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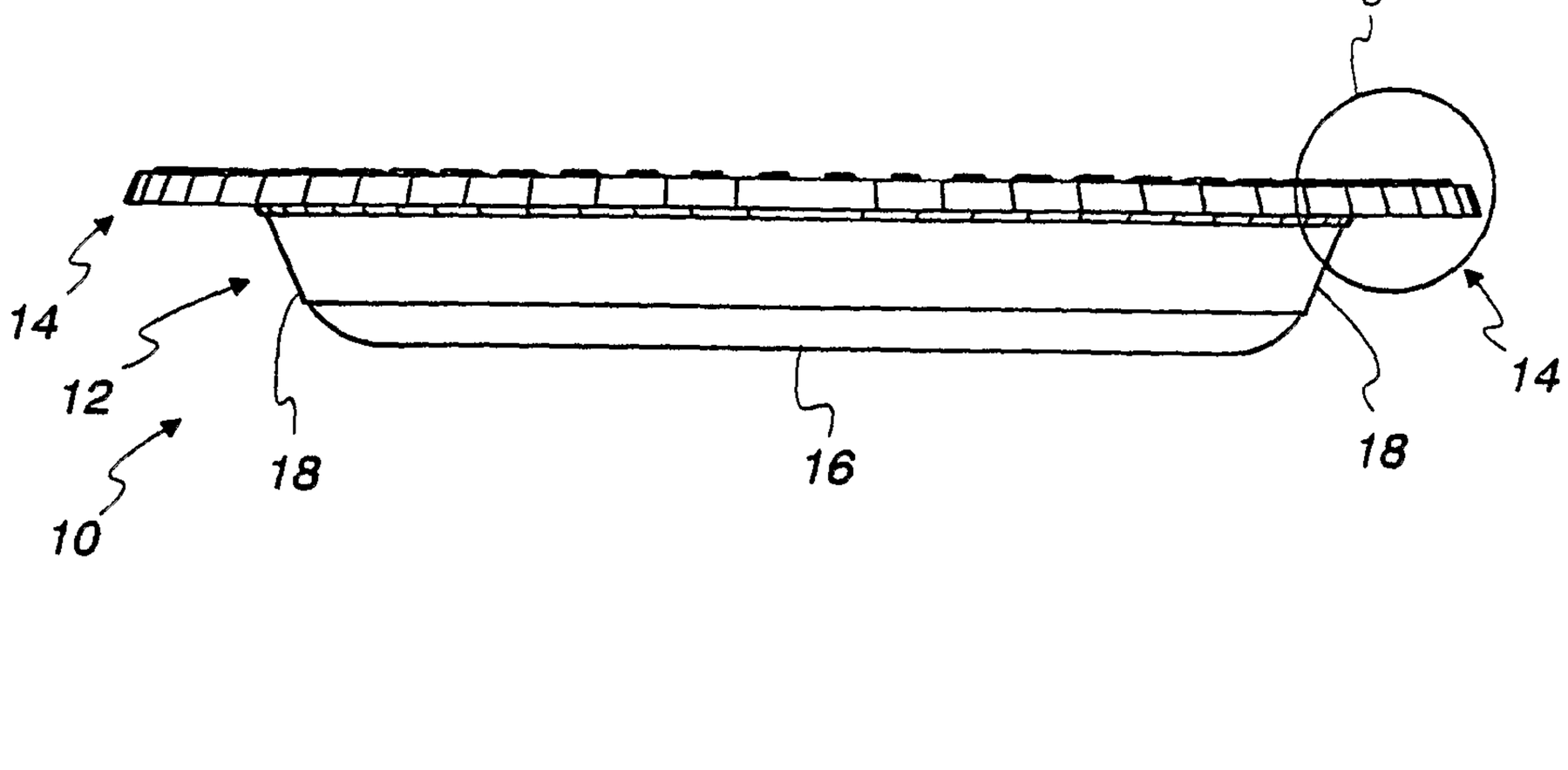
(54) Titre : ENSEMBLES DE RECIPIENT AVEC ACCESSOIRE DE VERROUILLAGE LIBERABLE
(54) Title: CONTAINER ASSEMBLIES WITH RELEASABLE LOCKING FEATURE

Fig. 6



(57) Abrégé/Abstract:
A container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The second container includes a second continuous body portion and a second rim. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second rim and the first rim are shaped substantially the same. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces. The first container may be shaped substantially the same as the second container

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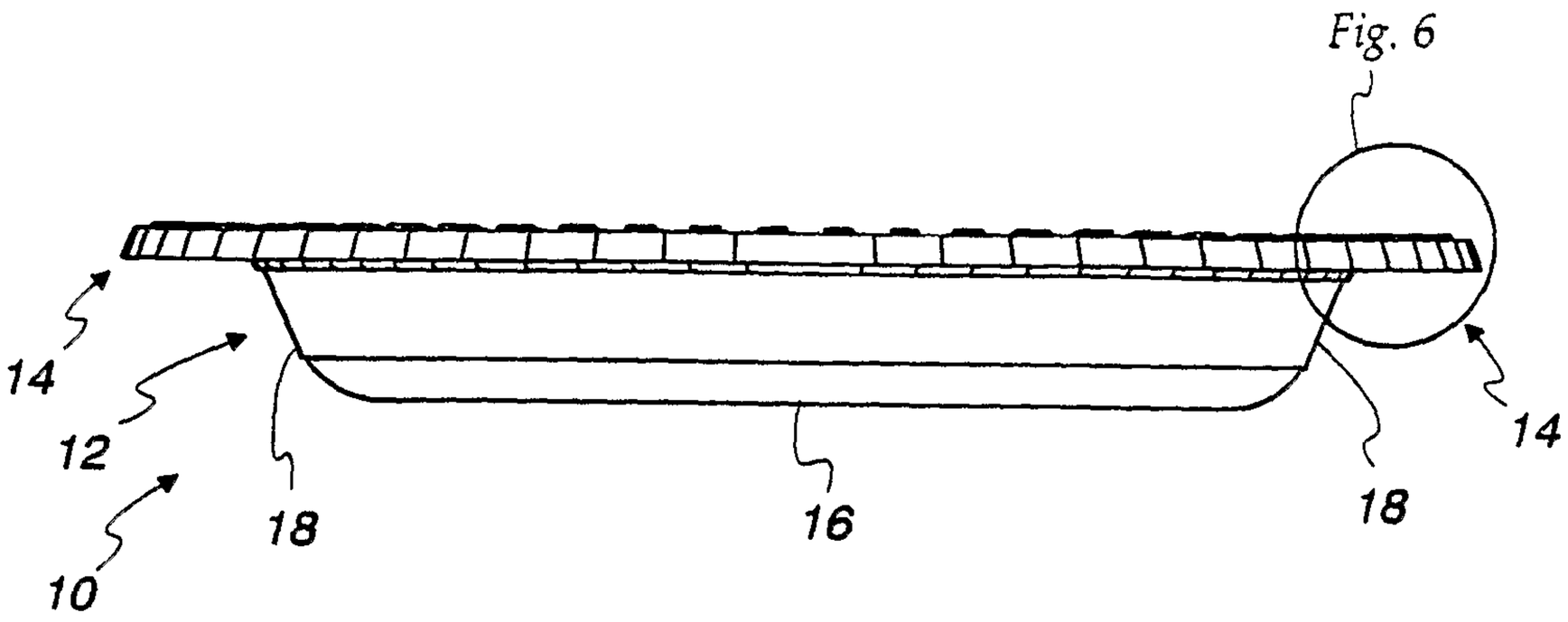
Fig. 6



(57) Abstract: A container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The second container includes a second continuous body portion and a second rim. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second rim and the first rim are shaped substantially the same. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces. The first container may be shaped substantially the same as the second container

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CONTAINER ASSEMBLIES WITH RELEASABLE LOCKING FEATURE

FIELD OF INVENTION

[0001] The present invention relates generally to containers. More particularly, the present invention relates to releasably lockable container assemblies and containers therein.

BACKGROUND OF THE INVENTION

[0002] The use of inexpensive polymeric, paper or metal packaging containers has become popular, especially for preparing and serving various food products. Polymeric, paper and metal containers generally have been used for heating the food product(s) disposed therein. These containers typically comprise a cover or lid and a base.

[0003] It would be desirable to have a container that would be easy for the customer to close and open. It would also be desirable to provide a container that is releasably lockable and prevents or inhibits material, such as liquid, from leaving the container. It would be desirable for a container to function without necessarily having a lid, but if a lid is desired to form a container assembly, a customer would be able to make such an assembly.

[0004] It would also be desirable to provide a container that is easy to manufacture and reduces the inventory requirement of customers that purchase the containers. It would also be desirable to produce a container that stacks efficiently so as to reduce the costs associated with shipping and storing the containers.

SUMMARY OF THE INVENTION

[0005] According to one embodiment, a container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The first plurality of ribs have a first sidewall and a second sidewall. A generally flat surface encompasses and bridges the first and second sidewalls of the first plurality of ribs. The first plurality of ribs have a rounded portion that transitions from the

generally flat surface towards the first body portion. The second container includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second plurality of ribs have a third sidewall and a fourth sidewall. A generally flat surface encompasses and bridges the third and fourth sidewalls of the second plurality of ribs. The second plurality of ribs have a rounded portion that transitions from the generally flat surface towards the first body portion. The first container is shaped substantially the same as the second container. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

[0006] According to one process, a container assembly is formed that comprises providing a first container that includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. A second container is provided that includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The first container is shaped substantially the same as the second container. One of the first container and the second container is flipped such that the first container and second container are generally aligned and the first rim and the second rim are adjacent to each other. The first plurality of upwardly-projecting ribs is fit into respective second spaces and the second plurality of upwardly-projecting ribs is fit into respective first spaces such that the first container and the second container are releasably lockable to each other.

[0007] According to another embodiment, a container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally

outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The second container includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second rim and the first rim are shaped substantially the same. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

[0008] According to another process, a container assembly is formed that comprises providing a first container that includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. A second container is provided that includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second rim and the first rim are shaped substantially the same. One of the first container and the second container is flipped such that the first container and second container are generally aligned and the first rim and the second rim are adjacent to each other. The first plurality of upwardly-projecting ribs is fit into respective second spaces and the second plurality of upwardly-projecting ribs is fit into respective first spaces such that the first container and the second container are releasably lockable to each other.

[0009] According to a further embodiment, a container assembly comprises a first and second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of upwardly projecting features with first spaces being formed between adjacent upwardly projecting features. The second container includes a second continuous body portion

and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of upwardly projecting features with second spaces being formed between adjacent upwardly projecting features. The second rim and the first rim are shaped substantially the same. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly projecting features into respective second spaces and fitting the second plurality of upwardly projecting features into respective first spaces.

[0010] According to yet another embodiment, a container to be used in a container assembly comprises a continuous body portion and a rim. The rim encompasses and projects laterally outwardly from the body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The rim is adapted to be releasably lockable by fitting the first plurality of ribs and first spaces into respective second spaces and second plurality of ribs of a second container. The second spaces and the second plurality of ribs are shaped substantially the same as respective first spaces and first plurality of ribs.

[0011] According to yet a further embodiment, a container assembly comprises a first and second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The second container includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The first container is shaped substantially the same as the second container. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces. The first rim and the second rim are adapted to form a seal.

[0012] According to still yet another embodiment, a container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The first plurality of ribs have a first sidewall and a second sidewall. A generally flat surface encompasses and bridges the first and second sidewalls of the first plurality of ribs. The first plurality of ribs have a rounded portion that transitions from the generally flat surface towards the first body portion. The second container includes a second continuous body portion and a second rim. The second rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second plurality of ribs have a third sidewall and a fourth sidewall. A generally flat surface encompasses and bridges the third and fourth sidewalls of the second plurality of ribs. The second plurality of ribs have a rounded portion that transitions from the generally flat surface towards the second body portion. The first container is shaped substantially the same as the second container. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

[0013] According to still yet a further embodiment, a container assembly comprises a first container and a second container. The first container includes a first continuous body portion and a first rim. The first rim encompasses and projects laterally outwardly from the first body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The first plurality of ribs have a first sidewall and a second sidewall. A generally flat surface encompasses and bridges the first and second sidewalls of the first plurality of ribs. The first plurality of ribs have a rounded portion that transitions from the generally flat surface towards the first and second sidewalls. The second container includes a second continuous body portion and a second rim. The second

rim encompasses and projects laterally outwardly from the second body portion. The rim has a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs. The second plurality of ribs have a third sidewall and a fourth sidewall. A generally flat surface encompasses and bridges the third and fourth sidewalls of the second plurality of ribs. The second plurality of ribs have a rounded portion that transitions from the generally flat surface towards the third and fourth sidewalls. The first container is shaped substantially the same as the second container. The first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

[0014] According to yet again another embodiment, a container to be used in a container assembly comprises a continuous body portion and a rim. The rim encompasses and projects laterally outwardly from the body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The first plurality of ribs have a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls. The first plurality of ribs have a rounded portion that transitions from the generally flat surface towards the first body portion. The rim is adapted to be releasably lockable by fitting the first plurality of ribs and first spaces into respective second spaces and second plurality of ribs of a second container. The second spaces and the second plurality of ribs are shaped substantially the same as respective first spaces and first plurality of ribs.

[0015] According to yet again a further embodiment, a container to be used in a container assembly comprises a continuous body portion and a rim. The rim encompasses and projects laterally outwardly from the body portion. The rim has a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs. The first plurality of ribs have a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls. The first plurality of ribs have a rounded portion that transitions from the generally flat surface towards the first and second sidewalls. The rim is

adapted to be releasably lockable by fitting the first plurality of ribs and first spaces into respective second spaces and second plurality of ribs of a second container. The second spaces and the second plurality of ribs are shaped substantially the same as respective first spaces and first plurality of ribs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 is a side view of a container to be used in one embodiment of the invention;

[0017] FIG. 2 is a top view of the container of FIG. 1;

[0018] FIG. 3 is an enlarged cross-sectional view taken generally along lines FIG. 3-FIG. 3 in FIG. 2;

[0019] FIG. 4 is an enlarged top view of generally circular region FIG. 4 of FIG. 2;

[0020] FIG. 5. is a perspective view of generally circular region FIG. 5 of FIG. 2 depicting two adjacent projecting ribs;

[0021] FIG. 6 is a sectional view of generally circular region FIG. 6 of FIG. 1 according to one embodiment.

[0022] FIG. 7a is a side view of a container assembly in a releasably lockable position using the container of FIG. 1 and a second identical container of FIG. 1 according to one embodiment of the present invention;

[0023] FIG. 7b is a top view of the container assembly of FIG. 7a;

[0024] FIG. 8 is an enlarged cross-sectional view taken generally along lines FIG. 8-FIG. 8 in FIG. 7b;

[0025] FIG. 9 is a side view of a container to be used in another embodiment of the invention;

[0026] FIG. 10 is a top view of the container of FIG. 9;

[0027] FIG. 11 is an enlarged top view of generally circular region FIG. 11 of FIG. 10;

[0028] FIG. 12 is a perspective view of generally circular region FIG. 11 of FIG. 10 depicting two adjacent projecting ribs;

[0029] FIG. 13 is an enlarged cross-sectional view taken generally along lines FIG. 13-FIG. 13 in FIG. 12;

[0030] FIG. 14a is a side view of a container assembly in a releasably lockable position using the container of FIG. 9 and a second identical container of FIG. 9 according to another embodiment of the present invention;

[0031] FIG. 14b is a top view of the container assembly of FIG. 14a;

[0032] FIG. 15 is an enlarged cross-sectional view taken generally along lines FIG. 15-FIG. 15 in FIG. 14b;

[0033] FIG. 16a is a top view of yet another container to be used in the present invention; and

[0034] FIG. 16b is an enlarged cross-sectional view taken generally along lines FIG. 16b–FIG. 16b in FIG. 16a.

[0035] FIG. 17 is a side view of a container to be used in a further embodiment of the invention;

[0036] FIG. 18 is a top view of the container of FIG. 17;

[0037] FIG. 19 is an enlarged cross-sectional view taken generally along lines FIG. 19-FIG. 19 of FIG. 18;

[0038] FIG. 20 is an enlarged perspective view of generally circular region FIG. 20 of FIG. 18 depicting two adjacent projecting ribs;

[0039] FIG. 21 is an enlarged top view of generally circular region FIG. 21 of FIG. 18.

[0040] FIG. 22 is a side view of a container assembly in a releasably lockable position using the container of FIG. 17 and a second identical container of FIG. 17 according to one embodiment of the present invention;

[0041] FIG. 23 is a top view of the container assembly of FIG. 22;

[0042] FIG. 24 is an enlarged cross-sectional view taken generally along lines FIG. 24-FIG. 24 of FIG. 23

[0043] While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawing and will herein be described in detail. It should be understood, however, that it is not intended to limit the invention to the particular forms disclosed but, on the contrary, the intention is to cover all modifications, equivalents, and

alternatives falling within the spirit and scope of the invention as defined by the appended claims.

DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0044] Referring to FIGs. 1-5, a container (*e.g.*, plate 10) to be used in one embodiment of the present invention is shown. The plate 10 is used with a second plate 110 (see FIGs. 7 and 8) that may be substantially the same or, alternatively, identical to the plate 10 to form a container assembly that is releasably lockable.

[0045] It is contemplated that other container assemblies may be formed besides those using plates. For example, container assemblies may be formed, but are not limited to, using plates, bowls, platters, tubs, single-serve and family-size containers, single-serve and family-size ovenware, and combinations thereof. One such combination is a bowl and a plate that forms a container assembly. The remainder of the application will discuss container and container assemblies with respect to plates although it is recognized by one of ordinary skill in the art that other container assemblies, such as those discussed above, may be formed.

