



US00D971706S

(12) **United States Design Patent** (10) **Patent No.:** **US D971,706 S**
Schneider et al. (45) **Date of Patent:** **** Dec. 6, 2022**

(54) **ROTARY IMPACT WRENCH** 2,881,884 A 4/1959 Amtsberg
2,973,071 A 2/1961 James
(71) Applicant: **MILWAUKEE ELECTRIC TOOL CORPORATION**, Brookfield, WI (US) 3,068,973 A 12/1962 Maurer
3,070,201 A 12/1962 Spyridakis
(Continued)

(72) Inventors: **Jacob P. Schneider**, Cedarburg, WI (US); **Joseph H. Ellice**, Greenfield, WI (US); **Sara Burch**, Milwaukee, WI (US); **Evan Brown**, Milwaukee, WI (US); **Andrew J. Weber**, Cudahy, WI (US); **Scott R. Fischer**, Menomonee Falls, WI (US)

FOREIGN PATENT DOCUMENTS

CN 101186034 A 5/2008
CN 202684816 U 1/2013
(Continued)

OTHER PUBLICATIONS

(73) Assignee: **MILWAUKEE ELECTRIC TOOL CORPORATION**, Brookfield, WI (US)

Bob Beacham. "Best Rotary Hammers." Best Reviews., Oct. 1, 2021 [online], [retrieved on Jul. 11, 2022]. Retrieved from the Internet <URL: <https://bestreviews.com/tools/hammers/best-rotary-hammers>>.*

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

(Continued)

(21) Appl. No.: **29/814,483**

(22) Filed: **Nov. 5, 2021**

Primary Examiner — Darlington Ly
(74) *Attorney, Agent, or Firm* — Michael Best & Friedrich LLP

Related U.S. Application Data

(62) Division of application No. 29/728,227, filed on Mar. 17, 2020, now Pat. No. Des. 948,978.

(51) **LOC (13) Cl.** **08-05**

(52) **U.S. Cl.**
USPC **D8/69**

(58) **Field of Classification Search**
USPC D8/61, 67, 68
CPC B62D 23/005; B62D 29/00; B62D 29/043;
B62D 31/00; B62D 33/046; B62D 35/00;
B62D 35/001; B60Q 1/0005
See application file for complete search history.

(57) **CLAIM**

We claim the ornamental design for a rotary impact wrench, as shown and described.

DESCRIPTION

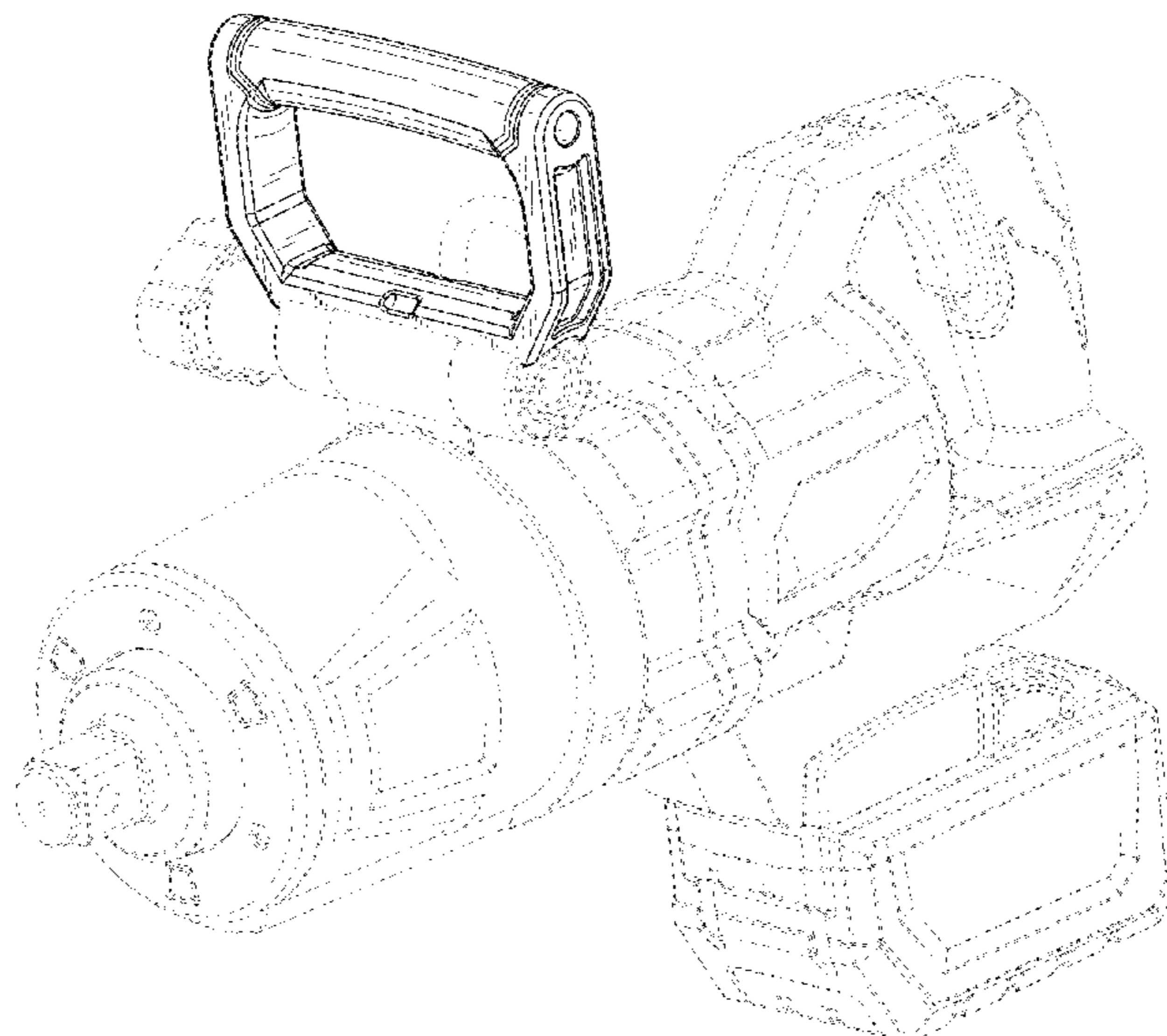
FIG. 1 is a front perspective view of a rotary impact wrench embodying our new design;
FIG. 2 is a left side elevation view thereof;
FIG. 3 is a right side elevation view thereof;
FIG. 4 is a front elevation view thereof;
FIG. 5 is a rear elevation view thereof;
FIG. 6 is a top plan view thereof; and,
FIG. 7 is a bottom plan view thereof.
The broken lines in the drawings illustrate portions of the rotary impact wrench that form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,373,664 A 4/1945 Emery
2,373,667 A 4/1945 Emery
2,564,224 A 8/1951 Mitchell et al.
2,825,436 A 3/1958 Amtsberg

