



US00D886026S

(12) **United States Design Patent**  
**Johannesson et al.**

(10) **Patent No.:** **US D886,026 S**  
(45) **Date of Patent:** **\*\* Jun. 2, 2020**

(54) **SET OF AIR CAVITIES FOR HULL SURFACE OF VESSEL**

(71) Applicant: **Silverstream Technologies B.V.**, VB Amstelveen (NL)

(72) Inventors: **Johannes Johannesson**, Espergaerde (DK); **Noah Silberschmidt**, London (GB); **Joergen Clausen**, Broendby (DK)

(73) Assignee: **Silverstream Technologies B.V.**, Amstelveen (NL)

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

(21) Appl. No.: **29/612,742**

(22) Filed: **Aug. 3, 2017**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 29/539,017, filed on Sep. 10, 2015, now abandoned.

**Foreign Application Priority Data**

(30) Mar. 10, 2015 (EM) ..... 002649715-0001  
Mar. 10, 2015 (EM) ..... 002649715-0002  
Mar. 10, 2015 (EM) ..... 002649715-0003  
Mar. 10, 2015 (EM) ..... 002649715-0004

(51) **LOC (12) Cl.** ..... **12-06**  
(52) **U.S. Cl.**  
USPC ..... **D12/317**

(58) **Field of Classification Search**  
USPC ..... D12/317  
CPC ..... B63B 1/34; B63B 1/38; B63B 2001/38;  
B63B 2001/385; B63B 2001/387  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,680,517 A \* 8/1972 Morrison ..... B63B 1/38  
114/67 A  
4,753,401 A \* 6/1988 Bechert ..... B64C 21/025  
244/130

(Continued)

*Primary Examiner* — Cynthia M. Chin

(74) *Attorney, Agent, or Firm* — Abelman, Frayne & Schwab

(57) **CLAIM**

The ornamental design for a set of air cavities for hull surface of vessel, as shown and described.

**DESCRIPTION**

FIG. 1 is a front, right and bottom perspective view of a set of air cavities for hull surface of vessel, according to the present invention;

FIG. 2 is an enlarged front, right and bottom view of a section of FIG. 1;

FIG. 3 is an enlarged rear, left and bottom view of a section of FIG. 1;

FIG. 4 is an enlarged bottom view of a section of FIG. 1;

FIG. 5 is a front, right and bottom perspective view of a set of air cavities for hull surface of vessel, according to another embodiment of the present invention;

