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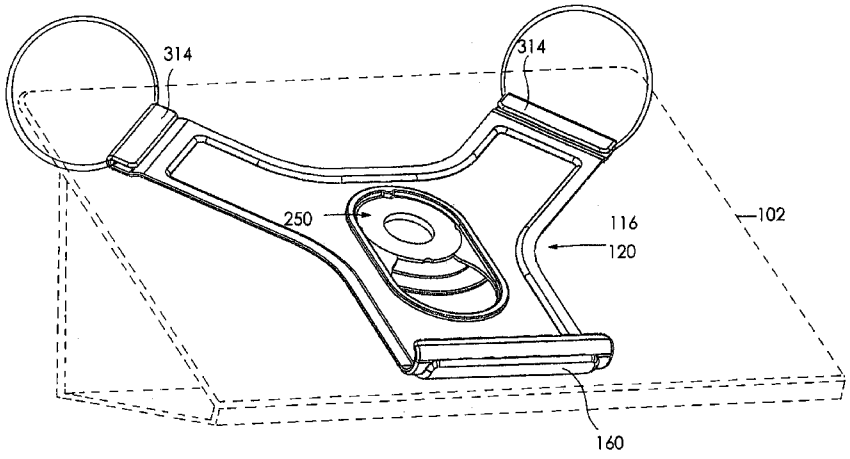

FIG.1

(57) Abstract: A rotating mechanism for a computer or similar device cooperates with a case to hold the computer or similar device in a desired position. The rotating mechanism has a cradle to receive the computer or similar device and a mounting disk to attach to the case. The cradle has an aperture to cooperate with the mounting disk to secure the computer or similar device to the case.

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ROTATING MECHANISM FOR COMPUTER OR SIMILAR DEVICE

This invention relates to a rotating mechanism for a computer or similar device, and more particularly, to a rotating mechanism for a computer or similar device, which is attached to a case for the computer or similar device.

BACKGROUND OF THE INVENTION

As a computer or a similar device is used, it is very desirable to facilitate that use. It is especially useful if a device supporting the computer does so with minimal intrusiveness.

It is especially desirable to be able to rotate the computer for different views, while supporting the computer in a desired position. When the computer or similar device is supported on its carrying case during use thereof, the multi-function use of the case provides great advantages for utility thereof, while keeping a structure for the improved use to a minimum.

A computer or a similar device can come in a variety of sizes. It is very useful for a computer mounting device to adjust to the size of the respective device, while still providing the desired holding and rotating capabilities. Such a requirement can work against the other requirements.

To a certain extent, various requirements for utility, functionality and simplicity work against each other. Emphasizing one over the other can compromise the overall function. Thus, it is best to avoid such compromises.

SUMMARY OF THE INVENTION

Among the many objectives of this invention is the provision of a rotating mechanism for a computer or similar device, which cooperates with a carrying case for the computer or similar device.

A further objective of this invention is the provision of a rotating mechanism for a computer or similar device, which facilitates rotation of the computer or similar device.

Yet a further objective of this invention is the provision of a rotating mechanism for a computer or similar device, which facilitates mounting of the computer or similar device on the case.

A still further objective of this invention is the provision of a rotating mechanism for a computer or similar device, which facilitates positioning of the computer or similar device.

Another objective of this invention is the provision of a rotating mechanism for a computer or similar device, which is strong.

Yet another objective of this invention is the provision of a rotating mechanism for a computer or similar device, which is durable.

Still another objective of this invention is the provision of a rotating mechanism for a computer or similar device, which adjusts to the size of the computer or similar device.

These and other objectives of the invention (which other objectives become clear by consideration of the specification, claims and drawings as a whole) are met by providing a rotating mechanism for a computer or similar device which cooperates with a case for the computer or similar device and allows the computer or similar device to be placed in a variety of positions relative to the case.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 depicts a front, perspective view of the rotating mechanism 100 with triangulated computer cradle 120 attached to case 102 and rotated to landscape position 116 with case 102 depicted in phantom.

Figure 2 depicts a front, perspective view of the rotating mechanism 100 with triangulated computer cradle 120 attached to case 102 and rotated to portrait position 114 with case 102 depicted in phantom.

Figure 3 depicts a front, perspective view of computer 104 mounted on case 102 in landscape position 116.

Figure 4 depicts a front, perspective view of computer 104 mounted on case 102 in portrait position 114.

Figure 5 depicts an exploded, perspective view of the relationship between case 102, mounting disk 250, triangulated computer cradle 120, and computer 104 with case 102 and computer 104 depicted in phantom.

Figure 6 depicts a top, perspective view of the rotating mechanism 100 of this invention having a triangulated computer cradle 120 with mounting disk 250.

Figure 7 depicts a top, perspective view of the rotating mechanism 100 of this invention having a triangulated computer cradle 120 with mounting disk 250 in locked stage 122.

Figure 8 depicts an assembled, top plan view of the rotating mechanism 100 of this invention having a triangulated computer cradle 120 with mounting disk 250 in insertion stage 124.

Figure 9 depicts an assembled, top plan view of the rotating mechanism 100 of this invention having a triangulated computer cradle 120 with mounting disk 250 in middle stage 126.

Figure 10 depicts a bottom, plan view of the triangulated computer cradle 120 and mounting disk 250.

Figure 11 depicts a top, plan view of the triangulated computer cradle 120 and mounting disk 250.

Figure 12 depicts a bottom, perspective view of a triangulated computer cradle 120 for the rotating mechanism 100 of this invention.

Figure 13 depicts a top, perspective view of a triangulated computer cradle 120 for the rotating mechanism 100 of this invention.

Figure 14 depicts a top, perspective view of the rotating mechanism 100 of this invention with mounting disk 250 in insertion stage 124.

Figure 15 depicts a top, perspective view of the rotating mechanism 100 of this invention with mounting disk 250 in middle stage 126.

Figure 16 depicts a top, perspective view of the rotating mechanism 100 of this invention with mounting disk 250 in positioning stage 128.

Figure 17 depicts a top, perspective view of the rotating mechanism 100 of this invention with mounting disk 250 in locked stage 122.

Figure 18 depicts a side view of triangulated computer cradle 120 and mounting disk 250.

Figure 19 depicts a front, perspective view of a triangulated computer cradle 120 for the rotating mechanism 100 in landscape position 116 with case 102 depicted in phantom.

Figure 20 depicts a front, perspective view of a triangulated computer cradle 120 for the rotating mechanism 100 in portrait position 114 with case 102 depicted in phantom.

Figure 21 depicts an exploded, perspective view of mounting disk 250 attached to case 102 with triangulated computer cradle 120 being attached thereto and case 102 is depicted in phantom.

Figure 22 depicts a top, perspective view of computer 104 being attached to triangulated computer cradle 120 mounted to case 102 with computer 104 and case 102 depicted in phantom.

Figure 23 depicts a front, perspective view of a triangulated computer cradle 120 and mounting disk 250 for the rotating mechanism 100 of this invention.

Figure 24 depicts a front, perspective view of a triangulated computer cradle 120 with mounting disk 250 in insertion stage 124.

Figure 25 depicts a front, plan view of a triangulated computer cradle 120 of the rotating mechanism 100 of this invention.

Figure 26 depicts a bottom, plan view of a triangulated computer cradle 120 of the rotating mechanism 100 of this invention.

Figure 27 depicts a front, perspective view of quadrilateral computer cradle 190 mounted to case 102 and rotated to landscape position 116 with case 102 depicted in phantom.

Figure 28 depicts a front, perspective view of quadrilateral computer cradle 190 mounted to case 102 and rotated to portrait position 114 with case 102 depicted in phantom.

Figure 29 depicts an exploded, perspective view of quadrilateral computer cradle 190 with its attachment to mounting disk 250 and computer 104 with case 102 and computer 104 depicted in phantom.

Figure 30 depicts a top, perspective view of the rotating mechanism 100 of this invention showing quadrilateral computer cradle 190 and mounting disk 250.

Figure 31 depicts a top, plan view of the rotating mechanism 100 of this invention showing quadrilateral computer cradle 190 with mounting disk 250.

Figure 32 depicts a bottom, plan view of a quadrilateral computer cradle 190 with computer 104 mounted thereon for the rotating mechanism 100 of this invention with computer 104 depicted in phantom.

Figure 33 depicts a top, plan view of a quadrilateral computer cradle 190 with computer 104 mounted thereon for the rotating mechanism 100 of this invention with computer 104 depicted in phantom.

Figure 34 depicts a top, perspective view of the rotating mechanism 100 of this invention showing quadrilateral computer cradle 190 with mounting disk 250 in locked stage 122.

Figure 35 depicts a top, perspective view of the rotating mechanism 100 of this invention showing quadrilateral computer cradle 190 with mounting disk 250 in insertion stage 124.

Figure 36 depicts a bottom, plan view of quadrilateral computer cradle 190 and mounting disk 250 for the rotating mechanism 100 of this invention.

Figure 37 depicts a top, plan view of mounting disk 250 for the rotating mechanism 100 of this invention.

Figure 38 depicts a side view of mounting disk 250 based on Figure 37.

Figure 39 is a bottom, plan view of mounting disk 250 based on Figure 37.

Figure 40 is a top, perspective view of mounting disk 250 based on Figure 37.

Figure 41 is a bottom, perspective view of mounting disk 250 based on Figure 37.

Figure 42 is a block diagram defining the computer mount 300 of this invention.

Throughout the figures of the drawings, where the same part appears in more than one figure of the drawings, the same number is applied thereto.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to several embodiments of the invention that are illustrated in accompanying drawings. Whenever possible, the same or similar reference numerals are used in the drawings and the description to refer to the same or like parts or steps. The drawings are in simplified form and are not to precise scale. For purposes of convenience and clarity only, directional terms such as top, bottom, left, right, up, over, above, below, beneath, rear, and front, may be used with respect to the

drawings. These and similar to directional terms are not to be construed to limit the scope of the invention in any manner. The words attach, connect, couple, and similar terms with their inflectional morphemes do not necessarily denote direct or intermediate connections, but may also include connections through mediate elements or devices.

In accordance with the present invention, a rotating mechanism for a computer or similar device cooperates with the carrying case. While in the rotating mechanism, the computer or similar device, may be rotated to achieve a different view of the screen, for example a portrait or landscape position. The computer or similar device may be removed from the carrying case when desired.

Some examples of the computer or similar device include any from the series of IPAD®. IPAD® is a United States Registered Trademark of Apple Inc., a Corporation incorporated under the laws of the State of California, 1 Infinite Loop, Cupertino, California 95014. The computer or similar device may be a MOTOROLA XOOM®. MOTOROLA XOOM® is a United States Registered Trademark of Motorola Trademark Holdings, a Limited Liability Company incorporated under the laws of the State of Delaware, 600 N. U.S. Highway 45, Libertyville, Illinois 60048. The computer or similar device may

be a KINDLE®. KINDLE® is a United States Registered Trademark of Amazon Technologies, Inc., a Corporation organized under the laws of the State of Nevada, P.O. Box 8102, Reno, Nevada 89507. The computer or similar device may be a NOOK®. NOOK® is a United States Registered Trademark of Fission LLC, a Limited Liability Company organized under the laws of the State of Delaware, 122 Fifth Avenue, New York, New York 10011. The computer or similar device may be any hand-held computing device, media reader, tablet computer, or portable electronic device for receiving and reading text, images, or other audio visual media.

Referring now to Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12, Figure 13, Figure 14, Figure 15, Figure 16, Figure 17, Figure 18, Figure 19, Figure 20, Figure 21, Figure 22, Figure 23, Figure 24, Figure 25, and Figure 26, a rotating mechanism 100 cooperates with a case 102 with a computer 104 mounted thereon. The computer 104 may be rotated and secured in a desired position such as landscape position 116 (Figure 1 and Figure 3), inverted landscape position 116 (Figure 19), portrait position 114 (Figure 2 and Figure 4), or inverted portrait position 114 (Figure 20). Rotating mechanism 100 has a triangulated computer cradle 120 with a cooperating

mounting disk 250. Mounting disk 250 is secured to case 102 in a suitable fashion such as sewing, adhesives, a hook and loop assembly, or any other suitable attachment mechanism or product. Triangulated computer cradle 120 receives computer 104 and cooperates with mounting disk 250 to secure computer 104 in a desired position. The triangulated computer cradle 120 can be circumscribed by an isosceles triangle.

Triangulated computer cradle 120 includes keyhole aperture 130 (Figure 6) having a lock loop 132, which is the locking side, and mounting loop 134, which is the receiving side. Mounting disk 250 moves from insertion stage 124 (Figure 14) to middle stage 126 (Figure 15) to positioning stage 128 (Figure 16) to locked stage 122 (Figure 17) for mounting. The moves are reversed for removing triangulated computer cradle 120 from case 102.

Uniform support rib 136 has locking tab 142. Locking disk 260 has a series of notches 262. To place the computer 104 in a desired position, triangulated computer cradle 120 is rotated around mounting disk 250 and the locking tab 142 is aligned with the corresponding notch 262. When the desired position is achieved, locking tab 142 cooperates with notch 262 to firmly lock the triangulated computer cradle 120 in place.

The keyhole aperture 130 is recessed within the cradle surface 138. The recessed keyhole aperture 130 allows mounting disk 250 to be inserted within the aperture 130 and slide to travel from insertion stage 124 to the locked stage 122 without contacting computer 104. Thus, once mounted, locking disk 260 is even with the cradle surface 138. Thus, computer 104 lays flat against triangulated computer cradle 120.

Triangulated computer cradle 120 has either an outer support rib 140 or a series of risers 144 and both may be used interchangably. Outer support rib 140 strengthens the triangulated computer cradle 120 in general. Outer support rib 140 and risers 144 are elevated above the cradle surface 138. Uniform support rib 136 may also be present and is the same height as outer support rib 140 or risers 144. Computer 104 rests on either outer support rib 140 or risers 144, and if present uniform support rib 136, when mounted in the triangulated computer cradle 120. Computer 104 rests elevated upon the cradle surface 138 so that it is not harmed or damaged from the mounting disk 250 during rotation.

Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7, Figure 8, Figure 9, Figure 10, Figure 11, Figure 12, Figure 13, Figure 14, Figure 15, Figure 16, Figure 17, and Figure 18 show triangulated computer

cradle 120 with adjustable arms 314. Adjustable arms 314 do not extend to the edges of case 102. Adjustable arms 314 have fastener 316 attached thereto and extending therefrom. Computer 104 has computer edge 162 oppositely disposed from first computer corner 106 and second computer corner 108. First computer corner 106 and second computer corner 108 are preferably adjoining corners. Adjustable arms 314 can be first equal arm clip 150 and second equal arm clip 152.

First computer corner 106 rests against first equal arm clip 150 and second computer corner 108 rests against second equal arm clip 152. Computer corners 106 and 108 are secured to clips 150 and 152 through fastener 316. Fastener 316 may be elastic or rubber loops, straps, belts, or any other suitable fastener which forms a secure yet removable connection between triangulated computer cradle 120 and adjustable arms 314.

Computer edge 162 rests in vertex clip 160. Clearly, vertex clip 160 cooperates with both first equal arm clip 150 and second equal arm clip 152 to hold computer 104 generally on rotating mechanism 100 and specifically on triangulated computer cradle 120.

Figure 19, Figure 20, Figure 21, Figure 22, Figure 23, Figure 24, Figure 25, and Figure 26 show triangulated computer cradle 120 with fixed arms

312. Fixed arms 312 extend to the edges of case 102. Fixed arms 312 are able accommodate computers 104 of varying sizes and thicknesses.

First fixed arm 154 accepts first computer corner 106 and second fixed arm 156 accepts second computer corner 108. Fixed arms 154 and 156 have cupped props 158 which receive first computer corner 106 and second computer corner 108 and securely hold them in position.

Computer edge 162 rests in vertex clip 160. Clearly, vertex clip 160 cooperates with both first fixed arm 154 and second fixed arm 156 to hold computer 104 generally on rotating mechanism 100 and specifically on triangulated computer cradle 120.

In this fixed arm embodiment, the triangulated computer cradle 120 has teardrop aperture 200 instead of keyhole aperture 130. Keyhole aperture 130 and teardrop aperture 200 are interchangeable and either aperture 130 or 200 can be used in any embodiment.

Teardrop aperture 200 has receiving side 202 and locking side 204. Locking axle 256 of mounting disk 250 inserts into receiving side 202 for insertion stage 124. Locking axle 256 is moved into locking side 204 for locked stage 122. The moves are reversed for dismounting triangulated computer cradle 120 from mounting disk 250.

Now adding Figure 27, Figure 28, Figure 29, Figure 30, Figure 31, Figure 32, Figure 33, Figure 34, Figure 35, and Figure 36 to the consideration, quadrilateral computer cradle 190 with computer 104 mounted thereon is also mounted on mounting disk 250 to form another version of the rotating mechanism 100 of this invention. Quadrilateral computer cradle 190 is positioned on mounting disk 250, and acts in the same manner as triangulated computer cradle 120. Quadrilateral computer cradle 190 can be rotated to landscape position 116 (Figure 27) or portrait position 114 (Figure 28).

Quadrilateral computer cradle 190 is depicted with keyhole aperture 130 but teardrop aperture 200 can be interchanged. Keyhole aperture 130 is also recessed as in the earlier embodiments to protect computer 104. More particularly, keyhole aperture 130 has a lock loop 132 and mounting loop 134 to receive mounting disk 250. Mounting loop 134 receives mounting disk 250, for insertion stage 124 (Figure 35) and permits sliding of quadrilateral computer cradle 190 from mounting loop 134 into lock loop 132 for locked stage 122 (Figure 34).

Quadrilateral computer cradle 190 has a first computer clip 210, a second computer clip 212, a third computer clip 214, and a fourth computer

clip 216 to engage the first computer corner or the edge 106, second computer corner or edge 108, third computer corner or edge 110, and fourth computer corner or edge 112 of computer 104. Computer clips 210, 212, 214, and 216 also have cupped props 158 to receive computer corners 106, 108, 110, and 112.

Edge rib 230 and aperture interior support rib 220 are elevated from top surface 232 of quadrilateral computer cradle 190. Computer 104 rests on edge rib 230 and if present, aperture interior support rib 220, to protect computer 104 from damage during rotation. Risers 144 may replace edge rib 230 as seen in earlier embodiments.

Locking disk 260 has a series of notches 262. Aperture interior support rib 220 has rib locking tab 222. In locked stage 122, rib locking tab 222 is aligned with one of the notches 262 to create a firm attachment between mounting disk 250 and quadrilateral computer cradle 190 so computer 104 is securely held in the desired position.

Considering now Figure 37, Figure 38, Figure 39, Figure 40, and Figure 41, mounting disk 250 has a base attachment surface 252, usually circular in appearance. Base attachment surface 252 is attached to case 102. A smaller disk 254 is next. Smaller disk 254 is flush with the surface

of case 102. Locking axle 256 is next. Locking disk 260 is the top piece and is substantially bigger than locking axle 256.

Locking axle 256 fits into mounting loop 134 or receiving side 202 for insertion stage 124, and secures mounting disk 250 in lock loop 132 or locking side 204 for locked stage 122. Keyhole aperture 130 has a pair of parallel straight edges 264 connecting mounting loop 134 to lock loop 132. The straight edges 246 form channel 146. The straight edges 264 of channel 146 are aligned with the straight edges of locking axle 256 during insertion stage 124 and remained aligned through middle stage 126 and into positioning stage 128. Cradle 120 or 190 is then rotated so that the straight edges of locking axle 256 are not aligned with straight edges 264 of channel 146 during locked stage 122. The non-aligned position secures mounting disk 250 in the aperture 130.

Figure 42 depicts a computer mount 300, which can include triangulated computer cradle 120 or quadrilateral computer cradle 190, among other versions. Arms 310 can be fixed arms 312, adjustable arms 314, or combinations thereof. Two arms 310 are depicted but there can be as many or few as arms 310 as necessary to accommodate computer 104. Adjustable arms 314 can be of adjustable lengths to accommodate

computers 104 of varying lengths, thicknesses, or sizes. Adjustable lengths are accomplished by straps, belts, elastic materials and similar materials. Mechanical devices can also vary the lengths.

This application taken as a whole with the abstract, specification, claims, and drawings being combined provides sufficient information for a person having ordinary skill in the art to practice the invention as disclosed and claimed herein. Any measures necessary to practice this invention are well within the skill of a person having ordinary skill in this art after that person has made a careful study of this disclosure.

Because of this disclosure and solely because of this disclosure, modification of this method and device can become clear to a person having ordinary skill in this particular art. Such modifications are clearly covered by this disclosure.

What is claimed and sought to be protected by Letters Patent is:

CLAIMS

1. A device for attaching a computer to a surface in a desired position comprising:

a) a cradle to receive the computer;

b) a securing means attached to the surface; and

c) the securing means cooperating with the cradle to connect the computer to the surface in the desired position.

2. The device of Claim 1 further comprising:

a) the securing means being a mounting disk;

b) the surface being a case for the computer;

c) the cradle having an aperture to cooperate with the mounting disk; and

d) the aperture and the mounting disk cooperating to securely attach the computer to the case in the desired position.

