



(43) International Publication Date
3 January 2014 (03.01.2014)

(10) International Publication Number
WO 2014/001435 A2

(51) International Patent Classification:
H04Q 1/02 (2006.01)

(21) International Application Number:
PCT/EP2013/063477

(22) International Filing Date:
27 June 2013 (27.06.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/665,199 27 June 2012 (27.06.2012) US

(71) Applicant: **TYCO ELECTRONICS RAYCHEM BVBA**
[BE/BE]; Diestsesteenweg 692, B-3010 Kessel-Lo (BE).

(72) Inventors: **W CLAEYS, Didier, Pierre**; Wezelbaan 141,
B-3290 Schaffen (BE). **THIJS, Danny, Ghislain**; Merel-
straat 14, B-3520 Zonhoven (BE).

(74) Agent: **OBST, Bernhard**; Bressel und Partner, Potsdamer
Platz 10, 10785 Berlin (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished
upon receipt of that report (Rule 48.2(g))

(54) Title: HIGH DENSITY TELECOMMUNICATIONS CHASSIS WITH CABLE MANAGEMENT

(57) Abstract: A telecommunications chassis (10/100) is disclosed herein. The telecommunications chassis (10/100) is configured for receiving telecommunications equipment. The telecommunications chassis (10/100) defines a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14). A first pair of panels (24/124) is located at the front side (16), a second pair of panels (24/124) is located at the rear side (18), a third pair of panels (24/124) is located at the right side (20), and a fourth pair of panels (24/124) is located at the left side (22). Each panel (24/124) of the pairs of panels (24/124) defines a plurality of receptacles (26/126) for receiving the telecommunications equipment. When mounted to a fixed surface, the telecommunications chassis (10/100) is rotatable relative to the fixed surface about the central longitudinal axis (36). Each panel (24/124) of any given pair of panels (24/124) is pivotable away from the other panel (24/124) of the any given pair of panels (24/124) about a pivot axis (30) parallel to the central longitudinal axis (36) of the chassis (10/100).



WO 2014/001435 A2

HIGH DENSITY TELECOMMUNICATIONS CHASSIS WITH CABLE MANAGEMENT

Cross-Reference To Related Application

The present patent application claims the benefit of U.S. Provisional Patent
5 Application Serial No. 61/665,199, filed June 27, 2012, which application is hereby
incorporated by reference in its entirety.

Technical Field

The present disclosure relates generally to telecommunications equipment.
More particularly, the present disclosure relates to chassis for housing
10 telecommunications equipment.

Background

In telecommunications, high density is desirable, especially if accommodating
standard sized equipment or standard footprints. However, achieving high density and
standardization in telecommunication connectivity leads to certain design challenges.
15 Cable management and easy access are both issues that must be taken into consideration
in configuration of high density equipment. There is a need in the art for
telecommunications equipment that can achieve high connectivity density, utilize
standard footprints, and provide effective cable management as well as easy
accessibility to all major components of the equipment.

Summary

20 The present disclosure relates to a high density mounting arrangement for
mounting telecommunications equipment to a chassis, the chassis providing cable
management and allowing access to major components of the equipment.

According to one aspect, the chassis of the present disclosure is configured for
25 receiving telecommunications equipment, the telecommunications chassis defining a
top, a bottom, a front side, a rear side, a right side, and a left side, the

telecommunications chassis defining a central longitudinal axis extending between the top and the bottom. A first plurality of receptacles for receiving telecommunications equipment is located at the front side, a second plurality of receptacles for receiving telecommunications equipment is located at the rear side, a third plurality of receptacles
5 for receiving telecommunications equipment is located at the right side, and a fourth plurality of receptacles for receiving telecommunications equipment is located at the left side. When mounted to a fixed surface, the telecommunications chassis is rotatable relative to the fixed surface about the central longitudinal axis.

According to another aspect, the chassis of the present disclosure is configured
10 for receiving telecommunications equipment, the telecommunications chassis defining a top, a bottom, a front side, a rear side, a right side, and a left side, the telecommunications chassis defining a central longitudinal axis extending between the top and the bottom. A first pair of panels is located at the front side, a second pair of panels is located at the rear side, a third pair of panels is located at the right side, and a
15 fourth pair of panels is located at the left side of the telecommunications chassis, each panel of the pairs of panels defining a plurality of receptacles for receiving the telecommunications equipment. Each panel of any given pair of panels is pivotable away from the other panel of the any given pair of panels about a pivot axis parallel to the central longitudinal axis of the chassis.

20 According to another aspect, the present disclosure is directed to a telecommunications device including a telecommunications chassis. The telecommunications chassis is configured for receiving telecommunications equipment. The telecommunications chassis defines a top, a bottom, a front side, a rear side, a right side, and a left side, the telecommunications chassis defining a central longitudinal axis
25 extending between the top and the bottom. A first pair of panels is located at the front side, a second pair of panels is located at the rear side, a third pair of panels is located at the right side, and a fourth pair of panels is located at the left side. Each panel of the pairs of panels defines a plurality of receptacles for receiving the telecommunications equipment. When mounted to a fixed surface, the telecommunications chassis is
30 rotatable relative to the fixed surface about the central longitudinal axis. Each panel of

any given pair of panels is pivotable away from the other panel of the any given pair of panels about a pivot axis parallel to the central longitudinal axis of the chassis.

According to another aspect, the present disclosure relates to a method of using a telecommunications device comprising providing a telecommunications chassis
5 configured for receiving telecommunications equipment, wherein the telecommunications chassis defines a top, a bottom, a front side, a rear side, a right side, and a left side, the telecommunications chassis defining a central longitudinal axis extending between the top and the bottom, providing a first plurality of receptacles for receiving telecommunications equipment at the front side, a second plurality of
10 receptacles for receiving telecommunications equipment at the rear side, a third plurality of receptacles for receiving telecommunications equipment at the right side, and a fourth plurality of receptacles for receiving telecommunications equipment at the left side, and rotating the telecommunications chassis relative to a fixed surface on which the telecommunications chassis has been mounted about the central longitudinal
15 axis to access a plurality of receptacles located on at least one of the right side and the left side of the chassis from either the front side or the rear side of the chassis.

According to yet another aspect, the present disclosure relates to a method of using a telecommunications device comprising providing a telecommunications chassis configured for receiving telecommunications equipment, wherein the
20 telecommunications chassis defines a top, a bottom, a front side, a rear side, a right side, and a left side, the telecommunications chassis defining a central longitudinal axis extending between the top and the bottom, providing a first pair of panels located at the front side, a second pair of panels located at the rear side, a third pair of panels located at the right side, and a fourth pair of panels located at the left side of the
25 telecommunications chassis, each panel of the pairs of panels defining a plurality of receptacles for receiving the telecommunications equipment, and pivoting a panel of a given pair of panels away from the other panel of the given pair of panels about a pivot axis parallel to the central longitudinal axis of the chassis.

A variety of additional inventive aspects will be set forth in the description that
30 follows. The inventive aspects can relate to individual features and combinations of

features. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the broad inventive concepts upon which the embodiments disclosed herein are based.

5

Brief Description of the Drawings

FIG. 1 is a top, front, right side perspective view of a first embodiment of a telecommunications chassis having features that are examples of inventive aspects in accordance with the present disclosure;

10 FIG. 2 is a bottom, front, right side perspective view of the telecommunications chassis of FIG. 1;

FIG. 3 is a top view of the telecommunications chassis of FIG. 1;

FIG. 4 is a front view of the telecommunications chassis of FIG. 1;

FIG. 5 diagrammatically illustrates the pivotability of the individual panels that make up the telecommunications chassis of FIG. 1;

15 FIGS. 6A-6D diagrammatically illustrate the rotatability of the telecommunications chassis of FIG. 1;

FIG. 7 is a top view of the telecommunications chassis of FIG. 1 illustrated with one example layout of cable management structures around the chassis;

20 FIG. 8 is a top, front, right side perspective view of a second embodiment of a telecommunications chassis having features that are examples of inventive aspects in accordance with the present disclosure;

FIG. 9 is a bottom, front, right side perspective view of the telecommunications chassis of FIG. 8;

FIG. 10 is a top view of the telecommunications chassis of FIG. 8;

25 FIG. 11 is a front view of the telecommunications chassis of FIG. 8; and

FIG. 12 illustrates in isolation one of the cable management structures of FIG. 7 in the form of a cable management ring that is suitable for use with the chassis of FIGS. 1-7 and chassis of FIGS. 8-11.

Detailed Description

Reference will now be made in detail to examples of inventive aspects of the present disclosure which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

According to the present disclosure, a telecommunications chassis configured to house telecommunications equipment in a high density arrangement is provided. As will be discussed in further detail below, the telecommunications chassis is configured with cable management features for managing cables extending to and/or from the telecommunications equipment. In addition, the telecommunications chassis is configured to allow access to all major components of the equipment.

Referring now to FIGS. 1-7, a first embodiment of a telecommunications chassis 10 having features that are examples of inventive aspects in accordance with the principles of the present disclosure is illustrated. Another embodiment of a telecommunications chassis 100 including features similar to the first embodiment 10 is shown in FIGS. 8-11.