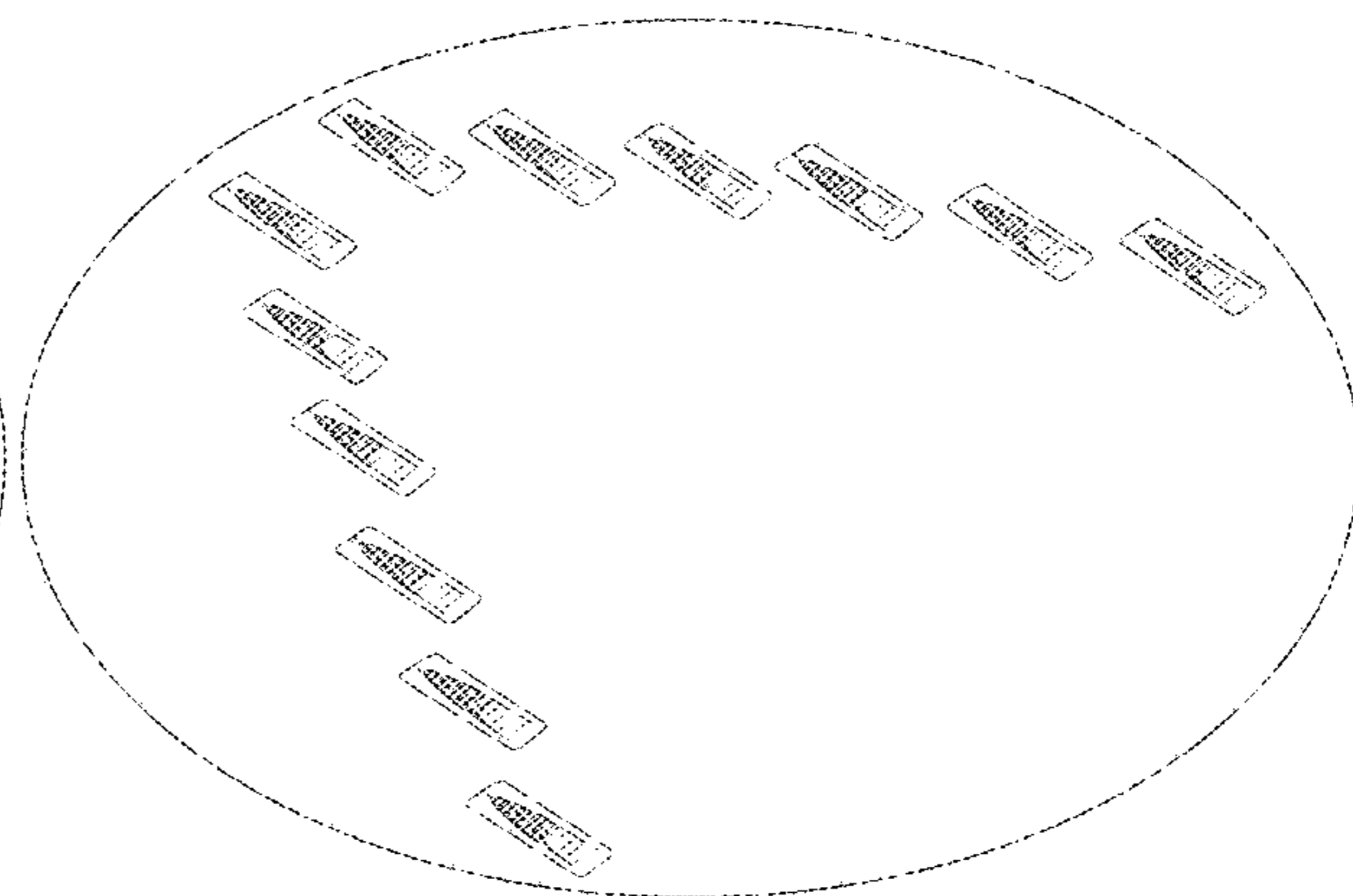
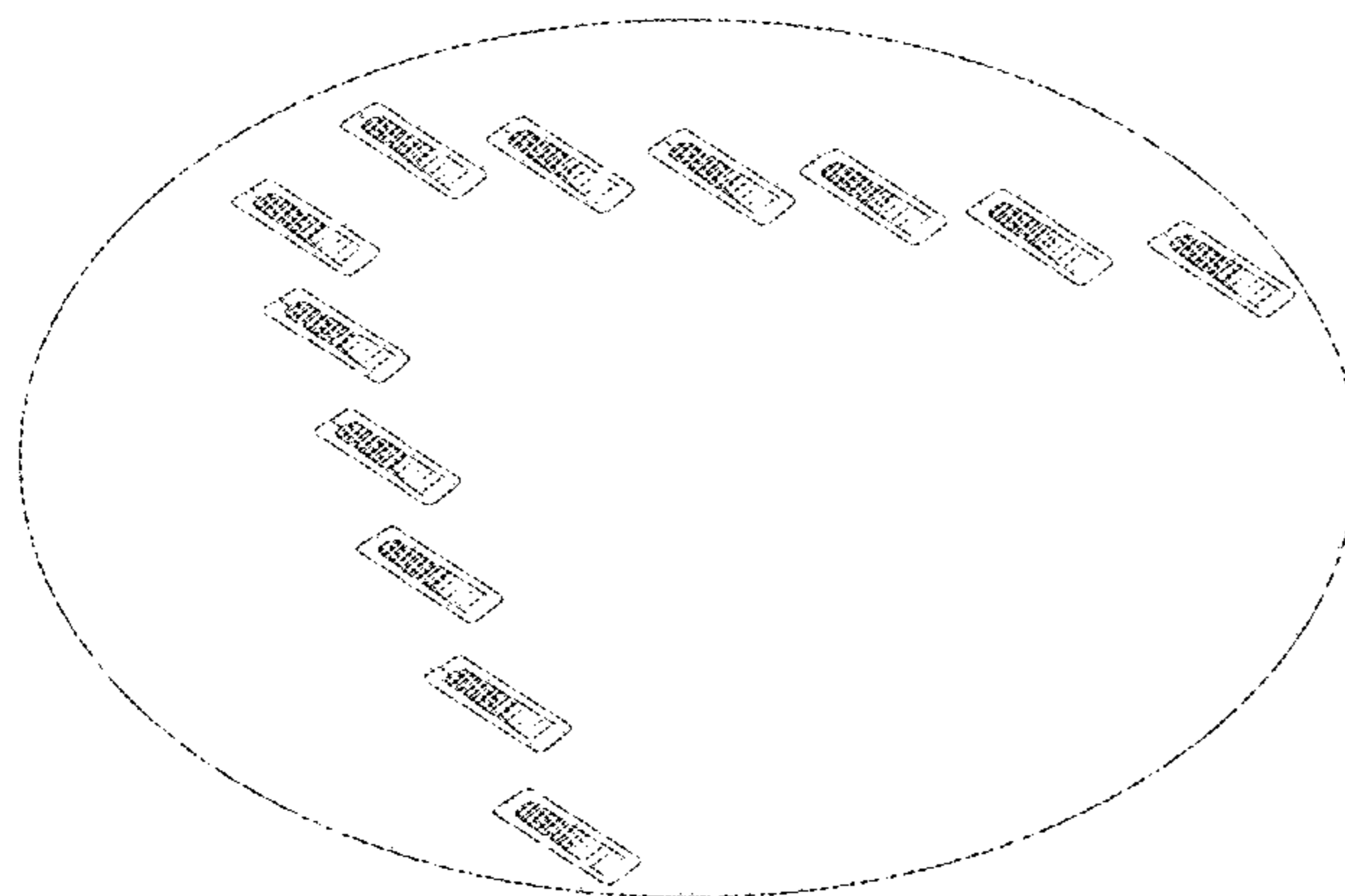
FIG. 6 is an enlarged front, right and bottom view of a section of FIG. 5;

