

US00D969183S

(12) **United States Design Patent** (10) **Patent No.:** **US D969,183 S**
Lake (45) **Date of Patent:** **** Nov. 8, 2022**

(54) **BOSS ON NOZZLE BORES OF A DRILL BIT**

DESCRIPTION

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Houston, TX (US)
(**) Term: **15 Years**
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(22) Filed: **Sep. 9, 2019**
(51) **LOC (13) Cl.** **15-09**
(52) **U.S. Cl.**
USPC **D15/139**
(58) **Field of Classification Search**
USPC D15/138, 139
CPC E21B 10/43; E21B 10/46; E21B 10/54;
E21B 10/62
See application file for complete search history.

FIG. 1 is a bottom view diagram of a first embodiment of a boss on nozzle bores of a drill bit.
FIG. 2 is an elevation diagram of the boss on nozzle bores of a drill bit of FIG. 1.
FIG. 3 is a first side view diagram of the boss on nozzle bores of a drill bit of FIG. 1.
FIG. 4 is a second side view diagram the boss on nozzle bores of a drill bit of FIG. 1.
FIG. 5 is a third side view diagram the boss on nozzle bores of a drill bit of FIG. 1.
FIG. 6 is a fourth side view diagram the boss on nozzle bores of a drill bit of FIG. 1.
FIG. 7 is a bottom view diagram of a second embodiment a boss on nozzle bores of a drill bit.
FIG. 8 is an elevation diagram the boss on nozzle bores of a drill bit of FIG. 7.
FIG. 9 is a first side view diagram the boss on nozzle bores of a drill bit of FIG. 7.
FIG. 10 is a second side view diagram the boss on nozzle bores of a drill bit of FIG. 7.
FIG. 11 is a third side view diagram the boss on nozzle bores of a drill bit of FIG. 7.
FIG. 12 is a fourth side view diagram the boss on nozzle bores of a drill bit of FIG. 7.
FIG. 13 is a bottom view diagram of a third embodiment a boss on nozzle bores of a drill bit.
FIG. 14 is an elevation diagram the boss on nozzle bores of a drill bit of FIG. 13.
FIG. 15 is a first side view diagram the boss on nozzle bores of a drill bit of FIG. 13.
FIG. 16 is a second side view diagram the boss on nozzle bores of a drill bit of FIG. 13.
FIG. 17 is a third side view diagram the boss on nozzle bores of a drill bit of FIG. 13; and,
FIG. 18 is a fourth side view diagram the boss on nozzle bores of a drill bit of FIG. 13.
The broken lines show portions of a boss on nozzle bores of a drill bit which form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

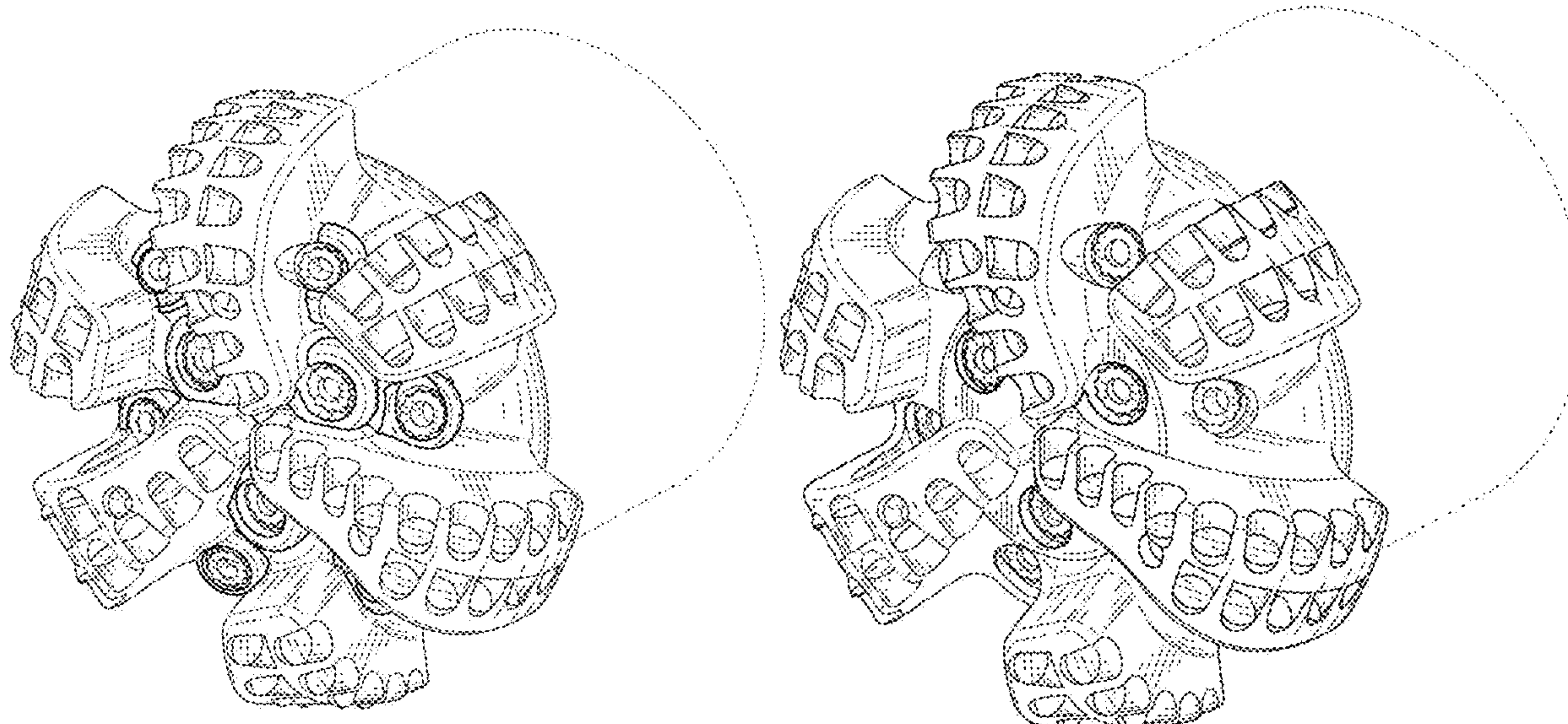
2,324,102 A 7/1943 Miller et al.
D381,026 S * 7/1997 Hessman D15/139
6,082,474 A * 7/2000 Matthias E21B 10/5735
175/432
6,192,999 B1 2/2001 Nguyen
(Continued)

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(57) **CLAIM**

I claim the ornamental design for a boss on nozzle bores of a drill bit, as shown and described.

1 Claim, 18 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D603,433	S *	11/2009	Zastrozynski	D15/139
8,100,202	B2	1/2012	Durairajan et al.	
D911,399	S *	2/2021	Atkins	D15/139
D924,949	S *	7/2021	Mortensen	D15/138
D940,767	S *	1/2022	Mahaffey, Jr.	D15/139
D947,910	S *	4/2022	Mortensen	D15/138
D951,313	S *	5/2022	Keller	D15/139
2010/0270078	A1	10/2010	Wells et al.	
2016/0177630	A1	6/2016	Trunk et al.	