1 Claim, 7 Drawing Sheets



US D971,706 S

(56)	References Cited	2007/0267206 A1*	11/2007	Chen	B25B 21/00 173/170
	U.S. PATENT DOCUMENTS	2008/0078067 A1	4/2008	Nicolantonio et al.	
		2008/0099217 A1	5/2008	Seith et al.	
		2009/0000434 A1	1/2009	Shinma et al.	
		2009/0133894 A1	5/2009	Mizuhara	
		2009/0178520 A1	7/2009	Engelfried et al.	
		2010/0005629 A1	1/2010	Di Nicolantonio	
		2010/0064482 A1	3/2010	Martin	
		2010/0096155 A1	4/2010	Iwata et al.	
		2011/0011609 A1	1/2011	Simm et al.	
		2011/0073334 A1	3/2011	Iimura et al.	
		2011/0079407 A1	4/2011	Iimura et al.	
		2011/0120741 A1	5/2011	Limberg et al.	
		2011/0188232 A1	8/2011	Friedman et al.	
		2011/0315417 A1	12/2011	Matsunaga et al.	
		2012/0073846 A1	3/2012	Hirai et al.	
		2012/0199372 A1	8/2012	Nishikawa et al.	
		2012/0234566 A1	9/2012	Mashiko et al.	
		2012/0279736 A1	11/2012	Tanimoto et al.	
		2012/0292065 A1	11/2012	Hoshi et al.	
		2012/0292070 A1	11/2012	Ito et al.	
		2012/0318549 A1	12/2012	Nagasaka et al.	
		2012/0318550 A1	12/2012	Tanimoto et al.	
		2012/0319508 A1	12/2012	Oomori	
		2013/0000934 A1	1/2013	Tadokoro et al.	
		2013/0008679 A1	1/2013	Nishikawa et al.	
		2013/0014967 A1	1/2013	Ito et al.	
		2013/0025892 A1	1/2013	Mashiko et al.	
		2013/0062008 A1	3/2013	Haddad	
		2013/0062086 A1	3/2013	Ito et al.	
		2013/0075121 A1	3/2013	Nakamura et al.	
		2013/0087355 A1	4/2013	Oomori et al.	
		2013/0126202 A1	5/2013	Oomori et al.	
		2013/0133911 A1	5/2013	Ishikawa et al.	
		2013/0139614 A1	6/2013	Johnson et al.	
		2013/0233584 A1	9/2013	Mashiko	
		2013/0270932 A1	10/2013	Hatfield et al.	
		2013/0270934 A1	10/2013	Smith et al.	
		2013/0284480 A1	10/2013	Horie et al.	
		2013/0333910 A1	12/2013	Tanimoto et al.	
		2014/0014385 A1	1/2014	Kosugi et al.	
		2014/0069672 A1	3/2014	Mashiko et al.	
		2014/0124229 A1	5/2014	Takahashi et al.	
		2014/0131059 A1	5/2014	Verbrugge et al.	
		2014/0144658 A1*	5/2014	Schmid	B25D 17/06 173/90
		2014/0145524 A1	5/2014	Tanimoto et al.	
		2014/0158388 A1	6/2014	Johnson	
		2014/0158390 A1	6/2014	Mashiko et al.	
		2014/0182869 A1	7/2014	Kumagai et al.	
		2014/0224075 A1	8/2014	Merrick	
		2014/0251649 A1	9/2014	Kondo	
		2014/0318821 A1*	10/2014	Wyler	B25F 5/006 173/104
		2014/0371018 A1	12/2014	Ito	
		2014/0374130 A1	12/2014	Nakamura et al.	
		2015/0000946 A1	1/2015	Amend et al.	
		2015/0022125 A1	1/2015	Takano et al.	
		2015/0041169 A1	2/2015	Kumagai et al.	
		2015/0047866 A1	2/2015	Sakai et al.	
		2015/0075829 A1	3/2015	Seith et al.	
		2015/0083448 A1	3/2015	Chen et al.	
		2015/0083451 A1	3/2015	Nishikawa	
		2015/0144365 A1	5/2015	Hirabayashi et al.	
		2015/0174753 A1	6/2015	Kamiya	
		2015/0209952 A1	7/2015	Nishii et al.	
		2015/0231770 A1	8/2015	Kusakawa et al.	
		2015/0231771 A1	8/2015	Sakai et al.	
		2015/0266176 A1	9/2015	Takeuchi et al.	
		2015/0303842 A1	10/2015	Takano et al.	
		2015/0333664 A1	11/2015	Bantle	
		2015/0336249 A1	11/2015	Iwata et al.	