FIG. 7 is an enlarged rear, left and bottom view of a section of FIG. 5; and,

FIG. 8 is an enlarged bottom view of a section of FIG. 5.

The broken lines represent the environment in which the article resides and forms no part of the claimed design. In a preferred embodiment, the air cavities are recessed below the hull surface of the vessel, such that the left side, right

(Continued)



side, front, rear, and top surfaces of the air cavities are not seen in use and these views are therefore not shown.

**1 Claim, 8 Drawing Sheets**

(56)

**References Cited**

U.S. PATENT DOCUMENTS

|           |     |         |            |       |                       |
|-----------|-----|---------|------------|-------|-----------------------|
| 5,058,837 | A * | 10/1991 | Wheeler    | ..... | B64C 23/06<br>244/198 |
| 5,088,433 | A * | 2/1992  | Osawa      | ..... | B63B 1/40<br>114/67 R |
| 5,339,761 | A * | 8/1994  | Huang      | ..... | B63B 1/042<br>114/274 |
| 5,456,201 | A * | 10/1995 | Bobst      | ..... | B63B 1/38<br>114/222  |
| 5,481,996 | A * | 1/1996  | Osawa      | ..... | B63B 1/20<br>114/67 R |
| 5,524,568 | A * | 6/1996  | Bobst      | ..... | B63B 1/38<br>114/222  |
| 5,746,146 | A * | 5/1998  | Bixel, Jr. | ..... | B63B 1/20<br>114/67 A |
| 6,145,459 | A * | 11/2000 | Takahashi  | ..... | B63B 1/38<br>114/67 A |

|              |      |         |              |       |                        |
|--------------|------|---------|--------------|-------|------------------------|
| 6,634,309    | B2 * | 10/2003 | Radrizzani   | ..... | B63B 1/20<br>114/291   |
| 6,684,807    | B1 * | 2/2004  | Smith        | ..... | B63B 1/22<br>114/285   |
| 6,880,476    | B2 * | 4/2005  | Olsen        | ..... | B63B 1/34<br>114/67 R  |
| 7,997,221    | B2 * | 8/2011  | Costas       | ..... | B63B 1/38<br>114/222   |
| 8,327,784    | B2 * | 12/2012 | Costas       | ..... | B63B 1/38<br>114/67 A  |
| 2002/0017228 | A1 * | 2/2002  | Burg         | ..... | B63B 1/38<br>114/67 A  |
| 2002/0083878 | A1 * | 7/2002  | Burg         | ..... | B63B 1/38<br>114/289   |
| 2003/0159637 | A1 * | 8/2003  | Osmundsvaag  | ..... | B63B 1/042<br>114/67 A |
| 2004/0154514 | A1 * | 8/2004  | Burg         | ..... | B63B 1/20<br>114/67 R  |
| 2006/0231004 | A1 * | 10/2006 | Stubblefield | ..... | B63B 1/22<br>114/285   |
| 2009/0126618 | A1 * | 5/2009  | Winkler      | ..... | B63B 1/20<br>114/291   |
| 2011/0146806 | A1 * | 6/2011  | Wulf         | ..... | B63B 1/40<br>114/67 R  |
| 2012/0097086 | A1 * | 4/2012  | Sancoff      | ..... | B64C 21/025<br>244/130 |
| 2016/0075406 | A1 * | 3/2016  | Johannesson  | ..... | B63B 1/38<br>114/67 A  |

