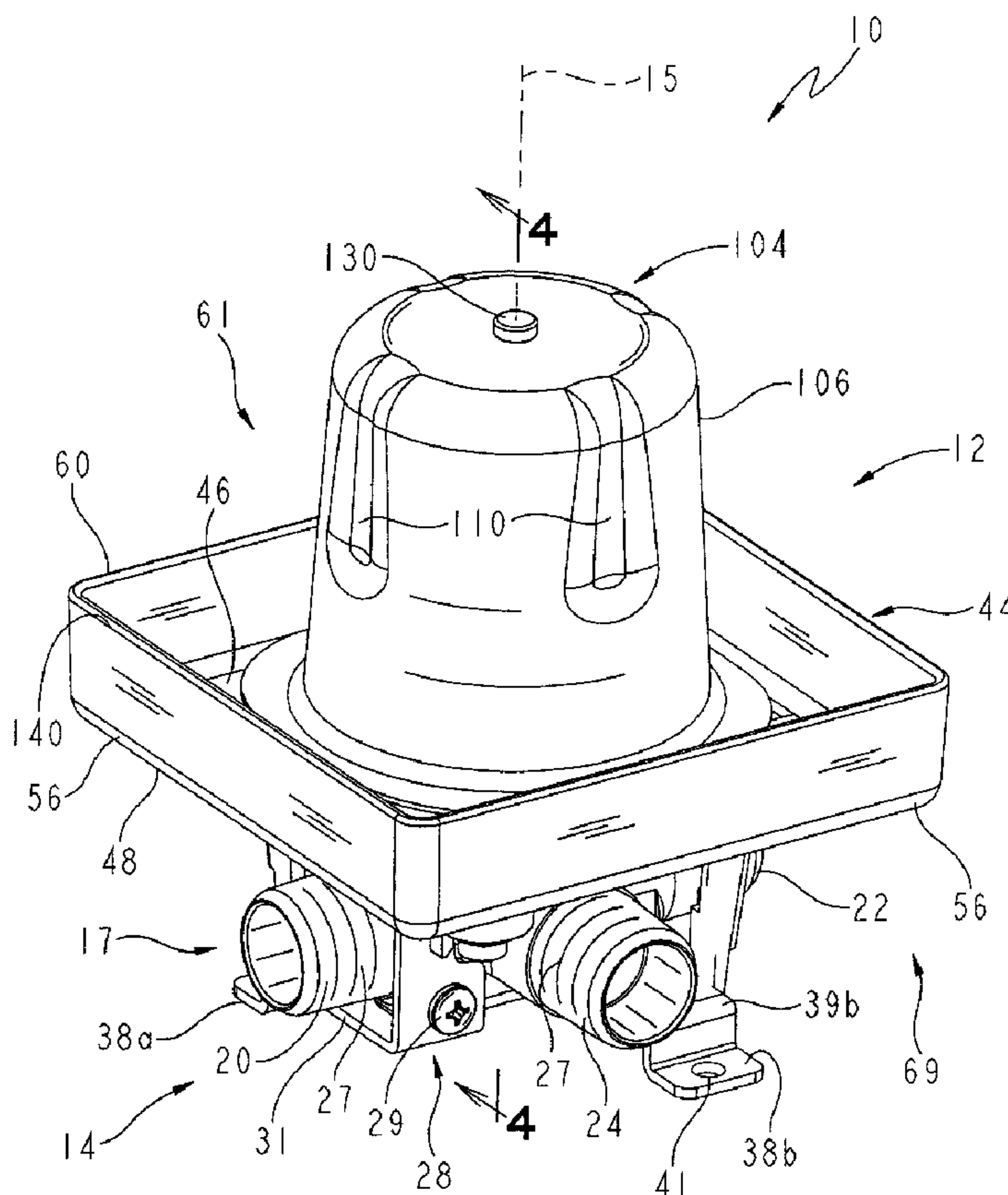




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(71) Demandeur/Applicant:  
MASCO CORPORATION OF INDIANA, US  
(72) Inventeur/Inventor:  
MCNERNEY, GERALD J., US  
(74) Agent: MACRAE & CO.

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(54) Title: PLASTER GUARD FOR A WALL MOUNTED FAUCET VALVE ASSEMBLY



(57) **Abrégé/Abstract:**

A plaster guard for a wall mounted faucet valve assembly. The plaster guard includes a body having a central opening configured to receive the valve assembly, and a coupler configured to couple the body to the valve assembly.

Abstract of the Disclosure

A plaster guard for a wall mounted faucet valve assembly. The plaster guard includes a body having a central opening configured to receive the valve assembly,  
5 and a coupler configured to couple the body to the valve assembly.

PLASTER GUARD FOR A WALL MOUNTED FAUCET VALVE ASSEMBLYBackground and Summary of the Invention

5 The present invention relates to a plaster guard and, more particularly, to a plaster guard configured to be coupled to a wall mounted faucet valve assembly for defining an opening within a wall.

10 Plaster guards are known in the art and are often used to protect a wall mounted valve assembly during installation of the surrounding wall, and to insure the proper spatial relationship between the wall and the valve assembly. More particularly, the plaster guard may include a planar base section having mounting holes for receiving fasteners which engage the valve assembly, and a cylindrical section which receives the valve body. The plaster guard typically remains mounted with the valve assembly during plastering and finishing of the wall. The wall is usually finished flush with the planar base section of the plaster guard. After the wall is finished, the fasteners may be removed and the plaster guard discarded. In 15 alternative installations, the fasteners and the plaster guard remain in place. An escutcheon is then mounted over the hole in the wall formed by the plaster guard, and the faucet valve handle is mounted onto the valve assembly to complete the installation.

20 Typical plaster guards have a round shape, most often circular, due to past practices and in the interests of space efficiencies. More particularly, the coverage of the plaster guard may be maximized by making its transverse cross-section substantially circular. Further, a plaster guard must still fit under the footprint of a conventional round shaped escutcheon. In order to utilize such a conventional plaster guard, an installer must form a circular hole in the wall. Such an operation is often 25 difficult and further complicated when the wall includes a layer of tile. In general, straight cuts are much easier for an installer to form than arcuate or circular cuts, especially when working with dimensions as large as a plaster guard.

30 The present invention provides a rectangular shaped plaster guard which eliminates the need to cut the aforementioned circular hole within the wall. More particularly, the rectangular shaped plaster guard facilitates straight cuts within the wall. The transverse cross-section of the plaster guard of the present invention

illustratively has substantially the same size and shape as a standard bathroom wall tile. In such an embodiment, additional cuts within the wall may be avoided by just leaving off one tile during the wall installation.

5 According to an illustrative embodiment of the present invention, a plaster guard for a wall mounted faucet valve assembly is provided. The plaster guard includes a body having a base with a central opening configured to receive a valve assembly having a longitudinal axis. A flange is supported by the base and is positioned in spaced relation to the central opening. The flange extends in a direction substantially parallel to the longitudinal axis, and has a substantially rectangular cross-section in a plane transverse to the longitudinal axis which surrounds the central opening. A coupler is supported by the body and is configured to couple the body to the valve assembly.

10 According to a further illustrative embodiment of the present invention, a plaster guard for a wall mounted faucet valve assembly includes a body having a central opening configured to receive a valve assembly. A flange is positioned in spaced relation to the central opening, the flange including a first pair of parallel walls and a second pair of parallel walls. The first pair of parallel walls is connected to and disposed perpendicular to the second pair of parallel walls. A coupler is supported by the body and is configured to couple the body to the valve assembly.

15 According to yet another illustrative embodiment of the present invention, a plaster guard for use in combination with a wall mounted faucet valve assembly includes a body having a base. The base includes a central opening configured to receive a valve assembly. A flange extends outwardly from the base, and a cover is concentrically received over the valve assembly. The cover is uncoupled from the body and fully supported by the valve assembly.

20 According to a further illustrative embodiment of the present invention, a valve mounting assembly includes a valve housing, and a mounting bracket coupled to the valve housing. The mounting bracket is configured to couple the valve housing to a wall support. A plaster guard includes an opening configured to receive the valve housing. A coupler is supported by the plaster guard and is configured to releasably couple the plaster guard to the mounting bracket.

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Additional features and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the illustrative embodiment exemplifying the best mode of carrying out the invention as presently perceived.

