



US00D947912S

(12) **United States Design Patent** (10) **Patent No.:** **US D947,912 S**  
**Kang** (45) **Date of Patent:** **\*\* Apr. 5, 2022**

(54) **AIR HEATER**

A24F 15/14; A24F 15/18; A24F 40/85;  
A24F 42/00; A24F 42/10; A24F 42/20;  
A24F

(71) Applicant: **Hong Ku Kang**, Seoul (KR)

(Continued)

(72) Inventor: **Hong Ku Kang**, Seoul (KR)

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

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(21) Appl. No.: **29/728,533**

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(22) Filed: **Mar. 19, 2020**

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433/32

(30) **Foreign Application Priority Data**

(Continued)

Oct. 22, 2019 (KR) ..... 30-2019-0050055

*Primary Examiner* — Marissa J Cash

(51) **LOC (13) Cl.** ..... **15-09**

*Assistant Examiner* — William B Melliar

(52) **U.S. Cl.**

(74) *Attorney, Agent, or Firm* — Invenstone Patent, LLC

USPC ..... **D15/144**

(57) **CLAIM**

(58) **Field of Classification Search**

The ornamental design for an air heater, as shown and described.

USPC ..... D27/100, 101, 139, 141, 162, 163, 164,  
D27/165, 166, 167, 168, 169, 170, 171,  
D27/172, 173, 174, 175, 176, 177, 178,  
D27/179, 180, 181, 182, 183, 184, 185,  
D27/186, 187, 188, 189, 190, 191, 192,  
D27/193, 194, 196; D23/360, 362, 323,  
D23/328, 415, 399, 314, 322, 336, 340,  
D23/341, 355, 358, 363, 386; D24/110,  
D24/110.4, 110.5, 110.6, 113; D15/144,  
D15/144.2

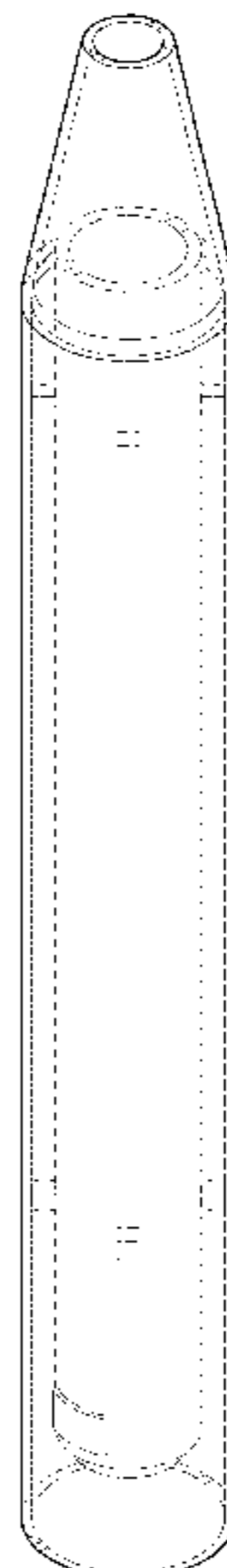
**DESCRIPTION**

CPC ..... A24F 40/10; A24F 40/40; A24F 40/46;  
A24F 40/44; A24F 40/50; A24F 40/485;  
A24F 40/60; A24F 40/90; A24F 40/53;  
A24F 40/70; A24F 40/51; A24F 40/05;  
A24F 40/48; A24F 40/57; A24F 40/65;  
A24F 40/20; A24F 47/002; A24F 40/30;  
A24F 40/95; A24F 47/004; A24F 13/14;  
A24F 1/32; A24F 40/00; A24F 40/49;  
A24F 42/60; A24F 7/04; A24F 9/16;  
A24F 47/008; A24F 40/42; A24F 47/00;  
A24F 15/015; A24F 1/02; A24F 2700/03;  
A24F 40/465; A24F 47/006; A24F 7/02;  
A24F 13/00; A24F 15/01; A24F 15/12;

FIG. 1 is a perspective view of an air heater showing the claimed design;  
FIG. 2 is a front view thereof;  
FIG. 3 is a rear view thereof;  
FIG. 4 is a left side view thereof;  
FIG. 5 is a right side view thereof;  
FIG. 6 is a top view thereof; and,  
FIG. 7 is a bottom view thereof.

This is a new design for an air heater for heating and directing air to a target workpiece as applied to fields including semiconductor manufacturing. The air heater includes an inlet at the bottom of FIG. 1 and an outlet at the top of FIG. 1, and the inlet may be connected to an air pump (not claimed). When fast moving air from the air pump enters the air heater through the inlet, the air heater instantly heats up the fast moving air in the cylinder, which exits the outlet as hot, fast moving air. The hot air heats up a target workpiece such as a semiconductor, ultimately melting at least a portion of the target workpiece.