[0046] The height and shape of the container assembly may vary from that shown without departing from the scope of the invention. For example, the container assemblies of FIGs. 7a and 14a, as will be discussed, are depicted as being generally circular. It is contemplated that the container assemblies and containers used herein may be other shapes such as rectangular, square, hexagonal, octagonal, other polygonal shapes, or oval.

[0047] The container assemblies of the present invention are typically used with respect to food, but may be used in other applications such as with medical applications, cosmetics or other items. Food container assemblies may be used for serving, storing, preparing and/or re-heating the food.

[0048] Referring back to FIGs. 1-2, the container 10 includes a continuous body portion 12 and a continuous rim 14 encompassing and projecting laterally outwardly from the body portion 12. The body portion 12 includes a bottom 16 and a continuous sidewall 18 encompassing and projecting upwardly and outwardly from the bottom 16. It is contemplated that the sidewall may project only upwardly from the bottom 16 or even project upwardly and inwardly from the bottom 16. It is also

contemplated that the rim may not be continuous, although it is preferred to be continuous.

[0049] Referring specifically to FIG. 2, the continuous rim 14 includes a plurality of ribs 20 that project generally upwardly therefrom. The plurality of ribs 20 is spaced around the general periphery of the container 10 and assists in forming a releasably lockable container assembly. The orientation of the plurality of ribs 20 creates a pattern that is generally normal to the direction of the rim 14. More specifically, the orientation of the plurality of ribs 20 may create a pattern that is normal to the direction of the rim 14. In a radial configuration with a pattern that is normal to the direction of the rim, each of the plurality of ribs 20, if extended inwardly, would pass through the general center of the plate.

[0050] The plurality of ribs 20, however, may be formed in different patterns than shown in FIG. 2 with respect to the rim 14 (*e.g.*, diagonally). It may be desirable to form the plurality of ribs 20 in a decorative pattern for aesthetic reasons. Such a decorative feature may assist in "hiding" or disguising the releasable lockable feature in the container 10. The container 10 of FIG. 2 has exactly 60 ribs formed in the continuous rim 14. It is contemplated that the number of ribs may vary from that shown in FIG. 2. For example, a container may have from about 3 to about 10 ribs. A container may have greater than about 20 or about 40 ribs, and may even have up to or greater than about 120 ribs. The desired number of ribs formed on the container will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength depends on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0051] Turning to FIGs. 3-5, the plurality of ribs 20 is shown in greater detail. Specifically, a cross-sectional view of FIG. 3 shows two adjacent ribs that project upwardly from the continuous rim 14. FIG. 3 depicts a first rib 20a and a second rib 20b with a space 22 being formed therebetween. The first rib 20a of FIG. 3 comprises a generally flat surface 24 that bridges two sidewalls 26, 28. The first rib 20a is shown as being generally perpendicular to the plane of the remainder of the continuous rim 14. Specifically, the first rib 20a is shown as being generally

perpendicular to plane CC formed along the remainder of the rim 14 in FIG. 3. More specifically, the rib may be perpendicular to the plane of the remainder of the rim. The sidewalls 26, 28 are spaced apart from each other and are shown as being generally perpendicular to the plane CC of the remainder of the rim 14. The sidewalls 26, 28, however, do not necessarily have to be generally perpendicular or perpendicular to the remainder of the rim 14.

[0052] Similarly, second rib 20b of FIG. 3 comprises a generally flat surface 30 that bridges two sidewalls 32, 34. The second rib 20b is also shown as being generally perpendicular to the plane CC of the remainder of the rim 14. The sidewalls 32, 34 are spaced apart from each other and are shown as being generally perpendicular to the plane CC of the remainder of the rim 14.

[0053] To provide an improved locked container assembly, at least one of the rib sidewalls may have an undercut. Such an optional undercut formed in the rib sidewall engages a similar undercut in a corresponding space formed between adjacent ribs of a second container when the container assembly is formed. This is discussed below in further detail with respect to FIGs. 7-8. For example, in FIG. 3, optional undercuts 26a, 28a are formed in respective sidewalls 26, 28. The size and shape of the undercut will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength may depend on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0054] The number of undercuts formed in the rib sidewalls, if any, depends on factors such as the desired leak-resistant, the type of closure mechanism, manufacturability of the container assemblies, and the material(s) type and thicknesses used in forming the container assemblies. For example, if the container assemblies are made of a first material that has a higher coefficient of friction than a second material, then the container made of the first material will likely need less undercuts in its sidewalls than the same container made with the second material to have the same holding strength. The number of undercuts used also depends on the fitness of use of the container assembly, including the holding strength thereof.

[0055] It is contemplated that the ribs may have sidewalls with no undercuts or at least one undercut (*e.g.*, first rib 20a with optional undercuts 26a, 28a in FIG. 3). It is also contemplated that some ribs within the same container may have no undercuts, while other ribs may have one or more undercuts.

[0056] Referring to FIGs. 4 and 5, adjacent ribs 36, 38 of a portion of the rim 14 are shown in more detail. In FIG. 4, a top view of the ribs 36, 38 shows that the ribs 36, 38 generally taper inwardly toward the center of the container. FIG. 4 also shows a generally flat area 36a of rib 36 and a generally flat area 38a of rib 38. To improve the sealability of the container assembly, the generally flat areas 36a, 38a may contact similar sized flat areas formed in the respective spaces between adjacent ribs of a second container that form the container assembly. An example of a similar sized flat area formed in a space between adjacent ribs is shown in FIG. 4 with generally flat area 40.

[0057] FIG. 5 shows adjacent ribs 42, 44 with respective generally flat areas 42a, 44a. The ribs 42, 44 are spaced apart with a generally flat area 46 that is formed between generally flat areas 42a, 44a. To maintain clearances on radial designs (*e.g.*, oval or circular shaped), the generally flat areas may grow proportionally with the diameter (*i.e.*, increase in size as the distance increases from the center of the container). For example, in FIG. 5, the width W1 of generally flat area 42a may be smaller than width W2. With, for example, rectangular-shaped containers, the size of the generally flat areas typically remains constant as the distance increases from the center of the container. It is contemplated that this area of the ribs may be sized and shaped differently than shown in FIGs. 4 and 5.

[0058] It is contemplated that the shape and size of the plurality of ribs 20 may vary from that shown in FIGs. 2-5. It is preferred that the plurality of ribs be shaped and sized to minimize the stacking height of the containers used to form container assemblies. It is desirable to minimize the stacking height of the containers to (a) reduce transportation costs and packaging, and (b) provide space efficiency in retail and consumer settings. It is also desirable to maximize the holding strength of the container assembly. The desired holding strength is often a balance between

making the container assembly easy for a consumer to open and close, while still preventing or inhibiting an inadvertent opening of the container assembly.

[0059] It is contemplated that the upwardly projecting features may be shaped differently than the ribs shown in FIGs. 2-5 and 11-13. For example, the upwardly projecting features may be a plurality of round, oval, square, or polygonal features. It is contemplated that many shapes and sizes may be formed by the upwardly projecting features used in the present invention.

[0060] Referring to FIGs. 5 and 6, an optional seal feature 50 formed on the rim 14 is depicted. In FIG. 6, the optional seal feature 50 is located outwardly from the rib 52 with respect to the center of the container 10. In other words, the optional seal feature 50 is located farther away from the center of the container 10 than the rib 52. The optional seal feature 50 in conjunction with a corresponding optional seal feature on another container (not shown), along with the locked ribs of the container assembly, assist in preventing or inhibiting material from leaving or entering the container assembly. The optional seal feature is especially useful in preventing or inhibiting product leakage that may occur due to tolerances within the manufacturing process. To provide an efficient seal, the height H1 of the optional seal feature 50 should be at least one-half of the rib height H2.

[0061] The optional seal feature, however, may be located inwardly from the ribs such that the seal is formed nearer the center of the container assembly as compared to the releasably lockable ribs. For example, in FIGs. 16a and 16b, a container 510 includes a plurality of ribs 520 and also includes an optional seal feature 550. In FIGs. 6 and 16b, the optional seal feature 550 is located inwardly from the plurality of ribs 520 with respect to the center of the container 510. The optional seal feature 550 in conjunction with a corresponding seal feature on another container (not shown), along with the locked ribs of the container assembly, assist in preventing or inhibiting material from leaving or entering the container assembly. The optional seal feature may be formed in a variety of shapes, including a general conical shape.

[0062] A container assembly 100 according to one embodiment of the present invention is depicted in FIGs. 7a, 7b. The container 100 comprises the first container 10 and a second container 110. In one embodiment, the second container

110 is shaped substantially the same as the first container 10. Alternatively, the second container 110 may be identical to the first container 10. It may be desirable to have containers identically shaped to reduce waste by a consumer when the top container or lid is not used. As discussed above, the container assembly may be formed with different first and second containers than plates.

[0063] The container assembly 100 of FIGs. 7a, 7b may be formed according to one method by providing the first container 10 and the second container 110. The second container 110 includes a continuous body portion 112 and a continuous rim 114 that encompasses and projects laterally outwardly from the body portion 112. Similarly, the first container 10, as discussed above, includes the continuous body portion 12 and the continuous rim 14 that encompasses and projects laterally outwardly from the body portion 12. Both of the rims 14, 114 include a respective plurality of ribs with spaces therebetween (not shown in FIGs. 7a, 7b). Each of the plurality of ribs may be shaped and sized similarly to the ribs 20 shown above in FIGs. 2-5. Each of the plurality of ribs projects generally upwardly therefrom (*i.e.*, in a direction away from the continuous body portion).

[0064] The second container 110 is flipped 180 degrees relative to the first container 10 such that the containers 10, 110 are generally aligned and the rims 14, 114 are adjacent to each other. This flipped position of container 110 relative to the container 10 is shown in FIG. 7a. To fit the ribs into respective spaces, the container 110 may have to be rotated slightly such that the ribs are offset (*i.e.*, the ribs and spaces are aligned). It is desirable that the consumer can assembly the containers so as to form a container assembly of the present invention.

[0065] Referring to FIG. 8, adjacent ribs 120a, 120b of the container 110 are fit into respective second spaces 22a, 22b of the container 10 and ribs 20a, 20b of the container 10 are fit into respective spaces 122a, 122b such that the container assembly 100 is releasably lockable. To fit the ribs into respective spaces, the container 110 may have to be rotated slightly such that the ribs are offset (*i.e.*, the ribs and spaces are aligned). FIG. 8 also depicts interference areas 124a, 124b formed between the first rib 20a and the space 122a created between ribs 120a, 120b of the container 110.

[0066] The strength of this lockable closure is dependent on many variables such as the number of the projecting ribs, the height of those ribs, whether undercuts are included, the size of the contact areas, the clearance needed between spaces and ribs, and the material(s) type and thickness used in forming the container assemblies. To improve the lockability of the container assembly, as discussed above, an optional sealing feature may be added.

[0067] Referring to FIGs. 9-10, a container (*e.g.*, plate 210) includes a continuous body portion 212 and a continuous rim 214 encompassing and projecting laterally outwardly from the body portion 212. The body portion 212 includes a bottom 216 and a continuous sidewall 218 encompassing and projecting upwardly and outwardly from the bottom 216. It is contemplated that the sidewall may project only upwardly from the bottom 216 or even project upwardly and inwardly from the bottom 216. It is also contemplated that the rim may not be continuous, although it is preferred to be continuous.

[0068] Referring to FIGs. 10 and 11, the continuous rim 214 includes a plurality of rib sets 220 that project generally upwardly therefrom. The plurality of rib sets 220 is spaced around the general periphery of the container 210 and assists in forming a releasably lockable container assembly. The orientation of the plurality of rib sets 220 creates a pattern that is generally parallel or generally concentric with the general direction of the rim 214. In other words, each of the plurality of rib sets 220, if extended outwardly, would be no closer to the general center of the container 210. The plurality of rib sets 220 is in the opposite direction of the plurality of ribs 20 in FIGs. 2-5.

[0069] The plurality of rib sets 220, however, may be formed in different patterns than shown in FIG. 10 with respect to the rim 214 (*e.g.*, diagonally). It may be desirable to form the plurality of rib sets 220 in a decorative pattern for aesthetic reasons. Such a decorative feature may assist in "hiding" or disguising the releasable lockable feature in the container 210.

[0070] The container 210 of FIG. 10 has exactly 60 sets of ribs formed in the continuous rim 214. As will be discussed in more detail below, each of the plurality of rib sets 220 has a first set of ribs on a raised portion and a second set of

ribs on a recessed portion. It is contemplated that the number of rib sets may vary from that shown in FIG. 10. For example, a container may have from about 2 to about 30 sets of ribs. A container may have greater than about 40 or about 80 sets of ribs, and may even have up to or greater than about 120 sets of ribs. The desired number of ribs formed on the container will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength may depend on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0071] Turning to FIGs. 11-13, two adjacent sets of ribs are shown in greater detail. The number of ribs in a set varies in FIGs. 11 and 12 depending on whether the ribs are located in a recessed area or a raised area formed in the rim 214. For example, in FIGs. 11 and 12, recessed area 240 has a first rib 242 and a second rib 244 with spaces 246, 248 and 250. Raised area 260 of FIGs. 11 and 12, however, has a first rib 262, a second rib 264, and a third rib 266 with spaces 268, 270 therebetween. Each of the ribs of FIGs. 11 and 12 projects upwardly from the continuous rim 214.

[0072] Referring specifically to FIG. 13, a cross-sectional view of the recessed area 240 is depicted and includes the ribs 242, 244. A cross-sectional view of the raised area 260 (not shown) would depict three ribs. The first rib 242 of FIG. 13 comprises a generally flat surface 288 that bridges two sidewalls 290, 292. The first rib 242 is shown as being generally perpendicular to the plane of the remainder of the continuous rim 214. Specifically, the first rib 242 is shown as being generally perpendicular to plane DD formed along the remainder of the rim 214 in FIG. 13. More specifically, the rib may be perpendicular to the plane of the remainder of the rim. The sidewalls 290, 292 are spaced apart from each other and are shown as being generally perpendicular to the plane DD of the remainder of the rim 214. The sidewalls 290, 292, however, do not necessarily have to be generally perpendicular or perpendicular to the remainder of the rim 214.

[0073] Similarly, second rib 244 of FIG. 13 comprises a generally flat surface 298 that bridges two sidewalls 300, 302. The second rib 244 is also shown as

being generally perpendicular to the plane DD of the remainder of the rim 214. The sidewalls 300, 302 are spaced apart from each other and are shown as being generally perpendicular to the plane DD of the remainder of the rim 214.

[0074] To provide an improved locked container assembly, at least one of the rib sidewalls may have an optional undercut. As discussed above, such an undercut formed in the rib sidewall engages a similar undercut in the spaces formed between adjacent ribs when the container assembly is formed. For example, in FIG. 13, optional undercuts 290a, 292a are formed in respective sidewalls 290, 292. The size and shape of the undercut will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength may depend on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0075] As discussed above, the number of undercuts formed in the rib sidewalls, if any, depends on several factors. It is contemplated that the ribs may have sidewalls with no undercuts or at least one undercut (*e.g.,* first rib 242 with optional undercuts 290a, 292a in FIG. 13). It is also contemplated that some ribs within the same container may have no undercuts, while other ribs have one or more undercuts.

[0076] Referring back to FIG. 12, the raised and recessed areas 240, 260 have a plurality of ribs with generally flat areas. For example, the rib 242 includes a top surface or generally flat area 242a. Similarly, the rib 264 includes a top surface or generally flat area 264a. To improve the sealability of the container assembly, the generally flat areas 264a, 242a may contact similar sized flat areas formed in the spaces formed between adjacent ribs of a second container that forms the container assembly. An example of a similar sized flat area formed in a space is depicted in FIG. 12 with space 246. As shown in FIG. 12, a generally flat area 282 is formed between adjacent sets of ribs (*i.e.*, the raised and recessed portions) to assist in releasably locking the container assembly. It is contemplated that this area of the ribs may be sized and shaped differently than shown in FIGs. 11-13. It is contemplated that the numbers of ribs in a set of ribs may vary from that shown in FIGs. 11 and 12 (two ribs in the recessed areas and three ribs in the raised areas)

[0077] It is contemplated that the shape and size of the plurality of ribs 220 may vary from that shown in FIGs. 10-13. It is preferred that the plurality of ribs be shaped and sized to minimize the stacking height of the containers. It is desirable to minimize the stacking height of the containers to (a) reduce transportation costs and packaging, and (b) provide space efficiency in retail and consumer settings. It is also desirable to maximize the holding strength of the container assembly. The desired holding strength is often a balance between making the container assembly easy for a consumer to open and close, while still preventing or inhibiting an inadvertent opening of the container assembly.

[0078] Referring specifically to FIG. 12, an optional seal feature 350 formed on the rim 214 is depicted. The optional seal feature 350 is located outwardly from the ribs 242, 244, 262, 264 and 266 with respect to the center of the container 210. In other words, the optional seal feature 350 is located farther away from the center of the container 210 than the ribs. The optional seal feature 350 in conjunction with a corresponding seal feature on another container (*e.g.,* optional seal feature 450 shown in FIG. 15), along with the locked ribs of the container assembly, assist in preventing or inhibiting material from leaving or entering the container assembly. The optional seal feature is especially useful in preventing or inhibiting product leakage that may occur due to tolerances within the manufacturing process. To provide an efficient seal, the height of the optional seal feature should be at least one-half of the rib height. This is shown in FIG. 15 where the optional seal features 350 and 450 contact each other.

[0079] As discussed above with respect to FIGs. 16a, b above, the optional seal feature, however, may be located inwardly from the ribs such that the seal is formed nearer the center of the container assembly as compared to the releasably lockable ribs.

