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(12) **United States Design Patent** (10) **Patent No.:** **US D816,717 S**
Kulkarni et al. (45) **Date of Patent:** **** May 1, 2018**

(54) **SUPERCHARGER HOUSING** 5,083,907 A 1/1992 Brownell
5,090,879 A 2/1992 Weinbrecht
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418/189
5,127,386 A 7/1992 Kim
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Kartikeya Krishnoji Mahalatkar, Pune (IN); **Matthew Gareld Swartzlander**, Battle Creek, MI (US) 5,527,168 A * 6/1996 Juday F01C 21/10
418/201.1
(Continued)

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(52) **U.S. Cl.**
USPC **D15/5**
(58) **Field of Classification Search**
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418/178, 179, 1, 206.5; 415/9, 173.4,
415/174.4; 464/127, 72, 74, 75
CPC F16D 2500/1068; F16D 3/70; F16D 3/64;
F16D 3/68; F16D 3/78; F02B 39/12;
F02B 39/04; F02B 37/04; F02B 33/38;
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See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS

2,489,887 A	11/1949	Houghton
2,906,448 A	9/1959	Lorenz
3,531,227 A	9/1970	Weatherston
3,575,535 A	4/1971	Bickar
4,062,199 A	12/1977	Kasahara et al.
4,553,911 A	11/1985	Pillis
4,569,646 A	2/1986	Soeters, Jr.
4,768,934 A	9/1988	Mahalatkar et al.
4,859,158 A	8/1989	Weinbrecht
4,995,347 A	2/1991	Tate et al.
4,995,796 A	2/1991	Kambe et al.
5,078,583 A	1/1992	Hampton et al.

FOREIGN PATENT DOCUMENTS

DE 2027272 A1 12/1971
EP 0225070 A1 6/1987
(Continued)

OTHER PUBLICATIONS

2.6.1 Design / Operating principle, Roots vacuum pumps, Pfeiffer Vacuum, <http://www.pfeiffer-vacuum.com/know-how/vacuum-generation/roots-vacuum-pumps/technology.action?chapter=tec2.6>, downloaded Aug. 18, 2014, pp. 1-5.
(Continued)

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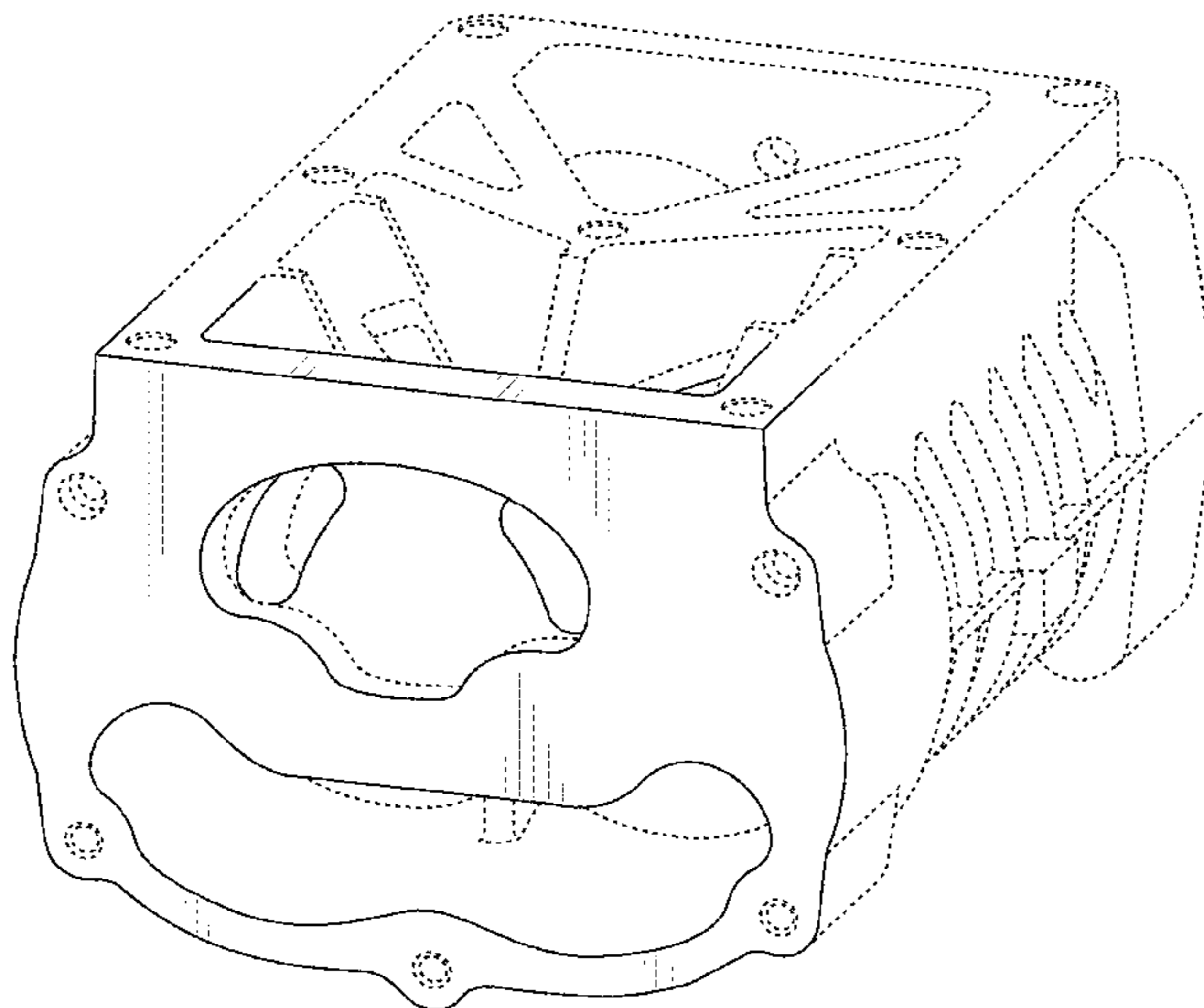
(57) **CLAIM**