* cited by examiner

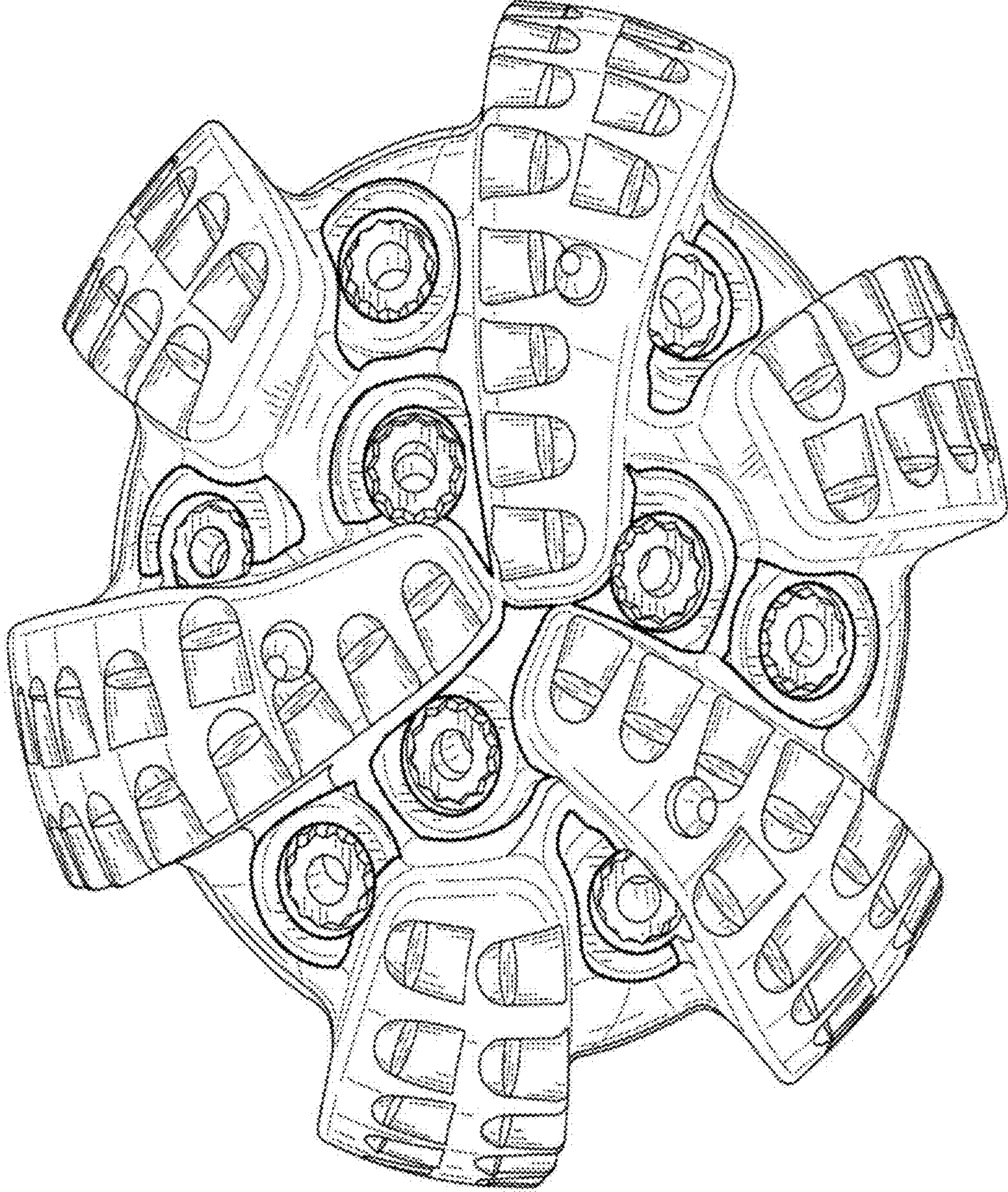


FIG. 1

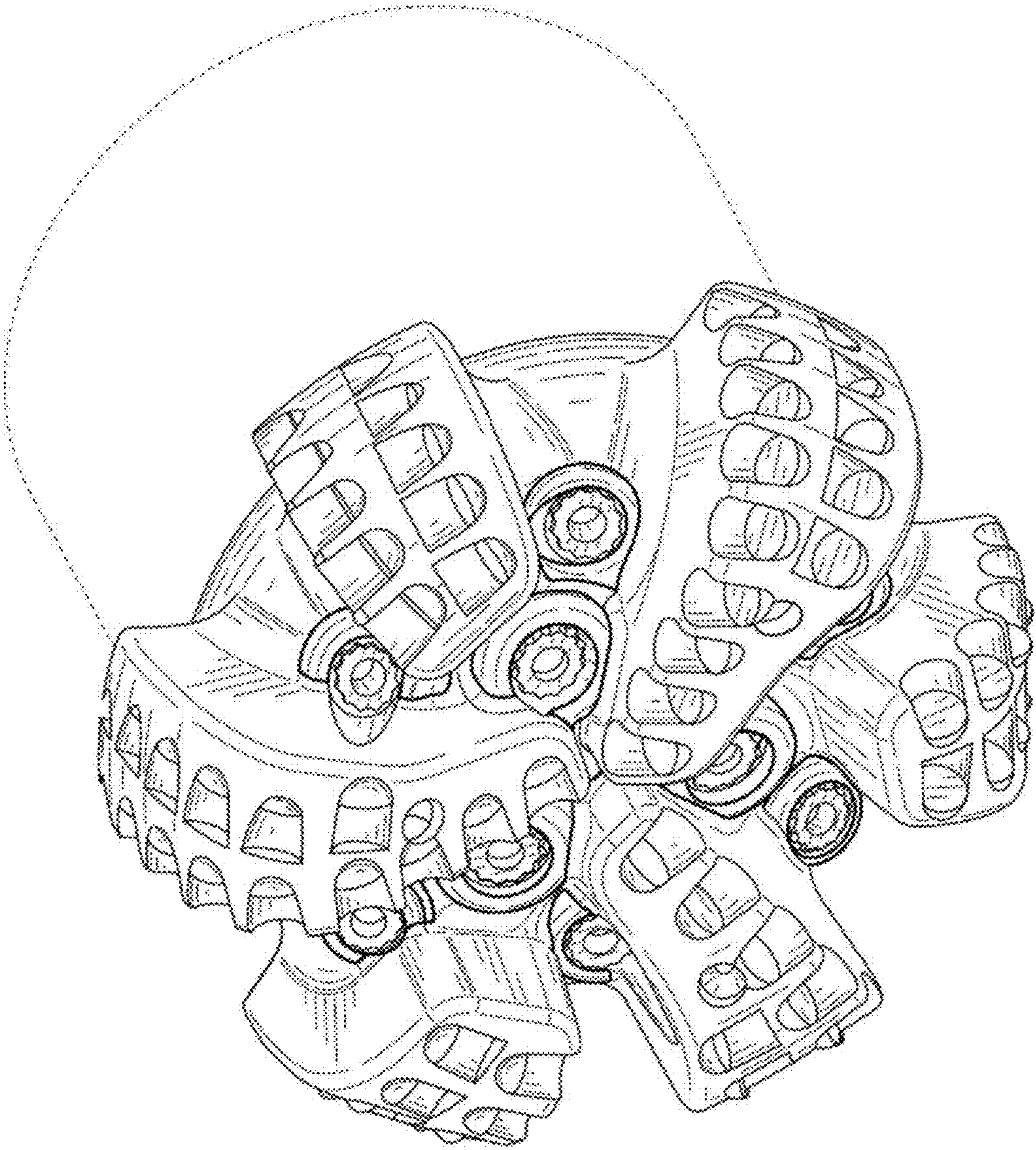


FIG. 2

