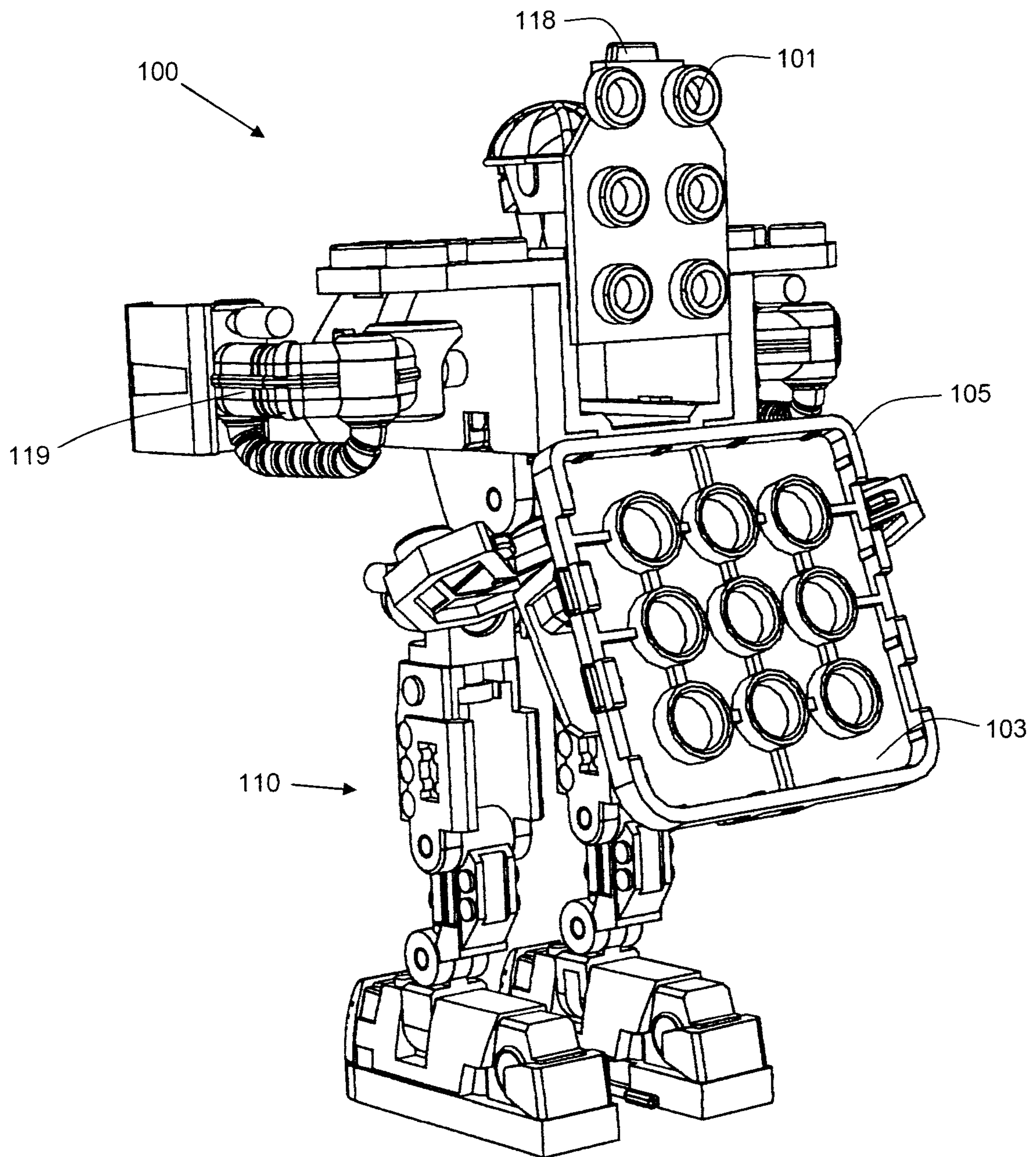


FIG. 18C

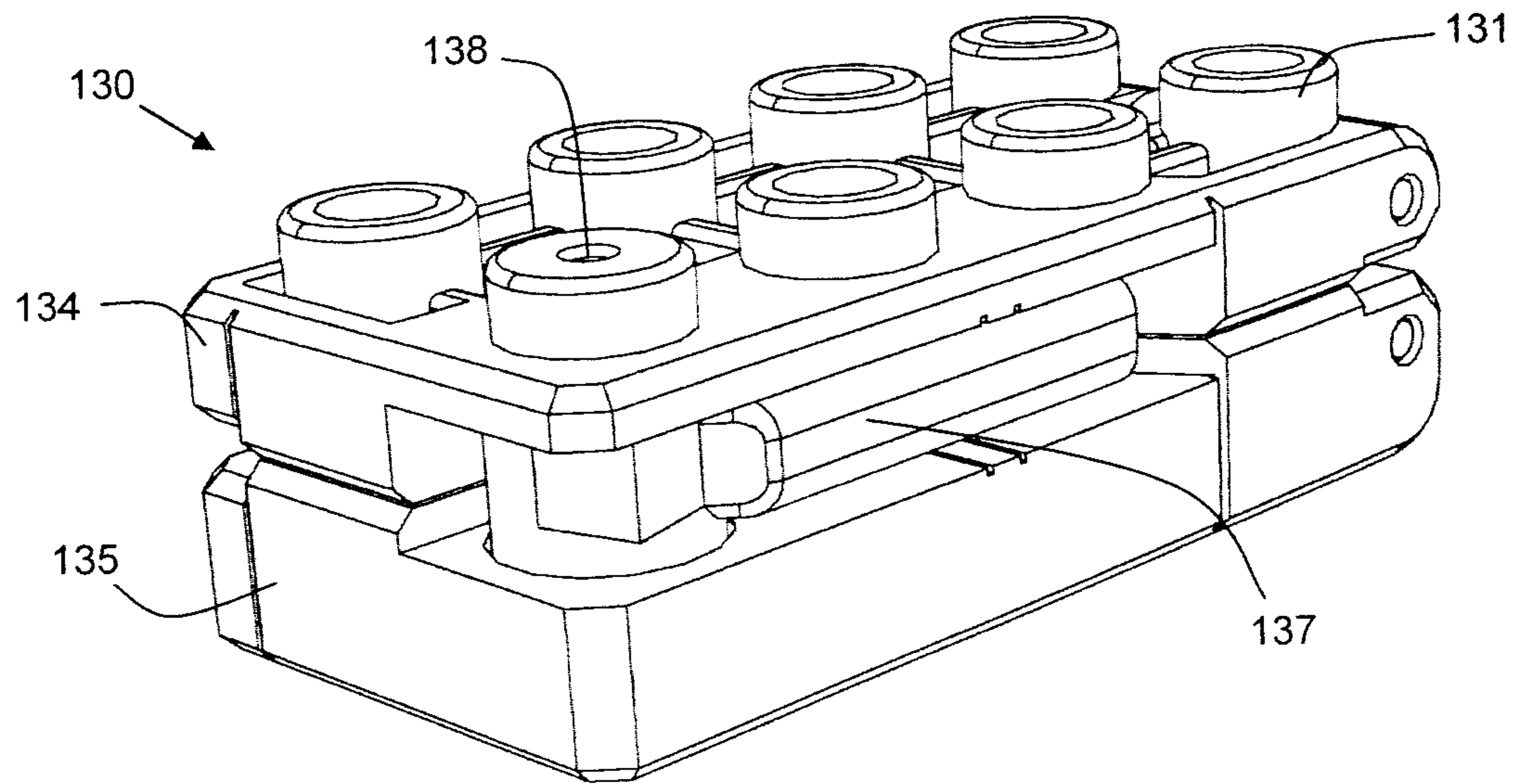


FIG. 19A

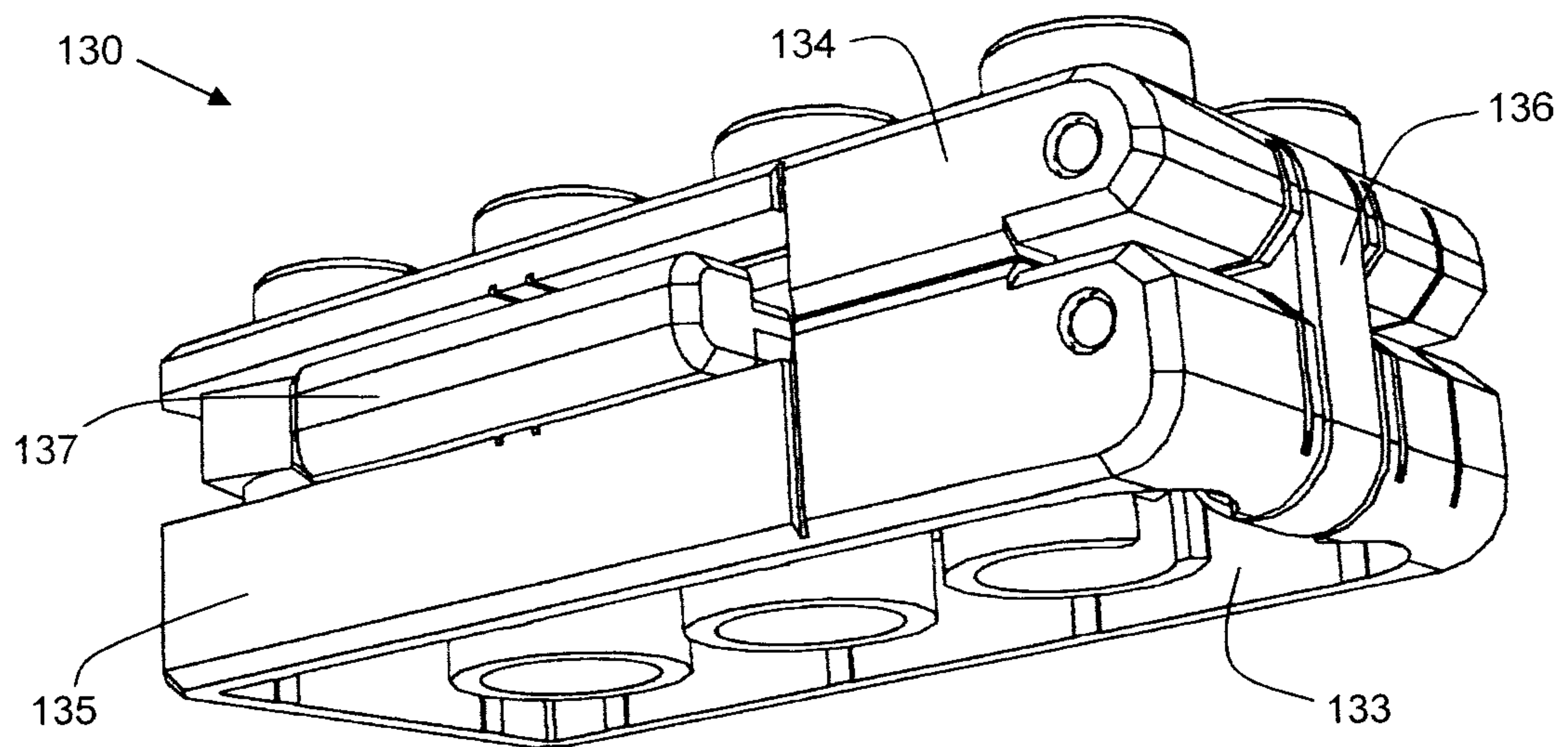