\* cited by examiner



FIG. 1

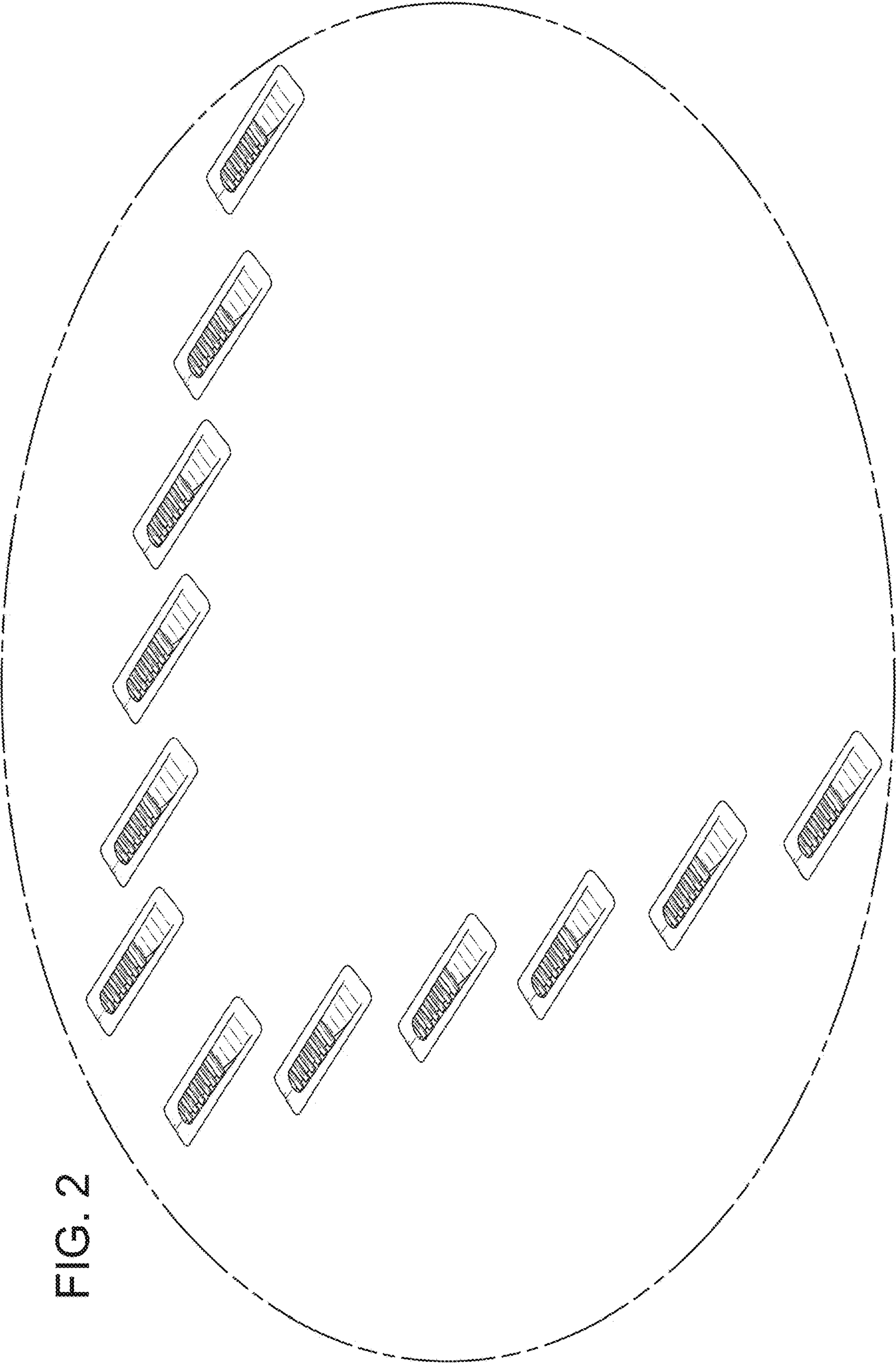


