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(12) **United States Design Patent**  
**Watanabe**

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(54) **SWITCH SPRING**

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(\*\*) Term: **15 Years**

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**Related U.S. Application Data**

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(30) **Foreign Application Priority Data**

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Nov. 7, 2016 (JP) ..... D2016-024164

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(51) **LOC (12) Cl.** ..... **13-03**

(52) **U.S. Cl.**  
USPC ..... **D13/173; D14/344**

(58) **Field of Classification Search**  
USPC ... D14/138 R, 144, 341, 344, 358, 388, 218,  
D14/440, 250; D10/30-39, 70, 98, 132,  
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(56) **References Cited**

**U.S. PATENT DOCUMENTS**

6,107,586 A \* 8/2000 Takeuchi ..... H01H 13/12  
200/520  
6,114,644 A \* 9/2000 Nishikawa ..... H01H 13/48  
200/406

(Continued)

**OTHER PUBLICATIONS**

Coin Cell Battery Holder—20Mm (Smd), posted Apr. 14, 2017, [retrieved Nov. 25, 2019]. Retrieved from Internet, <URL: https://www.amazon.com/Coin-Cell-Battery-Holder-20Mm/dp/B06ZZJ5SRC >.\*

(Continued)

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(57) **CLAIM**

The ornamental design for a switch spring, as shown and described.

**DESCRIPTION**

FIG. 1 is a top, front, left side perspective view of a first embodiment of a switch spring showing our new design; FIG. 2 is a rear, bottom, right side perspective view thereof; FIG. 3 is a front view thereof, the rear view being a mirror image of the front view;

FIG. 4 is a top plan view thereof;

FIG. 5 is a bottom plan view thereof;

FIG. 6 is a left side view thereof;

FIG. 7 is a right side view thereof;

FIG. 8 is a cross sectional view taken along the line 8-8 of FIG. 4;

FIG. 9 is a top, front, left side perspective view of a second embodiment of a switch spring showing my new design;

FIG. 10 is a rear, bottom, right side perspective view thereof; FIG. 11 is a front view thereof, the rear view being a mirror image of the front view;

FIG. 12 is a top plan view thereof;

FIG. 13 is a bottom plan view thereof;

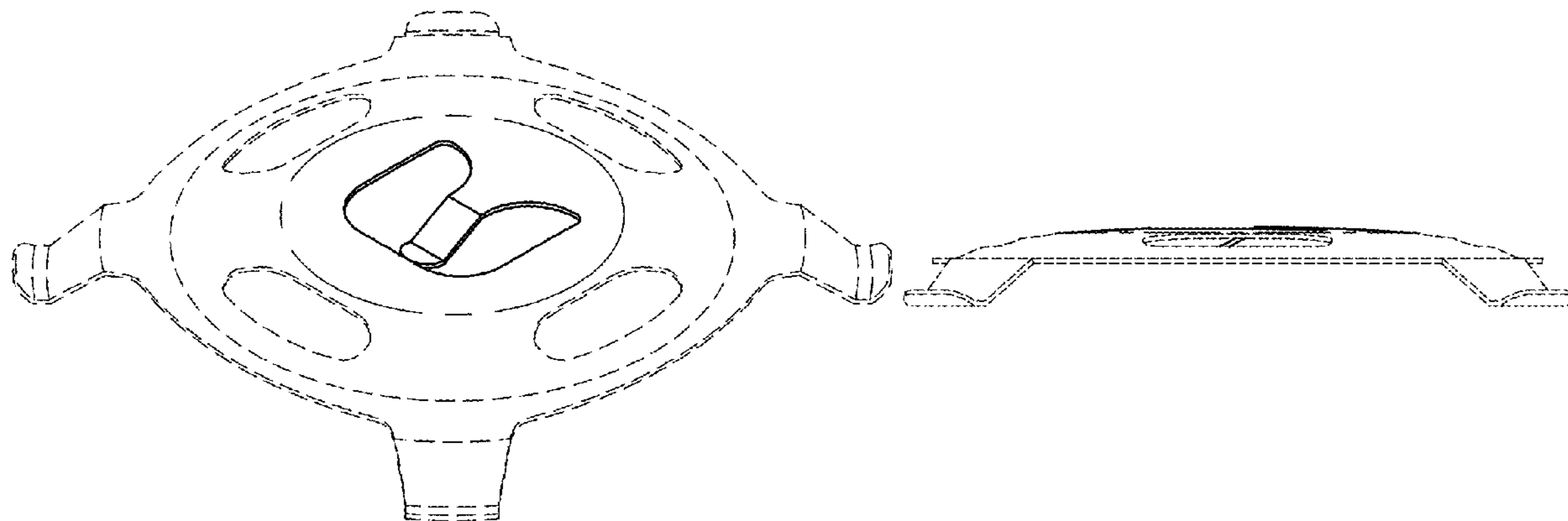
FIG. 14 is a left side view thereof;

FIG. 15 is a right side view thereof; and,

FIG. 16 is a cross sectional view taken along the line 16-16 of FIG. 12.

The broken lines depict portions of the article that form no part of the claimed design. The short-dash-long-dash broken

(Continued)



line shown in Embodiment 1 show the bounds of the claim and forms no part of the claimed design.