FIG. 19B

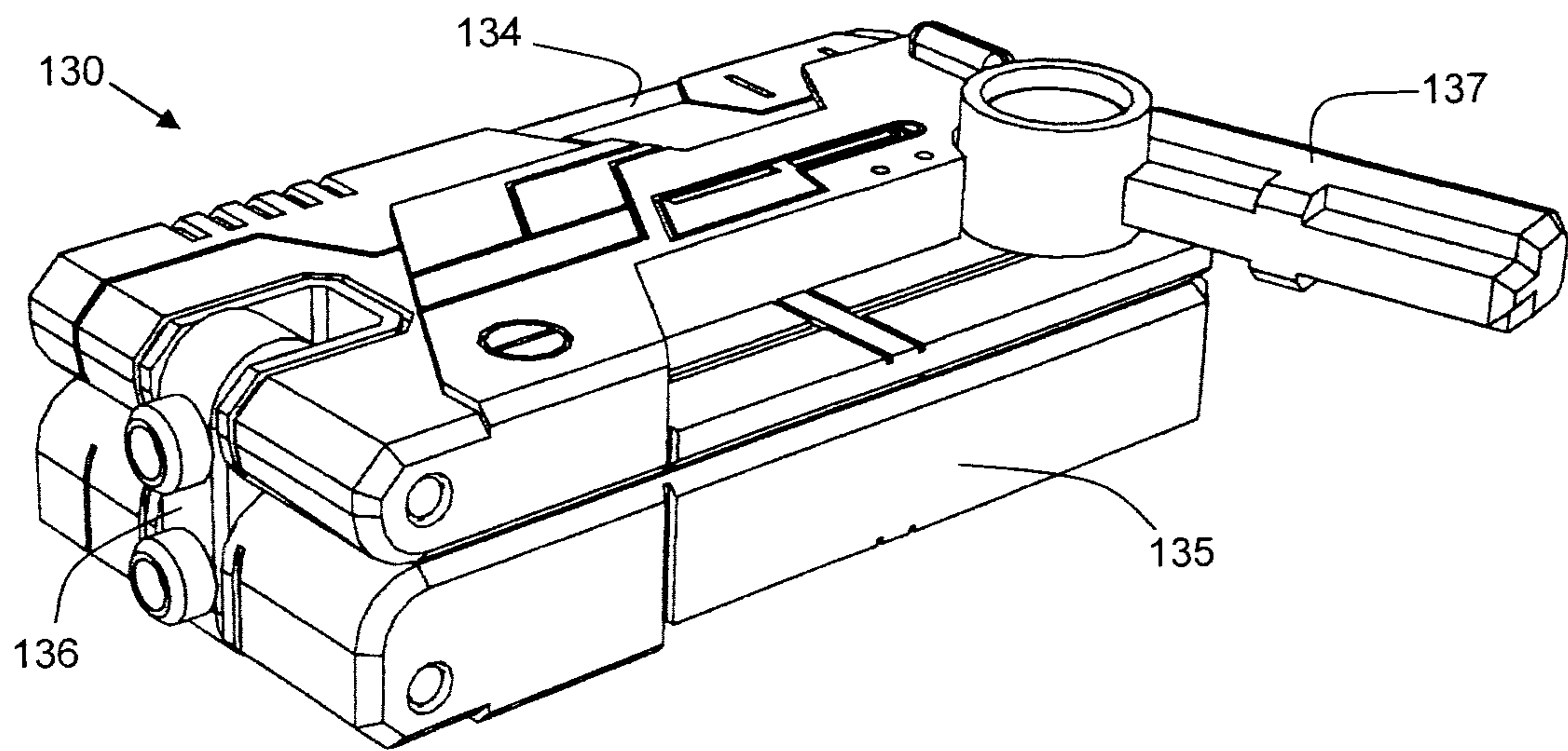


FIG. 20

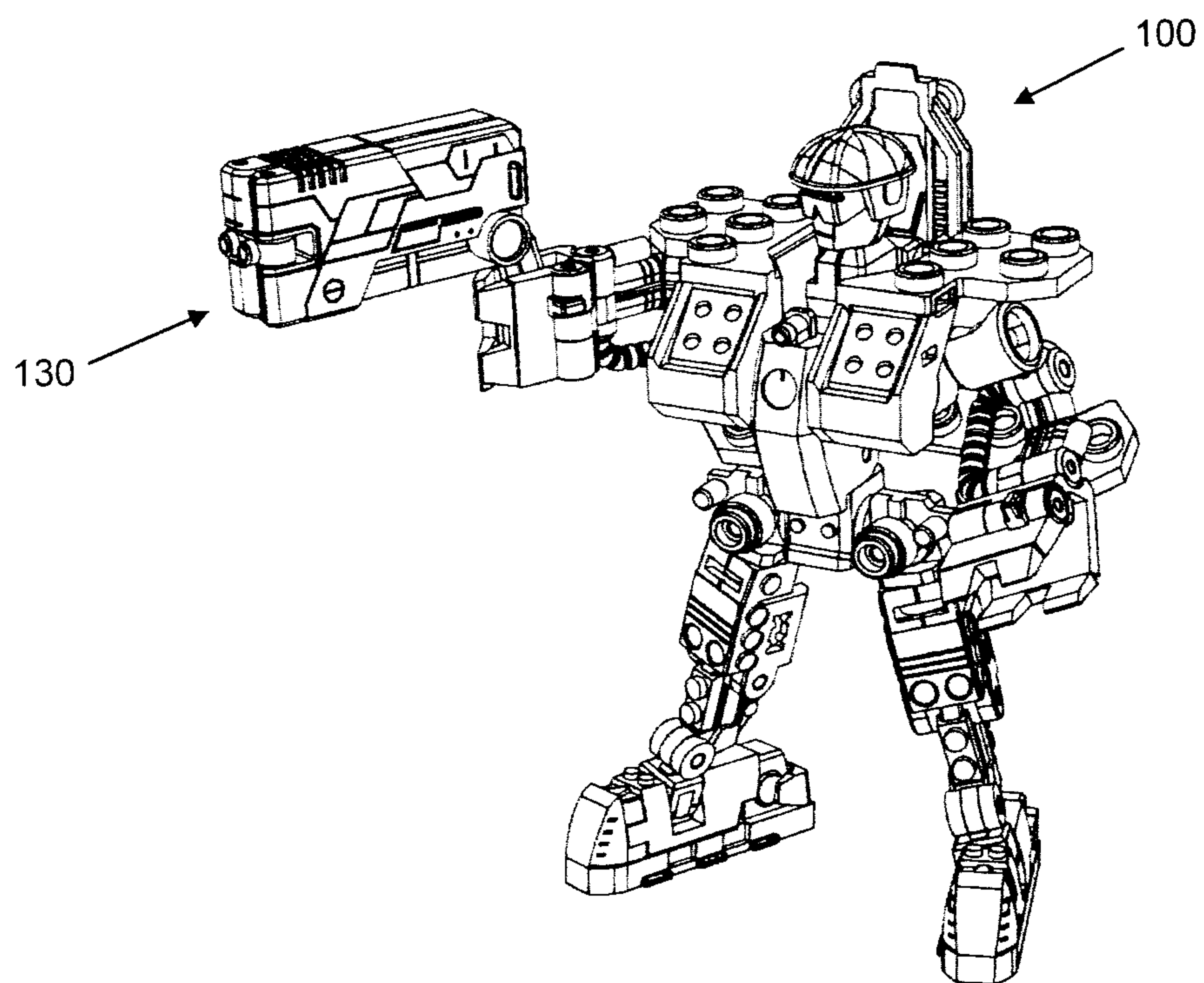


FIG. 21

