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

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- (54) **SURFACE CLEANING HEAD**
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4,372,004 A 2/1983 Vermillion
 4,627,127 A 12/1986 Dupre
 5,239,721 A * 8/1993 Zahuranec A47L 11/32
 15/41.1
 D348,548 S 7/1994 Pino
 (Continued)

FOREIGN PATENT DOCUMENTS

DE 102010017211 A1 12/2011
 DE 102010017258 A1 12/2011
 (Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion issued on Mar. 17, 2017 in corresponding PCT Patent Application No. PCT/US16/58155, 12 pgs.

(Continued)

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

(21) Appl. No.: **29/690,973**

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Related U.S. Application Data

- (60) Division of application No. 29/601,158, filed on Apr. 19, 2017, now Pat. No. Des. 849,345, which is a continuation-in-part of application No. 15/331,045, filed on Oct. 21, 2016.

(51) **LOC (12) Cl.** **15-05**

(52) **U.S. Cl.**
USPC **D32/32**

(58) **Field of Classification Search**
USPC D32/31–33
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,138,762 A 2/1979 Jost et al.
 4,209,873 A * 7/1980 Schaefer A47L 5/30
 15/182

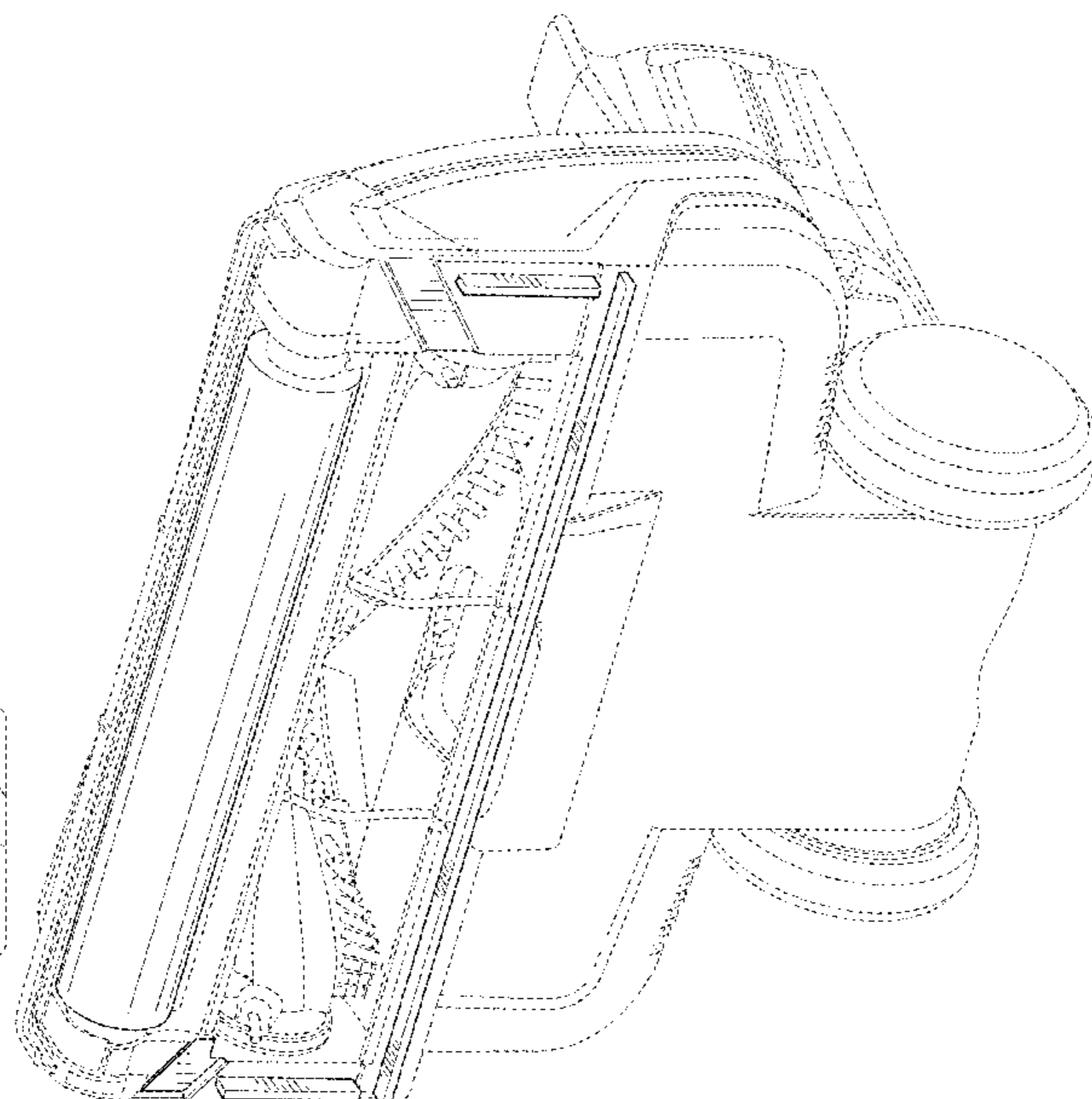
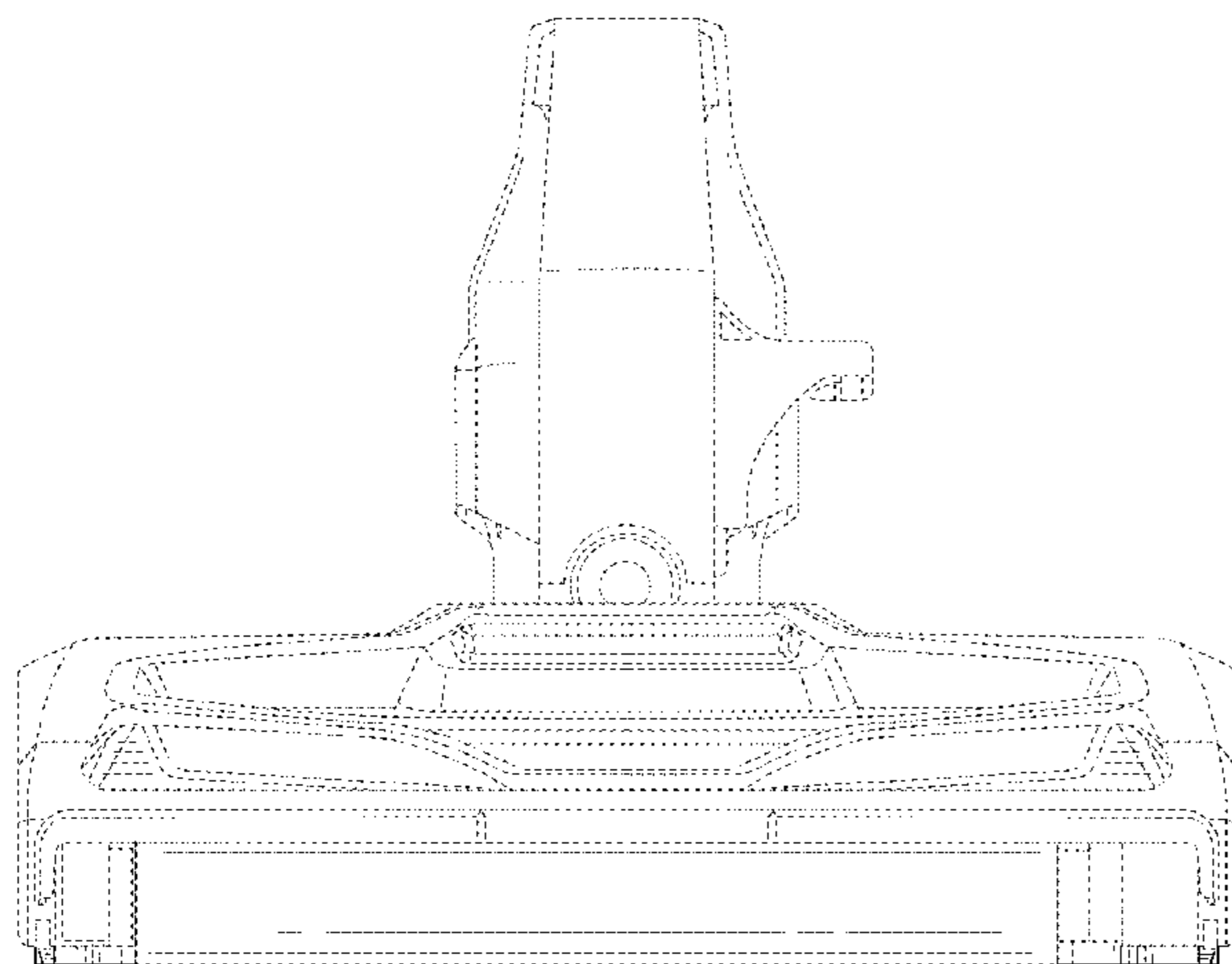
(57) **CLAIM**