		2015/0343617 A1	12/2015	Kondo et al.	
		2015/0352699 A1	12/2015	Sakai et al.	
		2016/0008961 A1	1/2016	Takano et al.	
		2016/0079887 A1	3/2016	Takano et al.	
		2016/0107297 A1	4/2016	Ishikawa et al.	
		2016/0129568 A1	5/2016	Nishikawa et al.	
	3,156,334 A	11/1964	Hoza		
	3,250,153 A	5/1966	Purkey		
	3,352,368 A	11/1967	Maffey, Jr.		
	3,362,486 A	1/1968	Remi		
	3,369,615 A	2/1968	Maffey, Jr. et al.		
	3,606,931 A	9/1971	Karden		
	3,648,784 A	3/1972	Schoeps		
	3,804,180 A	4/1974	Gelfand et al.		
	4,002,212 A	1/1977	Schoeps		
	4,276,675 A	7/1981	Pioch		
	4,314,782 A	2/1982	Beekenkamp		
	4,505,170 A	3/1985	Van Laere		
	4,619,162 A	10/1986	Van Laere		
	4,719,976 A	1/1988	Bleicher et al.		
	4,790,218 A	12/1988	Cabrera		
	4,905,423 A	3/1990	Van Laere		
	4,977,966 A	12/1990	Farber et al.		
	5,049,012 A	9/1991	Cavedo		
	5,092,410 A	3/1992	Wallace et al.		
	D343,345 S *	1/1994	Ogawa	D8/69	
	5,836,403 A	11/1998	Putney et al.		
	5,888,031 A	3/1999	Buck et al.		
	6,104,114 A	8/2000	Takeda et al.		
	6,158,526 A	12/2000	Ghode et al.		
	6,546,815 B2	4/2003	Yamada et al.		
	6,553,627 B1	4/2003	Horler		
	6,786,683 B2	9/2004	Schaer et al.		
	6,935,437 B2	8/2005	Izumisawa		
	7,032,685 B2	4/2006	Nakamizo		
	7,259,486 B2	8/2007	Yamamoto		
	7,401,663 B2	7/2008	Craven et al.		
	D590,681 S *	4/2009	Palermo	D8/68	
	D591,130 S *	4/2009	Palermo	D8/69	
	D606,377 S *	12/2009	Ho	D8/69	
	7,628,220 B2 *	12/2009	Barezzani	B25B 21/02 173/171	
	7,673,702 B2	3/2010	Johnson et al.		
	7,823,256 B2	11/2010	Engelfried et al.		
	7,905,377 B2	3/2011	Krondorfer et al.		
	7,918,286 B2	4/2011	Nagasaka et al.		
	7,934,566 B2	5/2011	Hlinka et al.		
	8,032,990 B2	10/2011	Shinma et al.		
	8,069,929 B2	12/2011	Sugimoto et al.		
	8,127,974 B2	3/2012	Zhang et al.		
	8,230,607 B2	7/2012	Limberg et al.		
	8,272,452 B2	9/2012	Katou et al.		
	8,371,394 B2	2/2013	Grand		
	8,371,708 B2	2/2013	Nagasaka et al.		
	8,407,860 B2	4/2013	Brennenstuhl et al.		
	8,460,153 B2	6/2013	Rudolph et al.		
	8,584,770 B2	11/2013	Zhang et al.		
	8,827,003 B2	9/2014	Nagasaka et al.		
	8,925,645 B2	1/2015	Harada et al.		
	8,925,646 B2	1/2015	Seith et al.		
	8,961,358 B2	2/2015	Hirabayashi		
	9,114,521 B2	8/2015	Yoshikawa		
	9,308,638 B2	4/2016	Kondo et al.		
	9,321,159 B2	4/2016	May		
	9,393,711 B2	7/2016	Myrhum, Jr. et al.		
	9,415,497 B2	8/2016	Hecht et al.		
	9,463,566 B2	10/2016	Yoshikane et al.		
	9,566,692 B2	2/2017	Seith et al.		
	9,643,300 B2	5/2017	Kumagai et al.		
	9,849,577 B2	12/2017	Wyler et al.		
	D835,959 S *	12/2018	Eardley	D8/67	
	10,286,529 B2	5/2019	Kiyohara et al.		
	10,295,990 B2	5/2019	Dey, IV et al.		
	D853,815 S *	7/2019	Yaschur	D8/69	
	10,654,153 B2	5/2020	Murakami et al.		
	2001/0004939 A1	6/2001	Durmeyer et al.		
	2002/0035876 A1	3/2002	Robert, Jr.		
	2005/0121209 A1	6/2005	Shimizu et al.		
	2007/0000676 A1	1/2007	Arimura		
	2007/0209162 A1	9/2007	Mcroberts et al.		

(56)

