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(54) Titre : SYSTEME DE MASQUAGE RESISTANT AUX TEMPERATURES ELEVEES REUTILISABLE
(54) Title: REUSABLE HIGH-TEMPERATURE RESISTANT MASKING SYSTEM

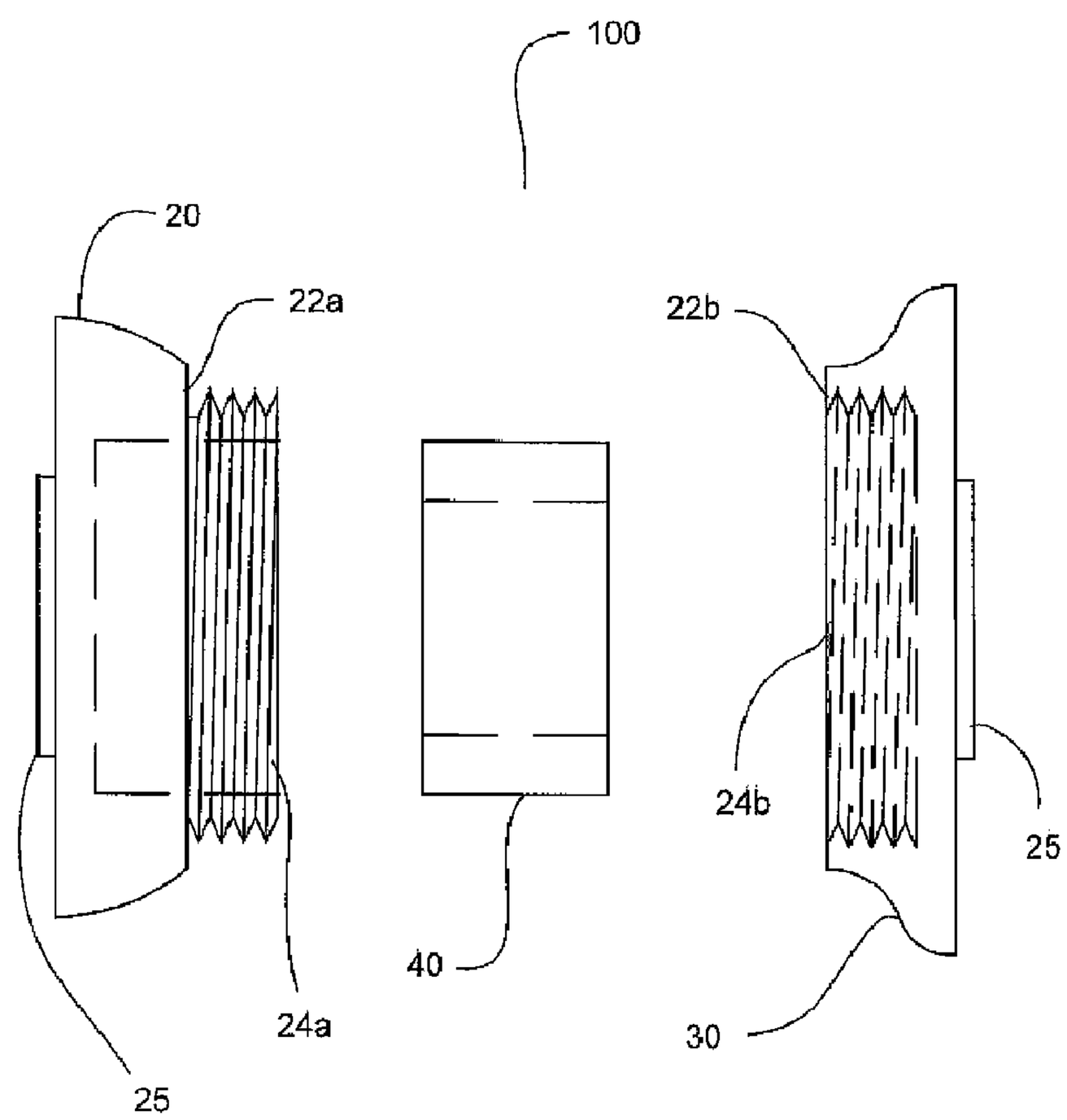

Figure 1a

(57) Abrégé/Abstract:
A masking device that is adapted to be reusable in high temperature applications and for a variety of masking applications, is cost-effective to manufacture, and which includes a magnetic component insulated on three or all four surfaces. The invention includes

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(57) Abrégé(suite)/Abstract(continued):
a system of interchangeable components in varying shapes and sizes, which may be selectively attached, assembled and combined providing versatility for a range of masking operations.

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[Continued on next page]

(54) Title: REUSABLE HIGH-TEMPERATURE RESISTANT MASKING SYSTEM

(57) Abstract: A masking device that is adapted to be reusable in high temperature applications and for a variety of masking applications, is cost-effective to manufacture, and which includes a magnetic component insulated on three or all four surfaces. The invention includes a system of interchangeable components in varying shapes and sizes, which may be selectively attached, assembled and combined providing versatility for a range of masking operations.

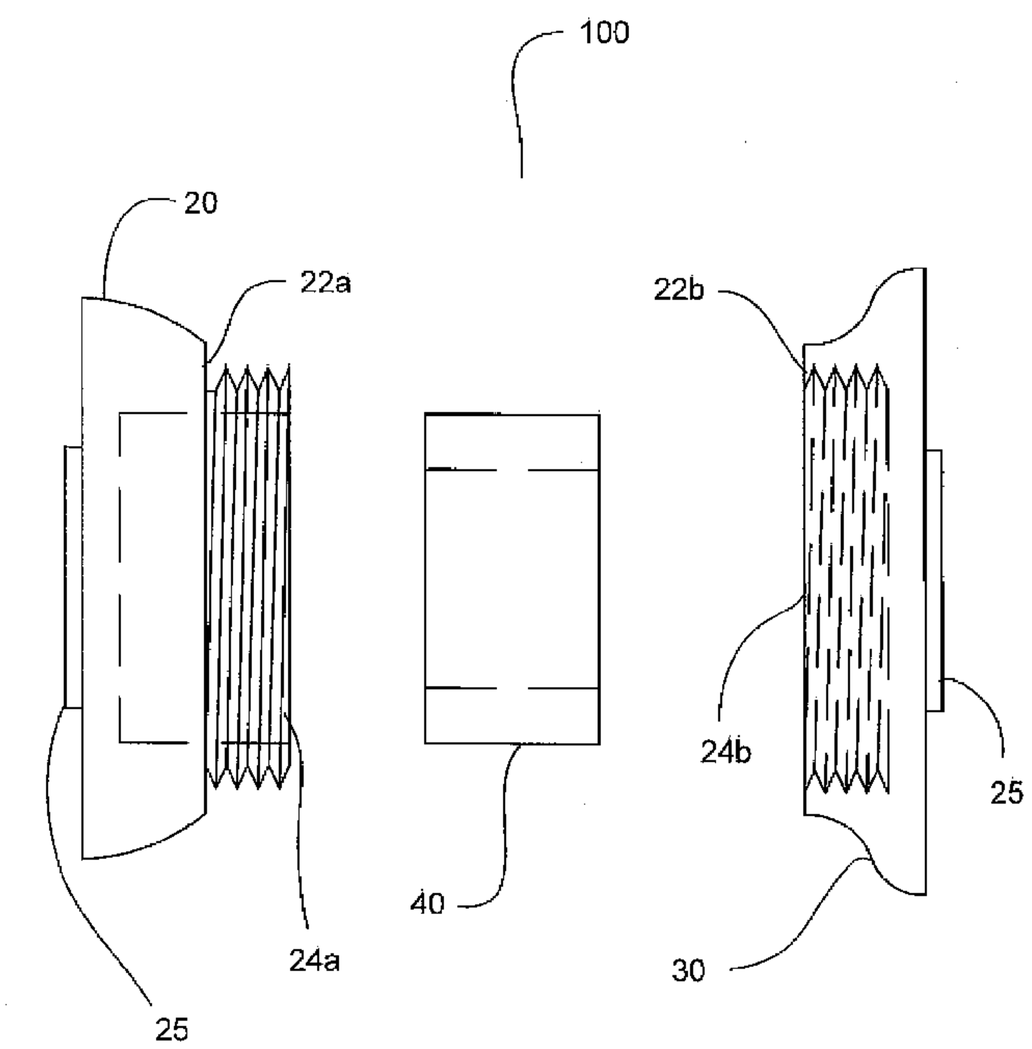

Figure 1a

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"Reusable High-Temperature Resistant Masking System"

Cross-Reference to Related Applications

[001] This application claims priority to U.S. Provisional Application No. 61/109,243 filed on October 29, 2008 and U.S. Non-Provisional Application No. 12/558,272 filed on September 11, 2009.

Field of Invention

[002] This invention relates generally to the field of masking devices, and more particularly to reusable high-temperature resistant masking devices incorporating magnets.

Brief Description of Drawings

[003] **Figure 1a** shows a cross-sectional view of the components of an exemplary embodiment of a masking device in an unassembled position.

[004] **Figure 1b** shows a side perspective view of the components of an exemplary embodiment of a masking device in an assembled position so that the magnet is insulated.

[005] **Figure 2a** shows a side perspective view of an exemplary embodiment of a housing member with tapered sides and a centering protrusion.

[006] **Figure 2b** shows a side perspective view of an exemplary embodiment of a housing member with tapered sides and an elongated centering protrusion.

[007] **Figure 2c** shows a side perspective view of an exemplary embodiment of a housing member with tapered sides and a smooth surface with no centering protrusion.

[008] **Figure 3a** shows a perspective view of a second exemplary embodiment of a housing member with straight sides.

[009] **Figure 3b** shows a top perspective view of a second exemplary embodiment of a housing member with straight sides.

[010] **Figure 3c** shows a cross-sectional view of a second exemplary embodiment of a housing member with straight sides.

[011] **Figure 4** shows a side perspective view of a third exemplary embodiment of a masking device in which the housing members are of different diameters.

[012] **Figure 5** shows a side perspective view a fourth exemplary embodiment of a masking device in which the housing members are triangular shaped.

[013] **Figure 6a** shows a side perspective view of a fifth exemplary embodiment of an optional neck extension component for a masking device.

[014] **Figure 6b** shows a cross-sectional view of an optional neck extension component in conjunction with first and second housing members.

[015] **Figure 7** shows a side perspective view of an exemplary embodiment of a masking device and system in the form of a kit comprised of interchangeable first and second housing members that can be adapted for a wide variety of masking functions.

[016] **Figure 8a** shows a top perspective view of a sixth exemplary embodiment of a masking device manufactured as a unitary component.

[017] **Figure 8b** shows a side perspective view of an exemplary embodiment of a masking device manufactured as a unitary component.

[018] **Figure 8c** shows a cross-sectional view of an exemplary embodiment of a masking device manufactured as a unitary component.

[019] **Figure 9a** shows a cross-sectional view of a second exemplary embodiment of a masking device manufactured as a unitary component.

[020] **Figure 9b** shows a side perspective view of a second exemplary embodiment of a masking device manufactured as a unitary component.

[021] **Figure 10a** shows a cross-sectional view of an optional lid for a masking device manufactured as a unitary component.

[022] **Figure 10b** shows a side perspective view of an optional lid for a masking device manufactured as a unitary component.

Glossary

[023] As used herein, the term "**centering protrusion**" or "**grasping protrusion**" means any structural contour or protuberance on a masking device which aids a user in centering and/or positioning the device over an area to be masked.

