



US00D992111S

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

(10) **Patent No.:** **US D992,111 S**

(45) **Date of Patent:** **\*\* Jul. 11, 2023**

(54) **CATALYST CARRIER FOR EXHAUST GAS PURIFICATION**

(71) Applicant: **NGK Insulators, Ltd.**, Nagoya (JP)

(72) Inventor: **Yoichi Aoki**, Nagoya (JP)

(73) Assignee: **NGK INSULATORS, LTD.**, Nagoya (JP)

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

(21) Appl. No.: **29/755,537**

(22) Filed: **Oct. 21, 2020**

**Related U.S. Application Data**

(62) Division of application No. 29/651,498, filed on Aug. 17, 2018, now Pat. No. Des. 919,072.

(30) **Foreign Application Priority Data**

Feb. 20, 2018 (JP) ..... 2018-003390  
Feb. 20, 2018 (JP) ..... 2018-003391  
(Continued)

(51) **LOC (14) Cl.** ..... **23-04**

(52) **U.S. Cl.**  
USPC ..... **D23/365; D23/355; D15/5**

(58) **Field of Classification Search**  
USPC ..... D23/209, 341, 354, 355, 364-365,  
D23/386-391; D25/114-116, 118-125  
(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

910,192 A 1/1909 Grouvelle et al.  
3,520,663 A \* 7/1970 Schertel ..... F01P 5/02  
428/596

(Continued)

**FOREIGN PATENT DOCUMENTS**

JP S50-127886 A1 10/1975  
JP S61-167798 A1 7/1986  
JP 2013-056312 A1 3/2013

**OTHER PUBLICATIONS**

Japanese Office Action (Application No. 2018-003392) dated Sep. 25, 2018 (with English translation).

(Continued)

*Primary Examiner* — Calvin E Vansant

(74) *Attorney, Agent, or Firm* — Burr Patent Law, PLLC

(57) **CLAIM**

The ornamental design for a catalyst carrier for exhaust gas purification, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a first embodiment of a catalyst carrier for exhaust gas purification illustrating my new design;

FIG. 2 is a front view thereof, the rear view thereof being a right-and-left reversed image;

FIG. 3 is a top view thereof, the bottom view thereof being a mirror image;

FIG. 4 is a right view thereof, the left view thereof being a mirror image;

FIG. 5 is an enlarged view delimited by the lines labelled 5 in FIG. 2;

FIG. 6 is a middle omitted cross-sectional view thereof taken through line 6-6 of FIG. 5;

FIG. 7 is a middle omitted cross-sectional view thereof taken through line 7-7 of FIG. 5;

FIG. 8 is a perspective view of a second embodiment of a catalyst carrier for exhaust gas purification illustrating my new design;

FIG. 9 is a front view thereof, the rear view thereof being a right-and-left reversed image;

FIG. 10 is a top view thereof, the bottom view thereof being a mirror image;

(Continued)

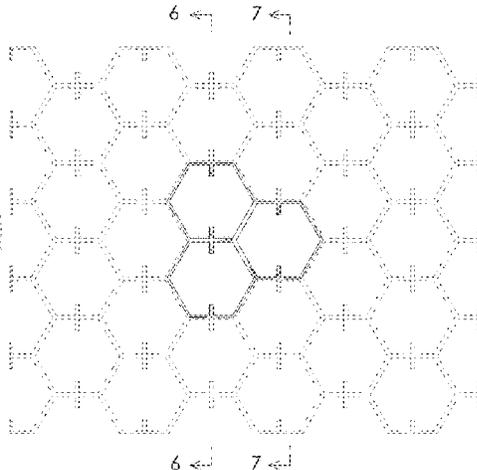
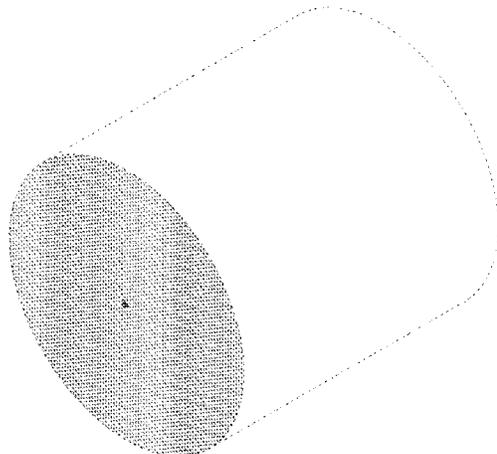


FIG. 11 is a right view thereof, the left view thereof being a mirror image;

FIG. 12 is an enlarged view thereof delimited by the lines labelled 12 in FIG. 9;

FIG. 13 is a middle omitted cross-sectional view thereof taken through line 13-13 of FIG. 12; and,

FIG. 14 is a middle omitted cross-sectional view thereof taken through line 14-14 of FIG. 12.