FIG. 2

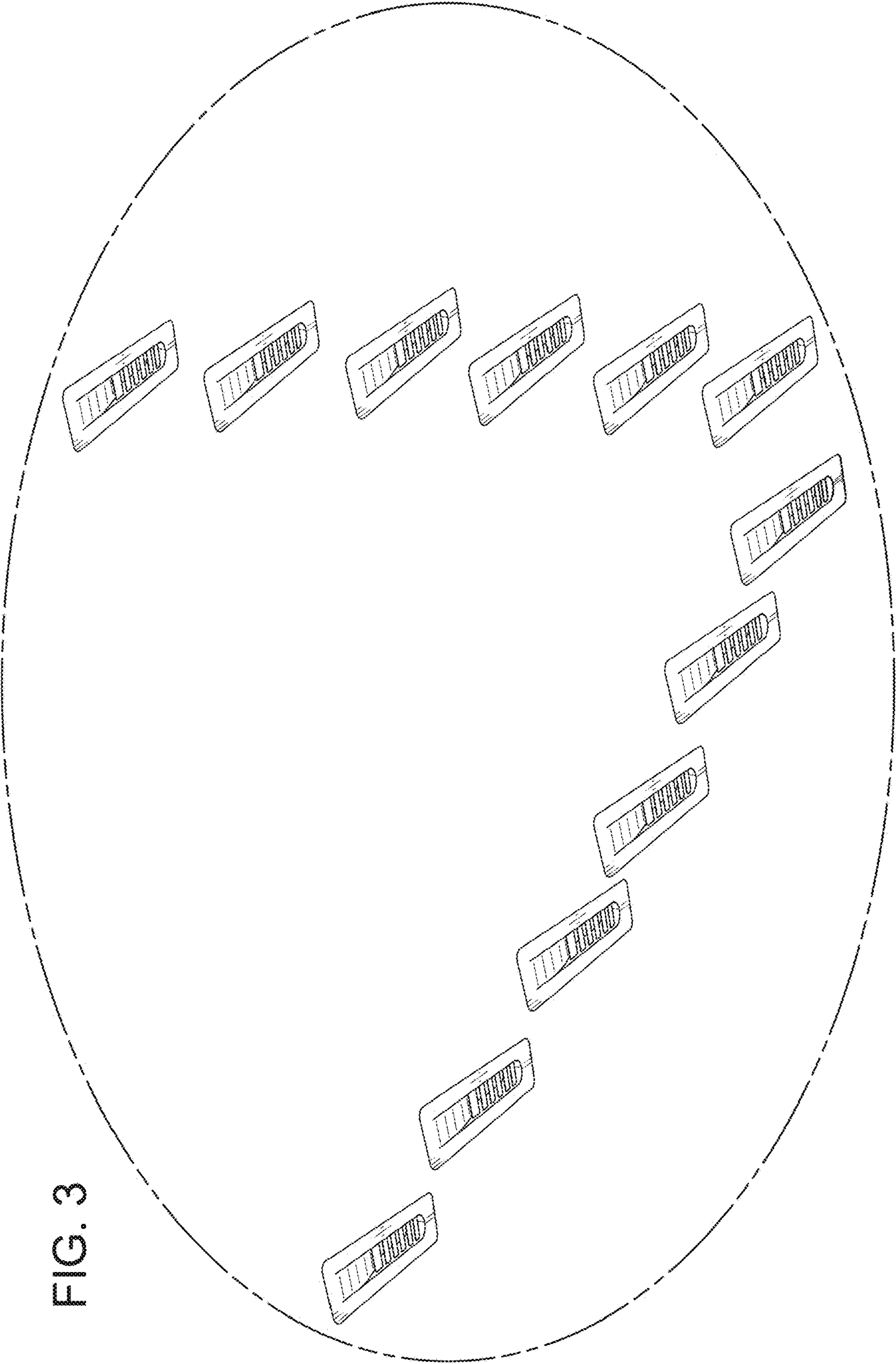


FIG. 3