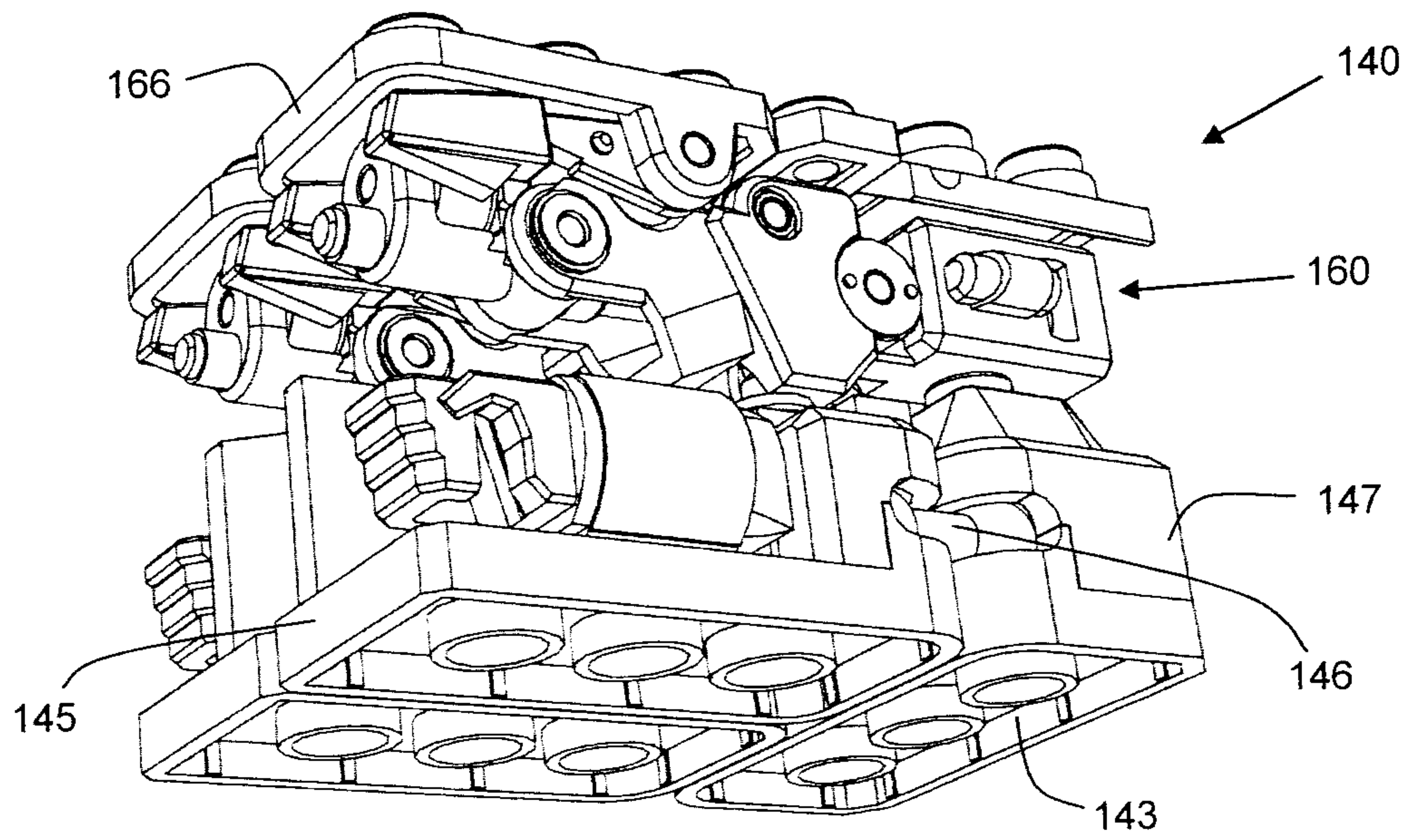


FIG. 22A

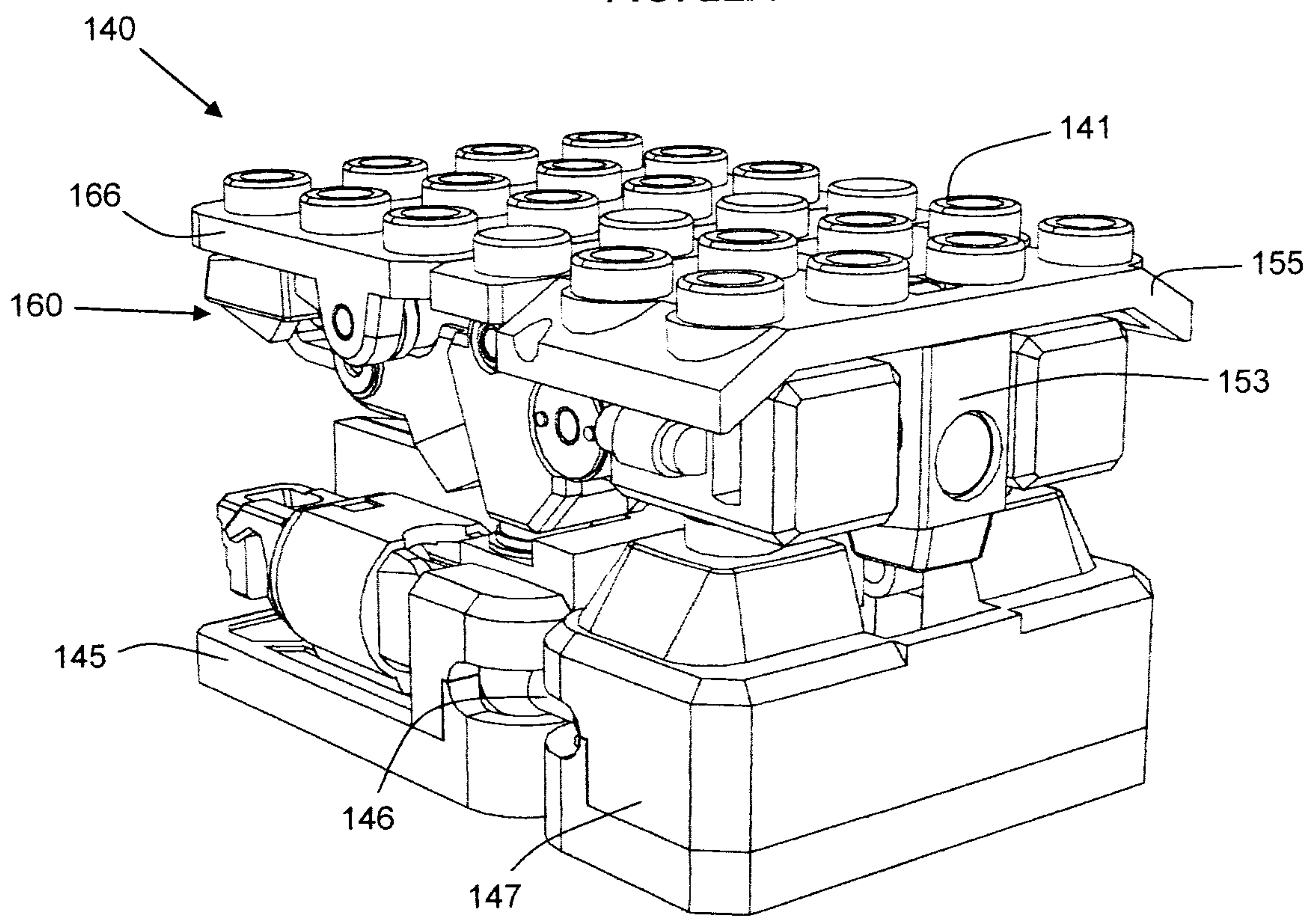


FIG. 22B

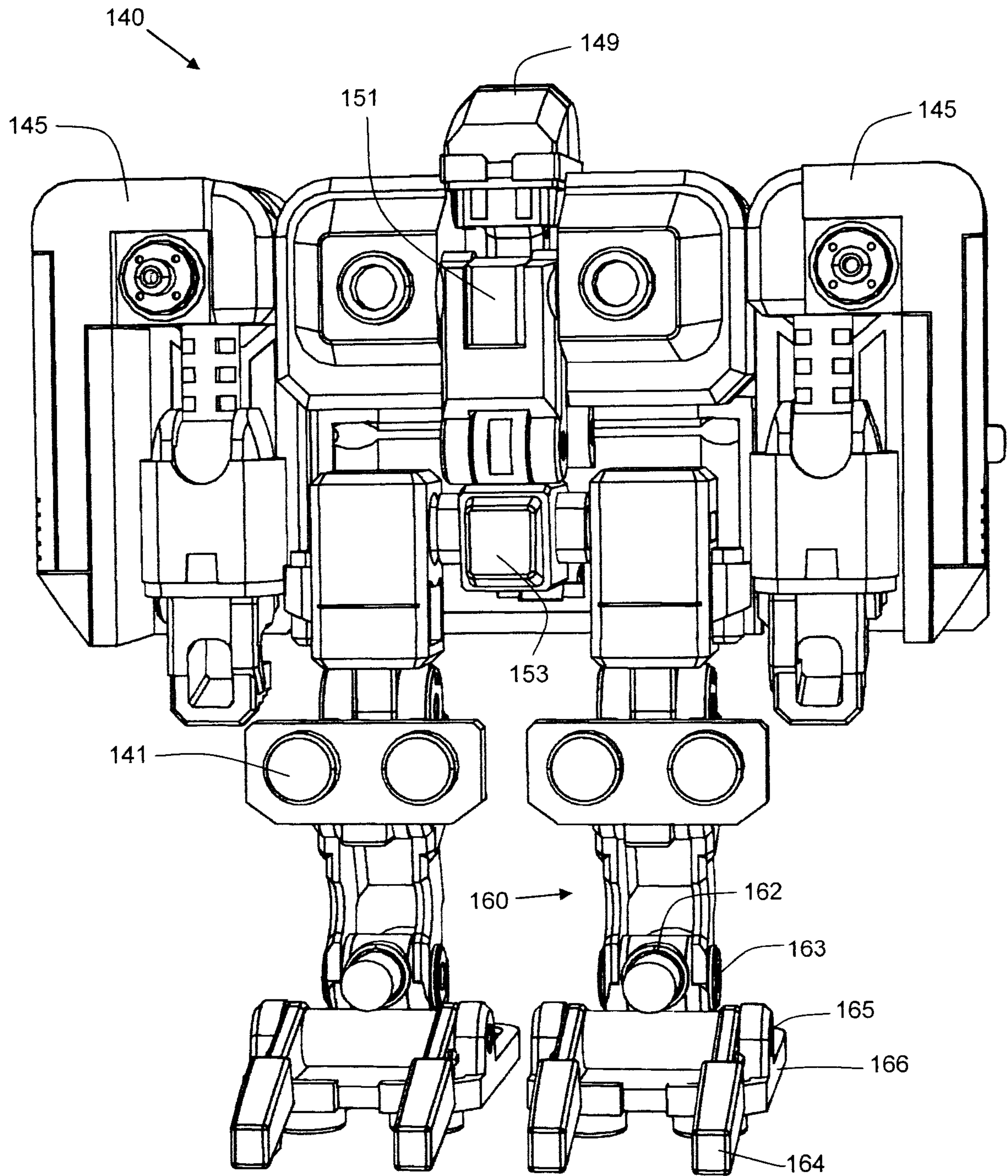