[024] As used herein, the term "**coating**" means any type of substance which is applied to a surface to form a coating. Examples of coating include but

are not limited to powder coating, wet spray, e-coat, dipping, plating and treating.

[025] As used herein, the term "**deflecting lip**" or "**overhang**" means any design feature that minimizes paint burr and deflects paint along the sealing surface, including but not limited to a contour, protrusion, protuberance, ridge, channel, groove, curve, chamfer, rounded edge, equivalents and combinations thereof.

[026] As used herein, the term "**deflecting lip depth**" means the distance from the outermost diameter of the lip to the sealing surface.

[027] As used herein, the term "**deflecting lip height**" means the distance between the bottom surface of the masking device and the bottom edge of the deflecting lip.

[028] As used herein, the term "**deformable**" means a material that is flexible and allows its shape to be temporarily changed. For example, deformable material may include, but is not limited to, silicone, EPDM rubber, nylon, synthetic polymers, elastomers, equivalents and combinations thereof.

[029] As used herein, the term "**ferrous**" or "**ferrous surface**" means any surface to which a magnet is attracted thus creating an adherent force.

[030] As used herein, the term "**housing**" or "**housing member**" means a component that wholly or partially covers, surrounds, or insulates another component.

[031] As used herein, the term "**interlocking**" means two or more components that are designed to fit together to ensure coordinated action.

[032] As used herein, the term "**magnetic**" refers to any material that creates an adherent force on a ferrous or other metal surface.

[033] As used herein, the term "**manufacture**" means the making of a component by a process that includes, but is not limited to, machining and molding.

[034] As used herein, the term "**masking**" means providing a barrier on the area of an object to be powder coated or coated by other means to limit the area's exposure to the coating substance.

[035] As used herein, the term "**paint burr**" or "**paint burring**" means paint build-up along the sealing surface.

[036] As used herein, the term "**powder coating build up**" means powder or other coating substances that accumulate over time on the surface of a reusable masking device.

[037] As used herein, the term "**sealing surface**" means the point where the masking device contacts the surface of the object to be coated.

[038] As used herein, the term "**Teflon**" or "**Teflon equivalent**" shall include any product made from one of three types of fluorine-containing polymers (i.e., polytetrafluoroethylene (PTFE), perfluoroalkoxy polymer resin (PFA), and fluorinated ethylene-propylene (FEP)) having temperature resistant and non-adherent, qualities, including but not limited to materials manufactured under the Teflon™ trademark. As used herein, Teflon may include products, such as silicone, EPDM rubber, nylon or other high temperature rated substances having equivalent or similar qualities.

[039] As used herein, the term "**unitary**" means a component that is comprised of a single piece or unit.

Background

[040] Masking plays a vital role in the painting or coating of parts used in the automotive, aerospace, electronics, and other industries. The painting or coating of parts may involve liquid coating, plating, powder coating, or electroplating. The coating may be applied by a variety of methods including brushing, rolling, spraying, dipping, flow-coating, electrostatic coating, and submersion in deposition tanks. The liquid, powder or plating material may be applied to wood, fiberglass, or metal surfaces in order to protect and strengthen those surfaces. The coating protects the surface of a part by preventing electrical leakage, oxidation, corrosion and decay. Once the coating is applied, it is often cured at temperatures between 200 and 600° Fahrenheit to harden and cross-link the coating on the surface. After the curing process is complete, the cured coating forms a very strong protective layer on the surface that is highly resistant to scratching and chipping.

[041] In most applications, a protective coating is applied only to certain areas of a surface and not to all areas of the surface. The areas where the coating is not to be applied must be covered or masked.

[042] Masking technology is typically used in the manufacturing of machinery (e.g., automobiles, furniture, industrial equipment, restaurant and institutional equipment, toys, medical and consumer items). Masking is used

when certain parts must be coated with various materials and substances to adapt those parts for their intended end use. The coatings impart desired characteristics to the parts, such as resistance to corrosion or friction. Many different types of materials can be applied to the parts including nylon, polycarbonates, metals, etc. Among the well-known types of coating, operations used to apply various substances to parts include coating by powder coating, anodizing and plating.

[043] Typically, in these coating operations, the surface portions of the part are completely exposed to the coating substance. In powder coating operations, the part to be coated is generally electrostatically charged, and then exposed to a fine particulate spray or fluidized bath of oppositely charged particles and then heated. The particles are attracted to the surface to be coated and are melted, forming a coating over the surface of the part. In anodizing and plating operations, the part to be coated is charged and then dipped into a bath containing the coating material. The coating material is attracted to the surface of the part and is deposited onto the exposed surface portions of the part.

[044] Many parts to be coated include internal surface portions which must not be coated. These types of parts are typically three-dimensional, include outer and inner surface portions and include various openings (also known as holes) in the part's outer surface through which coating materials could enter the part and undesirably come into contact with the internal surface portions of the part.

[045] It also may be undesirable to mask the internal surface portions of these types of parts. For example, it may be undesirable to apply a coating to the internal surface portions of a valve or pipe because that coating may be incompatible with fluids or gases conveyed through the valve or pipe. Also by way of example, it may be undesirable to apply a coating to threads cut in the internal surface portion of an annular opening in a tube or other part because that coating may interfere with operation of the threads. It may also be undesirable for the liquid media used in plating or anodizing operations to come into contact with the internal surface portions of a part because the media can damage the internal surface portions of the part.

[046] Various products have been developed to mask, or close, the openings in these parts thereby preventing coating materials from coming into contact with the internal surface portions of the parts. For example, a variety of tape devices, caps and plugs are commercially available to mask surface portions, recesses and apertures of a part to be coated.

[047] Currently, many of these masking devices, such as those disclosed by Sarajian in U.S. Patent No. 6,419,104 (Sarajian '104), are relatively expensive to use because they are disposable. In addition, these masking devices require careful positioning or are sized and configured for limited masking applications. For example, Sarajian '104 discloses a plug device that has a compression mechanism that compresses the plug body between an internal plug anchor and an opposed plug compression surface. The compressive force causes the plug circumference to increase forming a tight seal between the plug and walls

forming the opening. The internal anchor design and absence of any axial opening through the entire plug body prevents fluids and other coating materials from passing through the internal plug body and into the interior of the part to be coated, thereby avoiding costly damage to the part. This product is reusable, but is not versatile in that each plug has a specific range of variation in its circumference; thus, multiple plugs must be used for variable masking activities.

[048] Another common type of masking device is silicone adhesive tape. This tape is readily available in pre-cut disc sizes. There are inherent drawbacks that limit the utility of tape for masking in coating operations, including its inability to adhere to oily or contaminated surfaces, difficulty in centering the disc, and difficulty removing the disc after the coating process. Examples of such adhesive devices are disclosed in U.S. Pat. No. 6,656,558 (Sarajian '558) and in U.S. Patent No. 5,800,894 (Navis '894). These adhesive devices are not reusable, although they are highly versatile and are available in a wide variety of shapes and sizes to meet particular masking applications.

[049] Additionally, devices that rely on an adhesive to stick to the surfaces being coated have inherent drawbacks. The adhesives devices must be accurately positioned, generally by unskilled labors that may have varying degrees of manual dexterity. The cost of labor/time in positioning must be calculated in the cost of using these disposable devices.

[050] There are also masking devices known in the art which incorporate a magnet as a way to secure the device to a masking surface. However, devices, such as the one disclosed in Swedish Patent No. 000421805-0003 ("Törefors"),

are typically of unitary construction and are not designed to surround all surfaces of the magnet. As a result, paint or coating material may adhere to the exposed portion of the magnet, reducing the effectiveness and longevity of the magnet.

[051] It is desirable to have a highly versatile, reusable masking device which maximizes the usable life of a magnet by protecting it from powder coating or other types of coating build-up.

[052] It is further desirable to have a highly versatile, reusable masking device which minimizes paint burring.

[053] It is further desirable to minimize the manufacturing costs associated with creating a reusable masking device.

Summary of the Invention

[054] The invention disclosed herein is a masking device that is adapted to be reusable in high-temperature applications and for a variety of masking applications, is cost-effective to manufacture, and which includes a magnetic component insulated on three or all four surfaces. The invention herein may further include interchangeable component parts in varying shapes and sizes, which may be selectively attached, assembled and combined to provide versatility for a range of masking operations. Alternatively, the apparatus disclosed herein may be comprised of a unitary component for enclosing a magnet component to reduce manufacturing costs associated with production of multiple parts.

Detailed Description of Embodiments of the Invention

[055] For the purpose of promoting an understanding of the present invention, references are made in the text hereof to embodiments of a reusable high-temperature resistant masking device, only some of which are described herein. It should nevertheless be understood that no limitations on the scope of the invention are thereby intended. One of ordinary skill in the art will readily appreciate modifications such as the variation of size and shape of housing components. Some of these possible modifications are mentioned in the following description. Therefore, specific details disclosed herein are not to be interpreted as limiting, but rather as a basis for the claims and as a representative basis for teaching one of ordinary skill in the art to employ the present invention in virtually any appropriately detailed apparatus or manner.

[056] It should be understood that the drawings are not necessarily to scale; instead, emphasis is being placed upon illustrating the principles of the invention. In addition, in the embodiments depicted herein, like reference numerals in the various drawings refer to identical or near identical structural elements.

[057] Moreover, the term "substantially" or "approximately" as used herein may be applied to modify any quantitative representation that could permissibly vary without resulting in a change in the basic function to which it is related.

[058] Referring now to the drawings, **Figure 1a** shows a cross-sectional view of the individual components of an exemplary embodiment of a reusable high-temperature resistant masking device **100** for selectively masking surfaces

during a coating operation, e.g., the application of a powder coating. Reusable high-temperature resistant masking device **100**; as shown in **Figure 1a**, is comprised of first housing member **20**, second housing member **30**; and magnet **40**. In the embodiment shown, first housing member **20** has a slightly rounded side and second housing member **30** has a curved concave side. In other embodiments, first housing member **20** and/or second housing member **30** may have straight sides, curved sides, rounded sides or tapered sides with varying degrees of angling.

[059] Alternative embodiments of reusable high-temperature resistant masking device **100** may include more or fewer housing members, housing members which are selectively attachable in various configurations, and housing members which are molded as a single component and are not selectively removable. Further, housing members may be of the shape or size of any masking device known in the art or adapted to serve a masking function known in the art. In all embodiments of reusable high-temperature resistant device **100**, the device may also be disposable. In all embodiments of reusable high-temperature resistant masking device **100**, the device may further have a layer of paint resistant coating or a release agent on the outer surface to deflect paint or coating and/or reduce paint burring.

[060] In the exemplary embodiment shown in **Figure 1a**, first housing member **20** and second housing member **30** are adapted to hold magnet **40** so that magnet **40** is enclosed on all four sides when first housing member **20** and second housing member **30** are joined together; thereby forming a housing which

insulates magnet **40** on all or substantially all surfaces. It will be apparent to one of ordinary skill in the art that first housing member **20** and second housing member **30** may be joined together so that either first housing member **20** or second housing member **30** may function as a "top" component while the other functions as a "bottom" component. Additionally, the surfaces of first housing member **20** and second housing member **30** may be of equivalent or disparate sizes.