The catalyst carrier is used for removing toxic substances contained in exhaust fumes emitted from automobile engines and the like. The catalyst carrier has fins in each of its cells. The fin is provided in the same sectional shape over the whole length of the cells.

The broken lines in the drawings are for illustrative purposes only and form no part of the claimed design.

The dot-dash broken lines in the drawings depict a boundary between the claimed design and the unclaimed subject matter and form no part of the claimed design.

**1 Claim, 14 Drawing Sheets**

(30) **Foreign Application Priority Data**

Feb. 20, 2018 (JP) ..... 2018-003392  
 Feb. 20, 2018 (JP) ..... 2018-003393  
 Feb. 20, 2018 (JP) ..... 2018-003394  
 Feb. 20, 2018 (JP) ..... 2018-003395

(58) **Field of Classification Search**

CPC ..... F01N 2330/06; F01N 3/0222; B01D 46/2429; B01D 46/2451; B01D 46/247; B01D 46/2492; B01D 46/2481; F28F 1/40; E04B 2/42; E04B 2/44; E04B 2/50; E04B 2/52; E04B 2/54; C02F 3/101

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,740,408 A 4/1988 Mochida et al.  
 4,767,309 A 8/1988 Mizuno et al.  
 D465,257 S \* 11/2002 Van Olst ..... B01J 19/30  
 D23/207  
 D645,161 S 9/2011 Loken  
 D837,357 S 1/2019 Yamaguchi  
 D841,145 S 2/2019 Yamaguchi  
 D872,224 S 1/2020 Hildebrand et al.  
 D894,361 S 8/2020 Aoki  
 D901,663 S \* 11/2020 Kinoshita ..... D23/355  
 D919,072 S \* 5/2021 Aoki ..... D23/355  
 2016/0305687 A1 10/2016 Neidenberger et al.  
 2017/0355164 A1 12/2017 Kato et al.  
 2019/0160456 A1 5/2019 Kato et al.  
 2020/0318855 A1 \* 10/2020 Choi ..... F28F 1/40

OTHER PUBLICATIONS

Japanese Office Action (Application No. 2018-003393) dated Sep. 25, 2018 (with English translation).