[0080] A container assembly 400 according to one embodiment of the present invention is depicted in FIGs. 14a, 14b. The container 400 comprises the first container 210 and a second container 410. In one embodiment, the second container 410 is shaped substantially the same as the first container 210. Alternatively, the second container 410 may be identical to the first container 210. As discussed above,

the container assembly may be formed with different first and second containers than plates. For example, the container assembly may be formed using a bowl and a plate.

[0081] The container assembly 400 of FIGs. 14a, 14b may be formed according to one method by providing the first container 210 and the second container 410. The second container 410 includes a continuous body portion 412 and a continuous rim 414 that encompasses and projects laterally outwardly from the body portion 412. Similarly, the first container 210, as discussed above, includes the continuous body portion 212 and the continuous rim 214 that encompasses and projects laterally outwardly from the body portion 212. Both of the rims 214, 414 include a respective plurality of ribs with spaces therebetween (not shown in FIGs. 14a, 14b). Each of the plurality of ribs may be shaped and sized similarly to the ribs 220 shown above in FIGs. 10-13. Each of the plurality of ribs projects generally upwardly therefrom (*i.e.,* in a direction away from the continuous body portion).

[0082] As discussed above with container assembly 100, the second container 410 is flipped 180 degrees relative to the first container 210 such that the containers 210, 410 are generally aligned and the rims 214, 414 are adjacent to each other. This flipped position of the container 410 relative to the container 210 is shown in FIG. 14a.

[0083] Referring to FIG. 15, adjacent ribs 262, 264, 266 of one set of the container 210 are fit into respective second spaces 422, 424, and 426 of the container 410 and ribs 418, 420 of the container 410 are fit into respective spaces 268, 270 such that the container assembly 400 is releasably lockable.

[0084] Referring to FIGs. 17-21, a container (*e.g.,* plate 610) to be used in a further embodiment of the present invention is shown. The plate 610 is used with a second plate 710 (see FIGs. 22 and 23) that may be substantially the same or, alternatively, identical to the plate 610 to form a container assembly that is releasably lockable.

[0085] Referring to FIGs. 17-18, the container 610 includes a continuous body portion 612 and a continuous rim 614 encompassing and projecting laterally outwardly from the body portion 612. The body portion 612 includes a bottom 616 and a continuous sidewall 618 encompassing and projecting upwardly and outwardly

from the bottom 616. It is contemplated that the sidewall may project only upwardly from the bottom 616 or even project upwardly and inwardly from the bottom 616. It is also contemplated that the rim may not be continuous, although it is preferred to be continuous. Optional handle portions 652 are included on the container 610 to assist the users ability to utilize the container 610.

[0086] Referring specifically to FIG. 18, the continuous rim 614 includes a plurality of ribs 620 that project generally upwardly therefrom. The plurality of ribs 620 is spaced around the general periphery of the container 610 and assists in forming a releasably lockable container assembly. The orientation of the plurality of ribs 620 creates a pattern that is generally normal to the direction of the rim 614. More specifically, the orientation of the plurality of ribs 620 may create a pattern that is normal to the direction of the rim 614. In a radial configuration with a pattern that is normal to the direction of the rim, each of the plurality of ribs 620, if extended inwardly, would pass through the general center of the plate.

[0087] The plurality of ribs 620, however, may be formed in different patterns than shown in FIG. 18 with respect to the rim 614 (*e.g.*, diagonally). The container 610 of FIG. 18 has exactly 44 ribs formed in the continuous rim 614. It is contemplated that the number of ribs may vary from that shown in FIG. 18. For example, a container may have from about 3 to about 10 ribs. A container generally has from about 20 ribs to about 60 ribs. Containers typically have from about 30 ribs to about 50 ribs. The desired number of ribs formed on the container will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength depends on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0088] Turning to FIGs. 19-21, the plurality of ribs 620 is shown in greater detail. Specifically, a cross-sectional view of FIG. 19 shows two adjacent ribs that project upwardly from the continuous rim 614. FIG. 19 depicts a first rib 620a and a second rib 620b with a space 622 being formed therebetween. The first rib 620a of FIG. 19 comprises a generally flat surface 624 that bridges two sidewalls 626, 628. The first rib 620a is shown as being generally perpendicular to the plane of the

remainder of the continuous rim 614. Specifically, the first rib 620a is shown as being generally perpendicular to plane EE formed along the remainder of the rim 614 in FIG. 19. More specifically, the rib may be perpendicular to the plane of the remainder of the rim. The sidewalls 626, 628 are spaced apart from each other and are shown as being generally perpendicular to the plane EE of the remainder of the rim 14. The sidewalls 626, 628, however, do not necessarily have to be generally perpendicular or perpendicular to the remainder of the rim 14.

[0089] Similarly, second rib 620b of FIG. 19 comprises a generally flat surface 630 that bridges two sidewalls 632, 634. The second rib 620b is also shown as being generally perpendicular to the plane EE of the remainder of the rim 614. The sidewalls 632, 634 are spaced apart from each other and are shown as being generally perpendicular to the plane EE of the remainder of the rim 614.

[0090] To provide an improved locked container assembly, at least one of the rib sidewalls may have an undercut. Such an optional undercut formed in the rib sidewall engages a similar undercut in a corresponding space formed between adjacent ribs of a second container when the container assembly is formed. This is discussed below in further detail with respect to FIGs. 22-24. For example, in FIG. 19, optional undercuts 626a, 628a are formed in respective sidewalls 626, 628. The size and shape of the undercut will often vary depending on factors such as the size or shape of the container assembly, the material(s) type and thicknesses of the container assembly, and the desired holding strength of the container assembly. The desired holding strength may depend on factors such as the weight of item(s) placed in the container assembly and its perceived usage.

[0091] The number of undercuts formed in the rib sidewalls, if any, depends on factors such as the desired holding strength, the desired leak-resistant, the type of closure mechanism, manufacturability of the container assemblies, and the material(s) type and thicknesses used in forming the container assemblies. For example, if the container assemblies are made of a first material that has a higher coefficient of friction than a second material, then the container made of the first material will likely need less undercuts in its sidewalls than the same container made with the second material to have the same holding strength. The number of undercuts

used also depends on the fitness of use for a particular application of the container assembly, including the holding strength thereof.

[0092] It is contemplated that the ribs may have sidewalls with no undercuts or at least one undercut (*e.g.*, first rib 620a with optional undercuts 626a, 628a in FIG. 19). It is also contemplated that some ribs within the same container may have no undercuts, while other ribs may have one or more undercuts.

[0093] Referring to FIG. 20, adjacent ribs 642, 644 of a portion of the rim 614 are shown in more detail. FIG. 20 shows adjacent ribs 642, 644 with respective generally flat areas 642a, 644a. The ribs 642, 644 are spaced apart with a generally flat area 646 that is formed between generally flat areas 642a, 644a.

[0094] In FIG. 21, a top view of the ribs 636, 638 shows that the ribs 636, 638 generally taper inwardly toward the center of the container. FIG. 21 also shows a generally flat area 636a of rib 636 and a generally flat area 638a of rib 638. To improve the sealability of the container assembly, the generally flat areas 636a, 638a may contact similar sized flat areas formed in the respective spaces between adjacent ribs of a second container that form the container assembly. An example of a similar sized flat area formed in a space between adjacent ribs is shown in FIG. 21 with generally flat area 640. A rounded portion 654 transitions from the generally flat areas 636a, 638a of the ribs 636, 638 towards the body portion 612 of the container 610. The rounded portion 654 assists the operability of the container assembly that is releasably lockable. The rounded portion 654 eases the alignment of the ribs with their respective spaces as shown in FIG. 24, by allowing the ribs to slide into their respective spaces when forming a container assembly.

[0095] It is contemplated that the shape and size of the plurality of ribs 620 may vary from that shown in FIGs. 18-21. It is preferred that the plurality of ribs be shaped and sized to minimize the stacking height of the containers used to form container assemblies. It is desirable to minimize the stacking height of the containers to (a) reduce transportation costs and packaging, and (b) provide space efficiency in retail and consumer settings. It is also desirable to maximize the holding strength of the container assembly. The desired holding strength is often a balance between

making the container assembly easy for a consumer to open and close, while still preventing or inhibiting an inadvertent opening of the container assembly.

[0096] Referring back to FIG. 20, an optional seal feature 650 formed on the rim 614 is depicted. In FIG. 20, the optional seal feature 650 is located outwardly from the ribs 642, 644 with respect to the center of the container 610. In other words, the optional seal feature 650 is located farther away from the center of the container 610 than the ribs 642, 644. The optional seal feature 650 in conjunction with a corresponding optional seal feature on another container (not shown), along with the locked ribs of the container assembly, assist in preventing or inhibiting material from leaving or entering the container assembly. The optional seal feature is especially useful in preventing or inhibiting product leakage that may occur due to tolerances within the manufacturing process. To provide an efficient seal, the height of the optional seal feature 650 should be at least one-half of the rib height.

[0097] The optional seal feature, however, may be located inwardly from the ribs such that the seal is formed nearer the center of the container assembly as compared to the releasably lockable ribs. The optional seal feature may be formed in a variety of shapes, including a general conical shape.

[0098] A container assembly 700 according to one embodiment of the present invention is depicted in FIGs. 22, 23. The container assembly 700 comprises the first container 610 and a second container 710. In one embodiment, the second container 710 is shaped substantially the same as the first container 610. Alternatively, the second container 710 may be identical to the first container 610. It may be desirable to have containers identically shaped to reduce waste by a consumer when the top container or lid is not used. As discussed above, the container assembly may be formed with different first and second containers than plates.

[0099] The container assembly 700 of FIGs. 22, 23 may be formed according to one method by providing the first container 610 and the second container 710. The second container 710 includes a continuous body portion 712 and a continuous rim 714 that encompasses and projects laterally outwardly from the body portion 712. Similarly, the first container 610, as discussed above, includes the continuous body portion 612 and the continuous rim 614 that encompasses and

projects laterally outwardly from the body portion 612. Both of the rims 614, 714 include a respective plurality of ribs with spaces therebetween (not shown in FIGs. 22, 23). Each of the plurality of ribs may be shaped and sized similarly to the ribs shown above in FIGs. 18-21. Each of the plurality of ribs projects generally upwardly therefrom (*i.e.*, in a direction away from the continuous body portion).

[00100] The second container 710 is flipped 180 degrees relative to the first container 610 such that the containers 610, 710 are generally aligned and the rims 614, 714 are adjacent to each other. This flipped position of container 710 relative to the container 610 is shown in FIG. 22. To fit the ribs into respective spaces, the container 710 may have to be rotated slightly such that the ribs are offset (*i.e.*, the ribs and spaces are aligned). It is desirable that the consumer can assembly the containers so as to form a container assembly of the present invention.

[00101] Referring to FIG. 24, adjacent ribs 720a, 720b of the container 710 are fit into respective second spaces 622a, 622b of the container 610 and ribs 620a, 620b of the container 610 are fit into respective spaces 722a, 722b such that the container assembly 700 is releasably lockable. To fit the ribs into respective spaces, the container 710 may have to be rotated slightly such that the ribs are offset (*i.e.*, the ribs and spaces are aligned). FIG. 24 also depicts interference areas 724a, 724b formed between the first rib 620a and the space 722a created between ribs 720a, 720b of the container 710.

[00102] The strength of this lockable closure is dependent on many variables such as the number of the projecting ribs, the height of those ribs, whether undercuts are included, the size of the contact areas, the clearance needed between spaces and ribs, and the material(s) type and thickness used in forming the container assemblies. To improve the lockability of the container assembly, as discussed above, an optional sealing feature may be added.

[00103] The strength of this lockable closure is dependent on many variables such as the number of the projecting ribs, the height of those ribs, whether undercuts are included, the size of the contact areas, the clearance needed between spaces and ribs, and the material(s) type and thickness used in forming the container

assemblies. To improve the lockability of the container assembly, as discussed above, an optional sealing feature may be added.

[00104] The container assemblies of the present invention are typically formed from polymeric materials, but may be formed from materials such as paper or metal. The polymeric containers may be formed from polyolefins. The polymeric food containers are typically formed from orientated polystyrene (OPS), polyethylene terephthalate (PET), high-impact polystyrenes (HIPS), polyvinyl chloride (PVC), polypropylene and combinations thereof. The containers assemblies may be made from a mineral-filled polymeric material such as, for example, talc or calcium carbonate-filled polyolefin. An example of paper that may be used in forming the container assemblies is paperboard or molded fiber. Paperboard and molded fiber typically have a sufficient coefficient of friction to maintain the first and second containers in a lockable position.

[00105] As discussed, the materials used in forming the container assembly may assist in releasably locking the container assembly. For example, the material(s) forming the container assembly may have a fairly tacky laminate on one side that corresponds with a fairly tacky laminate on the opposing side, resulting in a desirable releasably lockable container assembly.

[00106] It is contemplated that the containers used in forming the container assemblies may be made from different materials. It is contemplated that one of ordinary skill in the art will recognize that other polymers or combination of polymers may be used to form the containers.

[00107] The container assemblies of the present invention are typically disposable, but it is contemplated that they may be reused at a future time. The containers used in forming the container assemblies (*e.g.*, container 10) are shown as including one compartment. It is contemplated that the containers may be formed of multiple compartments. Such containers are desirable for placing items (*e.g.*, food items) in different compartments to prevent or inhibit commingling of items. For example, undesirable mixing of food items can corrupt the flavor and the consistency of the food items.

[00108] As discussed above, the container assemblies may be used with food items. A method of using such container assemblies includes placing the food and locking the containers to form a container assembly with food therein. The container assembly is then placed in a heating apparatus and heated. Typical heating apparatuses include microwaves and conventional ovens. The container assemblies may contain solid food products. The container assemblies may be used for storage in the refrigerator and/or the freezer.

[00109] The containers to be used in forming the container assemblies of the present invention may be formed using conventional thermoforming (*e.g.*, by pressure, vacuum or the combination thereof), injection-molding processes, or rotational molding. According to one method of thermoforming, pellets of a polymeric resin and additives, if any, are added into an extruder. The pellets of the polymeric resin and additives, if any, are melted to form a blend. The blend is extruded through a die to form an extruded sheet. The extruded sheet is thermoformed to a desired shape of a container to be used in forming the container assembly.

[00110] The thickness of the container to be used in forming the container assemblies generally ranges from about 0.002 to about 0.15 inch, but is typically from about 0.005 to about 0.04 inch. The container assemblies may be opaque or a variety of colors or color combinations. The container assemblies typically have at least one transparent container if it is desired for the customer to ascertain the nature of the accommodated product and the condition thereof without having to open the container assembly.

[00111] While particular embodiments and applications of the present invention have been illustrated and described, it is to be understood that the invention is not limited to the precise construction and compositions disclosed herein and that various modifications, changes, and variations may be apparent from the foregoing descriptions without departing from the spirit and scope of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A container assembly, comprising:

a first container including a first continuous body portion and a first rim, the first rim encompassing and projecting laterally outwardly from the first body portion, the rim having a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs, the first plurality of ribs having a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls, the first plurality of ribs having a rounded portion transitioning from the generally flat surface towards the first body portion;

a second container including a second continuous body portion and a second rim, the second rim encompassing and projecting laterally outwardly from the second body portion, the rim having a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs, the second plurality of ribs having a third sidewall and a fourth sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls, the second plurality of ribs having a rounded portion transitioning from the generally flat surface towards the second body portion, the second container being shaped substantially the same as the second container; and

wherein the first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

2. The container assembly of claim 1, wherein the first and second containers are bowls.

3. The container assembly of claim 1, wherein the first and second containers are plates.

4. The container assembly of claim 1, wherein the first container is a bowl and the second container is a plate.

5. The container assembly of claim 1, wherein the first and second containers are made of polymeric material.

6. The container assembly of claim 5, wherein the first and second containers are made of a mineral-filled polymeric material.

7. The container assembly of claim 5, wherein the first and second containers are made of high-impact polystyrene.

8. The container assembly of claim 1, wherein at least one of the first and second containers are paper or metal.

9. The container assembly of claim 1, wherein the first container is identical to the second container.

10. The container assembly of claim 1, wherein the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs are generally perpendicular to the plane of the remainder of the respective rims.

11. The container assembly of claim 1, wherein at least one of the first and second sidewalls of the first plurality of upwardly-projecting ribs has a first undercut, and wherein at least one of the third and fourth sidewalls of the second plurality of upwardly-projecting ribs has a second undercut.

12. The container assembly of claim 1, wherein each of the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs includes at least about 3 ribs.

13. The container assembly of claim 12, wherein each of the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs includes at least about 40 ribs.

14. The container assembly of claim 1, wherein the first rim and the second rim are adapted to form a seal.

15. The container assembly of claim 14, wherein the seal is located outwardly from the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs.

16. The container assembly of claim 14, wherein the seal is located inwardly from the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs.

17. The container assembly of claim 1, wherein the first container has at least one handle portion, and the second container has at least one handle portion.

18. A container assembly, comprising:

a first container including a first continuous body portion and a first rim, the first rim encompassing and projecting laterally outwardly from the first body portion, the rim having a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs, the first plurality of ribs having a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls, the first plurality of ribs having a rounded portion transitioning from the generally flat surface towards the first and second sidewalls; and

a second container including a second continuous body portion and a second rim, the second rim encompassing and projecting laterally outwardly from the second body portion, the rim having a second plurality of ribs projecting generally upwardly therefrom such that second spaces are formed between adjacent ribs, the second plurality of ribs having a third sidewall and a fourth sidewall and a generally flat surface that encompasses and bridges the third and fourth sidewalls, the second plurality of ribs having a rounded portion transitioning from the generally flat surface towards the third and fourth sidewalls, the second rim and the first rim being shaped substantially the same;

wherein the first container and the second container are adapted to be releasably lockable to each other by fitting the first plurality of upwardly-projecting ribs into respective second spaces and fitting the second plurality of upwardly-projecting ribs into respective first spaces.