3. The device of Claim 2 further comprising:

a) the cradle having at least one arm to receive the computer;

b) the aperture having a receiving side and a locking side;

c) the mounting disk having a locking axle and a locking disk;

d) the locking disk being attached to a top side of the locking axle;

e) the receiving side accepting the locking axle;

f) the locking side accepting the locking axle from the receiving side;

g) the locking side and the locking axle cooperating to secure the computer in the desired position; and

h) the locking disk being larger than the locking axle to secure the mounting disk in the aperture.

4. The device of Claim 3 further comprising:

a) the aperture being recessed from a surface of the cradle;

b) the cradle having at least one raised projection to support the computer above the mounting disk;

c) the mounting disk having a base attachment surface and a smaller disk;

d) the smaller disk being attached to a bottom side of the locking axle;

e) the base attachment surface being attached to a bottom side of the smaller disk;

f) the base attachment surface attaching the mounting disk to the case; and

g) the smaller disk being flush with a surface of the case.

5. The device of Claim 4 further comprising:

a) the aperture having a channel separating the receiving side from the locking side;

b) the channel having two straight edges oppositely disposed from each other;

c) the locking axle having two straight edges oppositely disposed from each other;

d) the two straight edges of the locking axle aligning with the two straight edges of the channel to allow the locking axle to slide through the channel from the receiving side to the locking side;

e) the cradle being rotated to a non-aligning position between the two straight edges of the locking axle and the two straight edges of the channel; and

f) the two straight edges of the locking axle preventing the locking axle from entering the channel from the locking side once the non-aligning position is achieved.

6. The device of Claim 5 further comprising:

a) the cradle having an inner rib encircling the aperture;

b) the inner rib having a locking tab adjacent to the locking side of the aperture;

c) the locking disk having at least one notch; and

d) the locking tab aligning with at least one notch to secure the computer in the desired position.

7. The device of Claim 6 further comprising:

a) the at least one arm being at least one adjustable arm;

b) the at least one adjustable arm having a fastener secured at a distal end thereof;

c) the fastener securing a corner of the computer to the at least one adjustable arm; and

d) the cradle having a vertex clip to receive an edge of the computer therein;

e) the at least one adjustable arm cooperating with the vertex clip to secure the computer to the case.

8. The device of Claim 6 further comprising:

a) the at least one arm being at least one fixed arm;

b) the at least one fixed arm having a cupped prop at a distal end;

c) the cupped prop allowing the at least one fixed arm to receive a corner of the computer; and

d) the at least one fixed arm securing the computer to the case.

9. In a case for a computer, the improvement comprising:

a) a securing means being attached to the case;

b) the securing means cooperating with a cradle which receives the computer; and

c) the cooperation between the securing means and the cradle securing the computer to the case in a desired position.

10. The case of Claim 9 further comprising:

a) the securing means being a mounting disk;

b) the cradle having an aperture to cooperate with the mounting disk; and

c) the aperture and the mounting disk cooperating to securely attach the computer to the case in the desired position.

11. The case of Claim 10 further comprising:

a) the cradle having at least one arm to receive the computer;

b) the aperture having a receiving side and a locking side;

c) the mounting disk having a locking axle and a locking disk;

d) the locking disk being attached to a top side of the locking axle;

e) the receiving side accepting the locking axle;

f) the locking side accepting the locking axle from the receiving side;

g) the locking side and the locking axle cooperating to secure the computer in the desired position; and

h) the locking disk being larger than the locking axle to secure the mounting disk in the aperture.

12. The case of Claim 11 further comprising:

a) the aperture being recessed from a surface of the cradle;

b) the cradle having at least one raised projection to support the computer above the mounting disk;

c) the mounting disk having a base attachment surface and a smaller disk;

d) the smaller disk being attached to a bottom side of the locking axle;

e) the base attachment surface being attached to a bottom side of the smaller disk;

f) the base attachment surface attaching the mounting disk to the case; and

g) the smaller disk being flush with a surface of the case.

13. The case of Claim 12 further comprising:

a) the aperture having a channel separating the receiving side from the locking side;

b) the channel having two straight edges oppositely disposed from each other;

c) the locking axle having two straight edges oppositely disposed from each other;

d) the two straight edges of the locking axle aligning with the two straight edges of the channel to allow the locking axle to slide through the channel from the receiving side to the locking side;

e) the locking axle being rotated to a non-aligning position between the two straight edges of the locking axle and the two straight edges of the channel; and

f) the two straight edges of the locking axle preventing the locking axle from entering the channel once the non-aligning position is achieved.

14. The case of Claim 13 further comprising:

a) the cradle having an inner rib encircling the aperture;

b) the inner rib having a locking tab adjacent to the locking side of the aperture;

c) the locking disk having at least one notch; and

d) the locking tab aligning with at least one notch to secure the mounting disk in the desired position.

15. The case of Claim 14 further comprising:

a) the at least one arm being at least one adjustable arm;

b) the at least one adjustable arm having a fastener secured at a distal end thereof;

c) the fastener securing a corner of the computer to the at least one adjustable arm;

d) the cradle having a vertex clip to receive an edge of the computer therein; and

e) the at least one adjustable arm cooperating with the vertex clip to secure the computer to the case.

16. The case of Claim 14 further comprising:

a) the at least one arm being at least one fixed arm;

b) the at least one fixed arm having a cupped prop at the distal end;

c) the cupped prop allowing the at least one fixed arm to receive a corner of the computer; and

d) the at least one fixed arm securing the computer to the case.

17. A method of removably attaching a computer to a case in a desired position comprising:

a) providing a cradle to receive the computer;

b) attaching a mounting disk to the case;

c) providing the cradle with an aperture to cooperate with the mounting disk;

d) securely attaching the computer to the case with the cooperation between the aperture and the mounting disk;

e) providing the cradle with at least one arm to receive the computer;

f) providing the aperture with a receiving side and a locking side;

g) providing the mounting disk with a locking axle and a locking disk;

h) attaching the locking disk to a top side of the locking axle;

i) allowing the receiving side to accept the locking axle;

j) allowing the locking side to accept the locking axle from the receiving side;

k) allowing the locking side to cooperate with the locking axle to secure the computer in the desired position;

l) providing the locking disk as being larger than the locking axle to secure the mounting disk in the aperture;

m) recessing the aperture from a surface of the cradle;

n) providing the cradle with at least one raised projection to support the computer above the mounting disk;

o) providing the mounting disk with a base attachment surface and a smaller disk;

p) attaching the smaller disk to a bottom side of the locking axle;

q) attaching the base attachment surface to a bottom side of the smaller disk;

r) attaching the mounting disk to the case with the base attachment surface; and

s) positioning the smaller disk as flush with a surface of the case.

18. The method of Claim 17 further comprising:

a) providing the cradle with an inner rib encircling the aperture;

b) providing the inner rib with a locking tab adjacent to the locking side of the aperture;

c) providing the locking disk with at least one notch;

d) providing the aperture with a channel to separate the receiving side from the locking side;

e) providing the channel with two straight edges oppositely disposed from each other;

f) providing the locking axle with two straight edges oppositely disposed from each other;

g) positioning the locking axle in the receiving side of the aperture;

h) aligning the two straight edges of the locking axle with the two straight edges of the channel to allow the locking axle to slide through the channel;

i) sliding the locking axle into the locking side from the channel;

j) rotating the cradle to an non-aligning position between the two straight edges of the channel and the two straight edges of the locking axle to prevent the locking axle from entering the channel once the non-aligning position is achieved; and

k) aligning the locking tab with one of the at least one notch to secure the cradle in the desired position.

19. The method of Claim 18 further comprising:

a) providing the at least one arm as at least one adjustable arm;

b) securing a fastener to the at least one adjustable arm at a distal end thereof;

c) securing a corner of the computer to the case with the fastener of the at least one adjustable arm;

d) providing the cradle with a vertex clip to receive an edge of the computer therein; and

e) allowing the at least one adjustable arm to cooperate with the vertex clip to secure the computer to the case.

20. The method of Claim 18 further comprising:

a) providing the at least one arm as at least one fixed arm;

b) providing the at least one fixed arm with a cupped prop at a distal end thereof;

c) allowing the cupped prop of the at least one fixed arm to receive a corner of the computer; and

d) allowing the at least one fixed arm to secure the computer to the case.

AMENDED CLAIMS
received by the International Bureau on 16 August 2013 (16.08.2013)

1. A device for attaching a computer to a surface in a desired position comprising:

a) a cradle to receive the computer;

b) a securing means attached to the surface;

c) the surface being a case for the computer;

d) the securing means cooperating with the cradle to connect the computer to the surface in the desired position;

e) the securing means being a mounting disk;

f) the cradle being removable from the case;

g) the cradle having an aperture to cooperate with the mounting disk; and

h) the aperture and the mounting disk cooperating to securely attach the computer to the case in the desired position.

2. The device of Claim 1 further comprising:

a) the aperture having a receiving side and a locking side;

b) the mounting disk having a locking axle and a locking disk;

c) the locking disk being attached to a top side of the locking axle;

d) the receiving side accepting the locking axle;

e) the locking side accepting the locking axle from the receiving side;

f) the locking side and the locking axle cooperating to secure the computer in the desired position; and

g) the locking disk being larger than the locking axle to secure the mounting disk in the aperture.

3. The device of Claim 2 further comprising:

a) the cradle having at least one arm to receive the computer; and

b) the aperture being a closed loop to further secure the cradle to the case.

4. The device of Claim 3 further comprising:

a) the aperture being recessed from a surface of the cradle;

b) the cradle having at least one raised projection to support the computer above the mounting disk;

c) the mounting disk having a base attachment surface and a smaller disk;

d) the smaller disk being attached to a bottom side of the locking axle;

e) the base attachment surface being attached to a bottom side of the smaller disk;

f) the base attachment surface attaching the mounting disk to the case; and

g) the smaller disk being flush with a surface of the case.

5. The device of Claim 4 further comprising:

a) the aperture having a channel separating the receiving side from the locking side;

b) the channel having two straight edges oppositely disposed from each other;

c) the locking axle having two straight edges oppositely disposed from each other;

d) the two straight edges of the locking axle aligning with the two straight edges of the channel to allow the locking axle to slide through the channel from the receiving side to the locking side;

e) the cradle being rotated to a non-aligning position between the two straight edges of the locking axle and the two straight edges of the channel; and

f) the two straight edges of the locking axle preventing the locking axle from entering the channel from the locking side once the non-aligning position is achieved.

6. The device of Claim 5 further comprising:

a) the cradle having an inner rib encircling the aperture;

b) the inner rib having a locking tab adjacent to the locking side of the aperture;

c) the locking disk having at least one notch; and

d) the locking tab aligning with at least one notch to secure the computer in the desired position.

7. The device of Claim 6 further comprising:

a) the at least one arm being at least one adjustable arm;

b) the at least one adjustable arm having a fastener secured at a distal end thereof;

c) the fastener securing a corner of the computer to the at least one adjustable arm;

d) the cradle having a vertex clip to receive an edge of the computer therein;

e) the at least one adjustable arm cooperating with the vertex clip to secure the computer to the case;

f) the aperture which cooperates with the mounting disk being a keyhole aperture with a locking loop and a mounting loop;

g) the locking loop having a diameter which is smaller than a diameter of the mounting loop to facilitate securing of the cradle in the desired position; and

h) the cradle secured in the locking loop being able to rotate 360 degrees about the mounting disk.

8. The device of Claim 6 further comprising:

a) the at least one arm being at least one fixed arm;

b) the at least one fixed arm having a cupped prop at a distal end;

c) the cupped prop allowing the at least one fixed arm to receive a corner of the computer;

d) the at least one fixed arm securing the computer to the case;

e) the aperture which cooperates with the mounting disk being a teardrop aperture with the locking side and receiving side; and

f) the cradle secured in the locking side being able to rotate 360 degrees about the mounting disk.

9. In a case for a computer, the improvement comprising:

a) a securing means being attached to the case;

b) the securing means cooperating with a cradle which receives the computer;

c) the cooperation between the securing means and the cradle securing the computer to the case in a desired position;

d) the securing means being a mounting disk;

e) the cradle having an aperture to cooperate with the mounting disk; and

f) the aperture and the mounting disk cooperating to securely attach the computer to the case in the desired position.

10. The case of Claim 9 further comprising:

a) the aperture having a receiving side and a locking side;

b) the mounting disk having a locking axle and a locking disk;

c) the locking disk being attached to a top side of the locking axle;

d) the receiving side accepting the locking axle;

e) the locking side accepting the locking axle from the receiving side;

f) the locking side and the locking axle cooperating to secure the computer in the desired position; and

g) the locking disk being larger than the locking axle to secure the mounting disk in the aperture.

11. The case of Claim 10 further comprising:

a) the cradle having at least one arm to receive the computer; and

b) the aperture being a closed loop to further secure the cradle to the case.

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12. The case of Claim 11 further comprising:

a) the aperture being recessed from a surface of the cradle;

b) the cradle having at least one raised projection to support the computer above the mounting disk;

c) the mounting disk having a base attachment surface and a smaller disk;

d) the smaller disk being attached to a bottom side of the locking axle;

e) the base attachment surface being attached to a bottom side of the smaller disk;

f) the base attachment surface attaching the mounting disk to the case; and

g) the smaller disk being flush with a surface of the case.

13. The case of Claim 12 further comprising:

a) the aperture having a channel separating the receiving side from the locking side;

b) the channel having two straight edges oppositely disposed from each other;

c) the locking axle having two straight edges oppositely disposed from each other;

d) the two straight edges of the locking axle aligning with the two straight edges of the channel to allow the locking axle to slide through the channel from the receiving side to the locking side;

e) the locking axle being rotated to a non-aligning position between the two straight edges of the locking axle and the two straight edges of the channel; and

f) the two straight edges of the locking axle preventing the locking axle from entering the channel once the non-aligning position is achieved.

14. The case of Claim 13 further comprising:

a) the cradle having an inner rib encircling the aperture;

b) the inner rib having a locking tab adjacent to the locking side of the aperture;

c) the locking disk having at least one notch; and

d) the locking tab aligning with at least one notch to secure the mounting disk in the desired position.

15. The case of Claim 14 further comprising:

a) the at least one arm being at least one adjustable arm;

b) the at least one adjustable arm having a fastener secured at a distal end thereof;

c) the fastener securing a corner of the computer to the at least one adjustable arm;

d) the cradle having a vertex clip to receive an edge of the computer therein;

e) the at least one adjustable arm cooperating with the vertex clip to secure the computer to the case;

f) the aperture which cooperates with the mounting disk being a keyhole aperture with a locking loop and a mounting loop;

g) the locking loop having a diameter which is smaller than a diameter of the mounting loop to facilitate securing of the cradle in the desired position; and

h) the cradle secured in the locking loop being able to rotate 360 degrees about the mounting disk.

16. The case of Claim 14 further comprising:

a) the at least one arm being at least one fixed arm;

b) the at least one fixed arm having a cupped prop at the distal end;

c) the cupped prop allowing the at least one fixed arm to receive a corner of the computer;

d) the at least one fixed arm securing the computer to the case;

e) the aperture which cooperates with the mounting disk being a teardrop aperture with the locking side and receiving side; and

f) the cradle secured in the locking side being able to rotate 360 degrees about the mounting disk.

17. A method of removably attaching a computer to a case in a desired position comprising:

a) providing a cradle to receive the computer;

b) attaching a mounting disk to the case;

c) providing the cradle with an aperture to cooperate with the mounting disk;

d) securely attaching the computer to the case with the cooperation between the aperture and the mounting disk;

e) providing the cradle with at least one arm to receive the computer;

f) providing the aperture with a receiving side and a locking side;

g) providing the mounting disk with a locking axle and a locking disk;

h) attaching the locking disk to a top side of the locking axle;

i) allowing the receiving side to accept the locking axle;

j) allowing the locking side to accept the locking axle from the receiving side;

k) allowing the locking side to cooperate with the locking axle to secure the computer in the desired position;

l) providing the locking disk as being larger than the locking axle to secure the mounting disk in the aperture;

m) recessing the aperture from a surface of the cradle;

n) providing the cradle with at least one raised projection to support the computer above the mounting disk;

o) providing the mounting disk with a base attachment surface and a smaller disk;

p) attaching the smaller disk to a bottom side of the locking axle;

q) attaching the base attachment surface to a bottom side of the smaller disk;

r) attaching the mounting disk to the case with the base attachment surface;

s) positioning the smaller disk as flush with a surface of the case; and

t) providing the aperture as being a closed loop to further secure the cradle to the case.

18. The method of Claim 17 further comprising:

a) providing the cradle with an inner rib encircling the aperture;

b) providing the inner rib with a locking tab adjacent to the locking side of the aperture;

c) providing the locking disk with at least one notch;

d) providing the aperture with a channel to separate the receiving side from the locking side;

e) providing the channel with two straight edges oppositely disposed from each other;

f) providing the locking axle with two straight edges oppositely disposed from each other;

g) positioning the locking axle in the receiving side of the aperture;

h) aligning the two straight edges of the locking axle with the two straight edges of the channel to allow the locking axle to slide through the channel;

i) sliding the locking axle into the locking side from the channel;

j) rotating the cradle to an non-aligning position between the two straight edges of the channel and the two straight edges of the locking axle to prevent the locking axle from entering the channel once the non-aligning

position is achieved; and

k) aligning the locking tab with one of the at least one notch to secure the cradle in the desired position.

19. The method of Claim 18 further comprising:

a) providing the at least one arm as at least one adjustable arm;

b) securing a fastener to the at least one adjustable arm at a distal end thereof;

c) securing a corner of the computer to the case with the fastener of the at least one adjustable arm;

d) providing the cradle with a vertex clip to receive an edge of the computer therein;

e) allowing the at least one adjustable arm to cooperate with the vertex clip to secure the computer to the case;

f) providing the aperture which cooperates with the mounting disk as being a teardrop aperture with the locking side and the receiving side;

g) providing the locking side with a diameter which is smaller than a diameter of the receiving side to facilitate securing of the cradle in the desired position; and

h) providing the cradle as being able to rotate 360 degrees about the mounting disk when secured in the locking side.

20. The method of Claim 18 further comprising:

a) providing the at least one arm as at least one fixed arm;

b) providing the at least one fixed arm with a cupped prop at a distal end thereof;

c) allowing the cupped prop of the at least one fixed arm to receive a corner of the computer;

d) allowing the at least one fixed arm to secure the computer to the case;

e) providing the aperture which cooperates with the mounting disk as a teardrop aperture with the locking side and receiving side; and

f) providing the cradle as being able to rotate 360 degrees about the mounting disk once secured in the locking side.