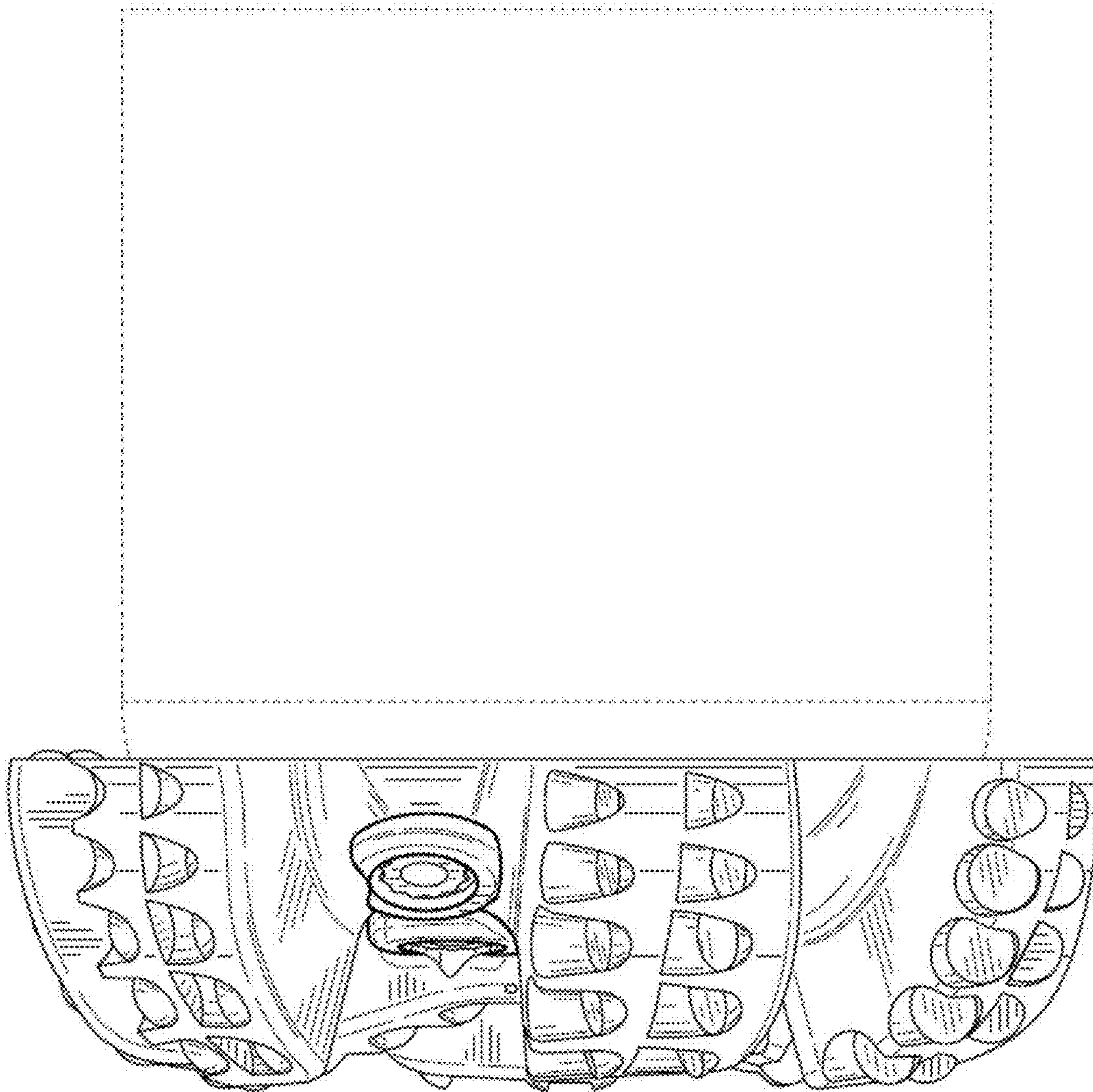


FIG. 3

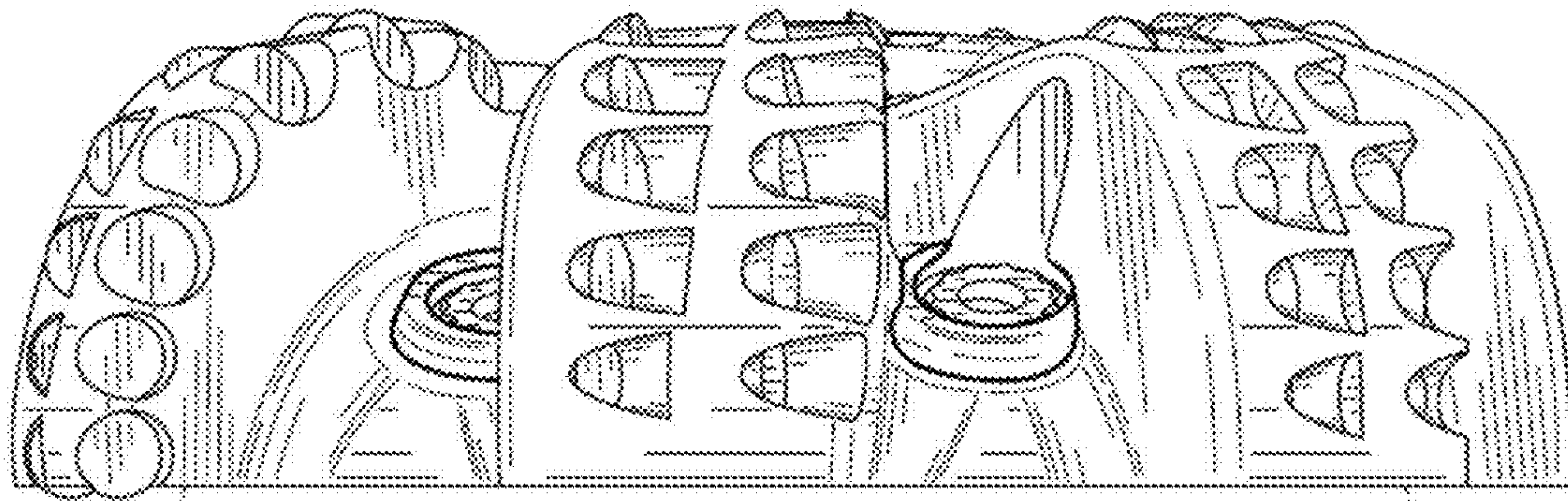


FIG. 4

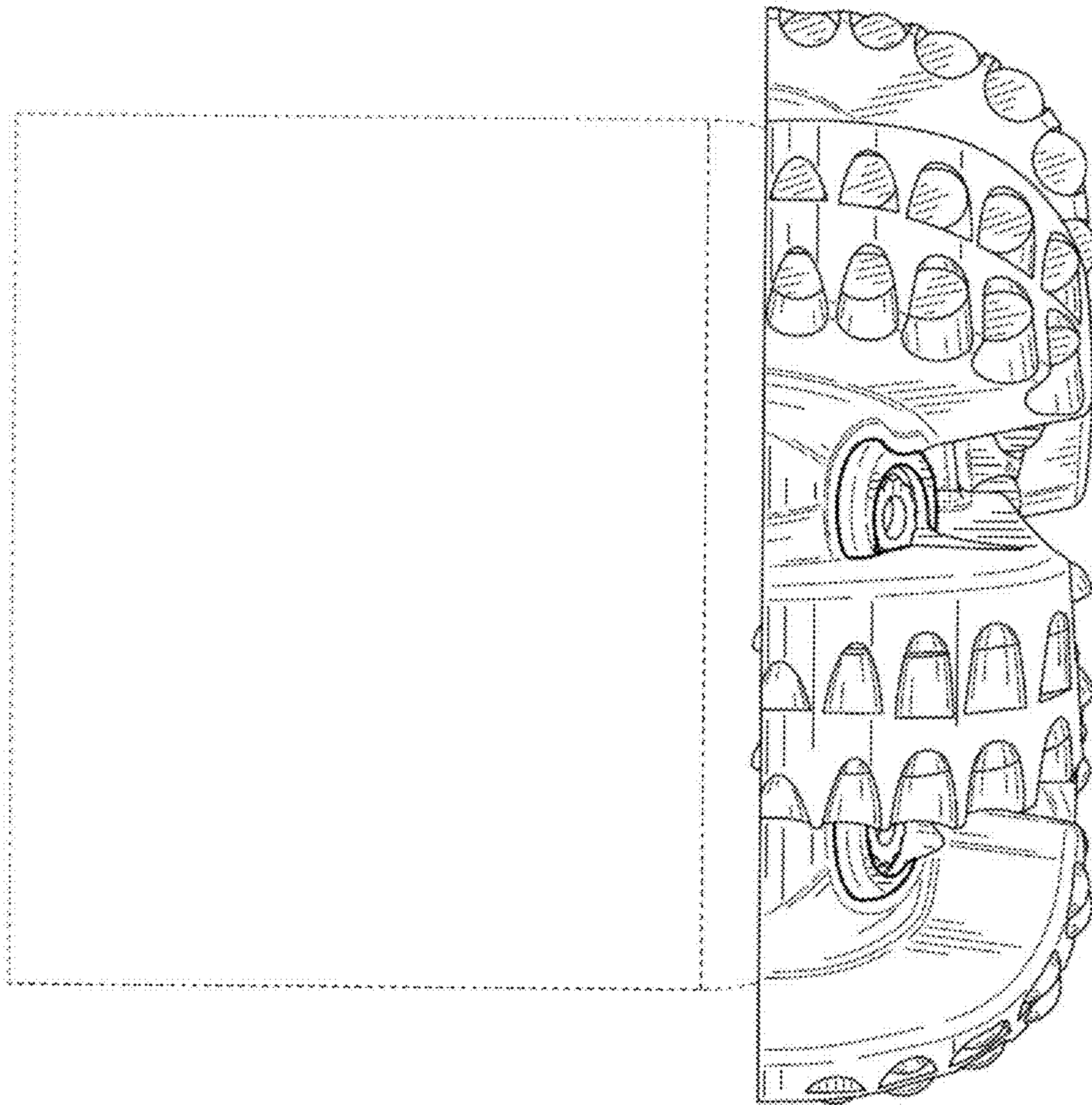