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#### Brief Description of the Drawings

The detailed description of the drawings particularly refers to the accompanying figures in which:

10 Fig. 1 is a top perspective view of an illustrative embodiment valve mounting assembly of present invention;

Fig. 2 is a bottom perspective view of the valve mounting assembly of Fig. 1, with a partial cut-away to show details of the coupling between the plaster guard body and the mounting bracket;

15 Fig. 3 is an exploded perspective view of the valve mounting assembly of Fig. 1;

Fig. 4 is a partial cross-sectional view taken along line 4-4 of Fig. 1;

Fig. 5 is a top perspective view of the plaster guard body of Fig. 1, with a partial cut-away thereof to show internal details;

Fig. 6 is a bottom perspective view of the plaster guard body of Fig. 5;

20 Fig. 7 is a bottom perspective view of the plaster guard body and the mounting bracket of Fig. 1;

Fig. 8 is a top plan view of the valve mounting assembly of Fig. 1 as installed within a conventional shower wall including a layer of tile;

25 Fig. 9 is an exploded perspective view of the installation of Fig. 8, with the valve housing removed for clarity;

Fig. 10 is a front elevational view of the installation of Fig. 8, with the escutcheon removed to clearly show the cover supported by the valve assembly;

Fig. 11 is a top plan view similar to Fig. 8 showing the valve mounting assembly installed within a thin shower wall; and

30 Fig. 12 is an exploded perspective view of the installation of Fig. 11, with the valve housing removed for clarity.

### Detailed Description of the Drawings

Referring initially to Figs. 1-4 of the drawings, an illustrative embodiment valve mounting assembly 10 of the present invention is shown as including a plaster guard 12 coupled to a valve assembly 14. The valve assembly 14 is illustratively of conventional design and includes a valve housing 16 extending axially along a longitudinal axis 15. The valve housing 16 includes a cylindrical wall 17 defining a chamber 18, which upon final installation is configured to receive a conventional valving member or cartridge (not shown). The valve housing 16 further includes a hot water inlet 20 and a cold water inlet 22 configured to provide hot water and cold water, respectively, to the chamber 18. The chamber 18 is also in fluid communication with a first outlet 24 and a second outlet 26. The first and second outlets 24 and 26 may be in fluid communication with first and second fluid delivery devices, such as a shower head and a tub spout (not shown). Illustratively, the inlets 20, 22 and the outlets 24, 26, each have external threads 27 configured to engage internal threads of connecting tubes (not shown). Illustratively, the valve housing 16 is formed from a durable metal, such as brass.

A mounting bracket 28 is secured to the valve housing 16 through conventional fasteners, such as screws 29. More particularly, as shown in Figs. 3 and 7, the mounting bracket 28 includes a base portion 30 having a pair of U-shaped mounting members 31, 32 connected by a connecting member 33. The mounting members 31, 32, each include an opening 34 for receiving one of the screws 29. The screws 29 are threadably received within mounting blocks 36a, 36b formed in the valve housing 16 (Fig. 3).

The mounting bracket 28 further includes wall mounting tabs 38a, 38b connected to the base portion 30 through connecting members 39a, 39b. The wall mounting tabs 38a, 38b extend outwardly from the base portion 30 in opposite directions. In other words, in the illustrative embodiment, the wall mounting tab 38a extends in a first direction (downwardly) away from the hot water inlet 20, and the wall mounting tab 38b extends in a second direction (upwardly) away from the cold water inlet 22. Both wall mounting tabs 38a, 38b further illustratively extend in a direction (rearwardly) away from the valve assembly 14 and the plaster guard 12 (Figs. 7 and 8). The wall mounting tabs 38a, 38b each include an aperture 41.

The mounting bracket 28 also includes escutcheon mounting tabs 40a, 40b which are connected to the base portion 30 and extend in directions opposite the corresponding wall mounting tabs 38a, 38b. More particularly, in the illustrative embodiment, the escutcheon mounting tab 40a extends in the second direction (upwardly) away from the hot water inlet 20, and the escutcheon mounting tab 40b extends in the first direction (downwardly) away from the cold water inlet 22. Both escutcheon mounting tabs 40a, 40b further illustratively extend in a direction (forwardly) toward the plaster guard 12 (Figs. 7 and 8). The escutcheon mounting tabs 40a, 40b each include a threaded aperture 42 configured to receive a conventional fastener, such as a screw 43 (Figs. 9 and 12). Illustratively, the mounting bracket 28 is formed from a durable metal, such as brass.

With reference to Figs. 1-3, 5, and 6, the plaster guard 12 illustratively includes a body 44 having a substantially planar base 46 with a peripheral edge 48. The base 46 includes an opening 50 configured to cooperate with the valve assembly 14. The opening 50 includes a central portion 51 configured to receive the valve housing 16, and radially outwardly extending windows 52 which are configured to provide access to portions of the valve assembly 14 positioned behind the body 44 of the plaster guard 12 (Figs. 5 and 6). More particularly, the windows 52a, 52b, 52c, and 52d are configured to provide access proximate to the inlets 20, 22 and the outlets 24, 26, respectively, of the valve assembly 14. A pair of escutcheon mounting holes 54 are provided within the base 46 of the plaster guard 12 and are positioned radially outwardly from the central portion 51 of opening 50. More particularly, escutcheon mounting hole 54a is positioned intermediate windows 52a and 52c, while escutcheon mounting hole 54b is positioned intermediate windows 52b and 52d. The base 46 is substantially rectangular such that the peripheral edge 48 includes a plurality of sides 56 defining a parallelogram with at least one right angle.

A flange 60 is supported by the base 46 and is positioned in spaced relation to the opening 50. The flange 60 is illustratively disposed adjacent to, and follows the contour of, the peripheral edge 48 of the base 46. As such, the flange 60 has a substantially rectangular cross-section in a plane extending transverse to the longitudinal axis 15 of the valve housing 16 which surrounds the opening 50. The flange 60 extends from the base 46 in a direction away from the mounting bracket 28

and substantially parallel with the longitudinal axis 15. In other words, the flange 60 extends toward a front end 61 of the body 44 of the plaster guard 12.

As shown in Figs. 5 and 6, the flange 60 includes a first pair of parallel side walls 62 and a second pair of parallel side walls 64. The first pair of parallel side walls 62 are connected to and disposed perpendicular to the second pair of parallel side walls 64. As such, the flange 60 has a substantially rectangular cross-section as identified above wherein the side walls 62 and 64 cooperate to define a parallelogram with at least one right angle. For the reasons detailed herein, the side walls 62 and 64 are configured to provide an opening within a bathroom wall for receiving the valve assembly 14, wherein the opening is of substantially the same size as a conventional wall tile. In one illustrative embodiment, the first and second pairs of parallel walls 62 and 64 each have a length substantially equal to four inches, thereby defining a square cross-section having dimensions substantially equal to a standard wall tile. It should be appreciated that the first pair of parallel walls 62 could have a length different from the second pair of parallel walls 64, thereby defining a non-square rectangle.

With reference to Figs. 2 and 5-7, a plurality of couplers 66 and 68 are supported by a rear end 69 of the body 44 and are configured to releasably couple the body 44 to the valve assembly 10. The couplers 66 illustratively include a first pair of retaining arms 70, and the couplers 68 illustratively include a second pair of retaining arms 72. Each of the retaining arms 70 and 72 extend in a direction from the front end 61 to the rear end 69 of the body 44, and includes a retaining portion or catch 74 and 76, respectively, configured to engage a rear surface 77 of the mounting bracket 28. More particularly, the first pair of retaining arms 70 are configured to releasably couple with the mounting bracket 28 adjacent the wall mounting tabs 38, while the second pair of retaining arms 72 are configured to releasably couple with the escutcheon mounting tabs 40. Each catch 74 and 76 includes a retaining or stop surface 78 and 80 facing axially toward the body 44, and an inclined guide surface 82 and 84 which is configured to be contacted by a front surface 86 of the mounting bracket 28 in order to force the respective arm 70, 72 outwardly when the opening 50 receives the valve assembly 12 and the body 44 is moved axially in a direction from the front end 61 toward the rear end 69. The retaining arms 70 and 72 include biasing



portions 88 and 90 which are configured to bias the catches 74 and 76 inwardly toward the mounting bracket 28.

The couplers 66 each further illustratively include a support member 92 extending substantially parallel with an adjacent retaining arm 70. The support member 92 is configured to engage with the front surface 86 of the mounting bracket 28, thereby providing additional support to the body 44 and providing a stop to prevent continued movement of the body 44 rearwardly.

The couplers 68 each further illustratively includes a support member 94 positioned adjacent a respective retaining arm 72. Each support member 94 includes a pair of locating members 96a, 96b extending rearwardly from a stop surface 98. The stop surface 98 is configured to engage with the front surface 86 of the mounting bracket 28, thereby providing additional support to the body 44 and providing a stop to prevent continued movement of the body 44 rearwardly. The locating members 96 are configured to be received on opposing sides each escutcheon mounting tab 40 in order to facilitate proper placement of the mounting bracket 28 relative to the body 44. A guide post 100 is associated with each of the retaining arms 70 and is configured to be received within an aperture 102 formed within the escutcheon mounting tab 40, thereby further facilitate locating of the mounting bracket 28 relative to the body 44.

The body 44 and couplers 66 and 68 of the plaster guard 12 are illustratively formed of a thermoplastic material, such as polystyrene, and all parts of the structure are integral and formed in a single molding operation. However, it should be appreciated that plaster guard 12 may be formed of materials other than molded thermoplastic.

Referring again to Figs. 1, 3, and 4, the plaster guard 10 further includes a cover 104 including a substantially cylindrical side wall 106 and a substantially planar end wall 108. A plurality of radially inwardly extending engagement members 110 are provided within the side wall 106 of the cover 104. The engagement members 110 are configured to frictionally engage the valve assembly 14 and, more particularly, a bonnet or nut 112 which is threadably received on an open end 114 of the valve housing 16. A lower flange or rim 116 extends outwardly from a bottom of the cover 104. As shown in the illustrative embodiment of Fig. 4, the cover 104 is entirely supported by the valve assembly 14, such that it is uncoupled from the body

44. More particularly, the cover 104 is in spaced relation to the body 44, such that no tabs or frangible portions must be broken in order to facilitate removal of the cover 104 from the body 44.