[061] In the embodiment shown, first housing member **20** and second housing member **30** include structurally fitted necks **22a** and **22b**. Fitted necks **22a** and **22b** have complementary configurations and are adapted to join first housing member **20** and second housing member **30** together to form a single housing member for enclosing magnet **40**. In the illustrated embodiment, fitted neck **22a** has external threading **24a** and fitted neck **22b** has internal threading **24b** which permit joining of first housing member **20** and second housing member **30**. In other embodiments, fitted necks **22a** and **22b** may also have a snapping, fitted or tapered seal, or manufactured in any other configuration that permits selective and temporary joining of first housing member **20** and second housing member **30**. Alternatively, first housing member **20** and second housing member **30** may be permanently joined or singly molded to form the single housing unit.

[062] In the illustrated embodiment, magnet **40** has a rounded or disc configuration. It is to be understood, however, that magnet **40** may be of any shape, size, thickness, or of any proportion. For example, magnet **40** may be a

solid or hollow magnet. In addition, a single magnet or any number of magnets may be used.

[063] First housing member **20** and second housing member **30** may be formed of any high-temperature resistant insulating material suitable for use in coating and curing operations. In particular, first housing member **20** and second housing member **30** are formed of a material capable of withstanding repeated exposure to temperatures of 100 to 1200 degrees Fahrenheit.

[064] **Figure 1b** illustrates a side perspective view of the components of an exemplary embodiment of a reusable high-temperature resistant masking device **100** as shown in **Figure 1a** in an assembled position in which magnet **40** is encased or housed within first housing member **20** and second housing member **30**. All or substantially all surfaces of magnet **40** are surrounded and insulated by first housing member **20** and second housing member **30**. By fully encasing magnet **40**, first housing member **20** and second housing member **30** increase the useful life of magnet **40** by protecting all four surfaces from exposure to and the build-up of coating material or other debris as well as from high temperatures which may reduce the strength (and therefore the longevity) of magnet **40**.

[065] In the embodiment shown, first housing member **20** and second housing member **30** include optional centering protrusion **25**. Centering protrusion **25** may be of any size and shape so as to permit easy grasping by a user or other anthropometric or ergonomic modifications. Centering protrusion **25** may be included or omitted on either or both of first housing member **20** and

second housing member **30**; may be of the same or of different size or configuration; may be rectangular, oval or circular; and may be of various thicknesses; made of various materials and/or have irregular or regular contours.

[066] **Figure 2a** shows a side perspective view of an exemplary embodiment of first housing member **20** having centering protrusion **25**. Centering protrusion **25** is adapted to hold reusable high-temperature resistant masking system **100** in place centrally within a hole or aperture. In the embodiment shown, first housing member **20** has rounded sides. Also visible is external threading **24a**.

[067] **Figure 2b** shows a side perspective view of an embodiment in which first housing member **20** has an elongated centering protrusion **25** that can also be used for grasping first housing member **20**. In the embodiment show, first housing member **20** has rounded sides. Also visible is external threading **24a**.

[068] **Figure 2c** shows a side perspective view of an embodiment in which first housing member **20** has a smooth or substantially flattened surface. In the embodiment shown, first housing member **20** has rounded sides. Also visible is external threading **24a**.

[069] **Figure 3a** shows a perspective view of a second exemplary embodiment of first housing member **20**. In the embodiment shown, first housing member **20** has straight sides and external threading **24a**.

[070] **Figure 3b** shows a top perspective view of an exemplary embodiment of first housing member **20** with external threading **24a**.

[071] **Figure 3c** shows a cross-sectional view of an exemplary embodiment of a housing member with straight sides. Also visible is external threading **24a**.

[072] **Figure 4** shows a side perspective view of an third exemplary embodiment of reusable high-temperature resistant masking device **100** in which first housing member **20** has rounded sides and second housing member **30** has longer, flatter sides than second housing member **30** illustrated in **Figure 1b**. In the embodiment shown, second housing member **30** has a substantially larger diameter than first housing member **20**. In other embodiments, there is a less or greater difference between the diameters of first housing member **20** and second housing member **30**.

[073] **Figure 5** shows a side perspective view of an fourth exemplary embodiment of reusable high-temperature resistant masking device **100** in which first housing member **20** and second housing member **30** have a triangular shape. In other embodiments, first housing member **20** and second housing member **30** are of a different shapes (e.g., rectangular, oval, round, disc-shaped).

[074] **Figures 6a** shows a side perspective view of a fifth exemplary embodiment of reusable high-temperature resistant masking device **100** in the assembled position. **Figure 6b** shows a cross-sectional view of an exemplary embodiment of reusable high-temperature resistant masking device **100** in the unassembled position. Reusable high-temperature resistant masking device **100** include neck extension member **60**. Neck extension member **60** may be

attached to either first housing member **20** and/or second housing member **30** as a singly molded component **(Figure 6a)**, or may be provided as a separate component adapted for selective attachment and detachment to first housing member **20** and second housing member **30 (Figure 6b)**.

[075] As illustrated in **Figure 7,** reusable high-temperature resistant masking devices may be provided to a user in the form of kit **200.** In the embodiment shown, kit **200** contains a variety of interchangeable first housing members **20a**, **20b**, **20c**, **20d** and second housing members **30a**, **30b**, **30c**, **30d**, **30e** of different sizes and shapes along with one or more magnets **40** and one or more neck extensions **60.** In other embodiments, kit **200** contains more or fewer interchangeable components.

[076] To use, a user selects a first housing member **20a**, **20b**, **20c** or **20d** of a desired size and shape and a second housing member **30a**, **30b**, **30c**, **30d** or **30e** of a desired size and shape. Magnet **40** is placed within the selected housing members which are then joined together to form a masking device which encloses and insulates magnet **40** on all four sides during the coating and curing process.

[077] It is to be understood that coloring, labeling, or numbering indicia may be incorporated to assist a user in selecting a part of optimal shape and size.

[078] The kit arrangement provides the ability to make both custom parts (e.g., first housing member **20** and second housing member **30**) for the needs of

a specific user by creating custom molds, and the ability to replace the magnet **40** to prolong the life of use of the custom parts.

[079] The kit arrangement also provides the ability to use one magnet **40** within first housing member **20** and second housing member **30** of varying sizes and shapes to reduce the cost of the magnet **40** (i.e., separate magnets **40** need not be purchased for each set of housing members **20** and **30**).

[080] **Figure 8a** shows a top perspective view of an exemplary embodiment of reusable high-temperature resistant masking device **300** manufactured as a unitary component. In the embodiment shown, reusable high-temperature resistant masking device **300** is manufactured from a deformable material, e.g., silicone, EPDM rubber, elastomers or combinations thereof. The deformable characteristic of reusable high-temperature resistant masking device **300** allows magnet **40** to be wedged into opening **45**. The material then snaps around magnet **40** locking it into place in the interior of reusable high-temperature resistant masking device **300**. A portion of the top surface of magnet **40** remains exposed.

[081] In the embodiment shown, reusable high-temperature resistant masking device **300** has overhang **48** (not visible) which helps to deflect paint and minimize paint burr. In the embodiment shown, overhang **48** is angled. Using an angled design makes reusable high-temperature resistant masking device **300** stiffer than a square-cornered design resulting is a slower rate of deterioration. In other embodiments, overhang **48** may be a contour, protrusion,

protuberance, ridge, channel, groove, curve, chamfer, rounded edge or any other structural feature adapted to minimize paint burr.

[082] In other embodiments, the interior of reusable high-temperature resistant masking device **300** contains threads which help to locate magnet **40**. In all embodiments of reusable high-temperature resistant device **300**, the device may also be disposable. In all embodiments of reusable high-temperature resistant masking device **300**, the device may further have a layer of paint resistant coating or a release agent on the outer surface to deflect paint or coating.

[083] When a deformable material that allows a magnet to be wedged into the interior of reusable high-temperature resistant masking device **300** is used, a second component (e.g., second housing member) to contain magnet **40** is not necessary, cutting down on the cost of manufacturing reusable high-temperature resistant masking device **300**. Deformable material, however, is generally not as heat-resistant as Teflon and paint sticks to deformable material more than it sticks to Teflon. On the other hand, deformable material, in addition to not requiring a second component to act as a cover, is more durable and less susceptible than Teflon to dents and scratches that can result from use, handling and storage. Deformable material also typically provides a better sealing surface, particularly when coating using a liquid bath (e.g., e-coating).

[084] The lack of a component which covers opening **45** allows paint to build-up on magnet **40**. The nature of the deformable material, however, allows magnet **40** to be removed easily. Once removed, the paint can be broken off

magnet **40**. In addition, magnet **40** can be removed and placed into another reusable high-temperature resistant masking device **300**.

[085] **Figure 8b** shows a side perspective view of an exemplary embodiment of reusable high-temperature resistant masking device **300** manufactured as a unitary component.

[086] **Figure 8c** shows a cross-sectional view of an exemplary embodiment of reusable high-temperature resistant masking device **300** manufactured as a unitary component taken along line A. Magnet **40** is visible in the interior of reusable high-temperature resistant masking device **300**.

[087] **Figure 9a** shows a cross-sectional view of a second exemplary embodiment of reusable high-temperature resistant masking device **300** manufactured as a unitary component. In the embodiment shown, reusable high-temperature resistant masking device **300** is manufactured from a deformable material, e.g., silicone or EPDM rubber and includes deflecting lip **50**. Deflecting lip **50** deflects paint and minimizes paint burr by causing the paint or powder to drift underneath it instead of building up at sealing surface **52**.

[088] In the embodiment shown, deflecting lip **50** is angled. In other embodiments, deflecting lip **50** may be straight with square corners, of varying radiuses, a contour, protrusion, protuberance, ridge, channel, groove, curve, chamfer, or be of any other shape or configuration adapted to minimize paint burr. The dimensions, thickness, shape and configuration may vary depending on the type of process and type of paint used. For example, the height of deflecting lip **50** may range from zero (i.e., flat) to 200 thousands of an inch. The

depth of deflecting lip **50** may range from 10 to 200 thousands of an inch. Deflecting lip **50** may be either Teflon, silicone, EMPD rubber or any other material.

[089] In the embodiment shown, the sides of reusable high-temperature resistant masking device **300** are curved and concave. In other embodiments, reusable high-temperature masking device may have straight sides, curved sides, rounded sides or tapered sides with varying degrees of angling.

[090] **Figure 9b** shows a side perspective view of a second exemplary embodiment of reusable high-temperature resistant masking device **300** manufactured as a unitary component.

[091] **Figure 10a** shows a cross-sectional view of optional lid **55** for reusable high-temperature resistant masking device **300**. In the embodiment shown, the configuration of lid **55** corresponds to the configuration to opening **45** of reusable high-temperature resistant masking device **300** shown in **Figures 9a** and **9b**. Lid **55** snaps into reusable-temperature resistant masking device **300** and closes off magnet **40** protecting it from paint build-up during the coating process. In the embodiment shown, lid **55** is made of silicone. In other embodiments, lid **55** is manufactured from a different material such as EPDM rubber and may have a Teflon or release agent coating.

[092] **Figure 10b** shows a side perspective view of optional lid **55** for reusable high-temperature resistant masking device **300** manufactured as a unitary component.

Claims

What is claimed is:

1. A reusable high-temperature resistant masking device comprised of:

a housing (20, 30) constructed of a material capable of withstanding temperatures of 600 degrees Fahrenheit and further including at least one aperture for insertion of at least one magnetic component (40);

at least one magnetic component (40) adapted to fit within said housing; and

at least one centering protrusion (25).

2. The reusable high-temperature resistant masking device of claim 1 wherein said at least one magnetic component is enclosed on all sides by said housing.