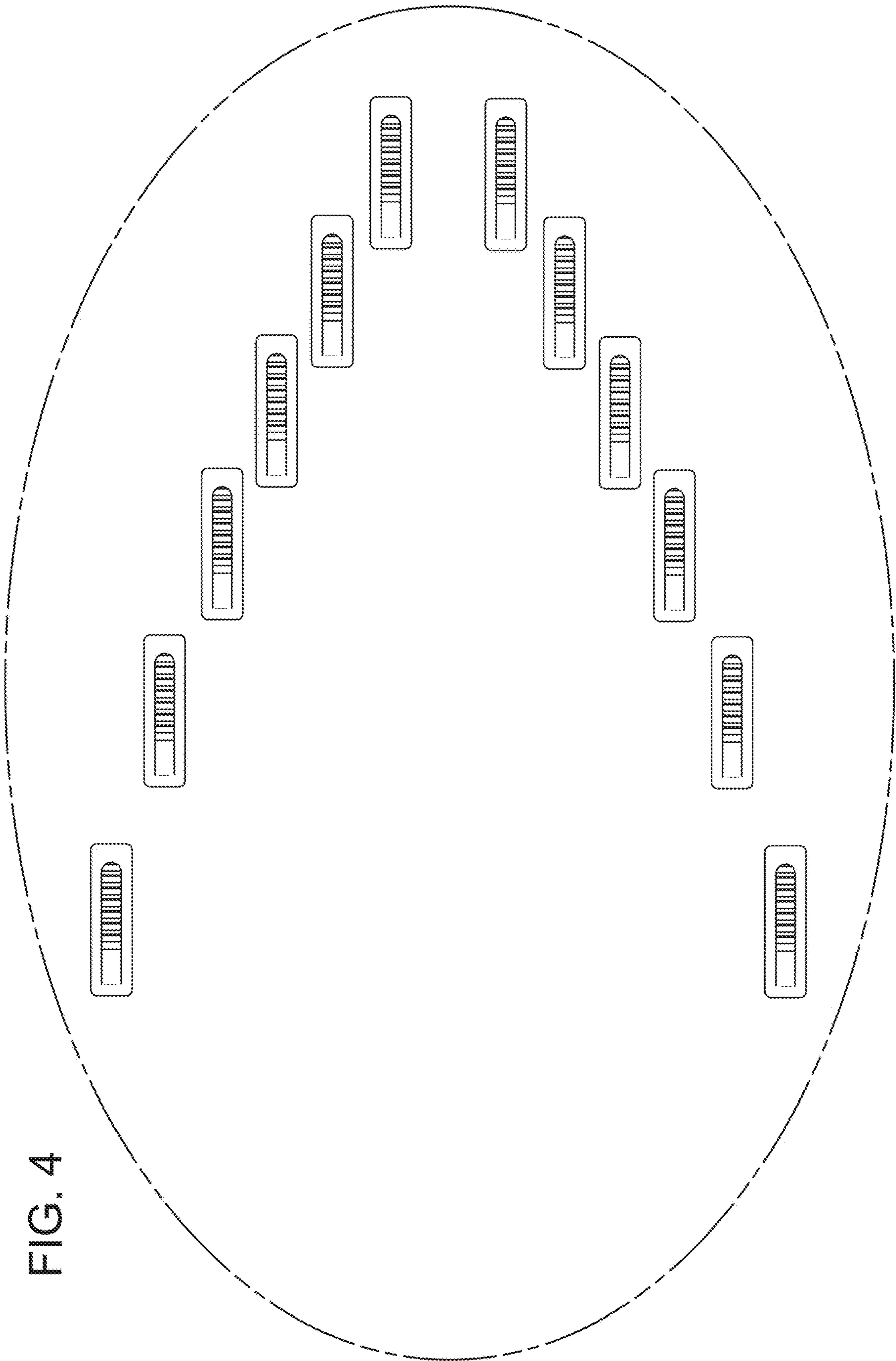


FIG. 4



FIG. 5