\* cited by examiner

Fig. 1

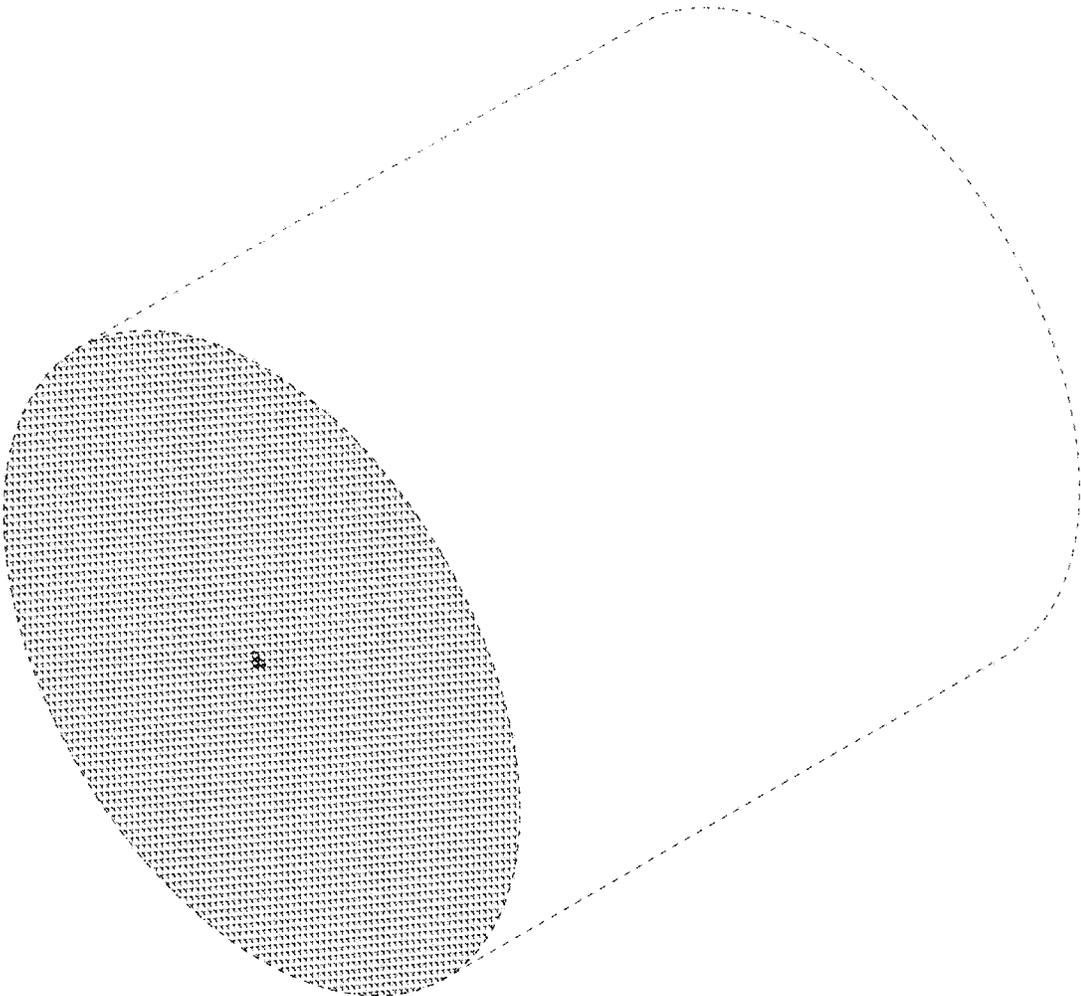


Fig. 2