3. The reusable high-temperature resistant masking device of claim 1 wherein said housing is comprised of a first housing member (20) and a second housing member (30).

4. The reusable high-temperature resistant masking device of claim 3 wherein said first housing member and said second housing member are threaded (24a, 24b).

5. The reusable high-temperature resistant masking device of claim 3 wherein said first housing member and said second housing member are adapted to be interlocking.

6. The reusable high-temperature resistant masking device of claim 1 wherein said at least one magnetic component is enclosed by a unitary housing component (300).

7. The reusable high-temperature masking device of claim 1 wherein said housing is constructed from a temperature resistant material selected from a group consisting of Teflon, silicone, EPDM rubber, nylon, synthetic polymers and elastomers.

8. The reusable high-temperature resistant masking device of claim 6 wherein said unitary housing component is constructed from a deformable material.

9. The reusable high-temperature resistant masking device of claim 6 which further includes at least one opening (45) for insertion of said at least one magnetic component.

10. The reusable high-temperature resistant masking device of claim 9 which further includes at least one lid (55) for sealing said at least one opening for insertion of said at least one magnetic component.

11. The reusable high-temperature resistant masking device of claim 8 wherein said deformable material is selected from a group consisting of silicone, EPDM rubber, nylon, synthetic polymers and elastomers.

12. The reusable high-temperature resistant masking device of claim 1 wherein said housing further includes a deflecting lip (50).

13. The reusable high-temperature resistant masking device of claim 1 wherein said housing further includes a structural component which minimizes paint burr.

14. The reusable high-temperature resistant masking device of claim 1 wherein said housing further includes a chamfer.

15. The reusable high-temperature resistant masking device of claim 1 wherein said housing further includes a paint resistant coating.

16. The reusable high-temperature resistant masking device of claim 1 wherein said housing is comprised of a Teflon equivalent.

17. The reusable high-temperature resistant masking device of claim 12 wherein said deflecting lip has of height between 0 and 200 thousandths of an inch.

18. The reusable high-temperature resistant masking device of claim 12 wherein said deflecting lip has a depth of between 10 and 200 thousandths of an inch.

19. A method of manufacturing a reusable high-temperature resistant masking device comprised of:

manufacturing a housing (20, 30) having at least one aperture and at least one centering protrusion (25) from a material capable of withstanding temperatures of 600 degrees Fahrenheit; and

inserting at least one magnetic component (40) within said at least one aperture.

20. The method of manufacturing a reusable high-temperature resistant masking device of claim 19 wherein said material capable of withstanding temperatures of 600 degrees Fahrenheit is selected from the group consisting of Teflon, Teflon equivalent, silicone, EPDM rubber, nylon, synthetic polymers and elastomers.

21. The method of manufacturing a reusable high-temperature resistant masking device of claim 19 wherein said housing further includes a deflecting lip (50) having a height between 0 and 200 thousandths of an inch and a depth between 10 and 200 thousandths of an inch.

22. A system of power-coating a surface comprised of:

a reusable high-temperature resistant masking device comprised of:

a housing (20, 30) constructed of a material capable of withstanding temperatures of 600 degrees Fahrenheit and further including at least one aperture for insertion of at least one magnetic component; and

at least one magnet component (40) adapted to fit within said housing;

at least one centering protrusion (25); and

a powder coating compound.

