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(12) **United States Design Patent** (10) **Patent No.:** **US D986,049 S**  
**Morano, III et al.** (45) **Date of Patent:** **\*\* May 16, 2023**

- (54) **ASYMMETRIC CLAMP FOR JOINING SANITARY FITTINGS** 3,913,187 A \* 10/1975 Okuda ..... F16L 3/1075 24/484
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 3,937,501 A 2/1976 Weinhold  
 3,979,143 A 9/1976 Weinhold  
 4,123,095 A 10/1978 Stehlin  
 4,163,571 A 8/1979 Nash  
 4,660,869 A 4/1987 Gabus  
 4,693,498 A 9/1987 Baugh et al.  
 4,702,499 A 10/1987 deRaymond et al.  
 D294,330 S \* 2/1988 Keck ..... D8/395  
 4,848,808 A 7/1989 Pannell et al.  
 4,919,453 A 4/1990 Halling et al.  
 D333,087 S 2/1993 Tekirian  
 5,257,834 A 11/1993 Zeidler et al.  
 5,470,114 A 11/1995 Umney et al.  
 5,499,849 A 3/1996 Fend  
 5,505,503 A 4/1996 Boivin  
 5,645,303 A 7/1997 Warehime et al.  
 5,782,499 A 7/1998 Gfrerer et al.  
 5,837,180 A 11/1998 Linder et al.  
 6,234,545 B1 5/2001 Babuder et al.  
 D447,564 S \* 9/2001 Stewart, Jr. .... D8/395  
 D448,657 S 10/2001 Calvert  
 6,488,664 B1 12/2002 Solomon et al.  
 6,536,811 B1 3/2003 Ranson, Jr. et al.  