FIG. 23A

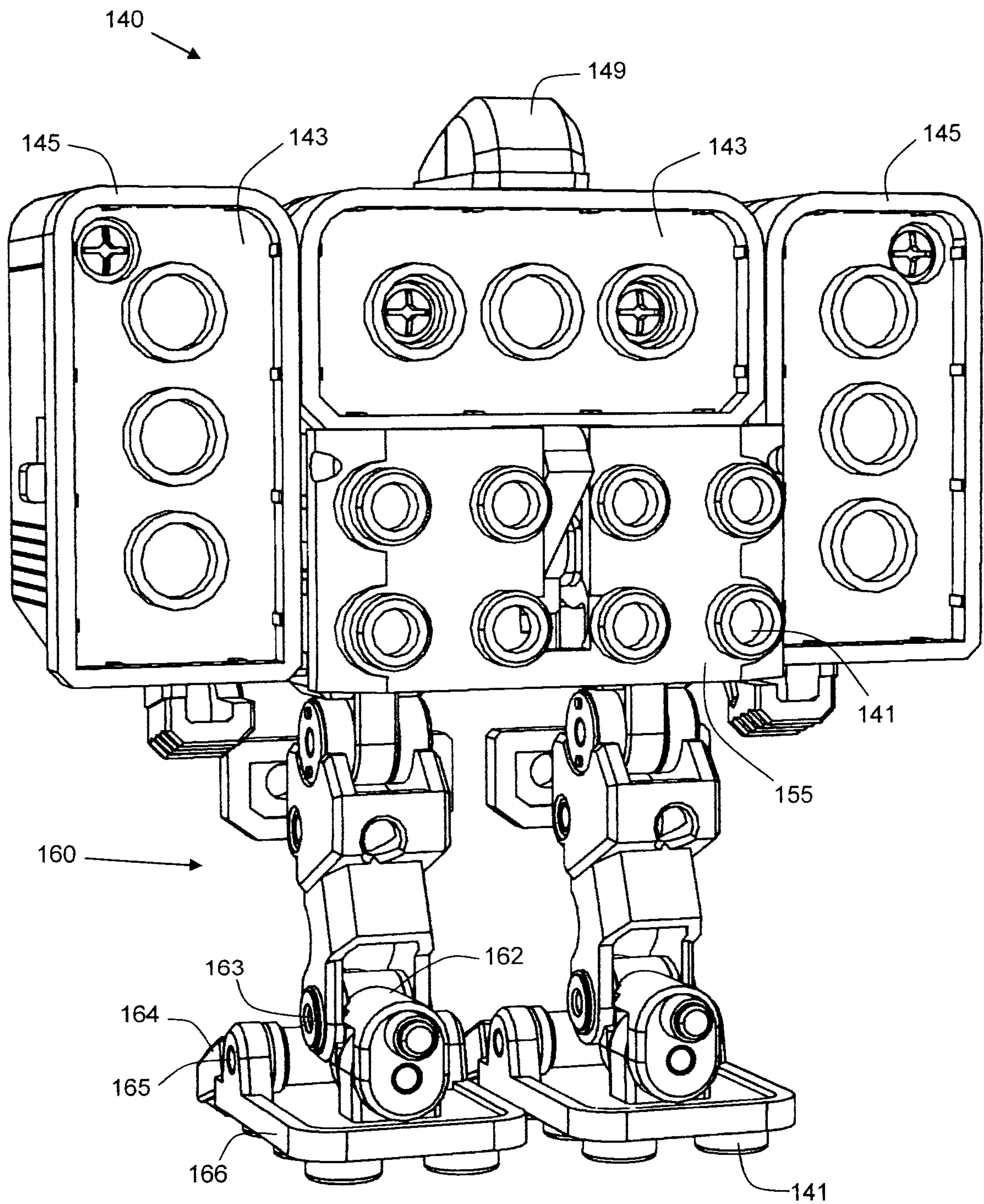
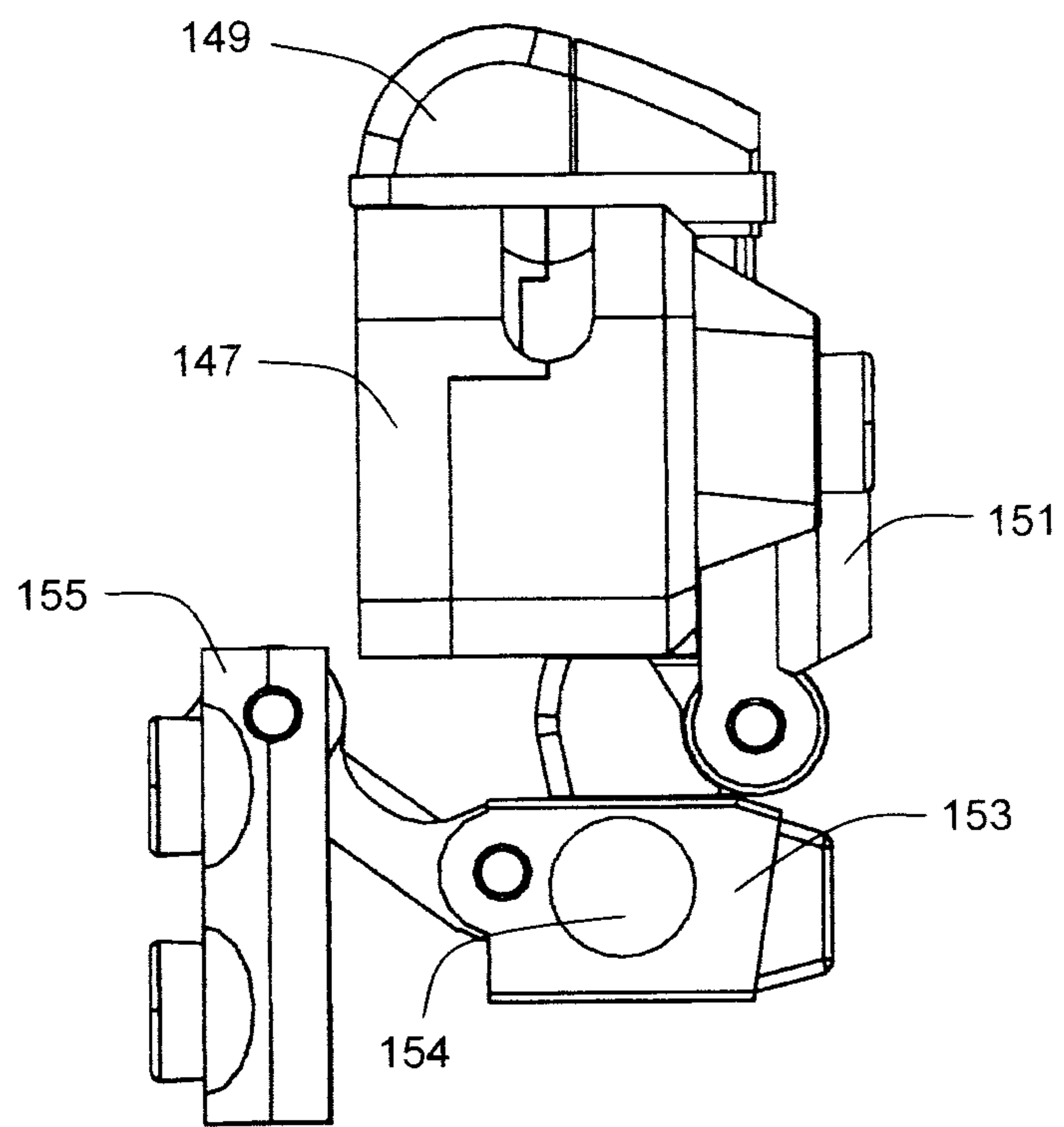
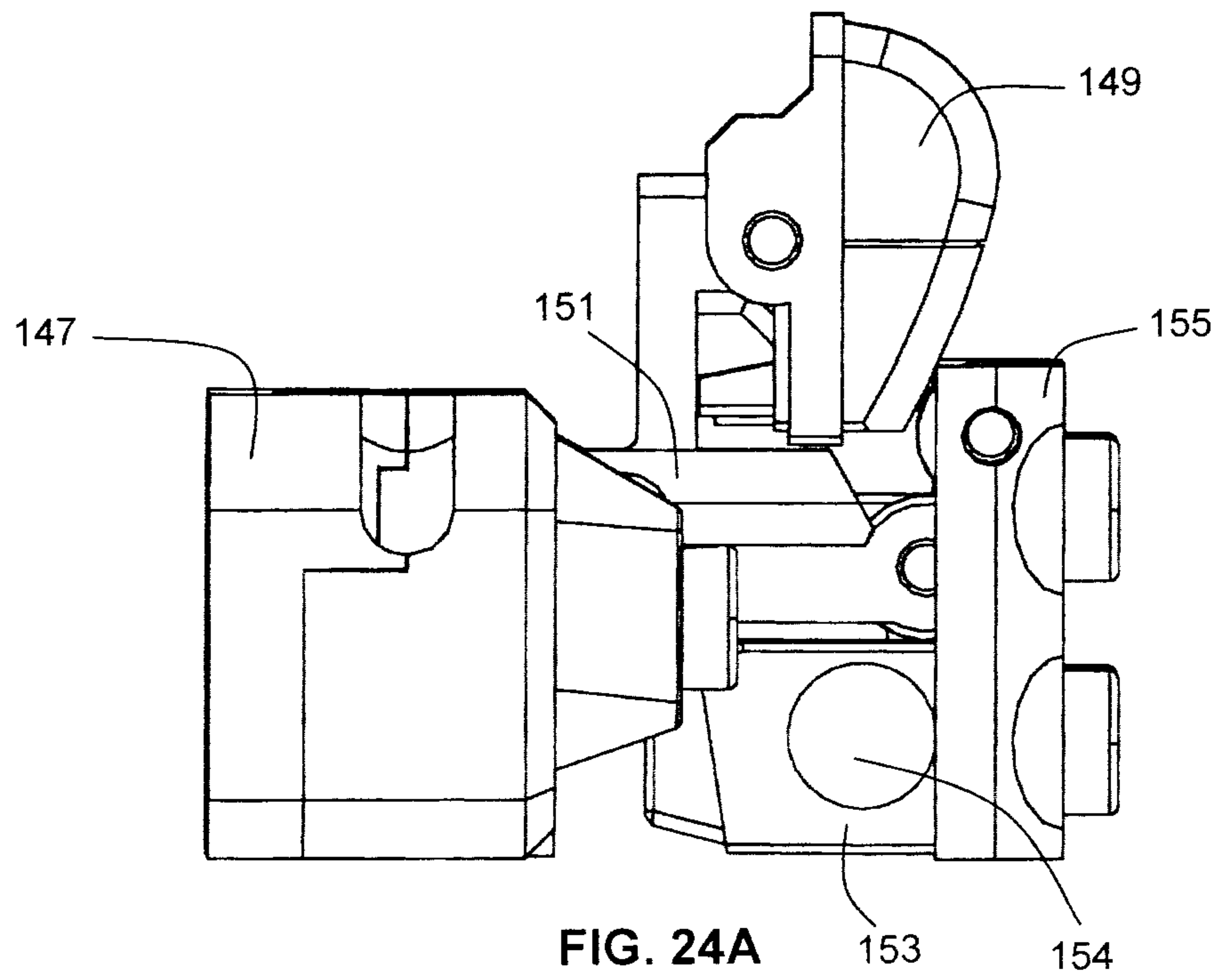