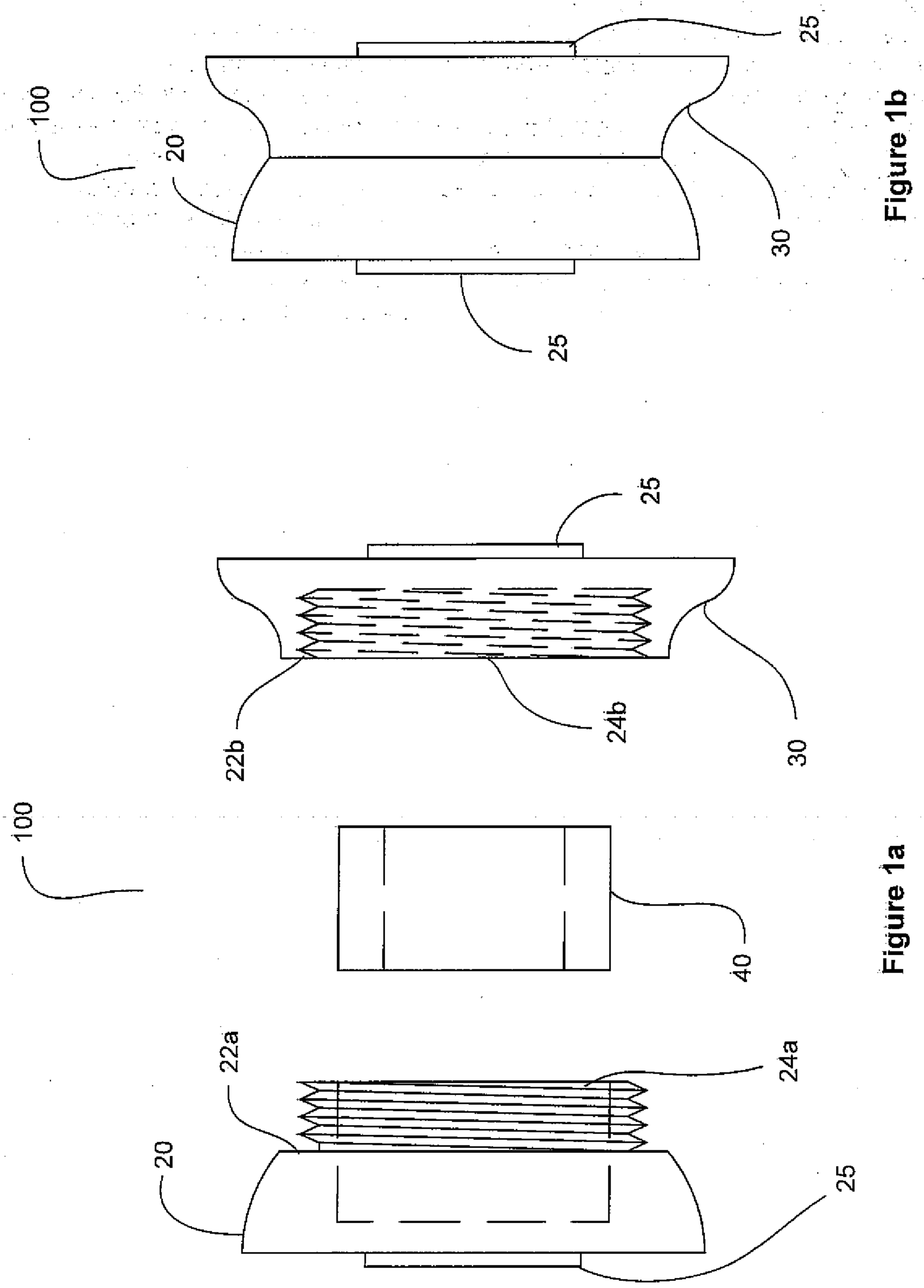

Figure 1b

Figure 1a

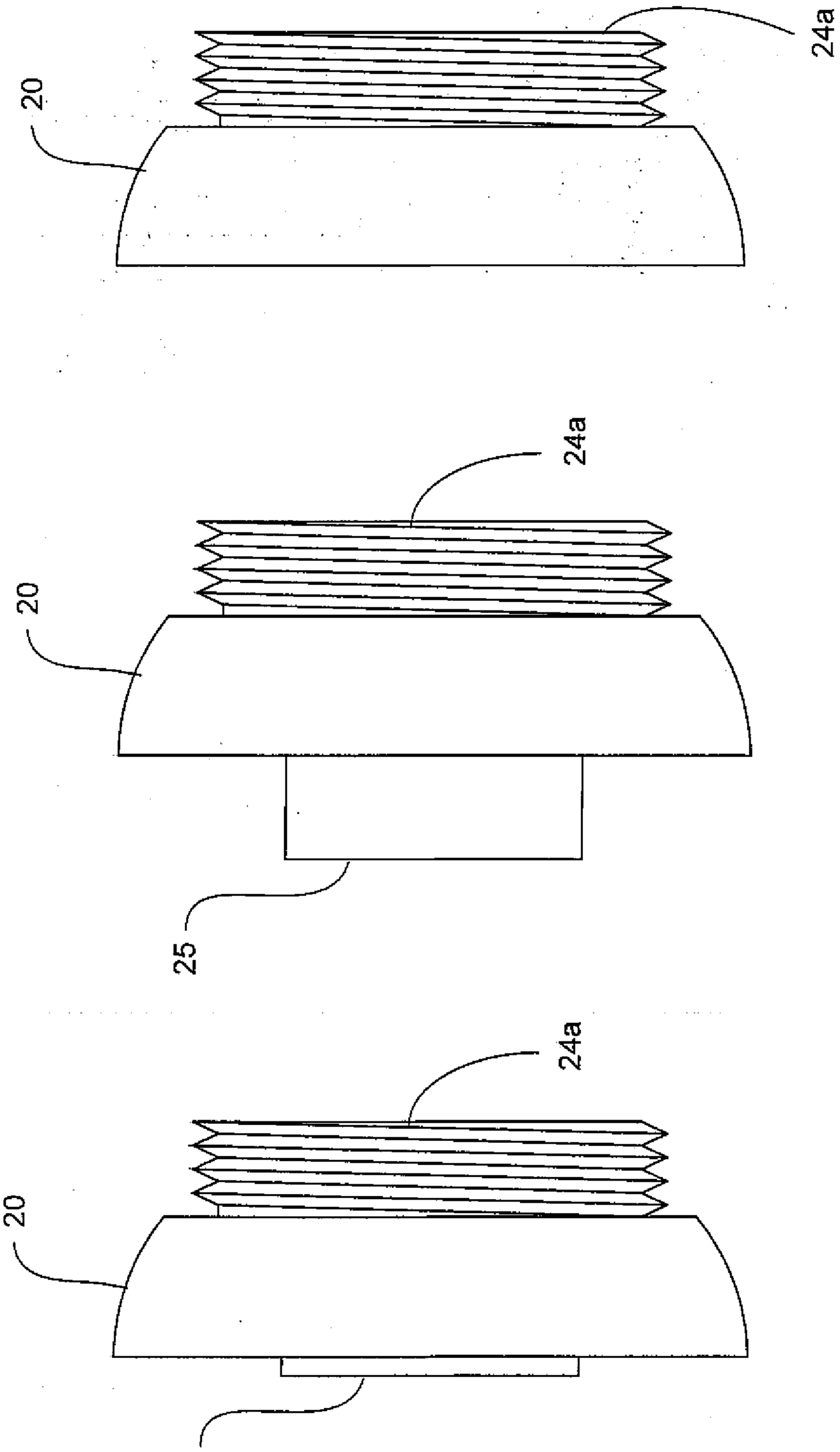

Figure 2c

Figure 2b

Figure 2a

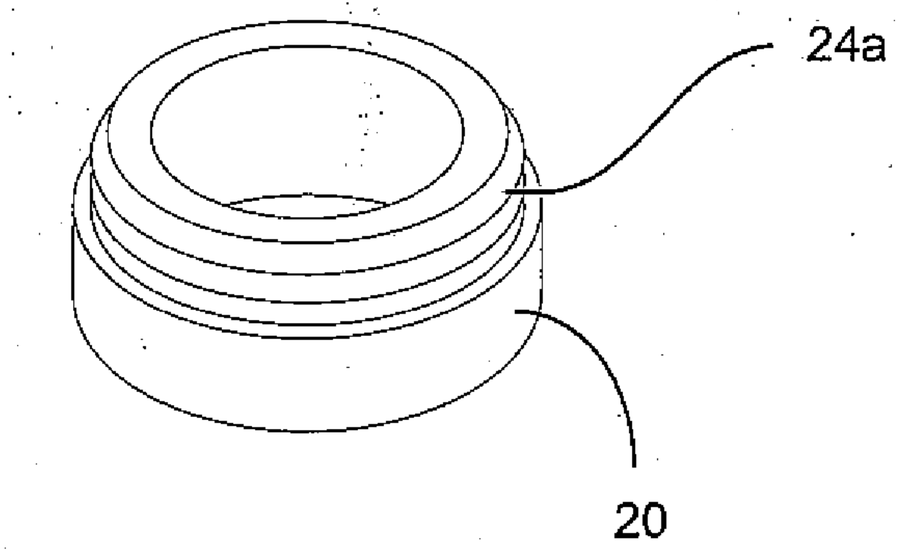

Figure 3a

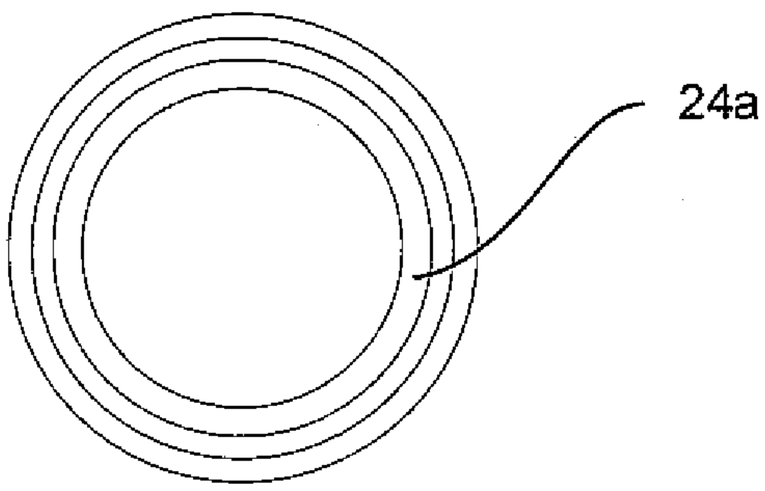

Figure 3b