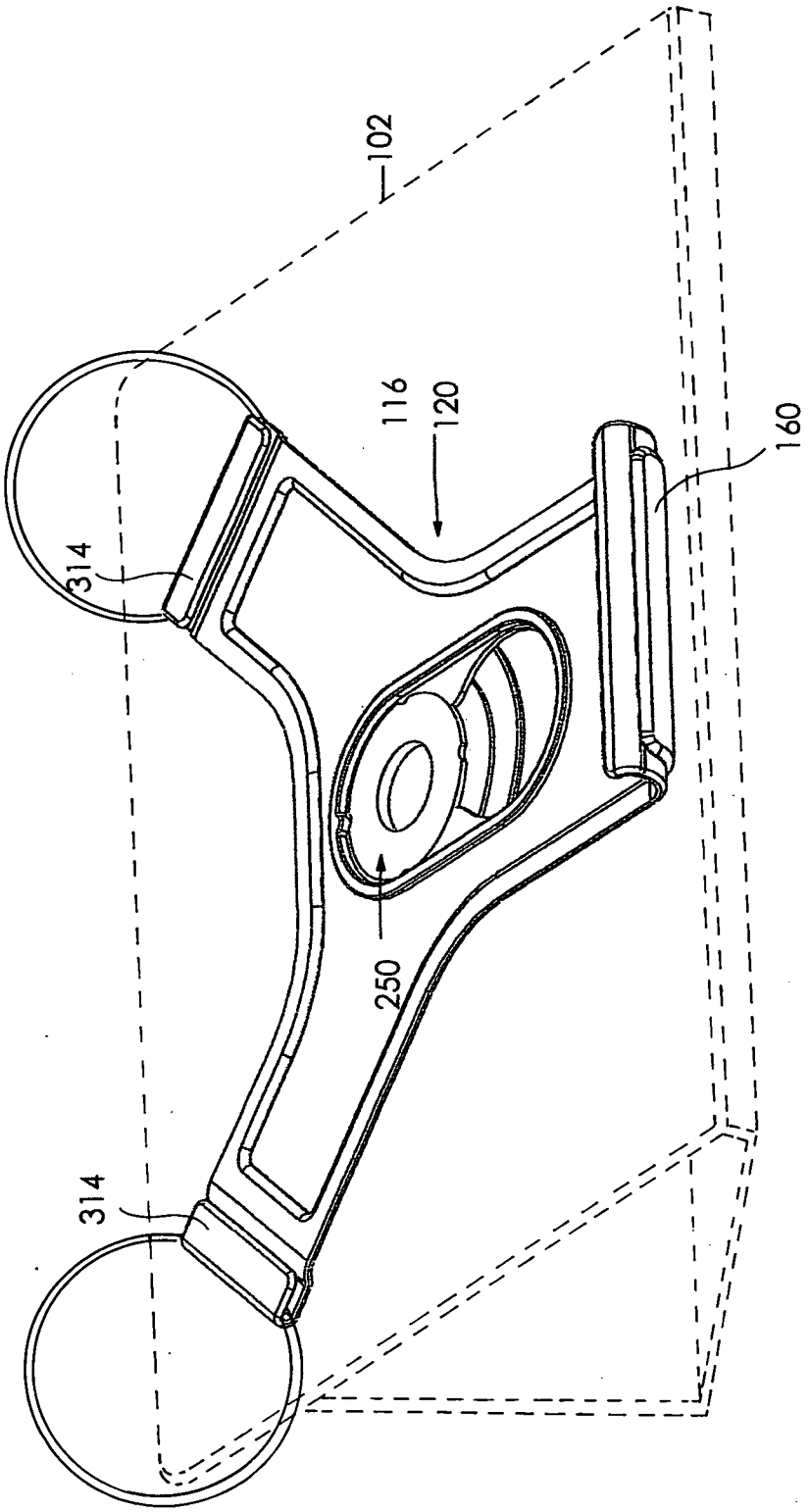

FIG.1

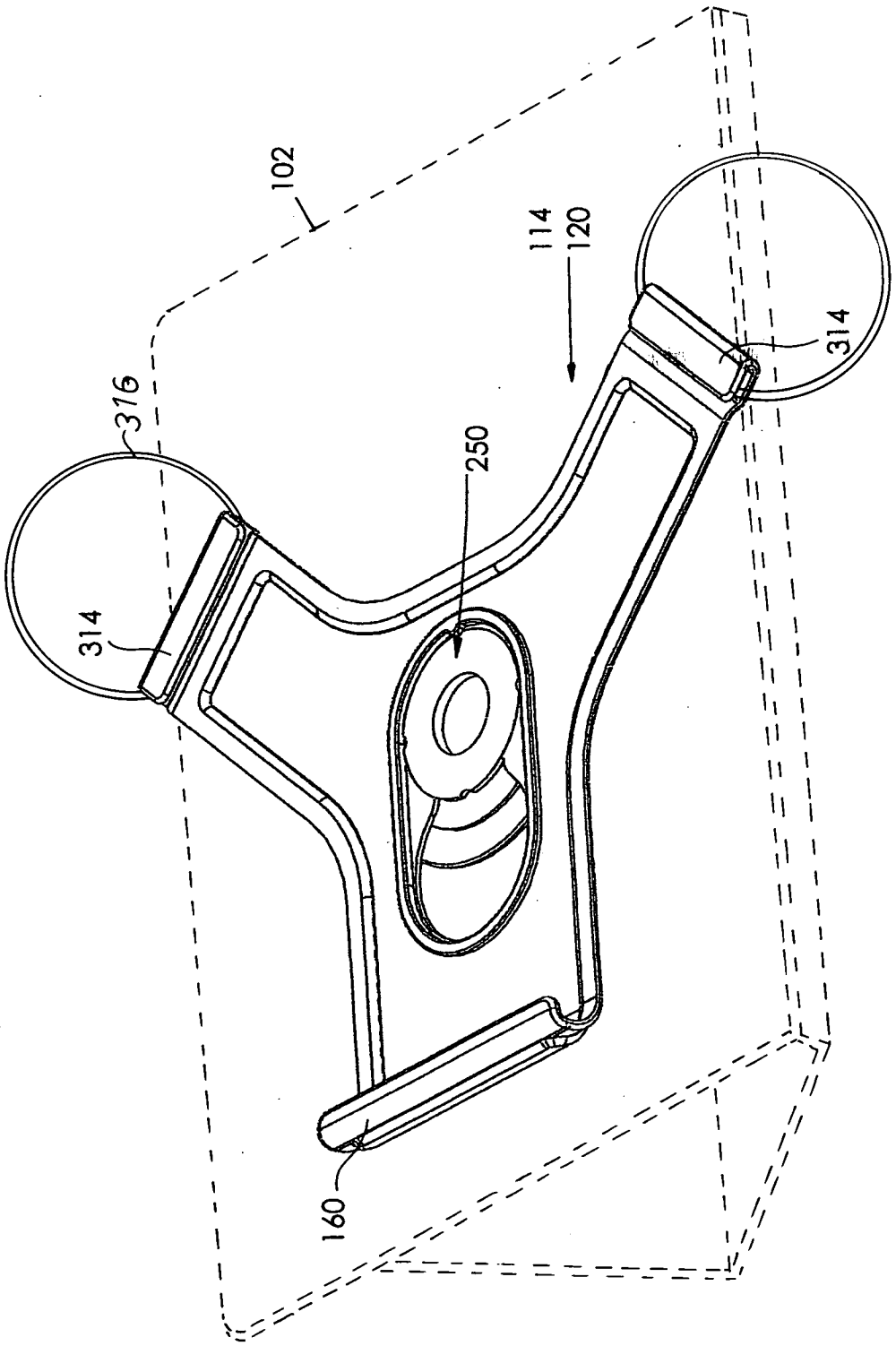

FIG.2

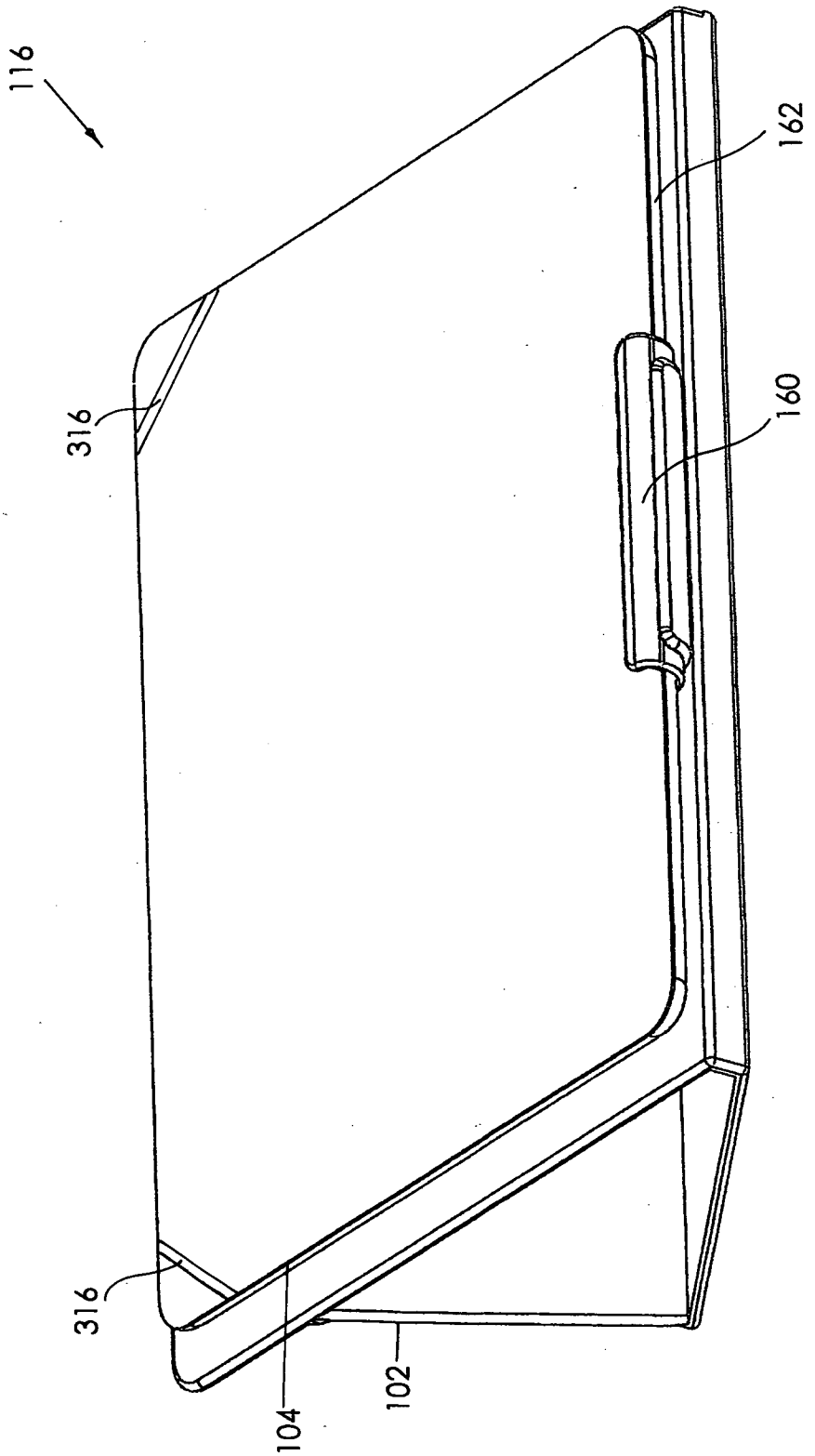

FIG.3

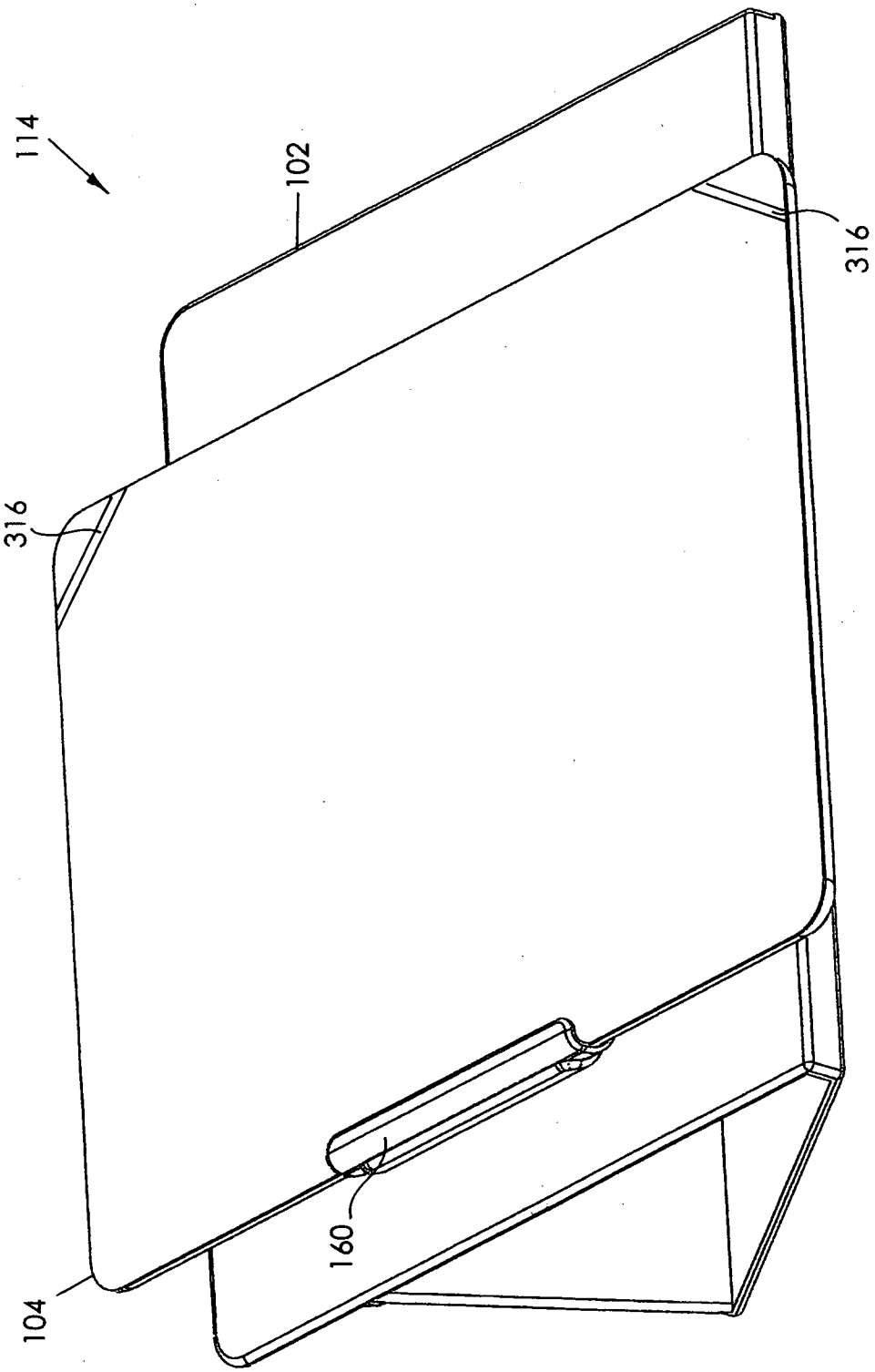

FIG.4

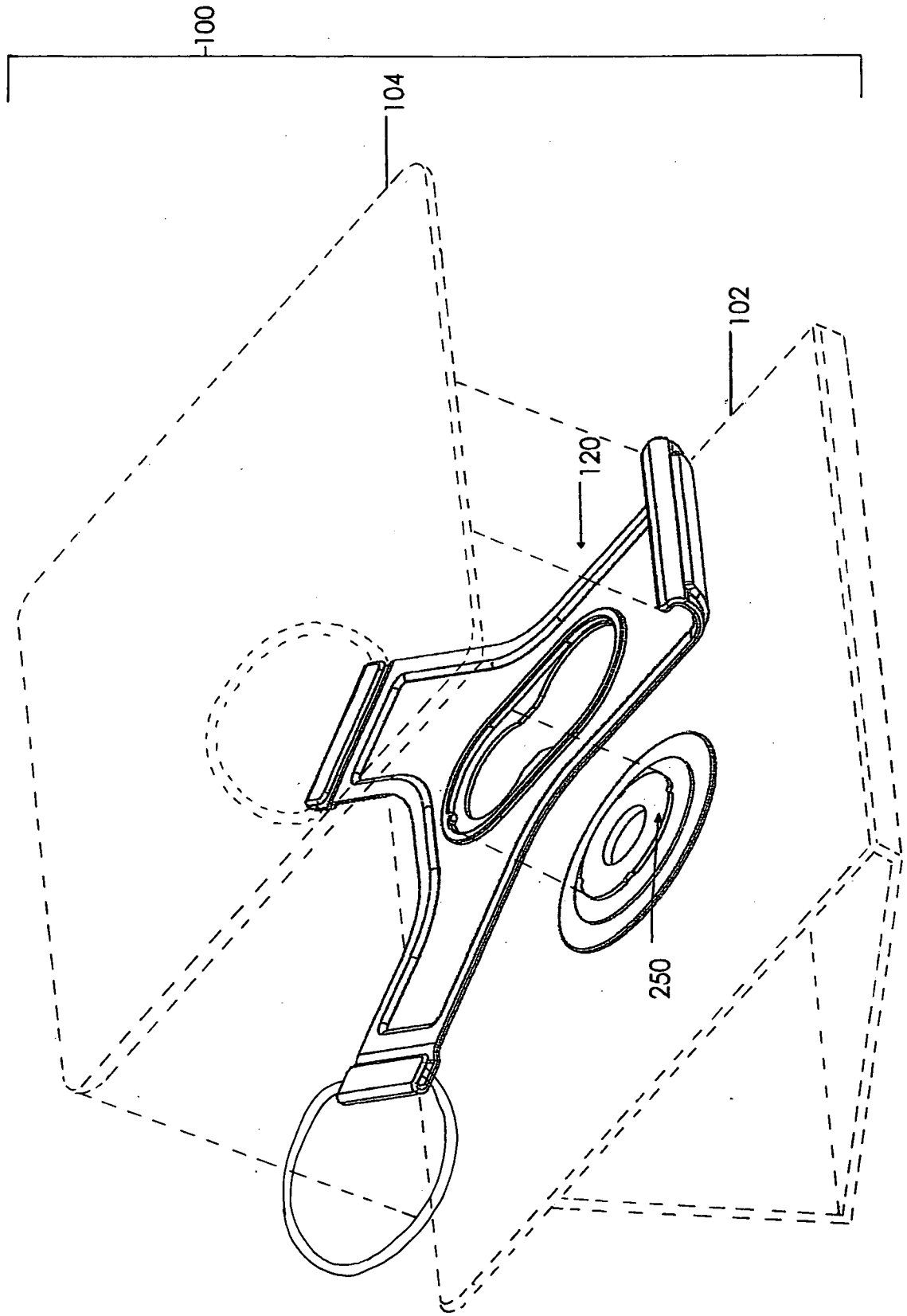

FIG.5

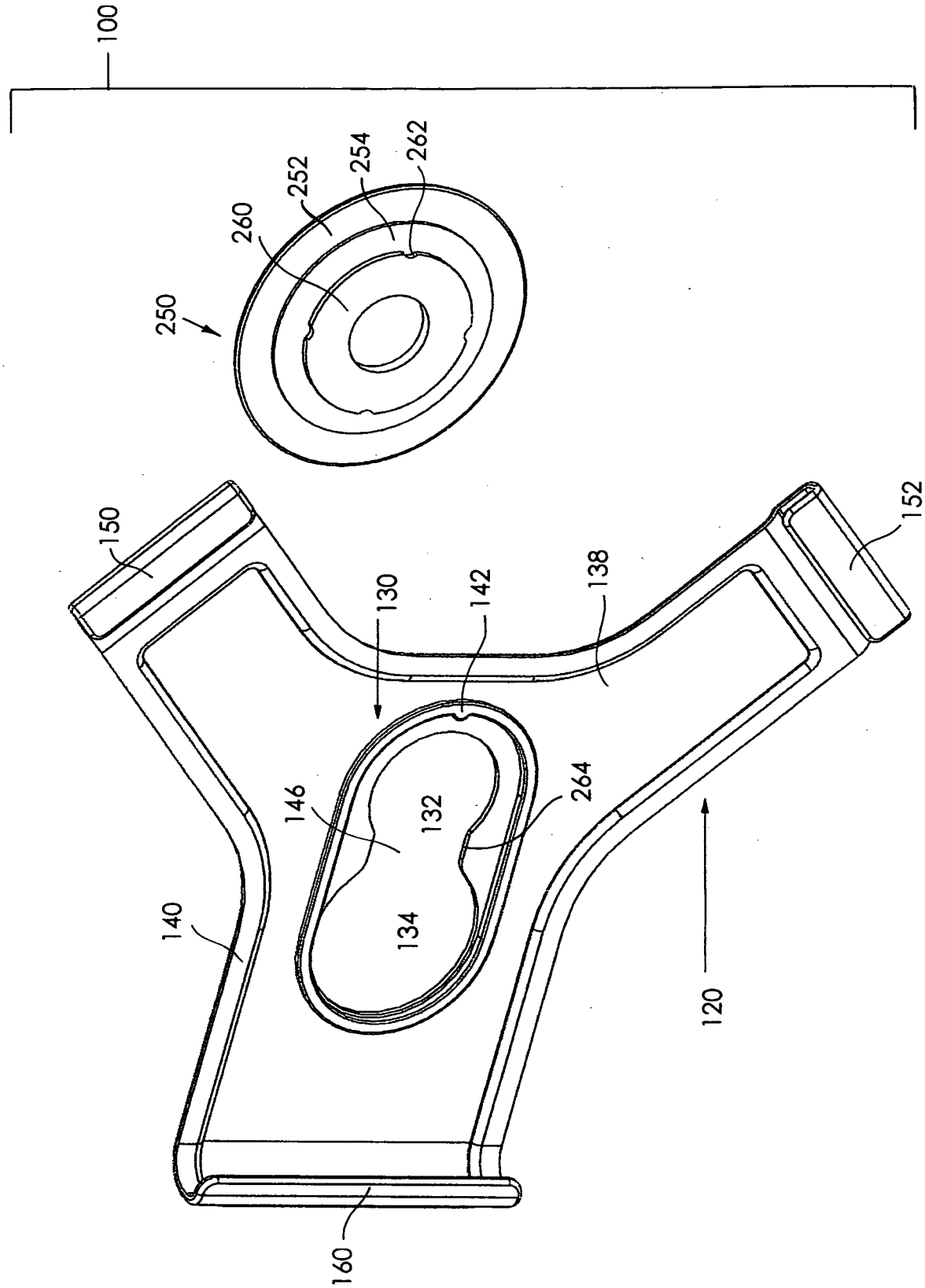
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FIG.6