We claim the ornamental design for surface cleaning head, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a surface cleaning head showing our new design;
 FIG. 2 is a bottom view thereof;
 FIG. 3 is a right side bottom perspective view thereof; and,
 FIG. 4 is a left side bottom perspective view thereof.
 The broken lines are included for the purpose of illustrating the unclaimed portions of the article and form no part of the claim.

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,495,634 A * 3/1996 Brundula A47L 5/30
15/179
5,960,514 A 10/1999 Miller et al.
D431,698 S * 10/2000 Hoshide D32/31
D440,019 S 4/2001 Mehaffey et al.
6,237,188 B1 5/2001 Takemoto et al.
6,463,623 B2 * 10/2002 Ahn A47L 5/30
15/364
D471,332 S * 3/2003 Haegermarck D32/31
D473,687 S 4/2003 Kaffenberger
D478,698 S * 8/2003 Mertes D32/31
D518,258 S * 3/2006 Hamm D32/31
D524,498 S 7/2006 Luebbering et al.
7,171,723 B2 2/2007 Kobayashi et al.
7,328,479 B2 2/2008 Willenbring
D566,356 S 4/2008 Medema
D569,564 S 5/2008 LaBarbera
D594,612 S 6/2009 Umeda
D597,268 S 7/2009 Santiago et al.
D619,315 S 7/2010 Ayers
D635,728 S 4/2011 Fjellman
7,979,952 B2 7/2011 Beskow et al.
D647,265 S * 10/2011 Follows D32/31
D655,468 S 3/2012 Karsan
D668,010 S 9/2012 Stickney et al.
8,402,600 B2 3/2013 Beskow et al.
D680,287 S * 4/2013 Morgan D32/31
D680,289 S * 4/2013 Gray D32/31
D681,291 S * 4/2013 Morgan D32/31
8,745,818 B2 6/2014 Iles et al.
D720,104 S 12/2014 Santiago et al.
D728,877 S * 5/2015 Therrien D32/31
9,027,198 B2 5/2015 Conrad
D731,130 S 6/2015 Dyson et al.
D731,134 S 6/2015 Dyson et al.
D731,136 S 6/2015 Yun et al.
D731,720 S 6/2015 Gidwell et al.
D731,724 S 6/2015 Cheon et al.
9,066,640 B2 6/2015 Iles et al.
D738,583 S 9/2015 Gidwell et al.
D738,584 S 9/2015 Niedzwecki
9,144,356 B2 9/2015 Yun
D741,558 S 10/2015 Kerr
D742,083 S 10/2015 Gidwell et al.
D743,123 S 11/2015 Chu
D745,231 S 12/2015 Niedzwecki
D747,052 S * 1/2016 Therrien D32/31
D747,571 S 1/2016 Dyson
D747,572 S 1/2016 Kerr
D761,507 S * 7/2016 Heck D32/31
D762,031 S 7/2016 Niedzwecki
9,451,853 B2 9/2016 Conrad et al.
D770,111 S 10/2016 Lee et al.
D771,890 S 11/2016 Kim
D772,512 S 11/2016 Yoon et al.
D773,139 S 11/2016 Palladino

D774,260 S 12/2016 Manning
D774,264 S 12/2016 Bartram et al.
D779,751 S 2/2017 Chu
D779,752 S 2/2017 Johnson
D781,014 S 3/2017 Wu et al.
D785,883 S * 5/2017 Wennerstrom D32/31
D788,393 S 5/2017 Canas et al.
D789,007 S 6/2017 Jang et al.
D790,785 S * 6/2017 Courtney D32/31
D792,665 S 7/2017 Salagnac
D796,134 S * 8/2017 LaBarbera D32/31
D796,136 S 8/2017 Reynolds et al.
9,750,383 B2 * 9/2017 Janzen A47L 9/0444
9,999,330 B2 * 6/2018 Fang A47L 9/0477
D849,345 S * 5/2019 Thorne D32/31
2002/0124334 A1 9/2002 Worwag
2005/0172447 A1 8/2005 Roney et al.
2006/0191097 A1 8/2006 Baumhake
2009/0229075 A1 9/2009 Eriksson
2012/0311813 A1 12/2012 Gilbert, Jr. et al.
2013/0139349 A1 6/2013 Iles et al.
2014/0060577 A1 3/2014 Bruders et al.
2014/0196247 A1 7/2014 Kasper et al.
2014/0237760 A1 8/2014 Conrad
2015/0033498 A1 2/2015 McVey
2015/0359396 A1 12/2015 Yun
2016/0058257 A1 3/2016 Ventress et al.
2016/0345795 A1 12/2016 Manning