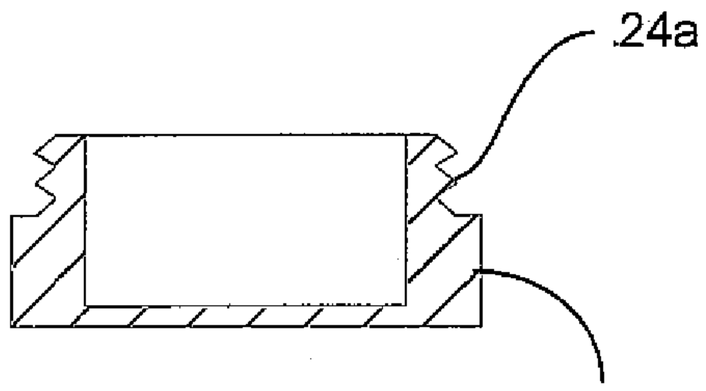

Figure 3c

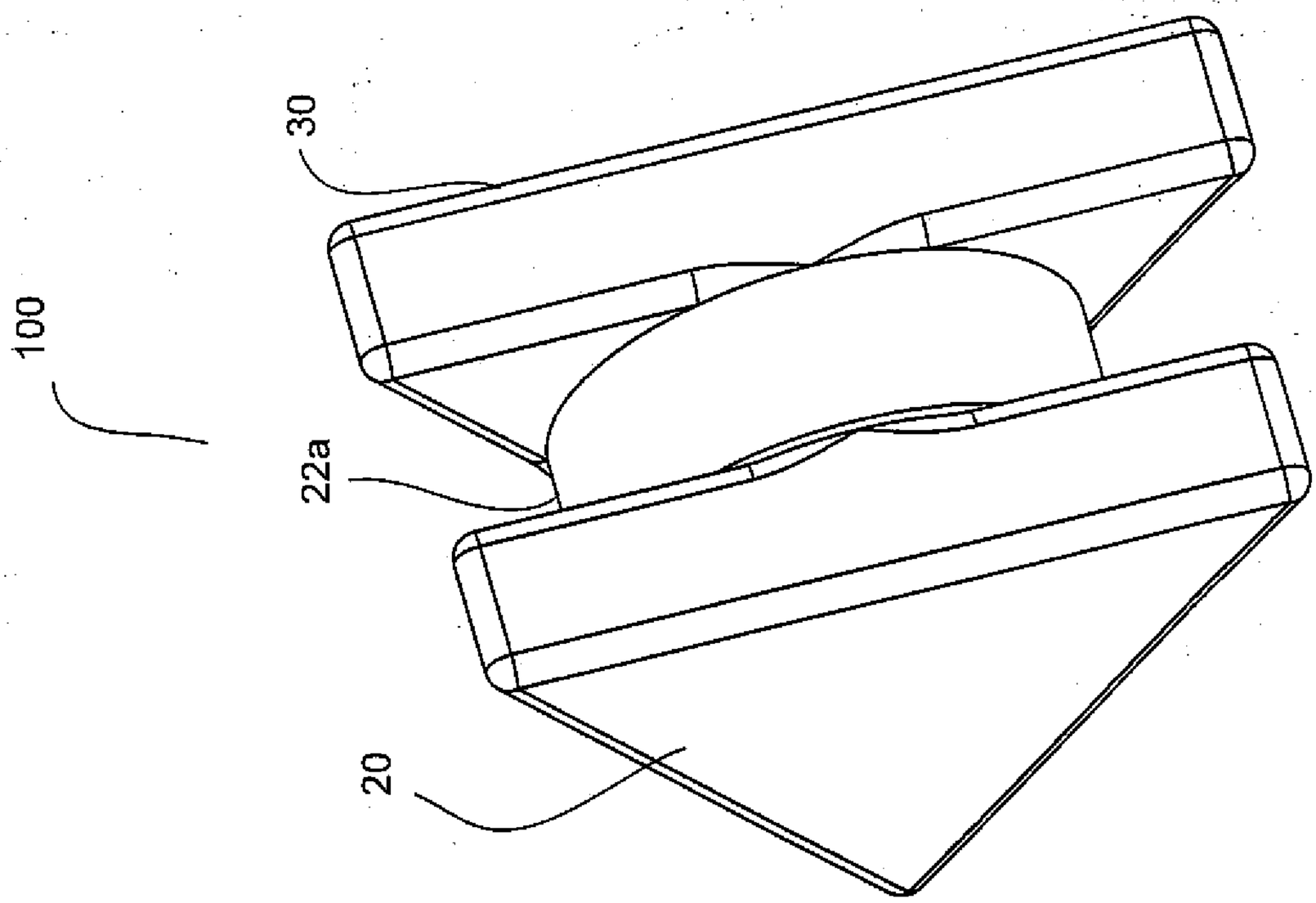

Figure 5

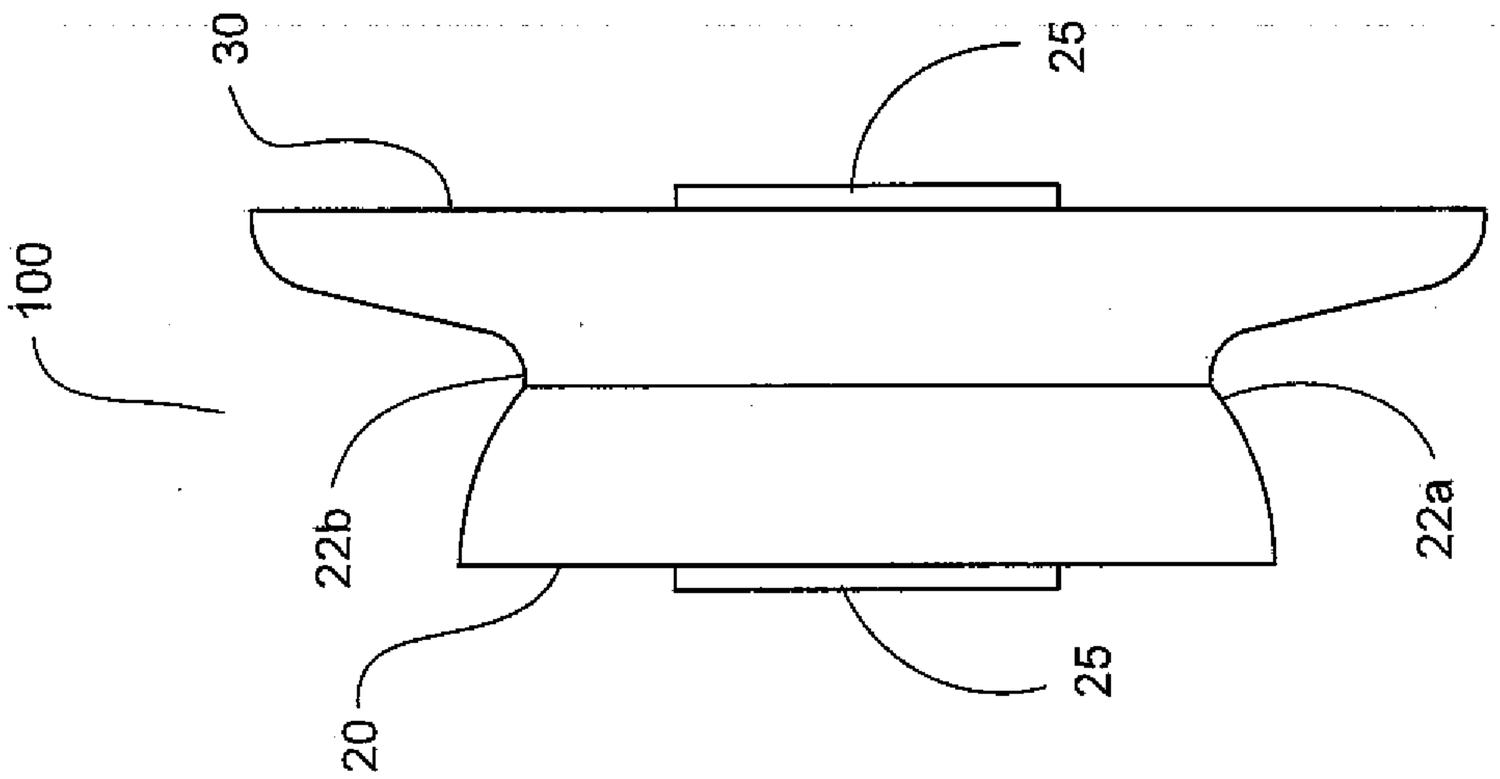

Figure 4

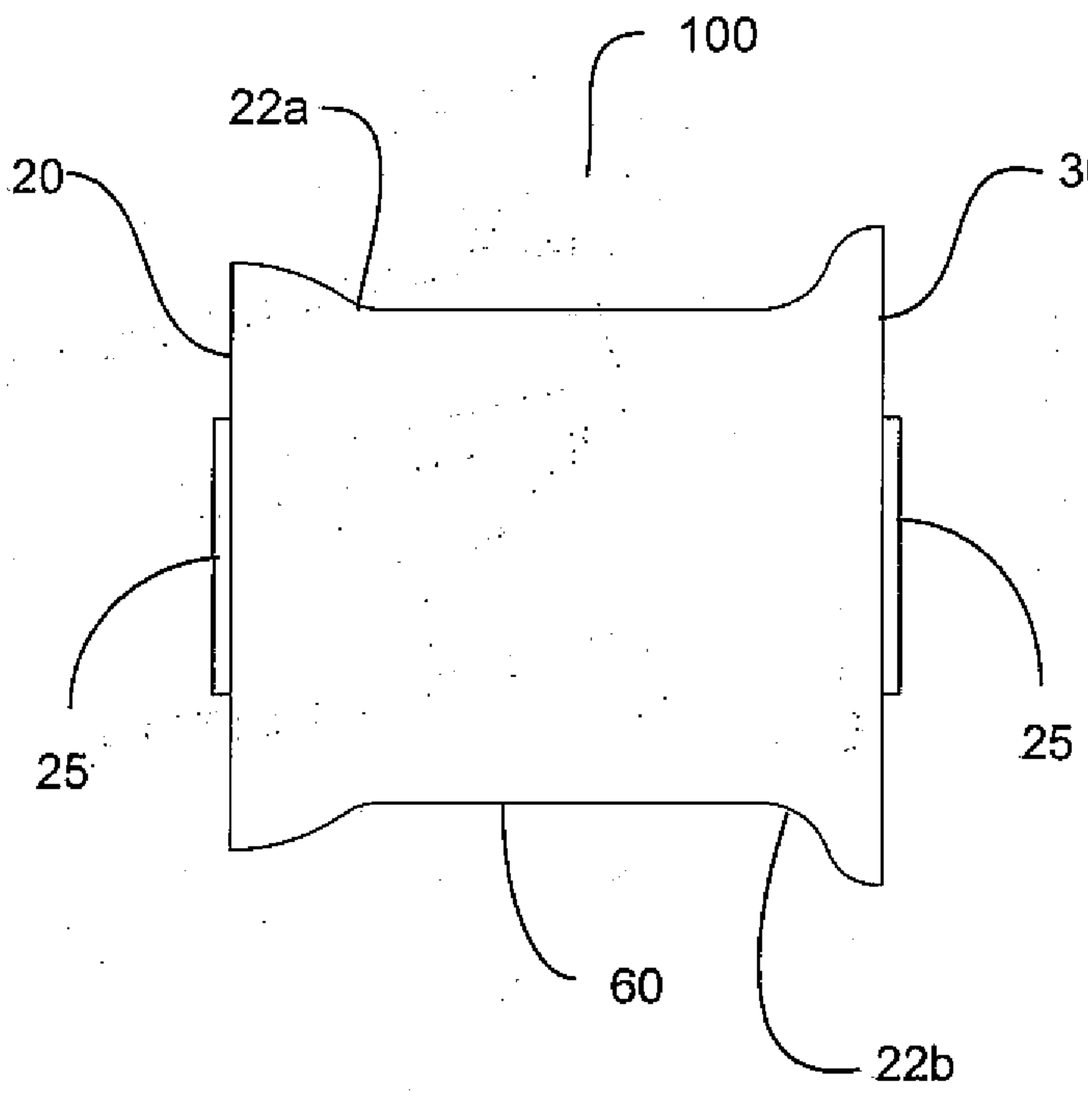

Figure 6a

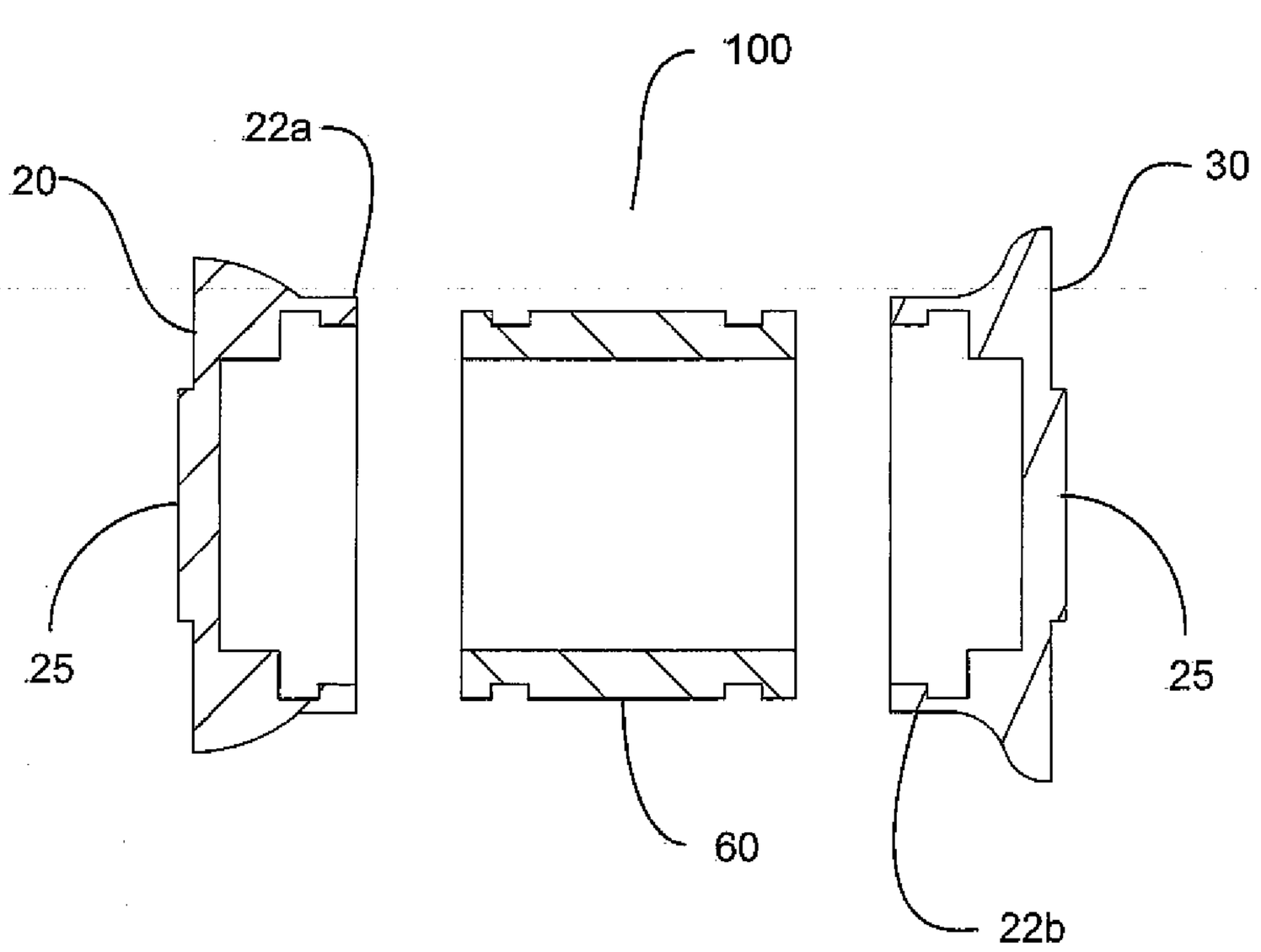