19. The container assembly of claim 18, wherein the first and second containers are made of polymeric material.

20. The container assembly of claim 19, wherein the first and second containers are made of a mineral-filled polymeric material.

21. The container assembly of claim 19, wherein the first and second containers are made of high-impact polystyrene.

22. The container assembly of claim 18, wherein the first rim is identical to the second rim.

23. The container assembly of claim 18, wherein the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs are generally perpendicular to the plane of the remainder of the respective rims.

24. The container assembly of claim 18, wherein at least one of the first and second sidewalls of the first plurality of upwardly-projecting ribs has a first undercut, and wherein at least one of the third and fourth sidewalls of the second plurality of upwardly-projecting ribs has a second undercut.

25. The container assembly of claim 18, wherein each of the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs includes at least about 3 ribs.

26. The container assembly of claim 25, wherein each of the first plurality of upwardly-projecting ribs and the second plurality of upwardly-projecting ribs includes at least about 40 ribs.

27. The container assembly of claim 18, wherein the first rim and the second rim are adapted to form a seal.

28. A container to be used in a container assembly, comprising a continuous body portion and a rim, the rim encompassing and projecting laterally outwardly from the body portion, the rim having a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs, the first plurality of ribs having a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls, the first plurality of ribs having a rounded portion transitioning from the generally flat surface towards the first body portion, the rim being adapted to be releasably lockable by fitting the first plurality of ribs and first spaces into respective second spaces and second plurality of ribs of a second container, the second container being shaped substantially the same as the first container.

29. The container of claim 28, wherein the first container is a bowl.

30. The container of claim 28, wherein the first container is a plate.

31. The container of claim 28, wherein the first container is made of polymeric material.

32. The container of claim 28, wherein the first container is made of high-impact polystyrene.

33. The container of claim 28, wherein at least one of the first and second sidewalls of the first plurality of ribs has a first undercut.

34. The container of claim 28, wherein the first plurality of upwardly-projecting ribs includes at least about 20 ribs.

35. A container to be used in a container assembly, comprising a continuous body portion and a rim, the rim encompassing and projecting laterally outwardly from the body portion, the rim having a first plurality of ribs projecting generally upwardly therefrom such that first spaces are formed between adjacent ribs, the first plurality of ribs having a first sidewall and a second sidewall and a generally flat surface that encompasses and bridges the first and second sidewalls, the first plurality of ribs having a rounded portion transitioning from the generally flat surface towards the first and second sidewalls, the rim being adapted to be releasably lockable by fitting the first plurality of ribs and first spaces into respective second spaces and second plurality of ribs of a second container, the second container being shaped substantially the same as the first container.

36. The container of claim 35, wherein the first container is made of polymeric material.

37. The container of claim 36, wherein the first container is made of high-impact polystyrene.

38. The container of claim 35, wherein at least one of the first and second sidewalls of the first plurality of ribs has a first undercut.