FOREIGN PATENT DOCUMENTS

EP	1994869	11/2008
EP	2543301	9/2013
GB	2109224	6/1983
GB	2476811	7/2011
GB	2529819	9/2016
JP	03228721 A	10/1991
JP	05228083 A	9/1993
JP	2639155 B2	8/1997
JP	2004222912 A	8/2004
JP	2006247229 A	9/2006
JP	2006312066 A	11/2006
KR	100593324 B1	6/2006
WO	9210967 A1	7/1992
WO	2009117383	9/2009
WO	2014177216	11/2014
WO	2015015166	2/2015
WO	2015015167	2/2015
WO	2016034848	3/2016

OTHER PUBLICATIONS

International Search Report and Written Opinion issued on Mar. 24, 2017 in corresponding PCT Patent Application No. PCT/US16/58148, 14 pgs.

English translation of Korean Office Action dated May 31, 2019, received in Korean Application No. 10-2018-7014186, 8 pgs.

* cited by examiner

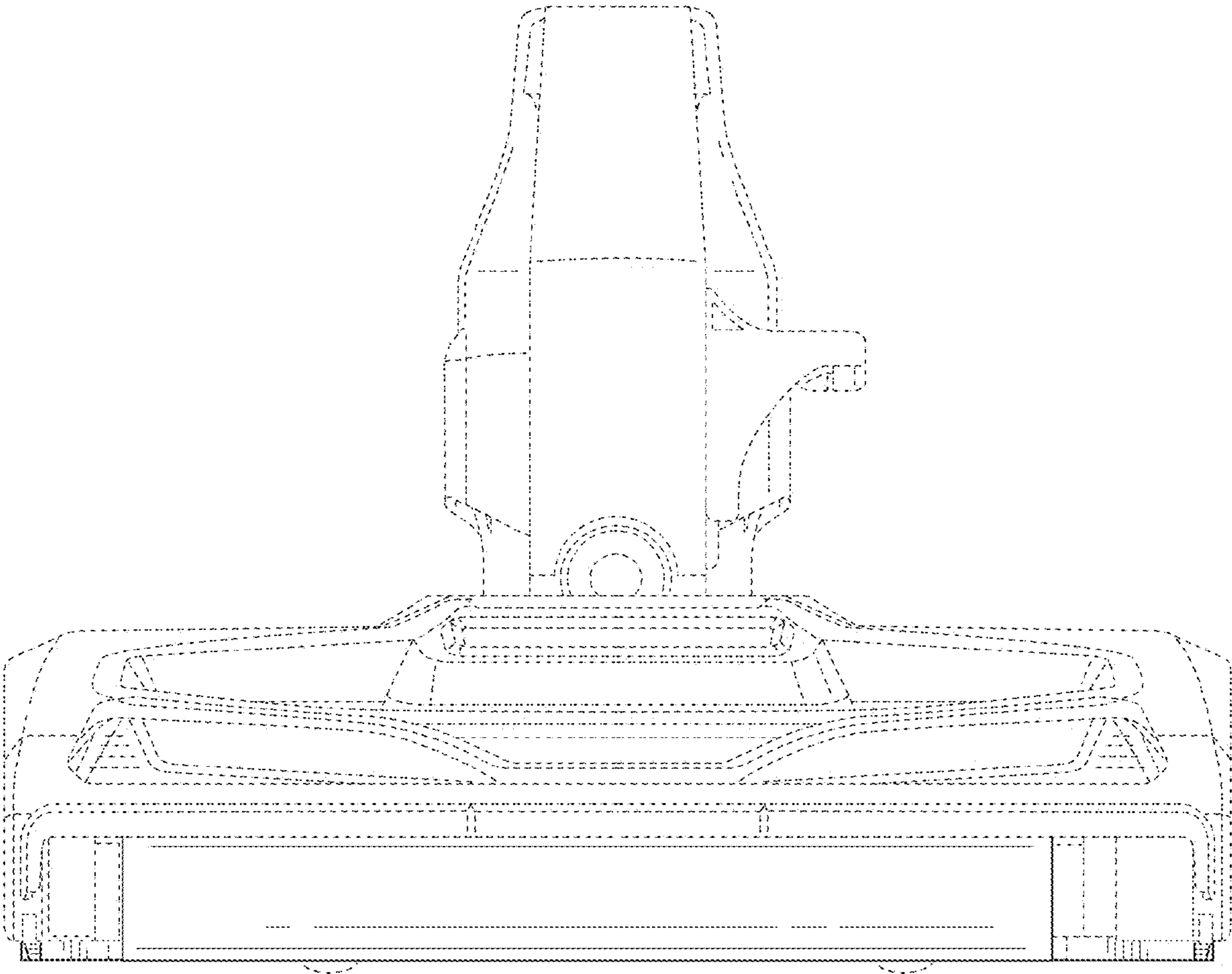


FIG. 1

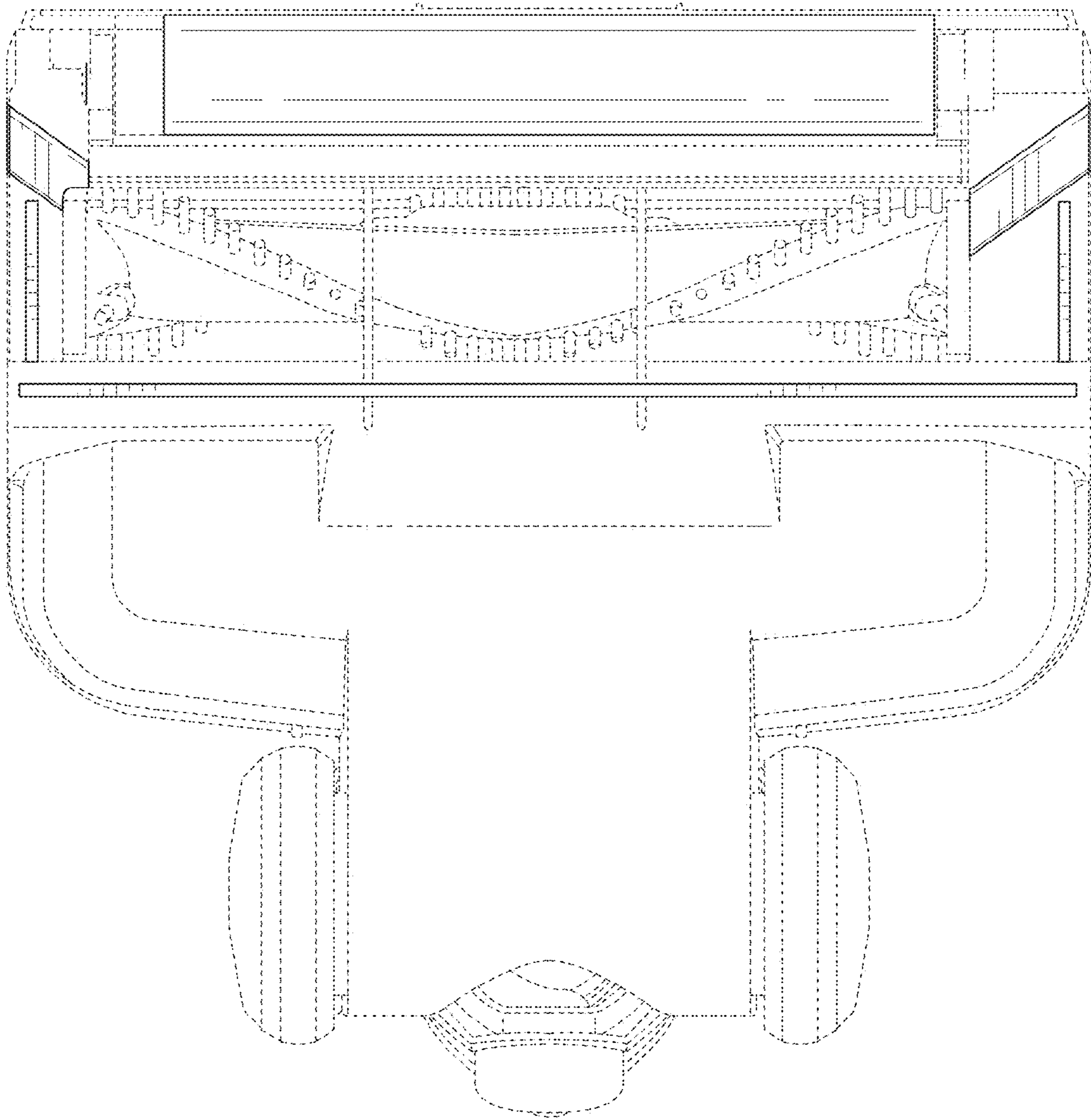


FIG. 2

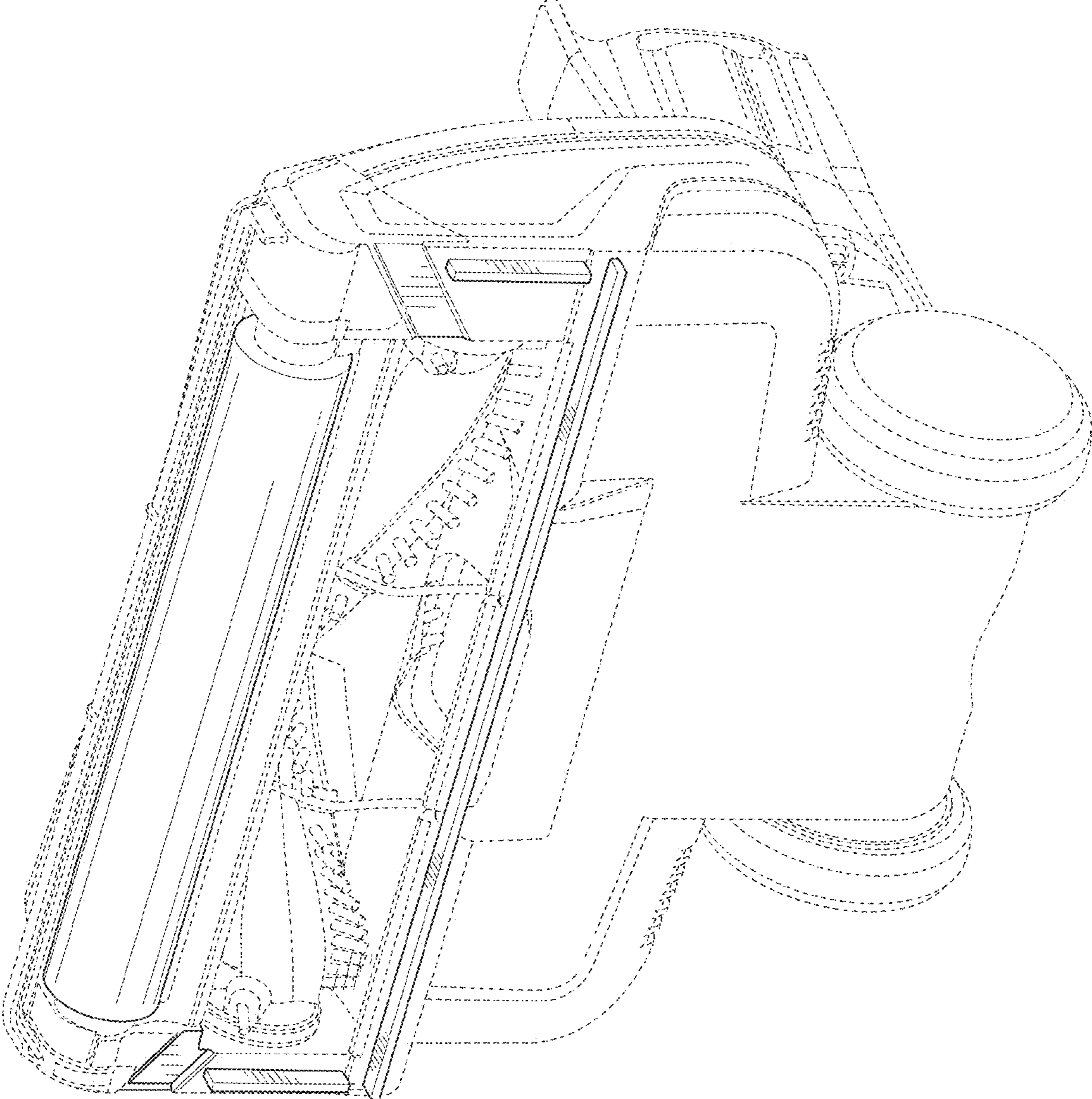


FIG. 3

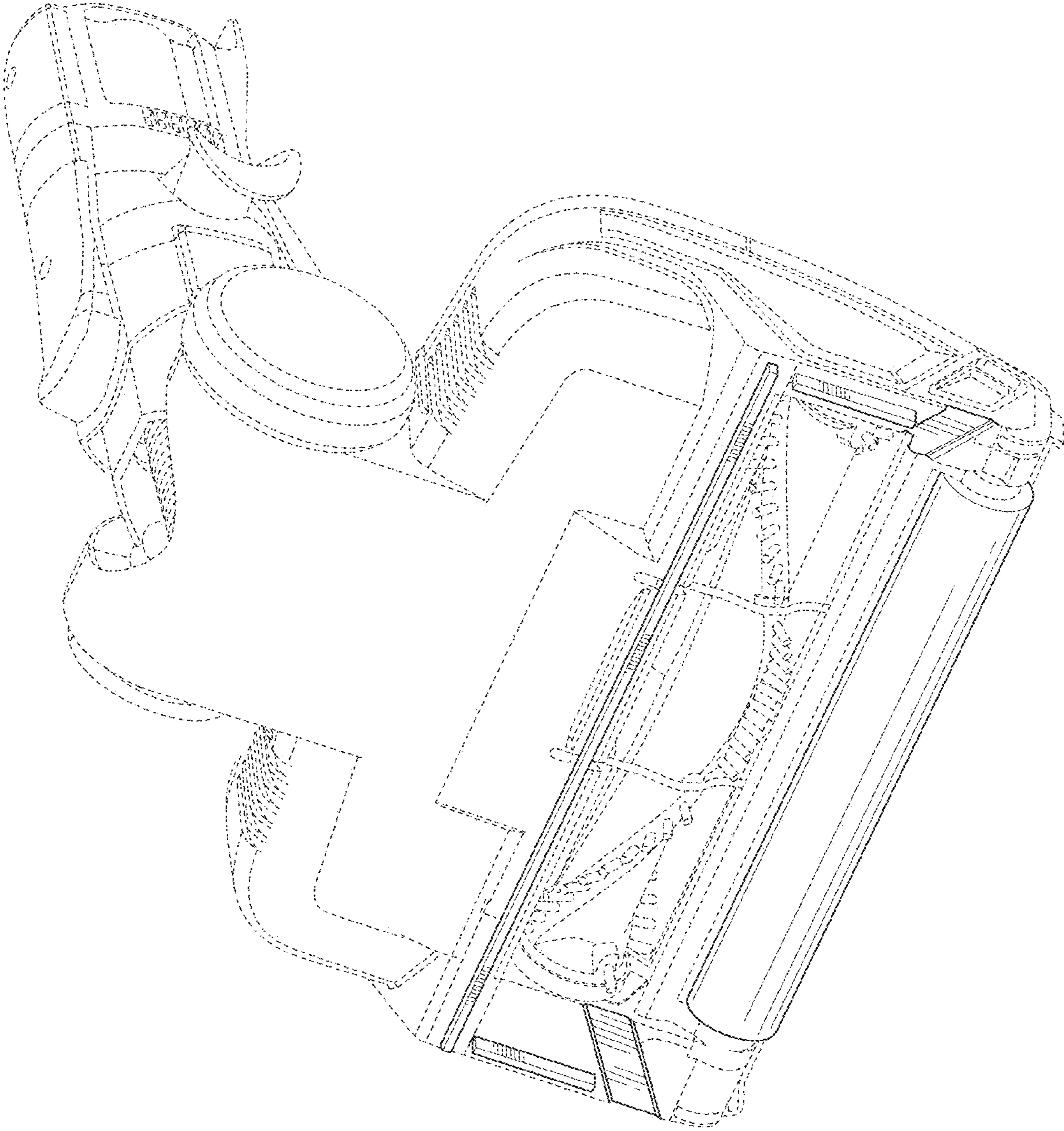


FIG. 4