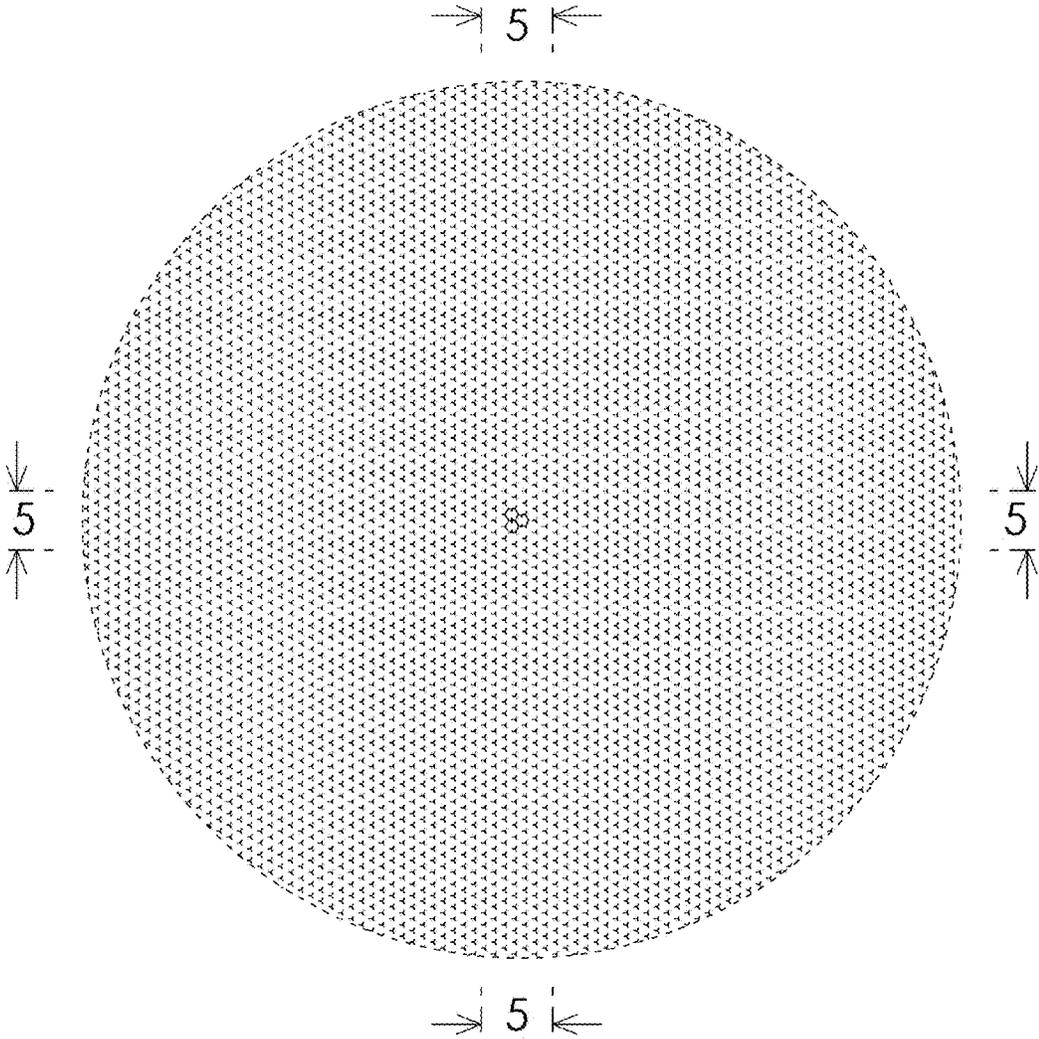


Fig. 3



Fig. 4

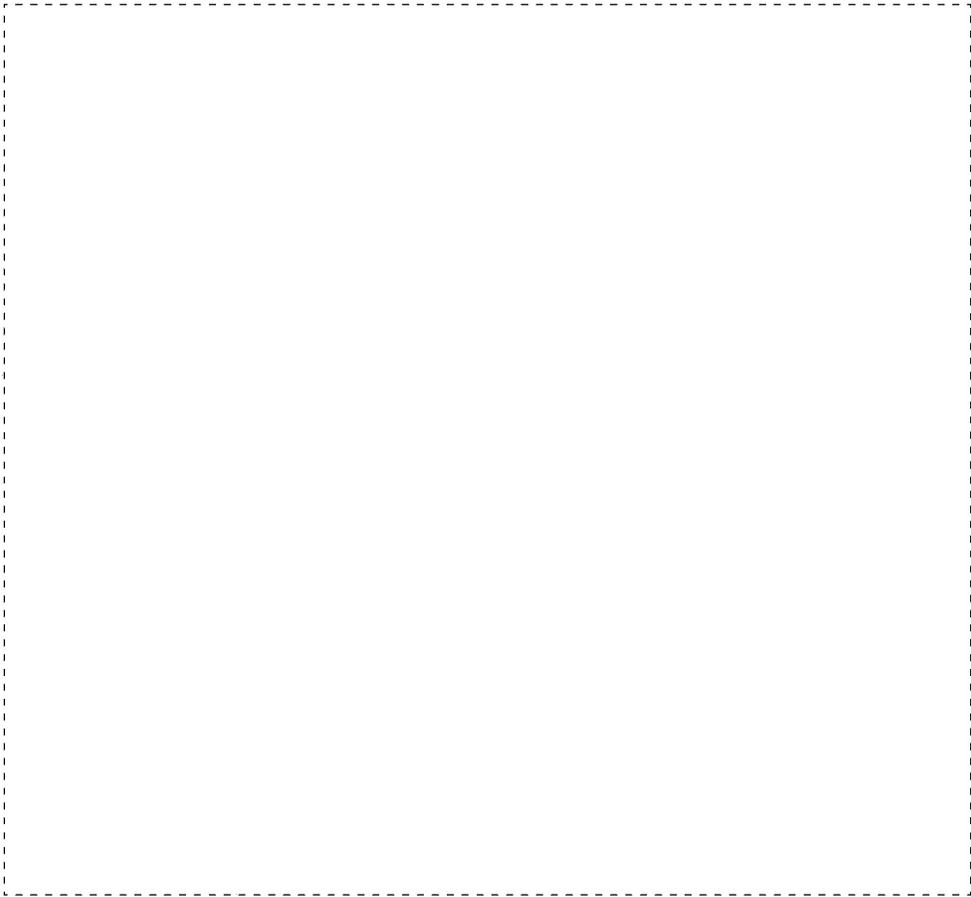