39. The container of claim 35, wherein the first plurality of upwardly-projecting ribs includes at least about 20 ribs.

Fig. 1

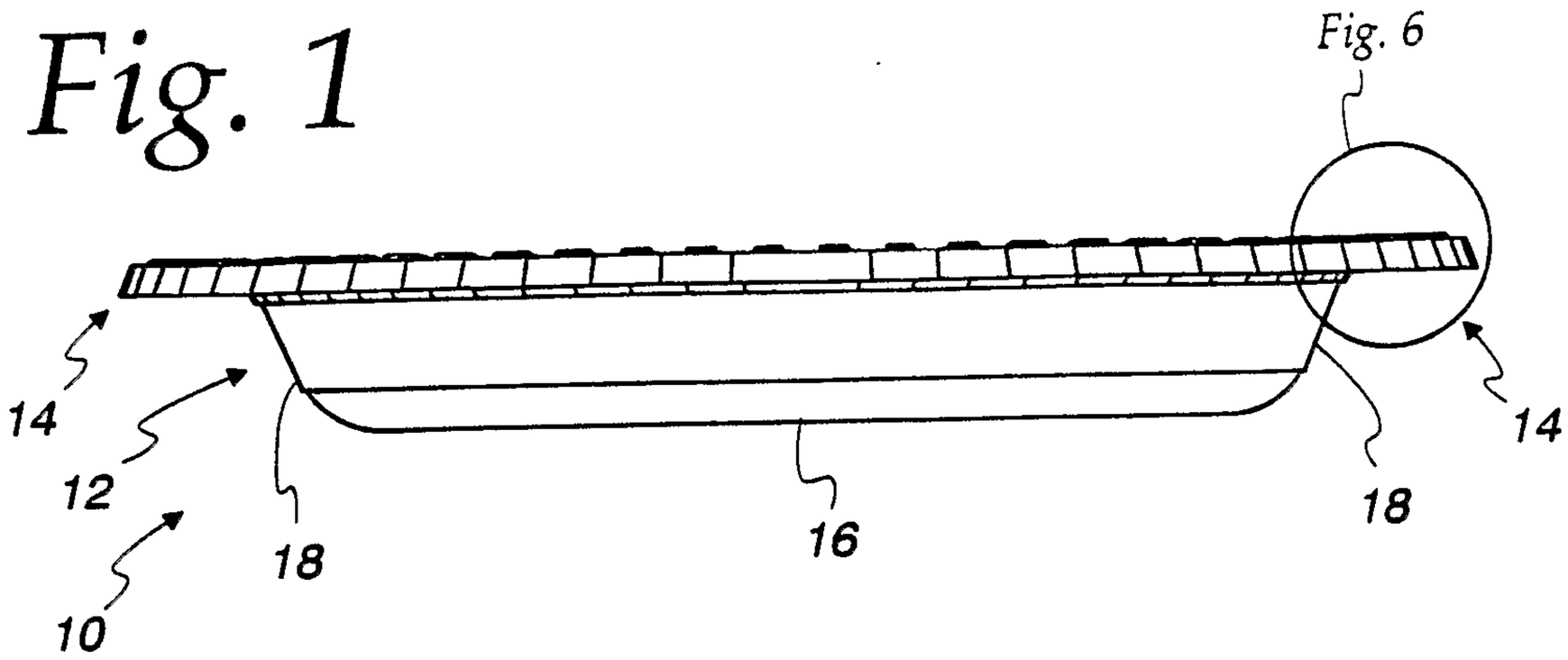

Fig. 2

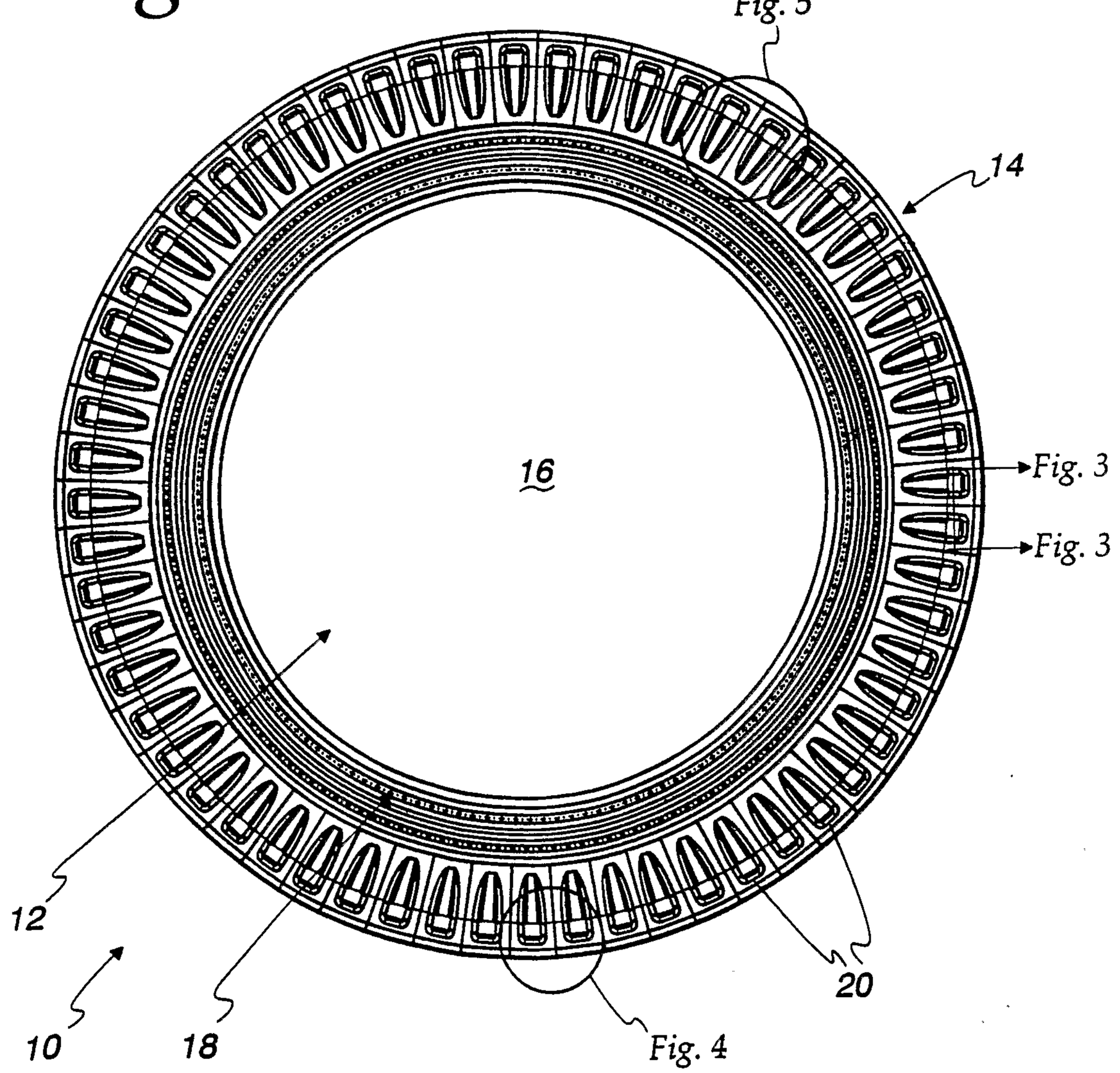

Fig. 4

Fig. 3

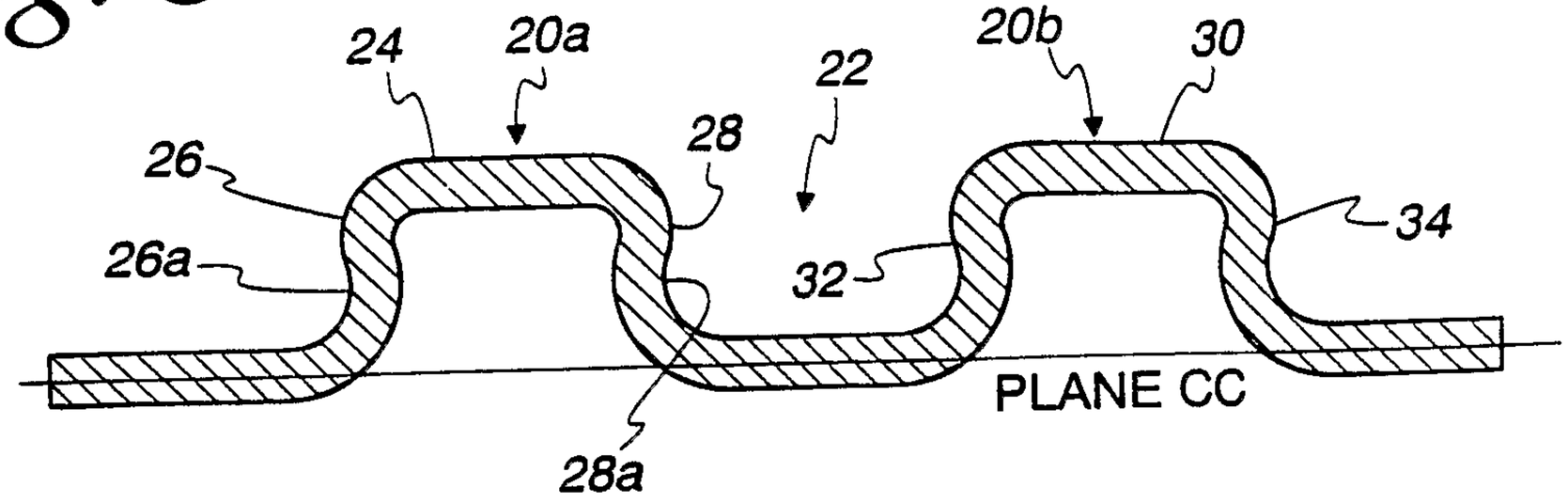

Fig. 4

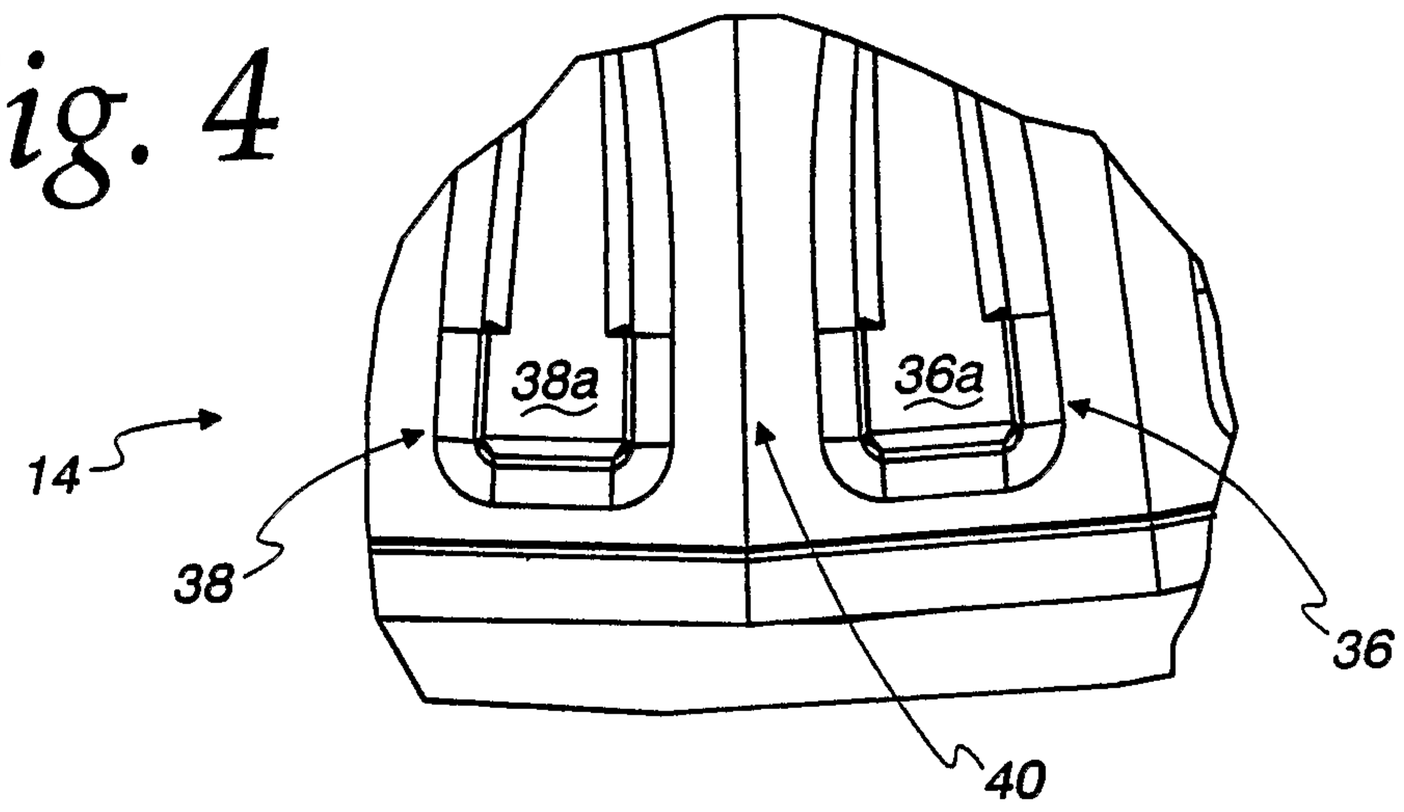

Fig. 5

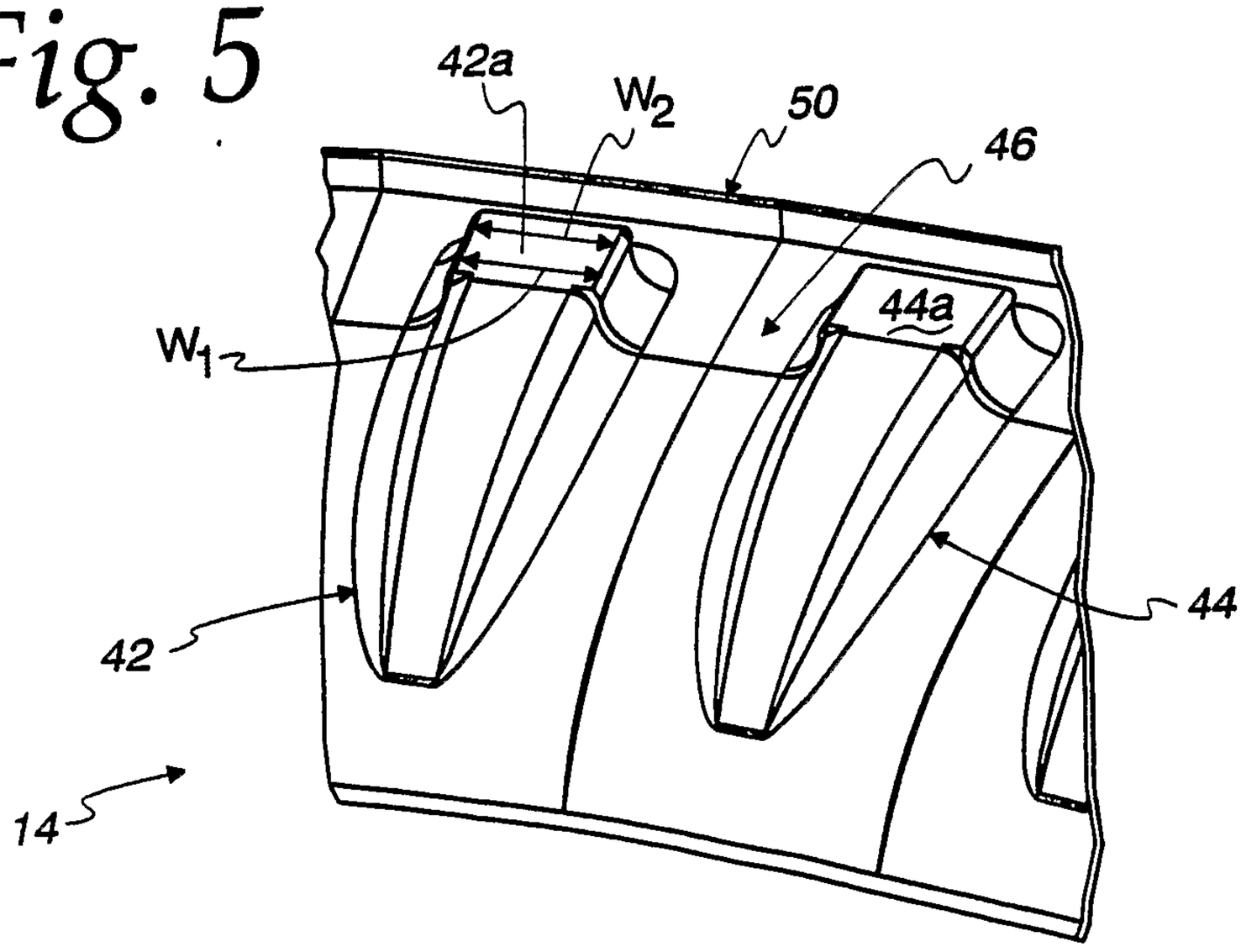

Fig. 6

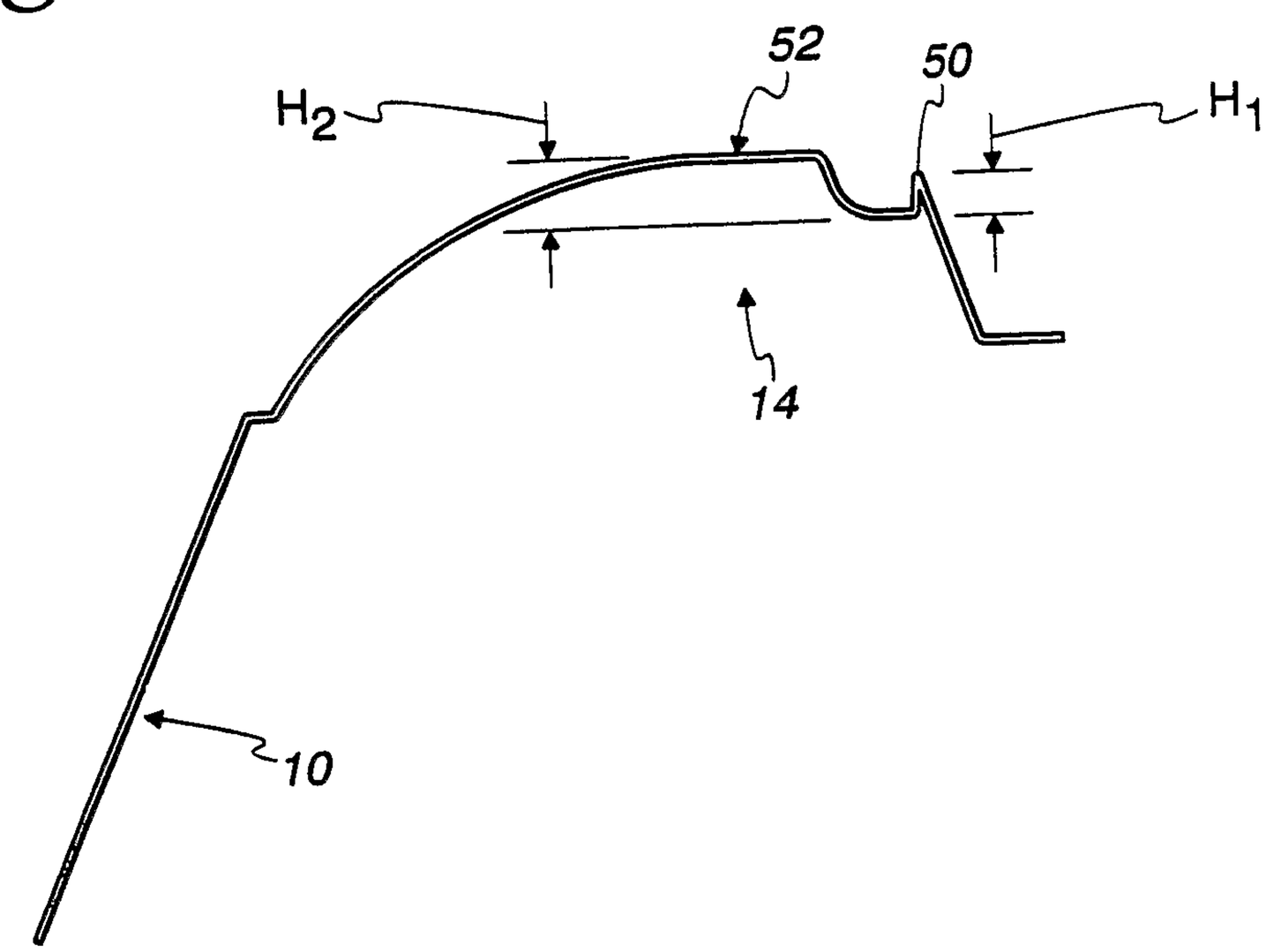

Fig. 7a

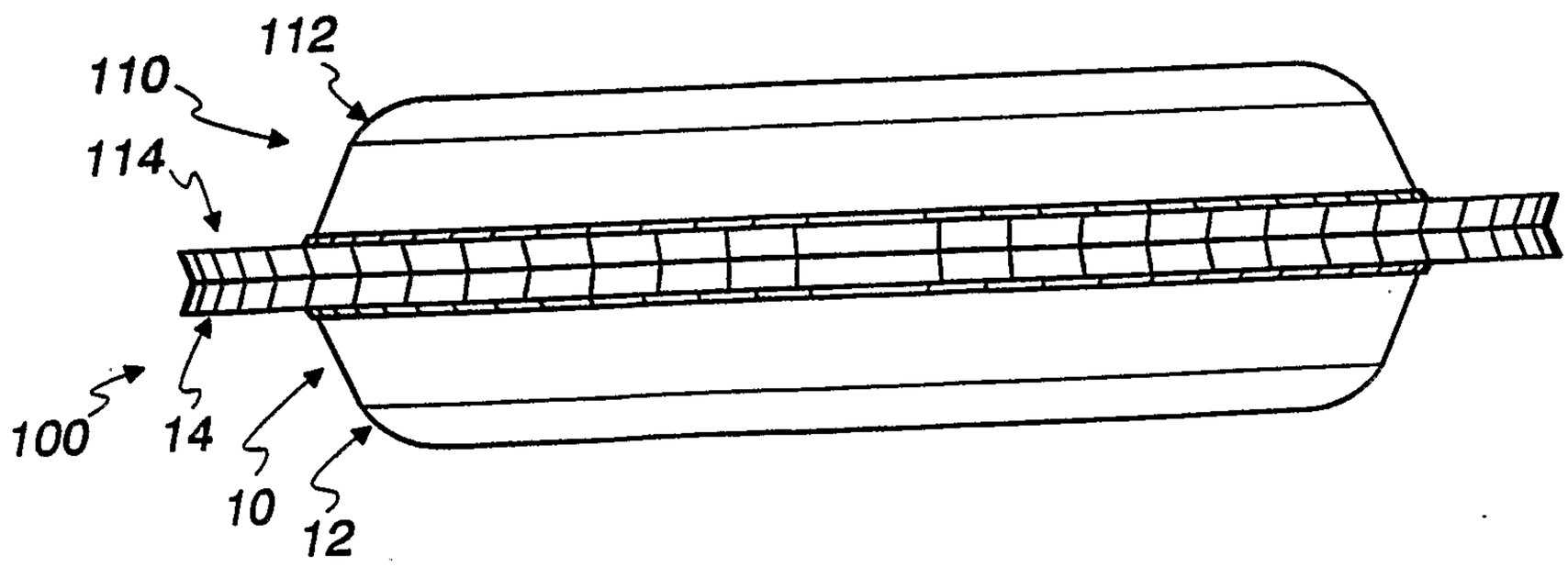

Fig. 7b

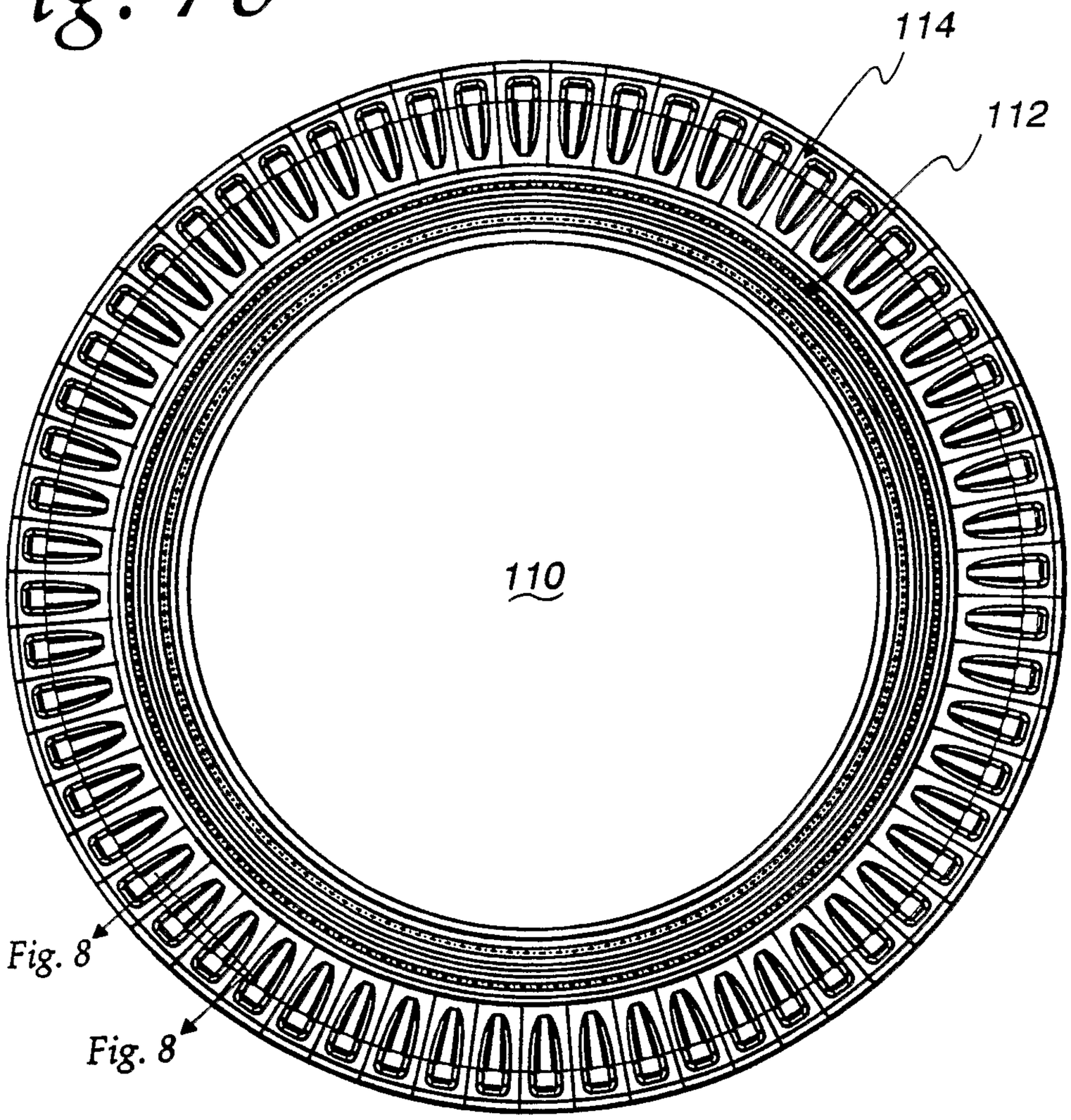
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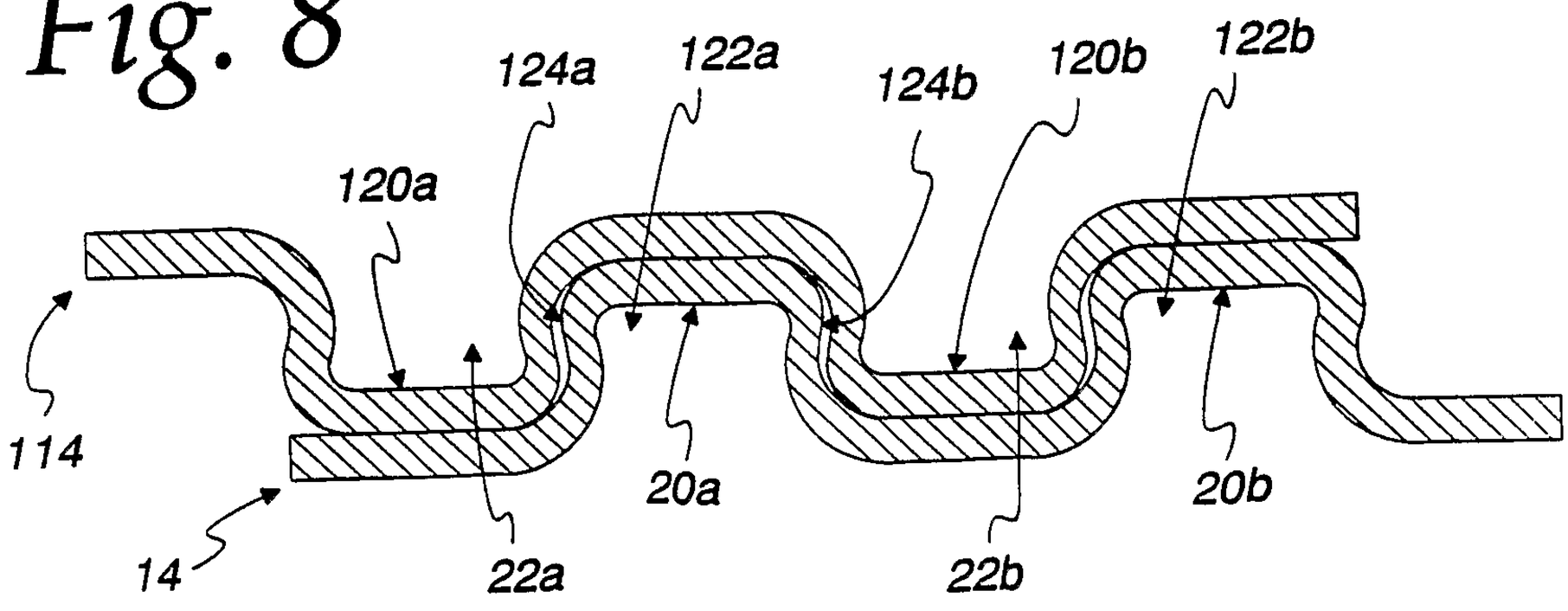
Fig. 8
Fig. 8

Fig. 8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20b
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22a
22b