 7,201,351 B2 4/2007 Stigler  
 7,284,731 B1 10/2007 Johnson et al.  
 7,306,212 B2 12/2007 Cantin  
 D564,866 S 3/2008 Ellery  
 7,644,960 B2 1/2010 Casey, Sr. et al.  
 7,828,335 B2 11/2010 Gill  
 7,837,239 B2 11/2010 Krausz et al.  
 8,196,971 B2 6/2012 Hansen  
 8,220,113 B2 7/2012 Morton et al.  
 8,322,755 B2 12/2012 Kluss et al.  
 8,328,457 B2 12/2012 Werth  
 D695,100 S \* 12/2013 Whitaker ..... D8/396  
 9,004,545 B2 4/2015 Whitaker et al.  
 9,151,420 B2 10/2015 McKiernan  
 D749,835 S \* 2/2016 Whitaker ..... D3/10  
 9,334,991 B2 5/2016 Weinhold  
 D770,886 S \* 11/2016 Whitaker ..... D8/394  
 9,618,147 B2 4/2017 Krueger  
 D789,779 S 6/2017 Asai  
 D807,137 S 1/2018 Whitaker  
 9,927,052 B1 \* 3/2018 Robillard ..... F16L 23/18  
 D833,265 S 11/2018 Meola et al.  
 10,125,906 B2 11/2018 Whitaker  
 D836,184 S 12/2018 Lippka  
 D836,185 S 12/2018 Lippka  
 D839,398 S 1/2019 Lippka  
 D839,399 S 1/2019 Lippka  
 10,197,199 B2 2/2019 Fontenot
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- (21) Appl. No.: **29/854,677**
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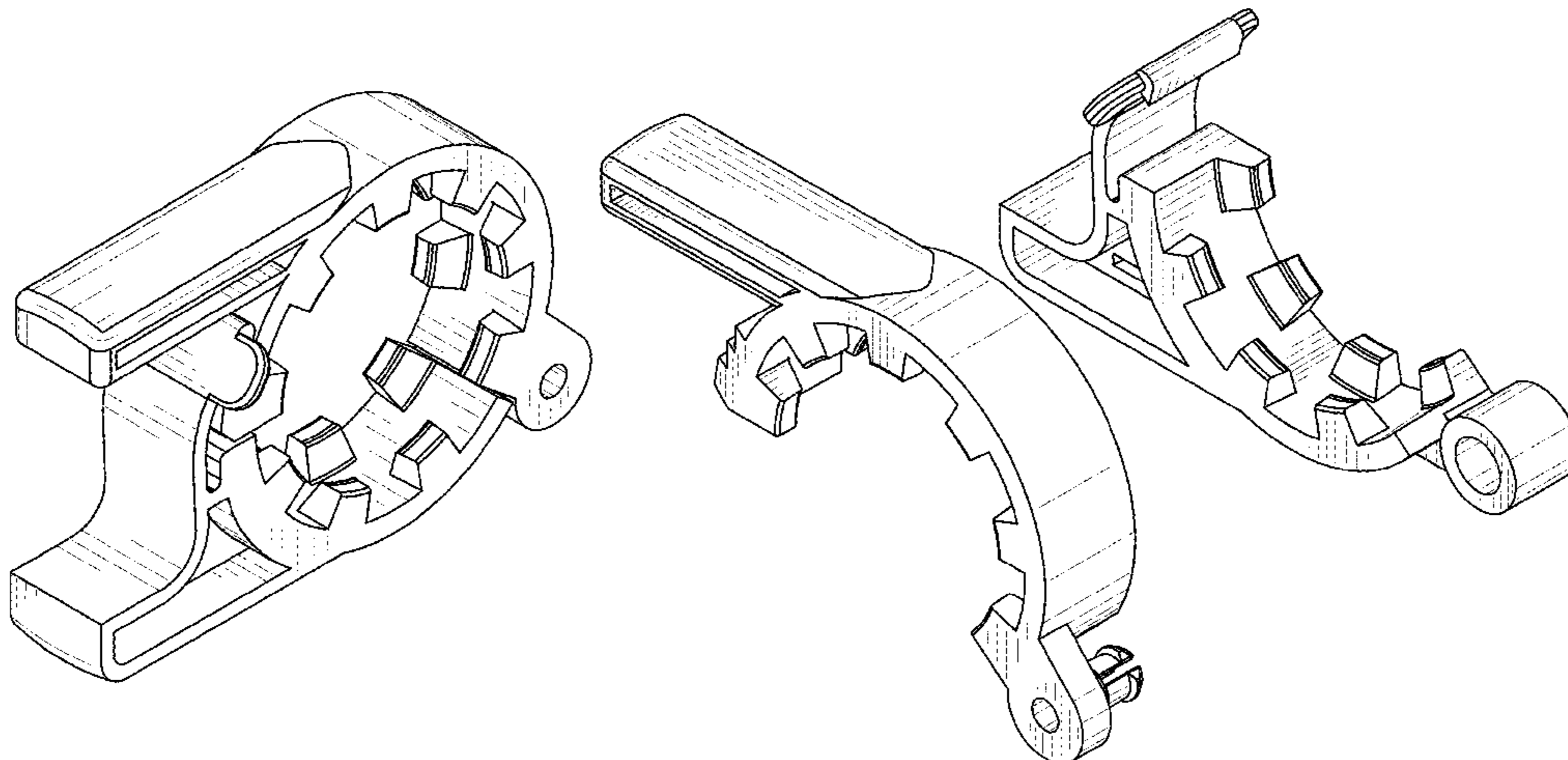
**Related U.S. Application Data**