The ornamental design for a supercharger housing, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a supercharger housing.
FIG. 2 is a bottom view of the supercharger housing.
FIG. 3 is a top view of the supercharger housing.
FIG. 4 is a left side view of the supercharger housing.
FIG. 5 is a right side view of the supercharger housing.
FIG. 6 is a back view of the supercharger housing; and,
FIG. 7 is a front view of the supercharger housing.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,819,538 A 10/1998 Lawson, Jr.
 6,203,297 B1 3/2001 Patel
 6,312,240 B1 11/2001 Weinbrecht
 6,324,848 B1 12/2001 Gladden et al.
 6,343,473 B1 2/2002 Kanesaka
 6,589,034 B2 7/2003 Vorwerk et al.
 6,874,486 B2 4/2005 Prior et al.
 7,100,584 B1 9/2006 Bruestle et al.
 7,226,280 B1 6/2007 Yokoi et al.
 7,488,164 B2 2/2009 Swartzlander
 7,529,614 B1 5/2009 Mueller
 7,779,822 B2 8/2010 Prior et al.
 7,866,966 B2 1/2011 Swartzlander
 7,950,911 B2 5/2011 Ohtsuka et al.
 8,434,305 B2 5/2013 Bentley et al.
 8,539,769 B2 9/2013 Barker
 8,632,324 B2 1/2014 Swartzlander
 D718,043 S * 11/2014 Hamburger D3/5
 D732,081 S * 6/2015 Northrop D15/4
 9,822,781 B2 * 11/2017 Swartzlander F04C 29/12
 2003/0039568 A1 2/2003 Vorwerk et al.
 2003/0192503 A1 * 10/2003 James F01C 1/28
 123/249
 2004/0194766 A1 10/2004 Prior et al.
 2006/0263230 A1 11/2006 Swartzlander
 2008/0060622 A1 * 3/2008 Prior F02B 33/38
 123/559.1
 2008/0168961 A1 7/2008 Prior et al.
 2008/0170958 A1 * 7/2008 Prior F04C 18/084
 418/179
 2008/0271719 A1 * 11/2008 Prior F02B 33/40
 123/559.1
 2009/0004038 A1 * 1/2009 Prior F04C 18/16
 418/85
 2009/0148330 A1 6/2009 Swartzlander
 2010/0086402 A1 * 4/2010 Ouwenga F04C 18/12
 415/224

2011/0058974 A1 3/2011 Swartzlander
 2011/0150671 A1 * 6/2011 Ouwenga F01C 11/008
 417/293
 2014/0017101 A1 * 1/2014 Staley F02B 33/38
 417/319
 2014/0193285 A1 7/2014 Swartzlander
 2015/0118086 A1 * 4/2015 Swartzlander F04C 29/12
 418/1
 2015/0252719 A1 * 9/2015 Pryor F04C 18/16
 92/177
 2015/0377158 A1 * 12/2015 Benjey F02B 39/10
 701/22
 2016/0003129 A1 * 1/2016 Swartzlander F04C 28/10
 418/1
 2016/0003249 A1 * 1/2016 Ouwenga F04C 27/005
 418/1
 2016/0003250 A1 * 1/2016 McWilliams F02B 33/38
 418/206.2
 2016/0047340 A1 * 2/2016 Mahalatkar F02M 25/0727
 123/568.12
 2017/0204881 A1 7/2017 Soeters, Jr.