Referring to FIGS. 1-7, the telecommunications chassis 10 defines a top 12, a bottom 14, a front side 16, a rear side 18, a right side 20, and a left side 22. The chassis 10 is configured to removably receive and house telecommunications equipment in a stacked arrangement, wherein the telecommunications equipment are generally stacked in a direction from top 12 to bottom 14.

The depicted chassis 10 includes eight panels 24, each including receptacles 26 for receiving the telecommunications equipment. In the depicted embodiment, each panel 24 includes two columns of receptacles 26 extending in a direction from top 12 to bottom 14. Two of the panels 24 define front faces 28 that are exposed toward the right side 20, two of the panels 24 define front faces 28 that are exposed toward the left side 22, two of the panels 24 define front faces 28 that are exposed toward to the front side 16, and two of the panels 24 define front faces 28 that are exposed toward the rear side 18.

According to example embodiments, the types of telecommunications equipment that may be mounted to the chassis 10 may be removable, modular type equipment. Such equipment may include electrical equipment such as digital cross-connect jack modules or cassettes. Such modules may include jacks having RJ-45
5 profiles, including Cat-5e jacks, or 10-Gig jacks as known in the art. The jack modules may define connection locations (e.g., ports) at the fronts of the modules and connection locations at the rears of the modules.

In the depicted embodiment, each panel 24 of the chassis 10 is configured with twenty receptacles 26 (two columns of ten receptacles 26) for holding twenty modules
10 or cassettes. Thus, in the depicted embodiment, the chassis 10 has the capacity to hold one hundred sixty modules or cassettes, forty at each side (or quadrant) 16, 18, 20, 22 of the chassis 10. Other numbers are possible.

As shown in the diagrammatic view in FIG. 5, each of the panels 24 that make up the pair of panels 24 of a given side or quadrant 16, 18, 20, 22 is configured to
15 pivotably move away from the other panel 24 of the pair. As shown in FIG. 5, the panels 24 are configured to pivot about pivot axes 30. By pivoting a desired panel 24, a technician is able to gain access to components such as connection locations of telecommunications equipment that are located at the rears of the equipment (and at the rear faces 32 of the panels 24) and that otherwise would not be accessible from a
20 peripheral exterior of the chassis 10.

As shown in FIGS. 1-7, the chassis 10 defines a central opening 34 extending therethrough in a direction from the top 12 of the chassis 10 toward the bottom 14 of the chassis 10. The central opening 34 is configured to accommodate cables that extend to and/or from the components at the rears of the equipment. As noted above, by pivoting
25 a desired panel 24 about a pivot axis 30, components or connection locations of telecommunications equipment that are otherwise only accessible from the rear face 32 of a panel 24, the central opening 34, and any cabling therewithin may be accessed.

As illustrated in FIG. 6, the chassis 10 is configured such that it can be rotated about a longitudinal axis 36 extending through the center of the opening 34. According
30 to one example embodiment, the chassis 10 is rotatable 90 degrees in a clockwise

direction. In such an embodiment, a technician standing at the front side 16 of the chassis 10 (facing the front faces 28 of the panels 24 at the front side 16) can rotate the chassis 90 degrees in a clockwise direction to access the front faces 28 of panels 24 that are normally positioned on the right side 20 of the chassis 10. Similarly, a technician
5 standing at the rear side 18 of the chassis 10 (facing the front faces 28 of the panels 24 at the rear side 18) can rotate the chassis 90 degrees in a clockwise direction to access the front faces 28 of panels 24 that are normally positioned on the left side 22 of the chassis 10. In this manner, if multiple chassis, similar to chassis 10 of FIGS. 1-7, are located in a telecommunications environment such as a data center, aisles only at the
10 front 16 and the back 18 of the chassis 10 need to be provided and full access to all sides 16, 18, 20, 22 of the chassis 10 are provided by the rotational arrangement of the chassis 10. The rotational arrangement also keeps any cables extending to and/or from the mounted telecommunications equipment generally close to the center of the chassis 10, limiting the need for extensive cable slack.

15 It should be noted that the rotational arrangement discussed above, including the angle of rotation and the direction of rotation, is simply one example and the chassis 10 can be configured for different angles and different freedoms of movement, depending upon the desired connectivity and cabling arrangement.

Still referring to FIGS. 1-7, the chassis 10 also provides for cable management
20 features around the outer periphery of the chassis 10. Each pair of panels 24 defines a cable channel or trough 38 with an adjacent pair of panels 24 that is located generally 90 degrees therefrom. As shown, each cable trough 38 is defined by a first sidewall 40, a second sidewall 42, and an intermediate wall 44 that connects the first sidewall 40 to the second sidewall 42. As shown, hinges 46 that allow the panels 24 to pivot generally
25 about the pivot axes 30 extend along the centerline 48 of the intermediate wall 44. When the panels 24 pivot, the first and second sidewalls 40, 42 move toward each other. The spacing provided by the cable trough 38 accommodates the moving panels 24.

The first and second sidewalls 40, 42 defining the cable troughs 38 are defined by panels 24 that are located at sides (i.e., quadrants) that are generally 90 degrees
30 apart. For example, if the first sidewall 40 defining a cable trough 38 is of a panel 24 at

the front side 16 of the chassis 10, the second sidewall 42 defining the cable trough 38 is of a panel 24 that may be located at the right side 20 of the chassis 10. In contrast, the intermediate wall 44 defining the trough 38 that extends between the first sidewall 40 and the second sidewall 42 is a shared wall. A first half 50 of the intermediate wall 44 is formed by a first panel 24 and the second half 52 of the intermediate wall 44 is formed by another panel 24 that is located at a side (quadrant) that is generally 90 degrees therefrom.

Cables extending from and/or to the front faces 28 of the panels 24 may be guided through the cable troughs 38. According to one example embodiment, cable management structures 54 in form of cable management rings 56 may be used at locations adjacent the troughs 38 for keeping cables organized within the troughs 38. FIG. 7 is a top view of the chassis 10 illustrating one possible positional layout for the cable management rings 56. The cable management rings 56 may be attached to the first sidewall 40 defining the trough 38, to the second sidewall 42 defining the trough 38, to the intermediate wall 44 defining the trough 38, or to the front faces 28 of the panels 24 adjacent the troughs 38. Other locations are certainly possible. In a preferred embodiment, each row of receptacles 26 is provided with a corresponding row of cable management rings 56.

An example cable management ring 56 that may be suitable for use with the chassis 10, 100 of the present disclosure is shown in isolation in FIG. 12. According to one embodiment, the cable management ring 56 shown in FIG. 12 may be manufactured out of various types of polymers. The cable management ring 56 includes an upper half 58 that is attached at a first end 60 to a lower half 62. Each of the upper half 58 and the lower half 62 defines a transverse extension 64 (e.g. a flexible flap) at a second end 66. The extensions 64 overlap or intermate to capture a cable passing through the ring 56 between the upper half 58 and the lower half 62. If a cable needs to be inserted into or removed from the cable management ring 56, it is passed through the flexible extensions from the second end 66 thereof. When the cable management rings 56 are mounted to telecommunications structures such as the chassis

10, 100 of the present disclosure, the rings 56 are generally mounted adjacent their first ends 60.

It should be noted that the cable management ring 56 illustrated in FIGS. 7 and 12 and described above is only one example of a variety of different cable management structures 54 that may be used with the chassis 10, 100 of the present disclosure and other structures are possible.

FIGS. 8-11 illustrate the second embodiment of a chassis 100 having features that are examples of inventive aspects in accordance with the present disclosure. The chassis 100 is similar in construction and operation to the chassis 10 described above and shown in FIGS. 1-7. The chassis 100 defines a slightly different overall shape than the chassis 10 of FIGS. 1-7. The chassis 100 of FIGS. 8-12 defines a larger central opening 134 and larger troughs 138 between the panels 124, defined by deeper first and second sidewalls 140, 142.

It should be noted that, although the chassis 10, 100 of the present disclosure have been described and depicted herein as defining a certain height or including a certain number of receptacles 26, 126 for receiving equipment, the chassis 10, 100 may be configured to a variety of equipment sizes and numbers. According to certain embodiments, the chassis 10, 100 may be manufactured in a certain height or size depending upon the desired connectivity application. According to other embodiments, the chassis 10, 100 may be provided in modular form, wherein similar chassis 10, 100 may be stacked on top of each other to increase the density of the connections. When stacked on top of each other, each chassis 10, 100 may still be configured to rotate individually or the stacked chassis may be provided with a locking arrangement to have the chassis 10, 100 rotate in unison. The same principles could be applied to the pivoting of the panels 24, 124.

Examples of various inventive aspects of the present disclosure have been described herein. It will be appreciated that modifications and equivalents of the disclosed inventive aspects are intended to be included within the broad scope of the present disclosure.