Fig. 9

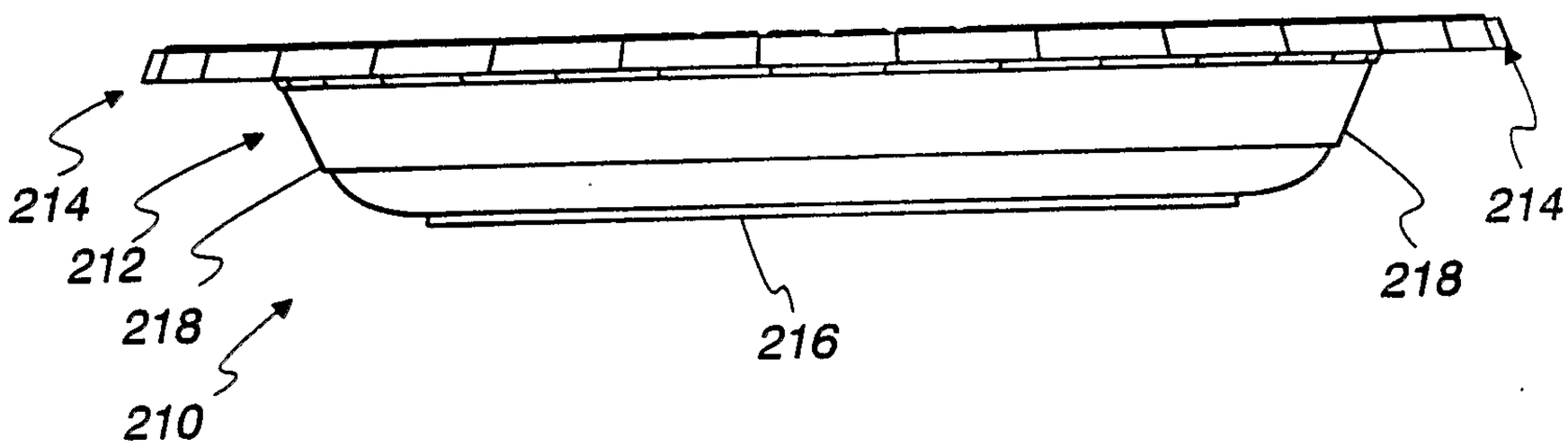


Fig. 10

Fig. 11

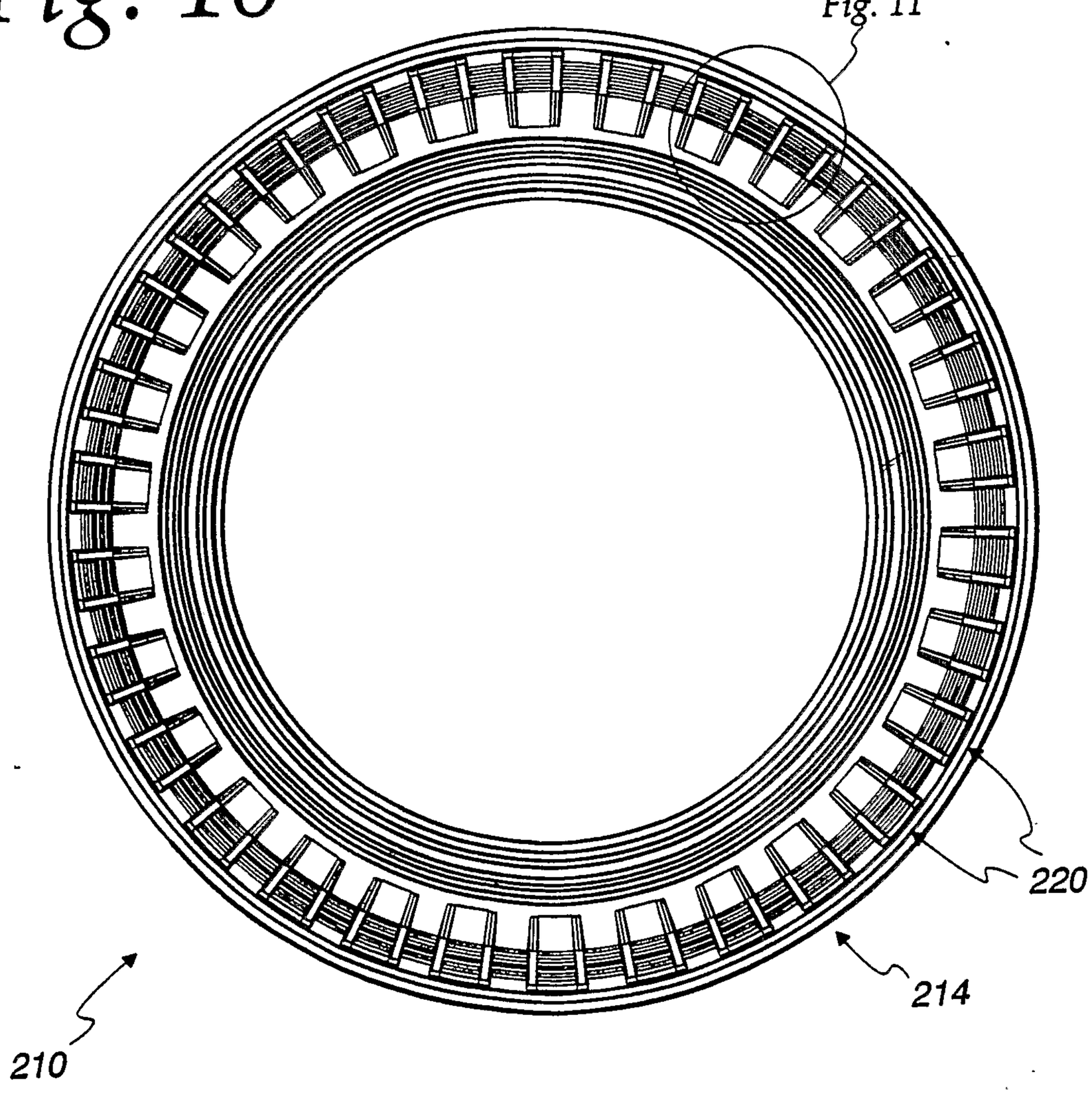


Fig. 11

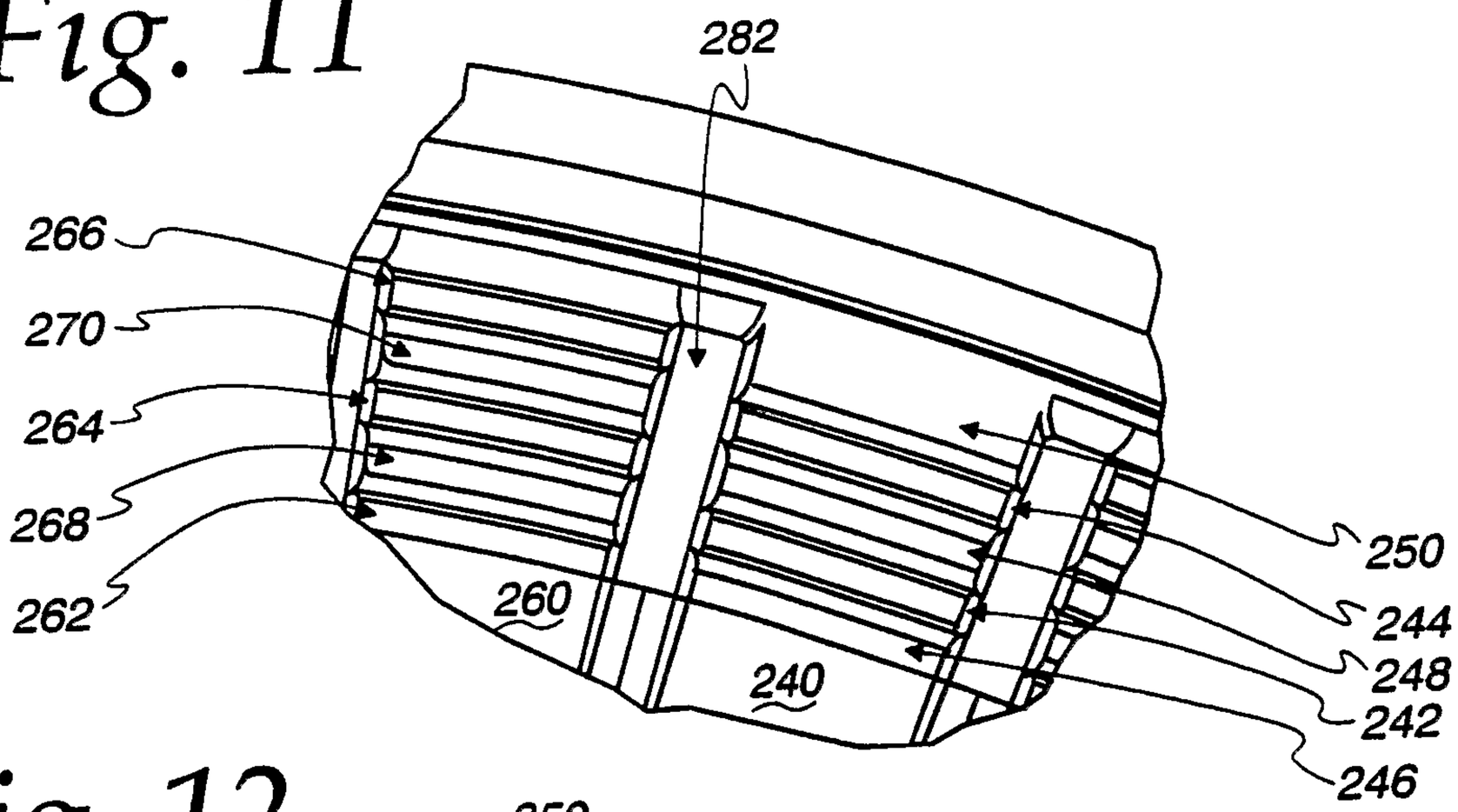


Fig. 12

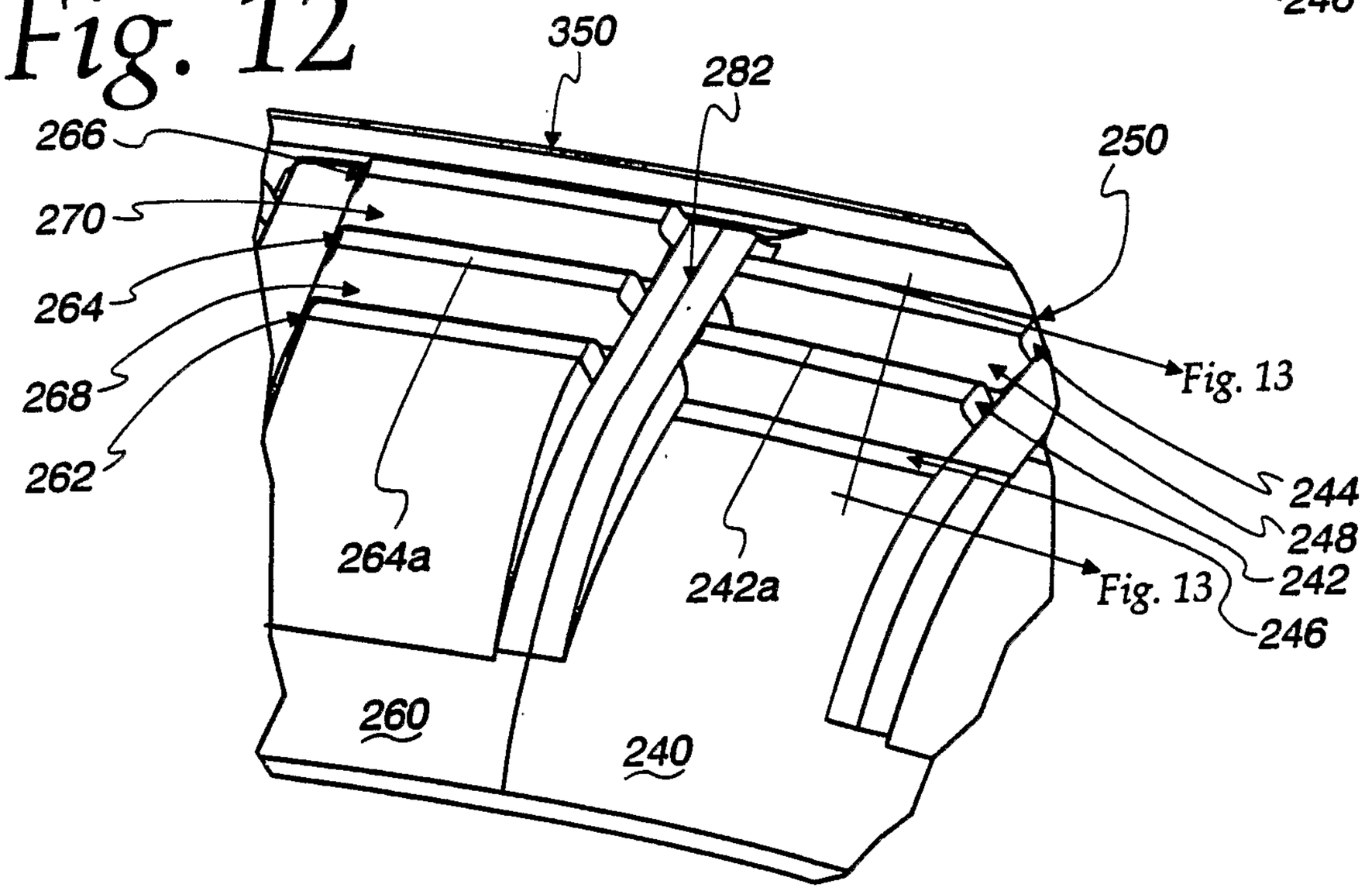


Fig. 13

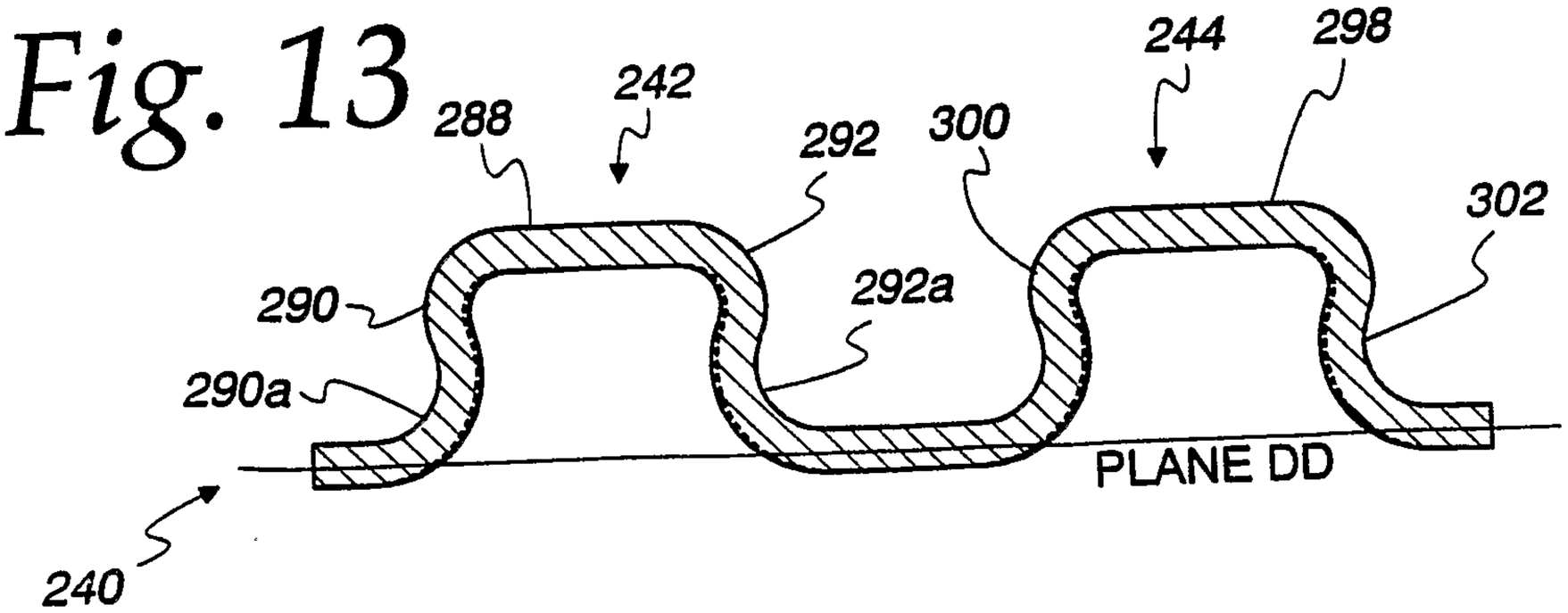


Fig. 14a

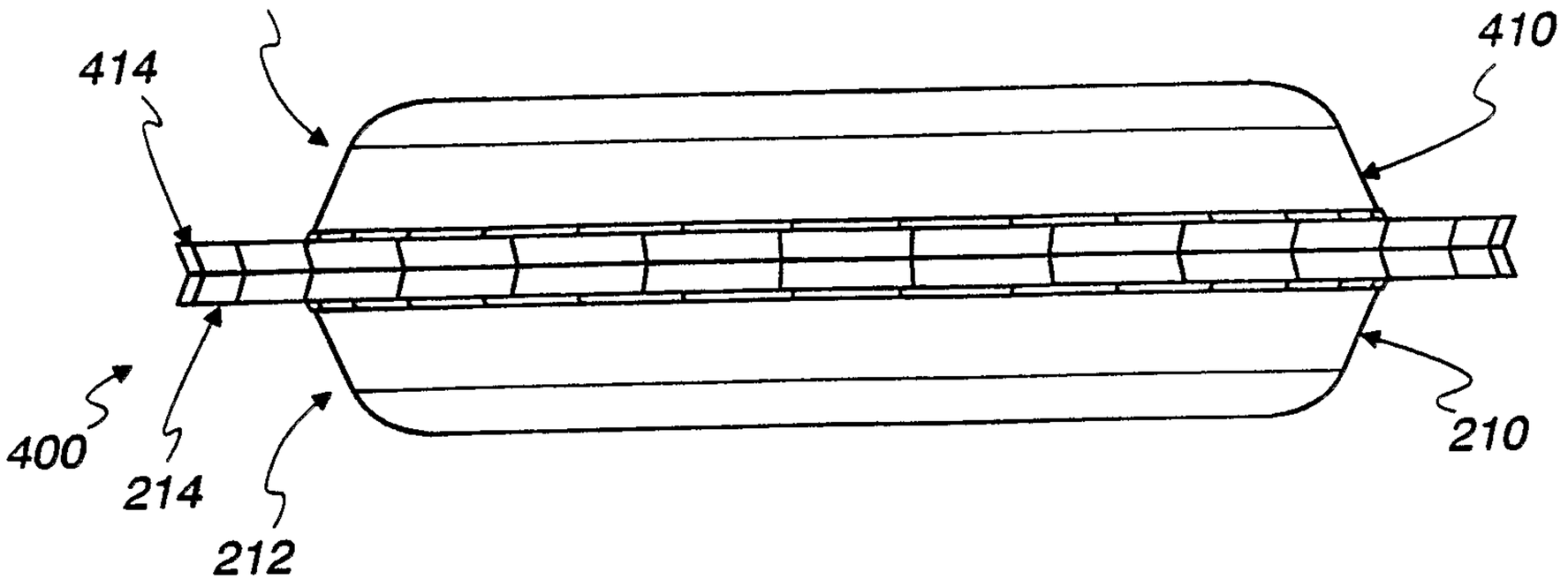


Fig. 14b

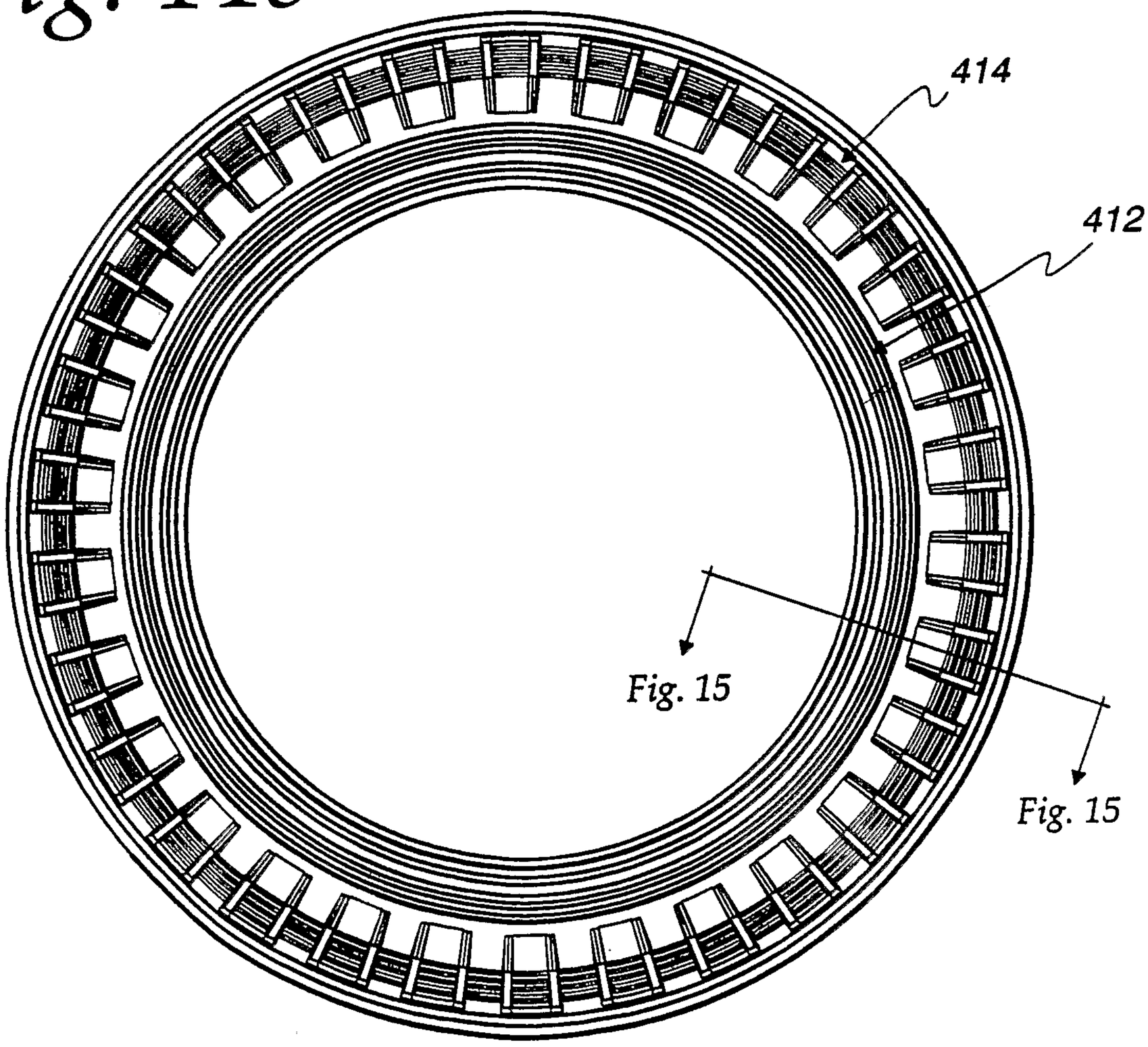


Fig. 15