Fig. 5

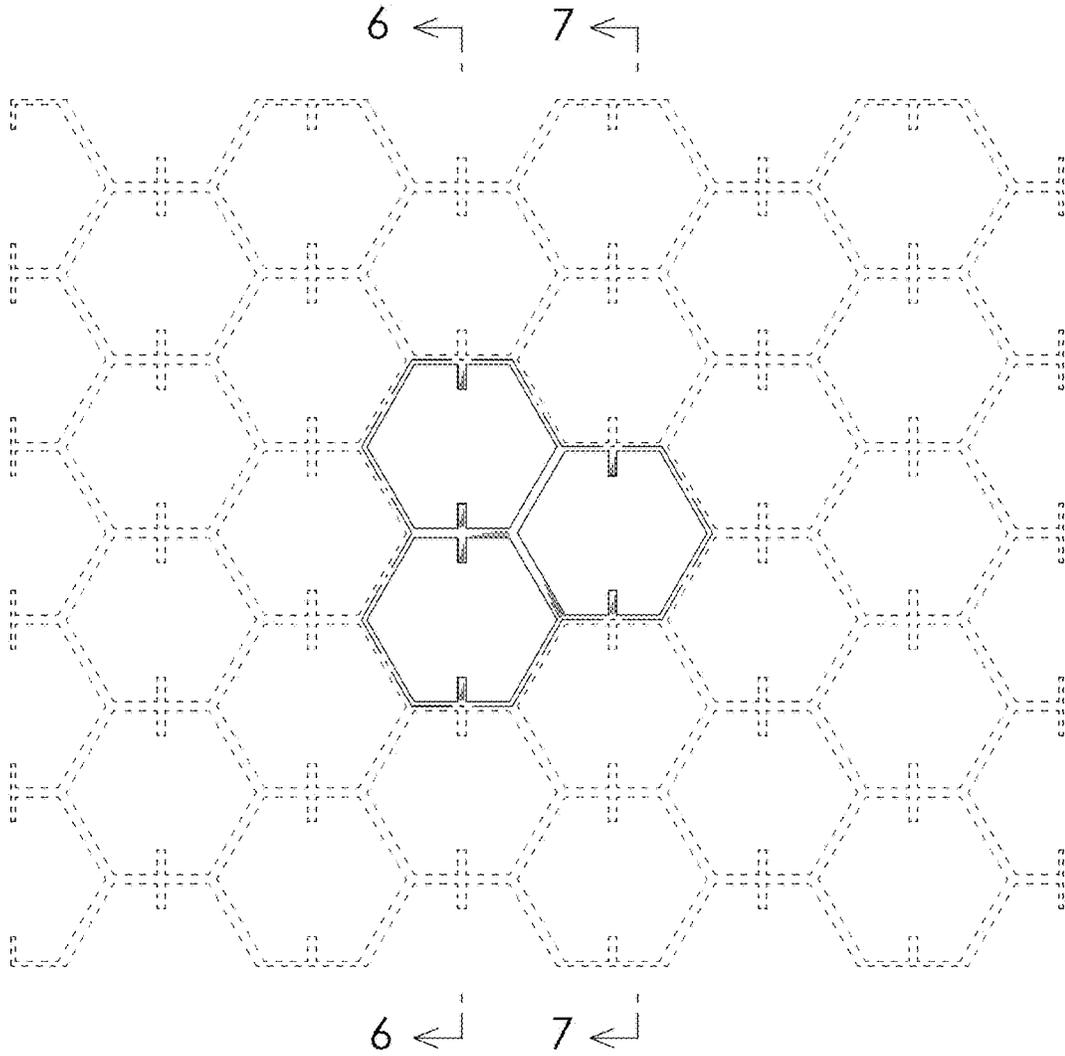


Fig. 6

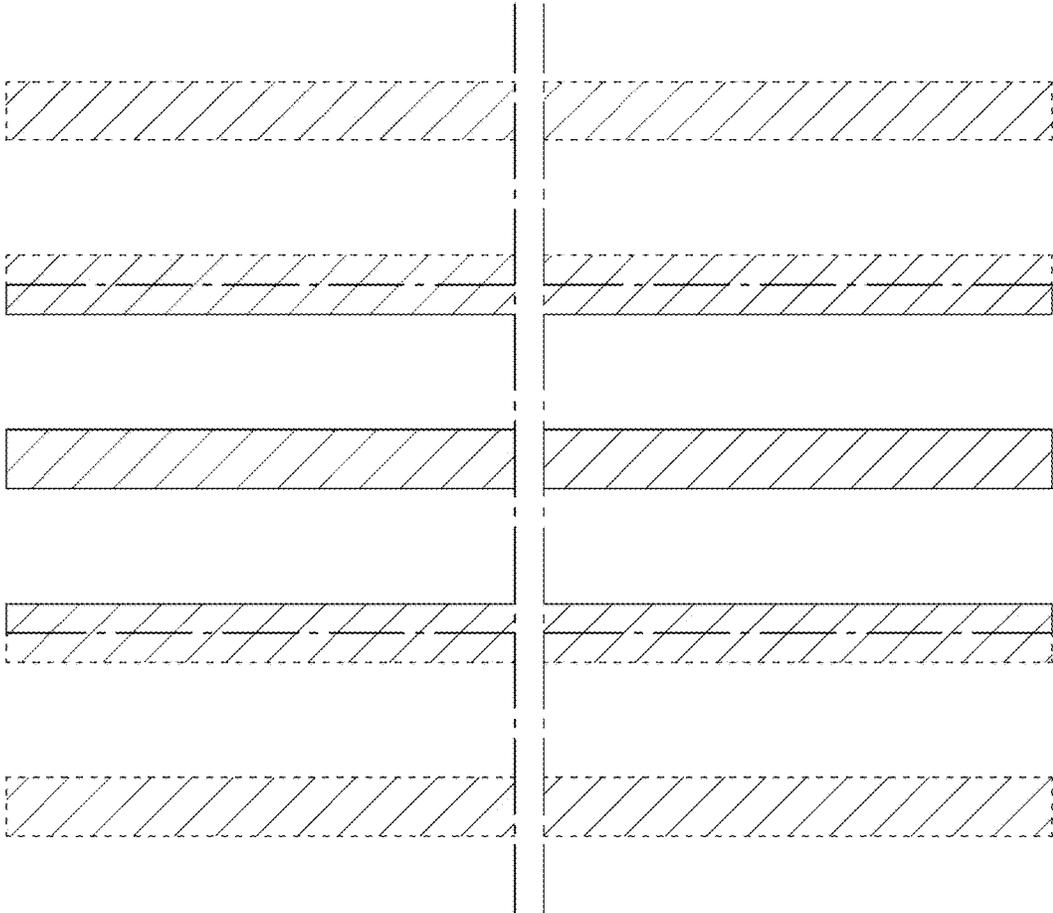