References Cited

U.S. PATENT DOCUMENTS

2016/0250743 A1 9/2016 Kikuchi et al.
 2016/0311102 A1 10/2016 Ebner
 2016/0325415 A1 11/2016 Huber et al.
 2016/0354905 A1 12/2016 Ely et al.
 2017/0021478 A1 1/2017 Junkers et al.
 2017/0028537 A1 2/2017 McClung et al.
 2017/0036327 A1 2/2017 Murakami et al.
 2017/0057064 A1 3/2017 Ishikawa et al.
 2017/0106517 A1 4/2017 Machida
 2017/0106525 A1 4/2017 Brauer et al.
 2017/0144278 A1 5/2017 Nishikawa et al.
 2017/0151657 A1 6/2017 Nagasaka et al.
 2017/0173768 A1 6/2017 Dey, IV et al.
 2017/0190027 A1 7/2017 Koizumi et al.
 2017/0190028 A1 7/2017 Howard et al.
 2017/0190032 A1 7/2017 Leong et al.
 2017/0239801 A1 8/2017 Kondo et al.
 2017/0246732 A1 8/2017 Dey, IV et al.
 2017/0326712 A1 11/2017 Li et al.
 2017/0326720 A1 11/2017 Kuroyanagi et al.
 2017/0348835 A1 12/2017 Skelly et al.
 2018/0001444 A1 1/2018 Matsushita et al.
 2018/0117745 A1 5/2018 Murakami et al.
 2018/0200872 A1 7/2018 Leong
 2018/0222022 A1 8/2018 Kumagai et al.
 2019/0030692 A1 1/2019 Harada et al.
 2019/0030696 A1 1/2019 Seith et al.
 2019/0224819 A1 7/2019 Kiyohara et al.
 2019/0255687 A1* 8/2019 Schneider B25B 21/026
 2020/0009709 A1 1/2020 Kumagai et al.
 2020/0122281 A1 4/2020 Wierer et al.
 2020/0180124 A1* 6/2020 Ellice B25B 21/02
 2020/0198100 A1* 6/2020 Schneider B25B 21/026
 2020/0262037 A1 8/2020 Schneider et al.
 2021/0100170 A1 4/2021 Suzuki
 2021/0237249 A1* 8/2021 Fischer B25F 5/02
 2021/0260733 A1* 8/2021 Fischer B25B 23/1475
 2021/0260734 A1* 8/2021 Kubale B25F 5/026

FOREIGN PATENT DOCUMENTS

CN 203843800 U 9/2014
 CN 206122746 U 4/2017
 CN 206702908 U 12/2017
 CN 109500432 A 3/2019
 CN 209139897 U 7/2019
 CN 209812185 U 12/2019
 DE 19738092 C1 12/1998
 EP 2944433 B1 6/2017
 JP 2008183691 A 8/2008
 JP 2016097498 A 5/2016
 JP 2017080853 A 5/2017

OTHER PUBLICATIONS

Alic Musyoka, Daniel Rika. “Best Rotary Hammers: Drill and Chisel More Efficiently.” The Drive., Aug. 20, 2021 [online], [retrieved on Jul. 11, 2022]. Retrieved from the Internet <URL: <https://www.thedrive.com/reviews/31029/best-rotary-hammer-drill>>.*
 Ingersoll Rand, “Air Impact Wrench 2850MAX and 2850MAX-6” Product Information, Edition 3, Feb. 2018, 32 pages.
 Ingersoll Rand, “285B Series Air Impact Wrench—Exploded View”, Edition 7, Jan. 2014, 2 pages.
 Ingersoll Rand, “2850MAX Series Air Impacttools™—Exploded View”, Edition 3, Feb. 2018, 2 pages.
 Ingersoll Rand, “1” D-Handle Impact Wrench 2850MAX and 2850MAX-6”, Informational Flyer, 2018, 2 pages.
 Ingersoll Rand, “Air Impact Wrench Series 285B and 295A” Product Information, Edition 5, Jan. 2014, 36 pages.
 International Search Report and Written Opinion for Application No. PCT/US2019/064583 dated Apr. 10, 2020 (12 pages).
 International Search Report and Written Opinion for Application No. PCT/US2021/019316 dated Jun. 18, 2021 (14 pages).