**1 Claim, 16 Drawing Sheets**

(30) **Foreign Application Priority Data**

Nov. 7, 2016 (JP) ..... D2016-024165  
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(58) **Field of Classification Search**

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 D13/178, 184, 199  
 CPC ..... A41D 1/002; A41D 19/0034; G06F 1/04;  
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 1/1626; G06F 1/1628; G06F 1/163; G06F  
 1/1635; G06F 1/3203; G06Q 20/10;  
 G06Q 20/12; G06Q 20/108; G06Q  
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 H04M 1/04; H04M 1/05; H04M 1/667;  
 H04M 1/6058; Y02B 60/1217; H01H  
 13/14; H01H 13/48; H01H 13/36; H01H  
 13/365; H01H 13/40; H01H 13/42; H01H  
 13/50; H01H 2215/004; H01H 2215/006;  
 H01H 2215/036; H01H 2227/022

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,351,205 B1 \* 2/2002 Armstrong ..... H01C 10/106  
 338/114  
 6,756,554 B1 \* 6/2004 Hu ..... H01H 13/48  
 200/520

D561,706 S \* 2/2008 Mishima ..... D13/171  
 D621,373 S \* 8/2010 Asada ..... D13/171  
 D650,302 S \* 12/2011 Greubel ..... D10/128  
 D700,535 S \* 3/2014 Graf ..... D10/128  
 D730,764 S \* 6/2015 Graf ..... D10/128  
 9,111,700 B2 \* 8/2015 Liu ..... H01H 13/52  
 D761,212 S \* 7/2016 Muramoto ..... D13/171  
 9,417,698 B2 \* 8/2016 Ishikawa ..... G06F 1/169  
 9,793,072 B2 \* 10/2017 Watanabe ..... H01H 13/48  
 9,847,191 B2 \* 12/2017 Nakase ..... H01H 13/14  
 9,916,945 B2 \* 3/2018 Niu ..... H01H 23/12  
 10,068,725 B2 \* 9/2018 Hebras ..... H01H 13/14  
 10,083,806 B2 \* 9/2018 Knopf ..... H01H 13/14  
 10,096,437 B2 \* 10/2018 Watanabe ..... H01H 13/14  
 10,096,439 B2 \* 10/2018 Wakuda ..... H01H 13/78  
 10,115,541 B2 \* 10/2018 Wakuda ..... H05K 1/181  
 10,304,641 B2 \* 5/2019 Watanabe ..... H01H 13/48  
 10,483,056 B2 \* 11/2019 Wakuda ..... H01H 13/78  
 10,515,769 B2 \* 12/2019 Doro ..... H01H 9/02  
 2008/0277251 A1 \* 11/2008 Tatman ..... H01H 13/48  
 200/17 B  
 2014/0116865 A1 \* 5/2014 Leong ..... G06F 3/0202  
 200/344  
 2018/0068810 A1 \* 3/2018 Wakuda ..... H01H 13/78

OTHER PUBLICATIONS

Jameco Reliapro WJ-CR1220-1 CR1220 Coin Cell Battery Holder  
 PC Mount (Pack of 20), posted unknown, [retrieved Nov. 25, 2019].  
 Retrieved from Internet, <URL: <https://www.amazon.com/Jameco-Reliapro-WJ-CR1220-1-CR1220-Battery/dp/B07FJDJF12#feature-bullets-btf>>.\*  
 Home > All Industries > Electrical Equipment & Supplies >  
 Batteries > Other Batteries, posted unknown, [retrieved Nov. 25,  
 2019]. Retrieved from Internet, <URL: [https://www.alibaba.com/product-detail/AG10-battery-retainer-3v-AG10-LR1130\\_60287094429.html](https://www.alibaba.com/product-detail/AG10-battery-retainer-3v-AG10-LR1130_60287094429.html)>.\*