Fig. 7



Fig. 8

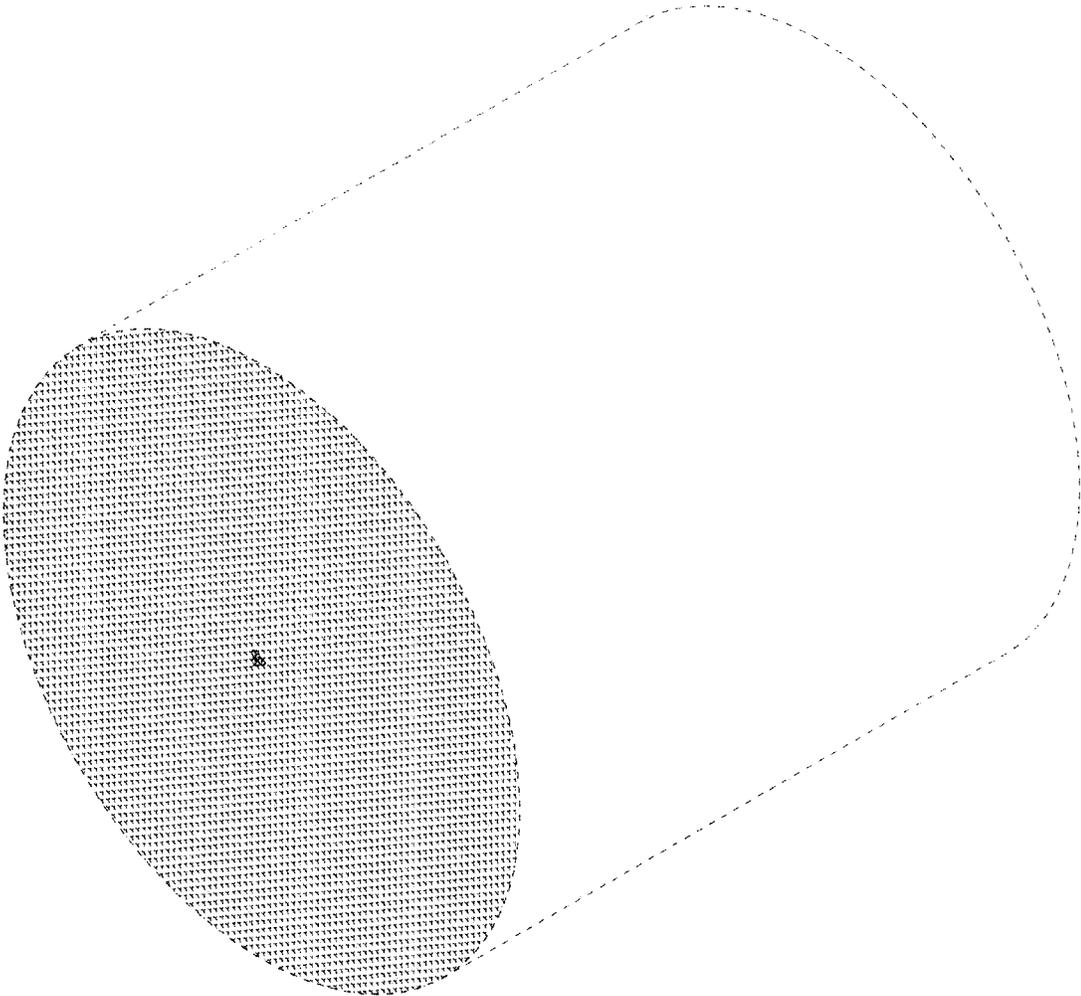


Fig. 9