FIG. 23B



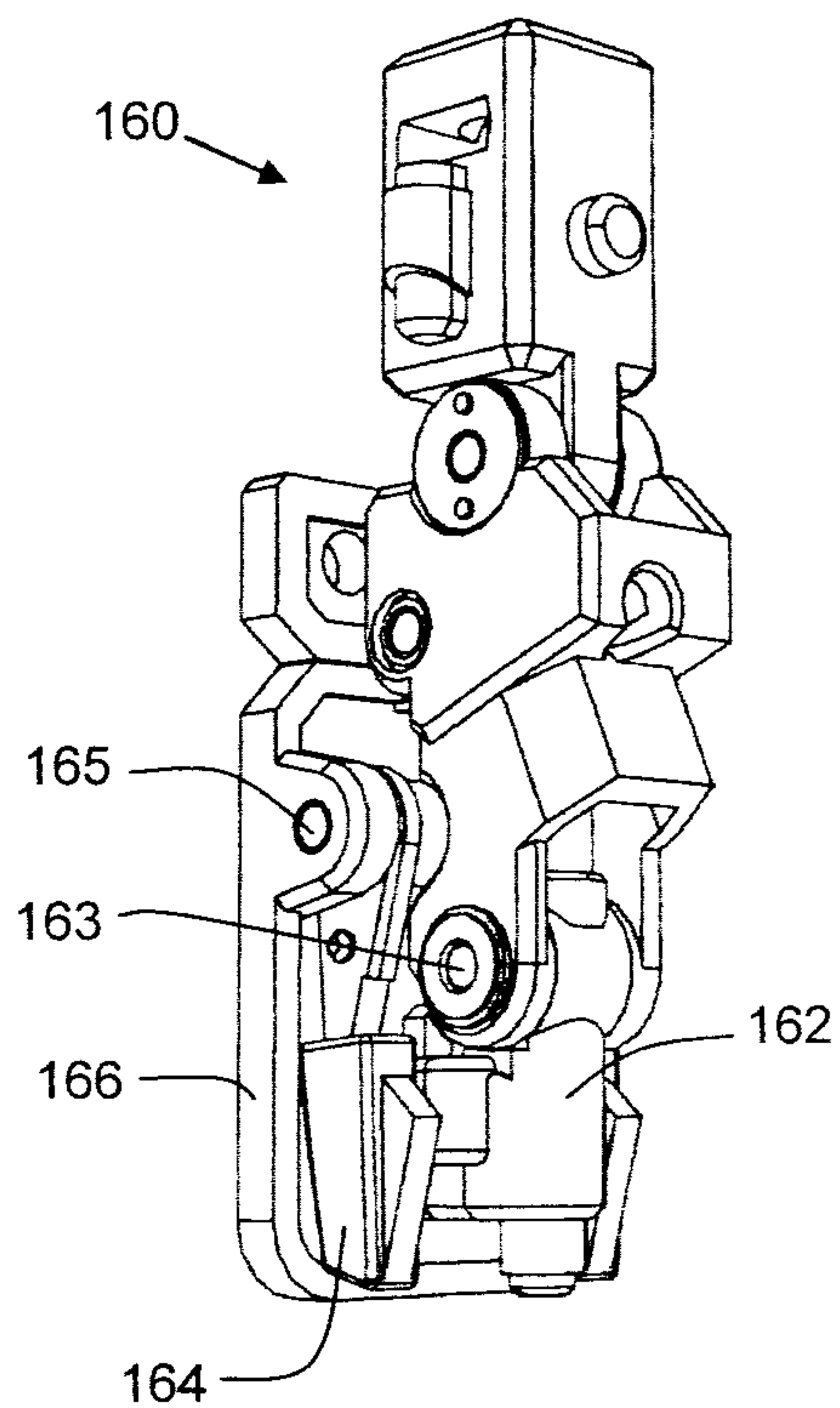


FIG. 25A

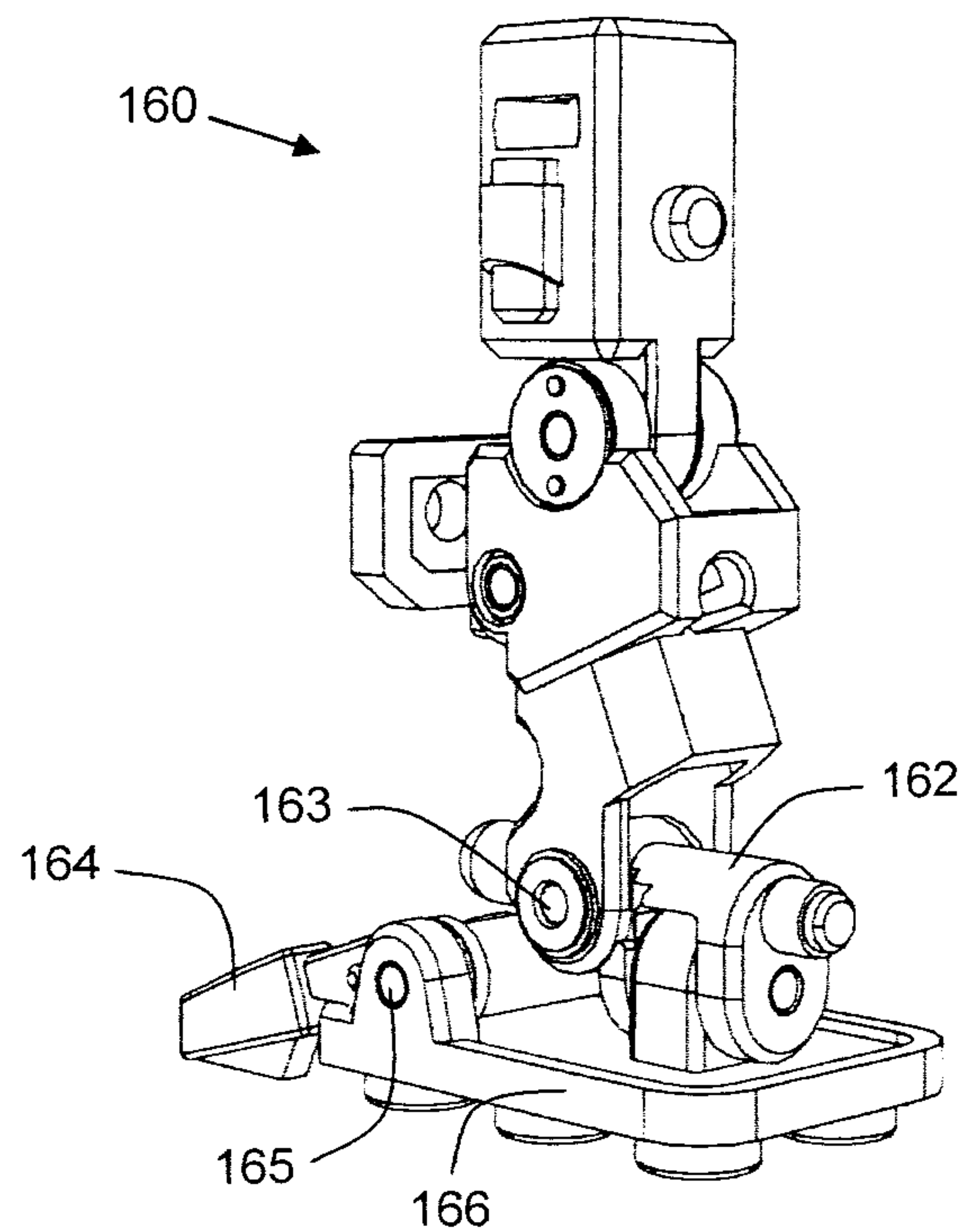


FIG. 25B

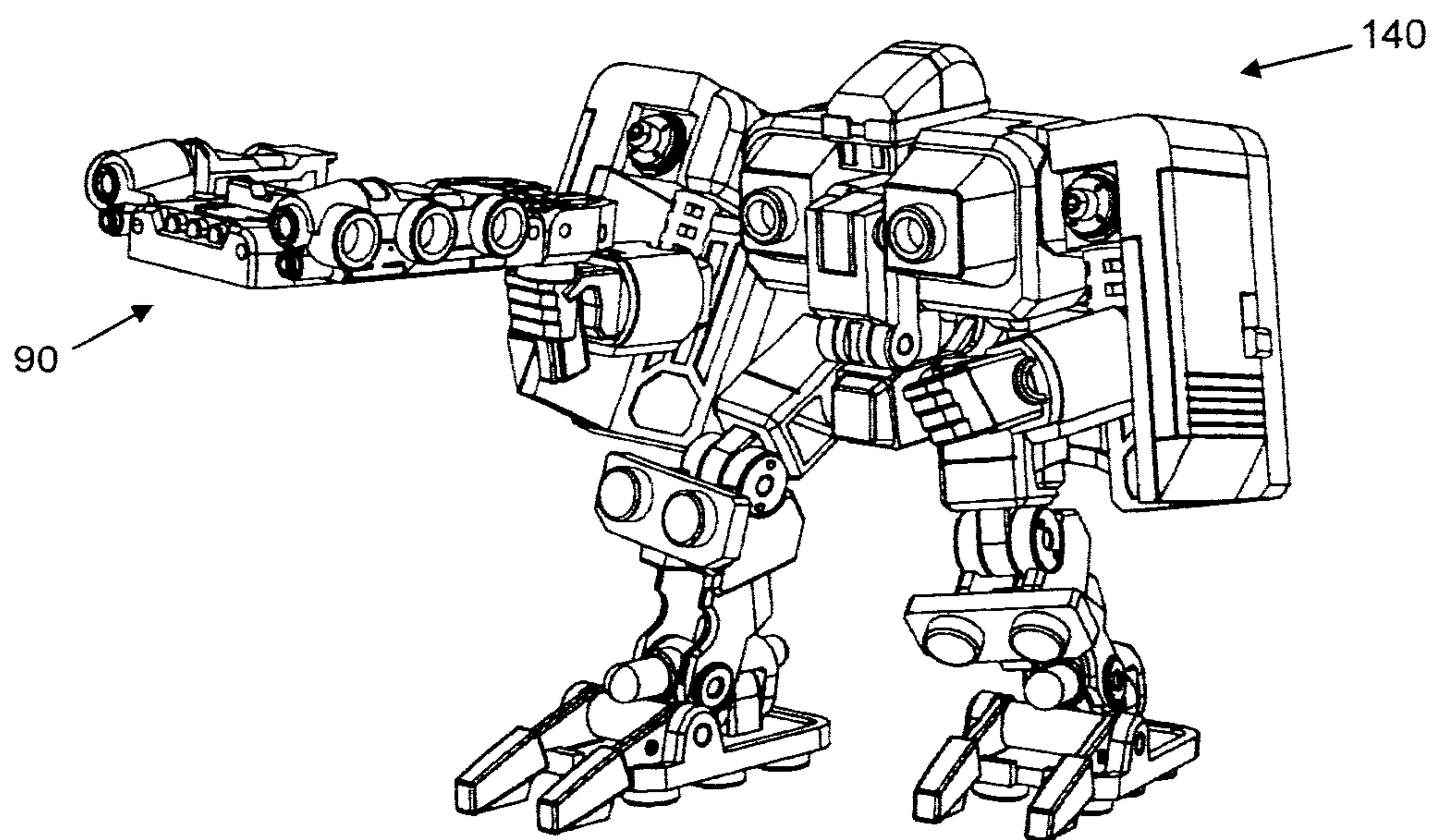


FIG. 26