\* cited by examiner

Fig. 1

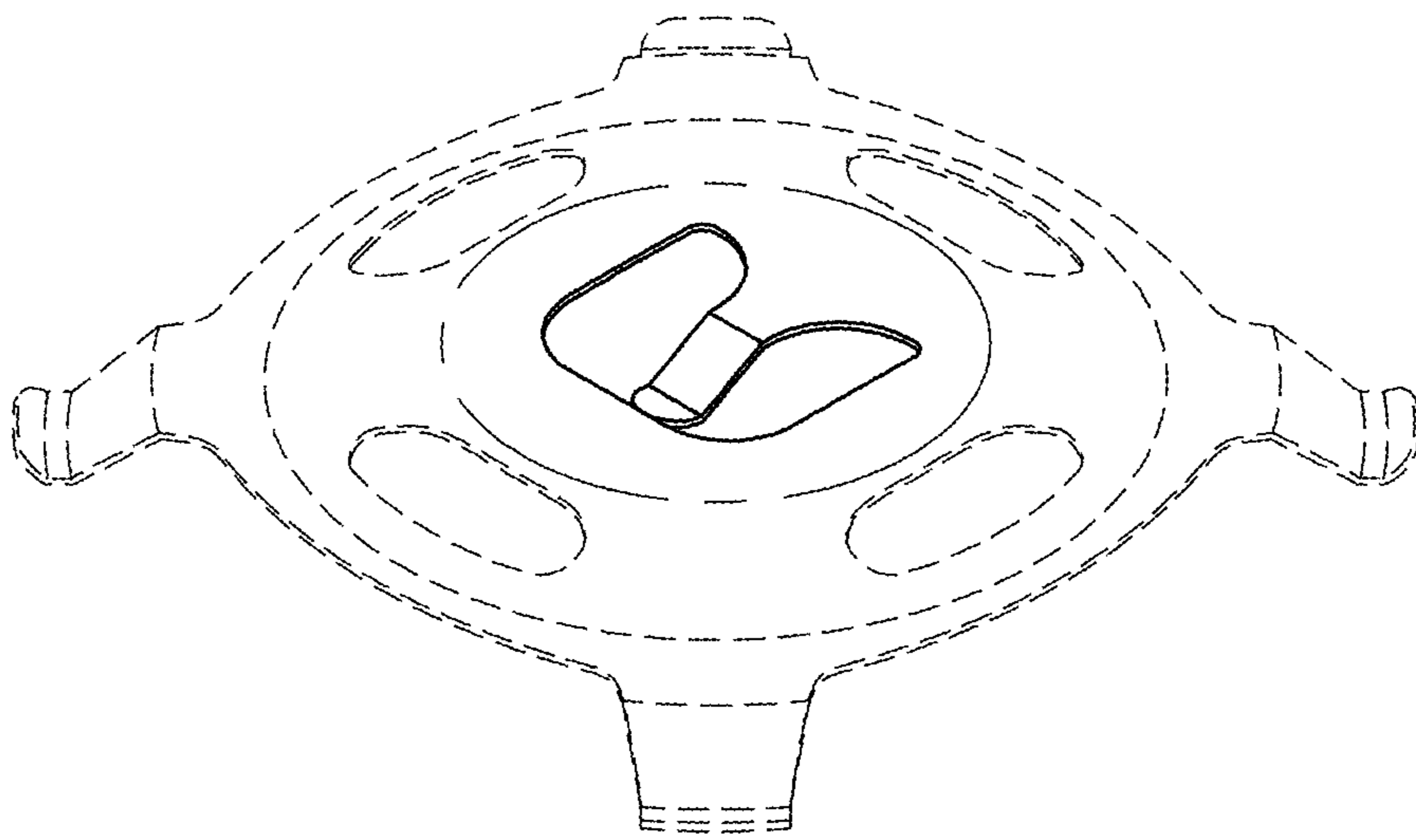


Fig. 2

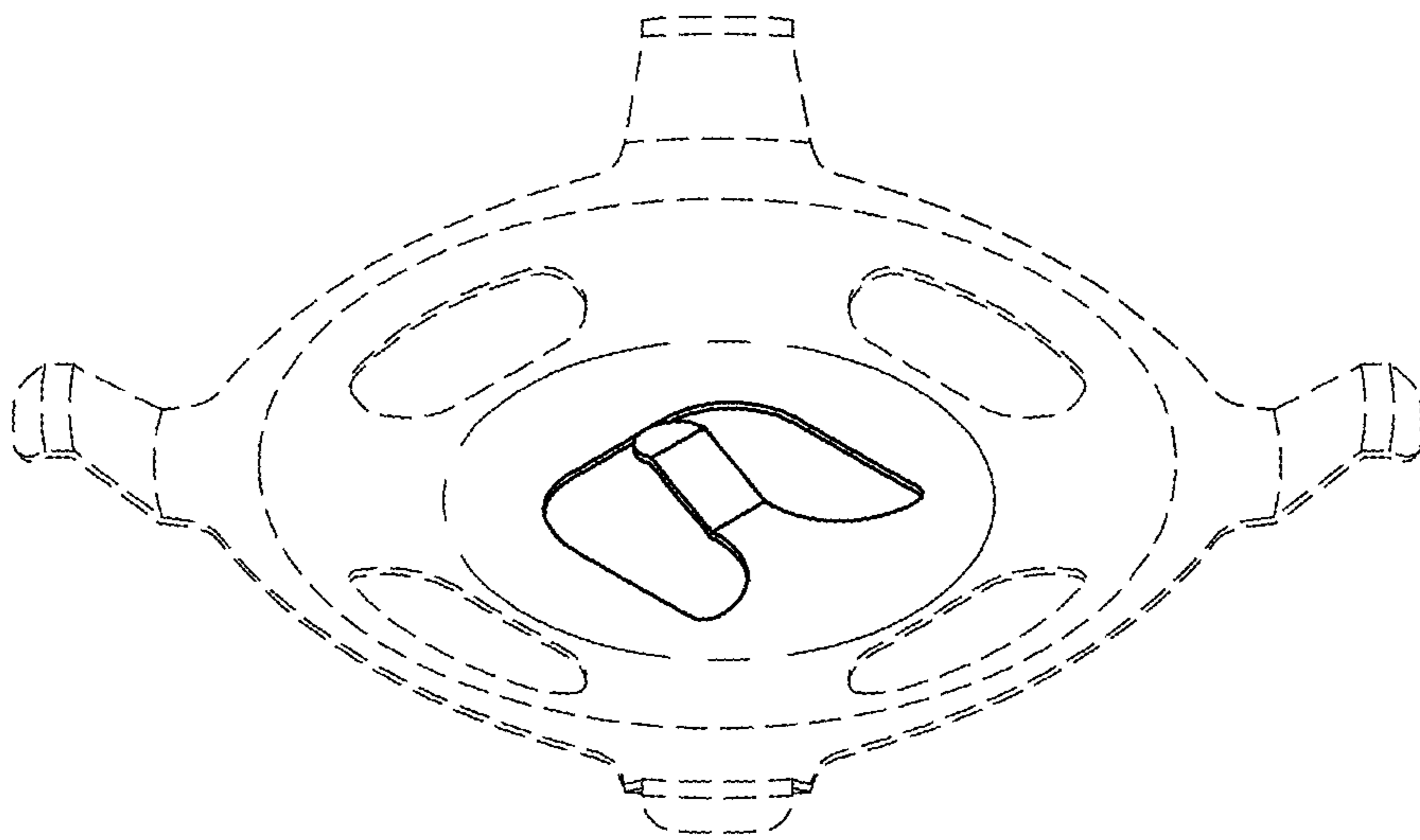