FOREIGN PATENT DOCUMENTS

FR 778361 3/1935
 GB 282752 5/1928
 JP 11-294175 10/1999
 WO 2015179444 A1 11/2015

OTHER PUBLICATIONS

International Search Report and Written Opinion, PCT/US2014/063439, dated Feb. 17, 2015, pp. 1-9.
 Welabrecht, John E., "The High-Ratio Circulating Compressor," International Compressor Engineering Conference, 1988, p. 1-9, Paper 644, Purdue University.
 Extended European Search Report dated Aug. 9, 2017 for Application No. 14857269.6, pp. 1-6.

* cited by examiner

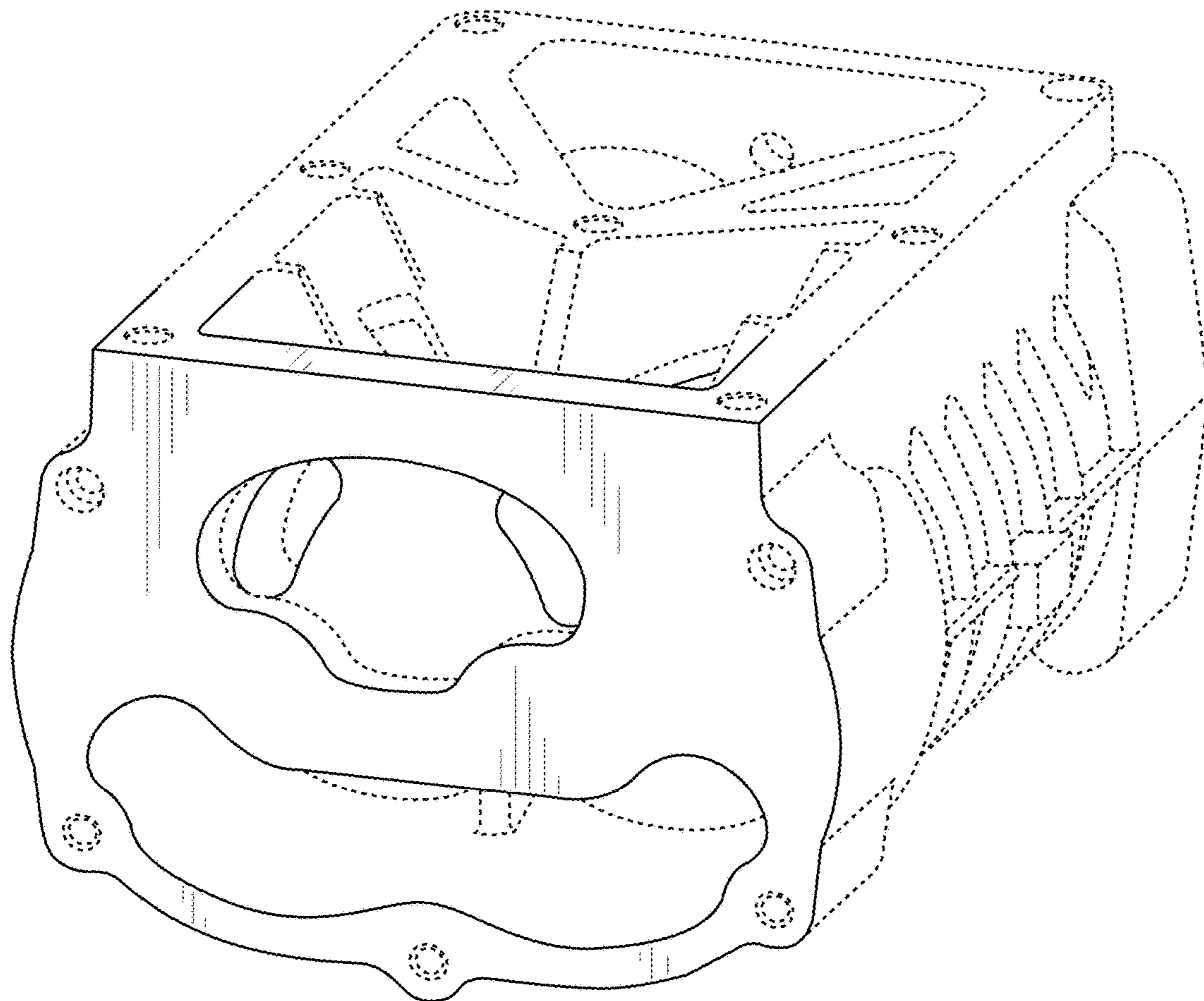


FIG. 1