FIG. 5

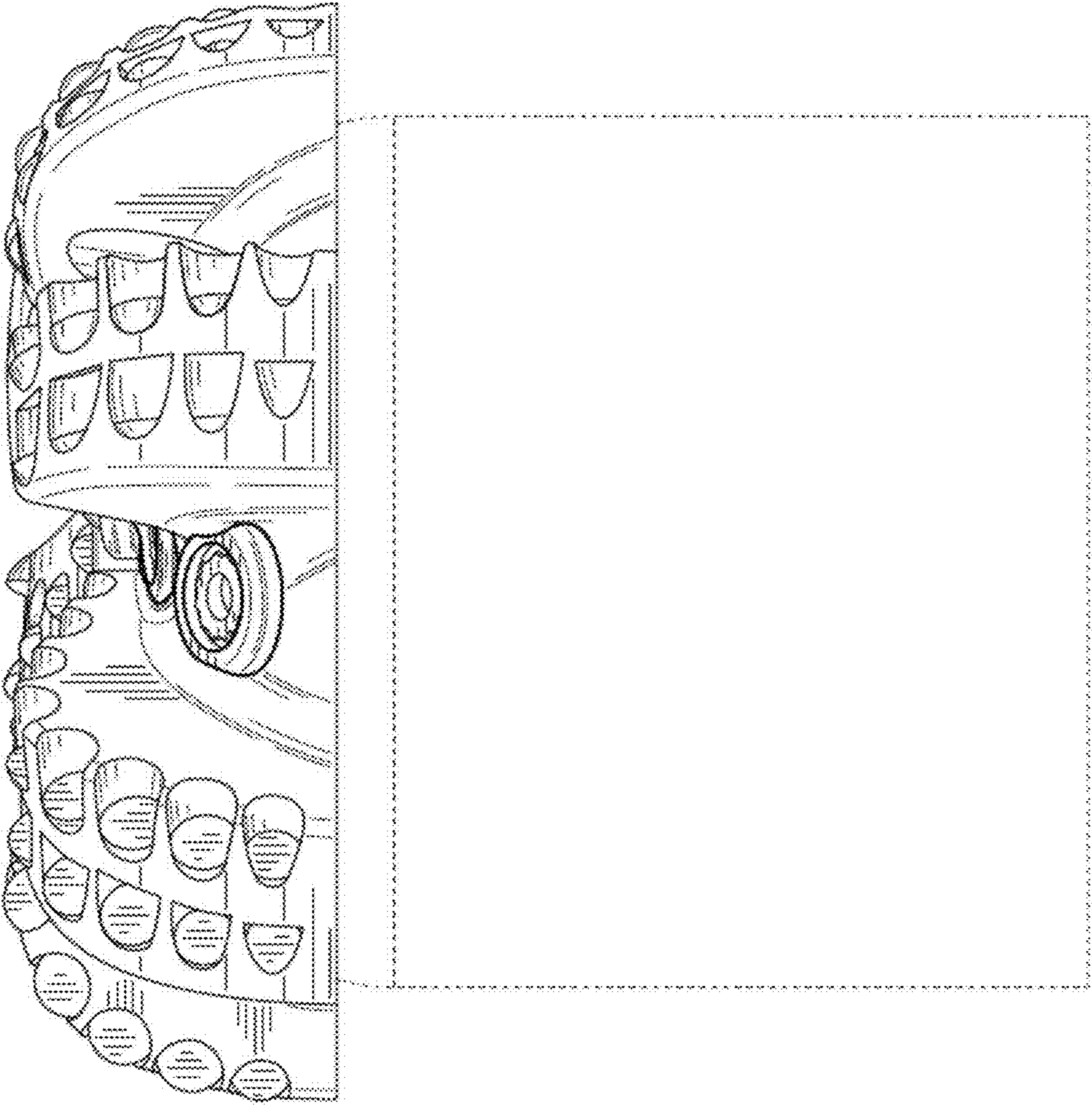


FIG. 6

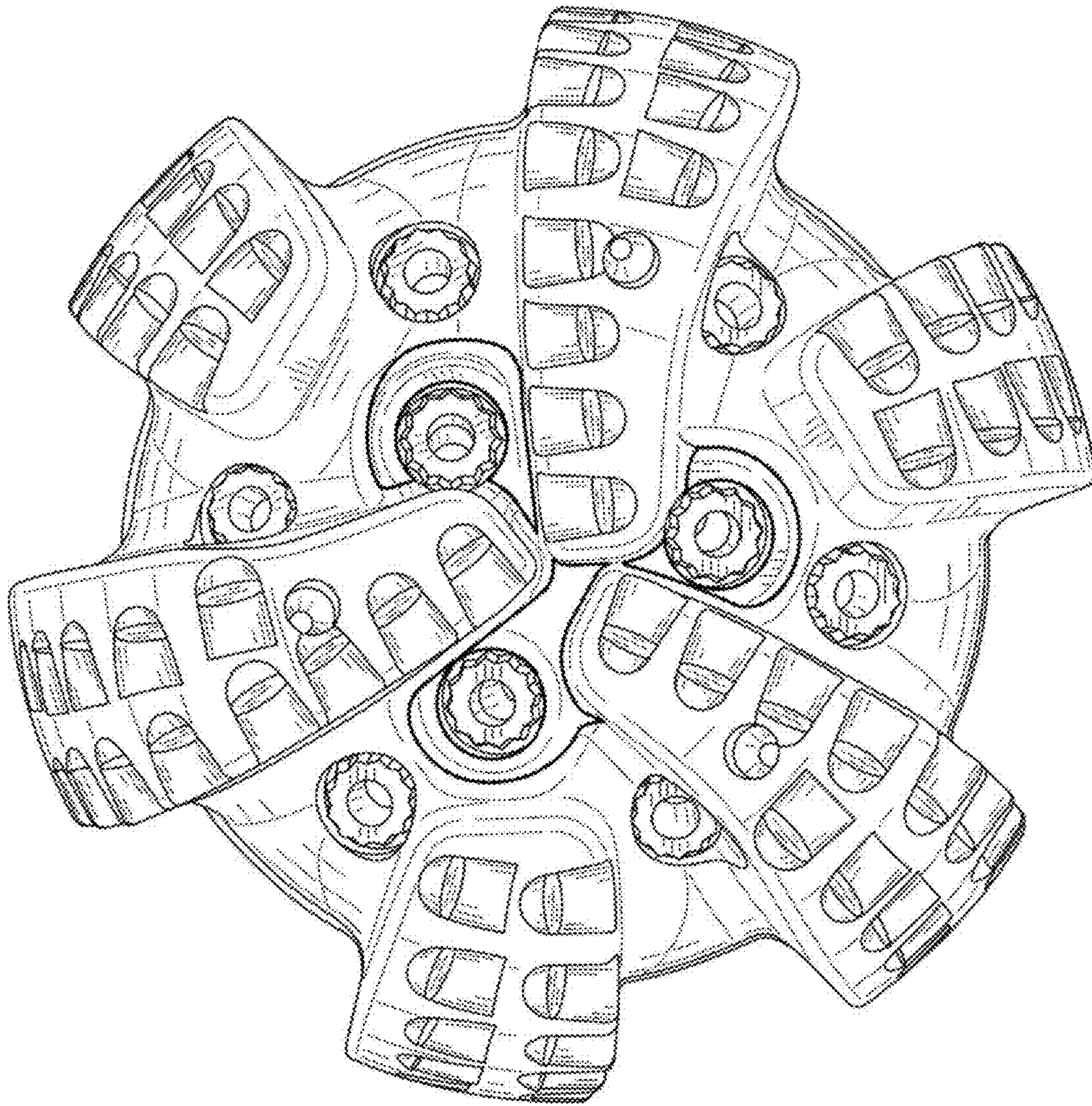


FIG. 7

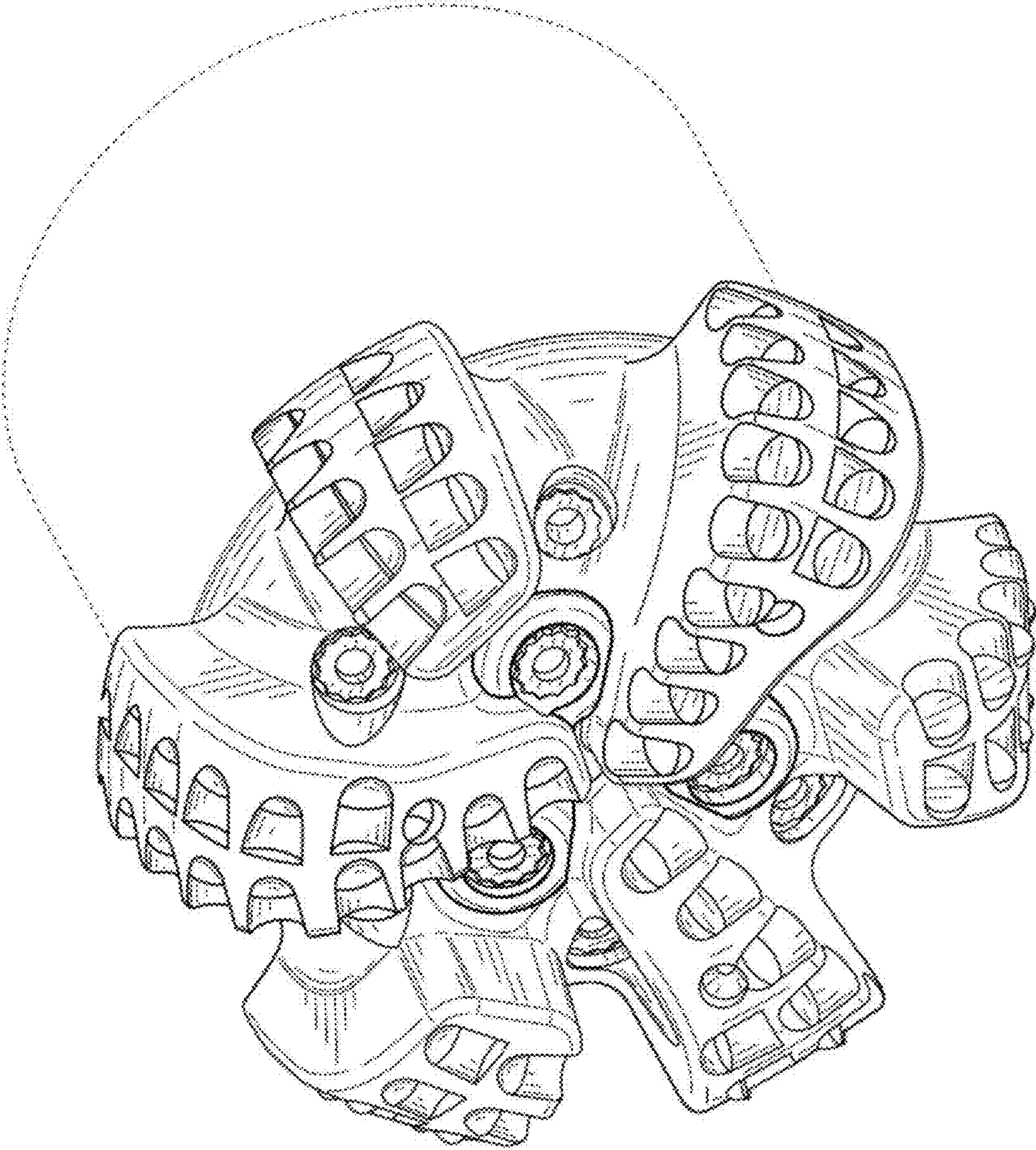