Fig. 3



Fig. 4

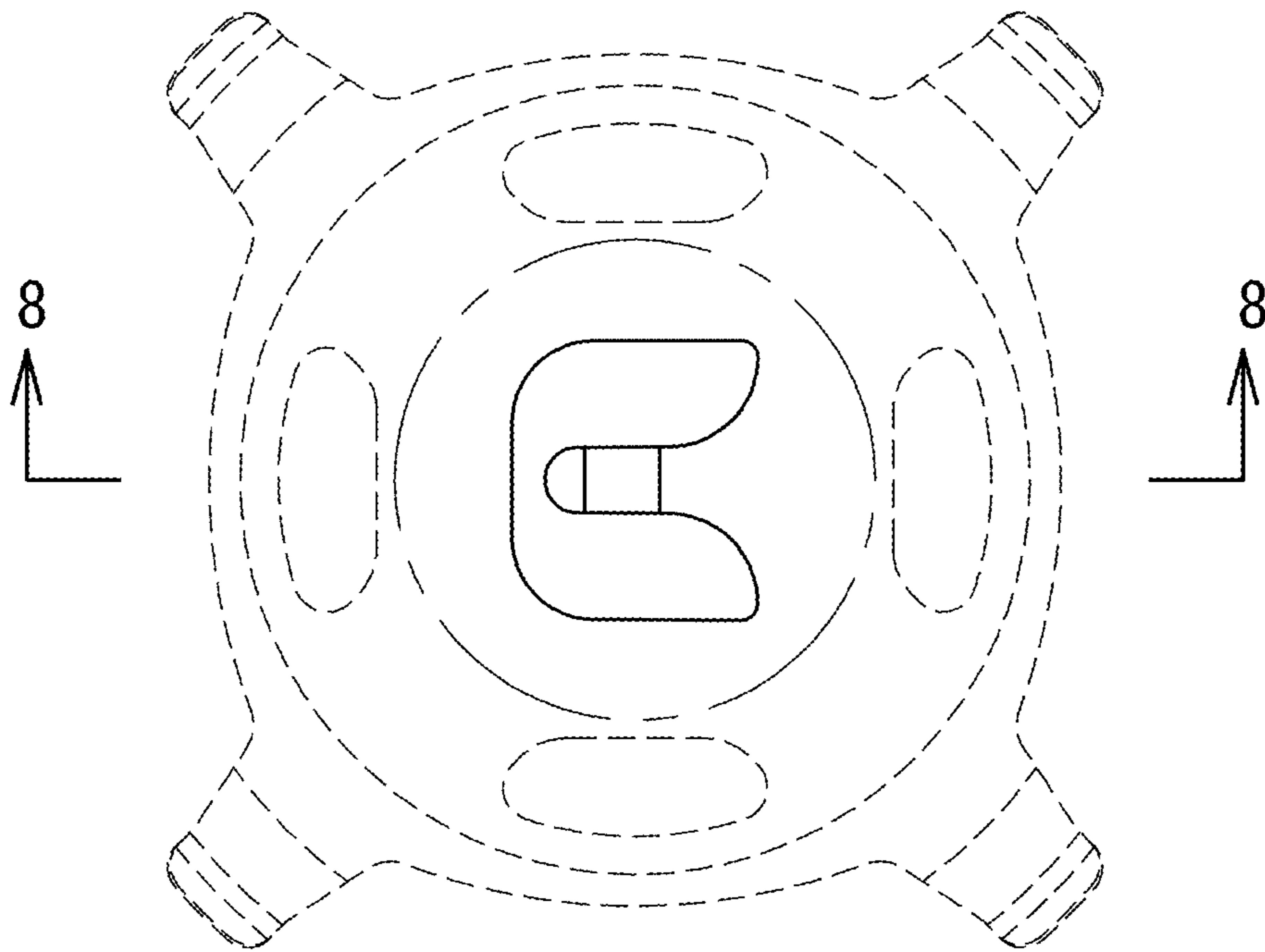


Fig. 5

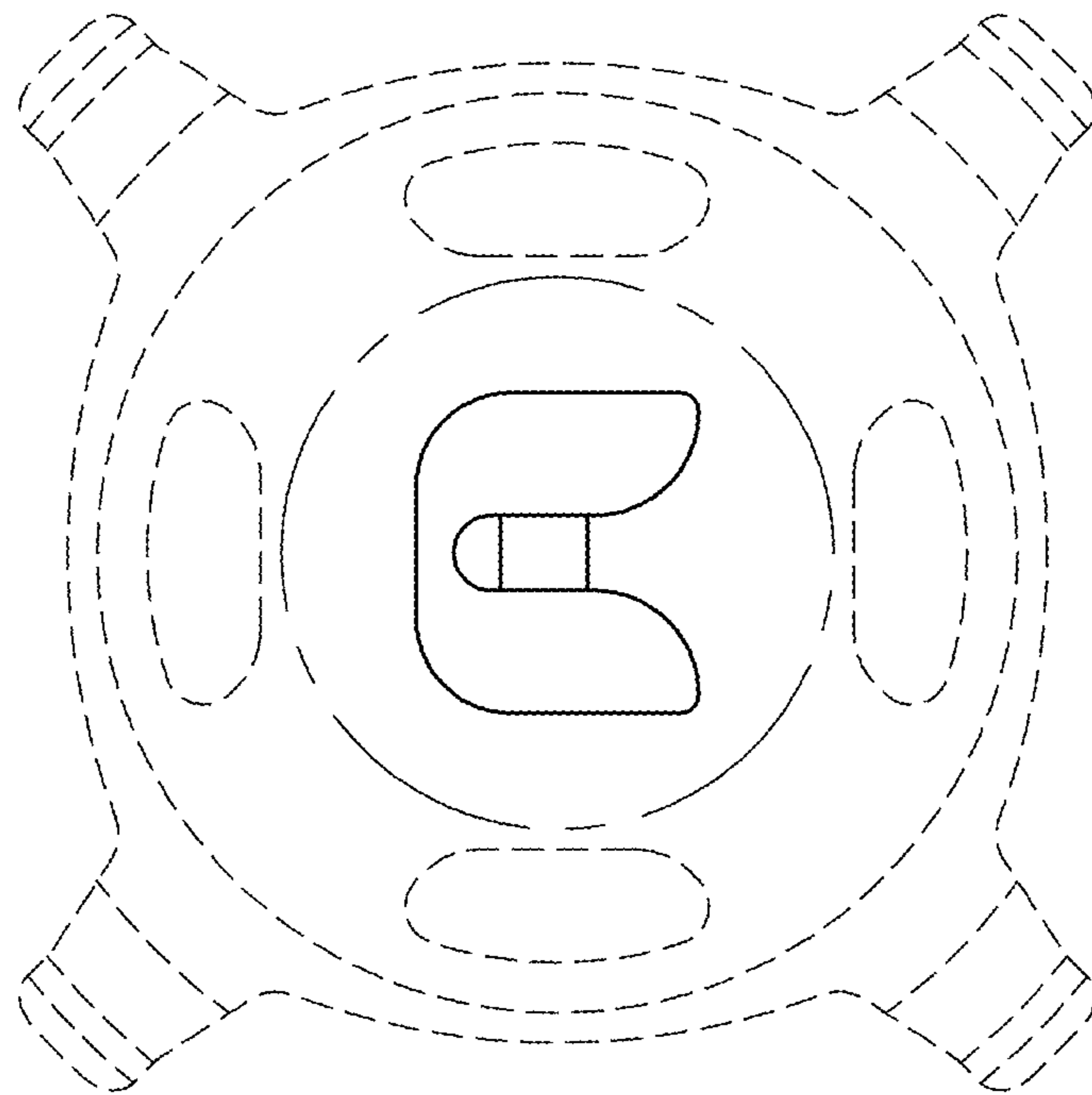


Fig. 6