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- (51) **LOC (14) Cl.** ..... **08-08**
- (52) **U.S. Cl.**  
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- (58) **Field of Classification Search**  
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 F16L 23/06; F16L 23/10; F16L 37/1225  
 See application file for complete search history.

**References Cited**

**U.S. PATENT DOCUMENTS**

- 2,775,806 A 1/1953 Love  
 2,689,141 A \* 9/1954 Kiekhaefer ..... F16L 23/06 285/410  
 3,563,571 A \* 2/1971 Werra ..... F16L 23/10 285/41  
 3,744,825 A 7/1973 Cooper et al.  
 D236,798 S \* 9/1975 Hall ..... D8/394



D850,247	S *	6/2019	Sillitoe	.....	D8/394
10,352,488	B2 *	7/2019	Barrientos	.....	F16L 33/035
10,408,371	B2	9/2019	Floyd		
D865,919	S	11/2019	Lippka		
10,508,668	B2	12/2019	Ikushima		
D877,604	S *	3/2020	Sillitoe	.....	D8/394
D889,611	S	7/2020	Lippka		
10,746,330	B2	8/2020	Hughes et al.		
10,859,192	B2	12/2020	Whitaker		
D911,158	S	2/2021	Jenkins		
11,060,637	B2	6/2021	Takeda et al.		
11,185,907	B2	11/2021	Schweizer et al.		
D938,814	S *	12/2021	Wickham	.....	D8/394
D941,408	S	1/2022	Jones		
D950,369	S	5/2022	Anderson		
11,320,078	B2	5/2022	Oba et al.		
D954,521	S *	6/2022	Jenney	.....	D8/72
11,369,899	B2	6/2022	Kuan		
11,441,715	B1 *	9/2022	Buzdum	.....	F16L 37/20
2004/0159454	A1	8/2004	Shibuya		
2005/0212291	A1 *	9/2005	Edwards	.....	F16L 23/10
					285/364
2005/0258648	A1 *	11/2005	Newman	.....	F16L 23/10
					285/364
2006/0049634	A1 *	3/2006	Goodsel	.....	F16L 37/1225
					285/406
2007/0024056	A1	2/2007	Borland		
2007/0138351	A1 *	6/2007	Wu	.....	F16L 23/06
					248/74.2
2008/0179469	A1 *	7/2008	Leone	.....	F16L 3/10
					248/56
2009/0119886	A1 *	5/2009	Werth	.....	F16L 23/04
					24/193
2009/0208277	A1 *	8/2009	Werth	.....	A61M 39/1011
					403/312
2010/0132165	A1 *	6/2010	Shor	.....	F16L 37/1225
					24/19
2012/0126534	A1 *	5/2012	Morton	.....	F16L 23/10
					285/365
2012/0227221	A1 *	9/2012	Whitaker	.....	A61M 39/1011
					29/525.08
2013/0009395	A1 *	1/2013	Horning	.....	F16L 23/06
					285/337
2013/0249212	A1 *	9/2013	McKiernan	.....	F16L 23/10
					285/407
2015/0235821	A1	8/2015	Madocks et al.		
2016/0053926	A1 *	2/2016	Whitaker	.....	F16L 37/12
					285/34
2017/0191589	A1 *	7/2017	Floyd	.....	F16L 23/06
2017/0307116	A1	10/2017	Handa		
2018/0156362	A1	6/2018	Takeda et al.		
2018/0187811	A1 *	7/2018	Scholz	.....	F16L 37/20
2019/0145559	A1	5/2019	Karlsson		
2019/0226613	A1	7/2019	Schneider		
2020/0080675	A1 *	3/2020	White	.....	F16L 23/04
2020/0277986	A1	9/2020	Ignaczak et al.		
2021/0247008	A1 *	8/2021	Sillitoe	.....	A61M 39/12
2021/0301952	A1	9/2021	Belen et al.		
2022/0333721	A1 *	10/2022	Jenney	.....	F16L 23/08

FOREIGN PATENT DOCUMENTS

EP	3446020	A2	2/2019
JP	5134573	B2	1/2013
JP	2020094613	A	6/2020
JP	4575973	B2	11/2020
WO	1998029679	A1	7/1998
WO	2002035905	A2	5/2002
WO	2003050445	A1	6/2003
WO	2006005826	A1	1/2006
WO	2006048086	A1	5/2006
WO	2009044024	A2	4/2009
WO	2010134771	A2	11/2010
WO	2013019009	A2	2/2013
WO	2016120223	A1	8/2016
WO	2019201381	A1	10/2019