* cited by examiner

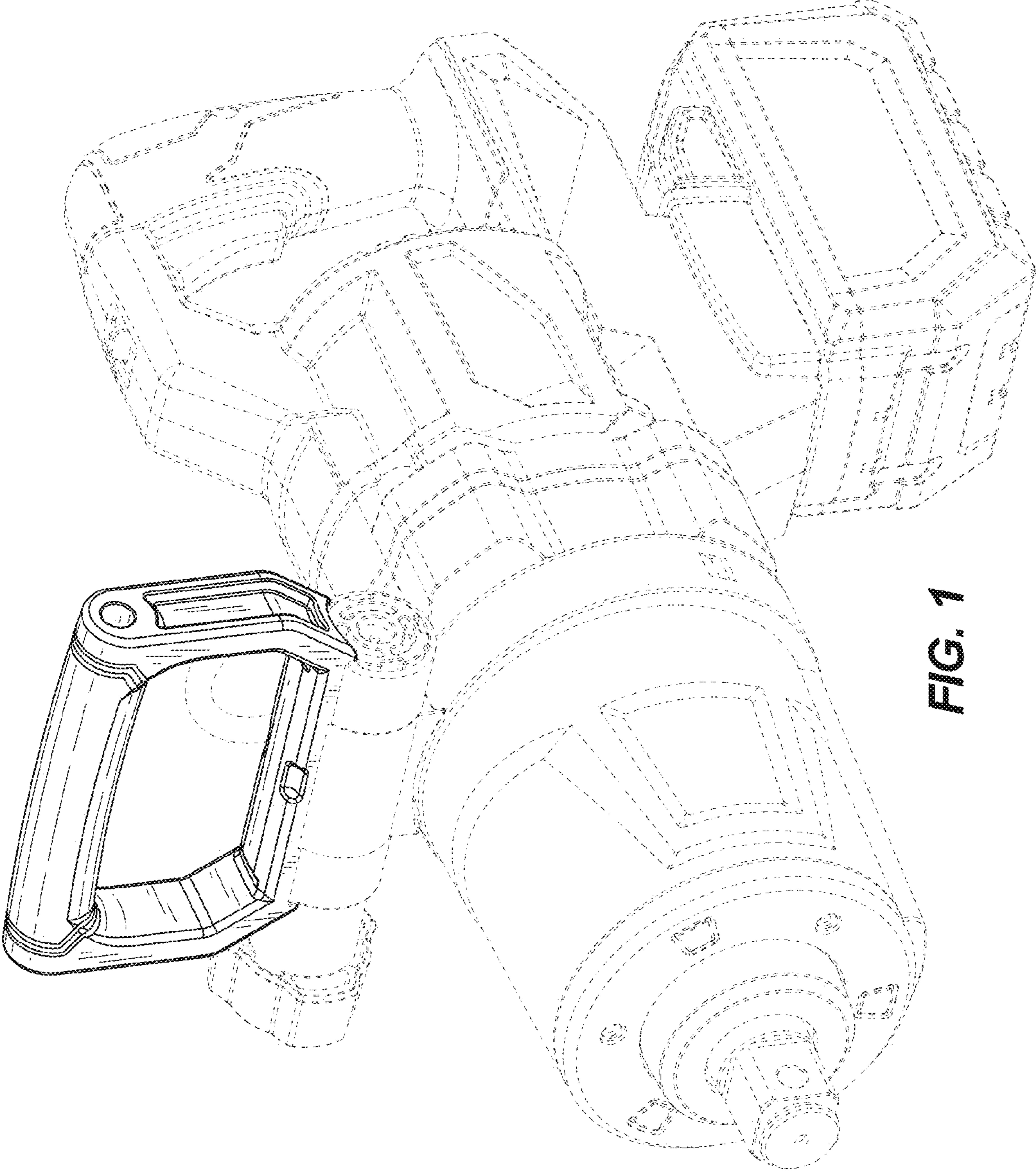


FIG. 1

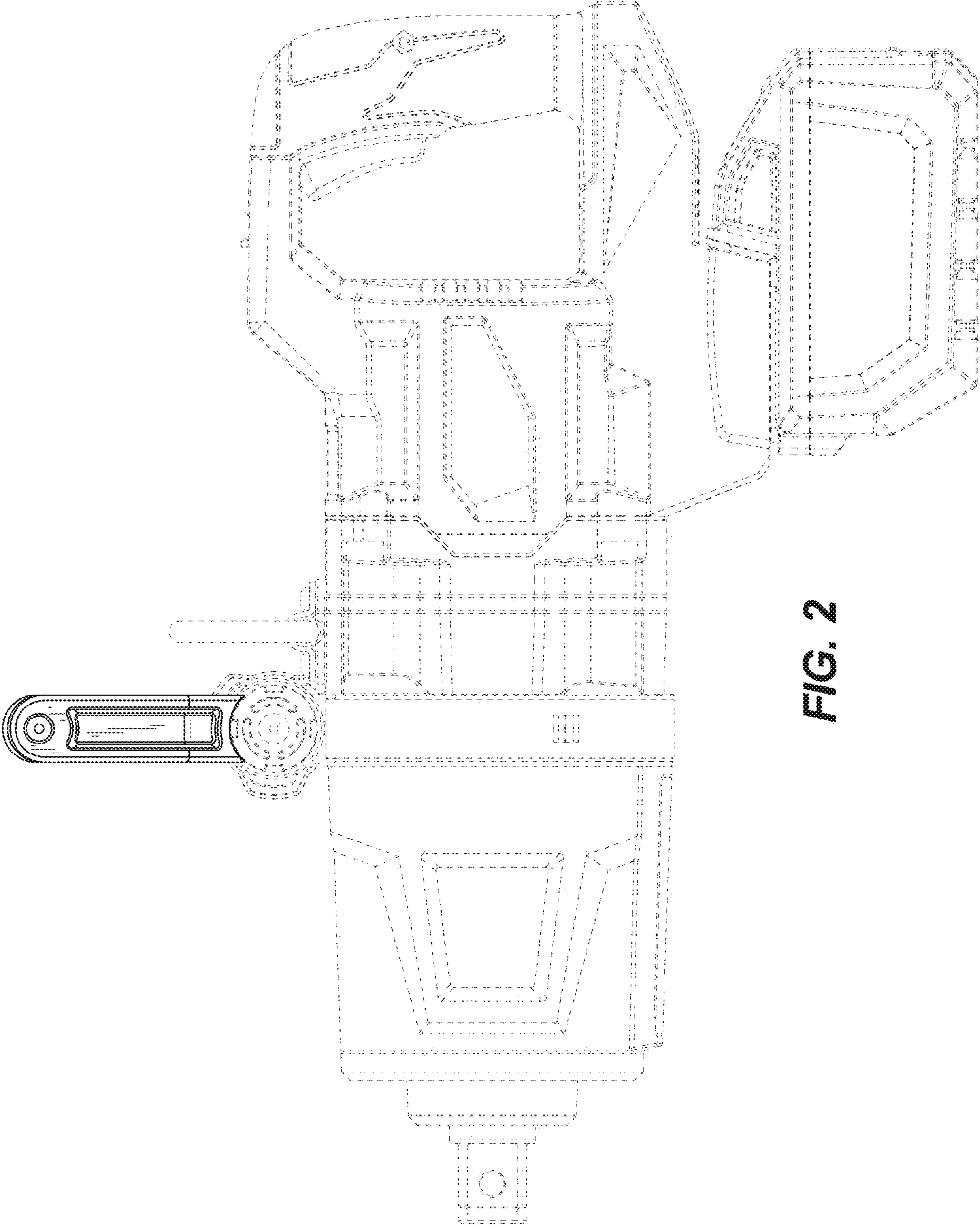