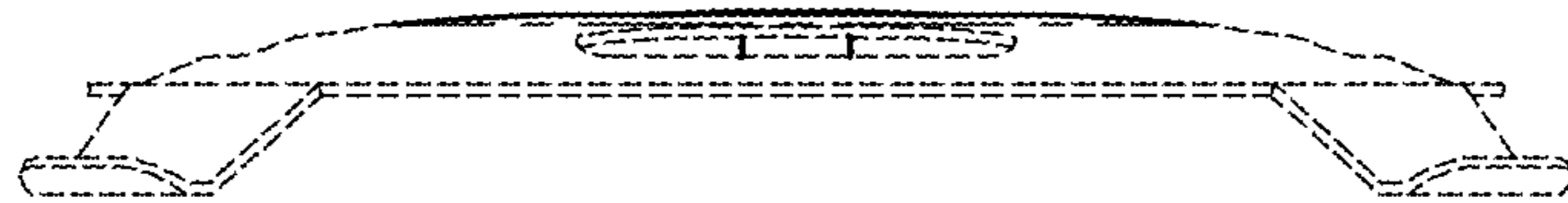




Fig. 7

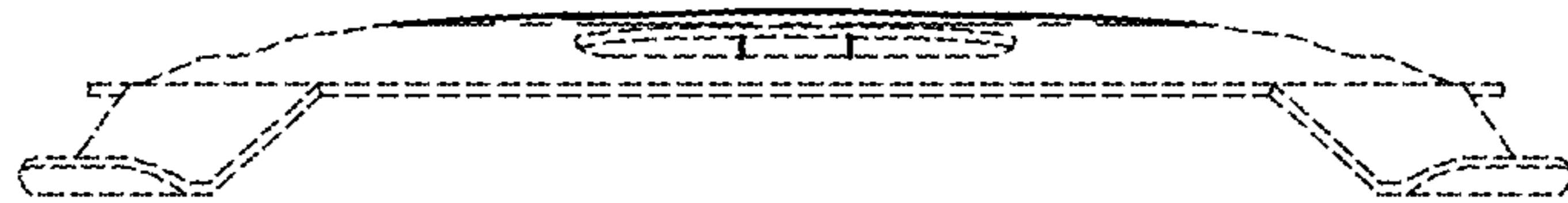


Fig. 8