Figure 6b

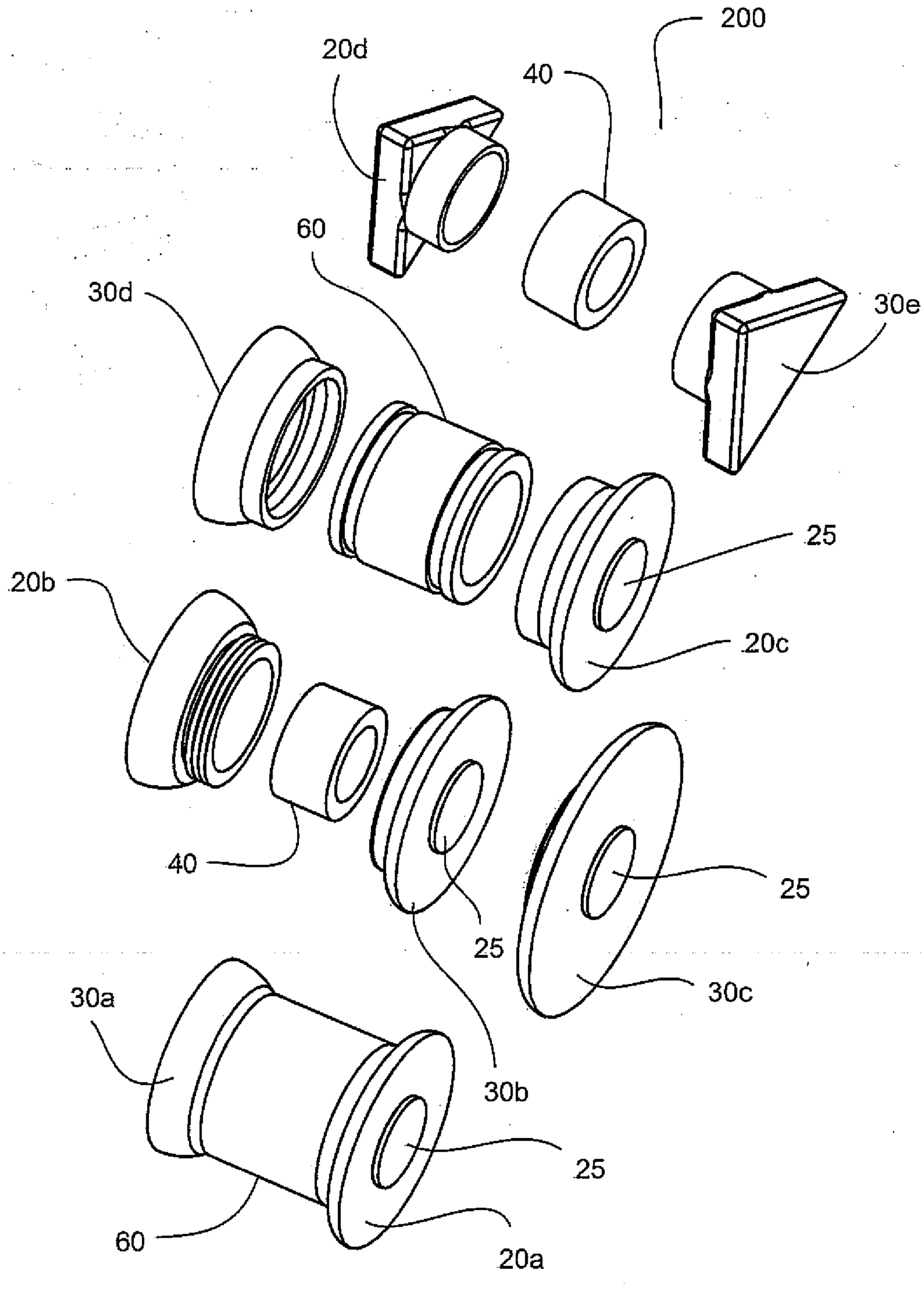

Figure 7

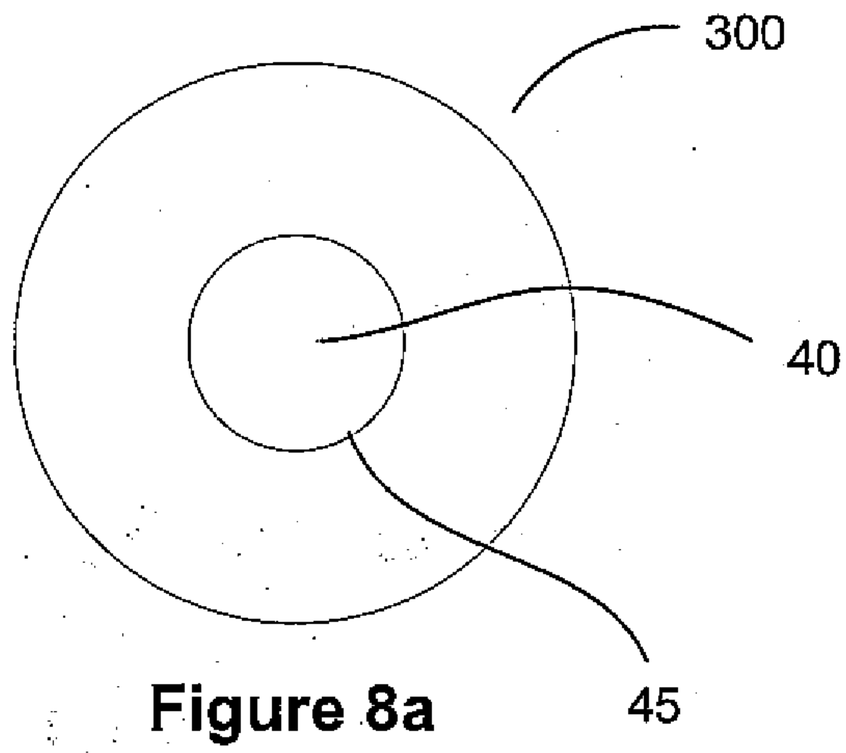

Figure 8a

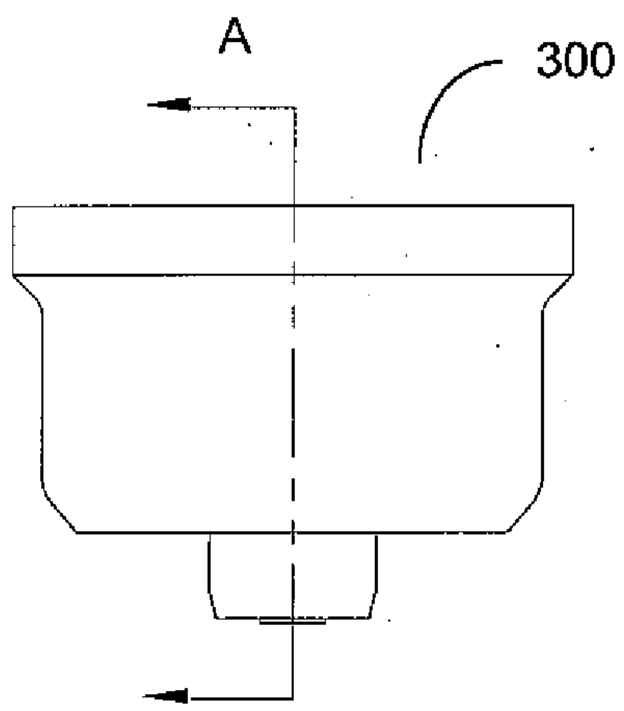

Figure 8b

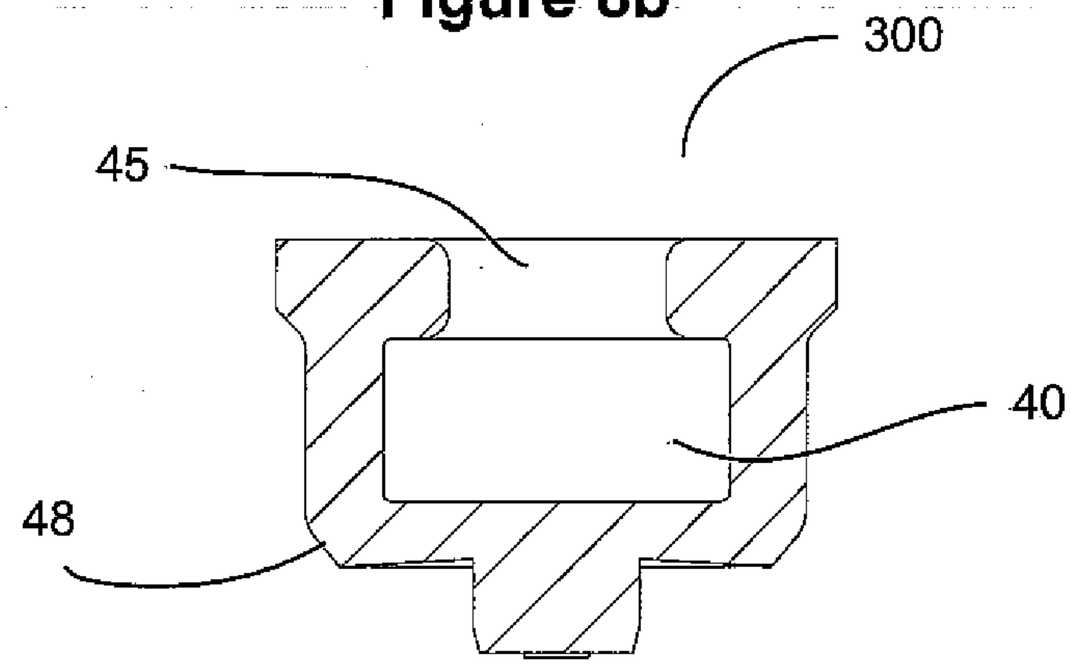

Figure 8c