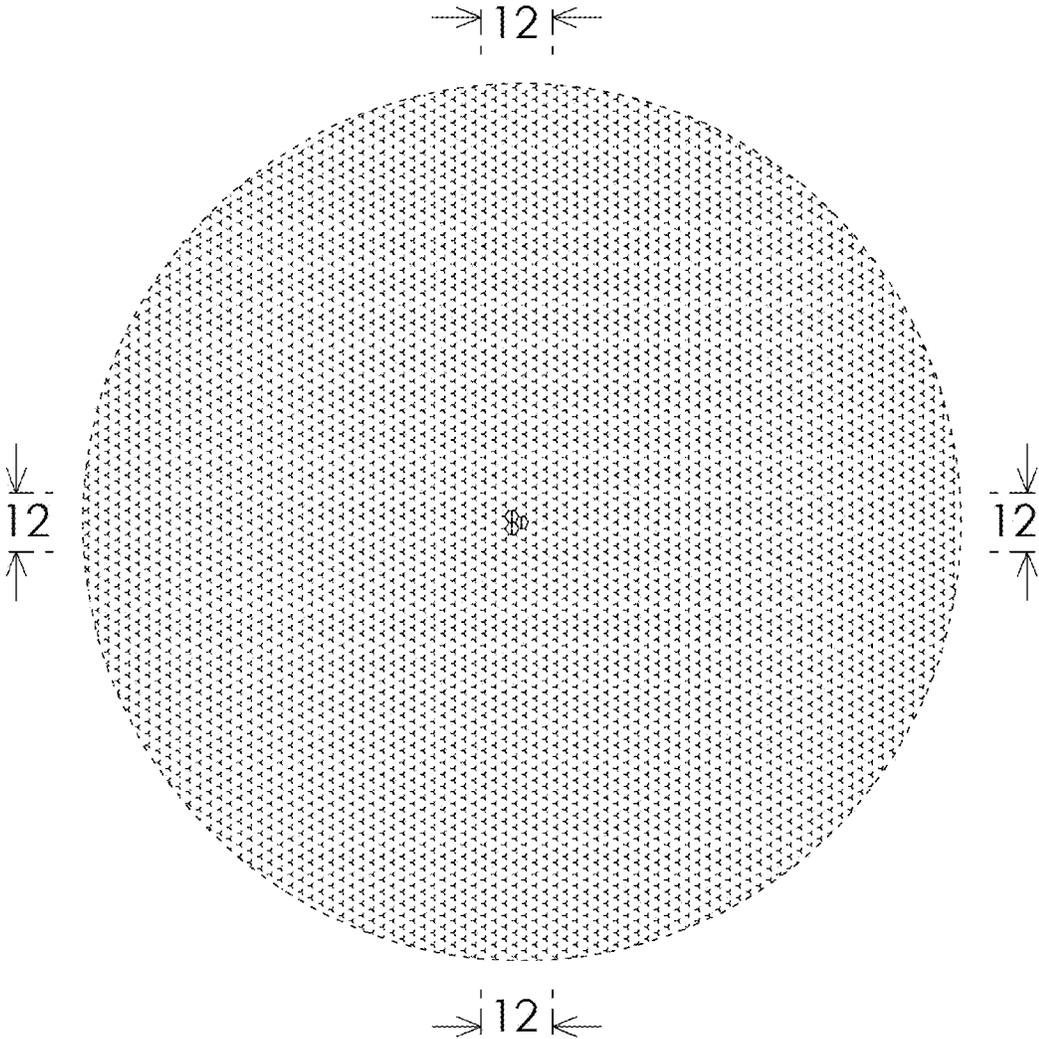


Fig.10



Fig. 11



Fig. 12