OTHER PUBLICATIONS

“Universal Flange Clamp”, Mar. 27, 2014, YouTube.com, site visited Jan. 26, 2023: <https://www.youtube.com/watch?v=HmUZPS9D2Ew> (Year: 2014).\*

“PharmaLok™ Series Single-Use Clamps”, Apr. 30, 2014, YouTube.com, site visited Jan. 26, 2023: <https://www.youtube.com/watch?v=xmFA6FC0UIo> (Year: 2014).\*

“FlowLinX Sanitary Components”, May 31, 2022, YouTube.com, site visited Jan. 26, 2023: <https://www.youtube.com/watch?v=-0Hmmbg7iVQ> (Year: 2022).\*

Locarno Design Output (part 1) of several relevant designs generated by Clarivate search Team using Questel tool, delivered Aug. 5, 2022, 46 pages, Clarivate, Philadelphia, PA, United States of America.

Locarno Design Output (part 2) of several relevant designs generated by Clarivate search Team using Questel tool, delivered Aug. 5, 2022, 206 pages, Clarivate, Philadelphia, PA, United States of America.

Pearl Icon PCR-100 Dual Pipe Clamp, available on web at <https://www.musik-produktiv.com/gb/pearl-icon-pcr-100-dual-pipe-clamp.html> before Aug. 2, 2022, 2 pages as printed, Musik Productiv GmbH & Co. KG, Germany.

Georg Fischer PP Black Pipe Clamp, 0.87in×2.92in×2.01in, 0.28in, available on web at [https://in.rsdelivers.com/product/georg-fischer/167061040/georg-fischer-pp-black-pipe-clamp-087in-x-292in-x-6195249#\\_](https://in.rsdelivers.com/product/georg-fischer/167061040/georg-fischer-pp-black-pipe-clamp-087in-x-292in-x-6195249#_) before Aug. 2, 2022, 1 page, RS Components & Controls (I) Ltd, Noida India.

What is a pipe clamp? Available on the web at <https://pipingtech.com/resources/faqs/what-is-a-pipe-clamp/> not later than Aug. 2, 2022, 2 pages, Piping Technology & Products, Inc. Houston, Texas.

\* cited by examiner

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Assistant Examiner — Michael A Kervin

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(57) CLAIM

The ornamental design for an asymmetric clamp for joining sanitary fittings, as shown.

DESCRIPTION

FIG. 1 is a top, left, front perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. 2 is a top, right, front perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. 3 is a bottom, left, front perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. 4 is a bottom, right, front perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. 5 is a front elevation view of an asymmetric clamp for joining sanitary fittings.

FIG. 6 is a rear elevation view of an asymmetric clamp for joining sanitary fittings.

FIG. 7 is a top plan view of an asymmetric clamp for joining sanitary fittings.

FIG. 8 is a bottom plan view of an asymmetric clamp for joining sanitary fittings.

FIG. 9 is a left side elevation view of an asymmetric clamp for joining sanitary fittings.

FIG. 10 is a right side elevation view of an asymmetric clamp for joining sanitary fittings.

FIG. 11 is a top, right, front exploded perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. 12 is a top, left, back exploded perspective view of an asymmetric clamp for joining sanitary fittings.

FIG. **13** is a top, left, back perspective view of an asymmetric clamp for joining sanitary fittings in an open position; and,  
FIG. **14** is a top, right, front perspective view of an asymmetric clamp for joining sanitary fittings in an open position.