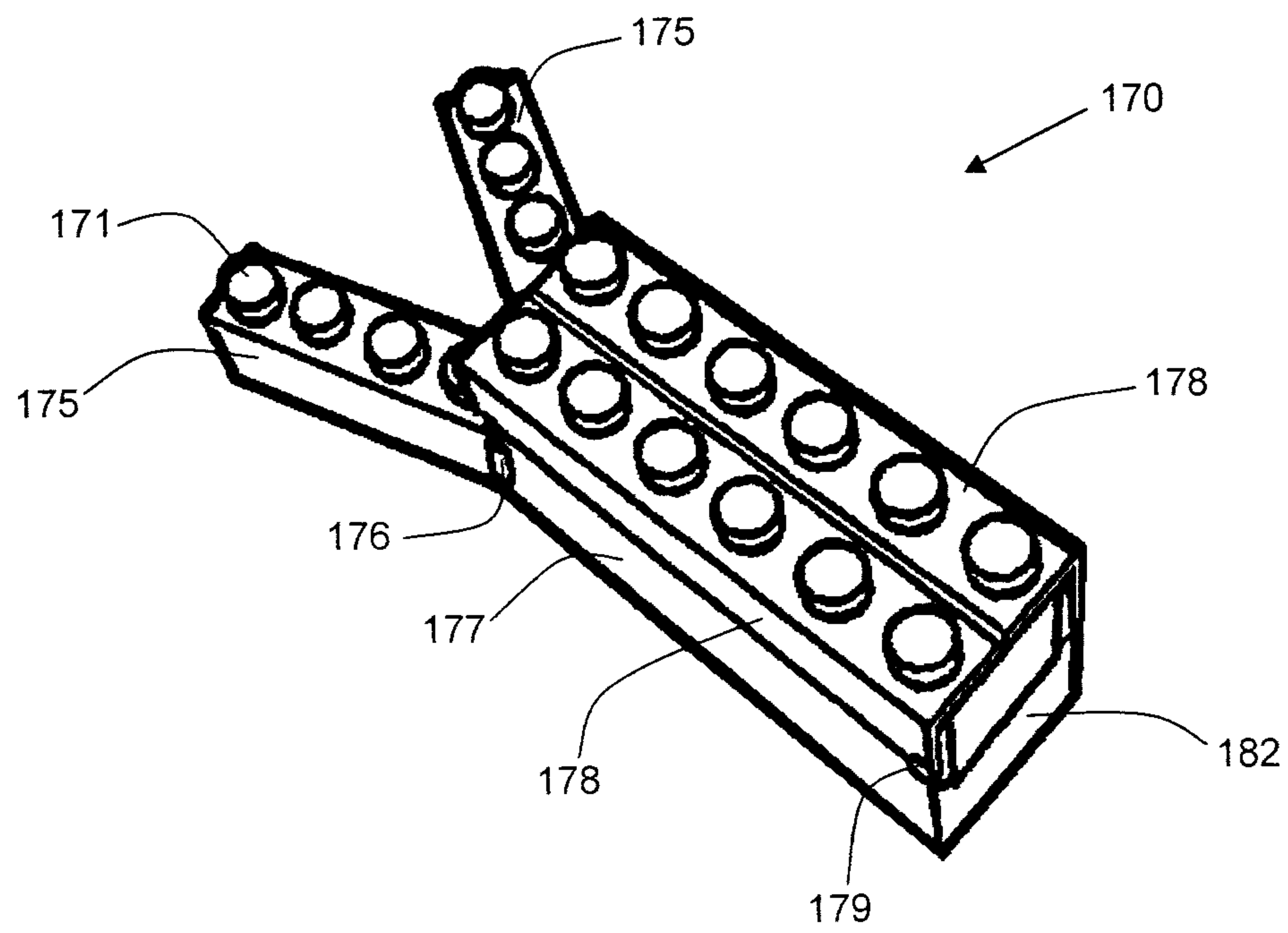


FIG. 27A

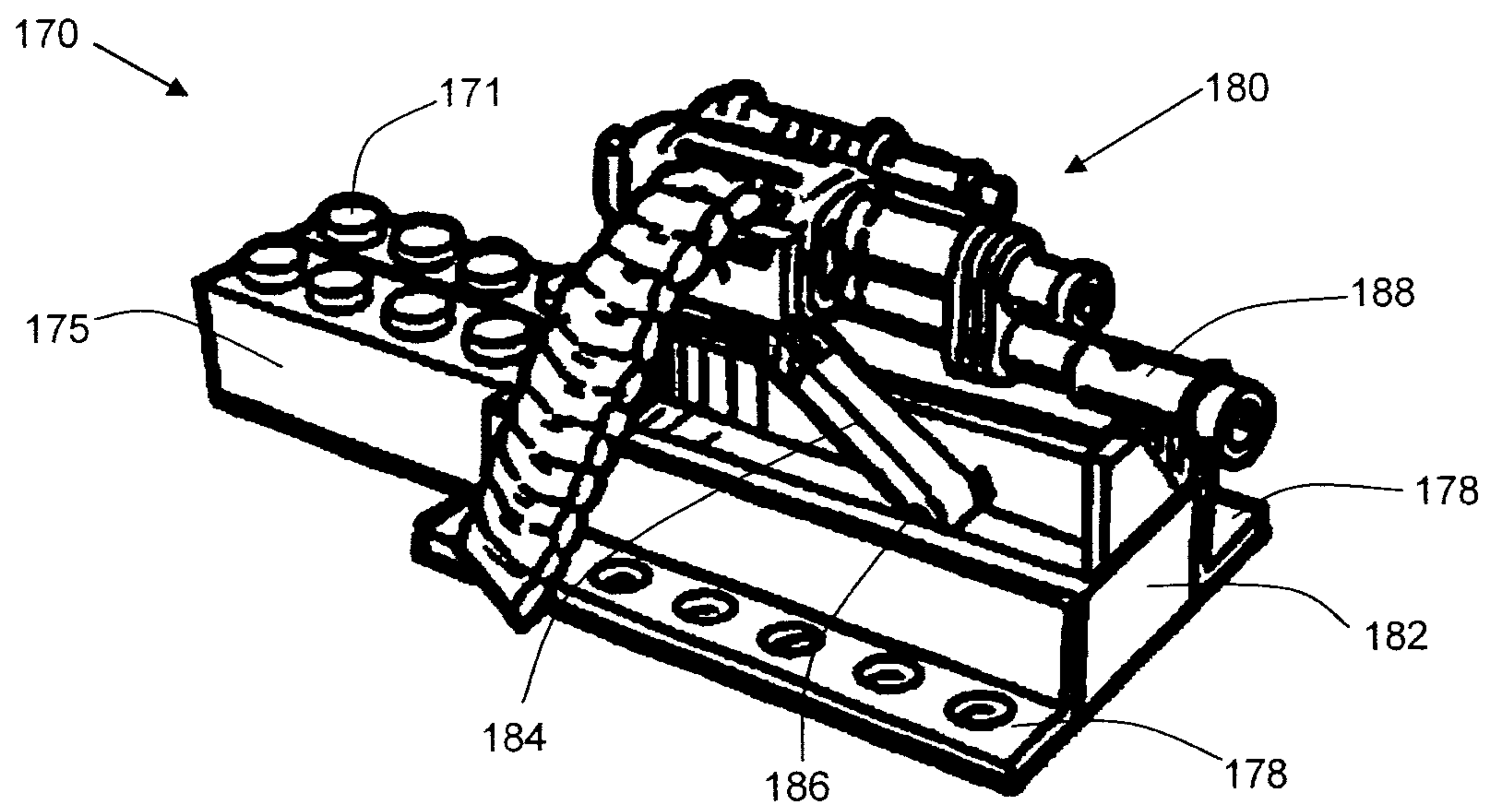


FIG. 27B

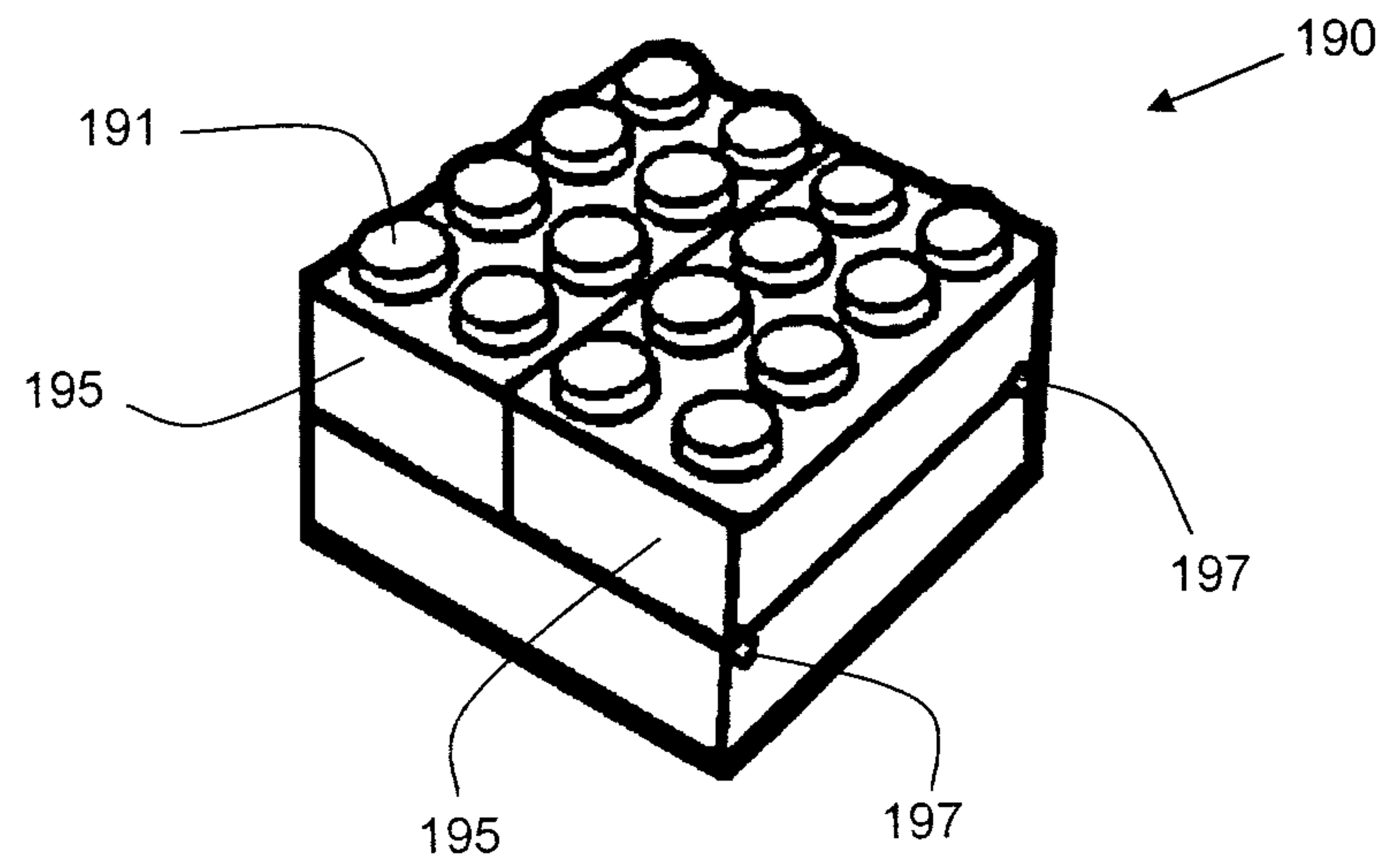


FIG. 28A