FIG. 2

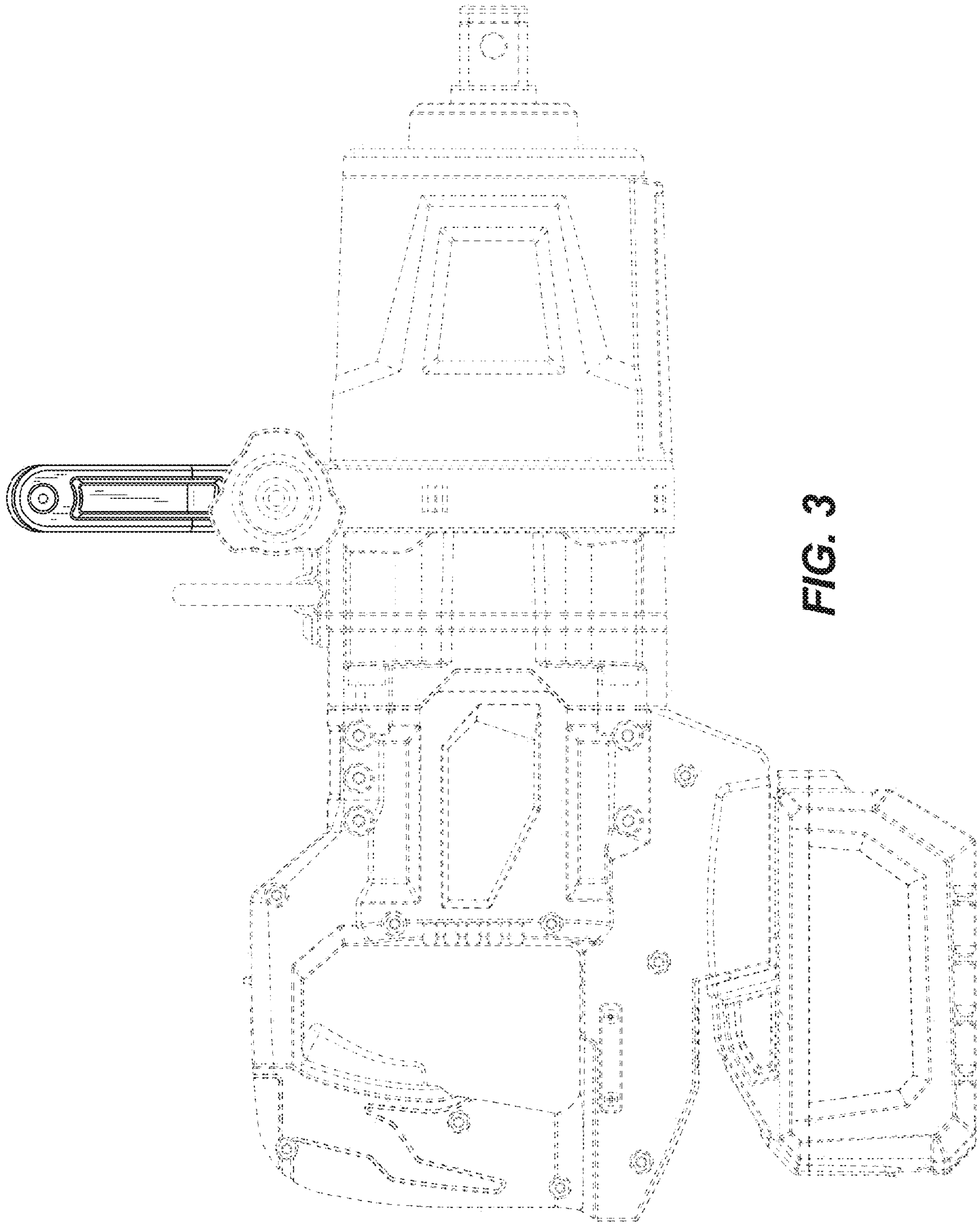


FIG. 3