**1 Claim, 7 Drawing Sheets**

FIG. 1

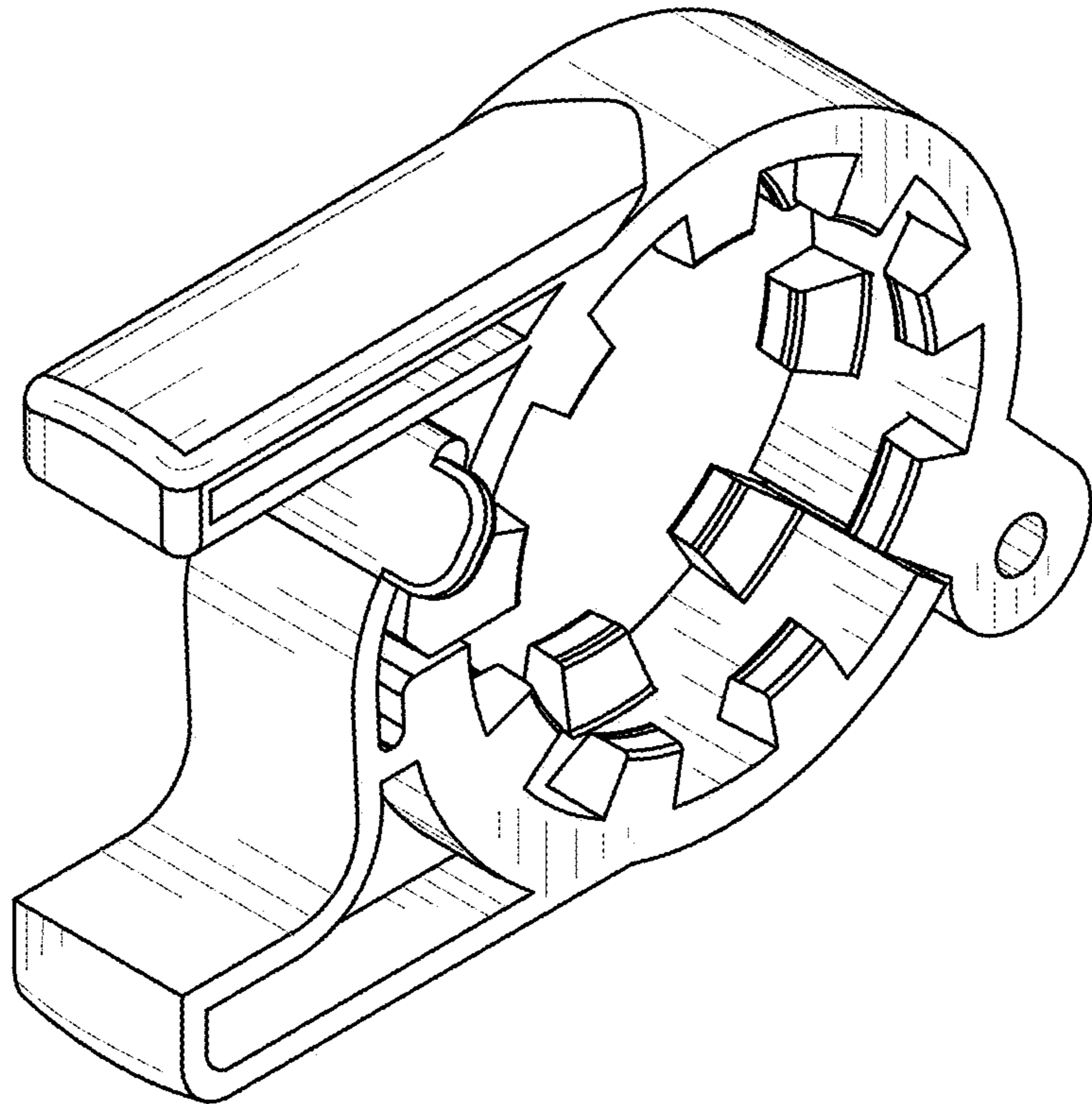