**1 Claim, 7 Drawing Sheets**



(58) **Field of Classification Search**

CPC .... 7/00; A61M 11/005; A61M 11/042; A61M 11/041; A61M 15/06; A61M 2205/8206; A61M 15/0021; A61M 15/025; A61M 11/001; A61M 11/02; A61M 2016/0021; A61M 2202/064; A61M 11/00; A61M 15/0085; A61M 15/009; A61M 15/00; A61M 15/0086; A61M 11/06; A61M 15/0018; A61M 2205/3569; A61M 2205/52; A61M 2205/6045; A61M 2205/6054; A61M 2205/6072; A61M 2205/70; A61M 2205/8262; A61M 2206/14; A61M 2206/16; A61M 2206/18; A61M 2207/00; A61M 2209/082; A61M 11/04; A61M 11/044; A61M 15/0001; A61M 15/0008; A61M 15/0016; A61M 15/0036; A61M 15/0041; A61M 15/0043; A61M 15/0045; A61M 15/0048; A61M 15/0066; A61M 15/02; A61M 16/0066; A61M 16/0627; A61M 16/147; A61M 16/201; A61M 2016/0015; A61M 2202/062; A61M 2205/075; A61M 2205/123; A61M 2205/128; A61M 2205/21; A61M 2205/273; A61M 2205/276; A61M 2205/3306; A61M 2205/3372; A61M 2205/583; A61M 2205/75; A61M 2205/7545; A61M 2205/8237; A61M 2205/8268; A61M 2205/84; A61M 2209/06; A61M 2209/10; A61M 2210/0612; A61M 2210/0618; A61M 2210/1039; A61M 2250/00; B23K 1/085; B23K 2101/36; B23K 1/0004; B23K 3/025; B23K 3/0607; B23K 3/087; B23K 1/002; B23K 3/02; B23K 3/0376; B23K 3/0615; B23K 1/00; B23K 3/03; B23K 1/012; B23K 1/015; B23K 3/0392;

B23K 9/26; B23K 11/3072; B23K 11/11; B29C 65/18

See application file for complete search history.