5 The cover 104 is illustratively formed of a thermoplastic material, such as polystyrene, and all parts of the structure are integral and formed in a single molding operation. However, it should be appreciated that cover 104 may be formed of materials other than molded thermoplastic.

10 A test cap 118 is configured to be sealingly received within the open end 114 of the valve housing 16. The test cap 118 may be used for testing of the plumbing system prior to final installation of the valving member within the valve housing 16. The test cap 118 includes a body 120 concentrically received within the chamber 18 of the valve housing 16 and sealing the open end 114 by cooperating with a conventional seal, such as an O-ring 122. A plurality of ribs 124 project upwardly from the body 120, wherein a pair of opposing ribs 124 define a handle 126 to facilitate positioning of the test cap 118 within the valve housing 16. All of the ribs 124 provide added strength to the test cap 118. The ribs 124 are connected through an upwardly extending connecting post 128 having an enlarged head 130. The head 130 is configured to be received within a opening 132 formed in the end wall 108 of the cover 104. More particularly, the enlarged head 130 is snap fit through the opening 132 to help facilitate securing of the cover 104 to the valve assembly 14. As with the cover 104, the test cap 118 may be formed from a molded thermoplastic.

15 Figs. 8-10 illustrate a conventional thick wall installation of the valve mounting assembly 10. The valve housing 16 is illustratively coupled to the mounting bracket 28 and the test cap 118 at a manufacturing facility prior to delivery to the worksite. The body 44 of the plaster guard 12 is coupled to the mounting bracket 28 in the manner detailed above. More particularly, the couplers 66 and 68 releasably couple with the mounting bracket 28 such that the catches 74 and 76 engage with the rear surface 77. Such a coupling may be pre-assembled at a manufacturing facility or assembled at the worksite during installation. In either case, the body 44 may be attached to the mounting bracket 28 by pushing the body 44 rearwardly until the retaining arms 70 and 72 bend away from and then the catches 74 and 76 snap back over the mounting bracket 28. The cover 104 is placed over the valve housing 16 in

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frictional engagement with the bonnet 112. Next, the mounting bracket 28 is secured to a wall support, typically a stringer 134, which is a horizontally mounted piece of wood positioned between two studs. A screwdriver (not shown) may be passed through the windows 52 in the base 46 of the body 44 to engage one or more screws 136. The screws 136 pass through apertures 41 in mounting tabs 38 in order to secure the valve assembly 14 in place at least until the pipes are installed and attached to the faucet valve inlets 20, 22 and outlets 24, 26.

A plaster wall 138 is then constructed about the outer rectangular flange 60 of the body 44. More particularly, the plaster wall 138 may be mounted in position using conventional dry wall installation methods. Preferably, the front surface 140 of the flange 60 is positioned to be flush with the outer surface 142 of the finished wall 144. Dry wall compound is applied to the plaster wall 138, followed by tile 146, in a manner surrounding the flange 60 of the plaster guard 12. In one illustrative installation method, straight cuts, approximating the dimensions of the flange 60, are formed within the plaster wall 138. In an alternative installation method, the plaster wall 138 may be formed around the body 44 of the plaster guard 12, thereby eliminating the need for a cutting step. The body 44 and the cover 104 of the plaster guard 12 prevents dry wall plaster compound from reaching the valve assembly 14. As noted herein, the body 44 of the plaster guard 12 illustratively occupies the space of a single tile 146, thereby facilitating installation. Upon completion of the finished wall 144, required testing of the plumbing system, including the valve assembly 14, may be conducted with the test cap 118 secured within the valve housing 16.

Next, the cover 104 may be removed followed by the test cap 118. The valve member and handle (not shown) may then be installed within the valve housing 16. Next, a conventional escutcheon 148 may be secured in place by screws 150 passing through openings in the body and received within the threaded apertures in the bracket 28. The escutcheon 148 covers the plaster guard 12 and the opening within the wall 144 formed thereby.

Figs. 11 and 12 illustrate an alternate installation for use of the valve mounting assembly 10 within a thin wall 152, of the type used in a prefabricated shower enclosure. In such an installation, the enclosure wall 152 is essentially sandwiched intermediate the body 44 of the plaster guard 12 and the escutcheon 148. As such, the

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valve assembly 14 is fully supported by the enclosure wall 152. During installation, the enclosure wall 152 has a hole 153 cut therein sized to receive the valve housing 16. The enclosure wall 152 is placed over the valve assembly 14 and two holes 154 are then drilled in the wall 152 aligned with the apertures 42 in the escutcheon mounting tabs 40. The escutcheon 148 is then placed in position and the mounting screws 150 are passed through the escutcheon 148, the wall 152, and the mounting bracket 28. The body 44 of the plaster guard 12 provides for additional support of the wall 152 which is sandwiched between the escutcheon 148 and the mounting bracket 28. A handle (not shown) is then placed on the stem of the valve member (not shown).

Although the invention has been described in detail with reference to certain preferred embodiments, variations and modifications exist within the spirit and scope of the invention as described and defined in the following claims.

## CLAIMS:

1. A plaster guard for a wall mounted faucet valve assembly, the plaster guard comprising:

5 a body including base having a central opening configured to receive a valve assembly having a longitudinal axis, and a flange supported by the base and positioned in spaced relation to the central opening, the flange extending in a direction substantially parallel to the longitudinal axis and having a substantially rectangular cross-section in a plane transverse to the longitudinal axis which surrounds the central opening; and

10 a coupler supported by the body and configured to couple the body to the valve assembly.

2. The plaster guard of claim 1, wherein:

the valve assembly includes a valve housing and a mounting bracket coupled to the valve housing; and

15 the coupler includes a plurality of retaining arms supported by the body and biased to releasably couple to the bracket.

3. The plaster guard of claim 1, wherein the flange of the body has a square cross-section in a plane transverse to the longitudinal axis.

4. The plaster guard of claim 3, wherein:

20 the flange of the body includes a first pair of parallel walls, and a second pair of parallel walls, the first pair of parallel walls being connected to, and disposed perpendicular to, the second pair of parallel walls; and

the first pair of parallel walls and the second pair of parallel walls being configured to provide an opening within a wall for receiving the valve assembly, the opening being of substantially the same size as a conventional wall tile.

25 5. The plaster guard of claim 4, wherein the first pair of parallel walls and the second pair of parallel walls, each of the walls having a length substantially equal to four inches.

30 6. The plaster guard of claim 1, further comprising a cover supported by and frictionally engaging the valve assembly, the cover being positioned in spaced relation to the body.

-12-

7. The plaster guard of claim 6, wherein the cover is configured to operably couple with a test cap sealingly received within the valve housing.

8. A plaster guard for a wall mounted faucet valve assembly, the plaster guard comprising:

5 a body including a central opening configured to receive a valve assembly, and a flange positioned in spaced relation to the central opening, the flange including a first pair of parallel walls and a second pair of parallel walls, the first pair of parallel walls being connected to and disposed perpendicular to the second pair of parallel walls; and

10 a coupler supported by the body and configured to couple the body to the valve assembly.

9. The plaster guard of claim 8, wherein:

the valve assembly includes a valve housing and a mounting bracket coupled to the valve housing; and

15 the coupler includes a plurality of retaining arms supported by the body and biased to releasably couple to the bracket.

10. The plaster guard of claim 9, wherein the first pair of parallel walls and the second pair of parallel walls are configured to provide a rectangular opening within a wall for receiving the valve assembly, the opening being of substantially the same size as a conventional wall tile.

11. The plaster guard of claim 8, wherein the first pair of parallel walls and the second pair of parallel walls each have a length substantially equal to four inches.

12. The plaster guard of claim 8, further comprising a cover supported by and frictionally engaging the valve assembly, the cover being positioned in spaced relation to the body.

13. The plaster guard of claim 12, wherein the cover is configured to operably couple with a test cap sealingly received within the valve housing.

14. A plaster guard for use in combination with a wall mounted faucet valve assembly, the plaster guard comprising:

30 a body including a base having a central opening configured to receive a valve assembly, and a flange extending outwardly from the base; and

a cover concentrically received over the valve assembly, the cover being uncoupled from the body and fully supported by the valve assembly.

5 15. The plaster guard of claim 14, wherein the valve assembly includes a bonnet and a housing configured to threadably receive the bonnet, the inner surface of the cover being in frictional engagement with the bonnet.

16. The plaster guard of claim 14, wherein the cover includes a plurality of radially inwardly extending engagement members configured to frictionally engage the valve assembly.

10 17. The plaster guard of claim 14, wherein the cover is configured to operably couple with a test cap sealingly received within the valve housing.

18. The plaster guard of claim 14, further comprising a coupler configured to releasably couple the body to the valve assembly.

19. The plaster guard of claim 14, wherein the body includes a rectangular flange configured to provide an opening within a wall receiving the valve assembly.

15 20. A valve mounting assembly comprising:

a valve housing;

a mounting bracket coupled to the valve housing and configured to couple the valve housing to a wall support;

20 a plaster guard including an opening configured to receive the valve housing; and

a coupler supported by the plaster guard and configured to releasably couple the plaster guard to the mounting bracket.

25 21. The valve mounting assembly of claim 20, wherein the coupler includes a plurality of resilient arms, each arm including a catch configured to releasably engage the mounting bracket.