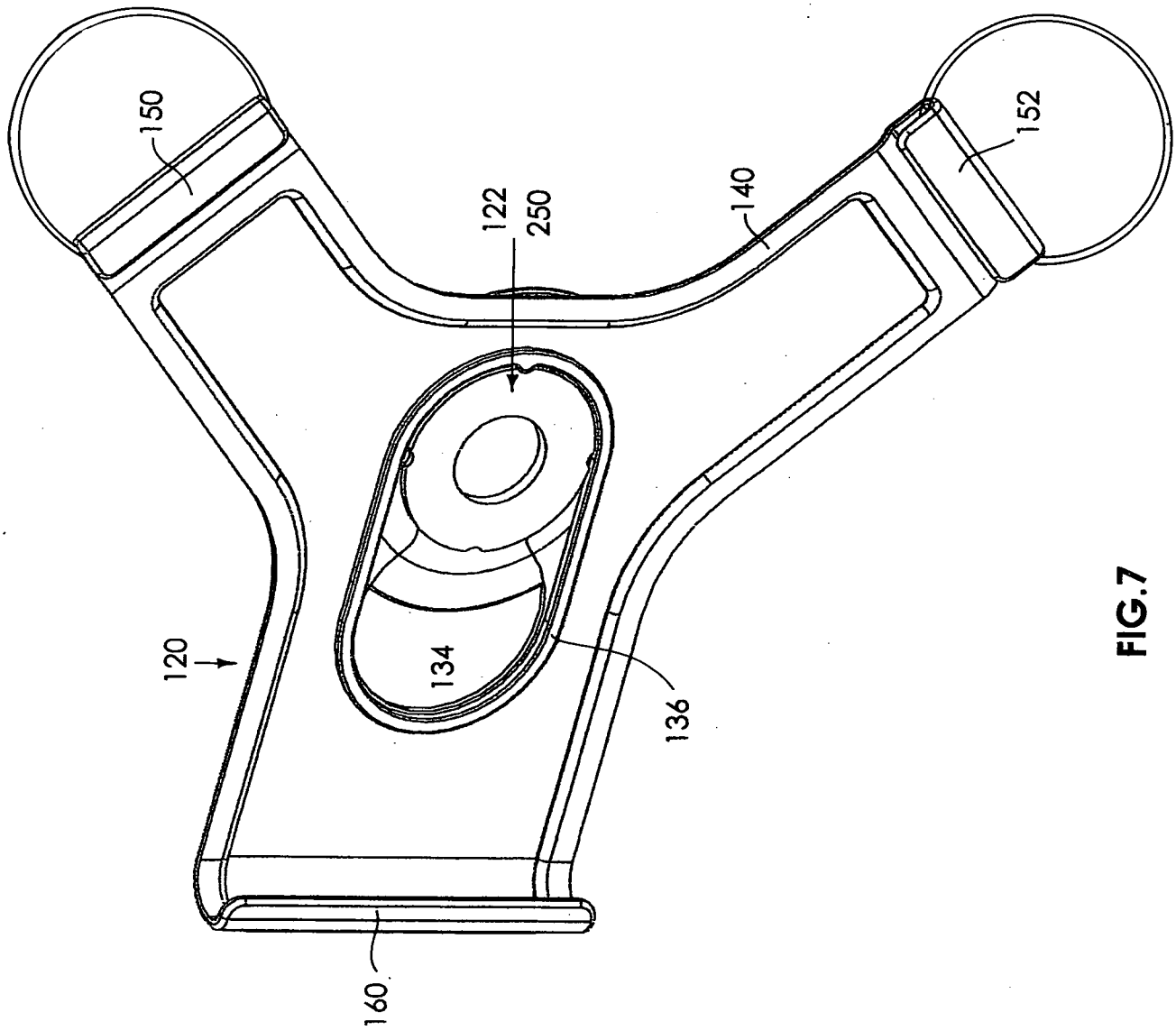

FIG.7

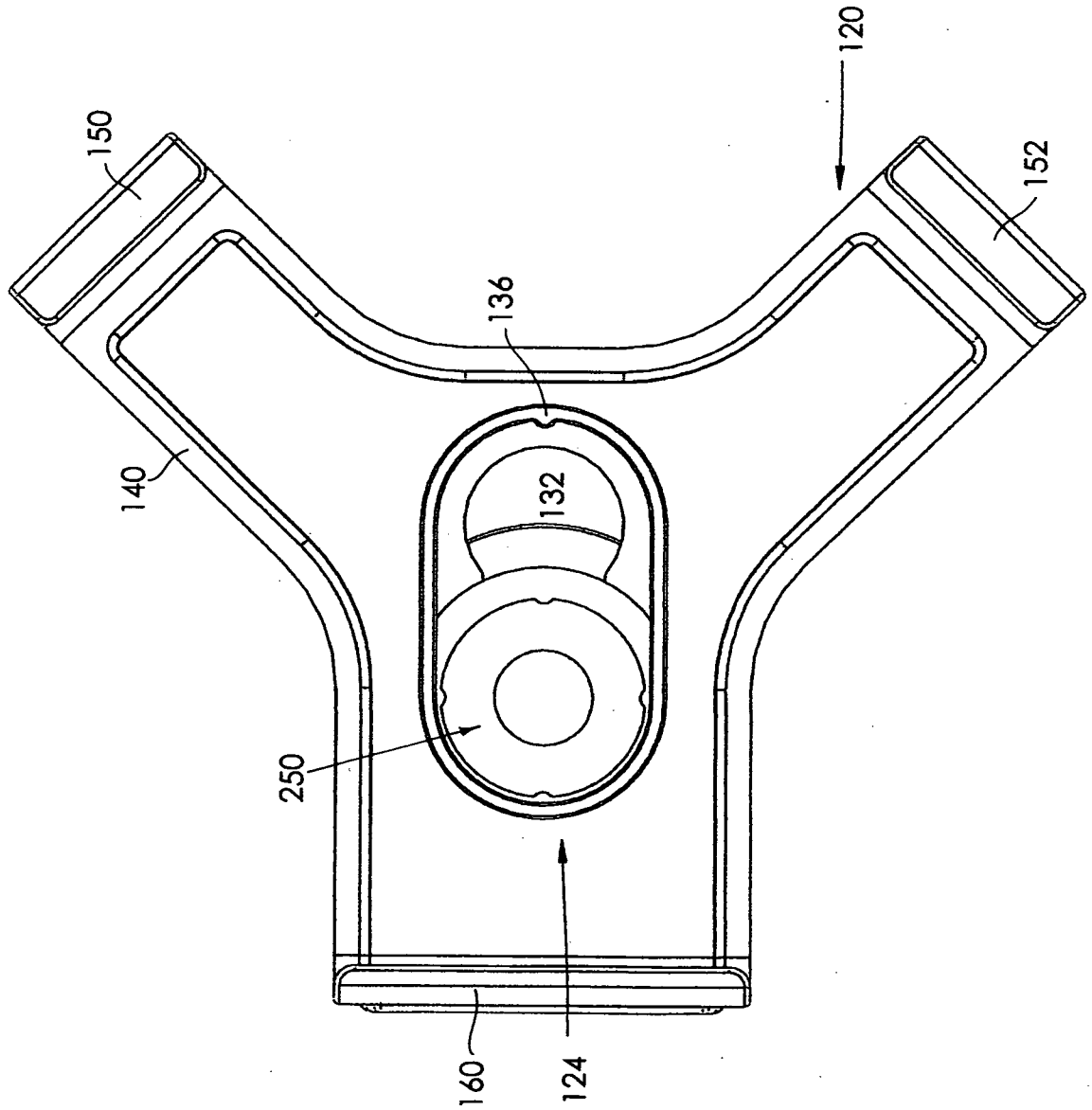

FIG.8

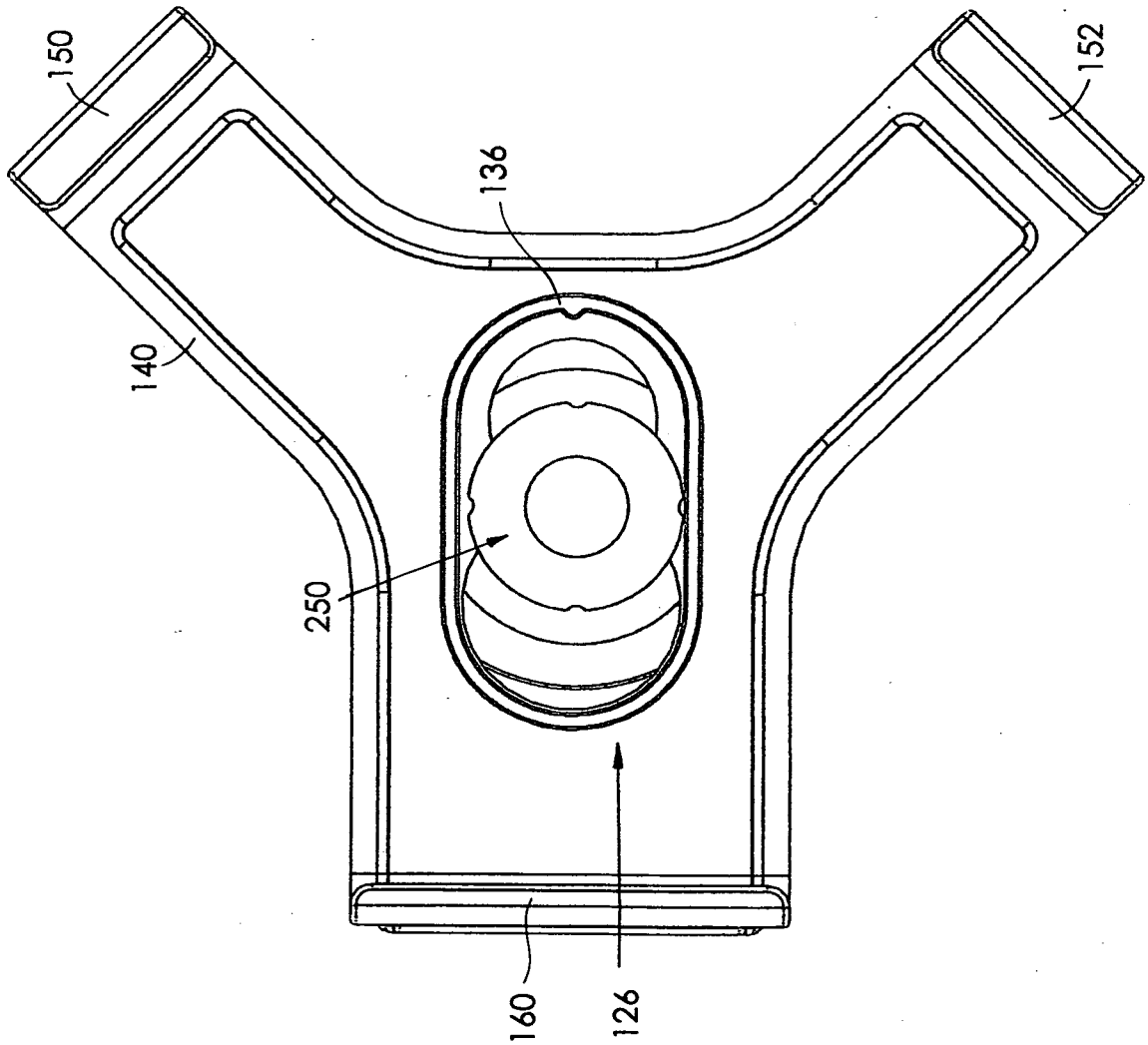

FIG.9

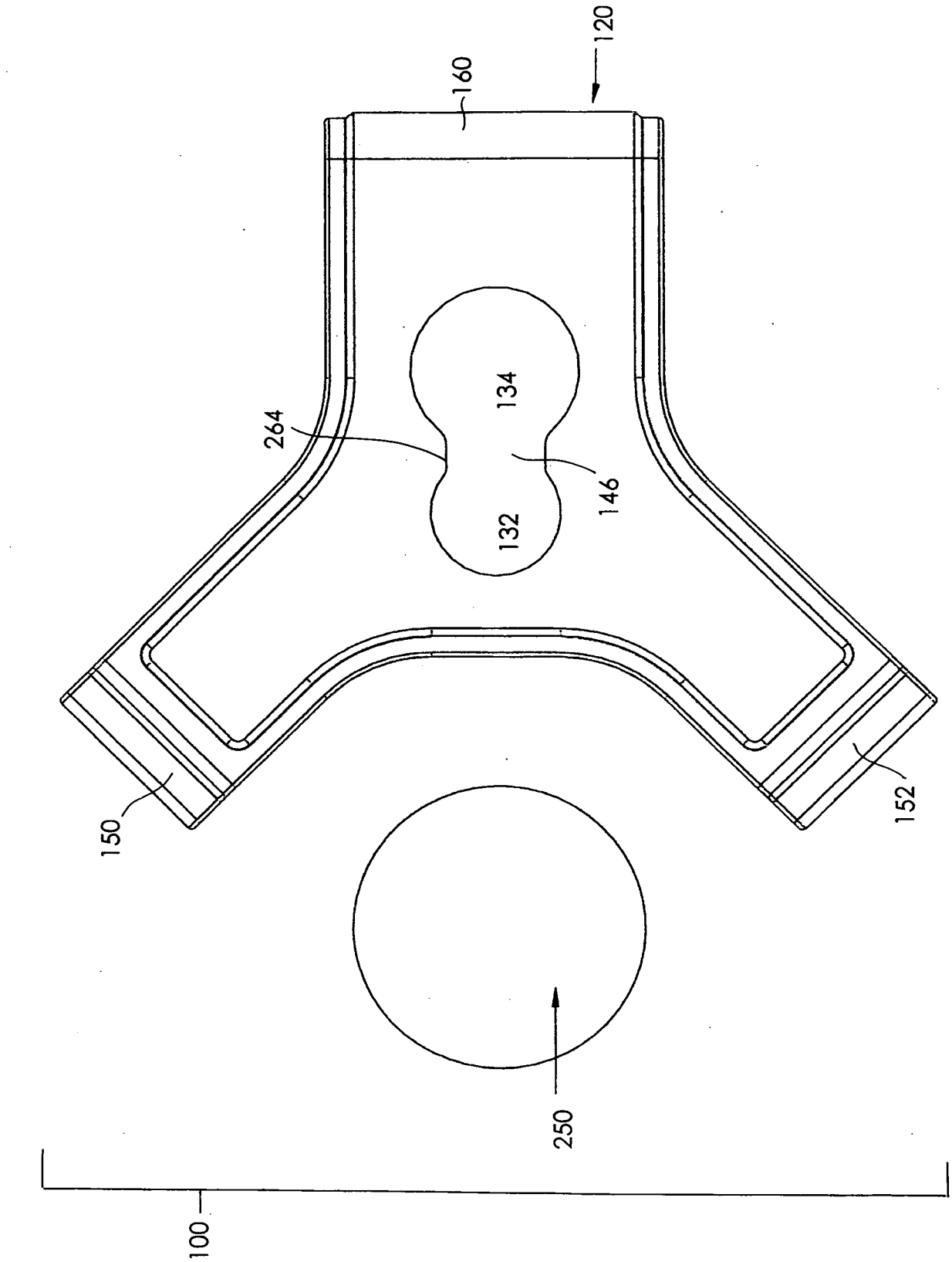

FIG.10

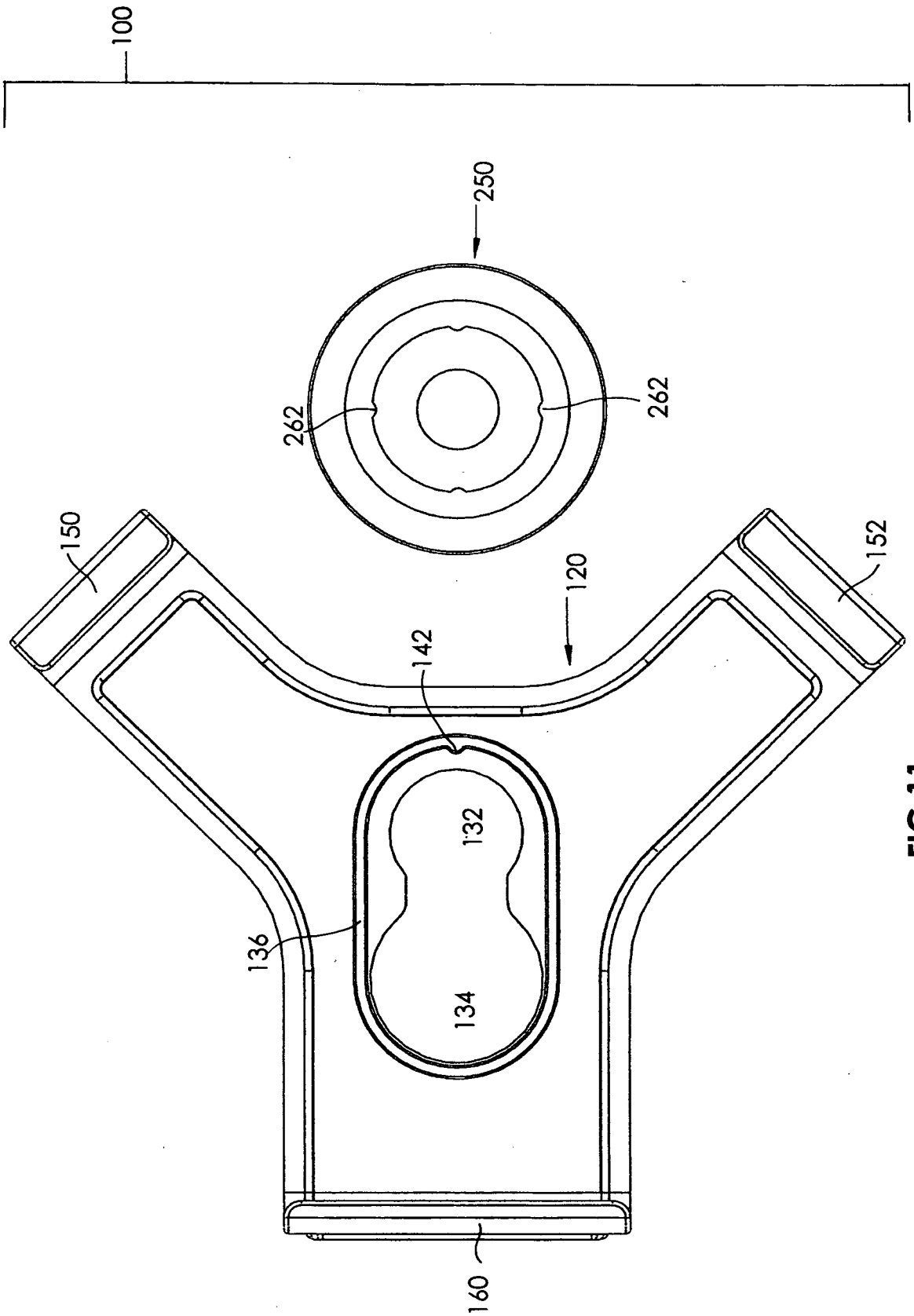

FIG.11

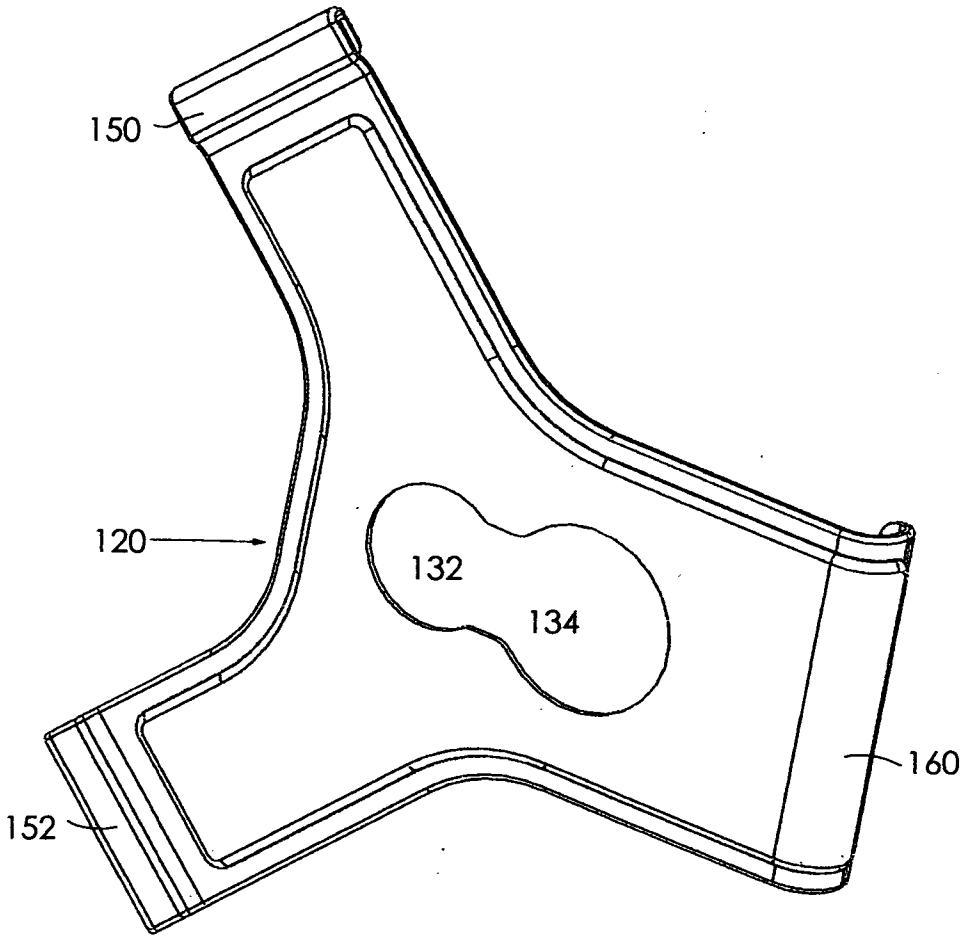

FIG.12

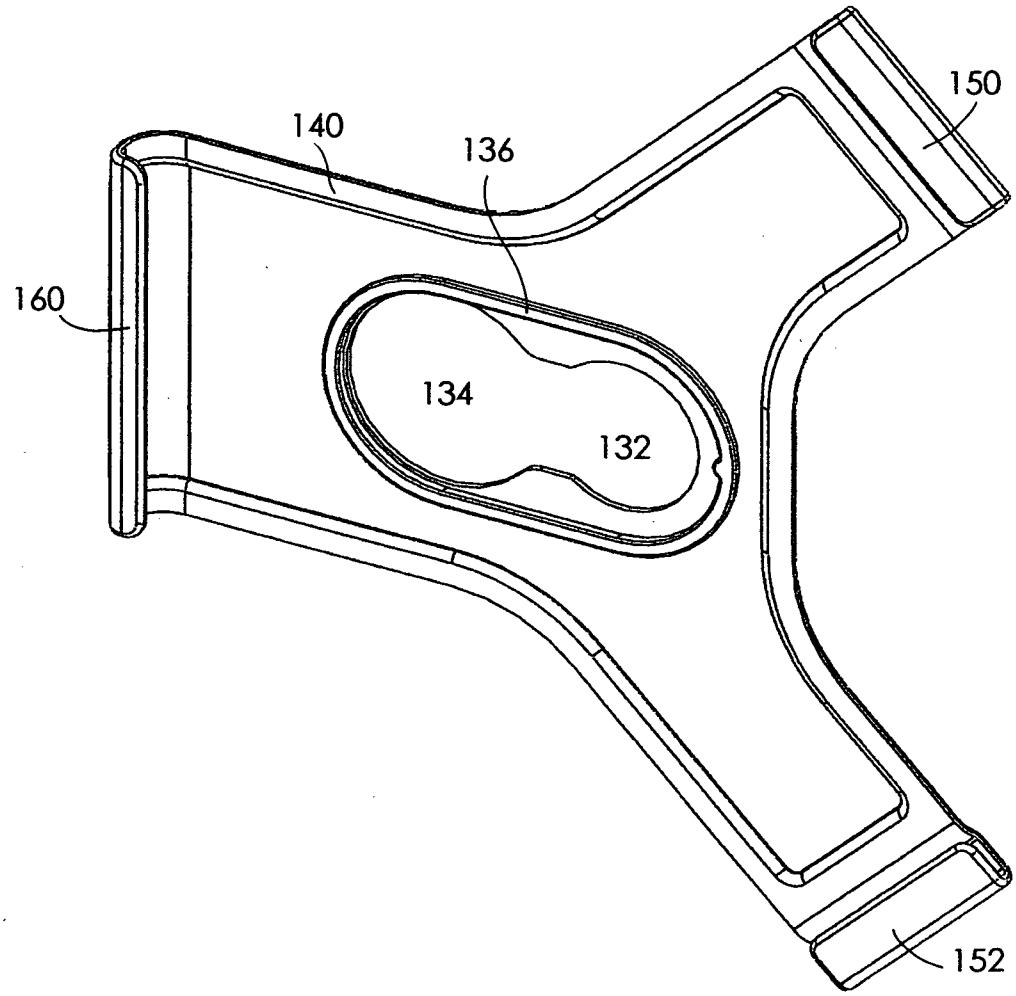