FIG. 8

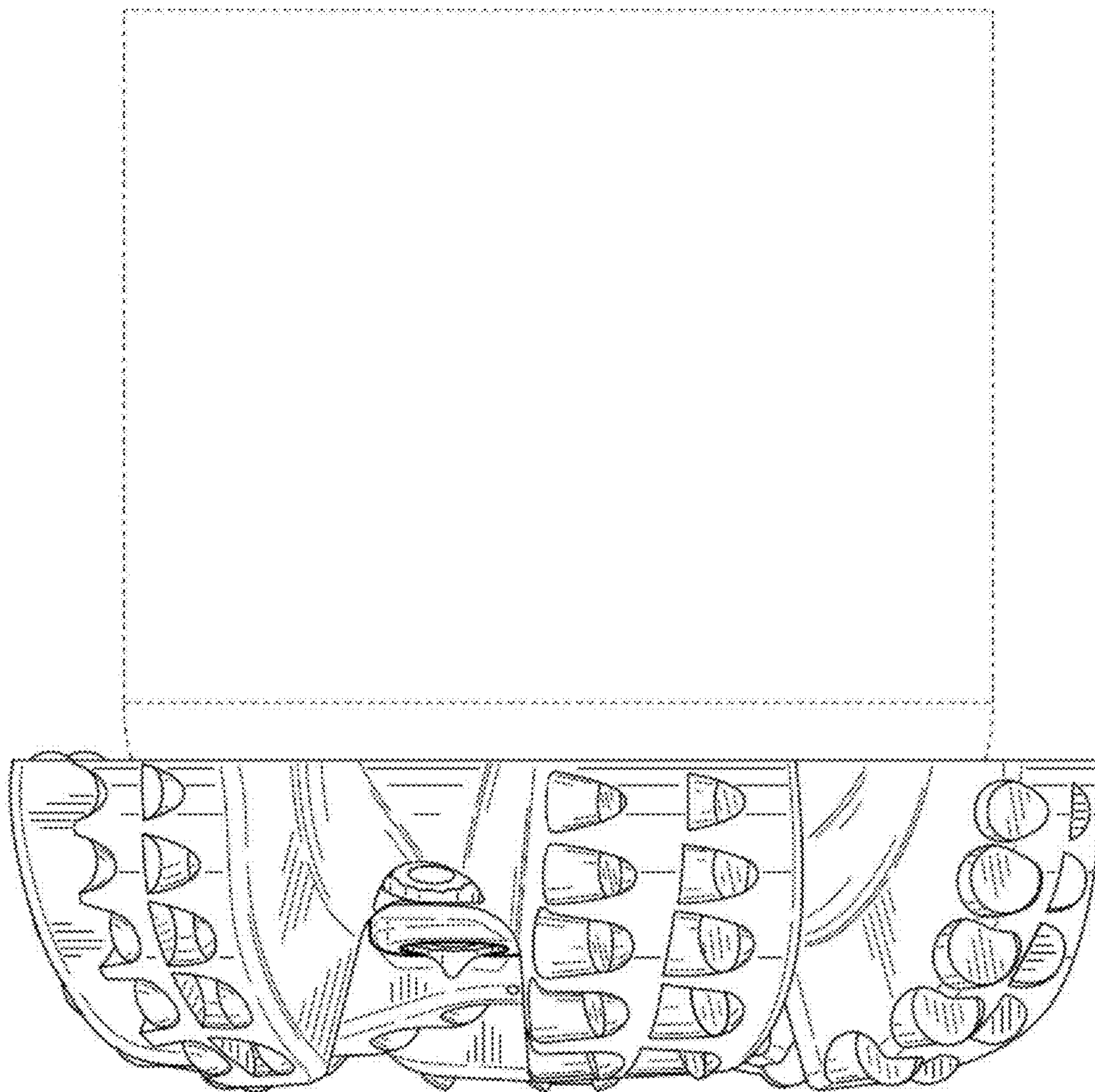


FIG. 9

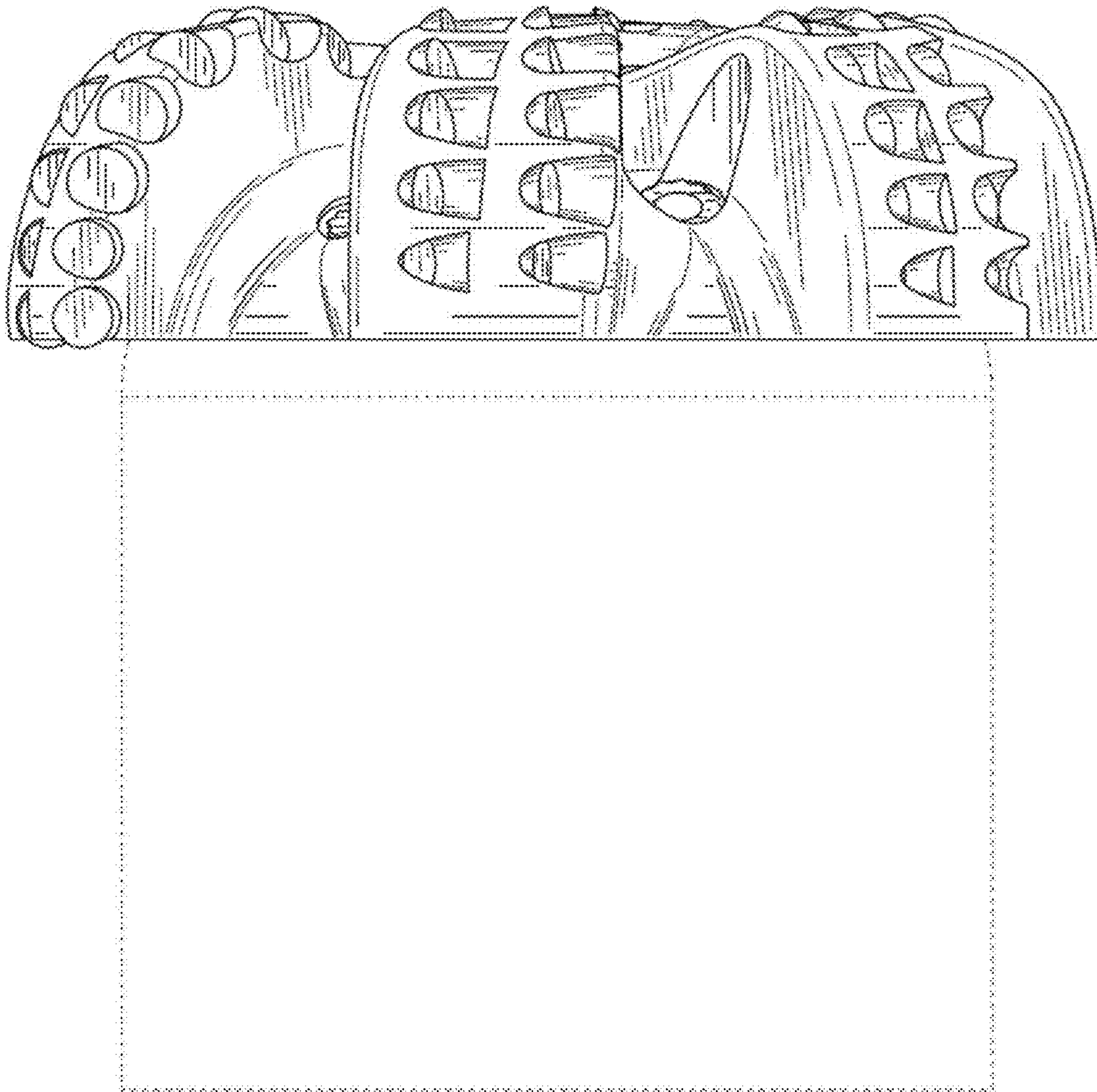


FIG. 10