22. The valve mounting assembly of claim 20, further comprising a cover supported by and frictionally engaging the valve assembly, the cover being positioned in spaced relation to the body.

30 23. The valve mounting assembly of claim 22, further comprising a test cap sealingly received within the valve housing and operably coupled with the cover.

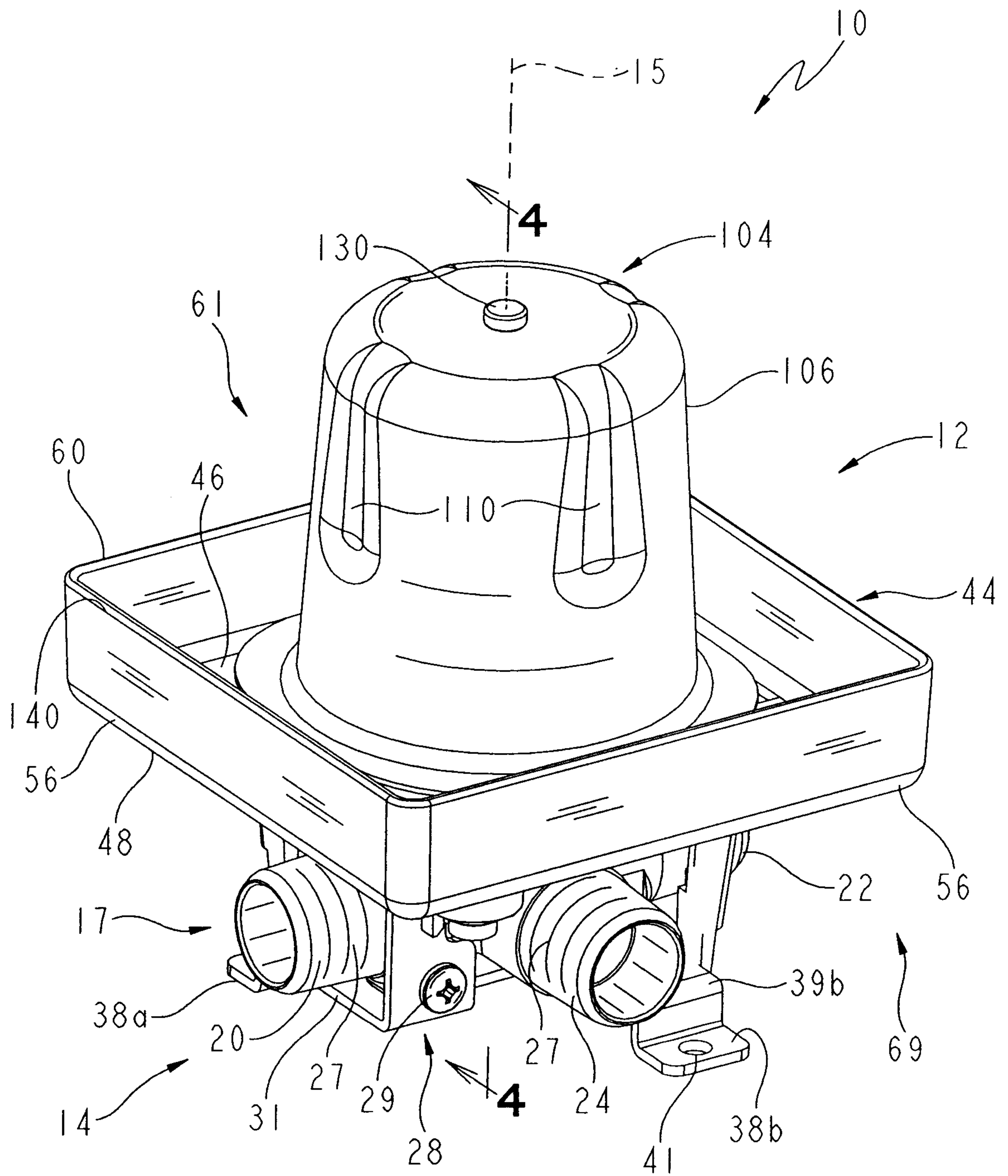