FIG.13

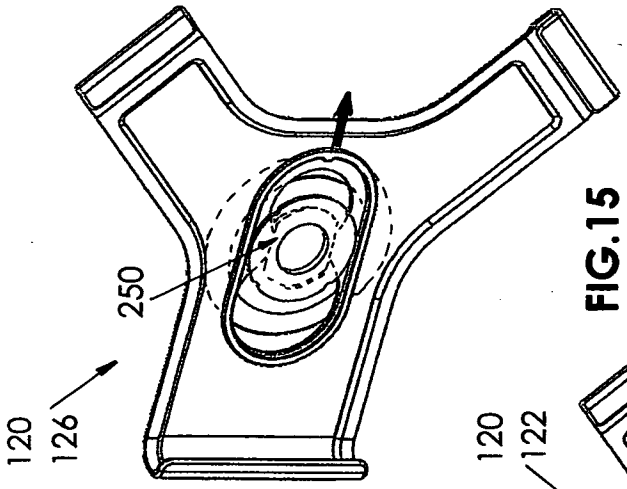

FIG.15

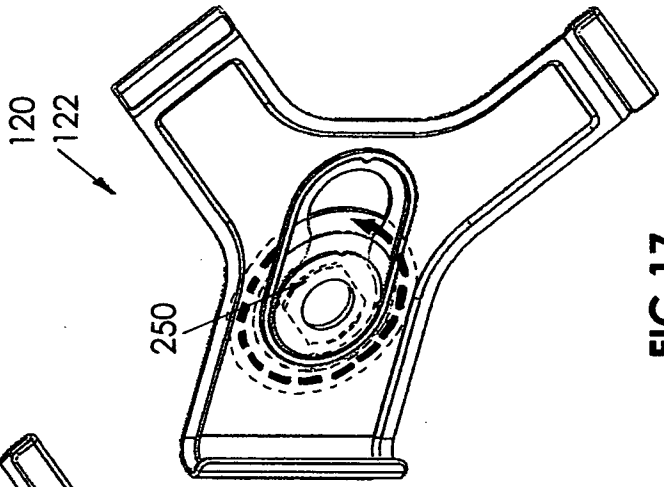

FIG.17

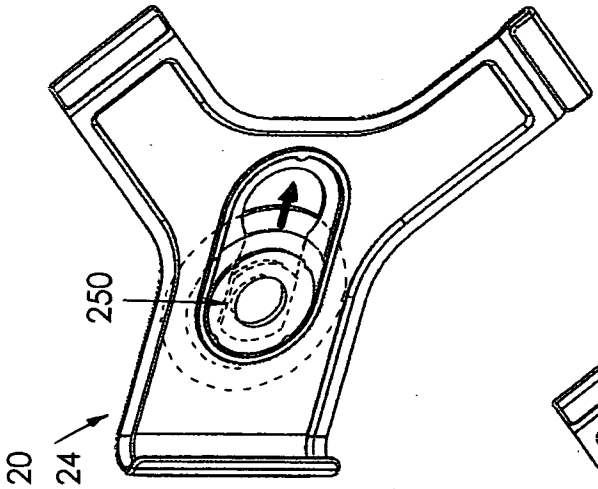

FIG.14

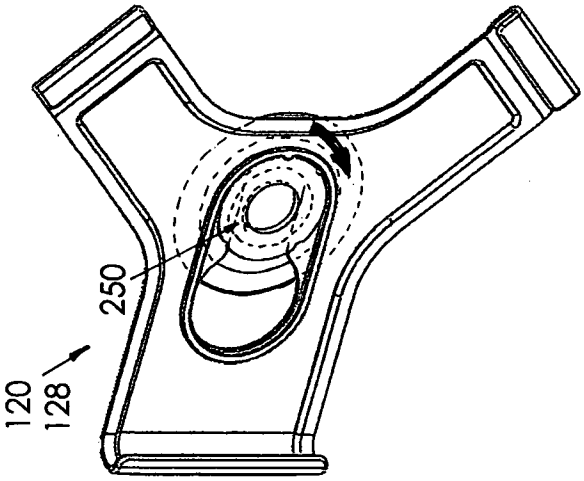

FIG.16

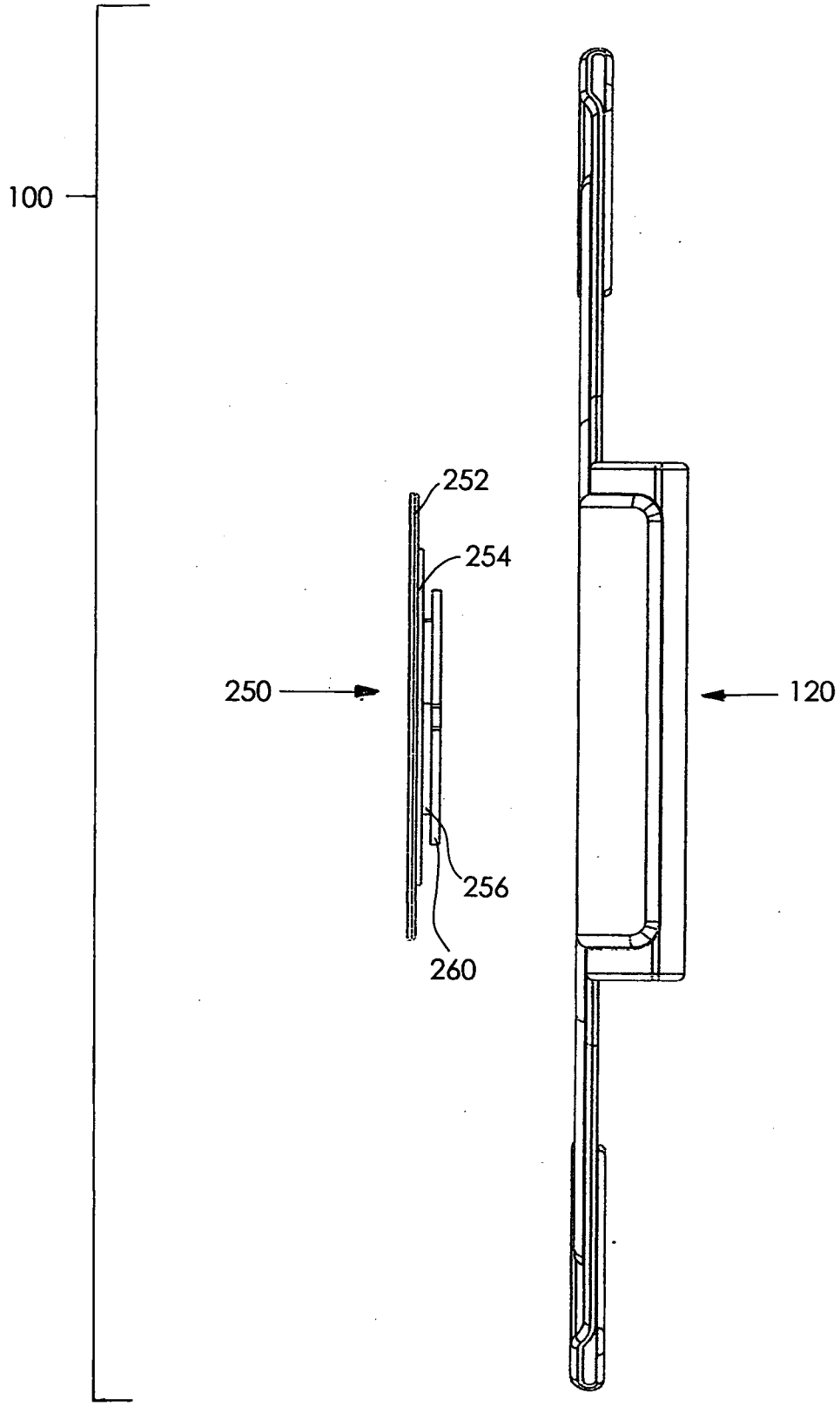

FIG.18

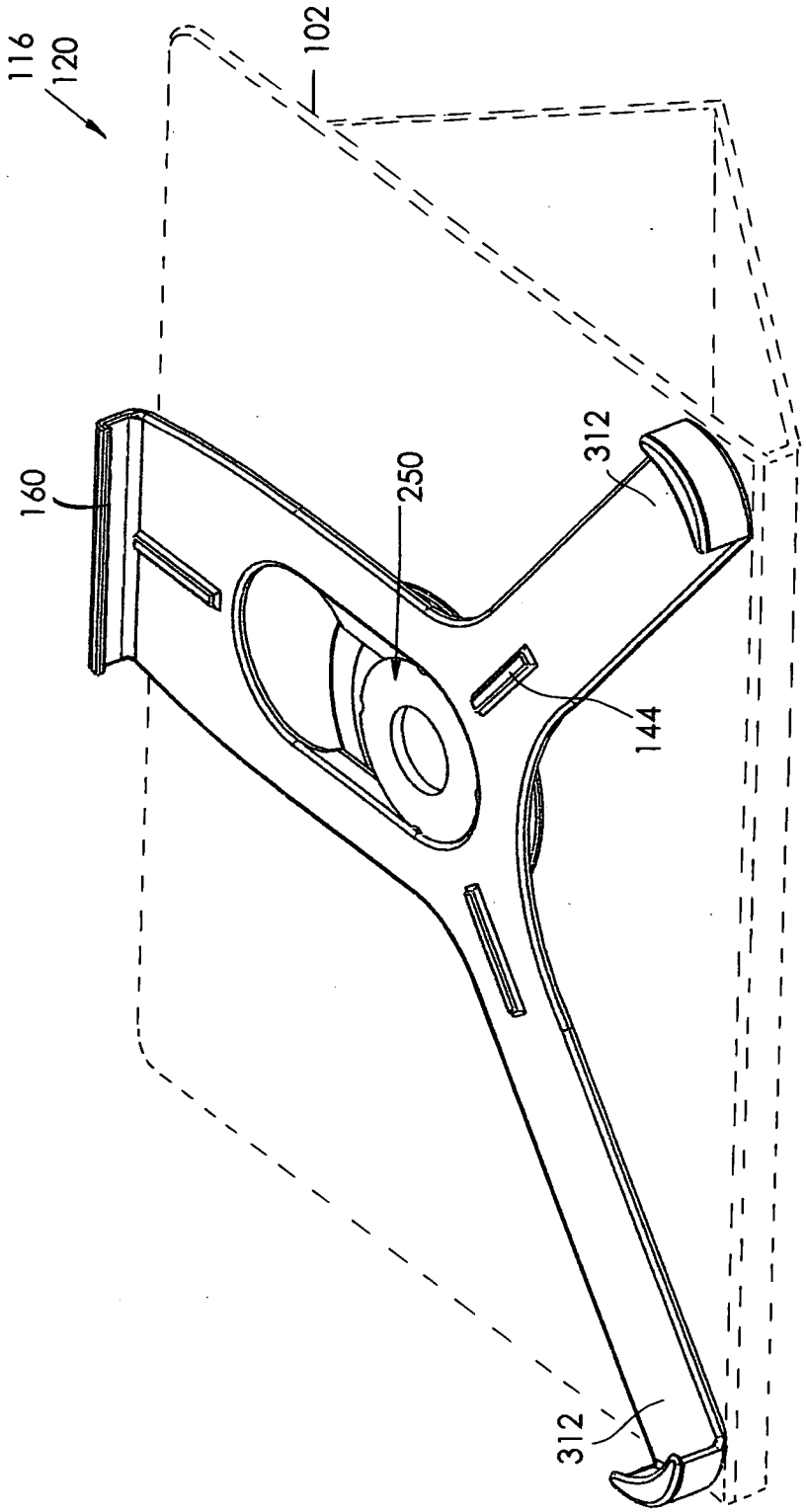

FIG.19

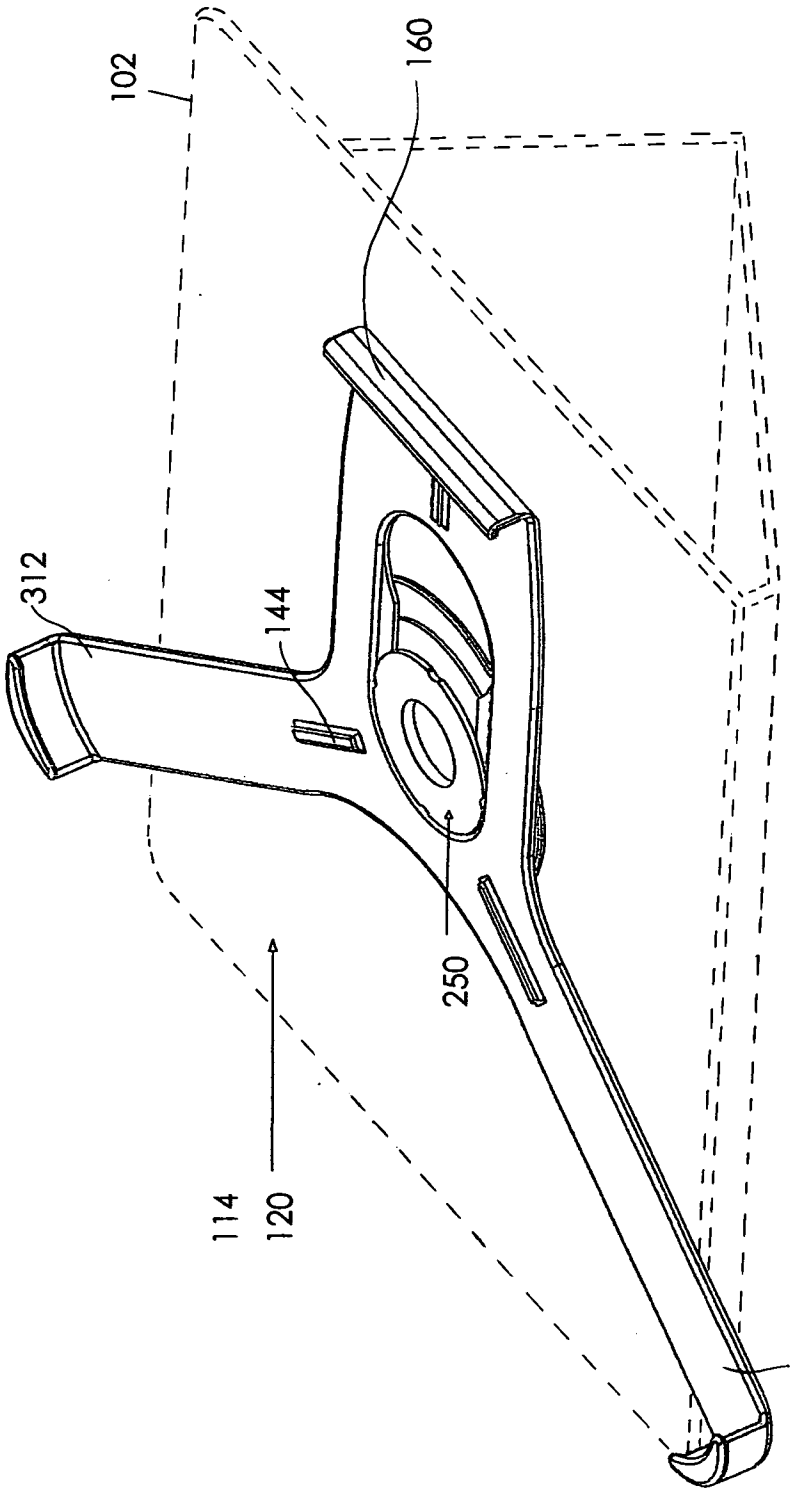