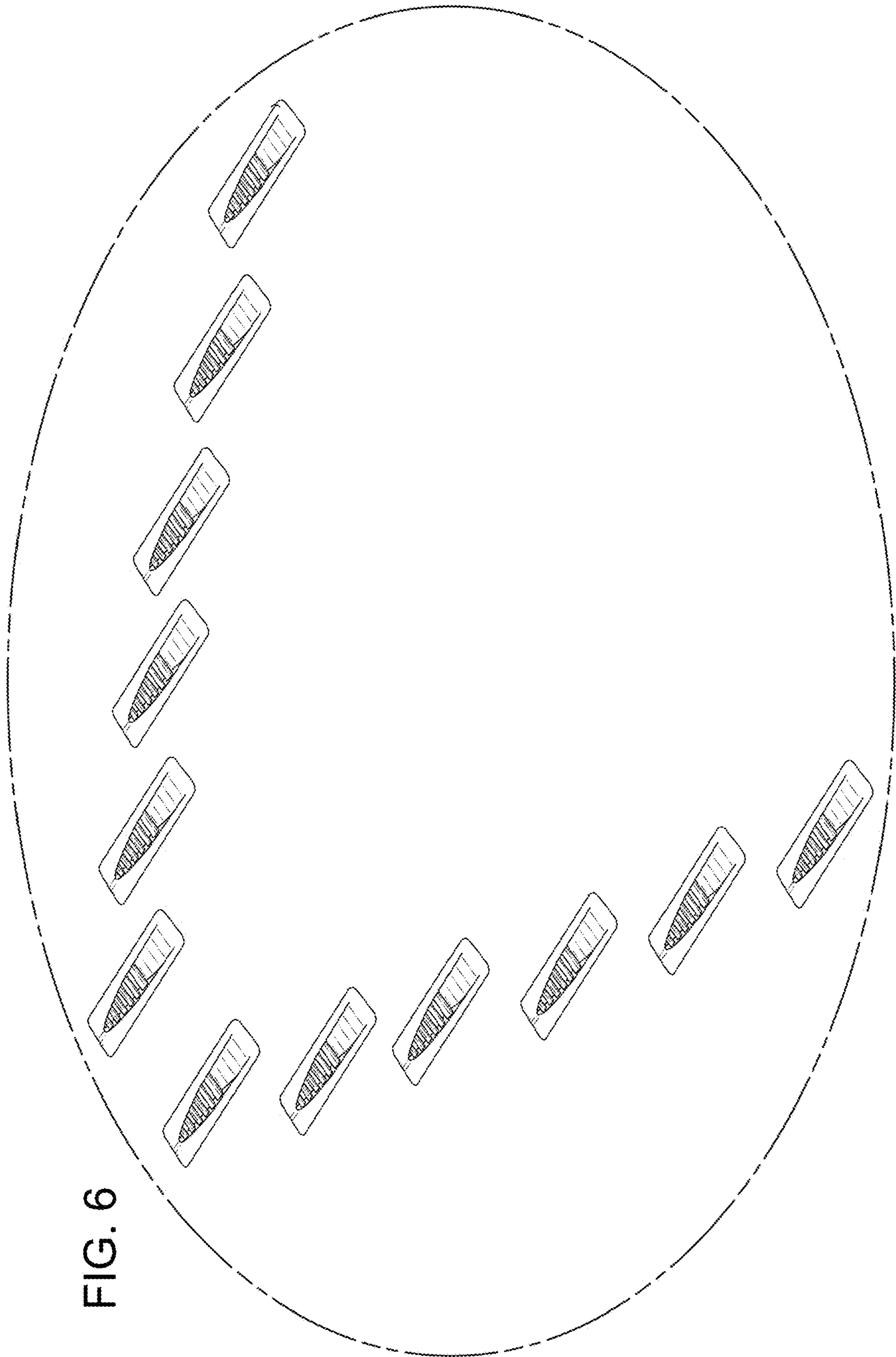


FIG. 6



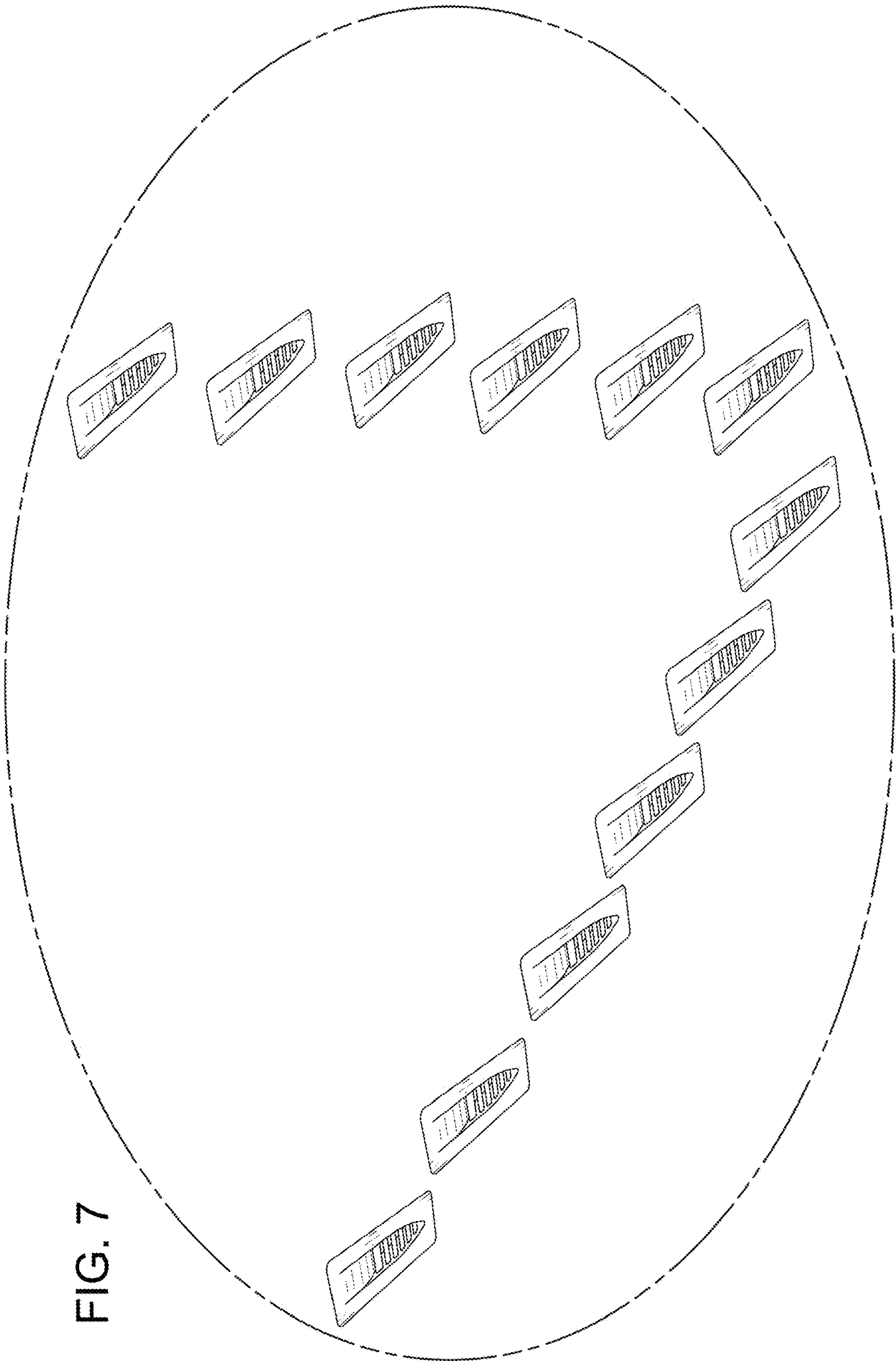