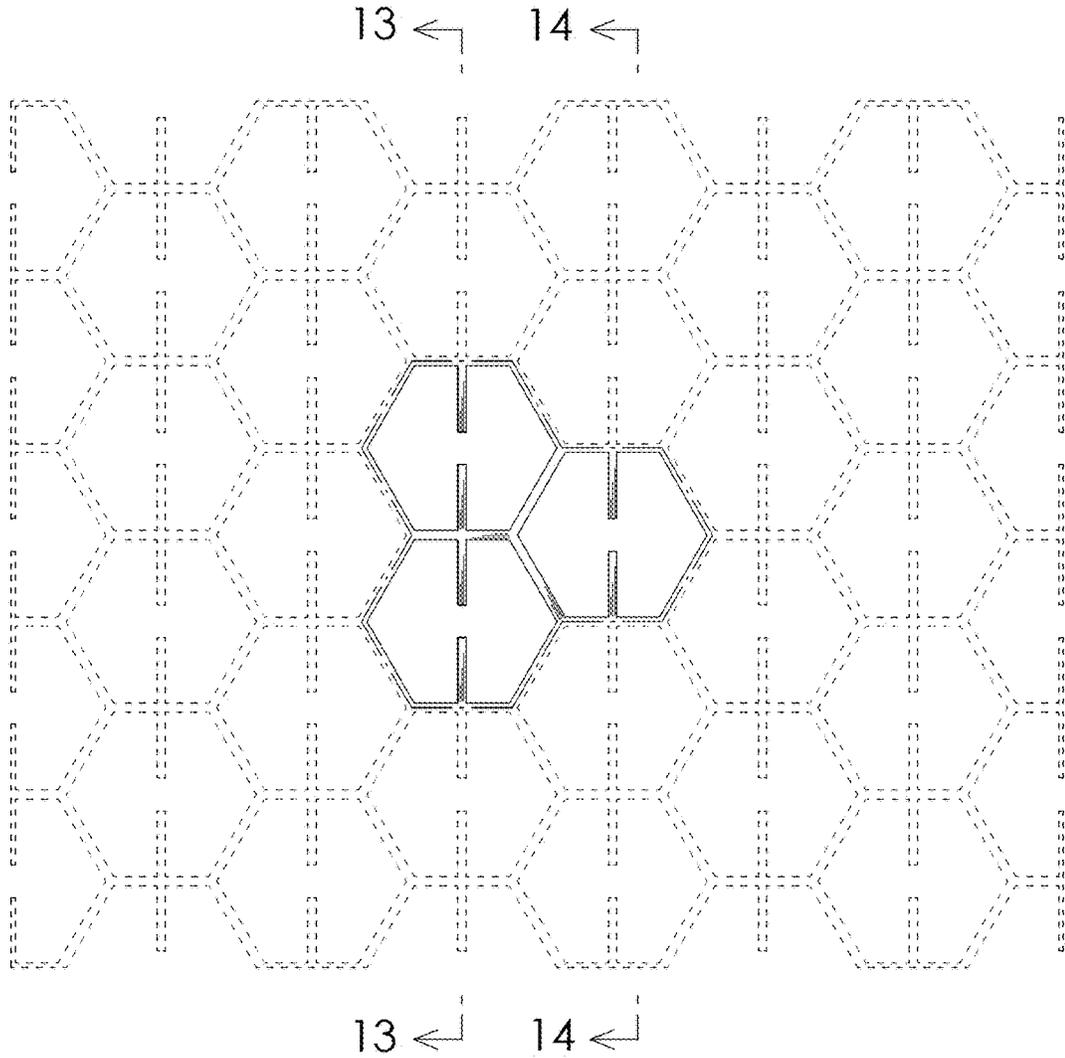


Fig. 13

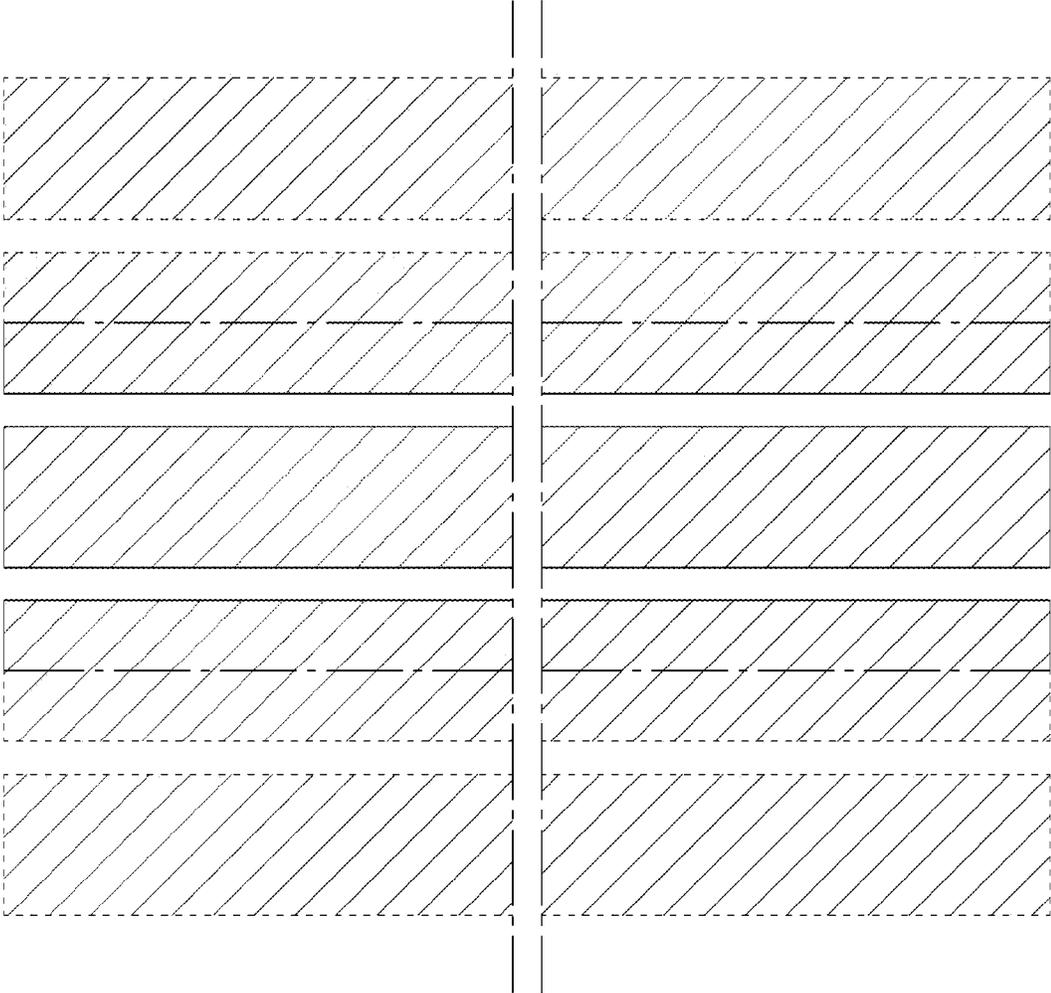


Fig. 14