List of Reference Numerals and Corresponding Features

- 10 – First embodiment of a telecommunications chassis
- 12 – Top of chassis
- 5 14 – Bottom of chassis
- 16 – Front side/quadrant of chassis
- 18 – Rear side/quadrant of chassis
- 20 – Right side/quadrant of chassis
- 22 – Left side/quadrant of chassis
- 10 24 – Panel
- 26 – Receptacle
- 28 – Front face of panel
- 30 – Pivot axis
- 32 – Rear face of panel
- 15 34 – Central opening
- 36 – Longitudinal axis
- 38 – Trough
- 40 – First sidewall
- 42 – Second sidewall
- 20 44 – Intermediate wall
- 46 – Hinge
- 48 – Centerline of intermediate wall
- 50 – First half of intermediate wall
- 52 – Second half of intermediate wall
- 25 54 – Cable management structure
- 56 – Cable management ring
- 58 – Upper half of cable management ring
- 60 – First end of cable management ring
- 62 – Lower half of cable management ring
- 30 64 – Transverse extension

- 66 – Second end of cable management ring
- 100 – Second embodiment of a telecommunications chassis
- 124 – Panel of second embodiment of telecommunications chassis
- 126 – Receptacle of second embodiment of telecommunications chassis
- 5 134 – Central opening of second embodiment of telecommunications chassis
- 138 – Trough of second embodiment of telecommunications chassis
- 140 – First sidewall defining trough of second embodiment of telecommunications chassis
- 142 – Second sidewall defining trough of second embodiment of telecommunications
- 10 chassis

WE CLAIM:

1. A telecommunications device comprising:
a telecommunications chassis (10/100) configured for receiving telecommunications equipment, the telecommunications chassis (10/100) defining a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14); and
a first pair of panels (24/124) located at the front side (16), a second pair of panels (24/124) located at the rear side (18), a third pair of panels (24/124) located at the right side (20), and a fourth pair of panels (24/124) located at the left side (22) of the telecommunications chassis (10/100), each panel (24/124) of the pairs of panels (24/124) defining a plurality of receptacles (26/126) for receiving the telecommunications equipment;
wherein, when mounted to a fixed surface, the telecommunications chassis (10/100) is rotatable relative to the fixed surface about the central longitudinal axis (36);
and
wherein each panel (24/124) of any given pair of panels (24/124) is pivotable away from the other panel (24/124) of the any given pair of panels (24/124) about a pivot axis (30) parallel to the central longitudinal axis (36) of the chassis (10/100).
2. A telecommunications device according to claim 1, wherein the receptacles (26/126) defined by each panel (24/124) are configured in a stacked arrangement extending from the top (12) to the bottom (14).
3. A telecommunications device according to claim 2, wherein each panel (24/124) defines two columns of receptacles (26/126) stacked in a direction from the top (12) to the bottom (14).

4. A telecommunications device according to claim 1, wherein each panel (24/124) defines twenty receptacles (26/126).
5. A telecommunications device according to claim 1, wherein the telecommunications chassis (10/100) further defines an opening (34/134) extending therethrough in a direction parallel to the central longitudinal axis (36).
6. A telecommunications device according to claim 5, wherein the opening (34/134) is a central opening defining the central longitudinal axis (36).
7. A telecommunications device according to claim 1, wherein a cable trough (38/138) is defined between each pair of panels (24/124) around a periphery of the telecommunications chassis (10/100), the cable troughs (38/138) extending from the top (12) to the bottom (14).
8. A telecommunications device according to claim 7, wherein the telecommunications chassis (10/100) further includes cable management structures (54) configured to guide cables extending to and/or from the telecommunications equipment toward the troughs (38/138).
9. A telecommunications device according to claim 8, wherein the cable management structures (54) are defined by cable management rings (56).
10. A telecommunications device according to claim 9, wherein each row of receptacles (24/124) around a periphery of the telecommunications chassis (10/100) includes a corresponding row of cable management rings (56).
11. A telecommunications device according to claim 1, wherein chassis (10/100) is rotatable about the central longitudinal axis (36) over a range of about 90 degrees.

12. A telecommunications device comprising:
a telecommunications chassis (10/100) configured for receiving telecommunications equipment, the telecommunications chassis (10/100) defining a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14); and
a first pair of panels (24/124) located at the front side (16), a second pair of panels (24/124) located at the rear side (18), a third pair of panels (24/124) located at the right side (20), and a fourth pair of panels (24/124) located at the left side (22) of the telecommunications chassis (10/100), each panel (24/124) of the pairs of panels (24/124) defining a plurality of receptacles (26/126) for receiving the telecommunications equipment;
wherein each panel (24/124) of any given pair of panels (24/124) is pivotable away from the other panel (24/124) of the any given pair of panels (24/124) about a pivot axis (30) parallel to the central longitudinal axis (36) of the chassis (10/100).
13. A telecommunications device according to claim 12, wherein the receptacles (26/126) defined by each panel (24/124) are configured in a stacked arrangement extending from the top (12) to the bottom (14).
14. A telecommunications device according to claim 13, wherein each panel (24/124) defines two columns of receptacles (24/124) stacked in a direction from the top (12) to the bottom (14).
15. A telecommunications device according to claim 12, wherein each panel (24/124) defines twenty receptacles (26/126).
16. A telecommunications device according to claim 12, wherein the telecommunications chassis (10/100) further defines an opening (34/134) extending therethrough in a direction parallel to the central longitudinal axis (36).

17. A telecommunications device according to claim 16, wherein the opening (34/134) is a central opening defining the central longitudinal axis (36).

18. A telecommunications device according to claim 12, wherein a cable trough (38/138) is defined between each pair of panels (24/124) around a periphery of the telecommunications chassis (10/100), the cable troughs (38/138) extending from the top (12) to the bottom (14).

19. A telecommunications device comprising:

a telecommunications chassis (10/100) configured for receiving telecommunications equipment, the telecommunications chassis (10/100) defining a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14); and

a first plurality of receptacles (26/126) for receiving telecommunications equipment located at the front side (16), a second plurality of receptacles (26/126) for receiving telecommunications equipment located at the rear side (18), a third plurality of receptacles (26/126) for receiving telecommunications equipment located at the right side (20), and a fourth plurality of receptacles (26/126) for receiving telecommunications equipment located at the left side (22);

wherein, when mounted to a fixed surface, the telecommunications chassis (10/100) is rotatable relative to the fixed surface about the central longitudinal axis (36).

20. A telecommunications device according to claim 19, wherein chassis (10/100) is rotatable about the central longitudinal axis (36) over a range of about 90 degrees.

21. A method of using a telecommunications device, the method comprising:

- providing a telecommunications chassis (10/100) configured for receiving telecommunications equipment, wherein the telecommunications chassis (10/100)

defines a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14);

- providing a first plurality of receptacles (26/126) for receiving telecommunications equipment at the front side (16), a second plurality of receptacles (26/126) for receiving telecommunications equipment at the rear side (18), a third plurality of receptacles (26/126) for receiving telecommunications equipment at the right side (20), and a fourth plurality of receptacles (26/126) for receiving telecommunications equipment at the left side (22); and

- rotating the telecommunications chassis (10/100) relative to a fixed surface on which the telecommunications chassis (10/100) has been mounted about the central longitudinal axis (36) to access a plurality of receptacles (26/126) located on at least one of the right side (20) and the left side (22) of the chassis (10/100) from either the front side (16) or the rear side (18) of the chassis (10/100).

22. A method of using a telecommunications device, the method comprising:

- providing a telecommunications chassis (10/100) configured for receiving telecommunications equipment, wherein the telecommunications chassis (10/100) defines a top (12), a bottom (14), a front side (16), a rear side (18), a right side (20), and a left side (22), the telecommunications chassis (10/100) defining a central longitudinal axis (36) extending between the top (12) and the bottom (14);

- providing a first pair of panels (24/124) located at the front side (16), a second pair of panels (24/124) located at the rear side (18), a third pair of panels (24/124) located at the right side (20), and a fourth pair of panels (24/124) located at the left side (22) of the telecommunications chassis (10/100), each panel (24/124) of the pairs of panels (24/124) defining a plurality of receptacles (26/126) for receiving the telecommunications equipment; and

- pivoting a panel (24/124) of a given pair of panels (24/124) away from the other panel (24/124) of the given pair of panels (24/124) about a pivot axis (30) parallel to the central longitudinal axis (36) of the chassis (10/100).