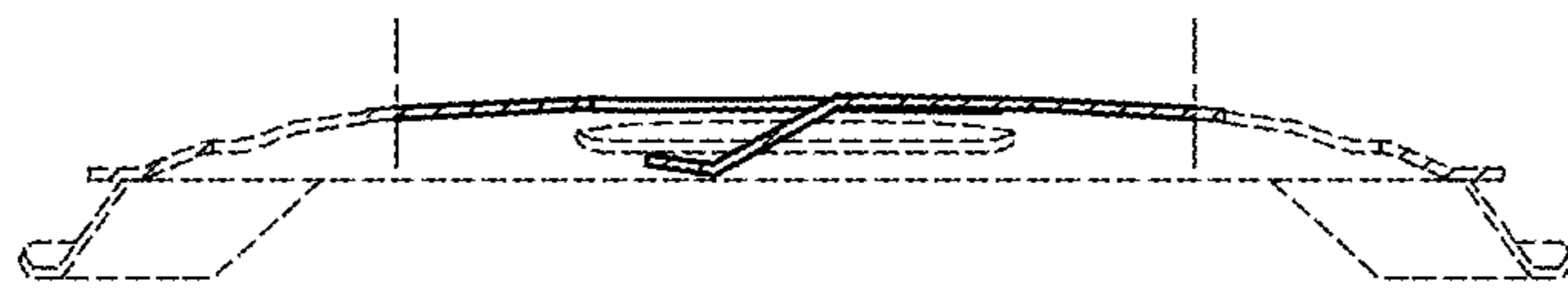


Fig. 9

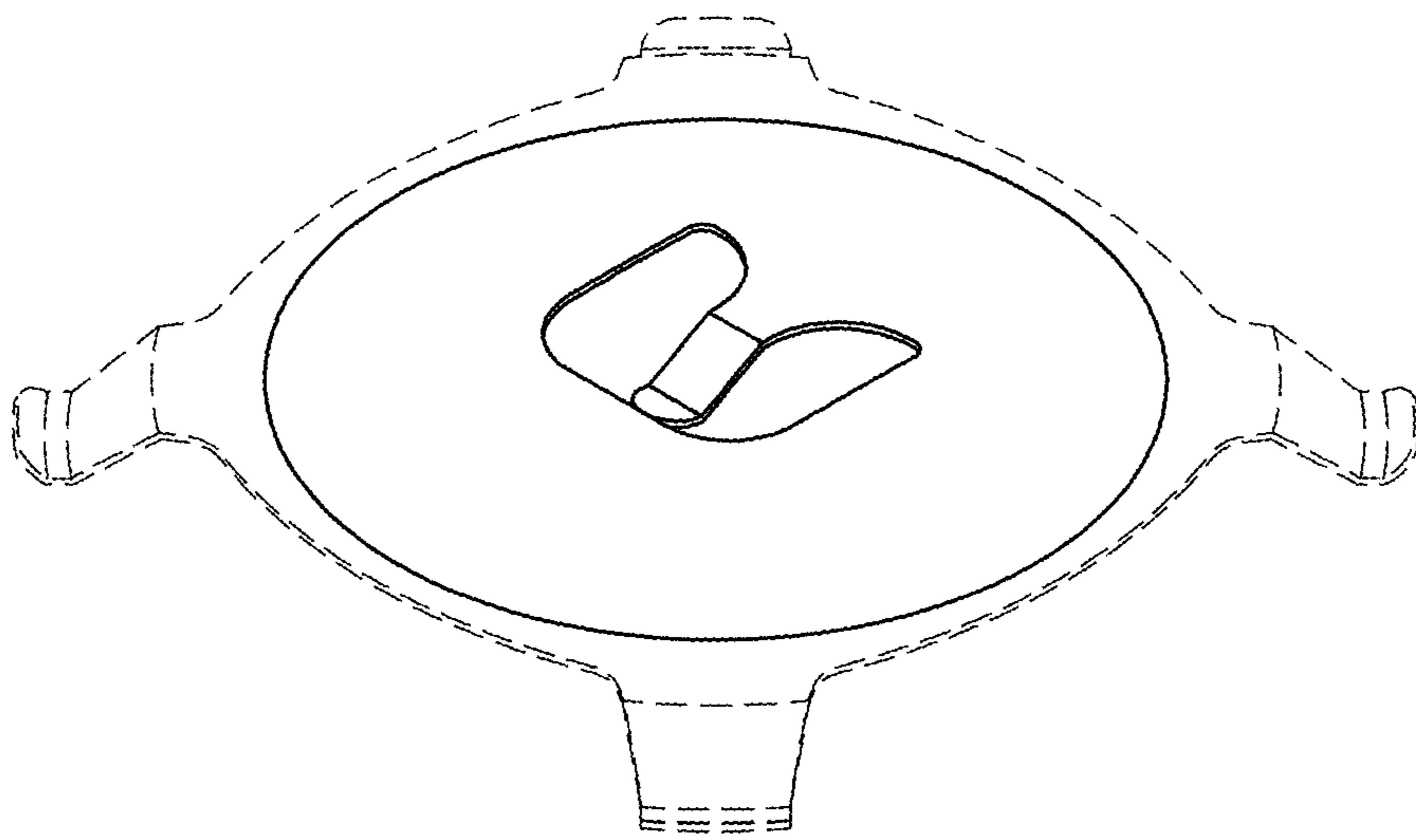


Fig. 10

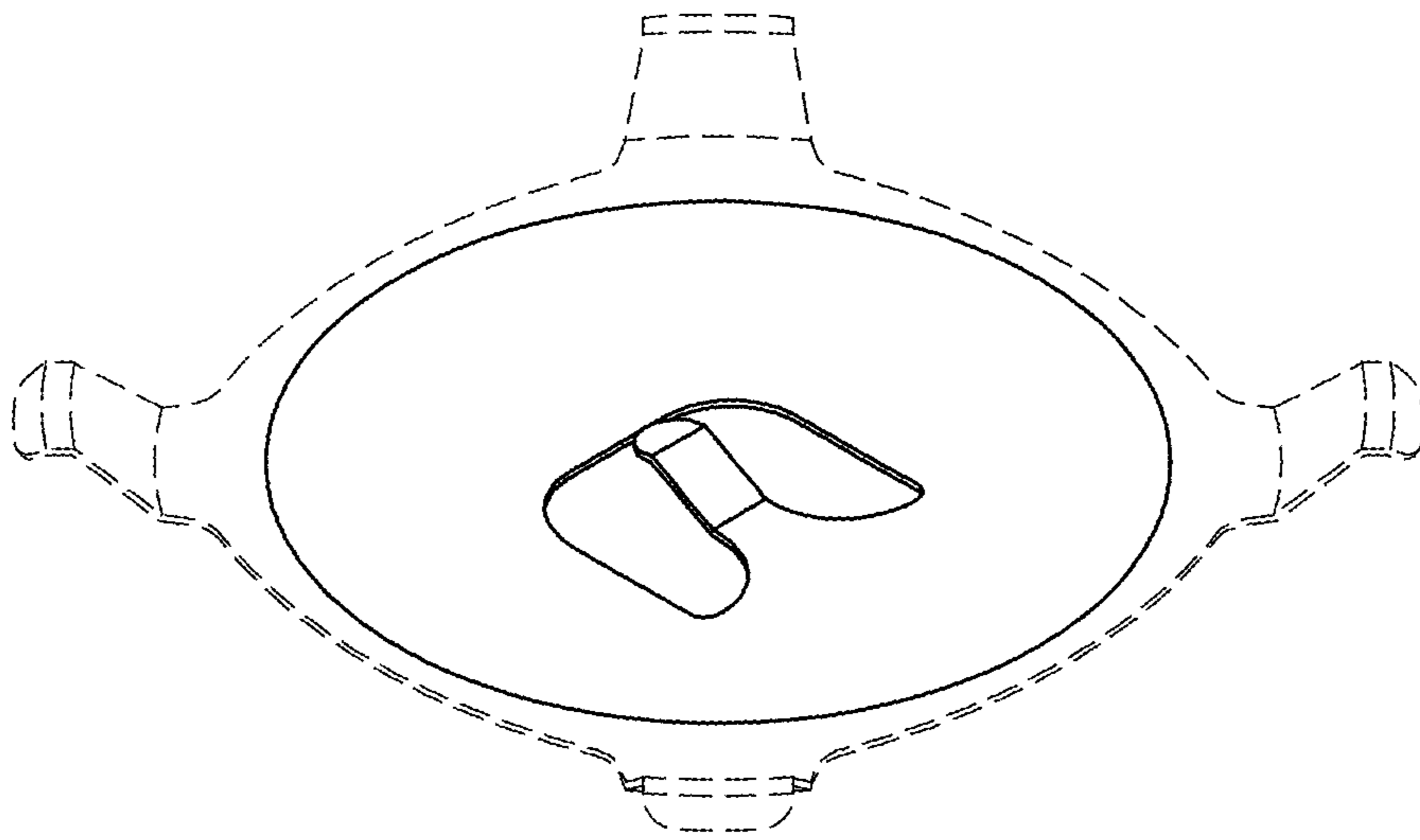