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FIG. 1

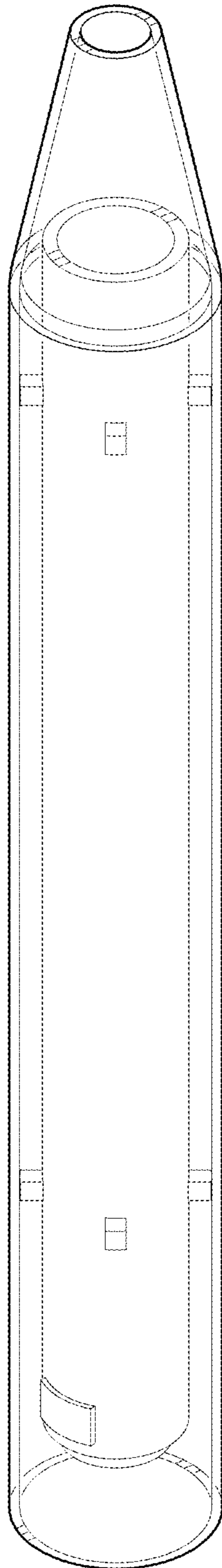


FIG. 2

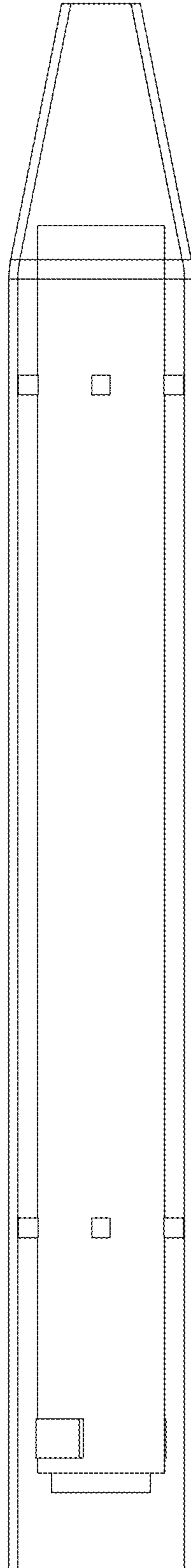


FIG. 3

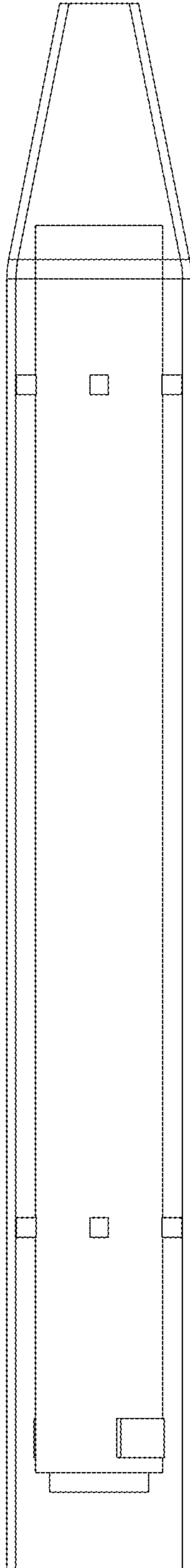


FIG. 4

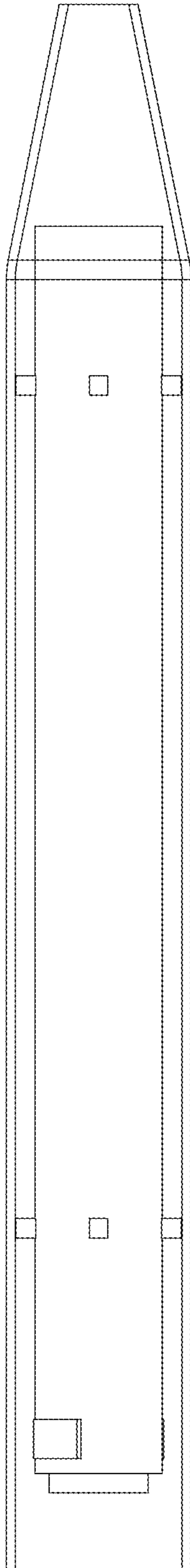


FIG. 5

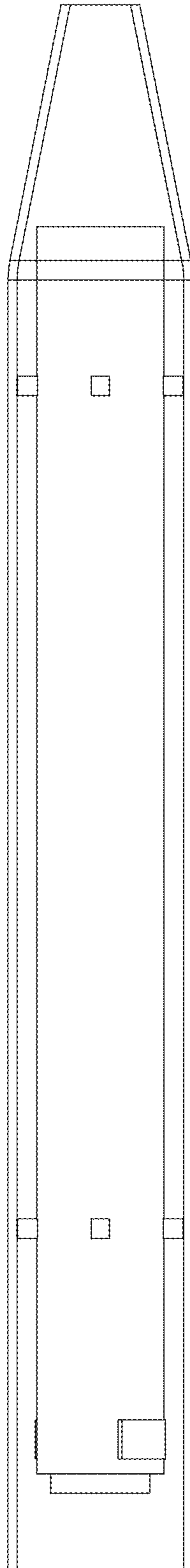


FIG. 6

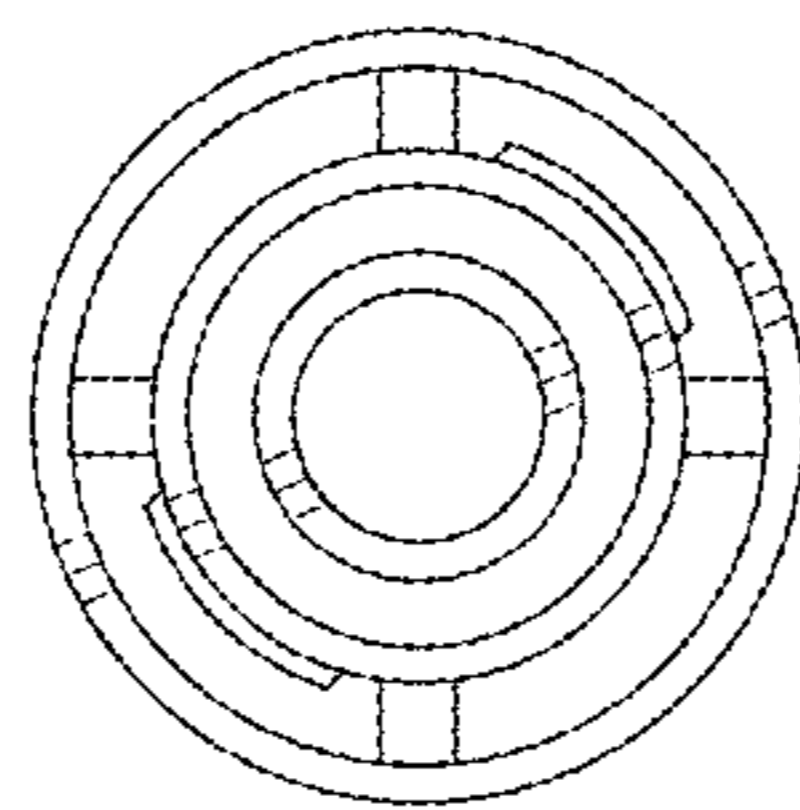




FIG. 7