FIG. 1

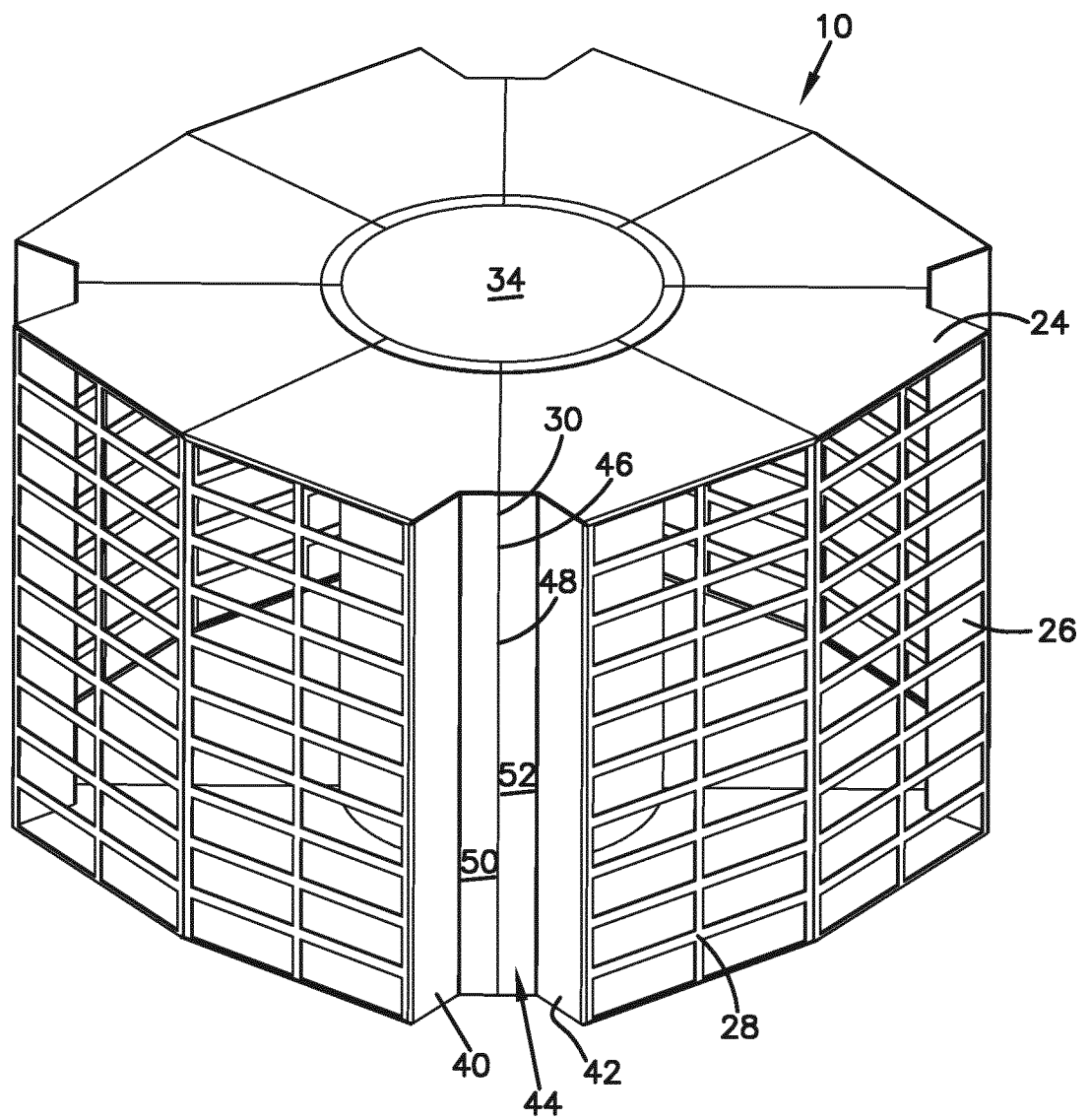


FIG. 2

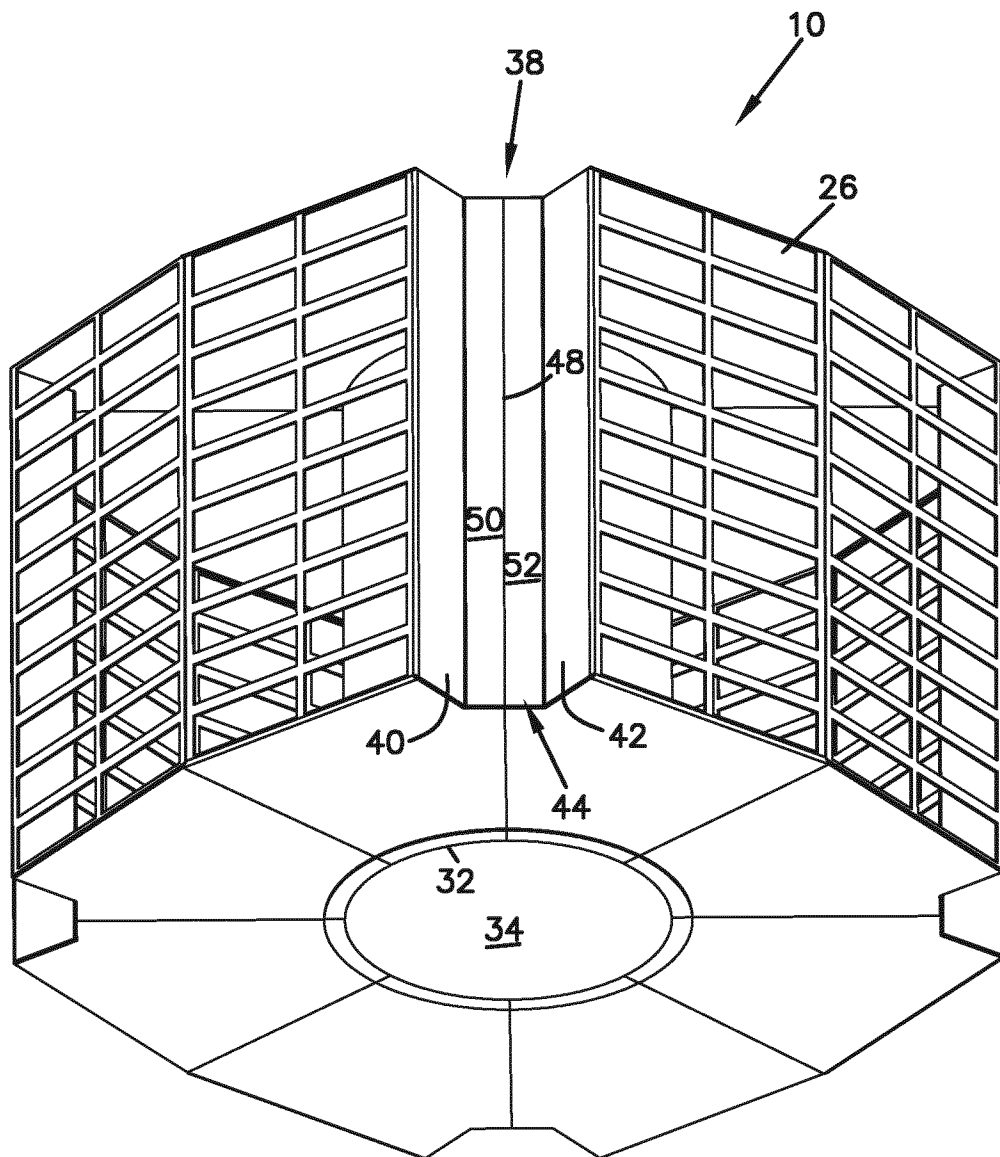
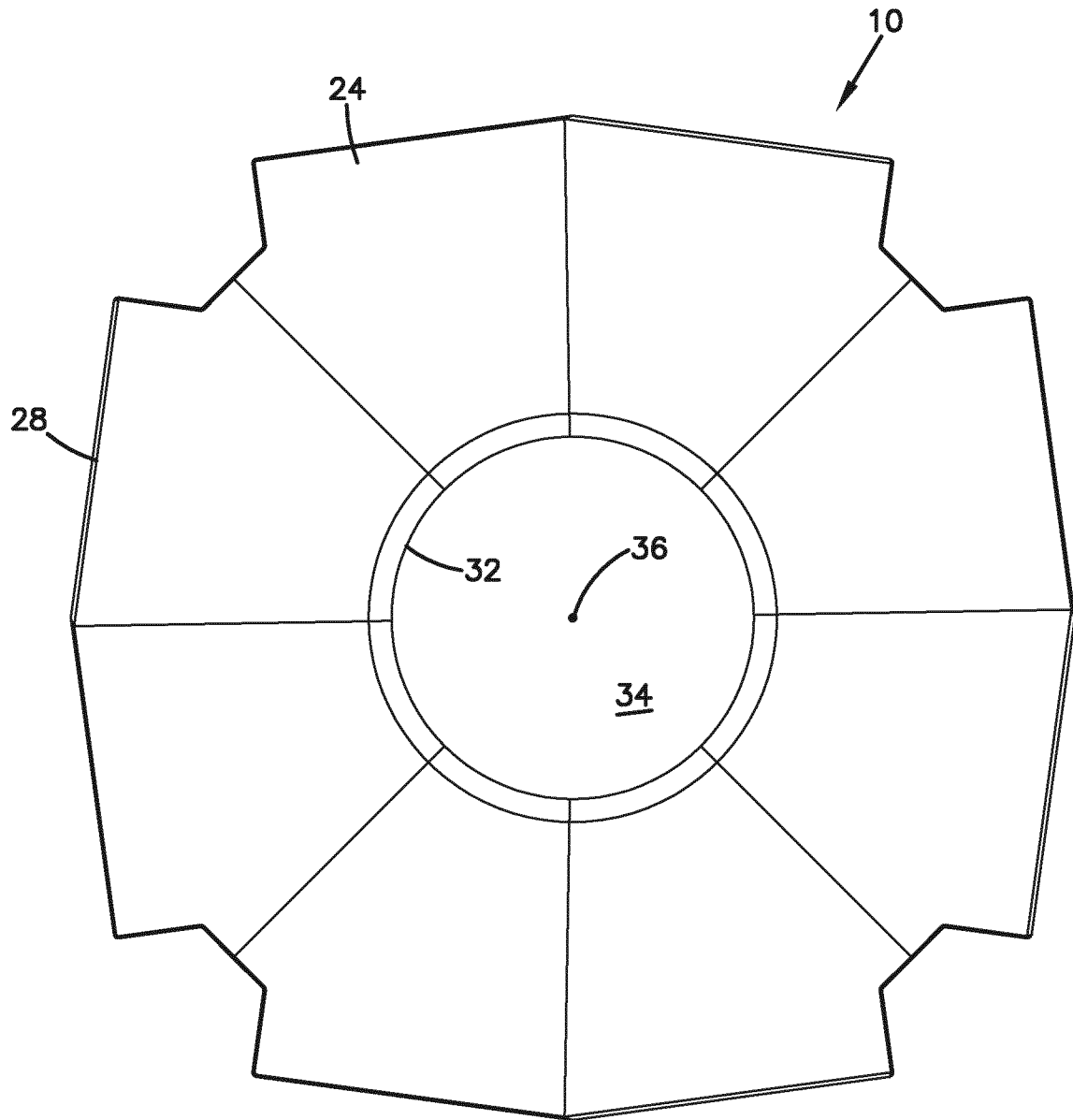