Fig. 11

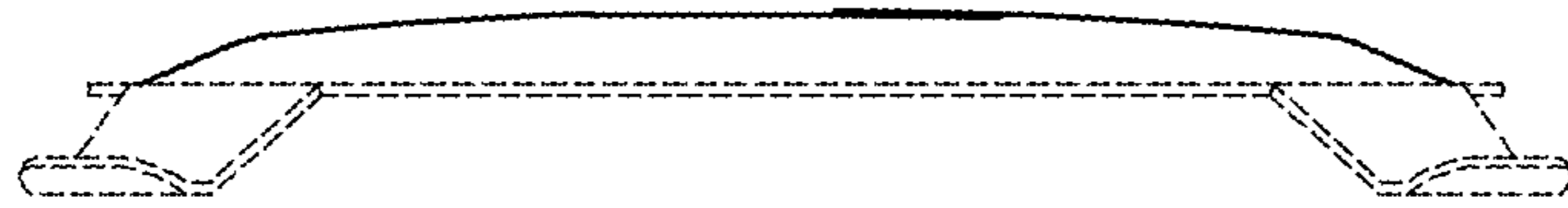


Fig. 12

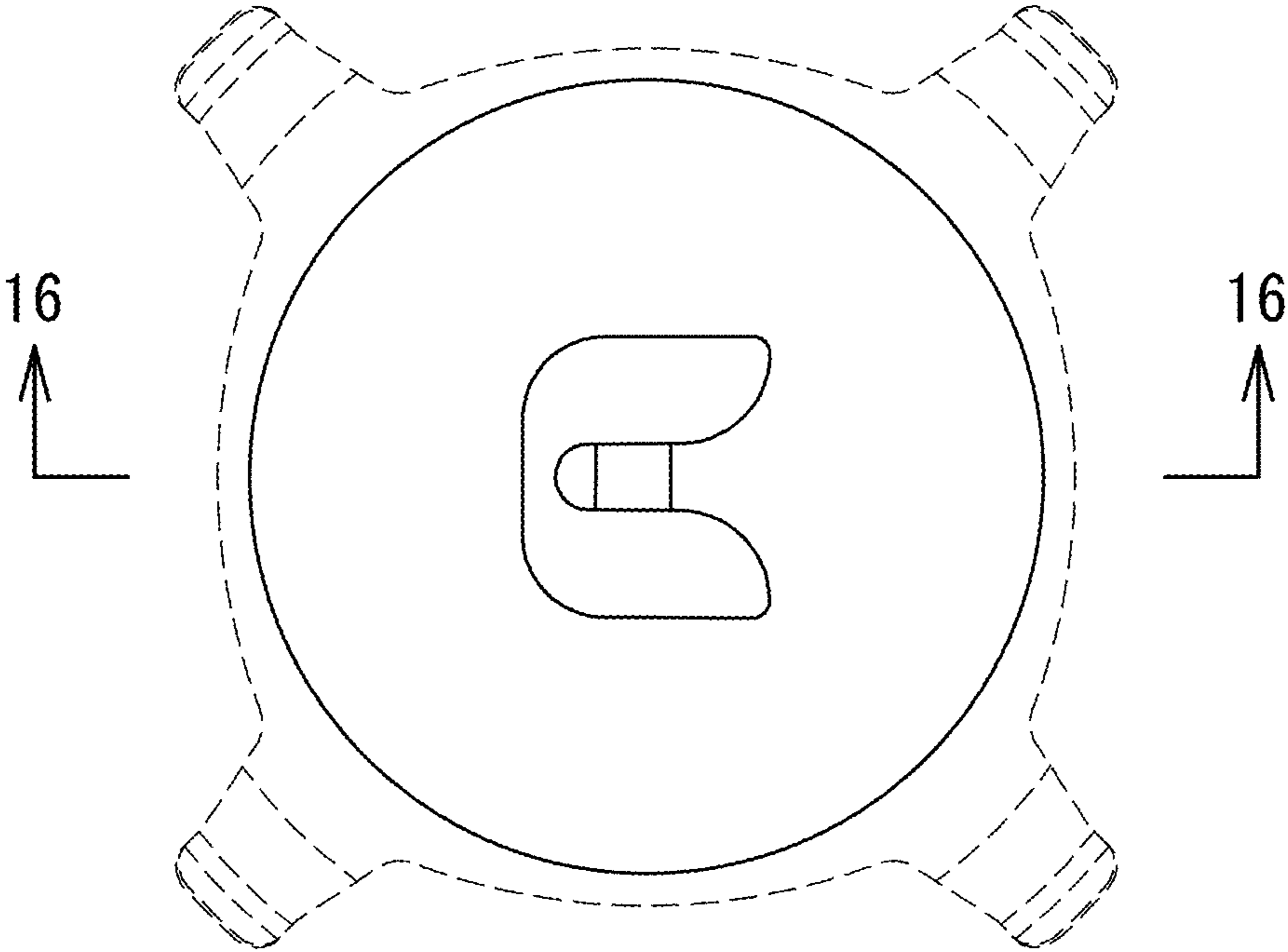


Fig. 13