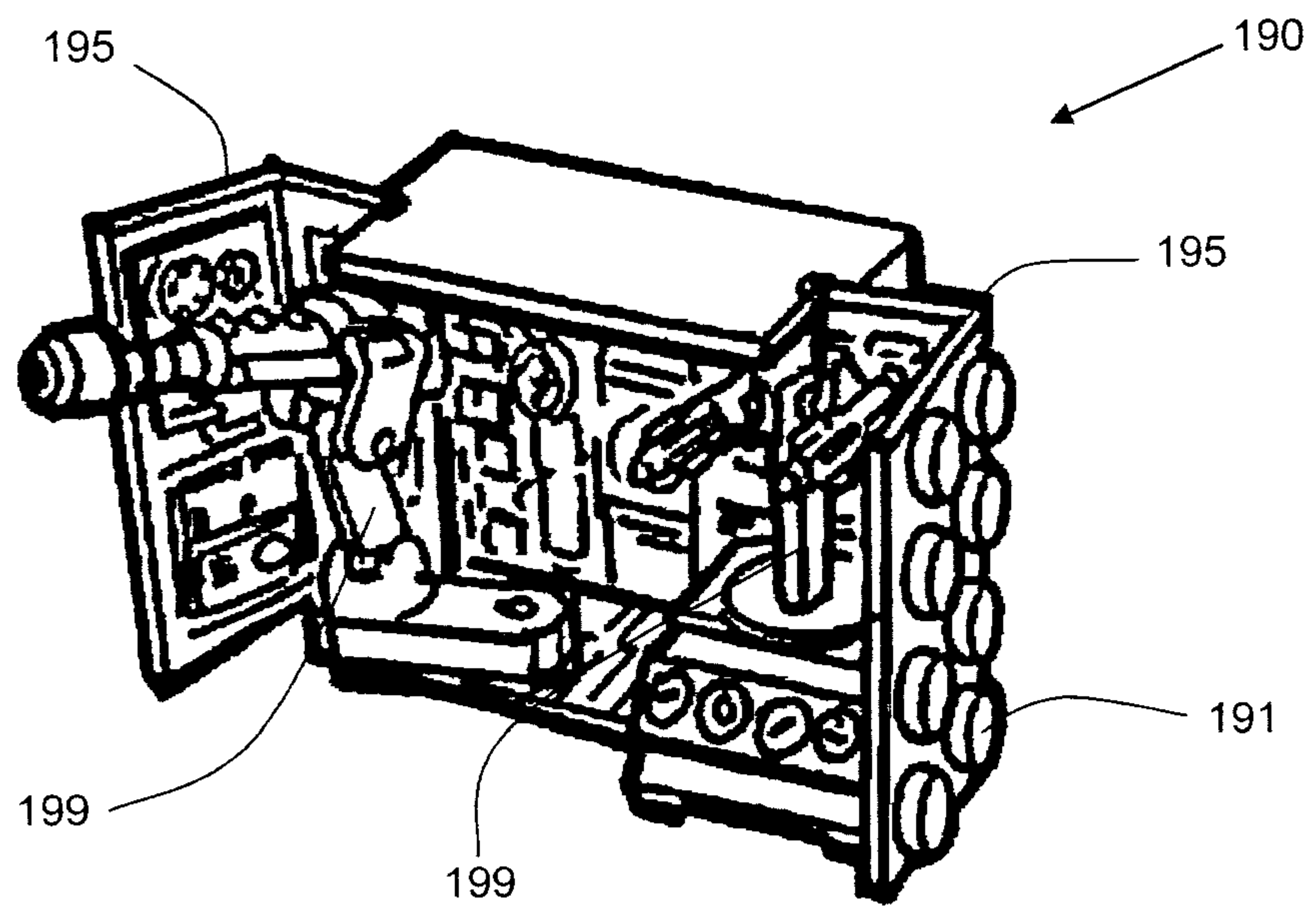


FIG. 28B

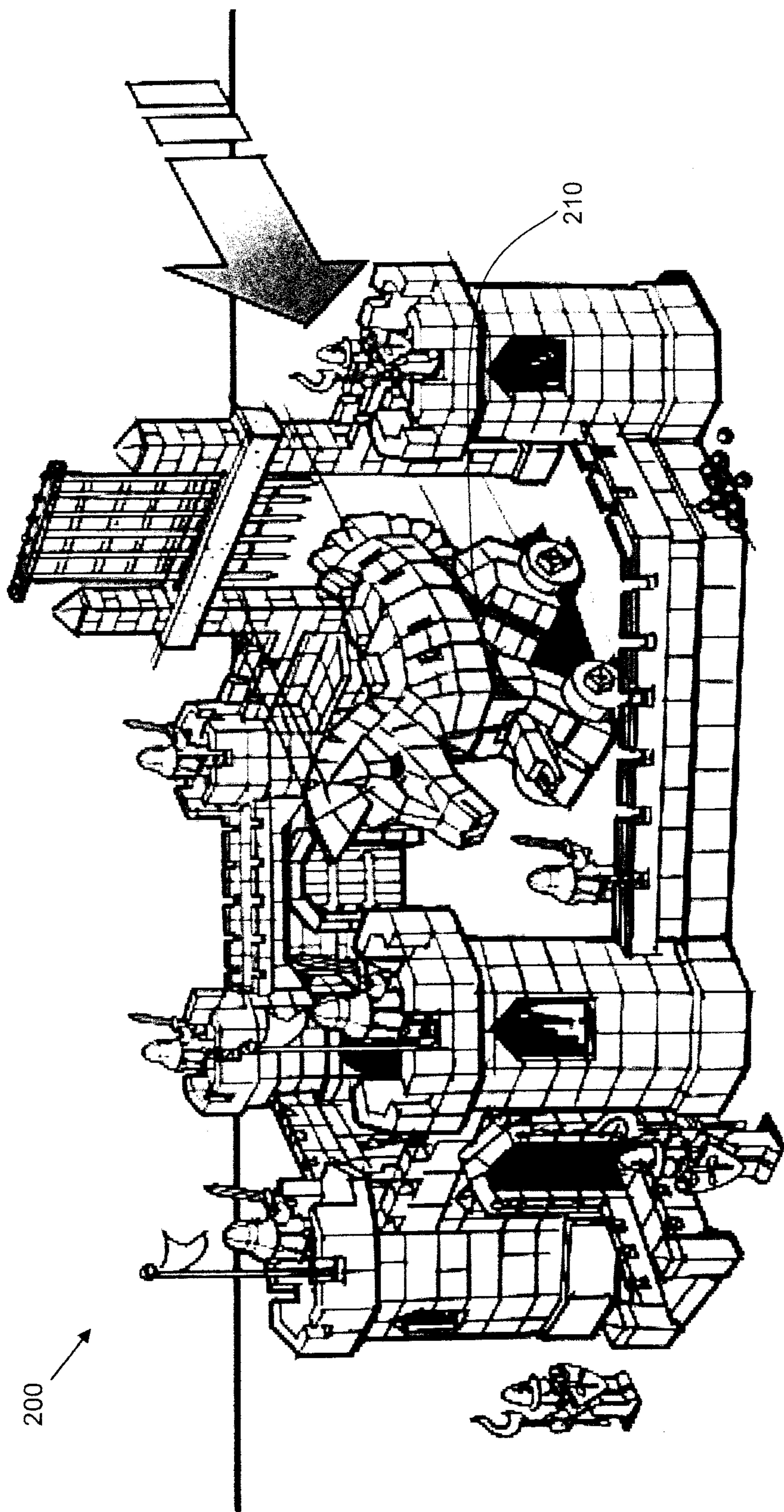


FIG. 29A

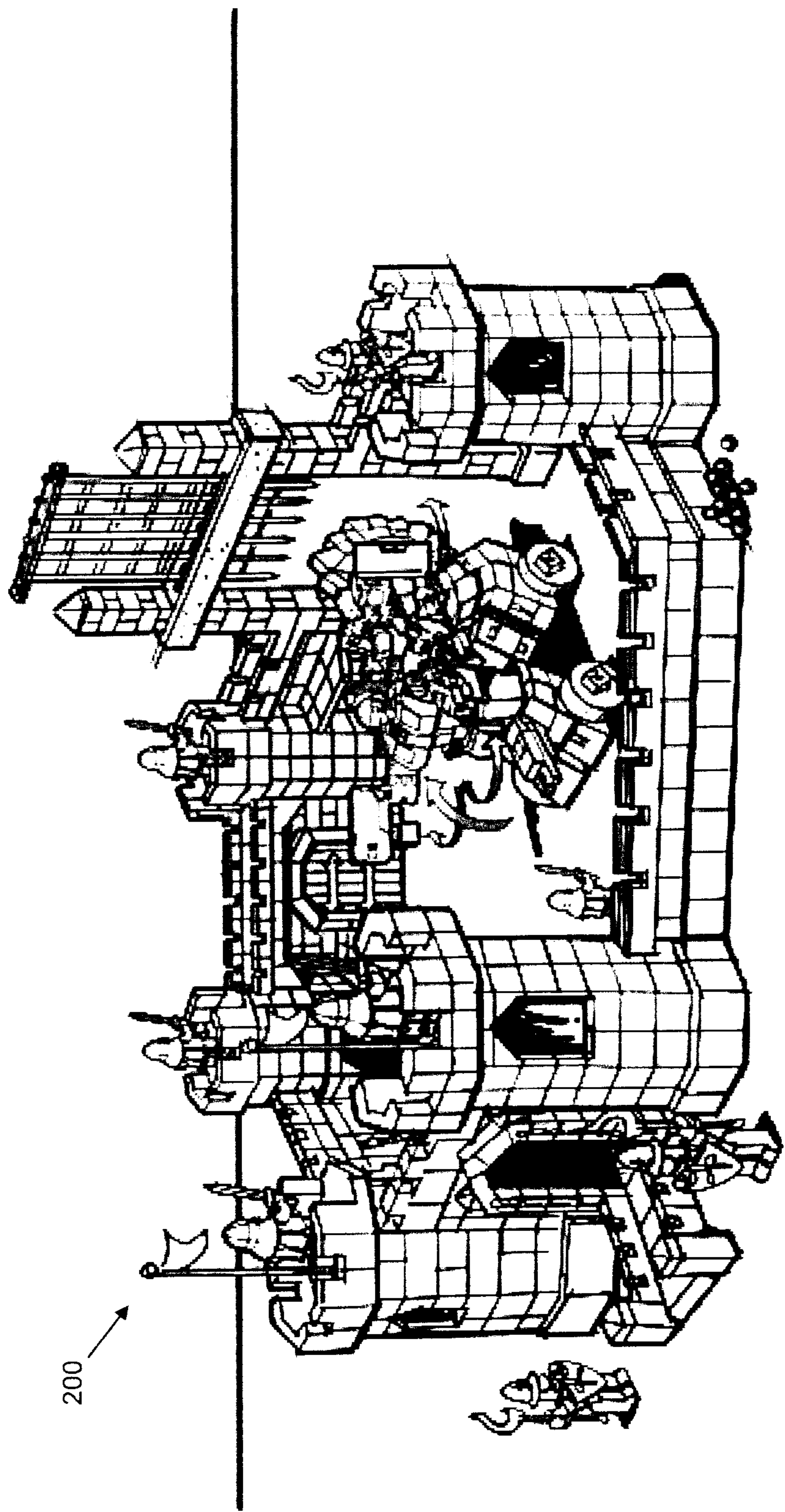


FIG. 29B