Fig. 15

Fig. 15

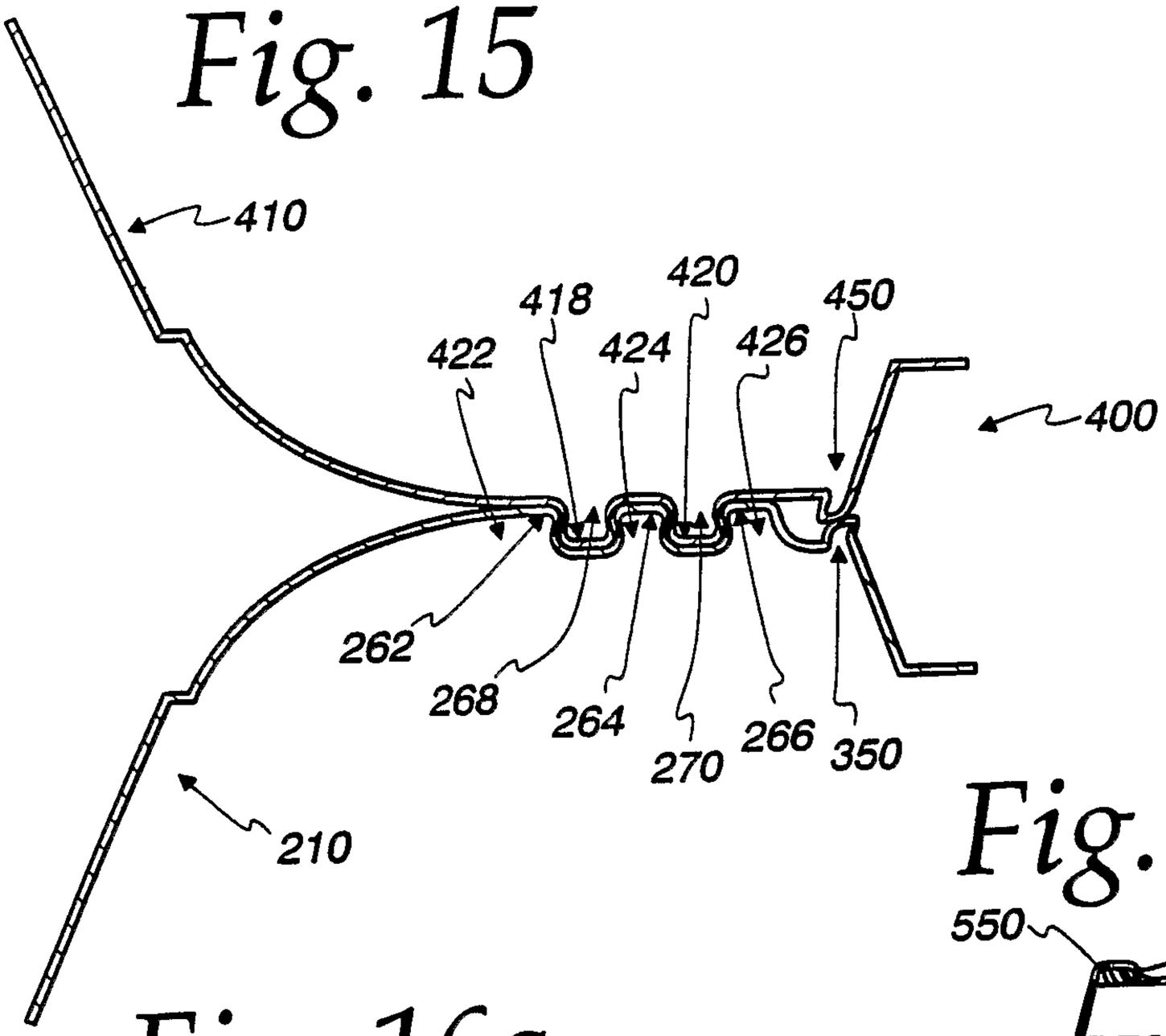


Fig. 16a

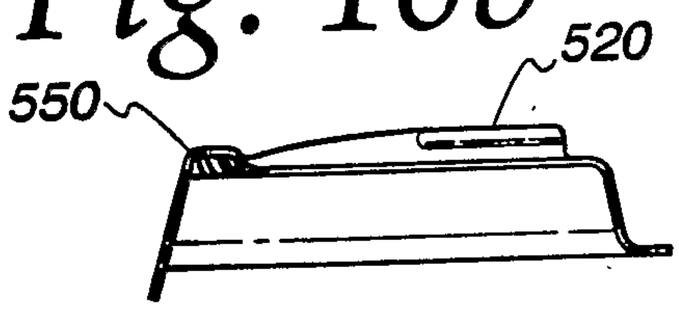
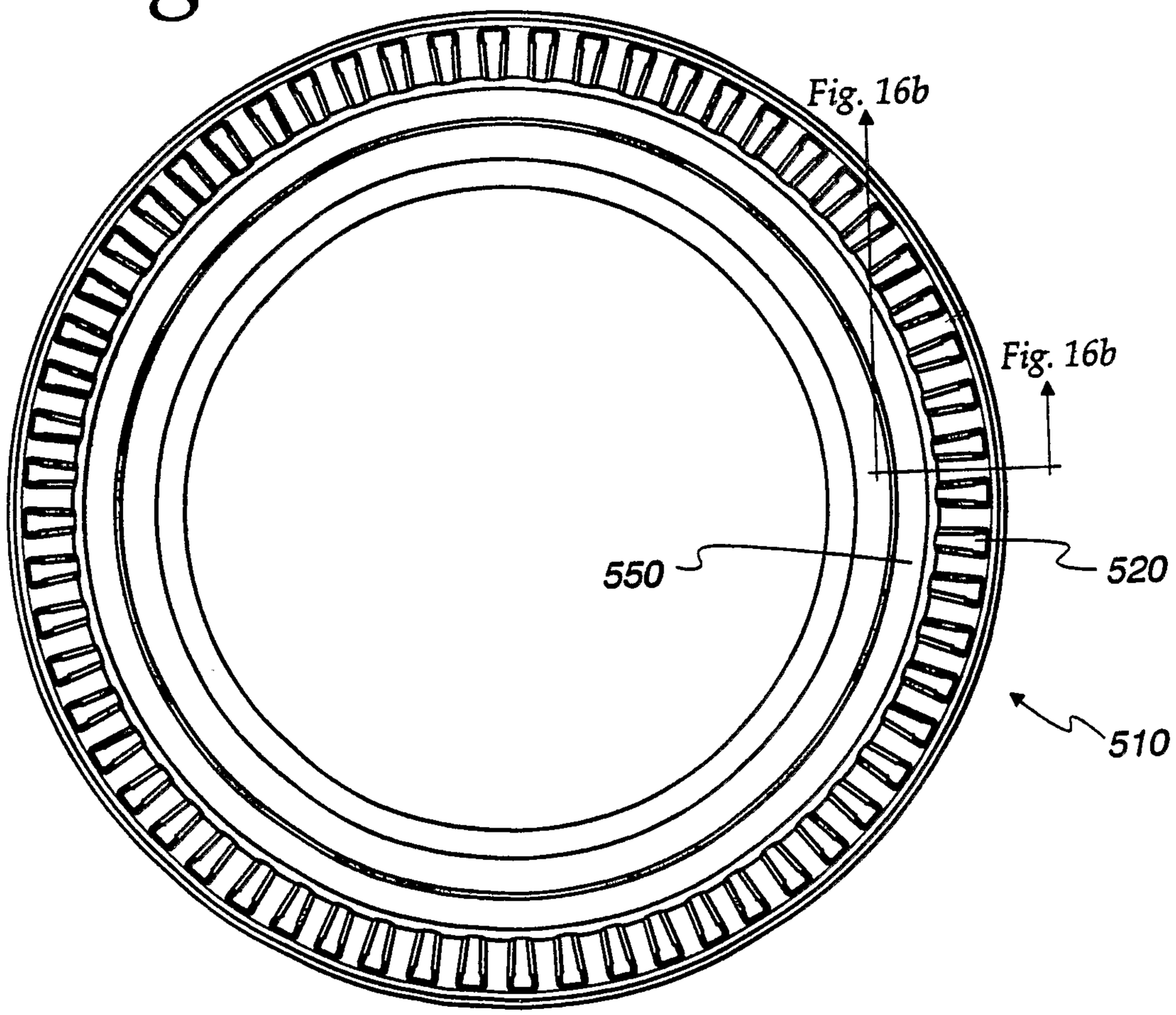


Fig. 16b



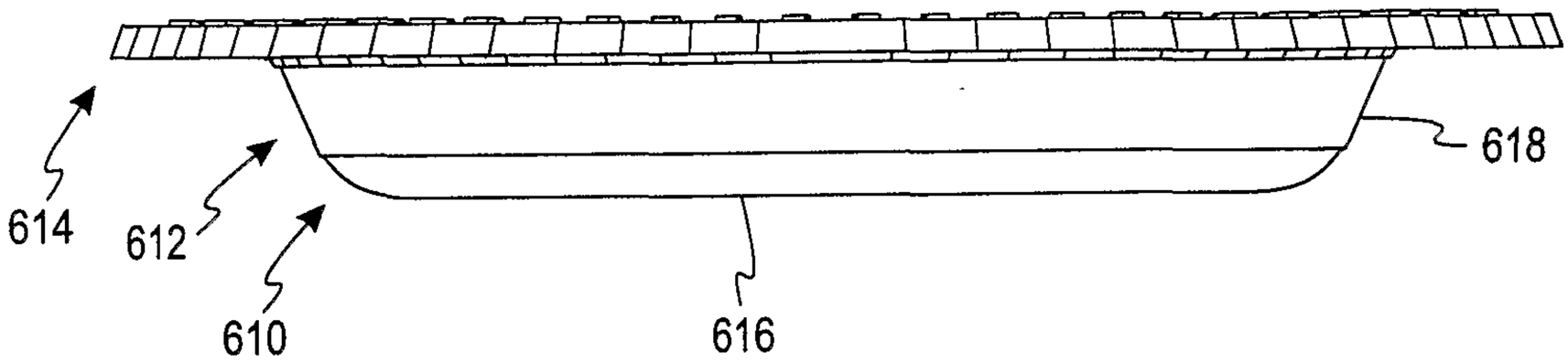

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Fig. 17

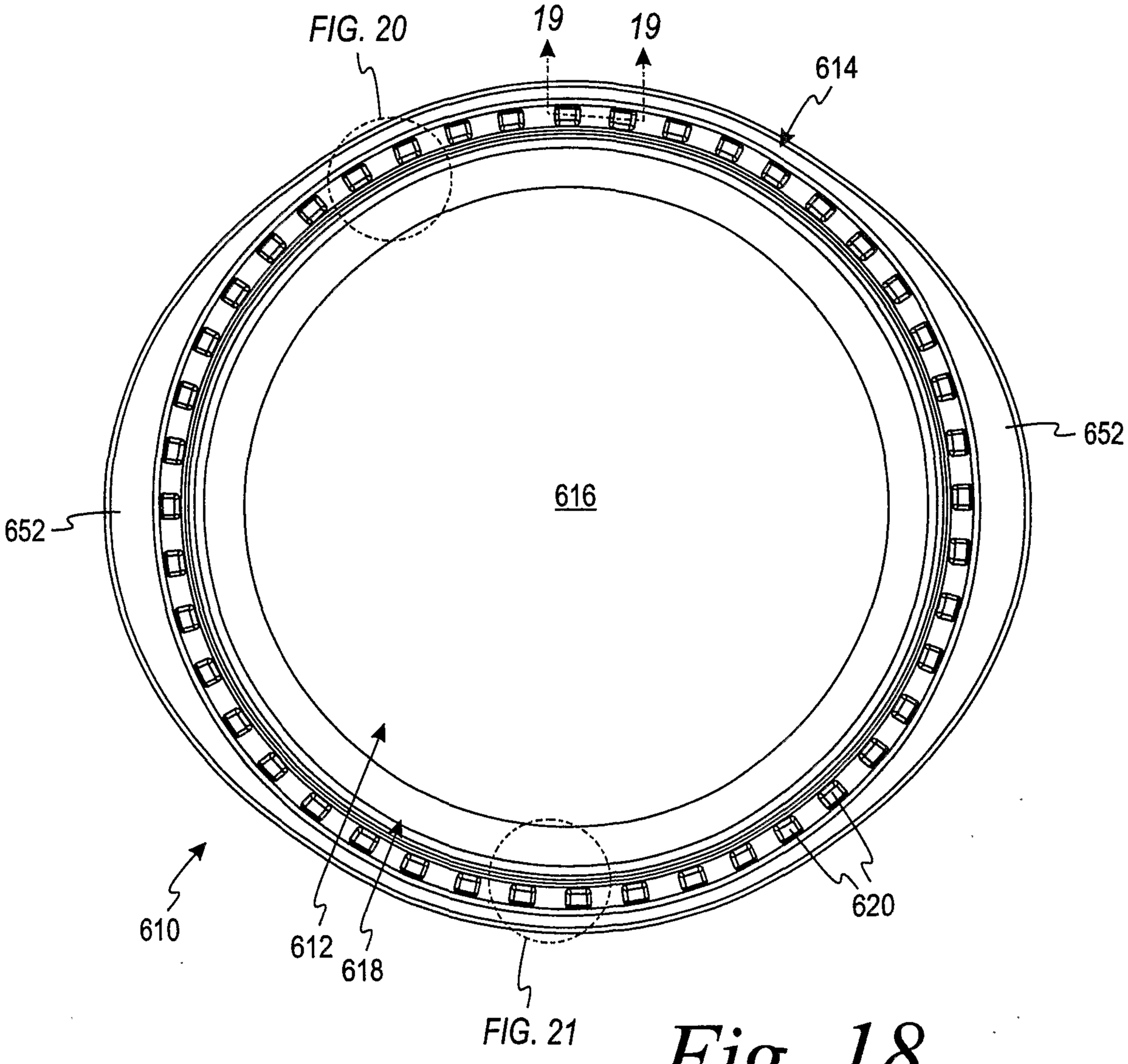
FIG. 20
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FIG. 21