FIG.20

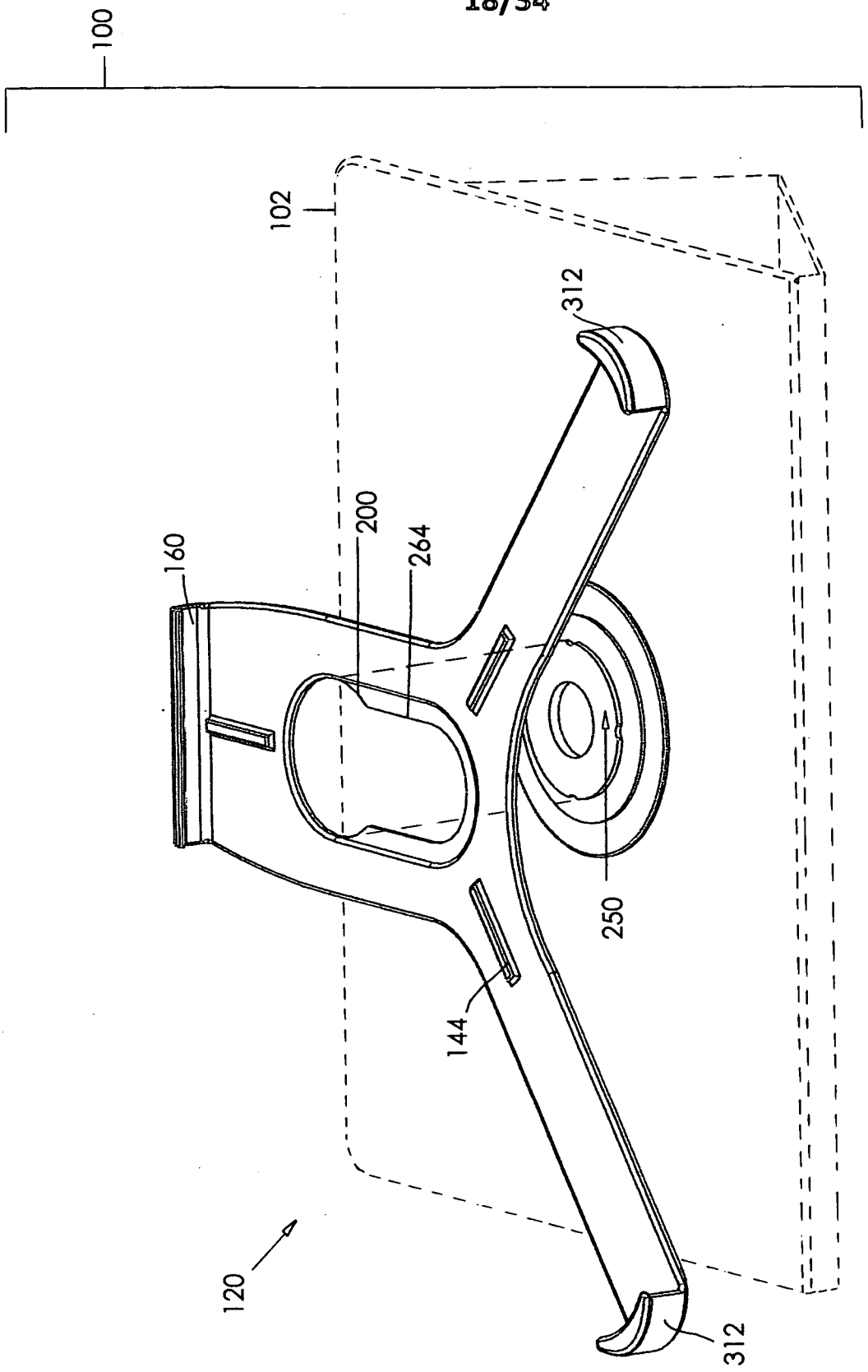

FIG.21

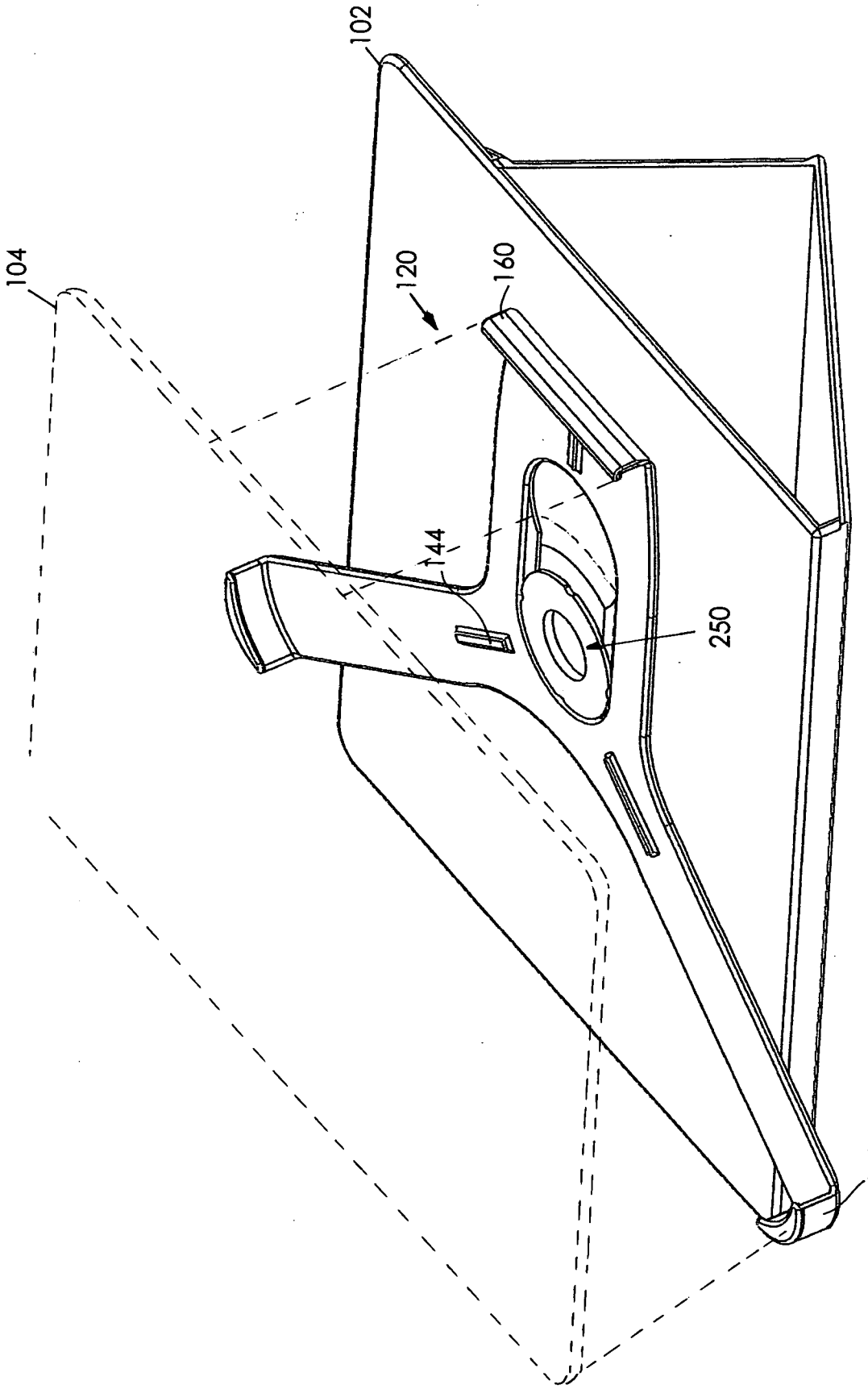

FIG.22

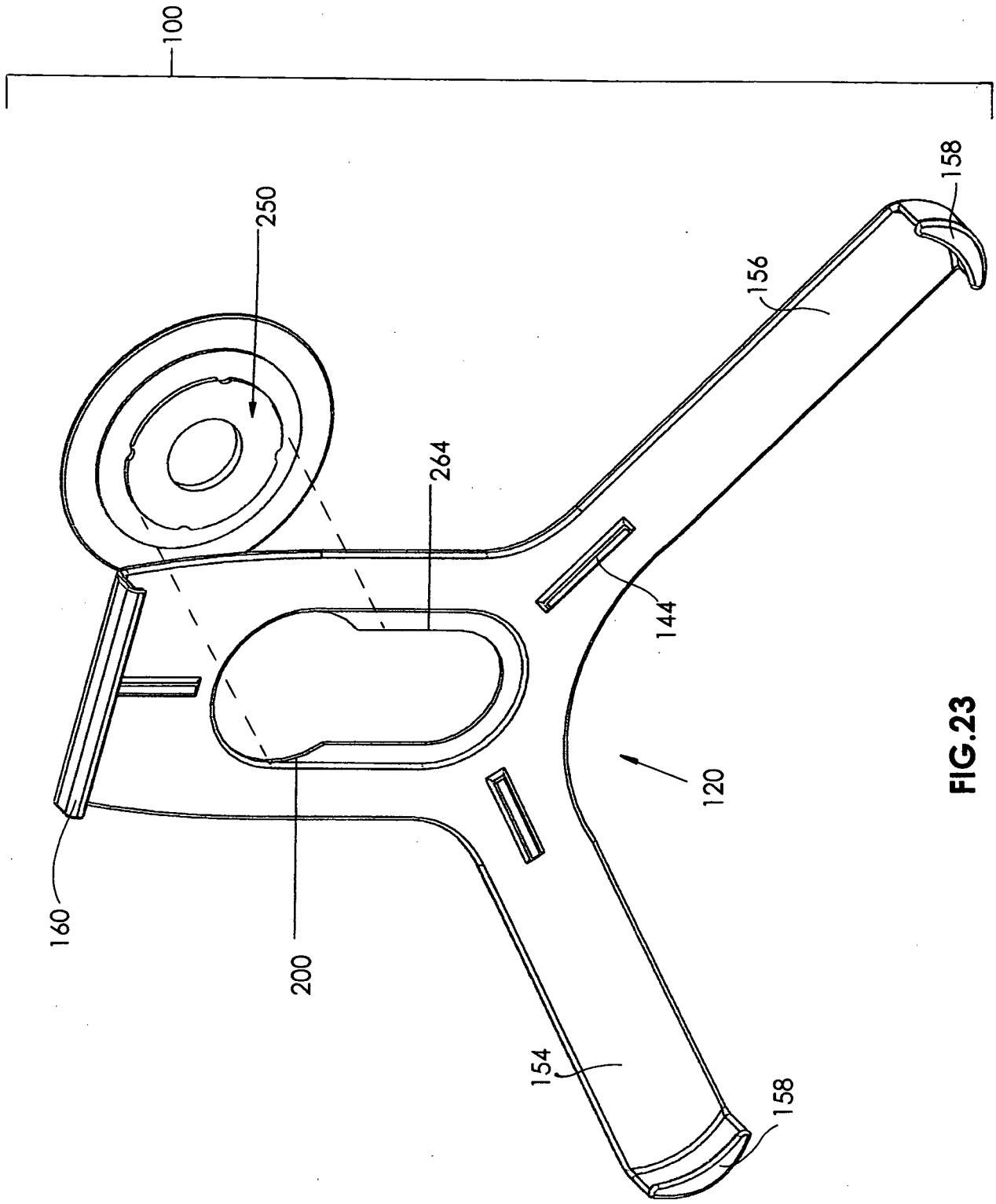

FIG.23

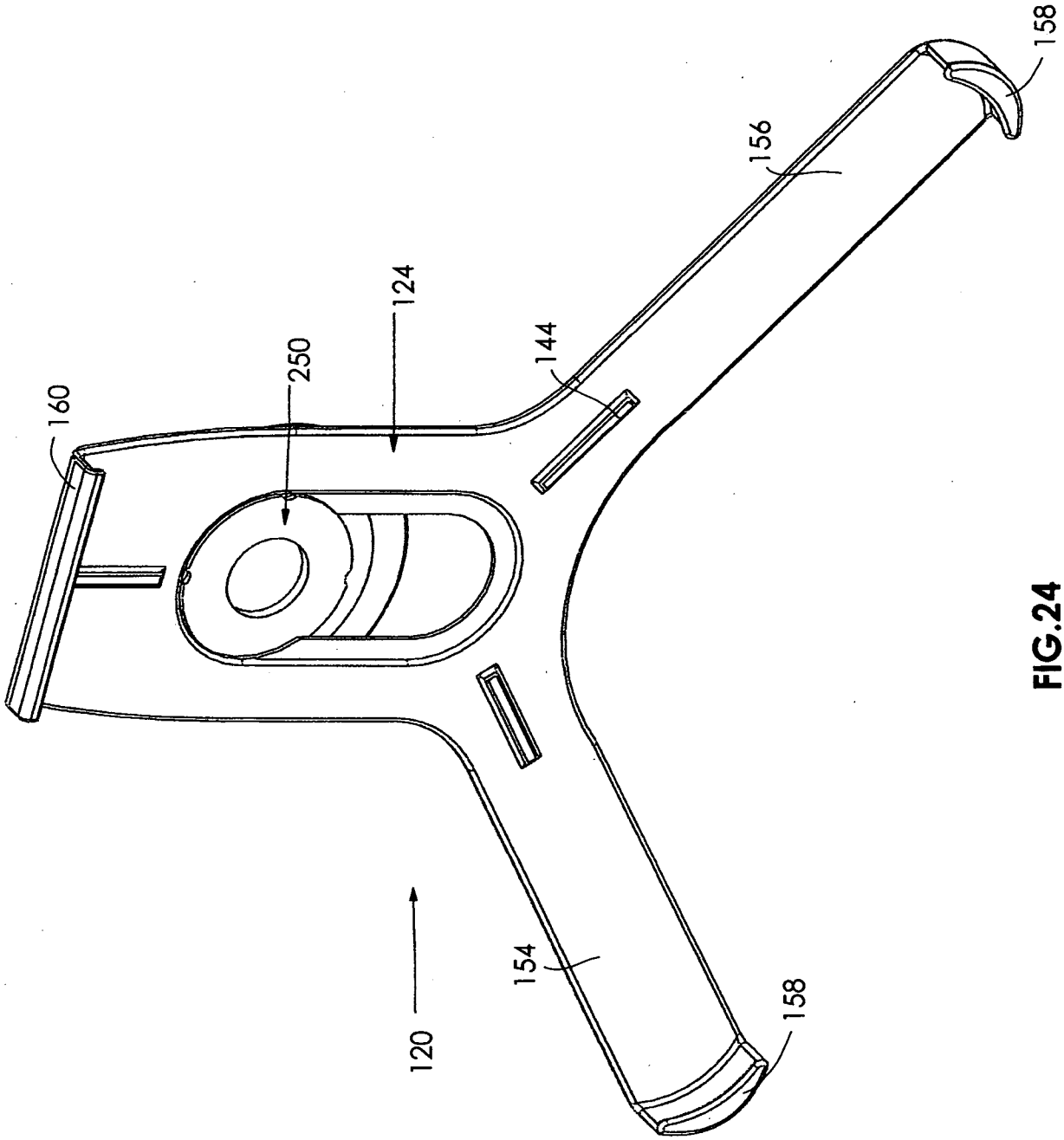

FIG.24

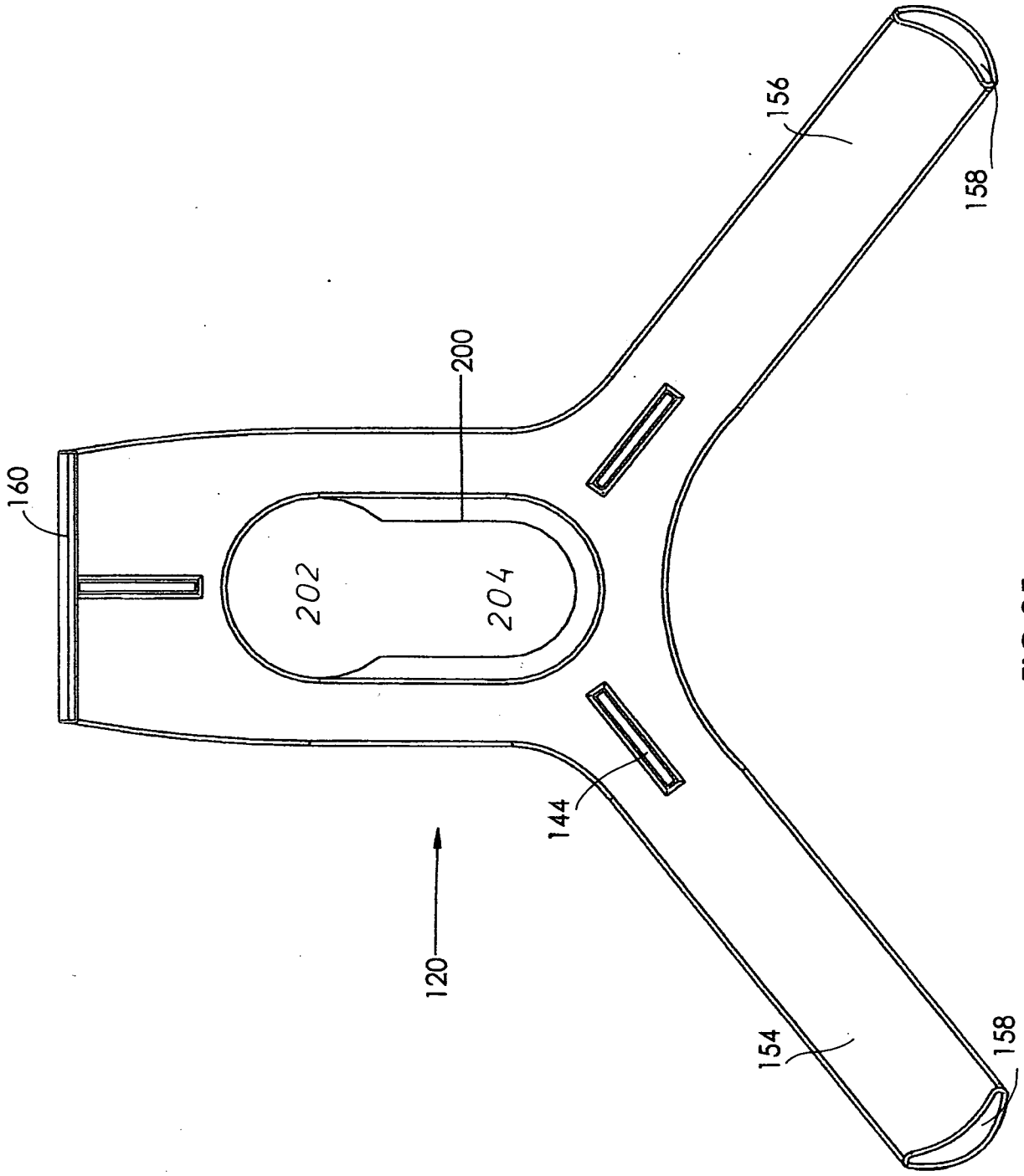

FIG.25

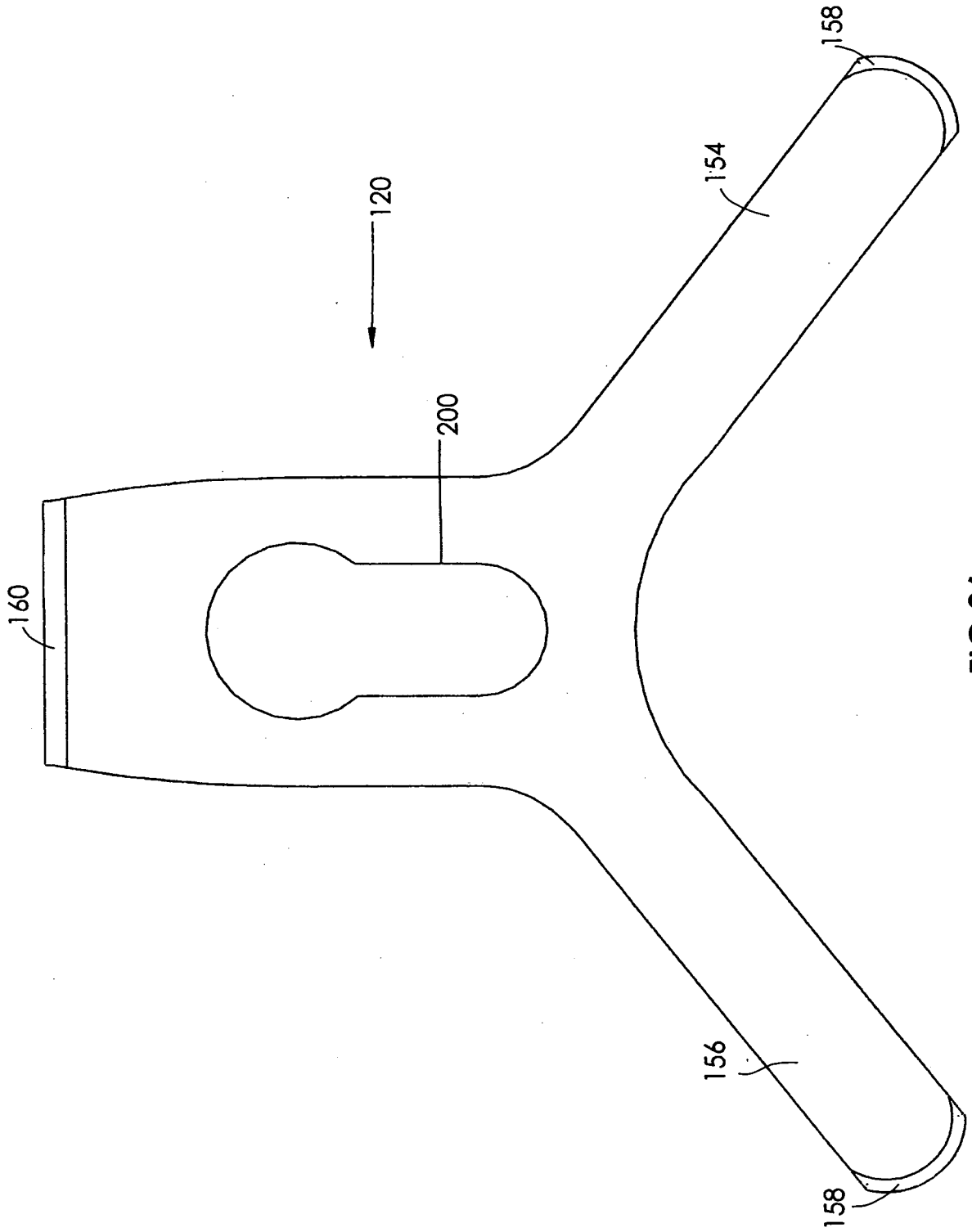

FIG.26