FIG. 3



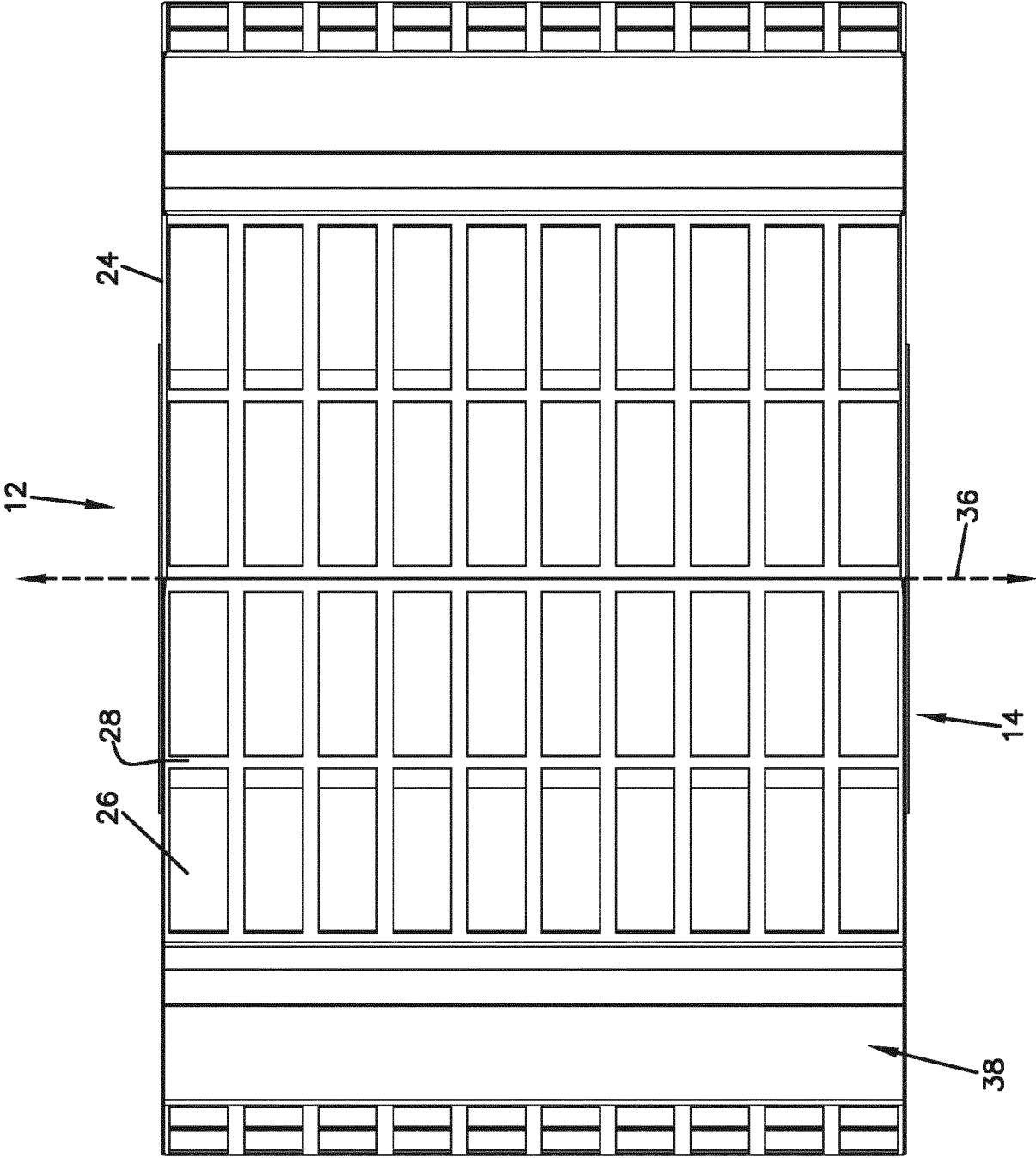
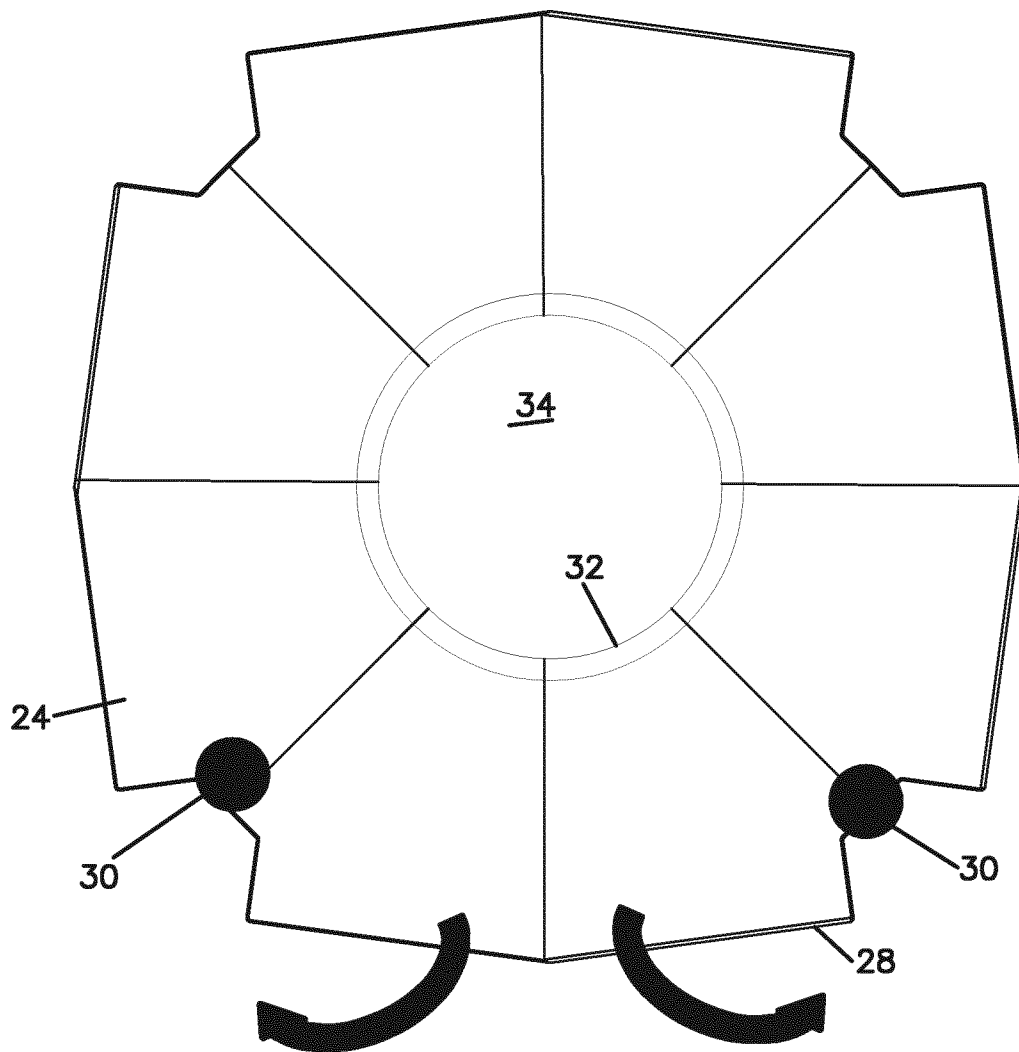