FIG. 1



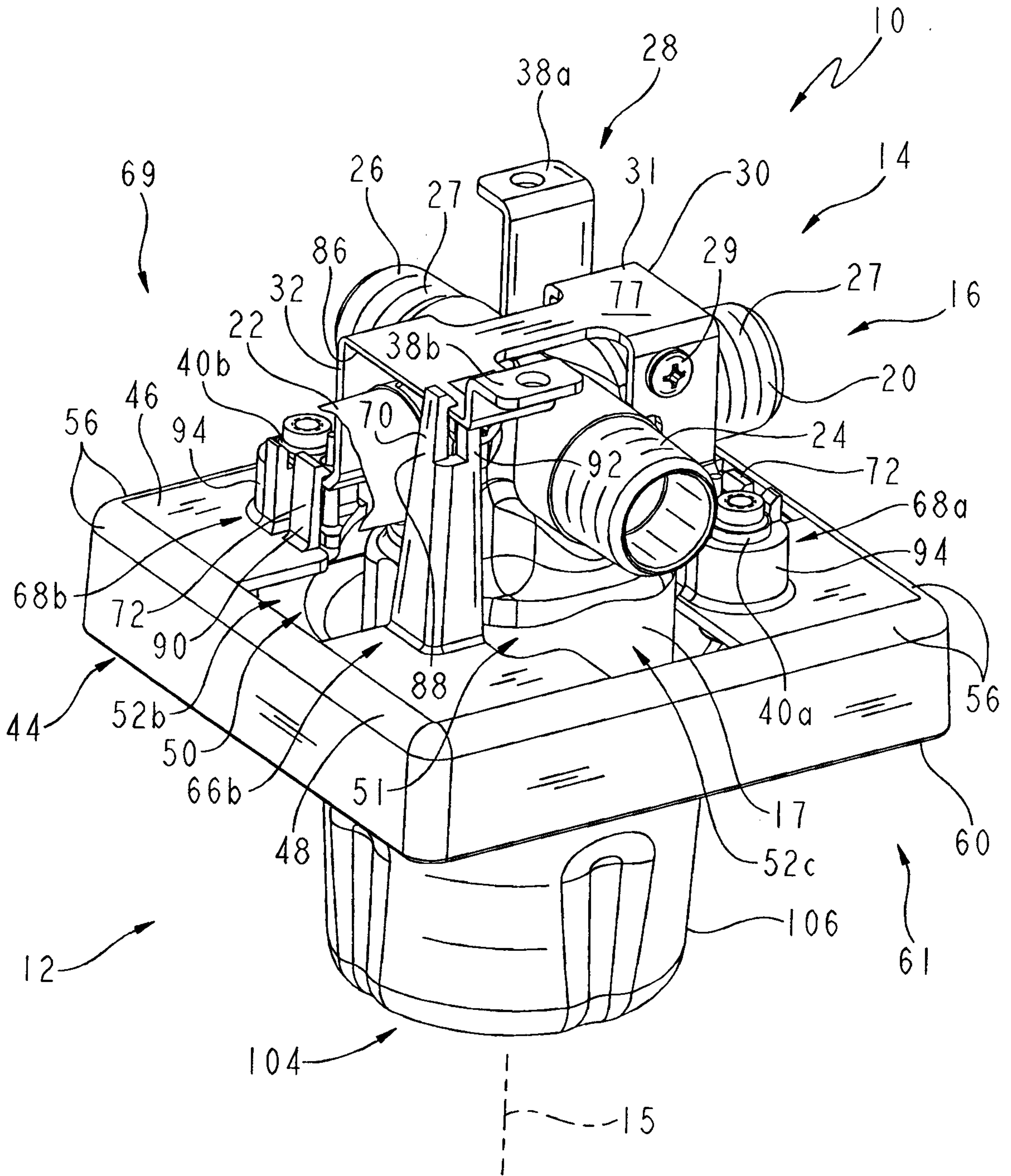


FIG. 2

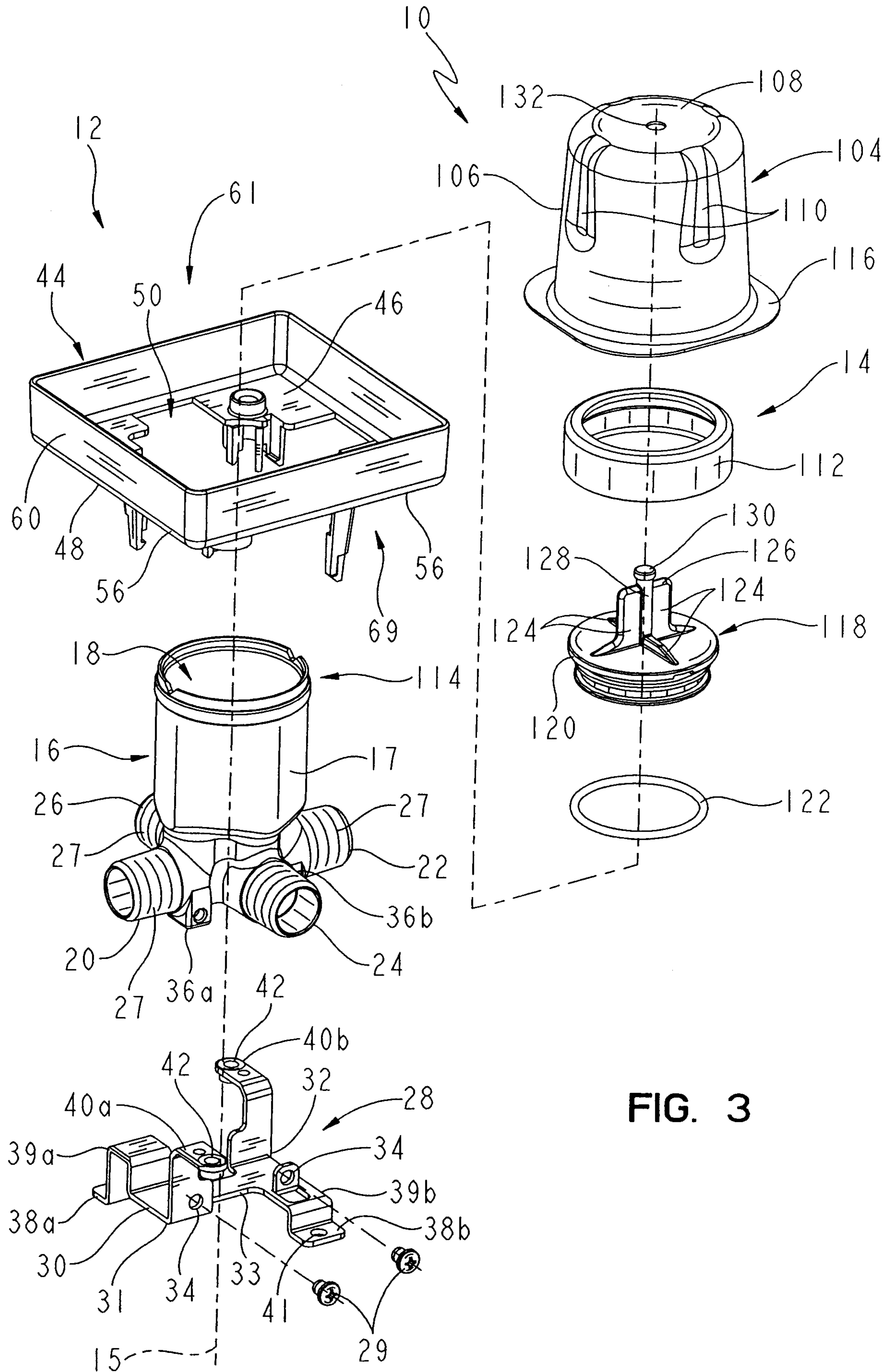


FIG. 3

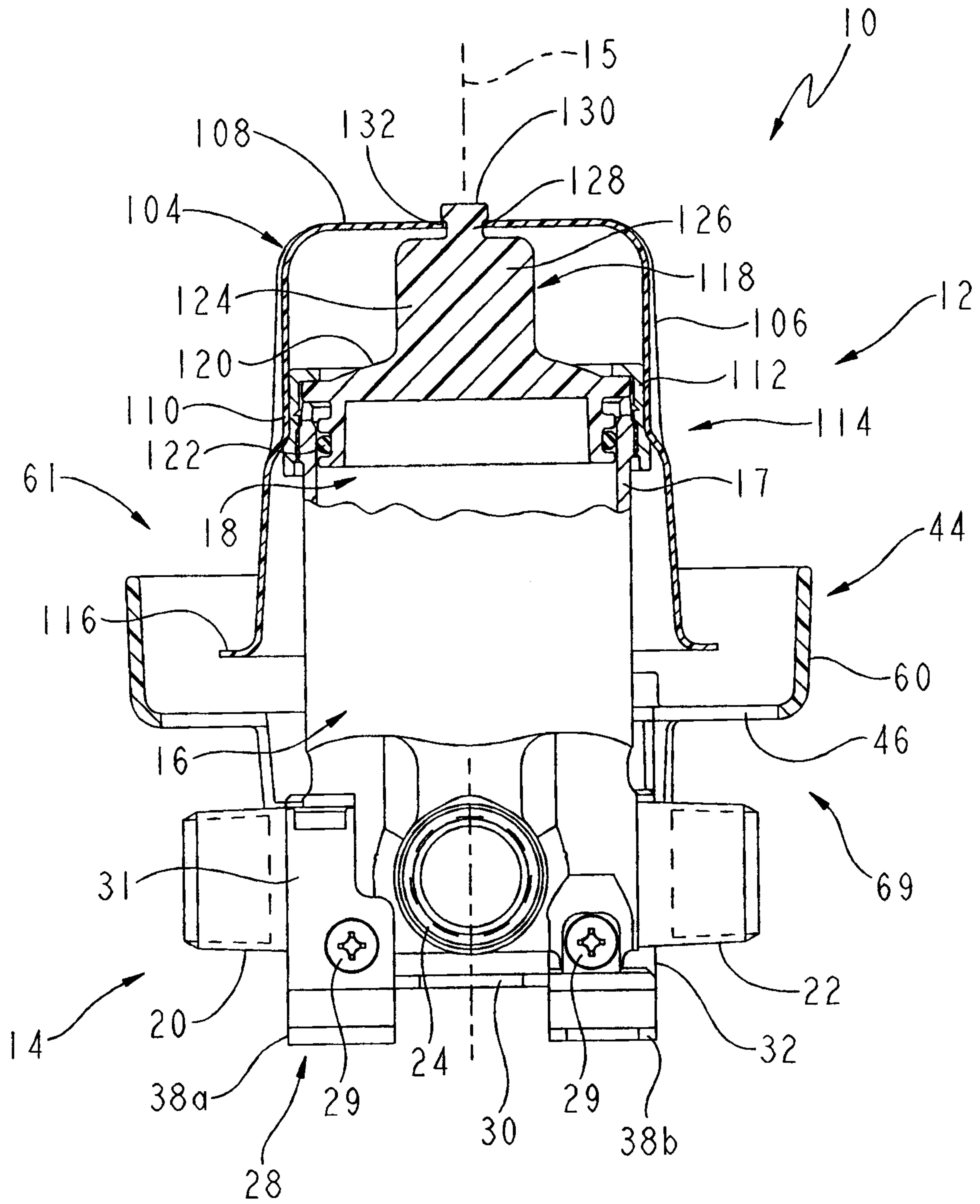


FIG. 4

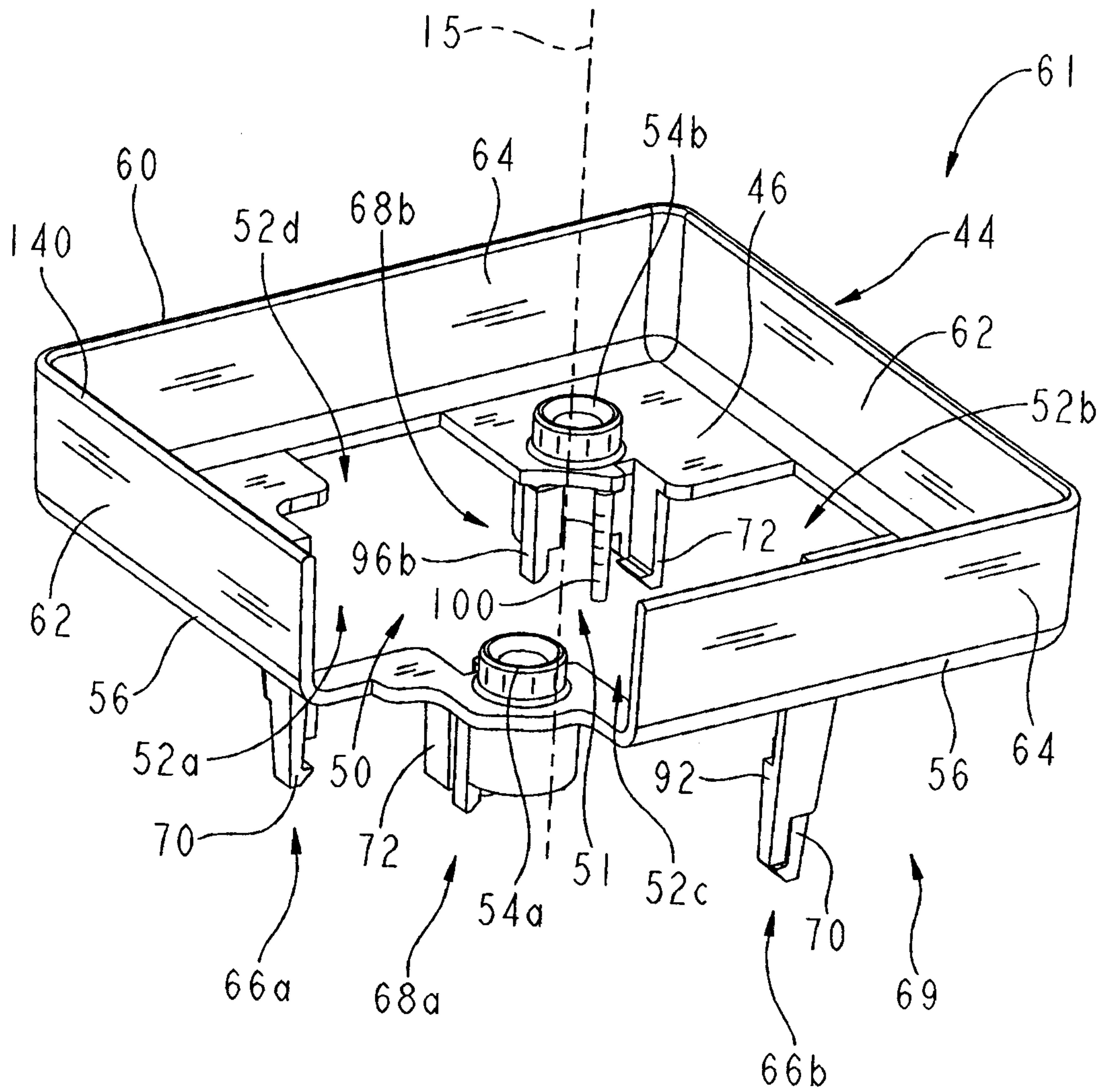