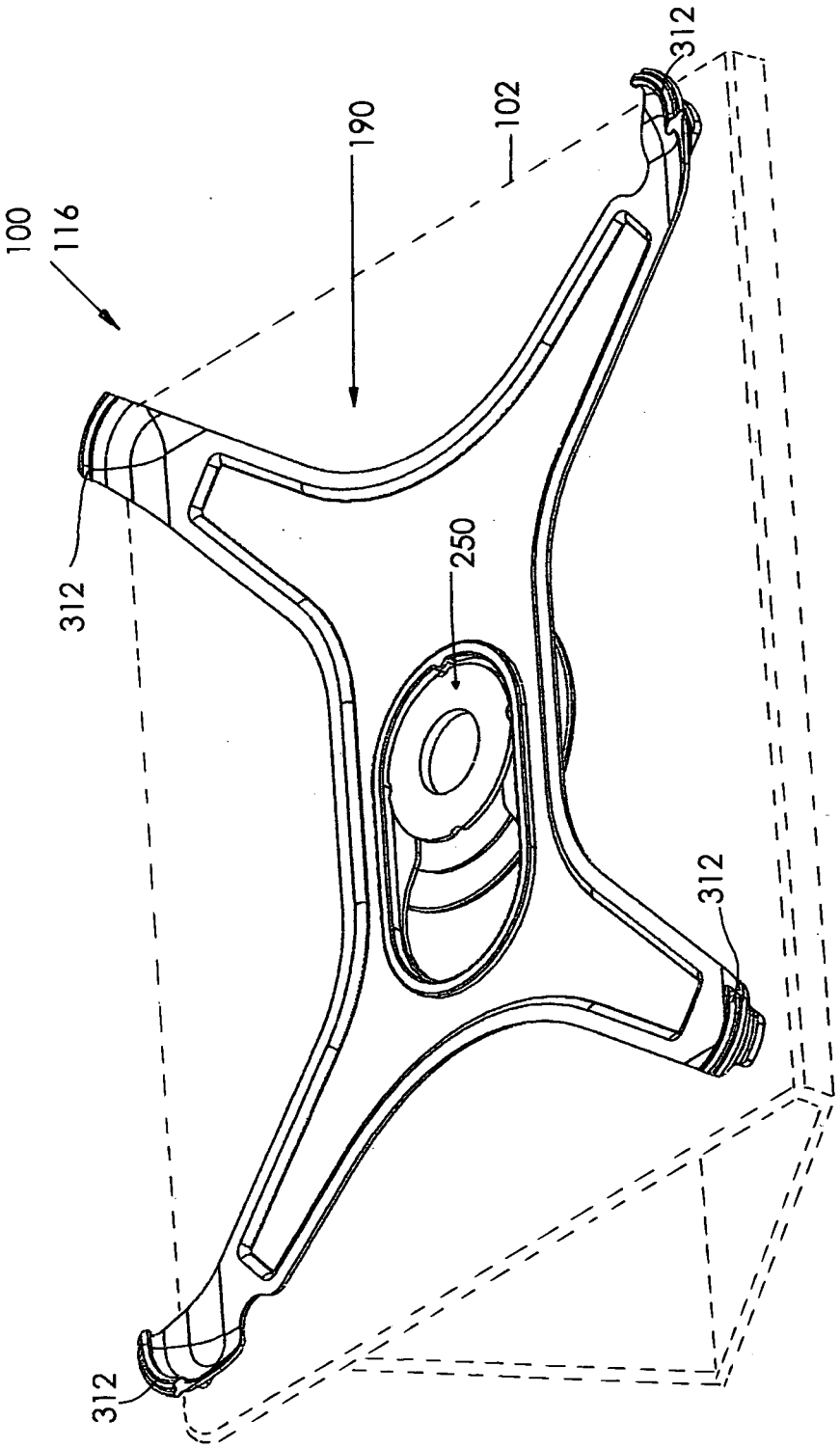

FIG.27

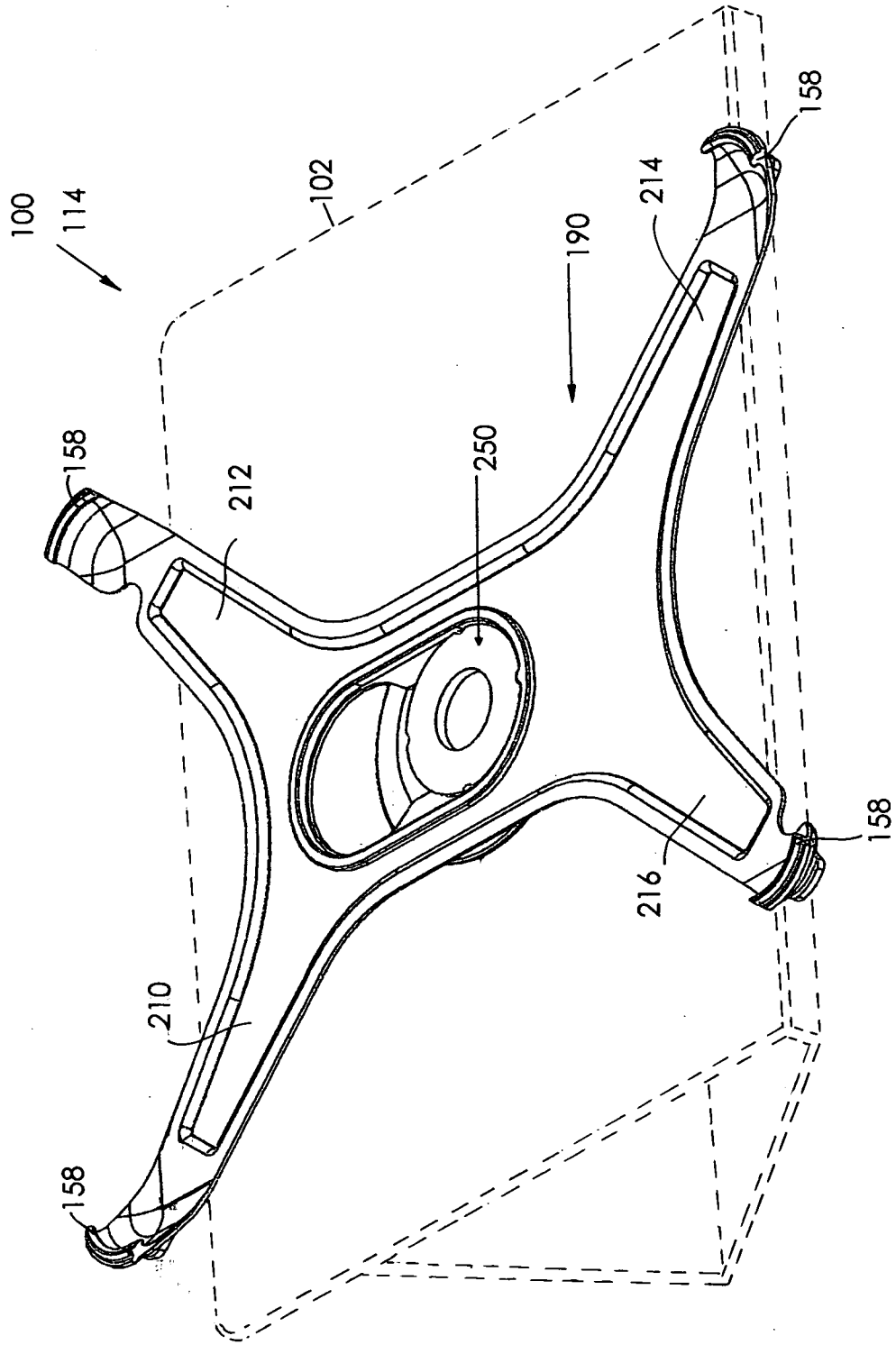

FIG.28

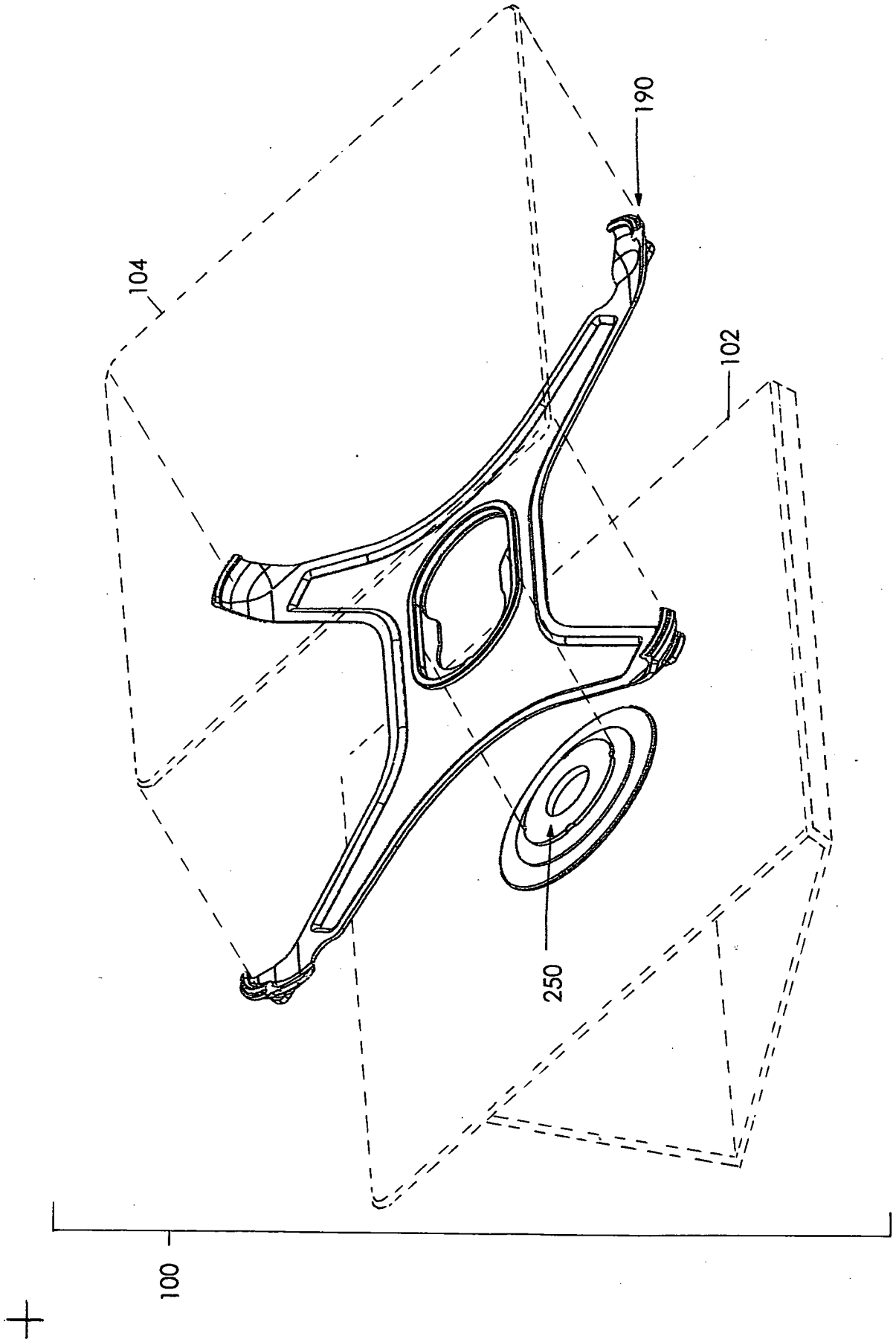

FIG.29

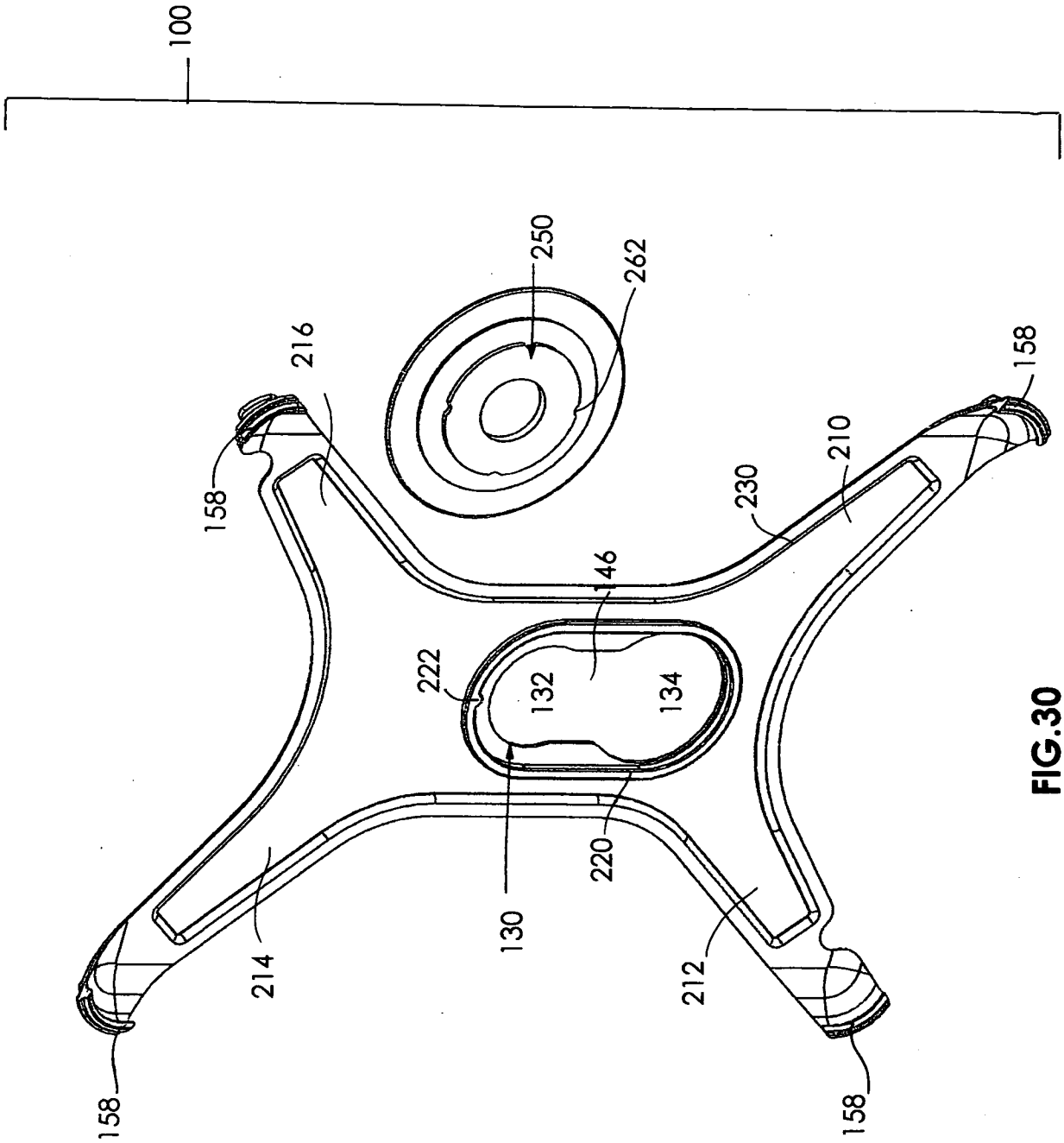
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FIG.30

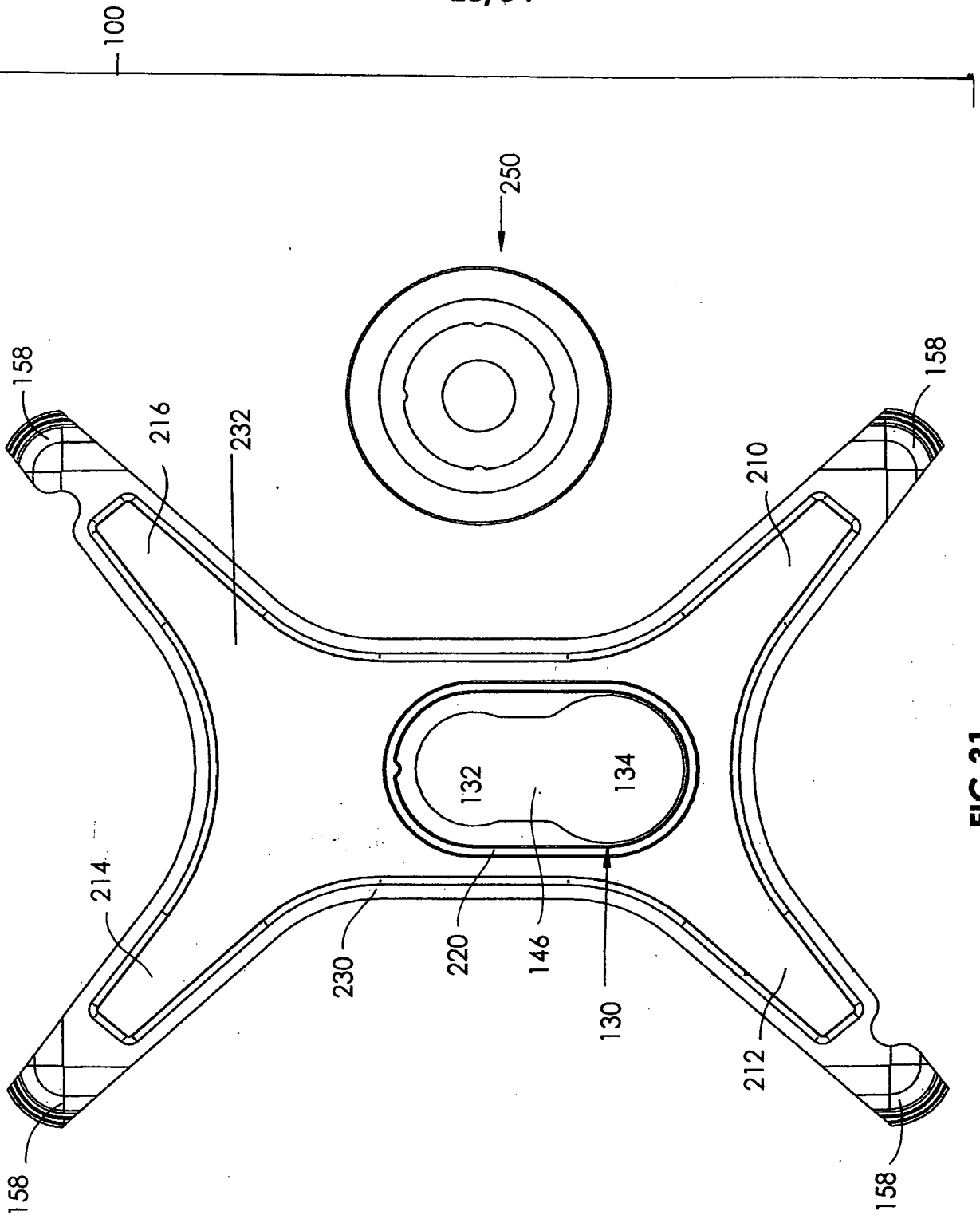
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FIG.31