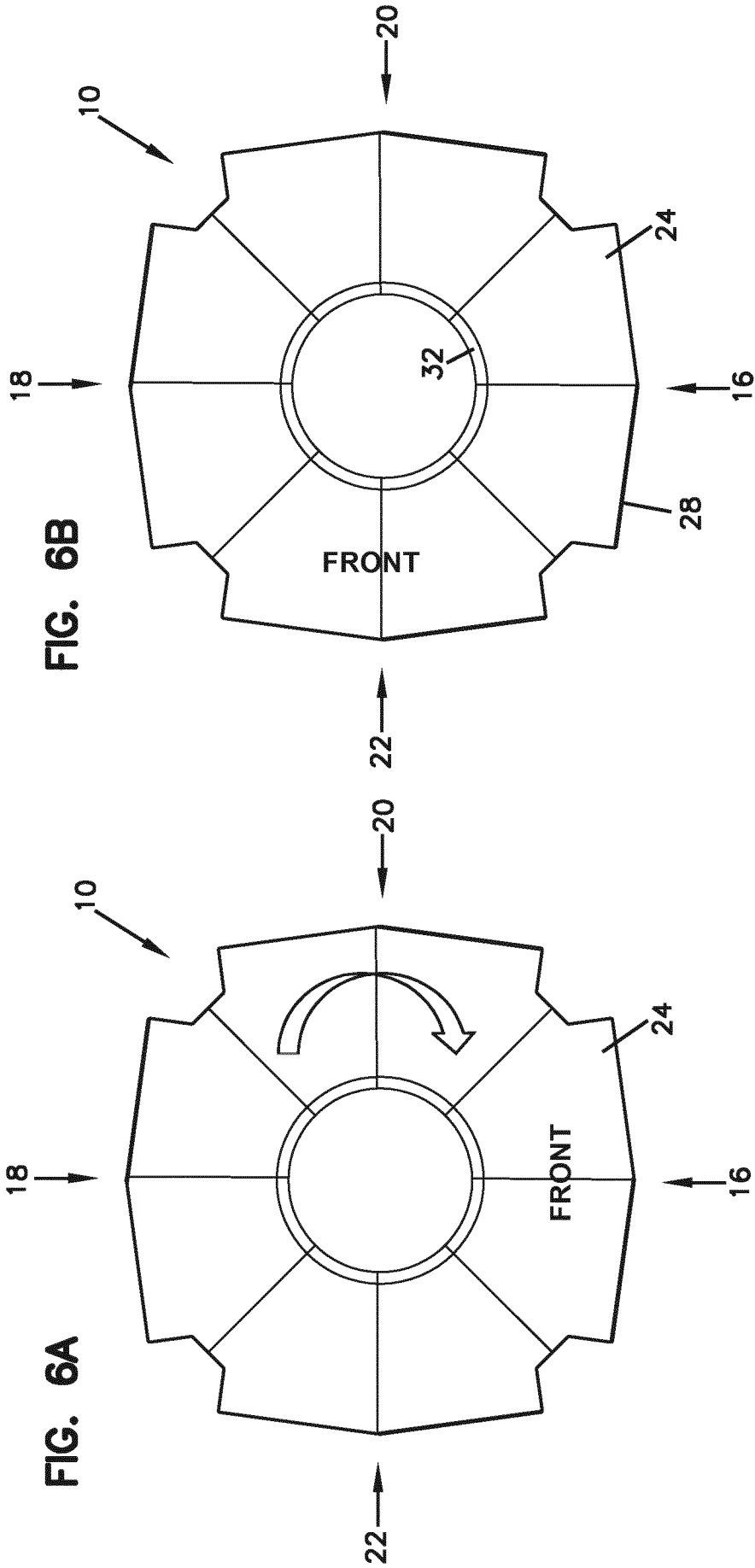
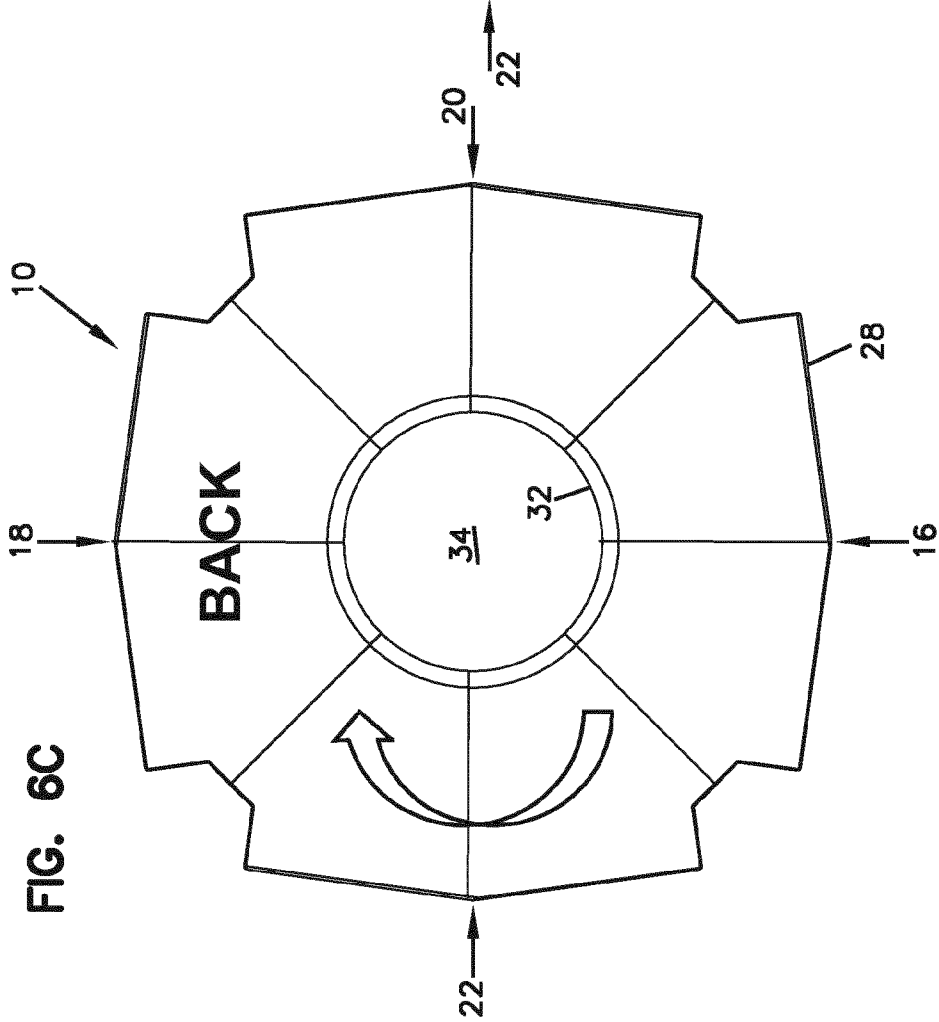
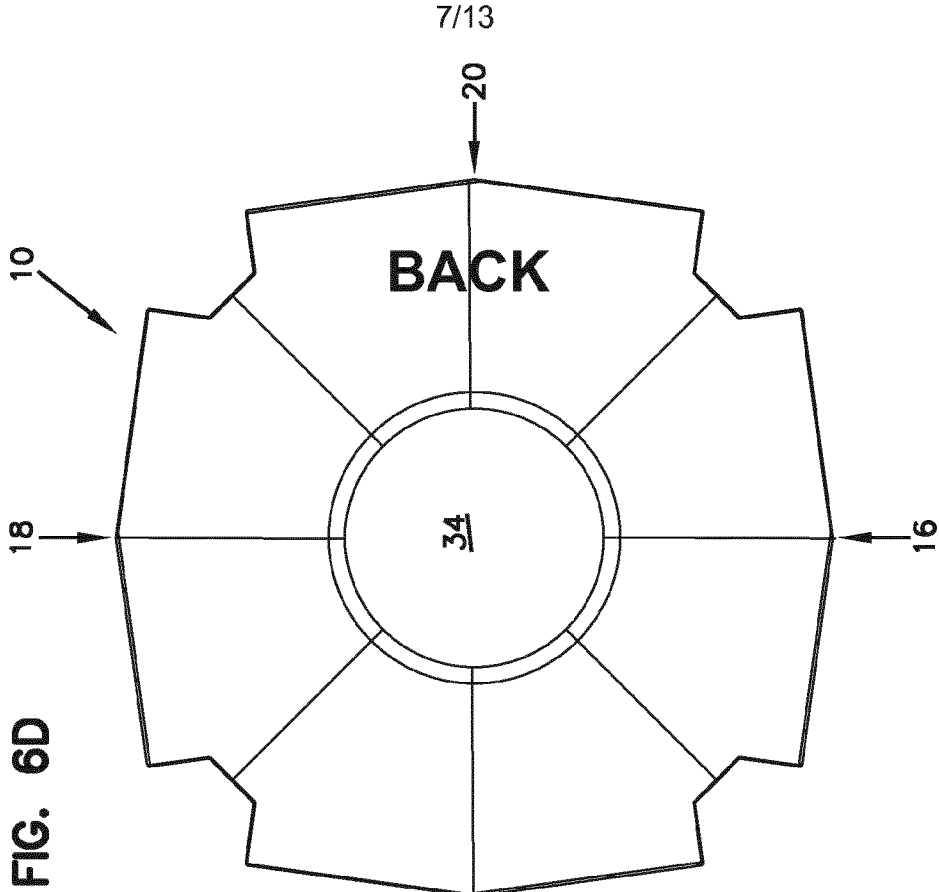