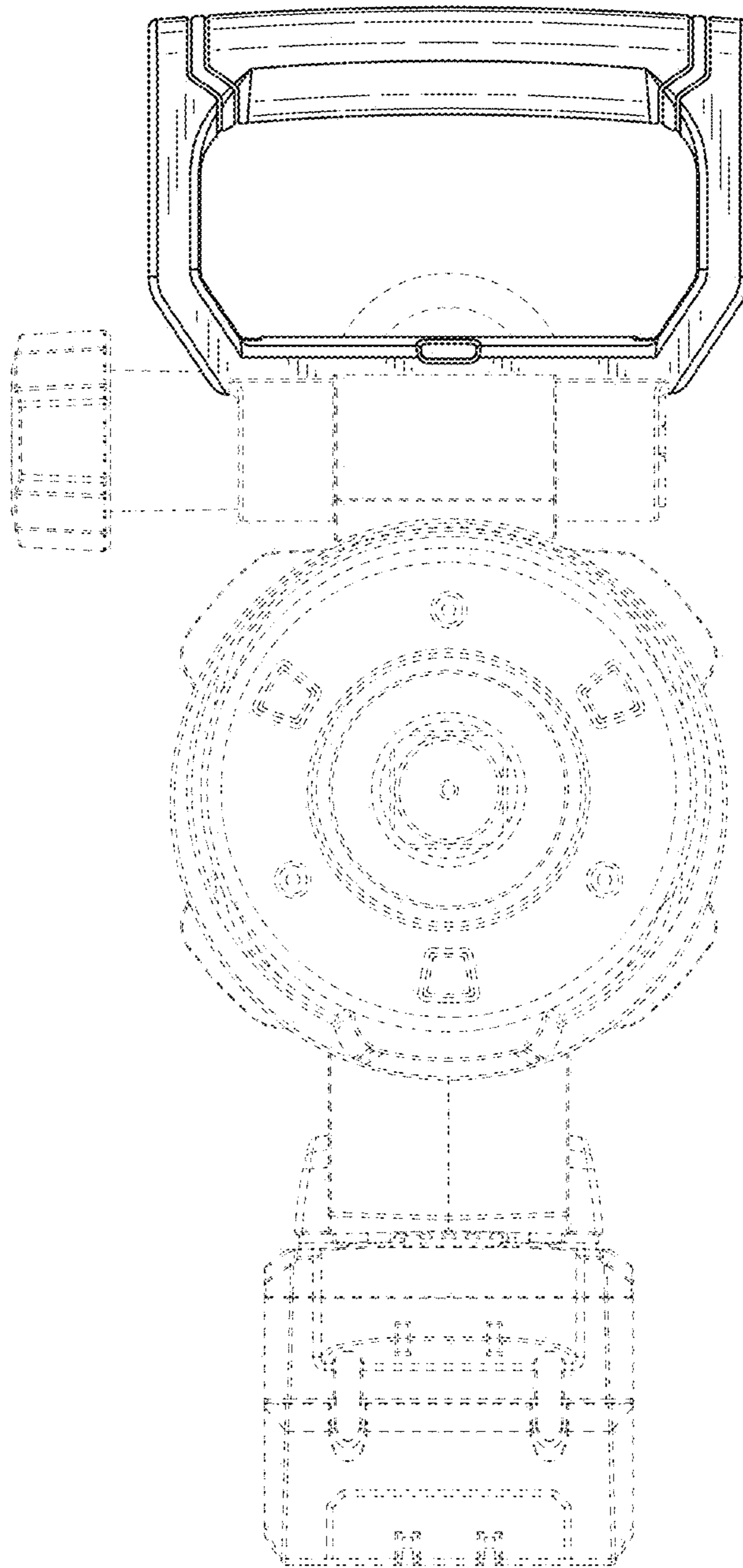


FIG. 4

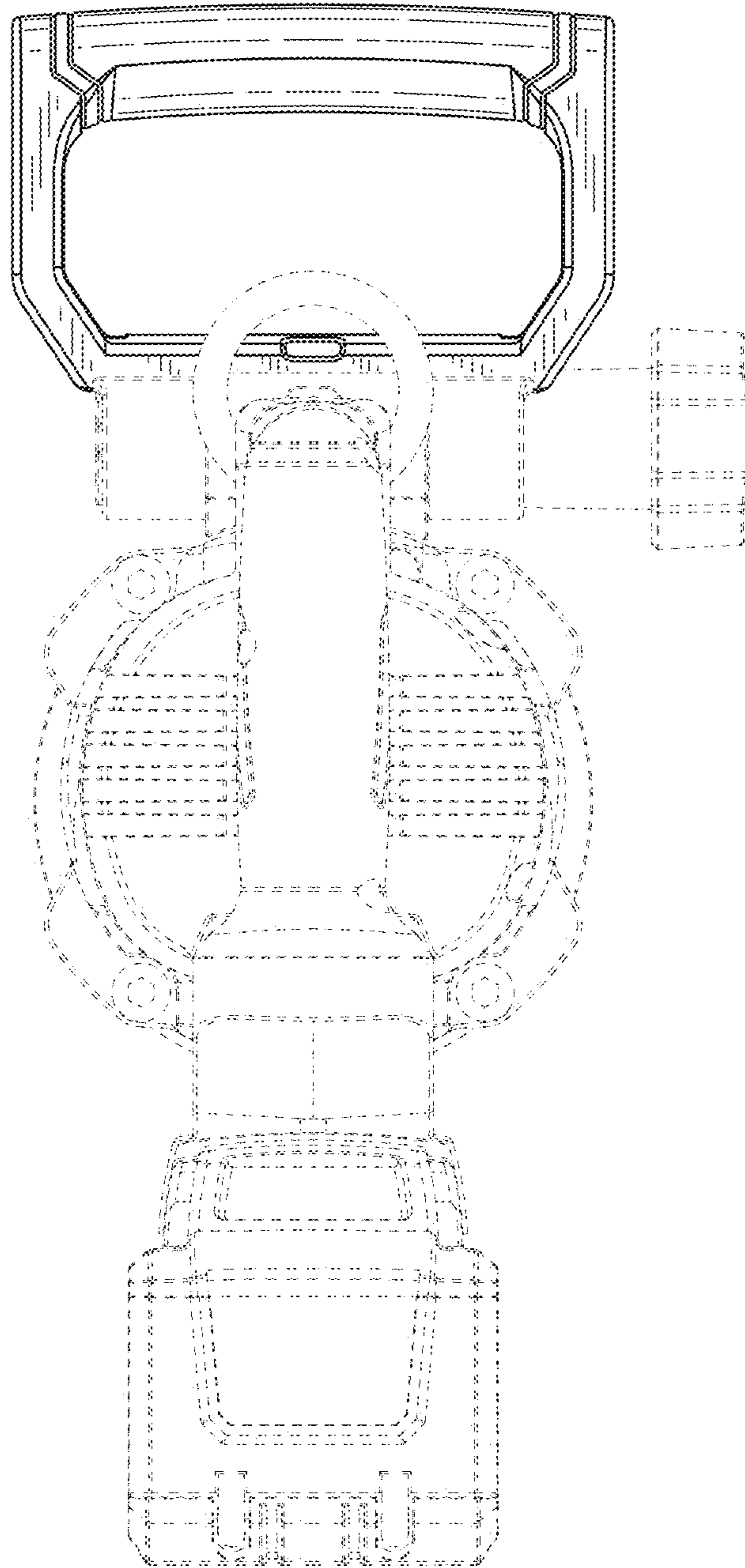


FIG. 5