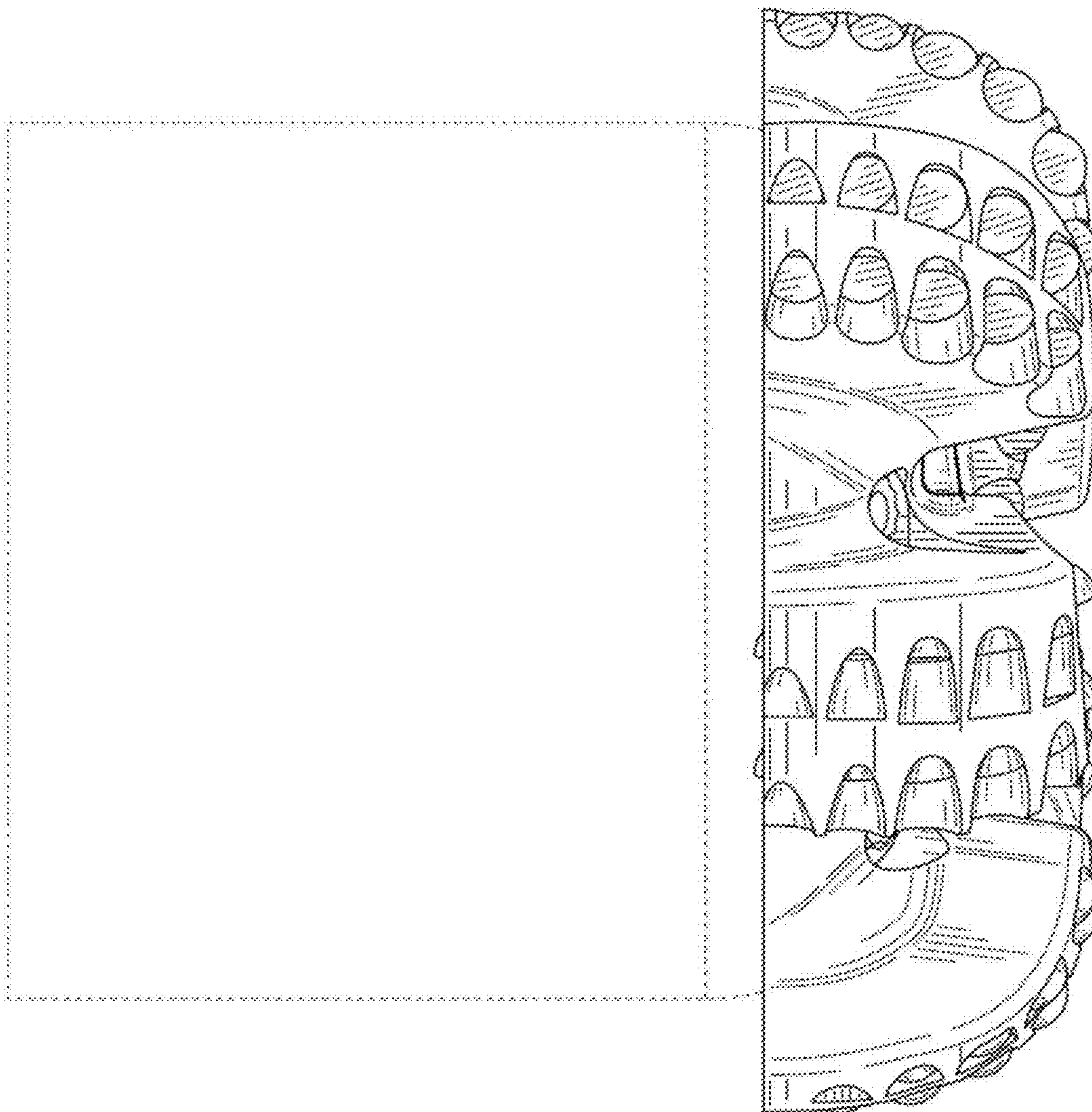


FIG. 11

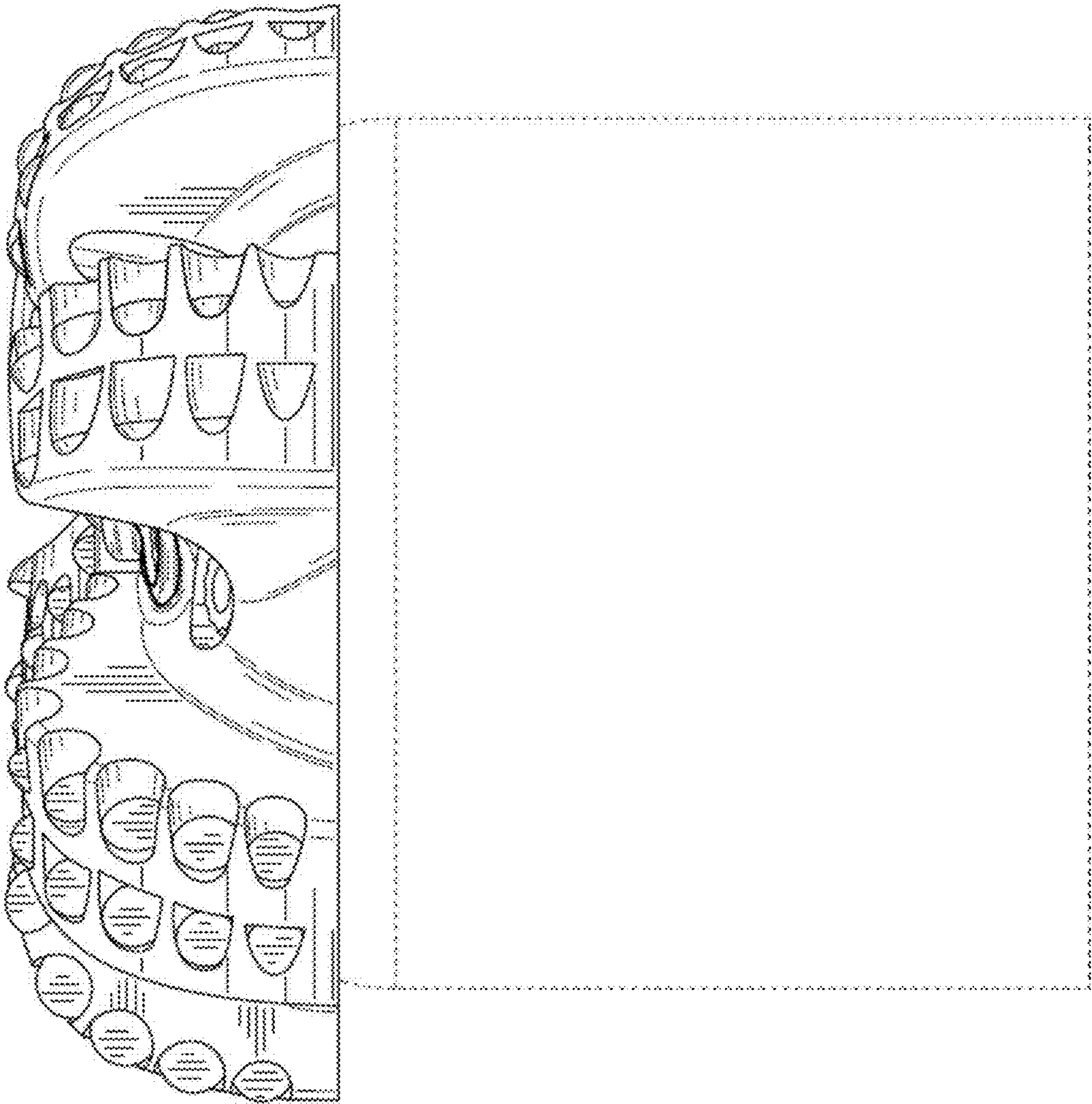


FIG. 12

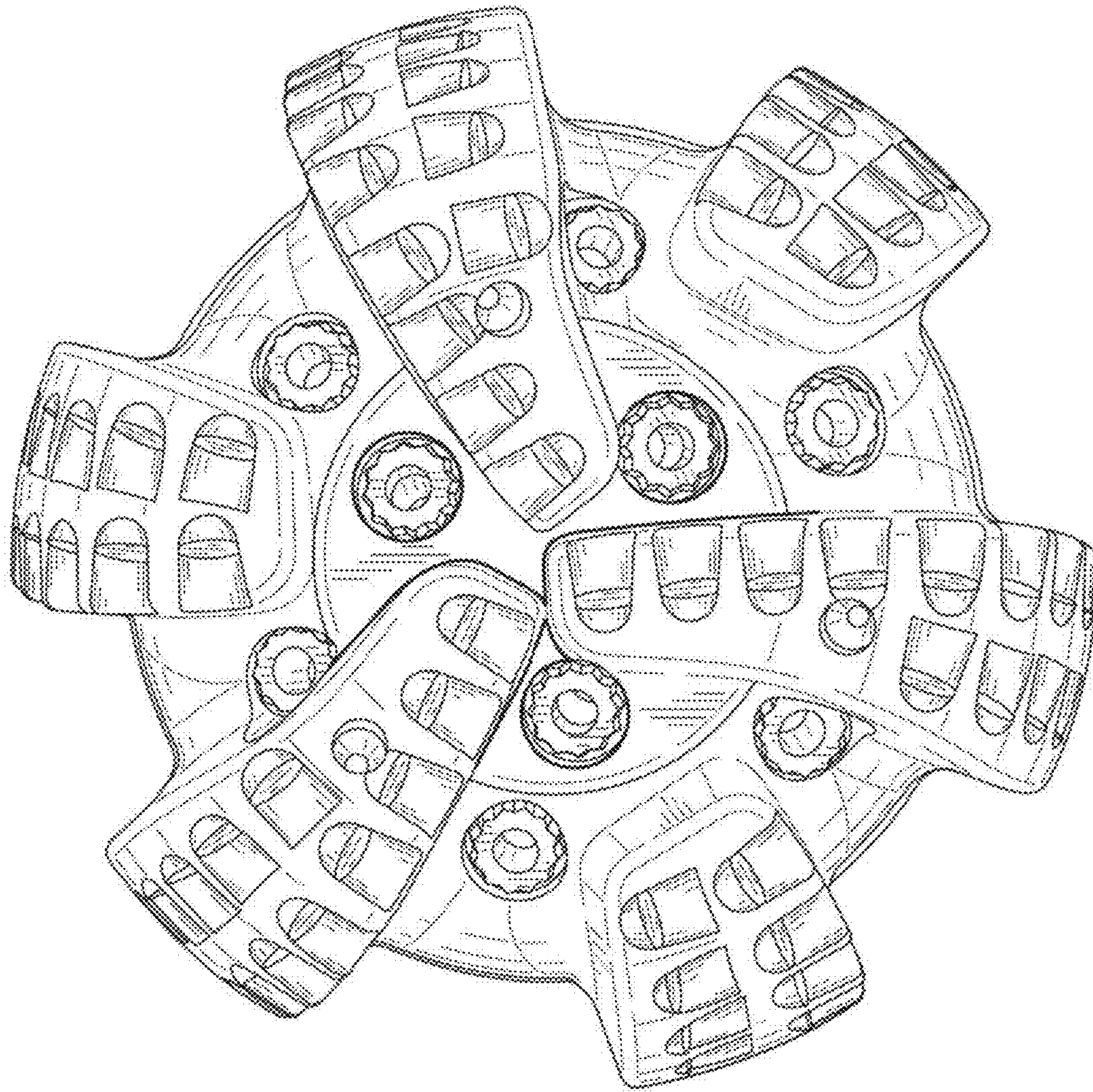