FIG. 4

FIG. 5





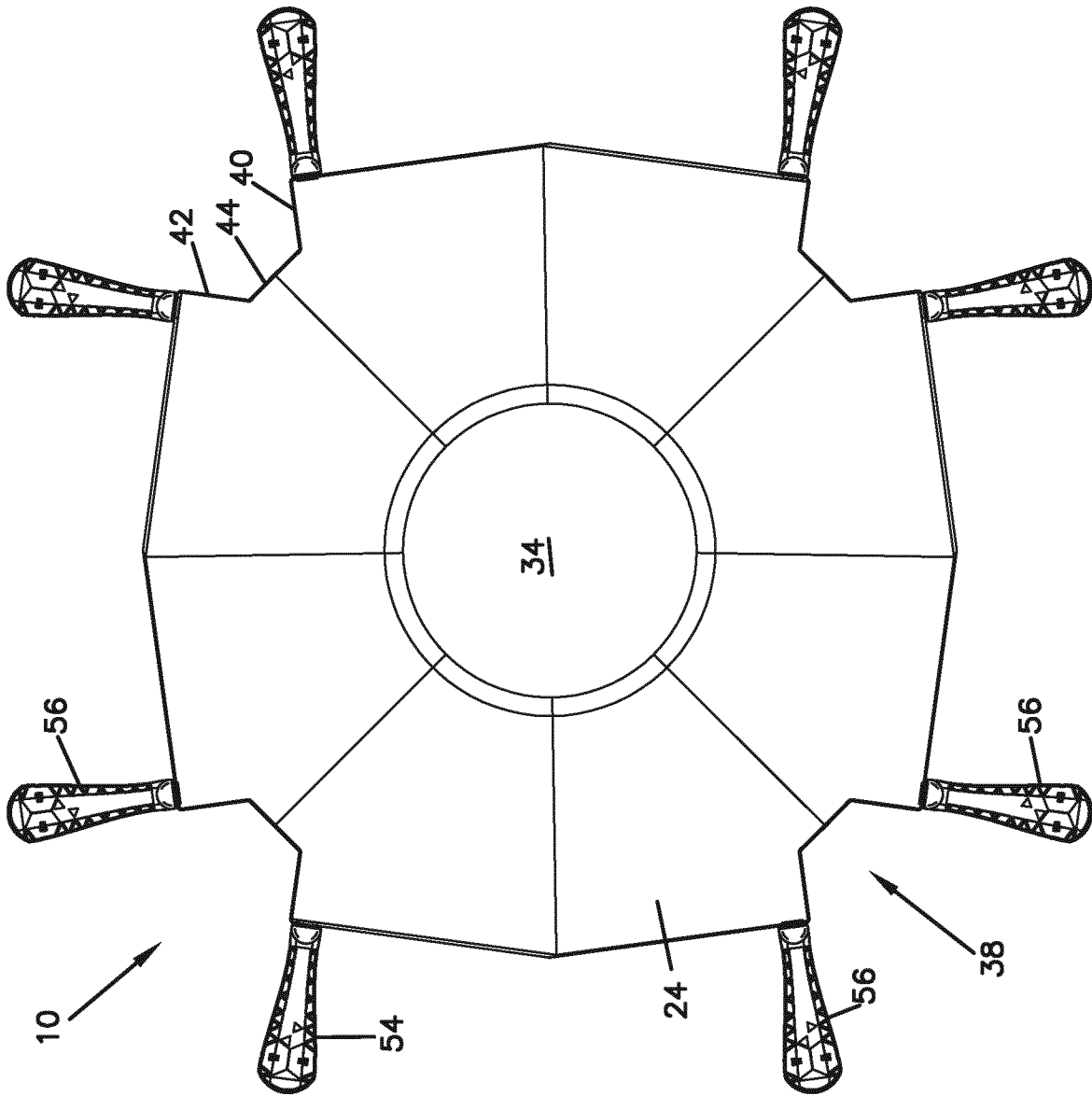


FIG. 7

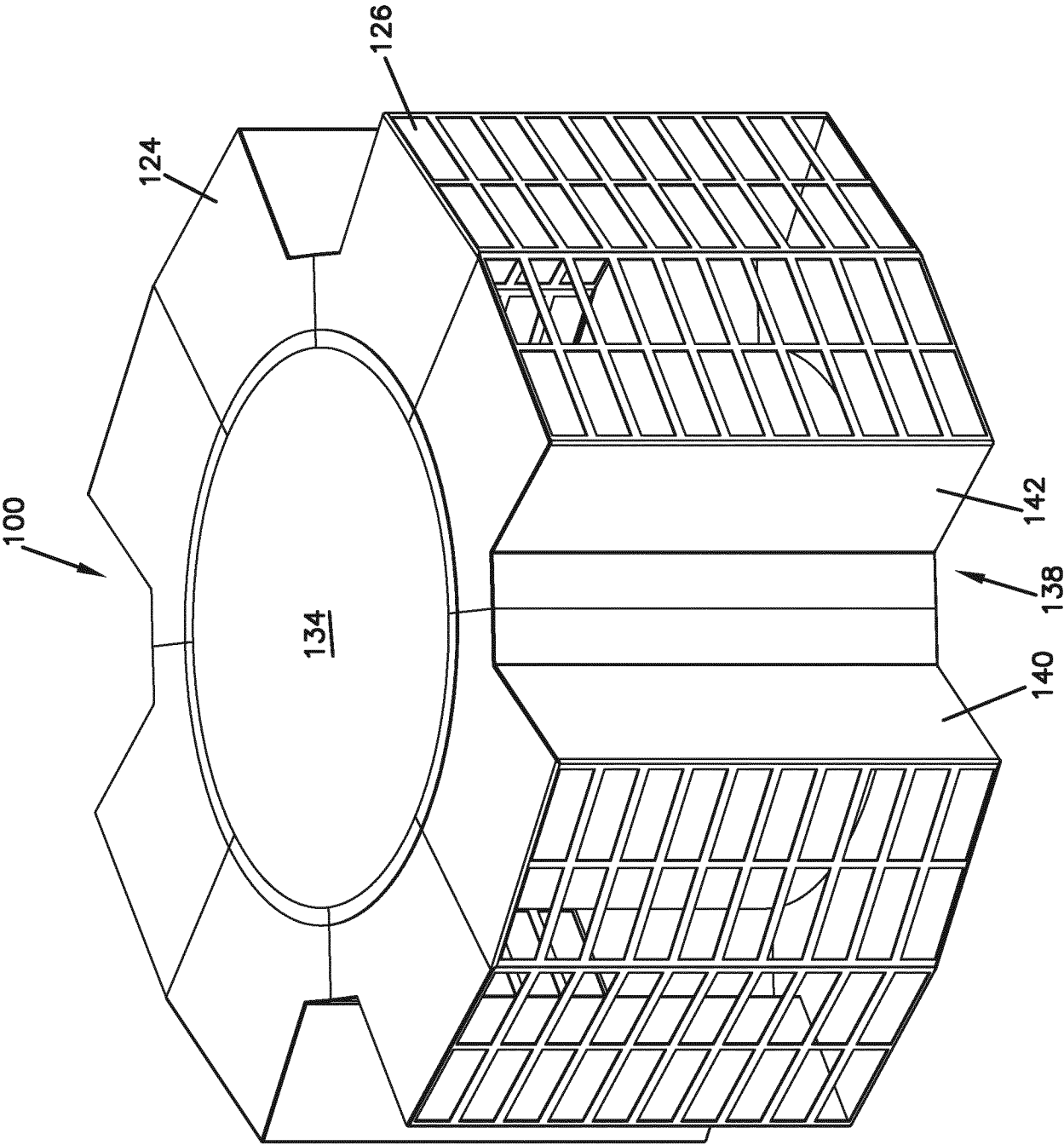


FIG. 8