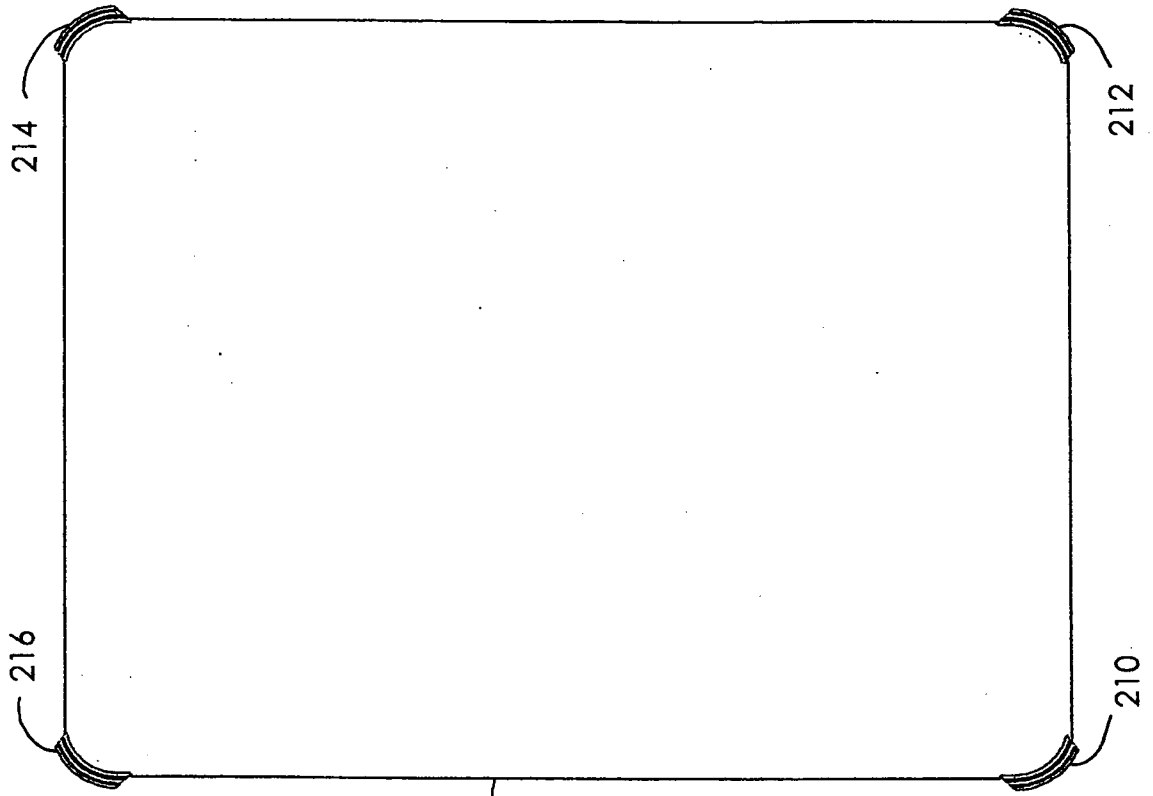

FIG.33

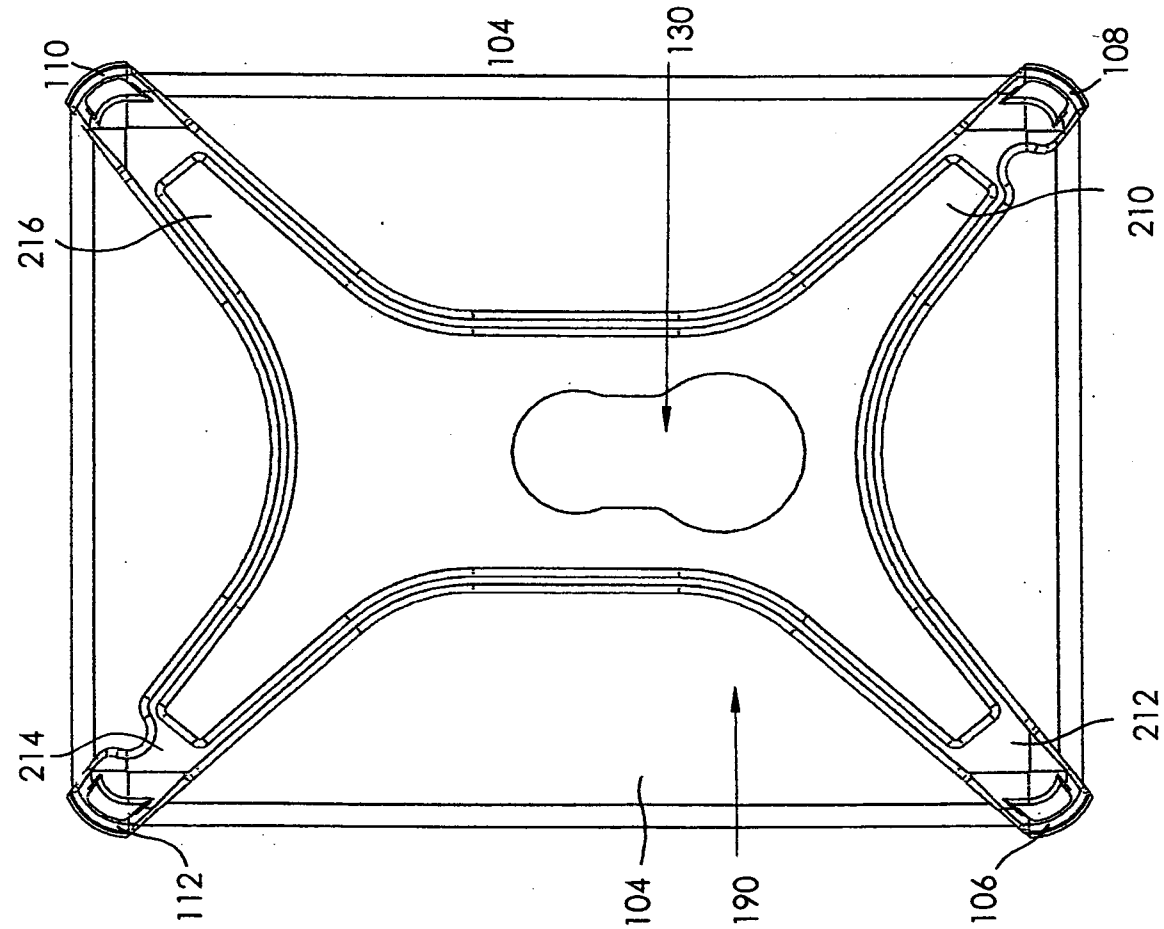

FIG.32

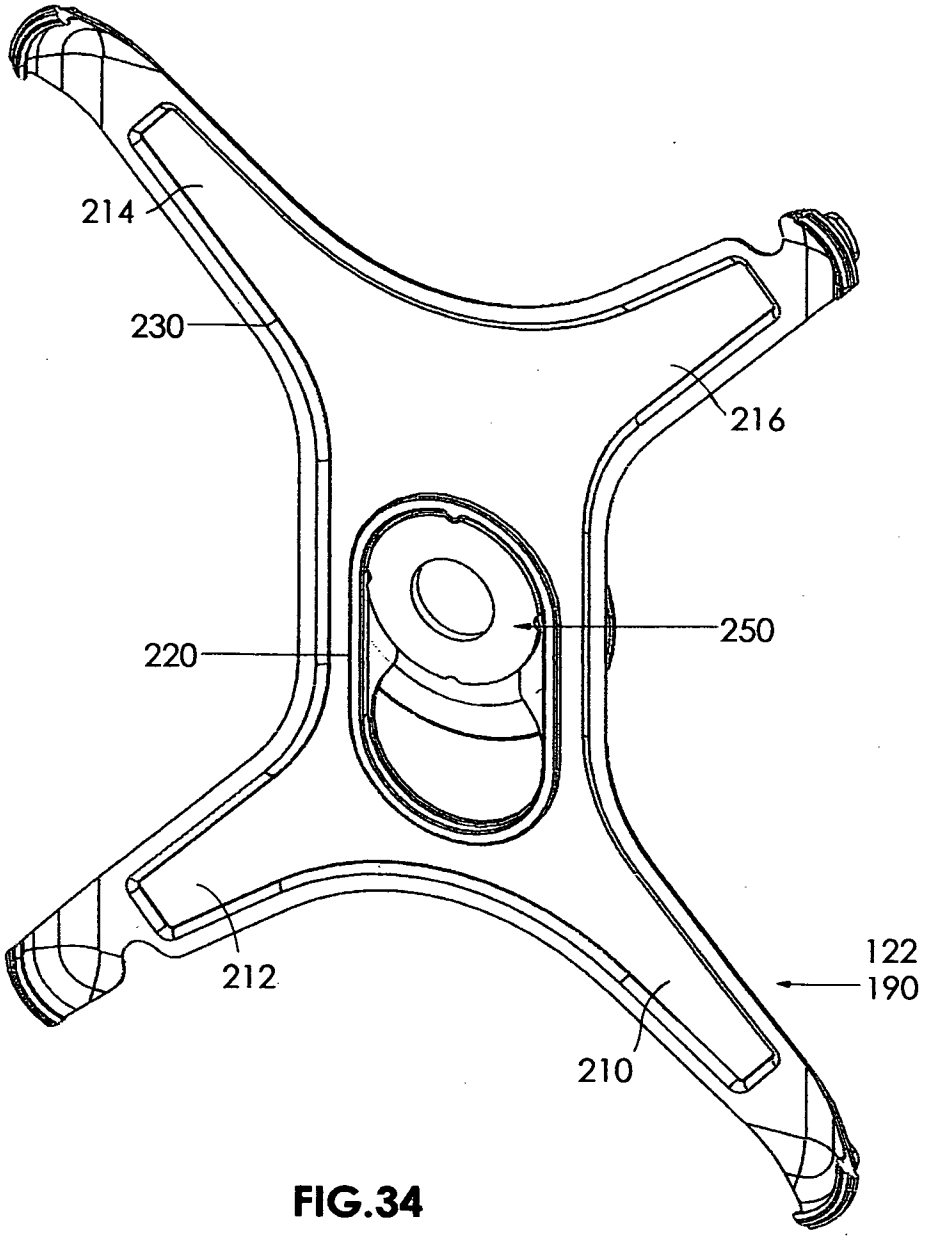

FIG.34

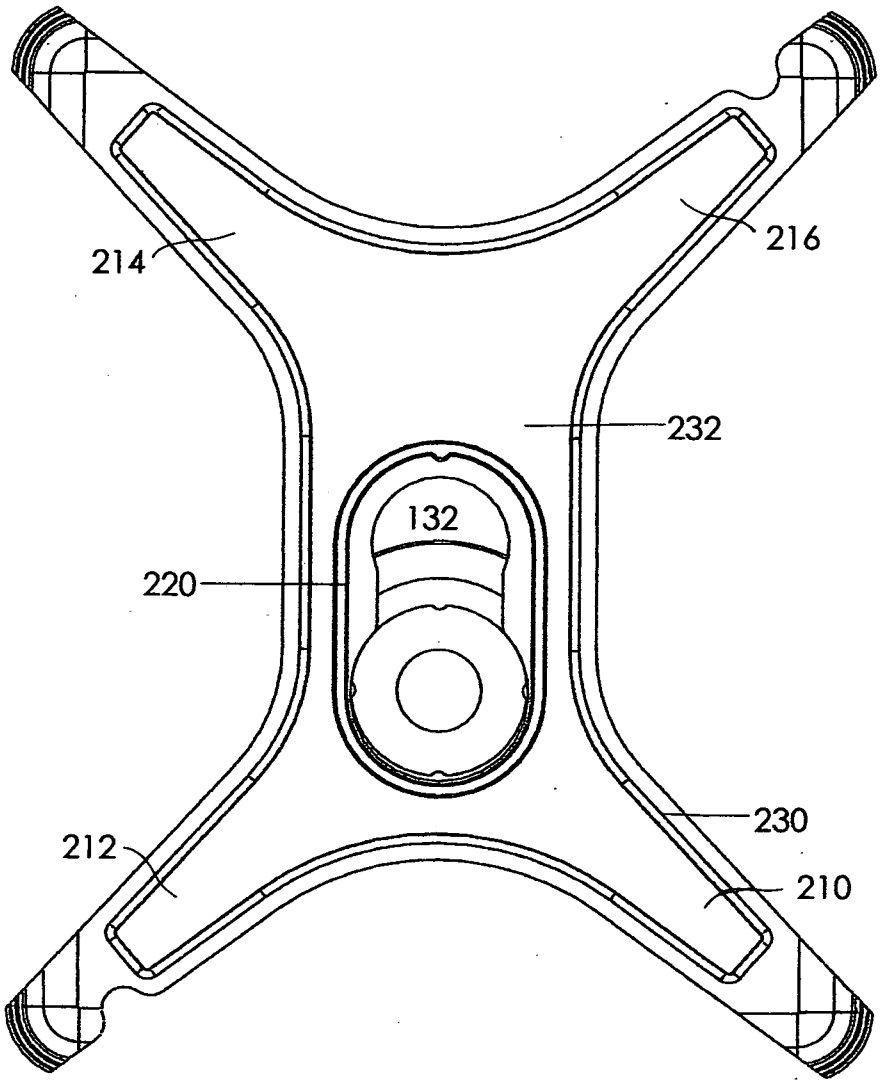

FIG.35

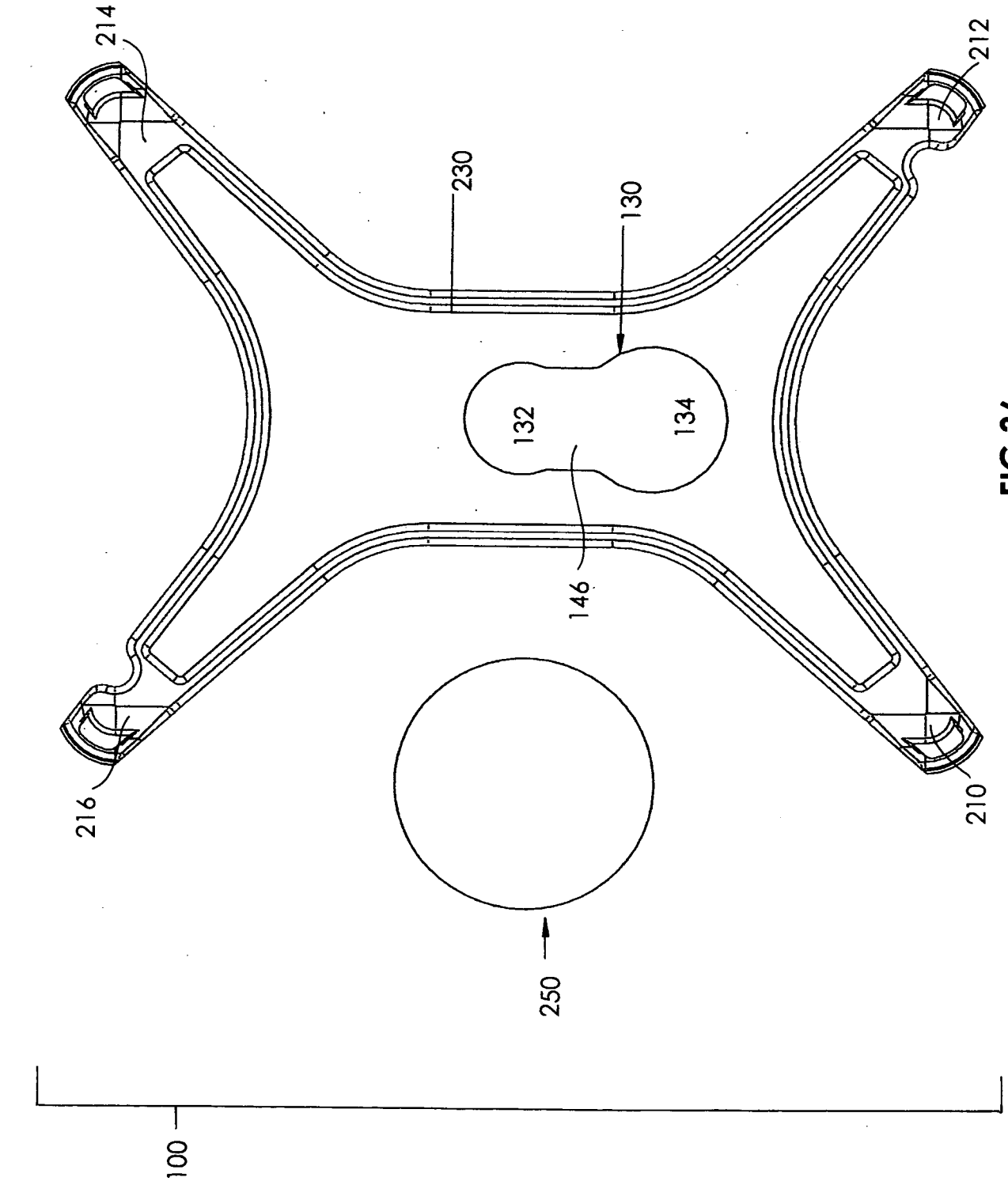

FIG.36

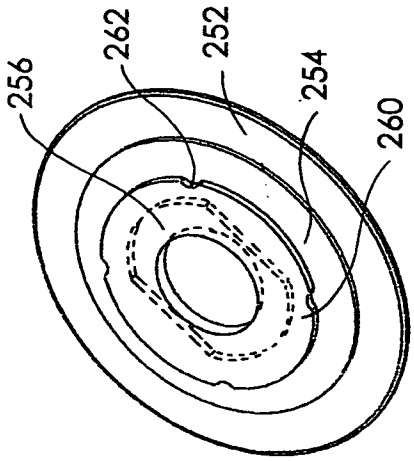

FIG.40

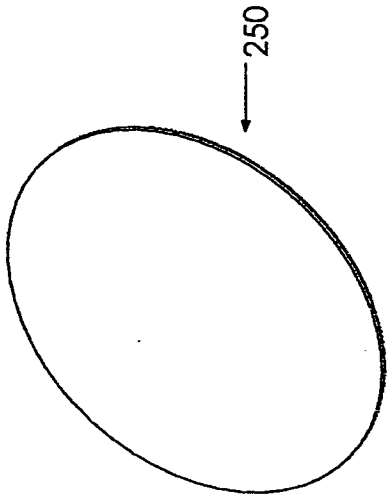

FIG.41

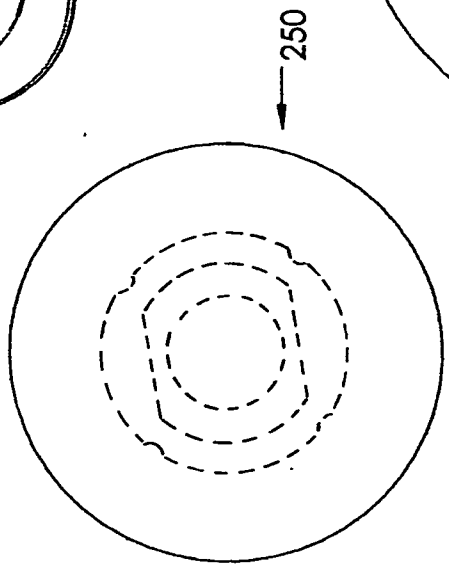

FIG.39

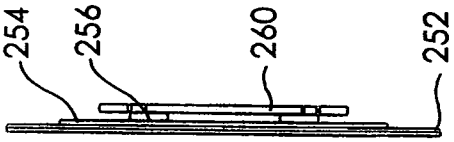

FIG.38

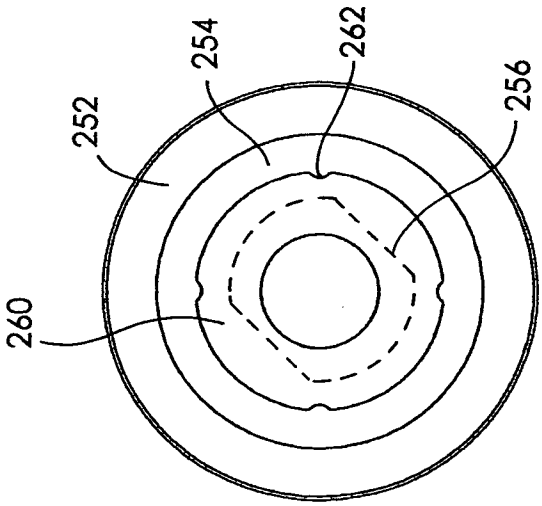

FIG.37

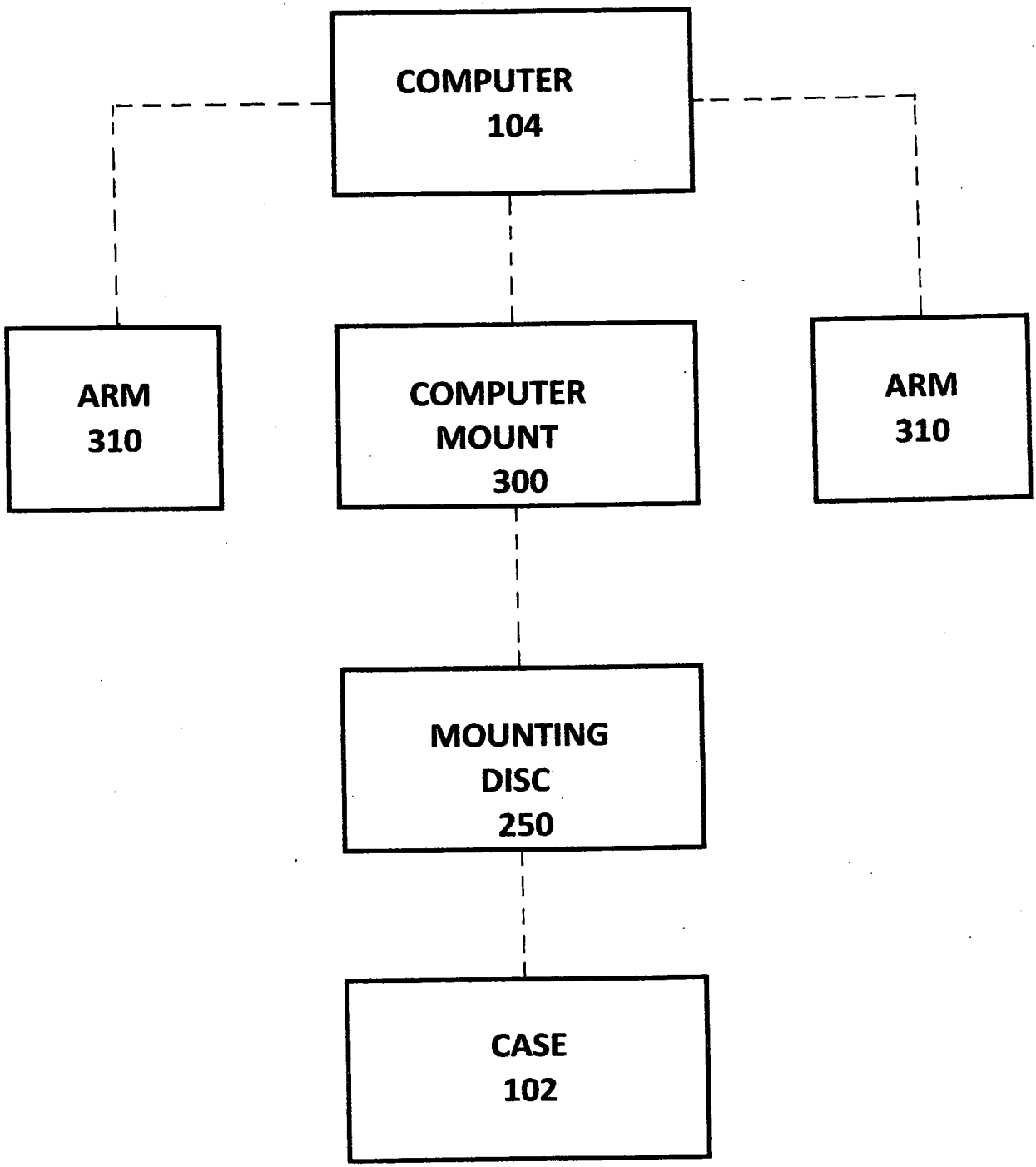
COMPUTER
104
ARM
310
COMPUTER
MOUNT
300
ARM
310
MOUNTING
DISC
250
CASE
102

FIG.42

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 12/00204

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H05K 5/00 (2012.01)
USPC - 361/755
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 361/755

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 361/679.01, 679.02, 755; 439/296, 300 (keyword limited - see search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST (PGPB, USPT, USOC, EPAB, JPAB); GOOGLE; Google Scholar
Terms: holder, cradle, aperture, opening, computer, rotate, surface, locking, arm, position, base, mount, disk, align, channel, pivot, ipad.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2012/0075789 A1 (DeCamp et al.) 29 March 2012 (29.03.2012), entire document, especially abstract, Fig. 1, para [0021], [0025], [0026], [0029], [0032], [0033], [0047], [0048], [0049],	1, 9-10 --- 2-8, 11-20
Y	US 2011/0261509 A1 (Xu et al.) 27 October 2011 (27.10.2011), entire document, especially abstract, para [0005], [0006], [0007], [0008], [0029], [0030], [0032], [0039], [0042]	2-8, 11-20
A	US 2006/0187696 A1 (Lanni) 24 August 2006 (24.08.2006), entire document, especially abstract, para [0002], [0027], [0028], [0030], [0035], [0046].	1-20
A	US 2008/0002369 A1 (Carnevali) 3 January 2008 (03.01.2008), entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 June 2012 (23.06.2012)	11 JUL 2012
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)