FIG. 5

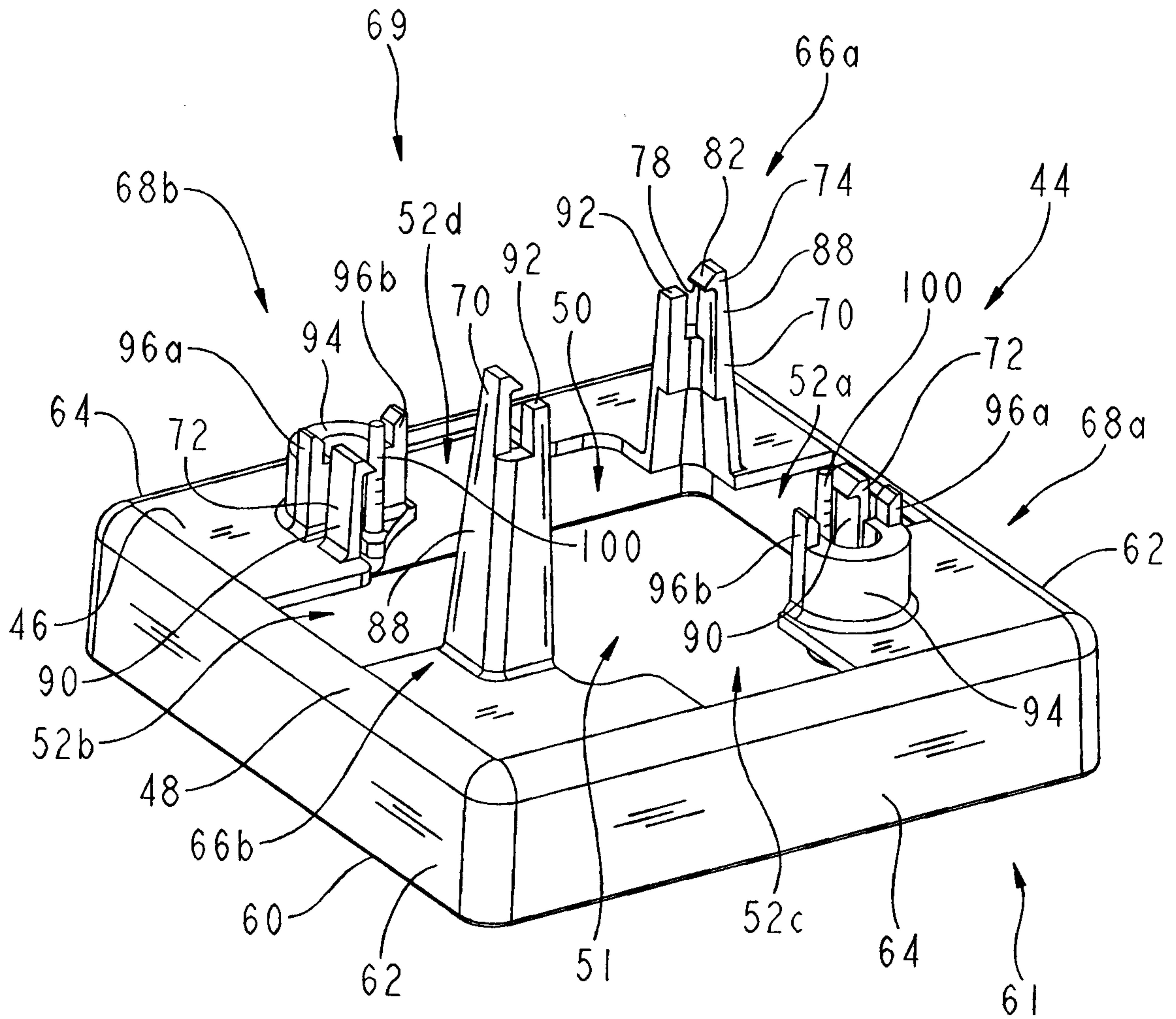


FIG. 6

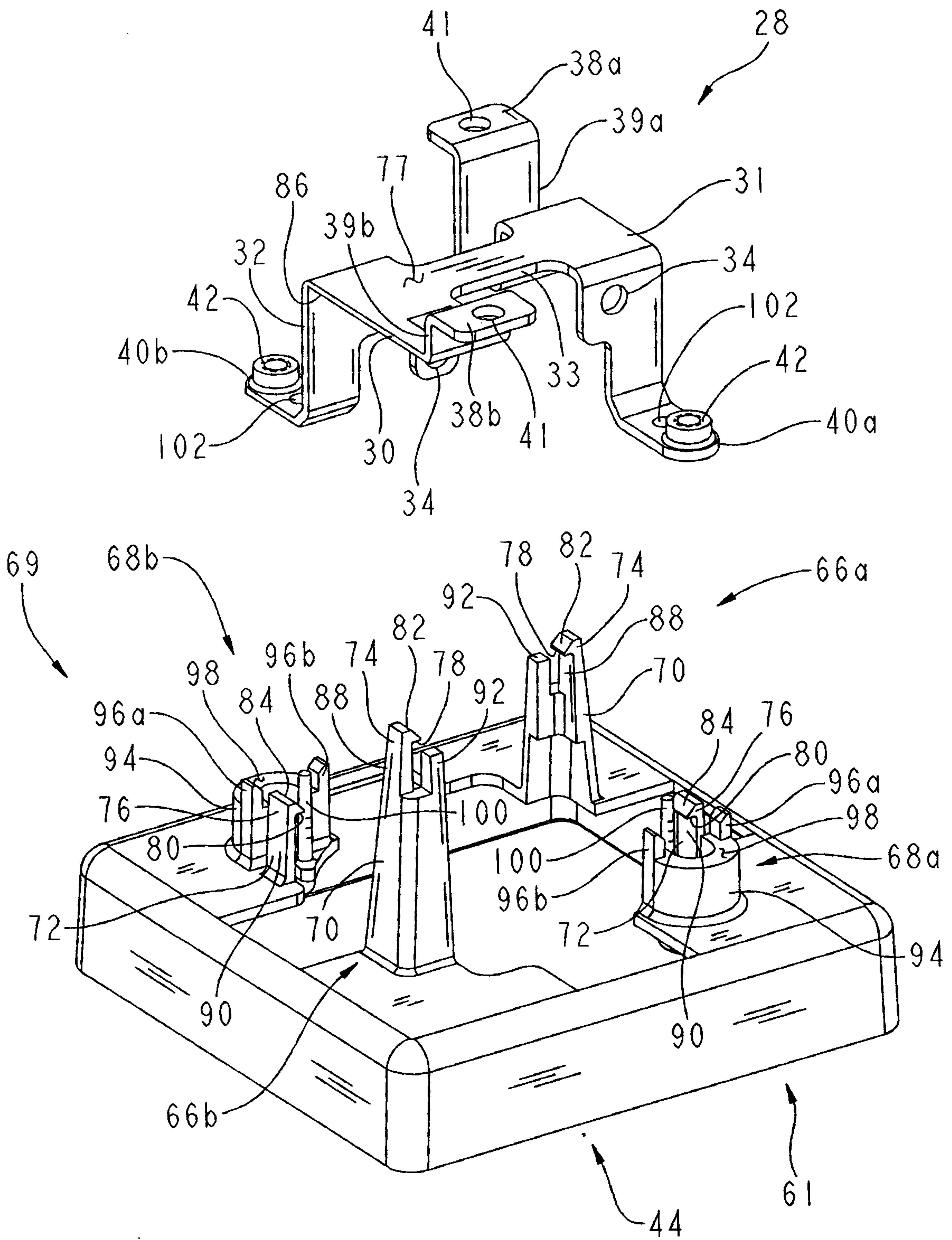


FIG. 7

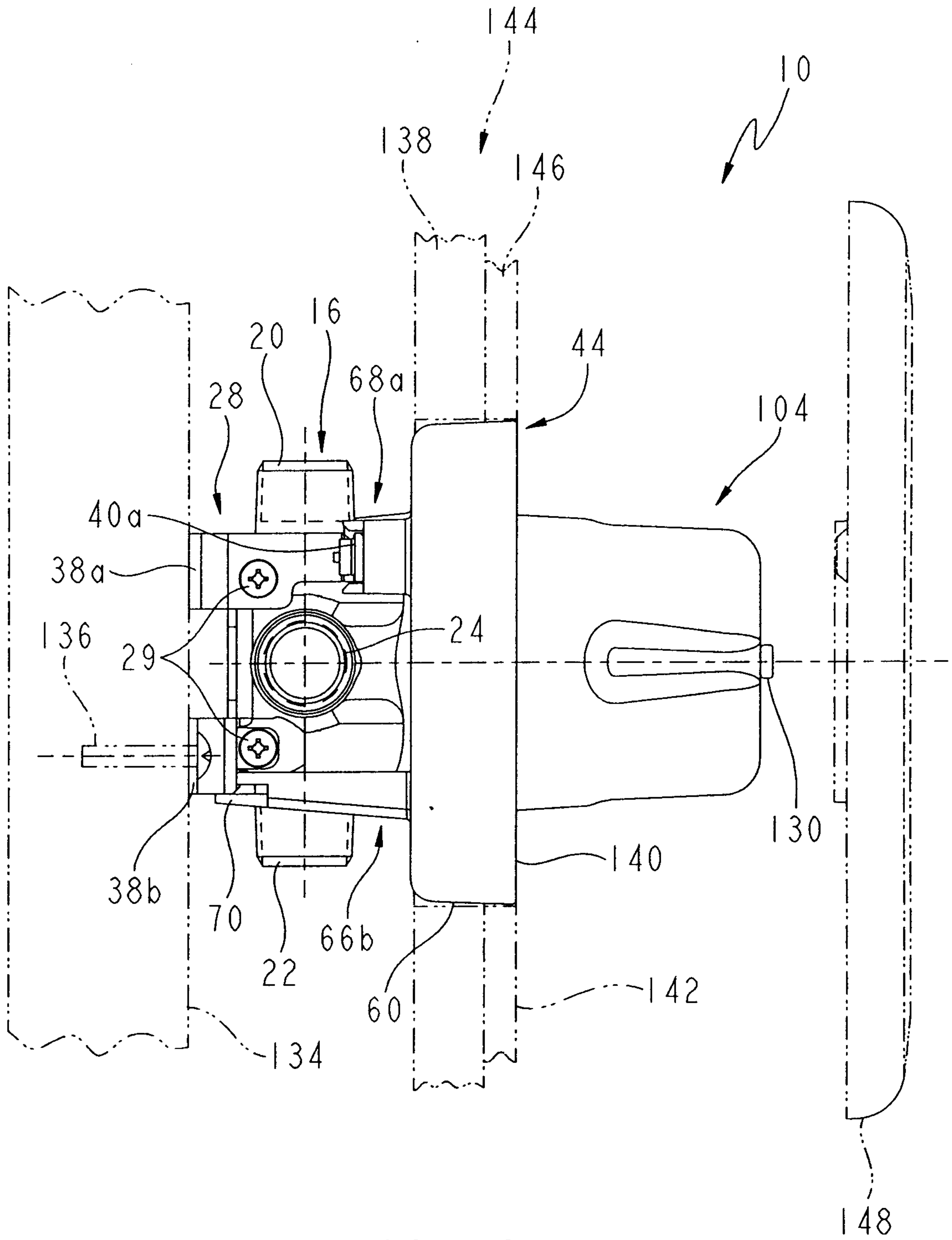


FIG. 8