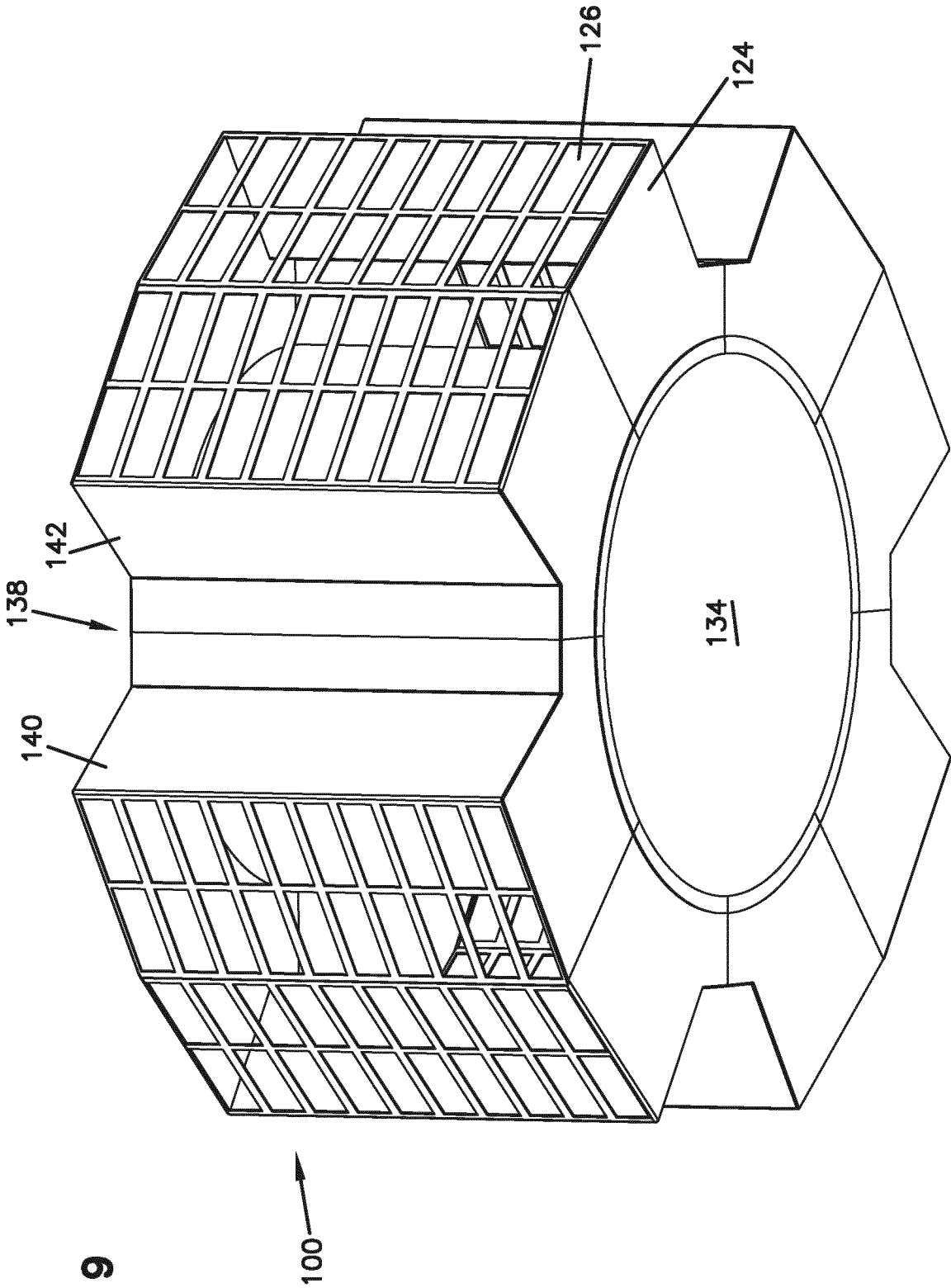


FIG. 9

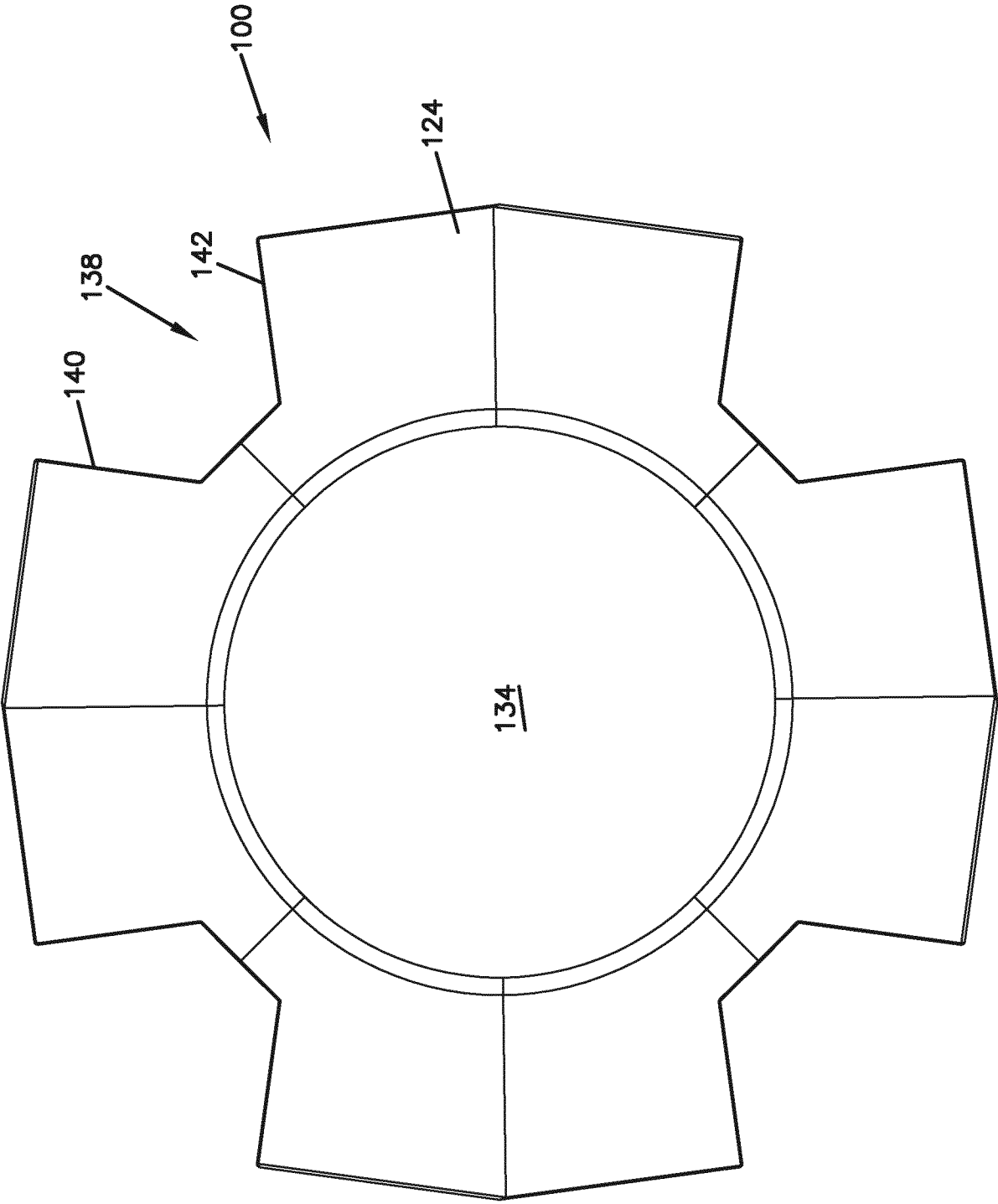


FIG. 10

FIG. 11

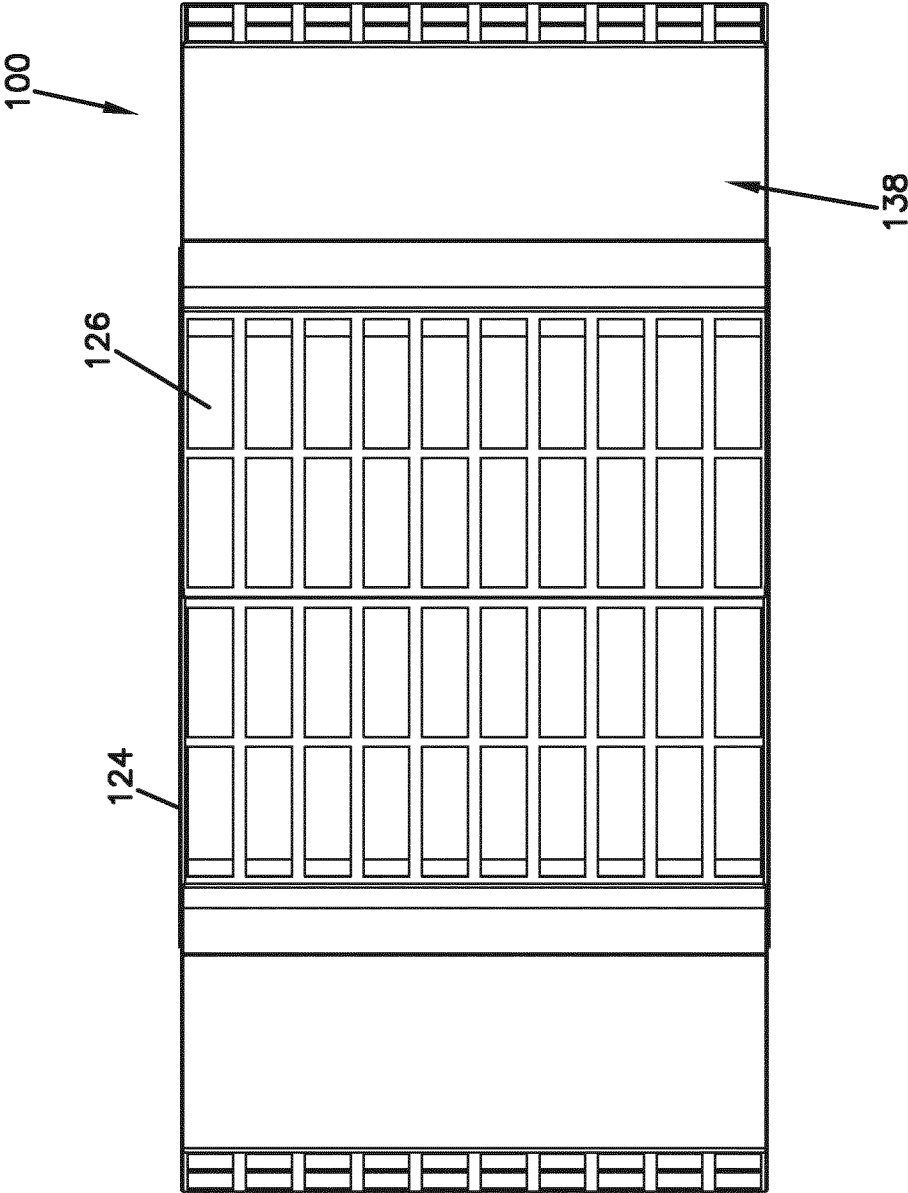


FIG. 12