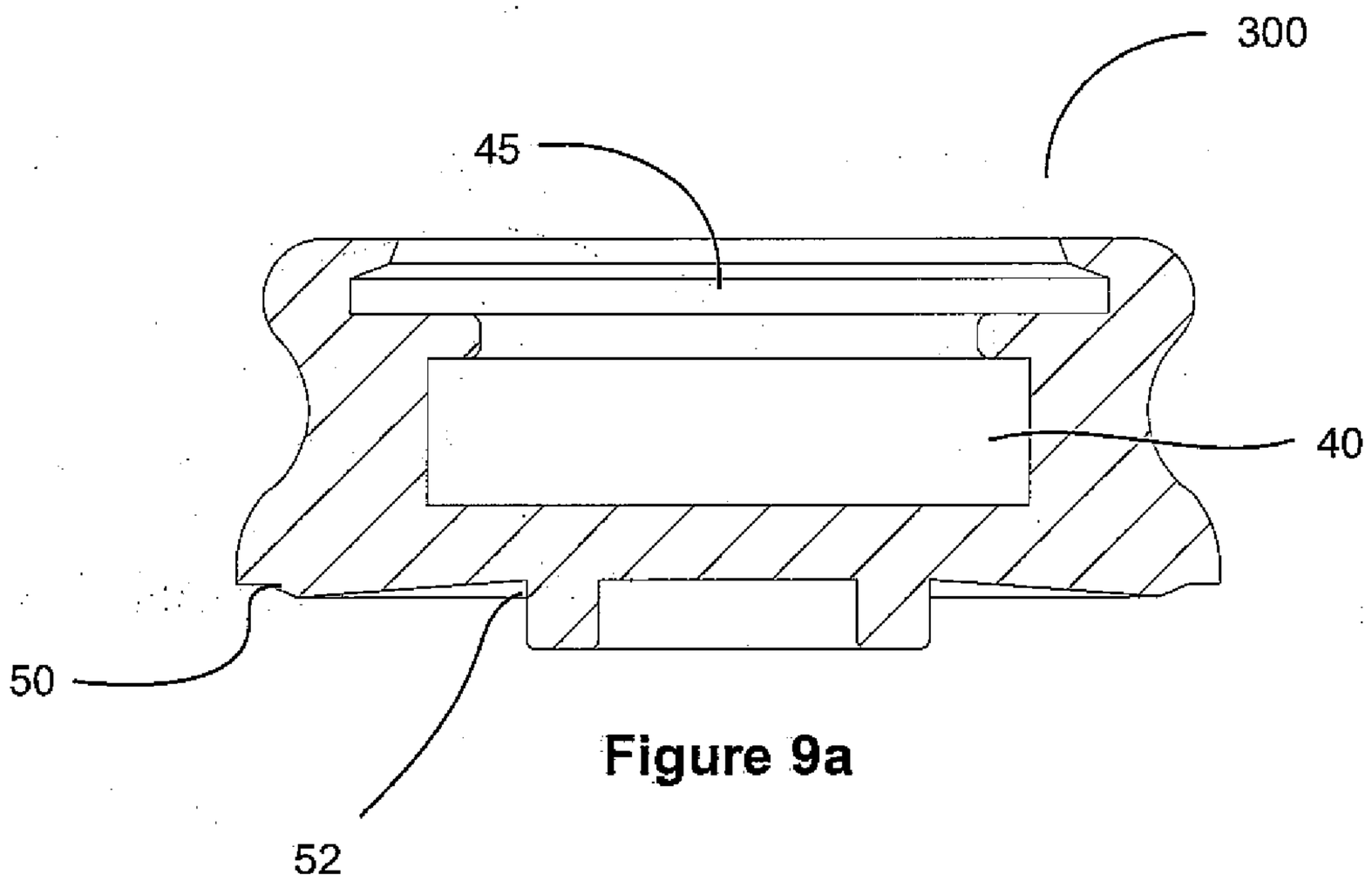

Figure 9a

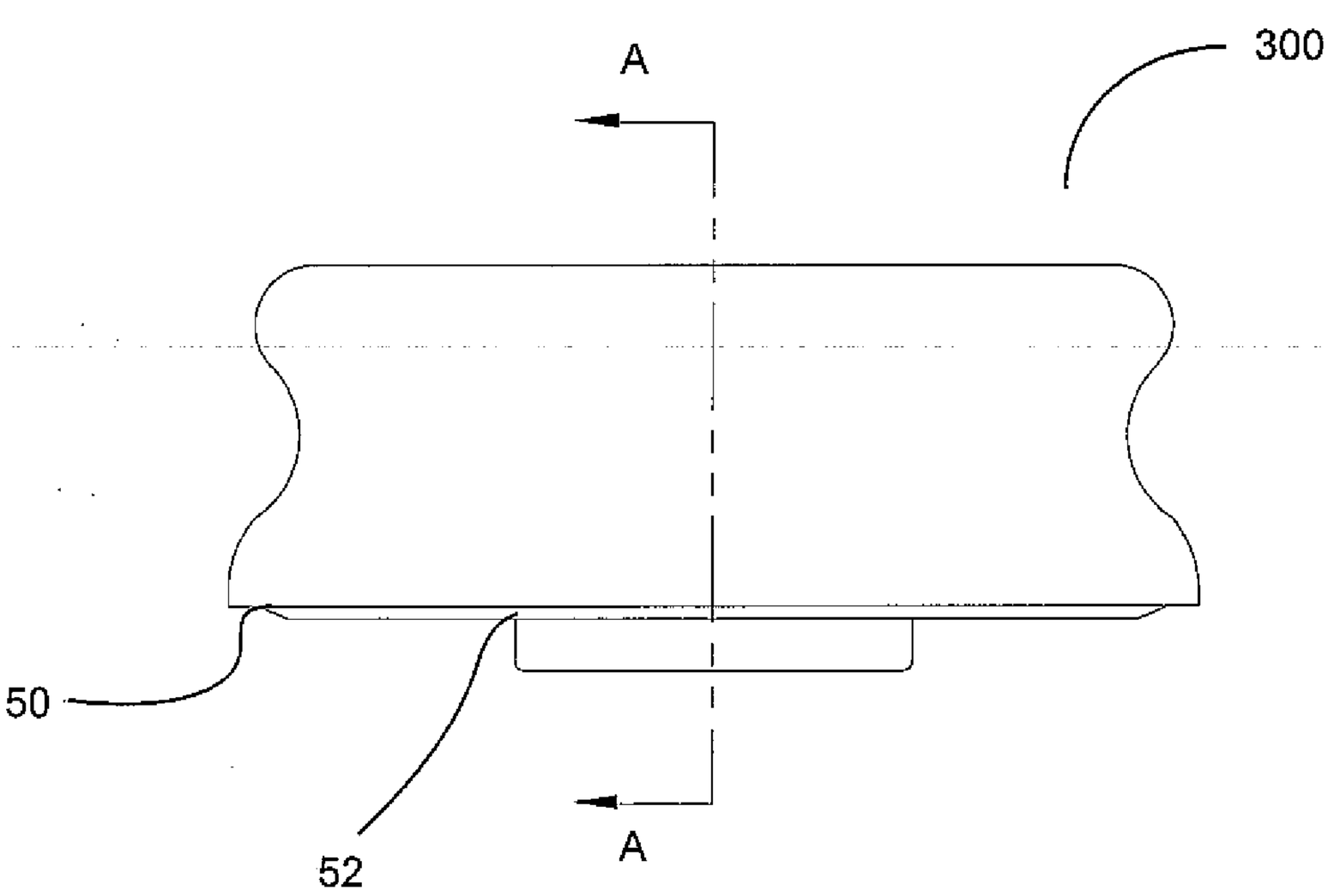

Figure 9b

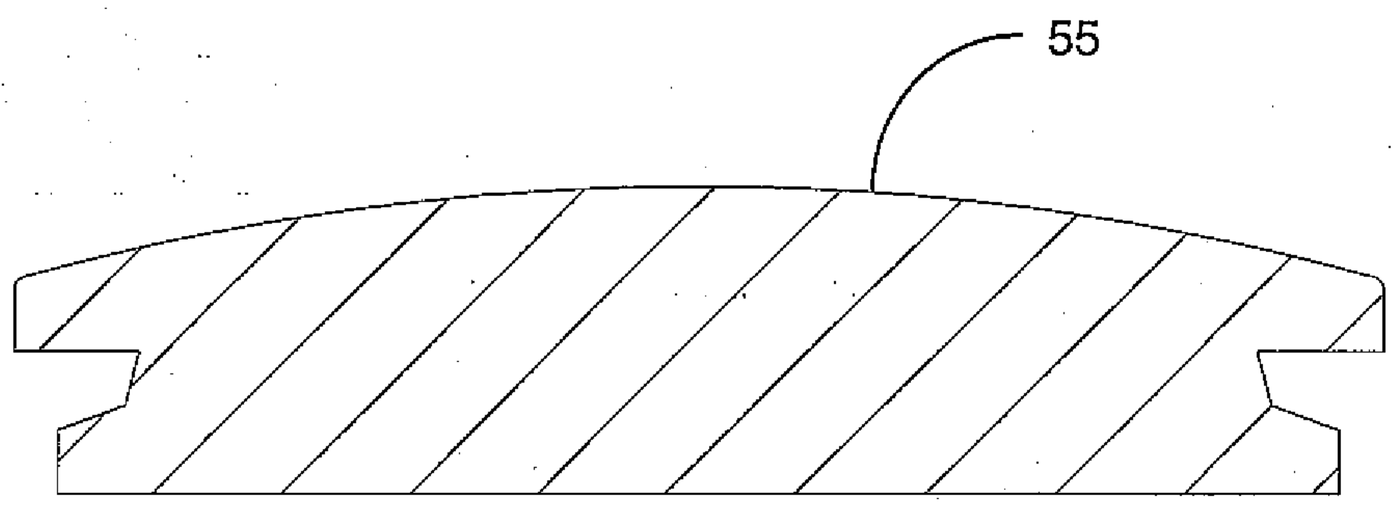

Figure 10a

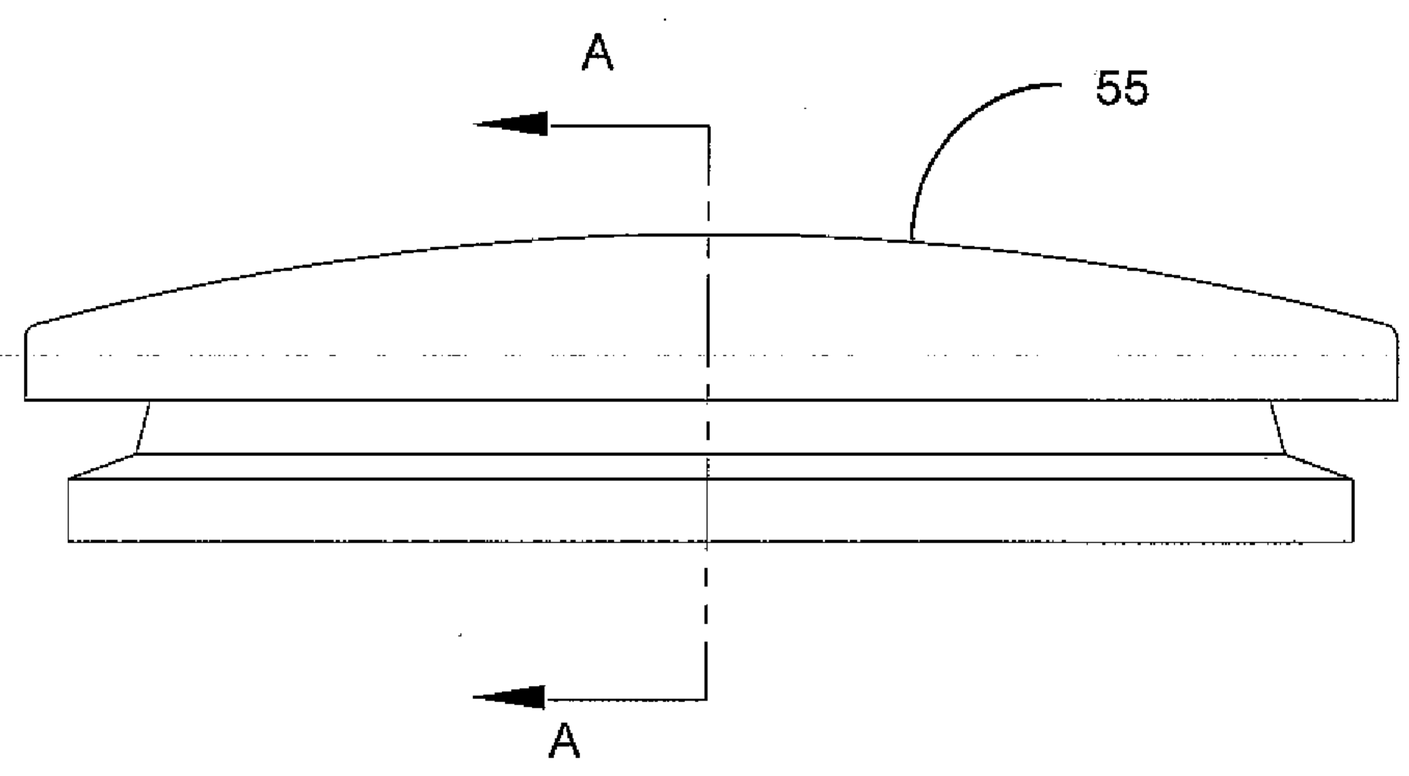

Figure 10b

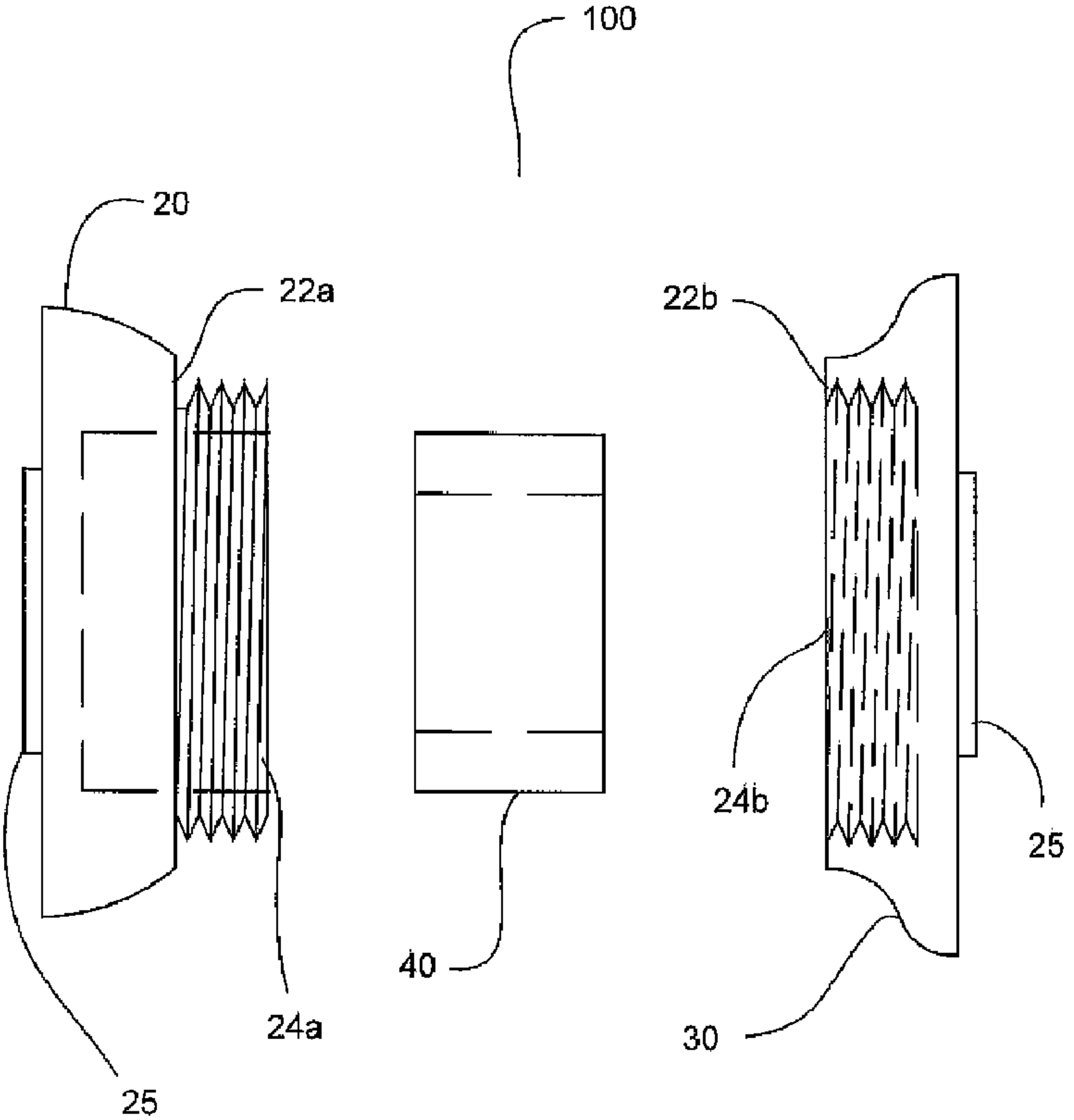

Figure 1a