Fig. 18

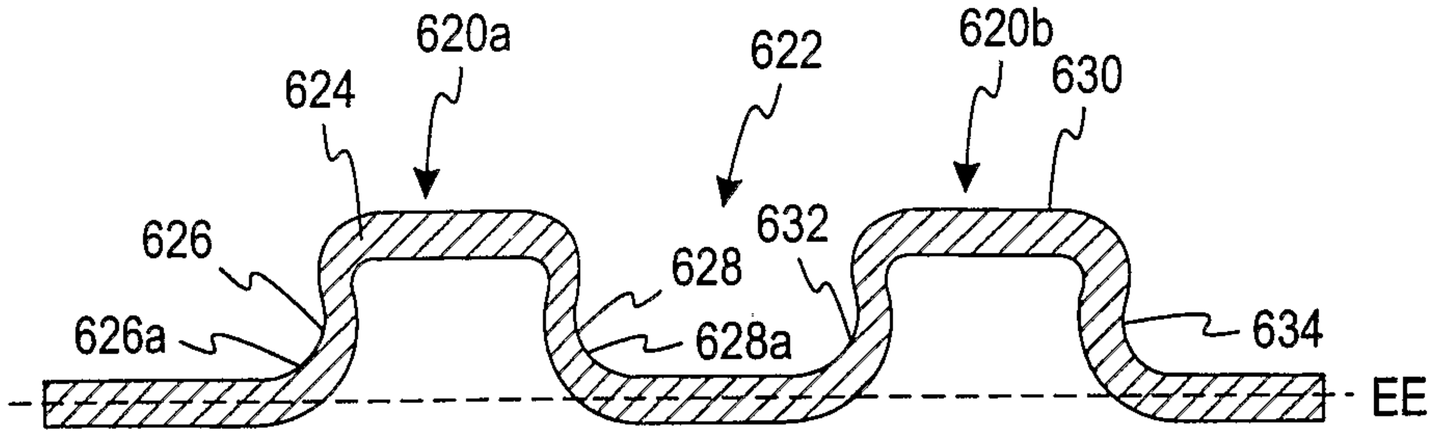


Fig. 19

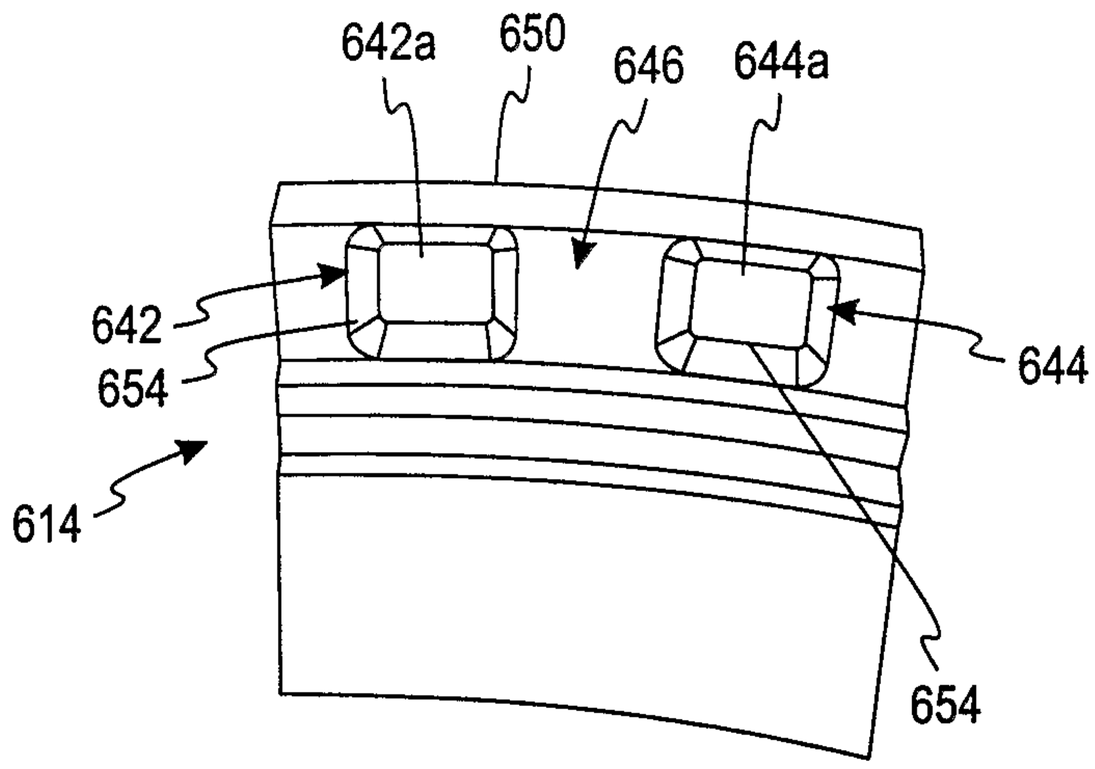
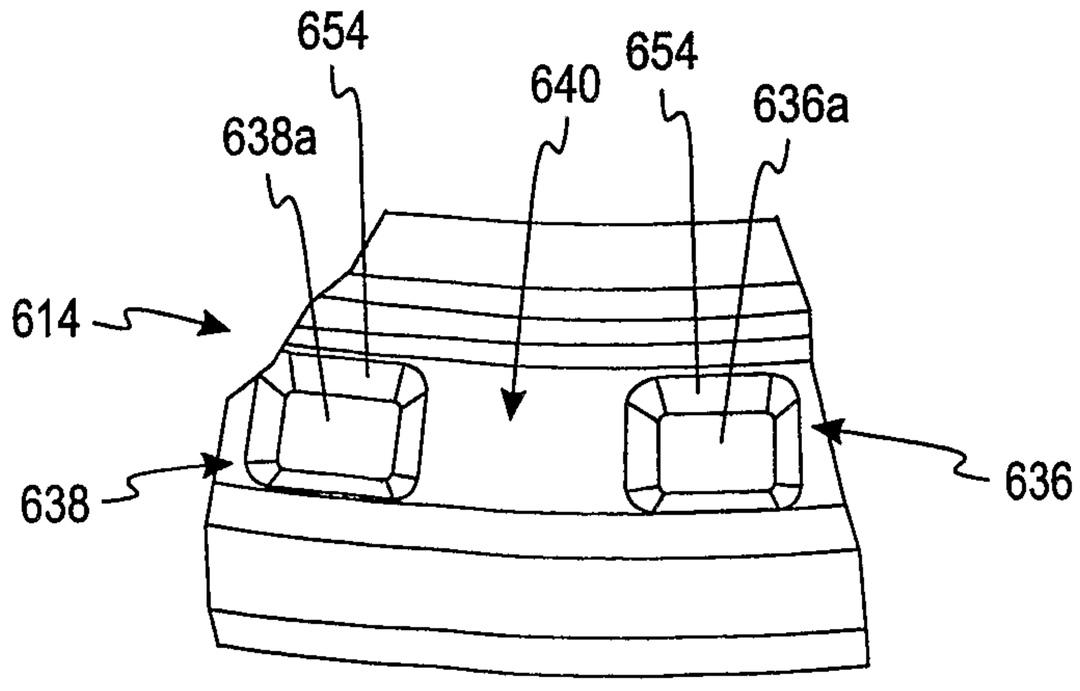


Fig. 20



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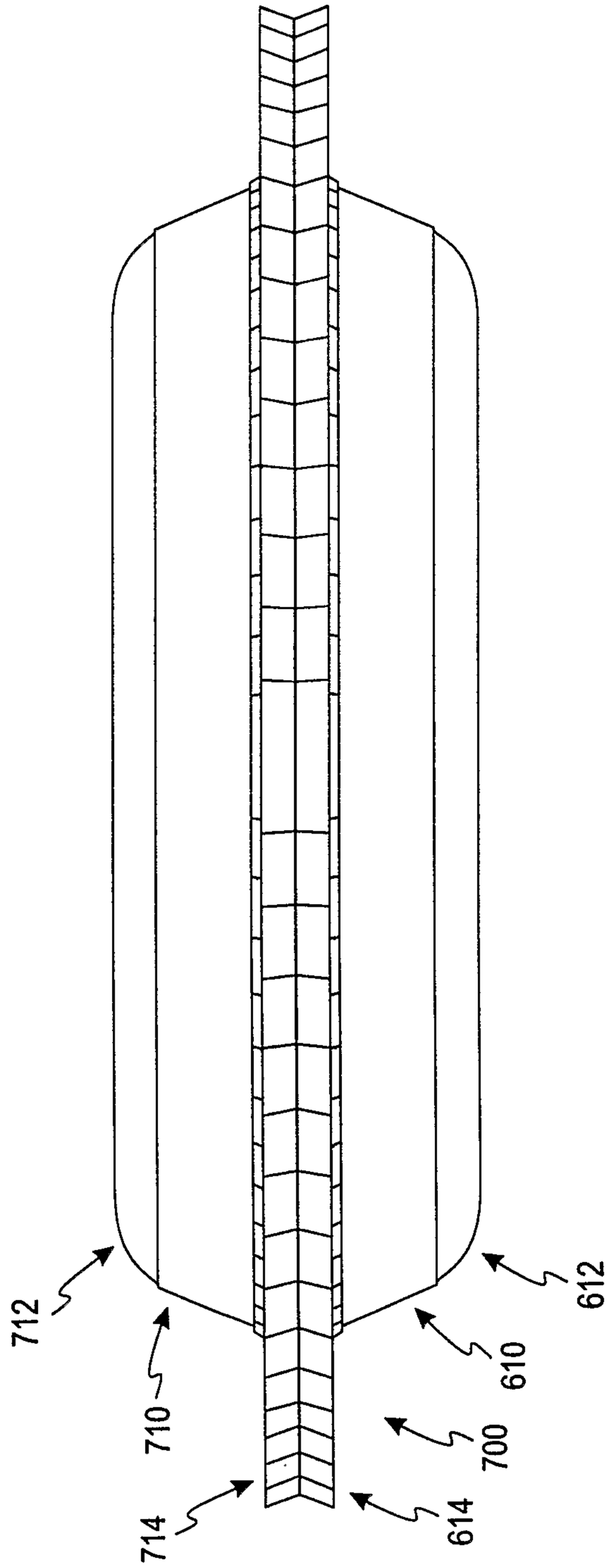

Fig. 22

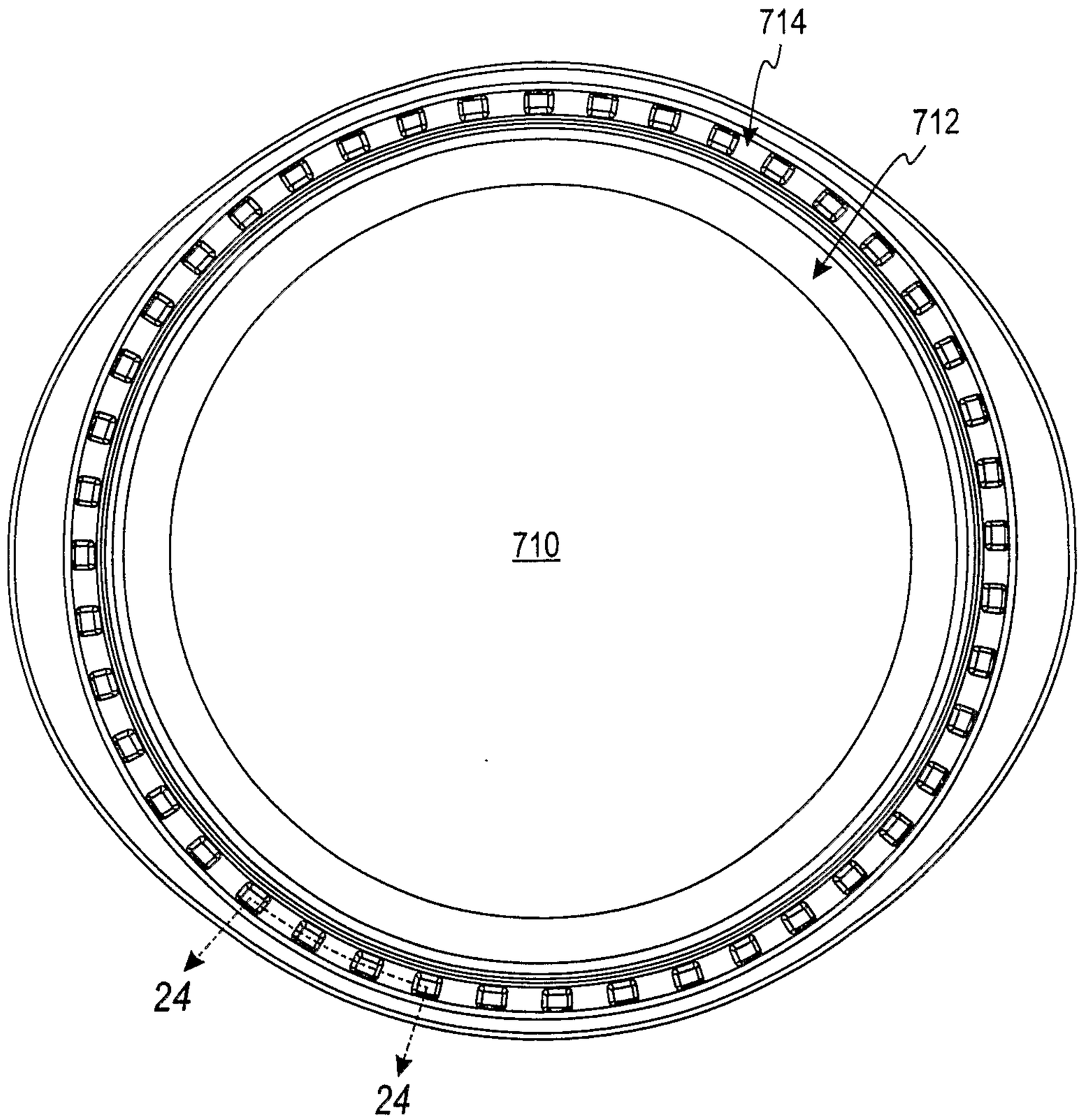
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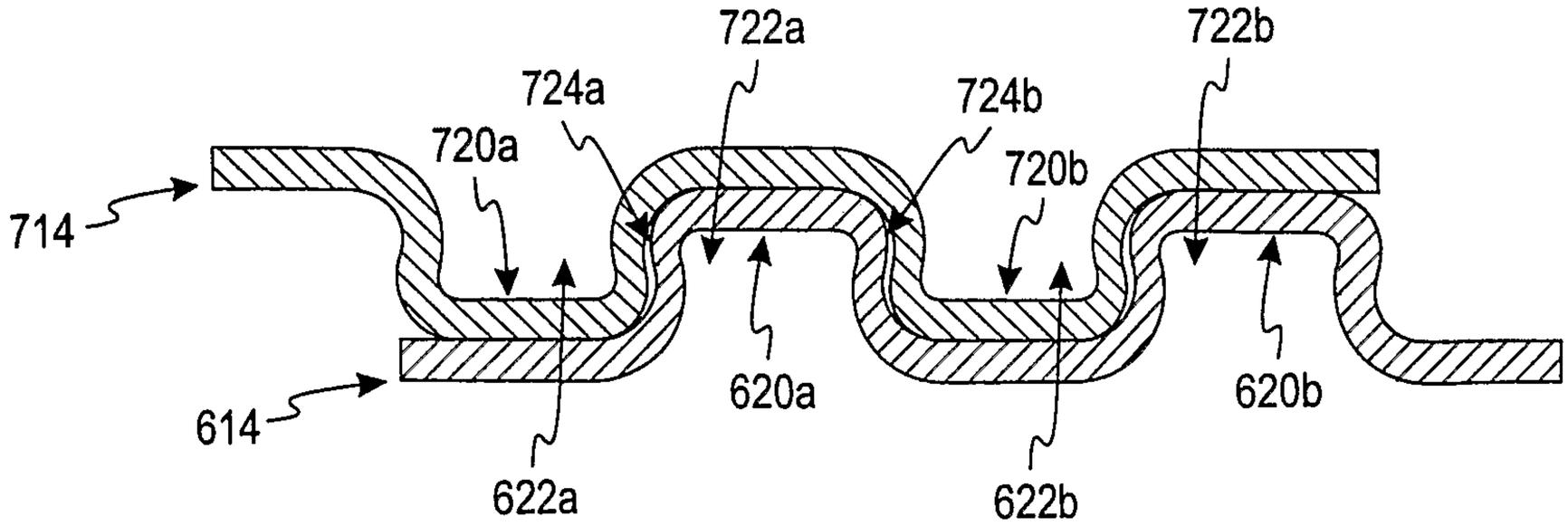
Fig. 23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620b
622a
622b

Fig. 24

Fig. 6