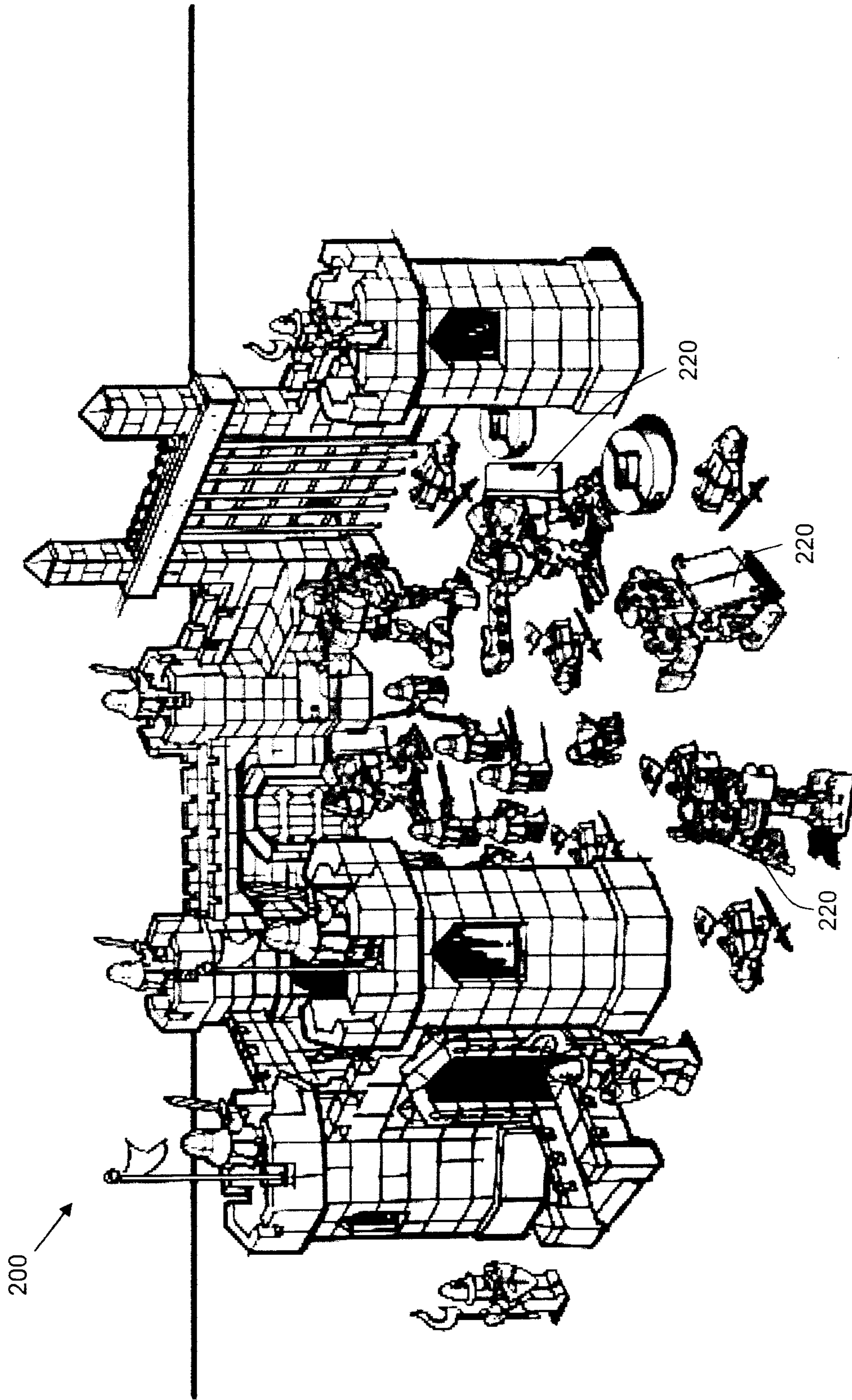
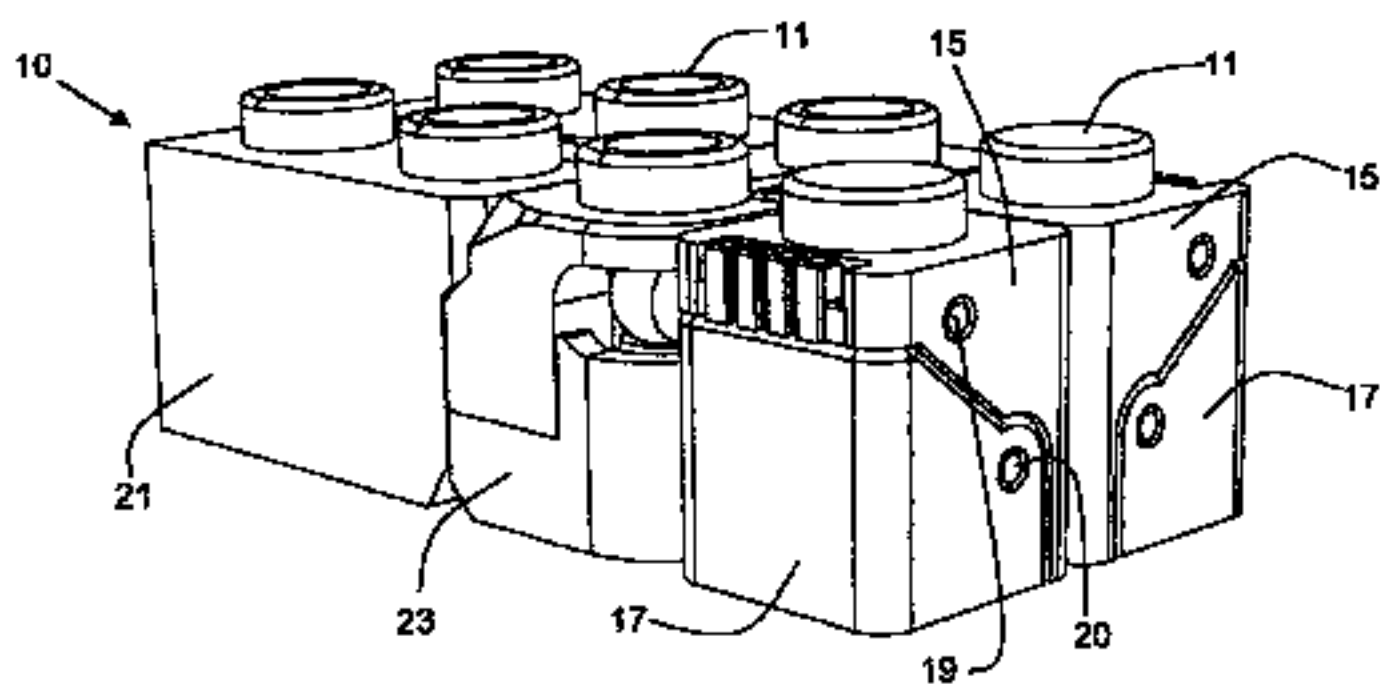
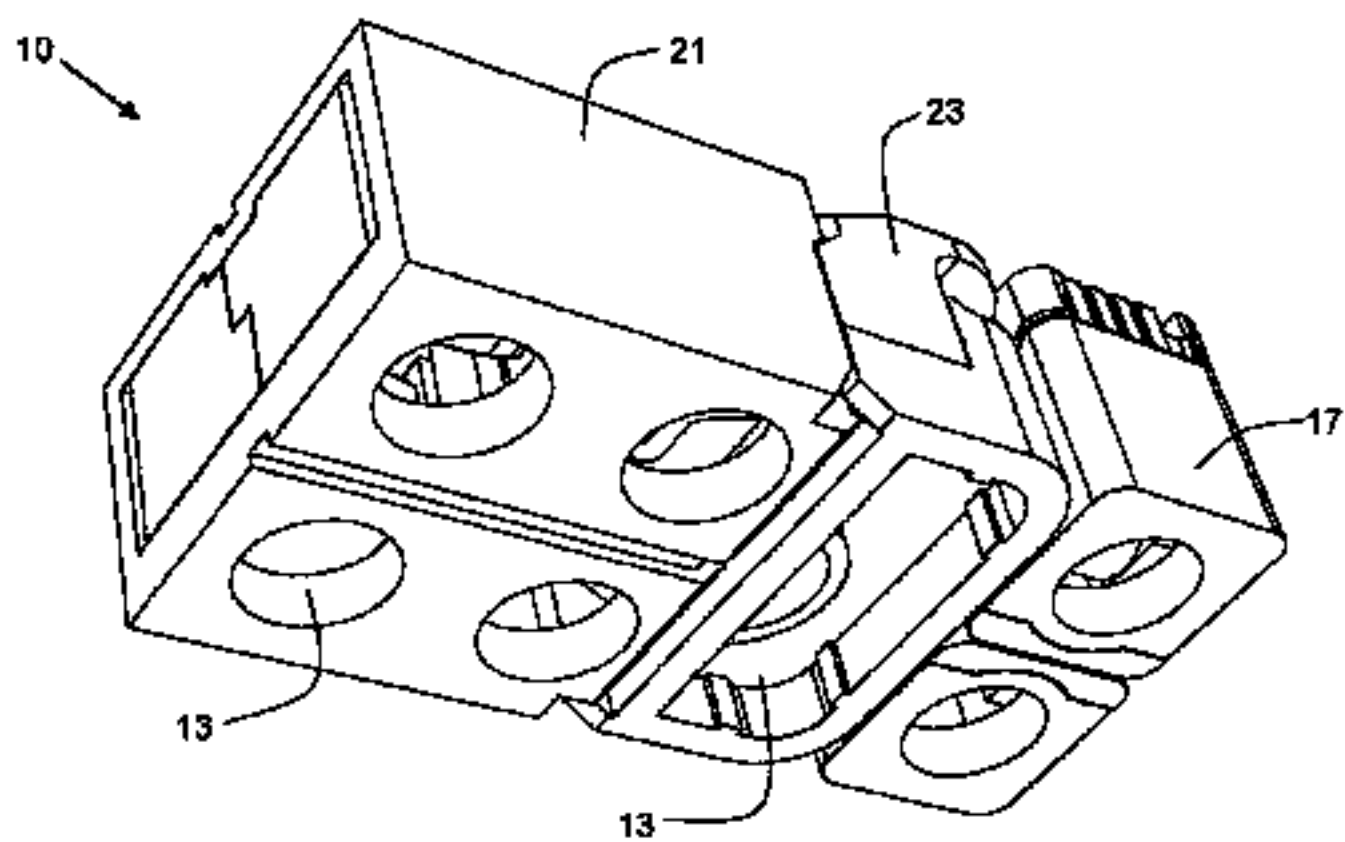


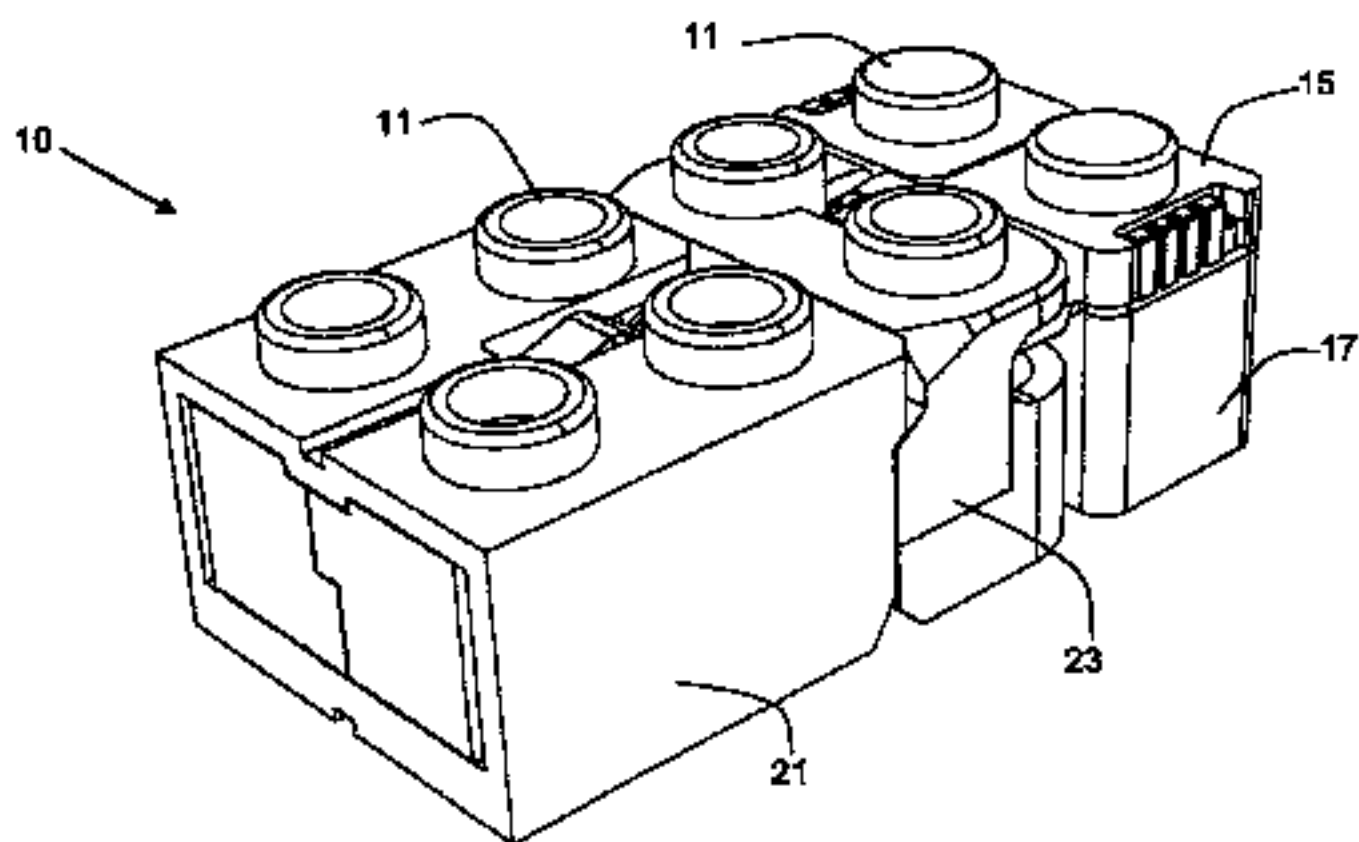
FIG. 29C



A



B



C