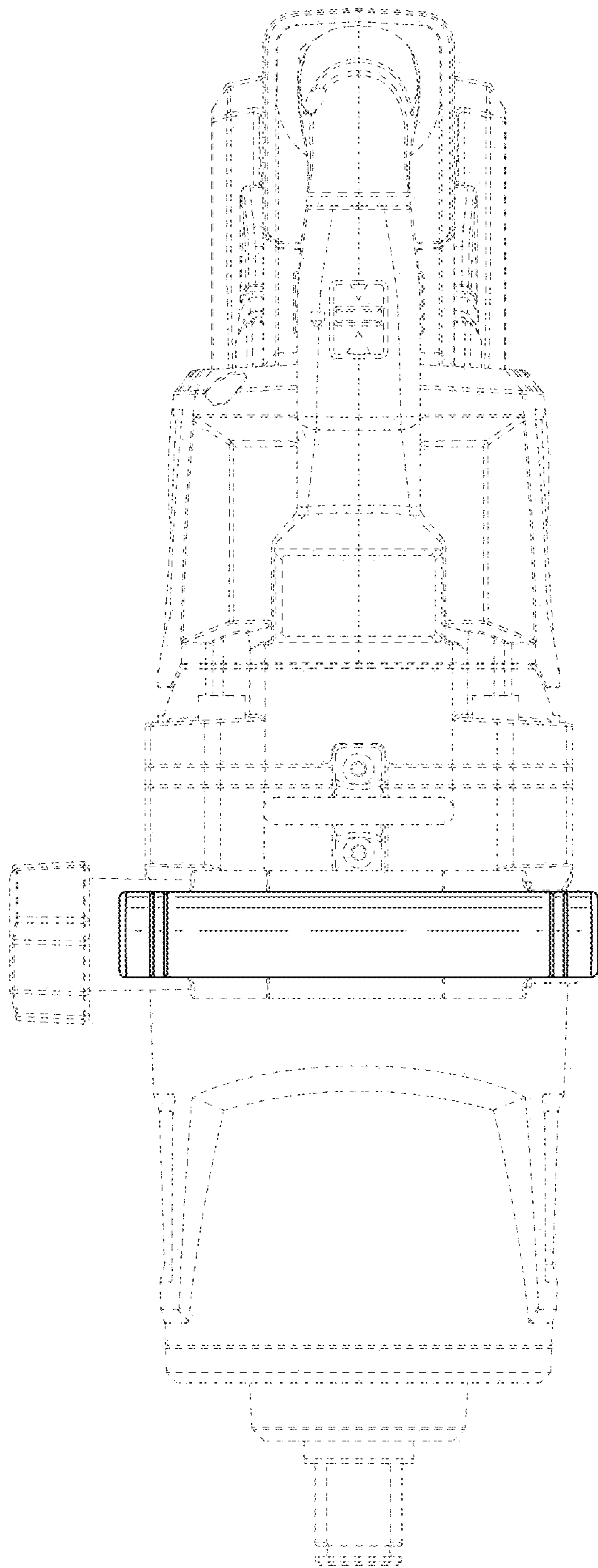


FIG. 6

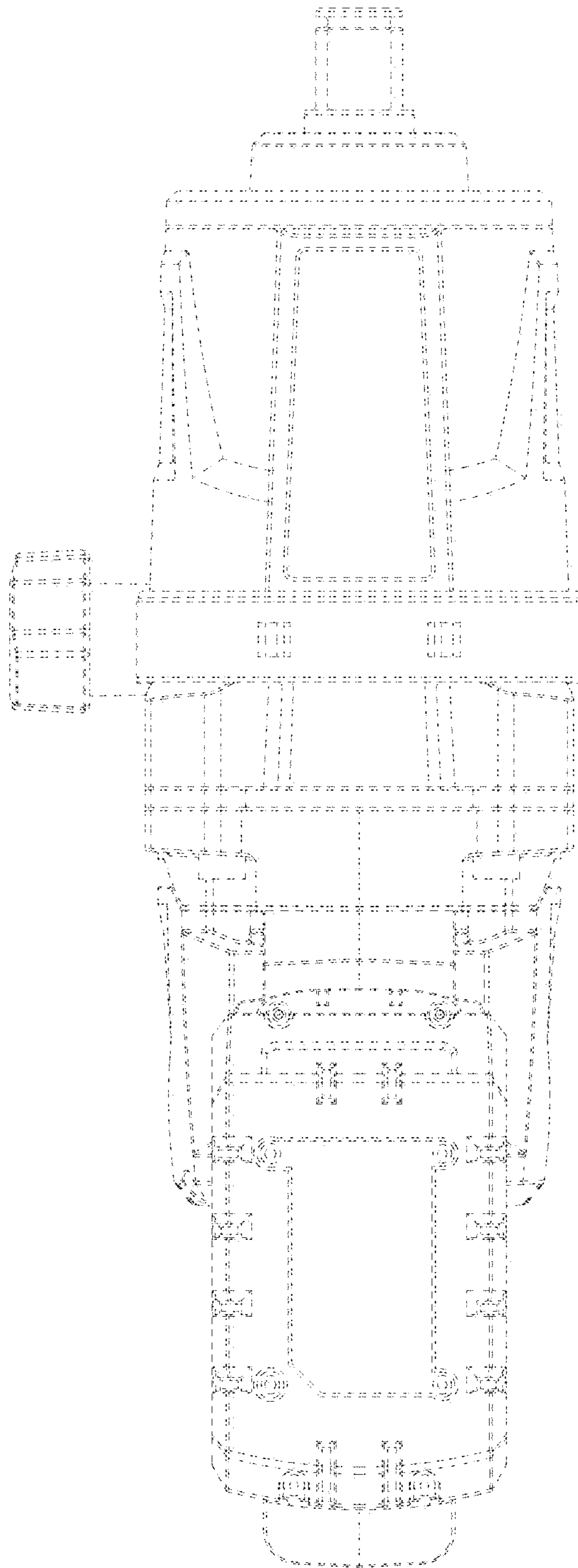


FIG. 7