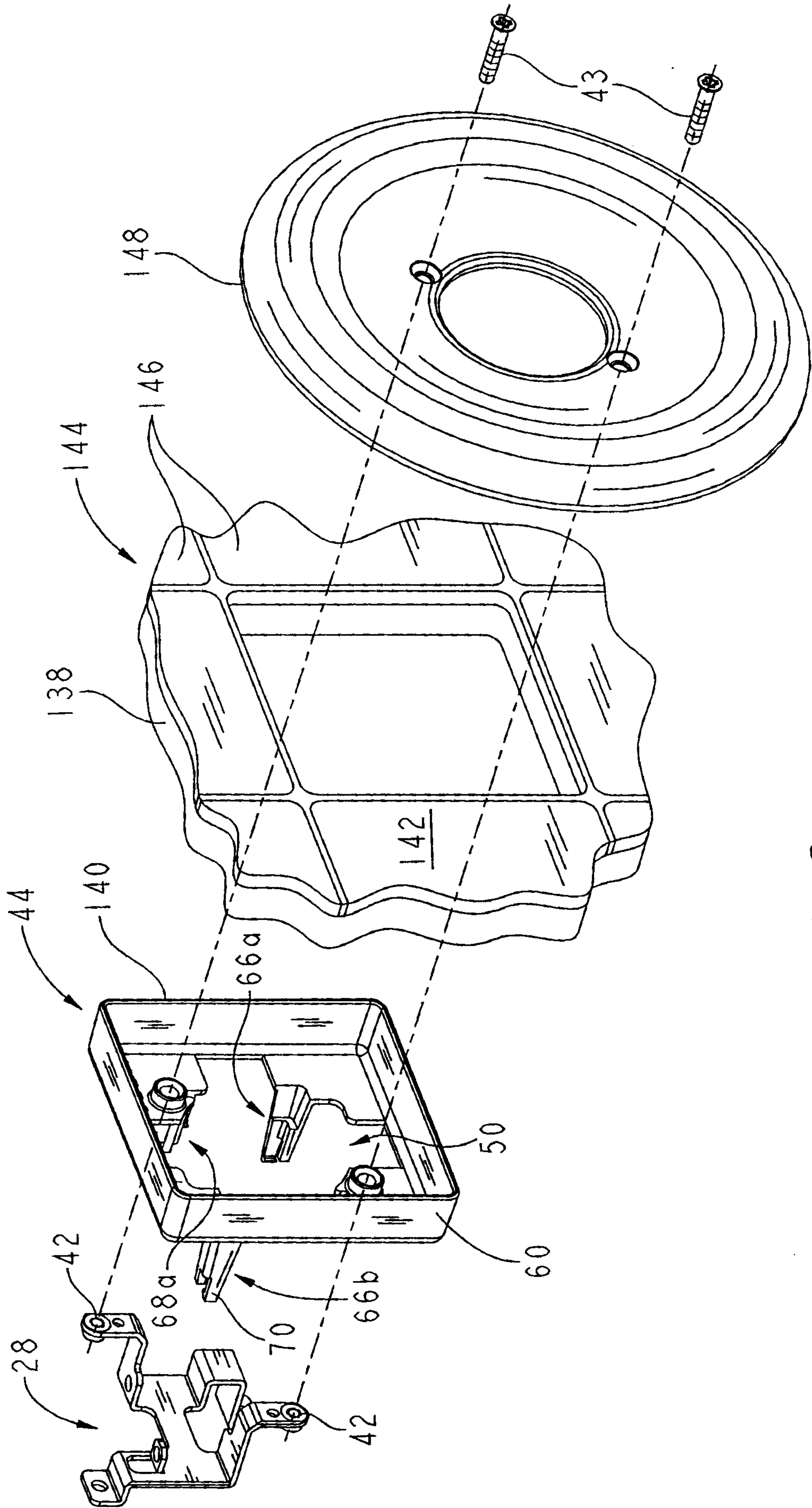


FIG. 9



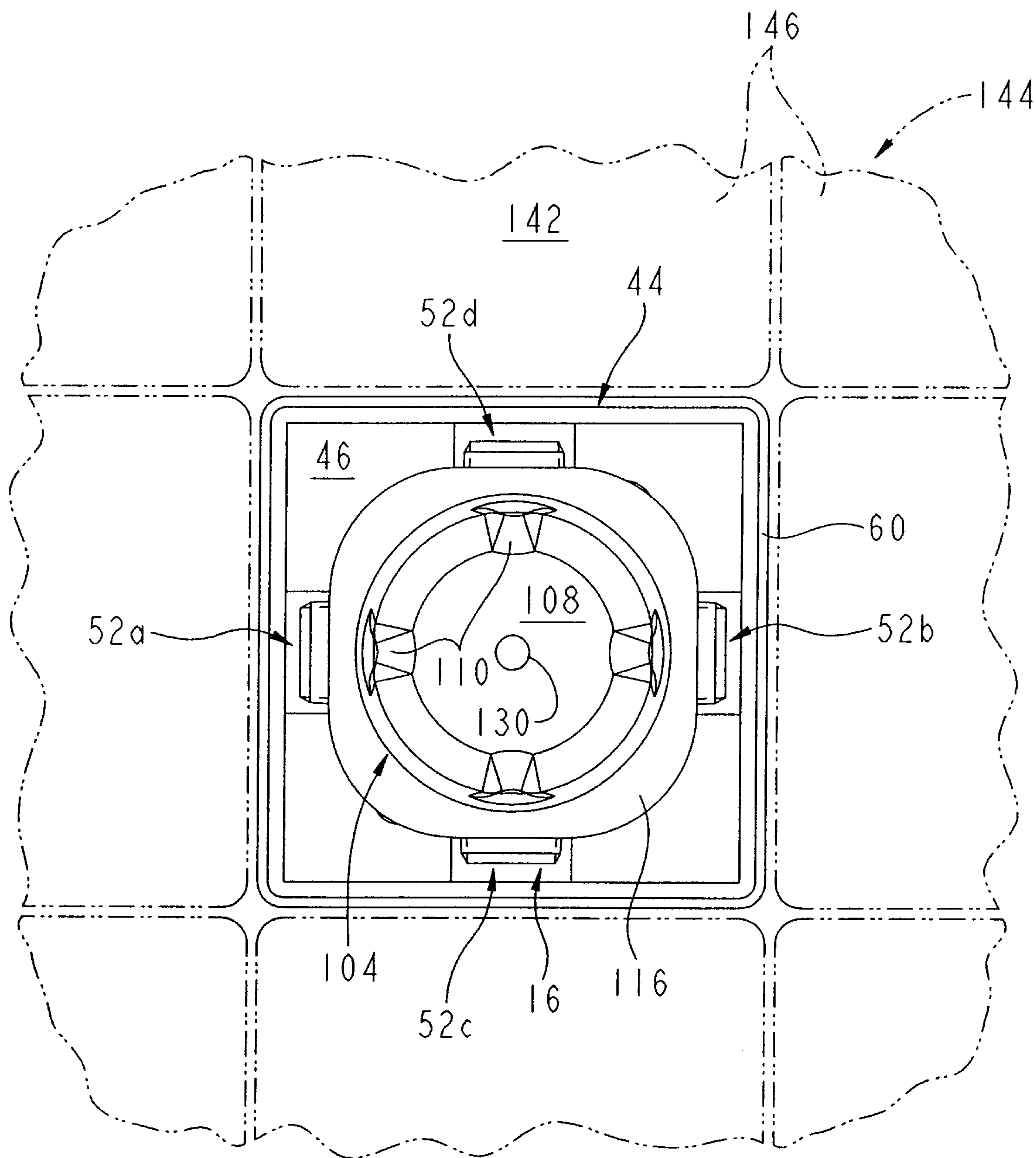


FIG. 10

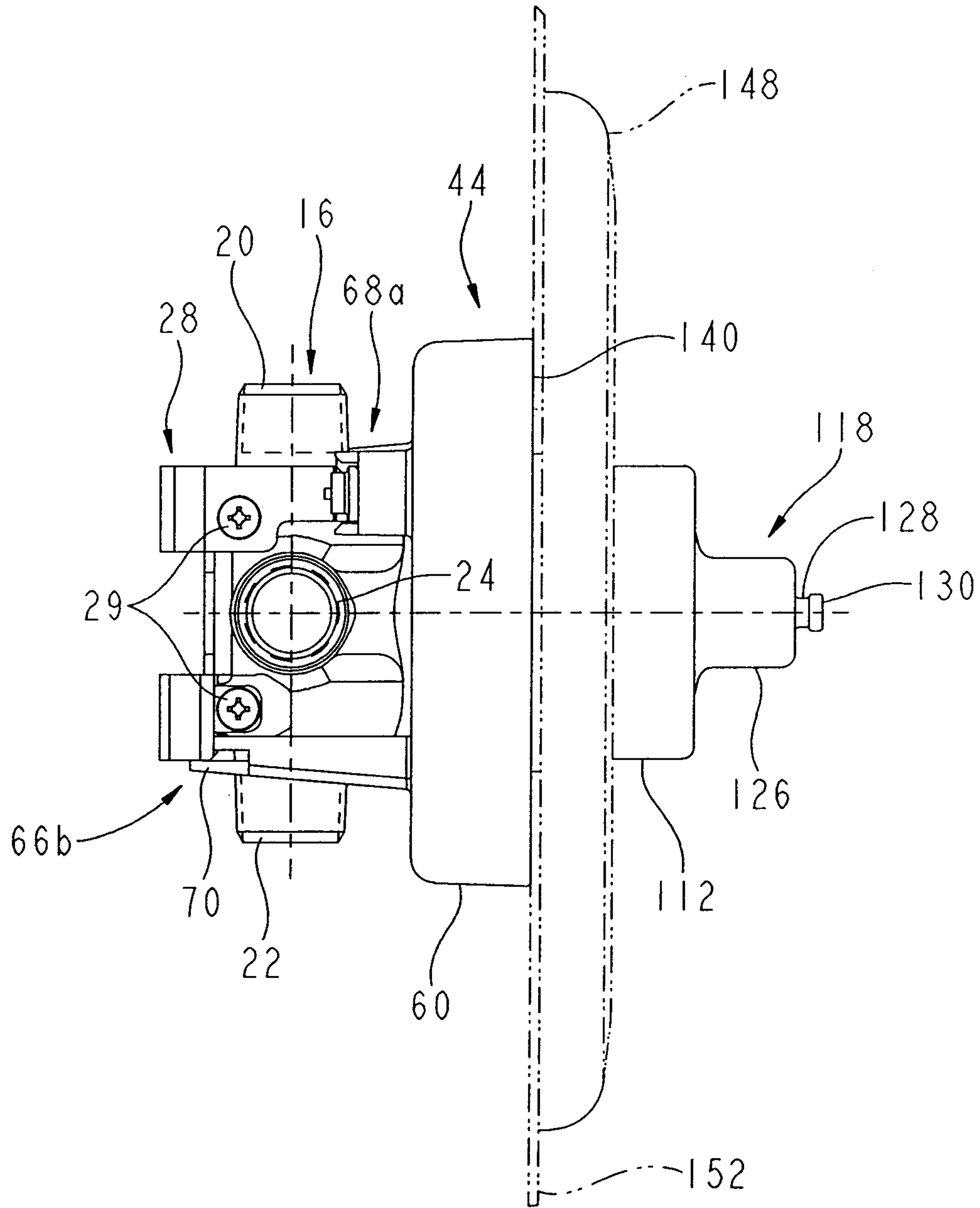


FIG. 11

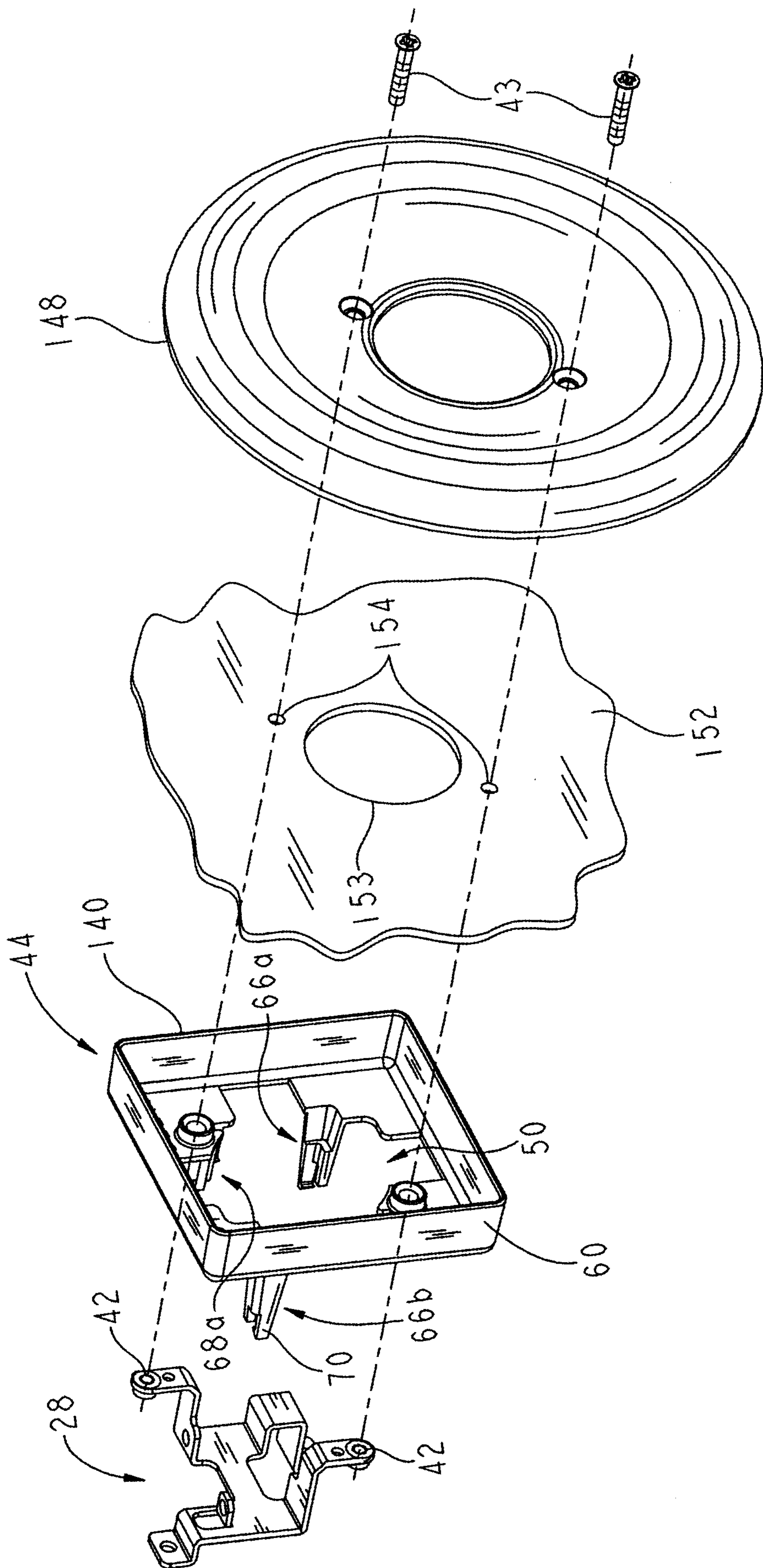


FIG. 12