FIG. 13

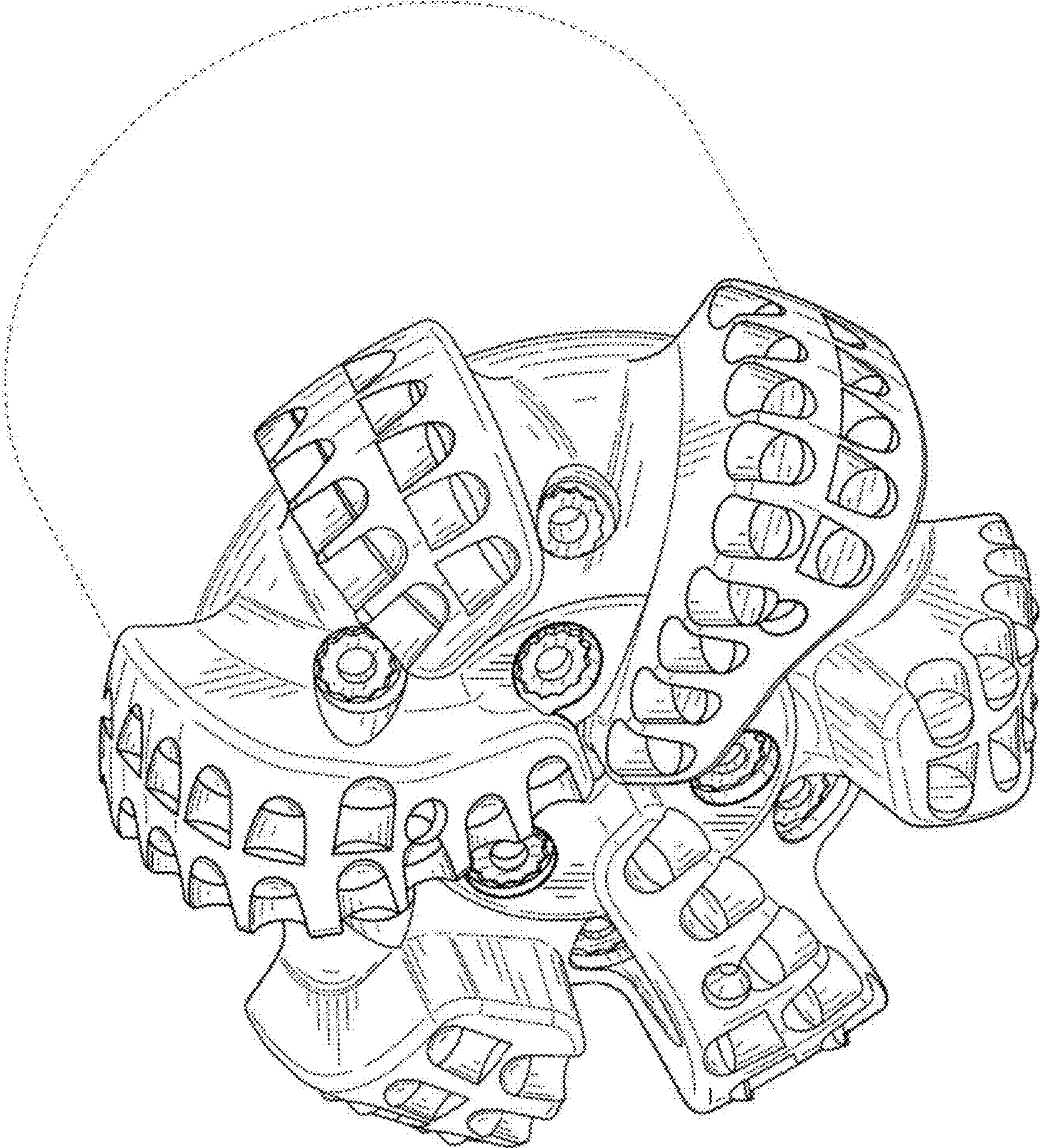


FIG. 14

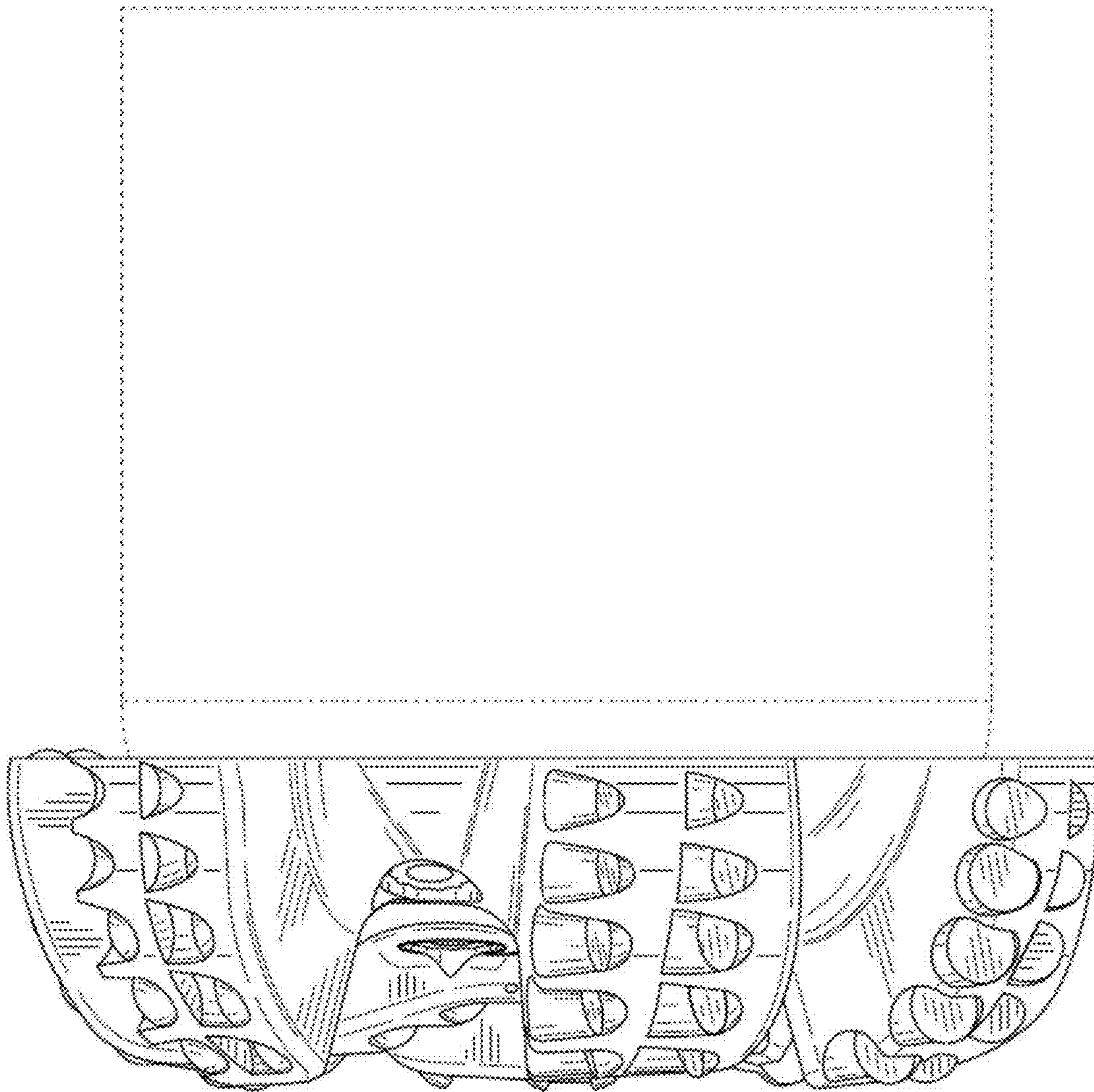


FIG. 15