FIG. 7

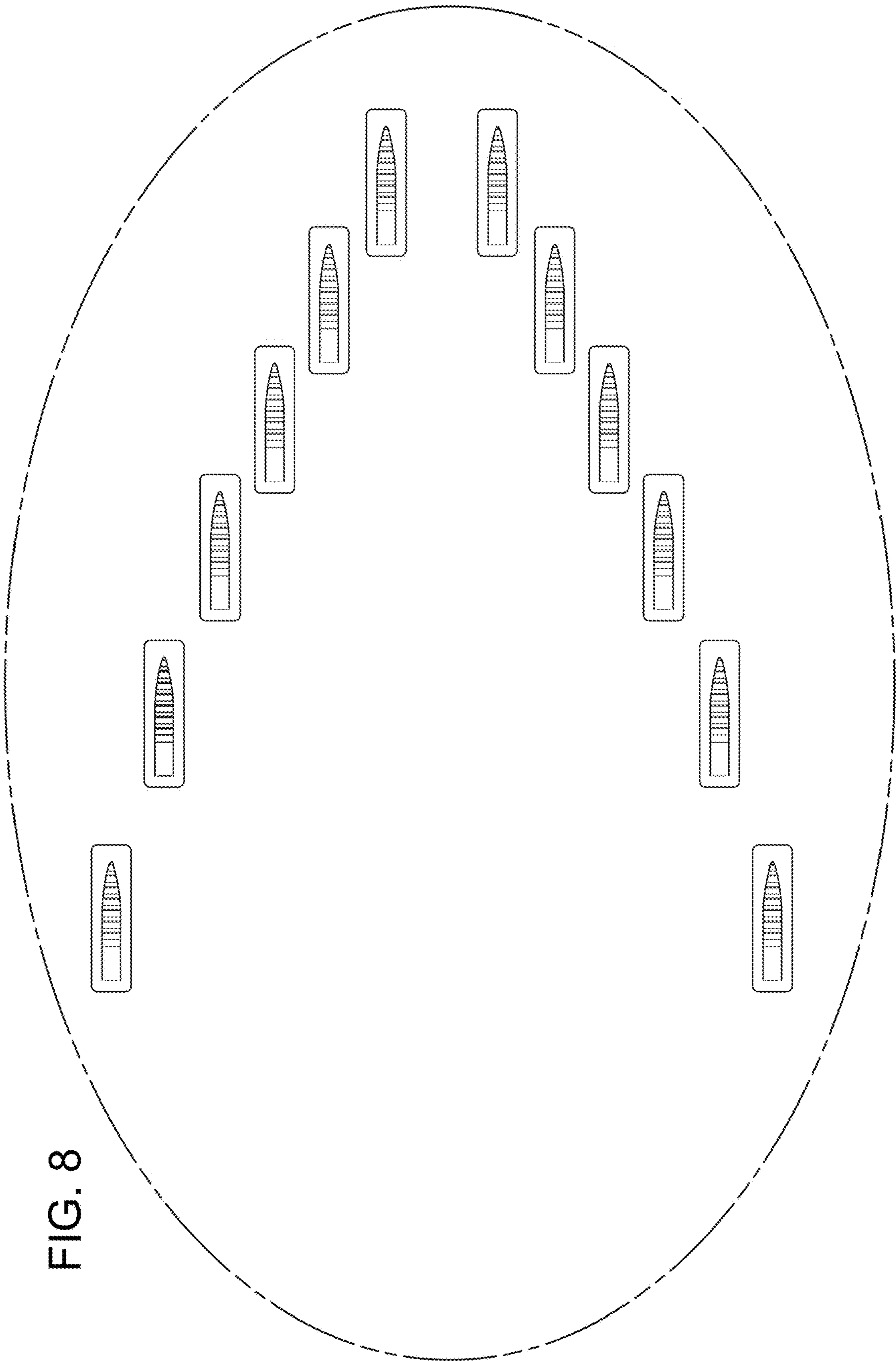


FIG. 8