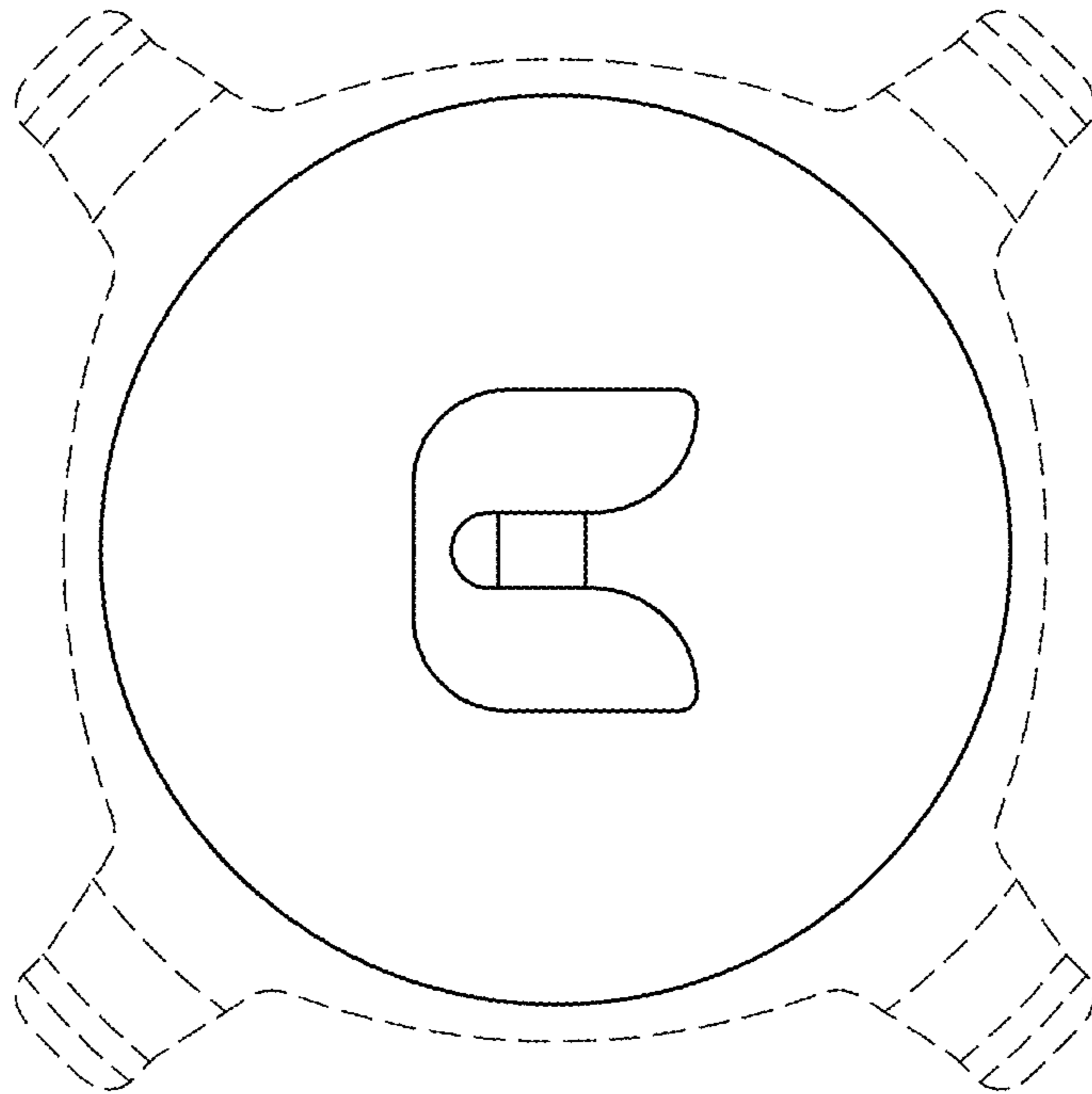


Fig. 14





Fig. 15

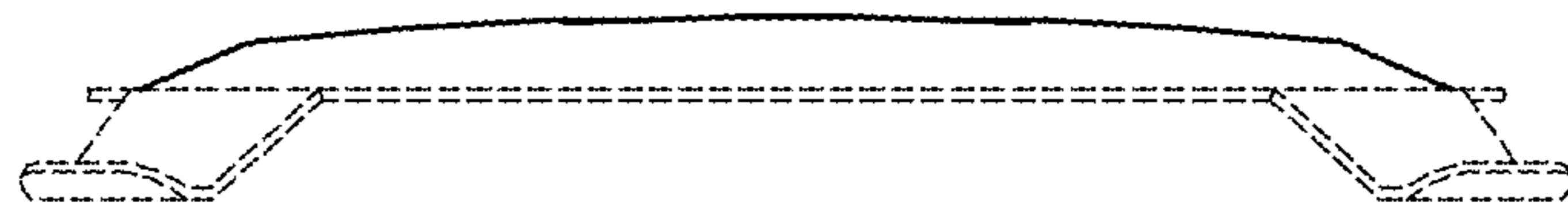


Fig. 16