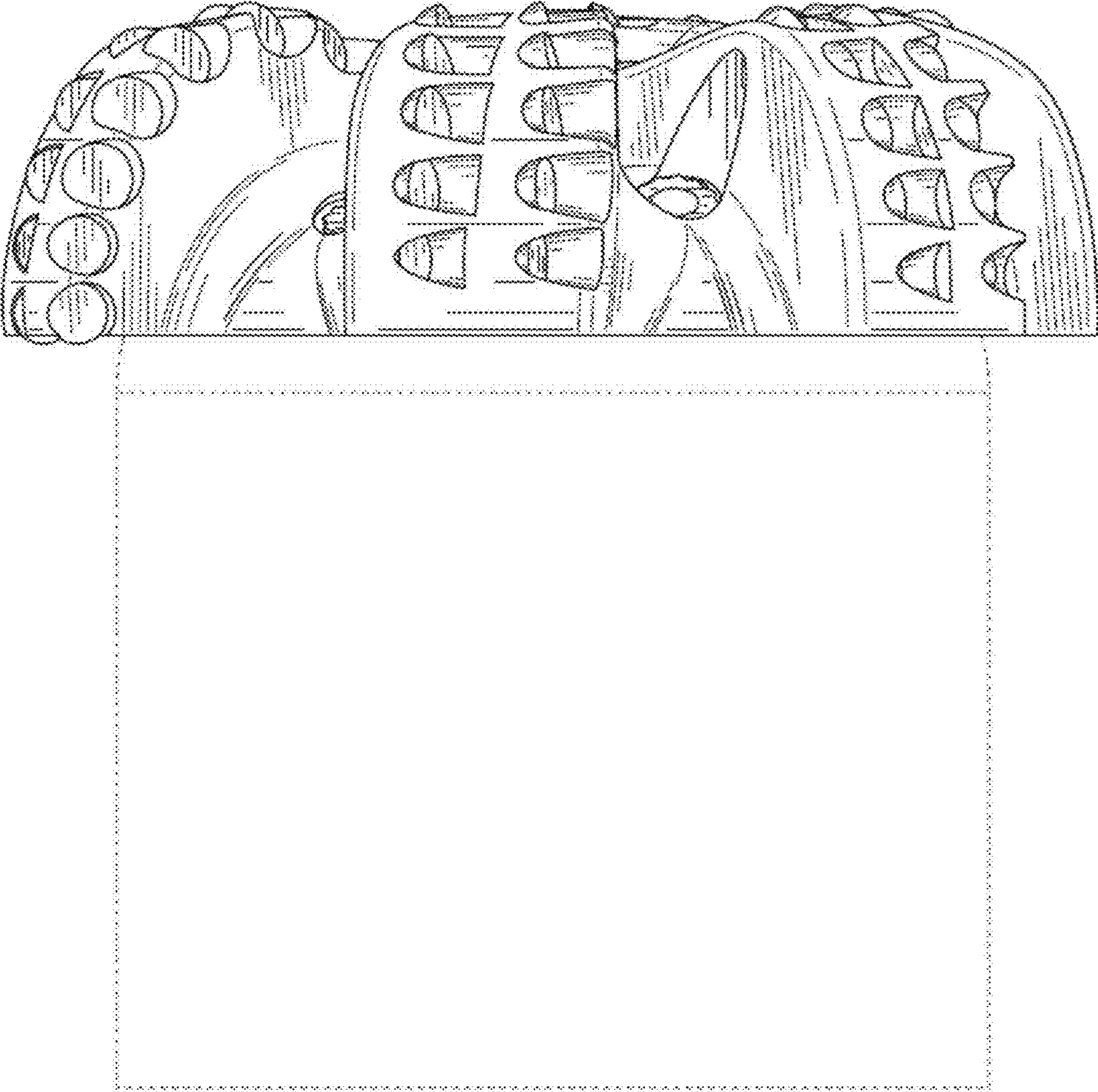


FIG. 16

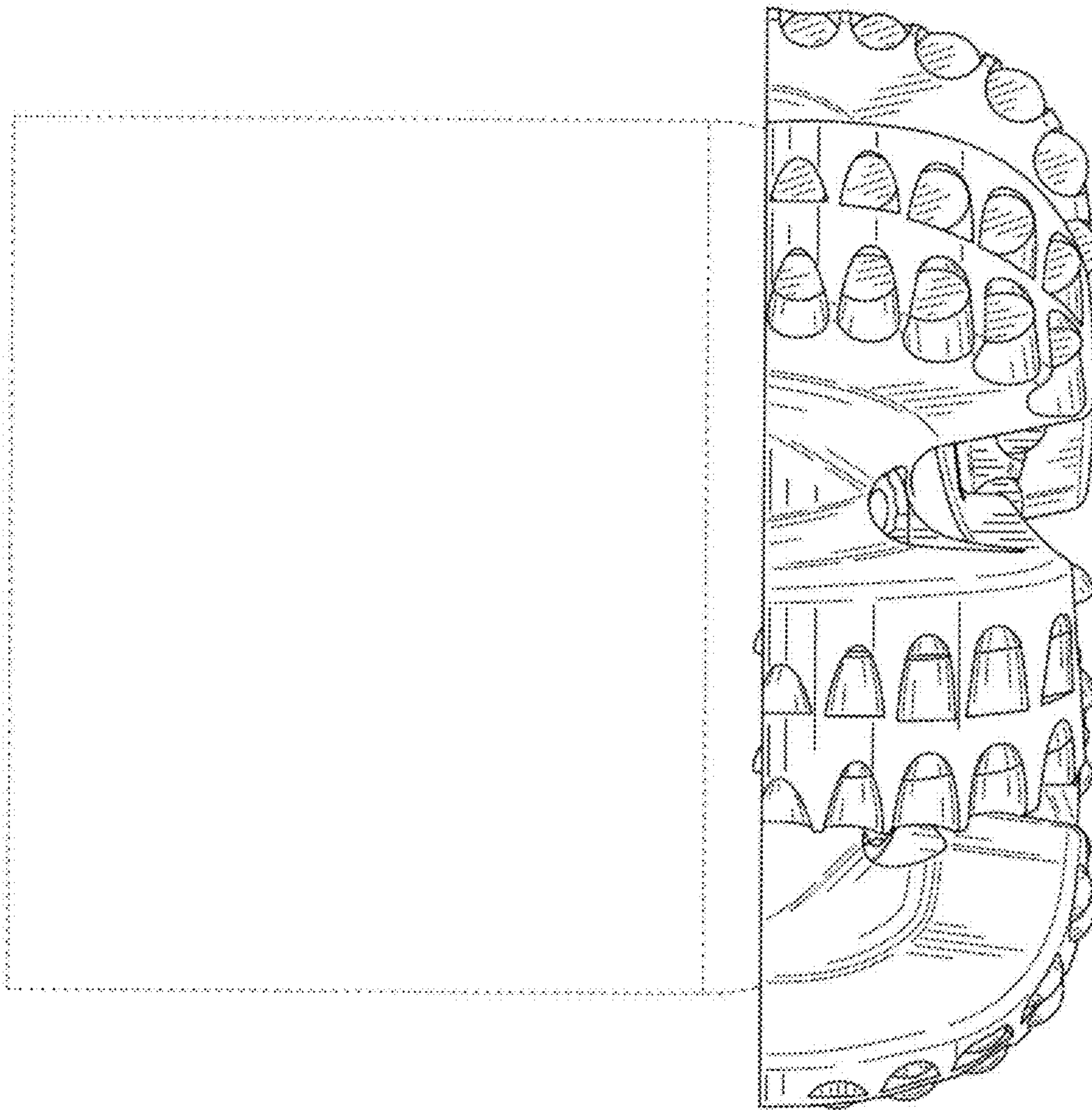


FIG. 17

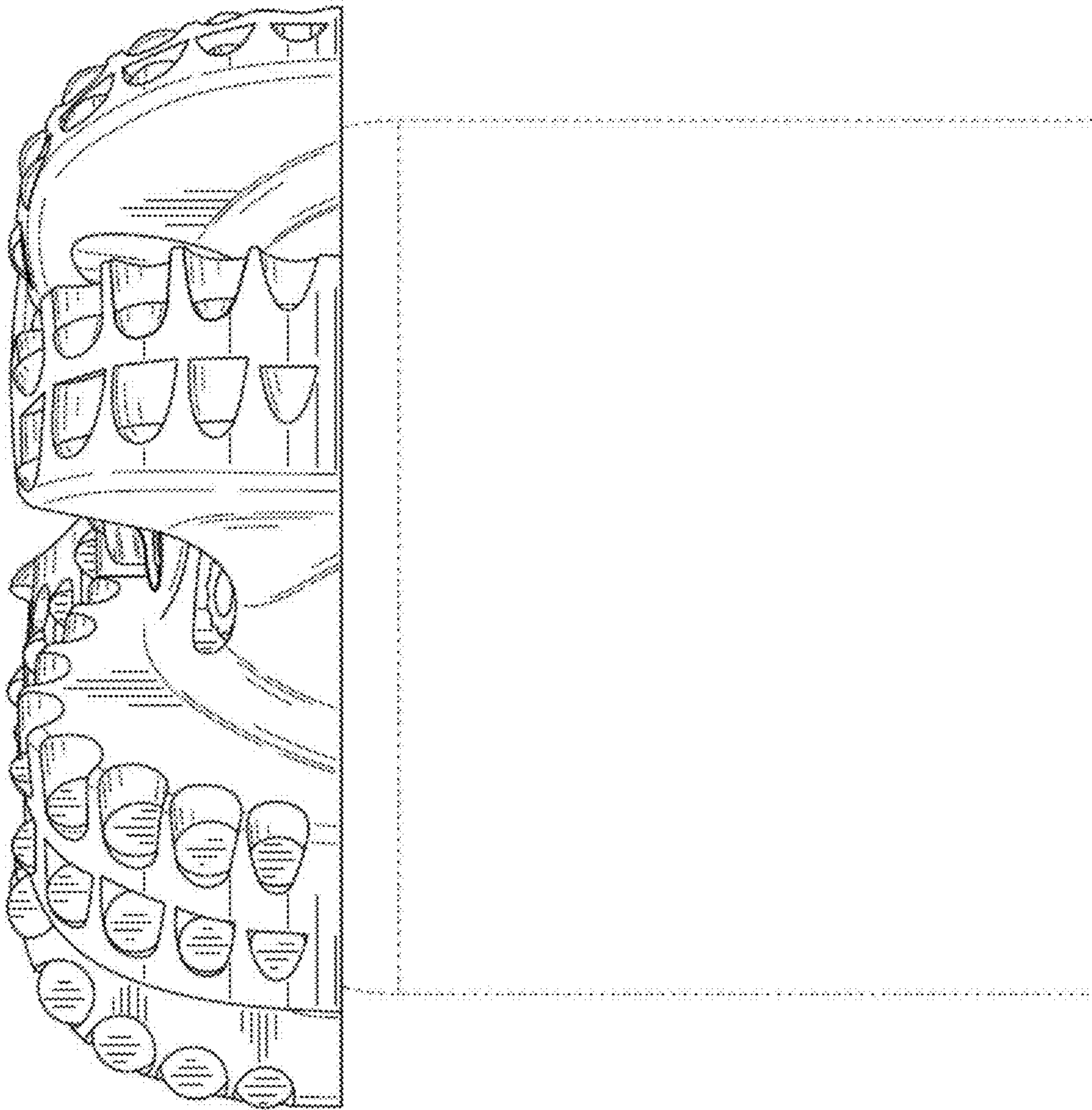


FIG. 18