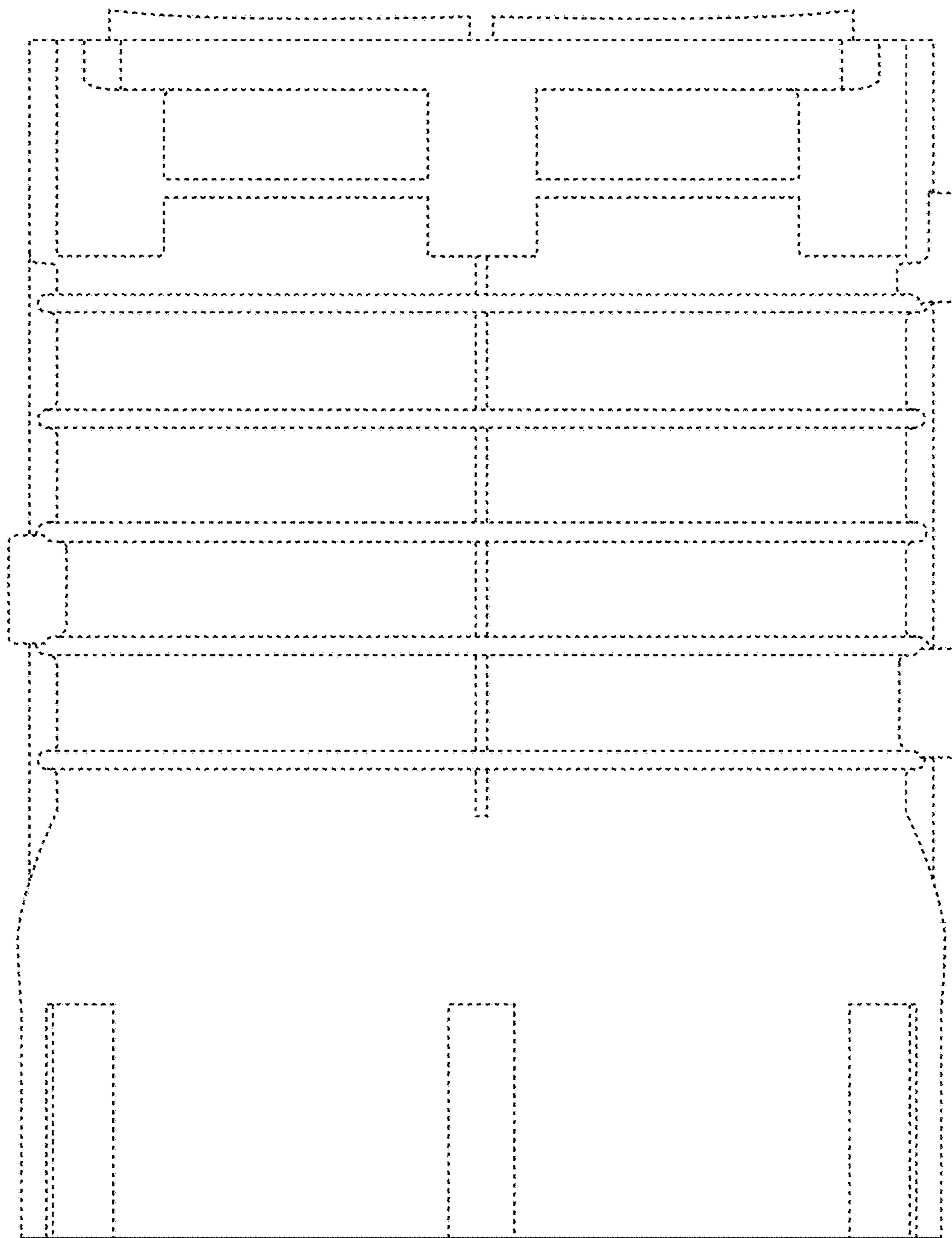


FIG. 2

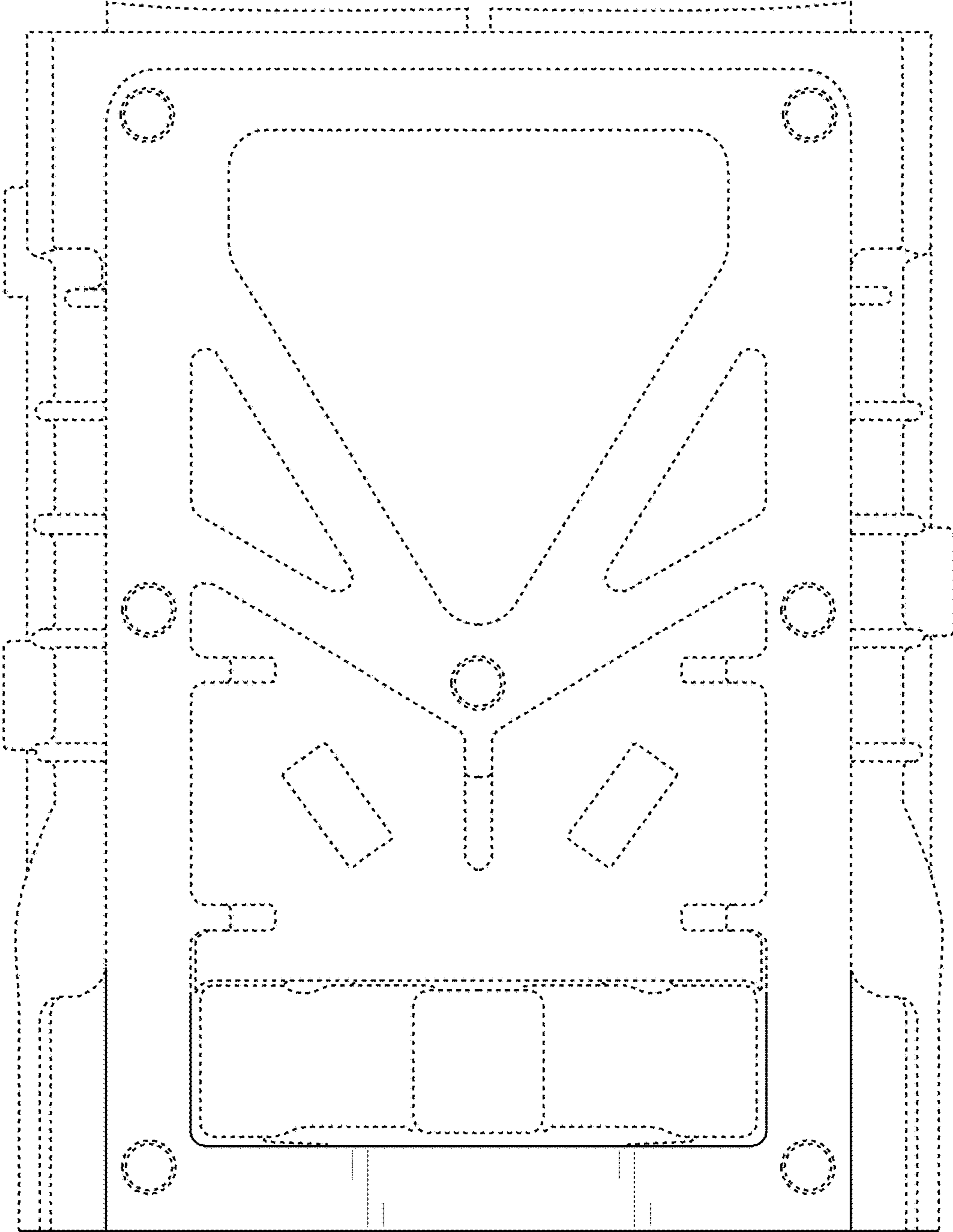


FIG. 3

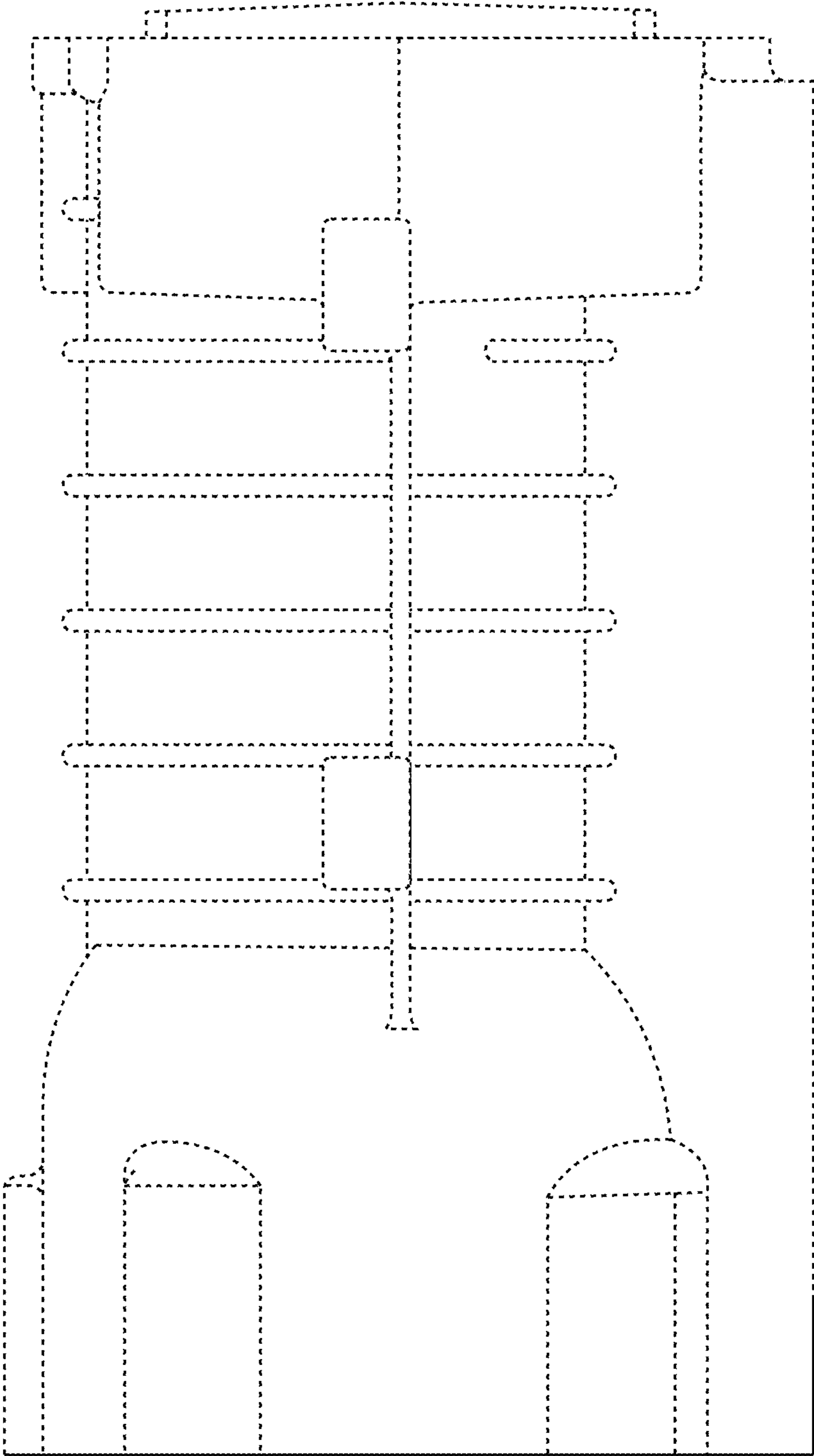


FIG. 4

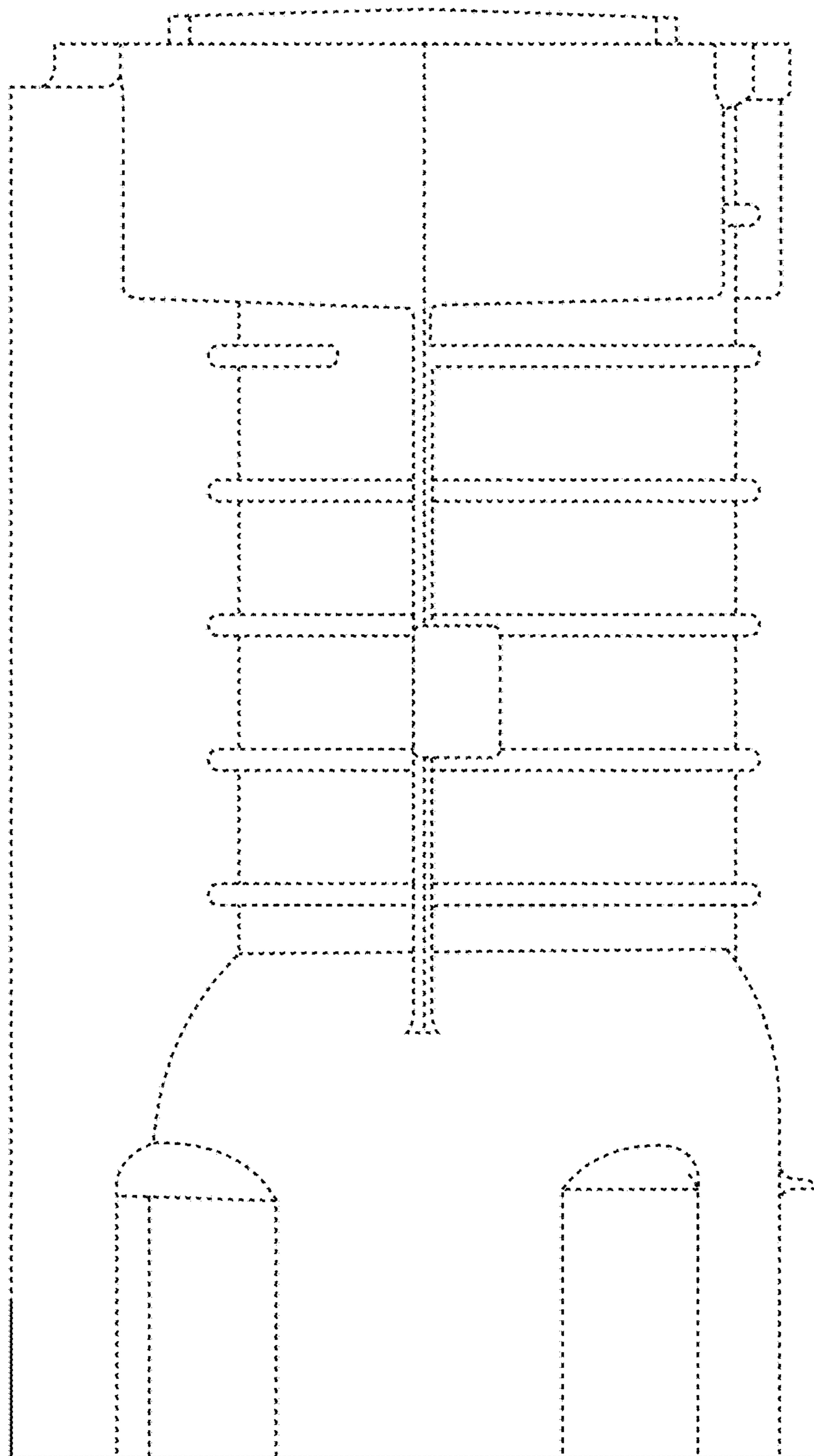


FIG. 5

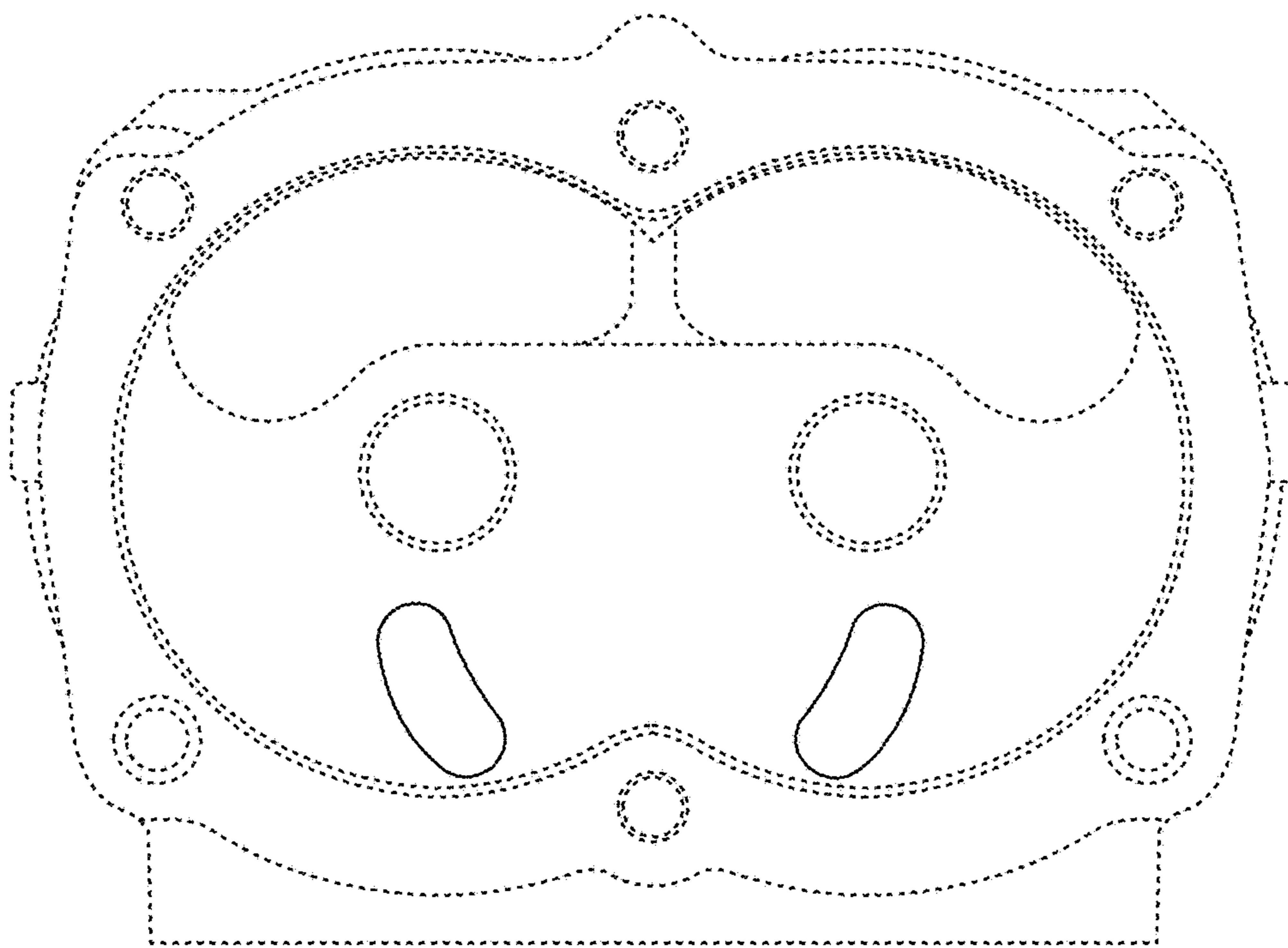


FIG. 6

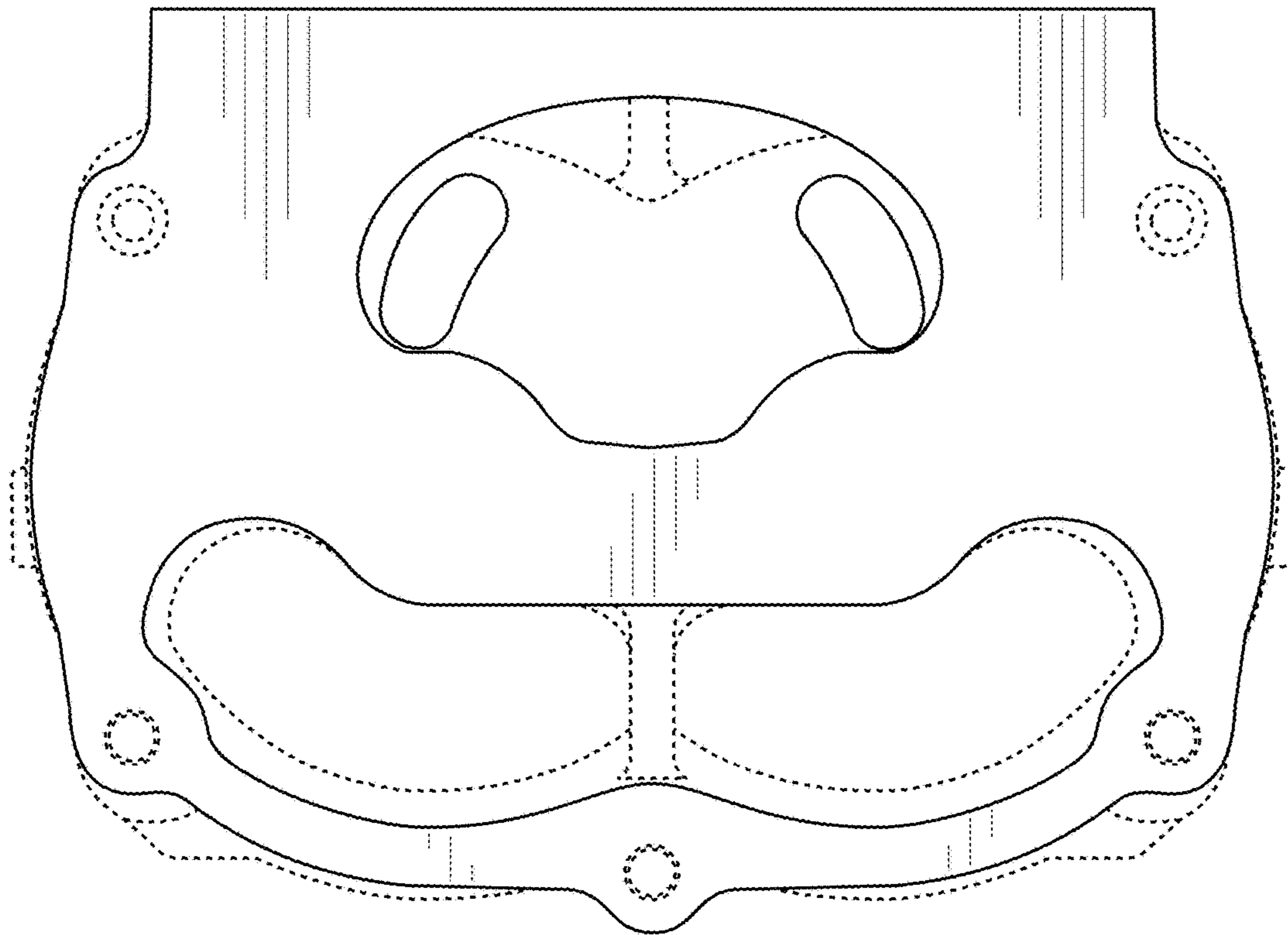


FIG. 7