FIG. 2

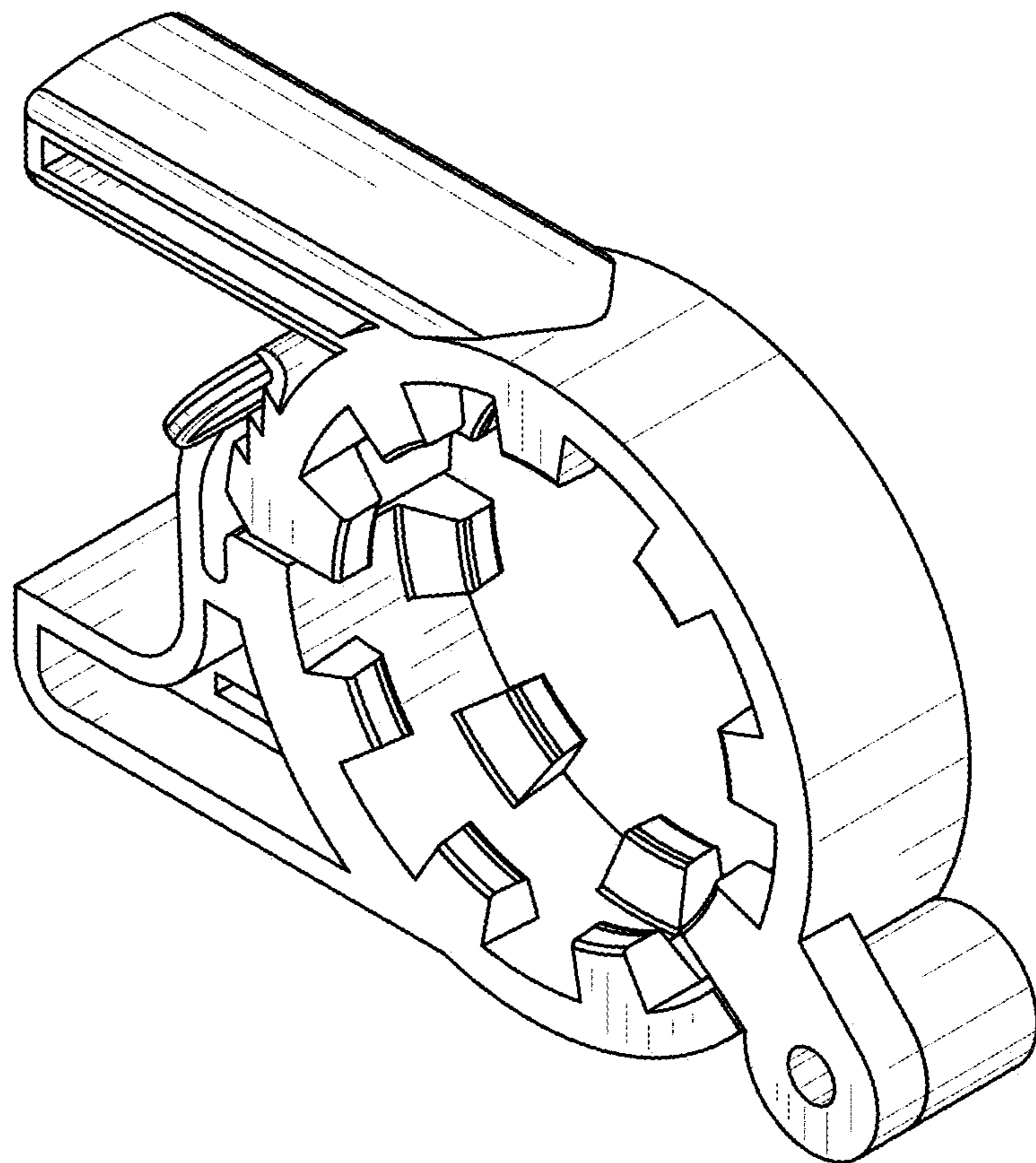


FIG. 3

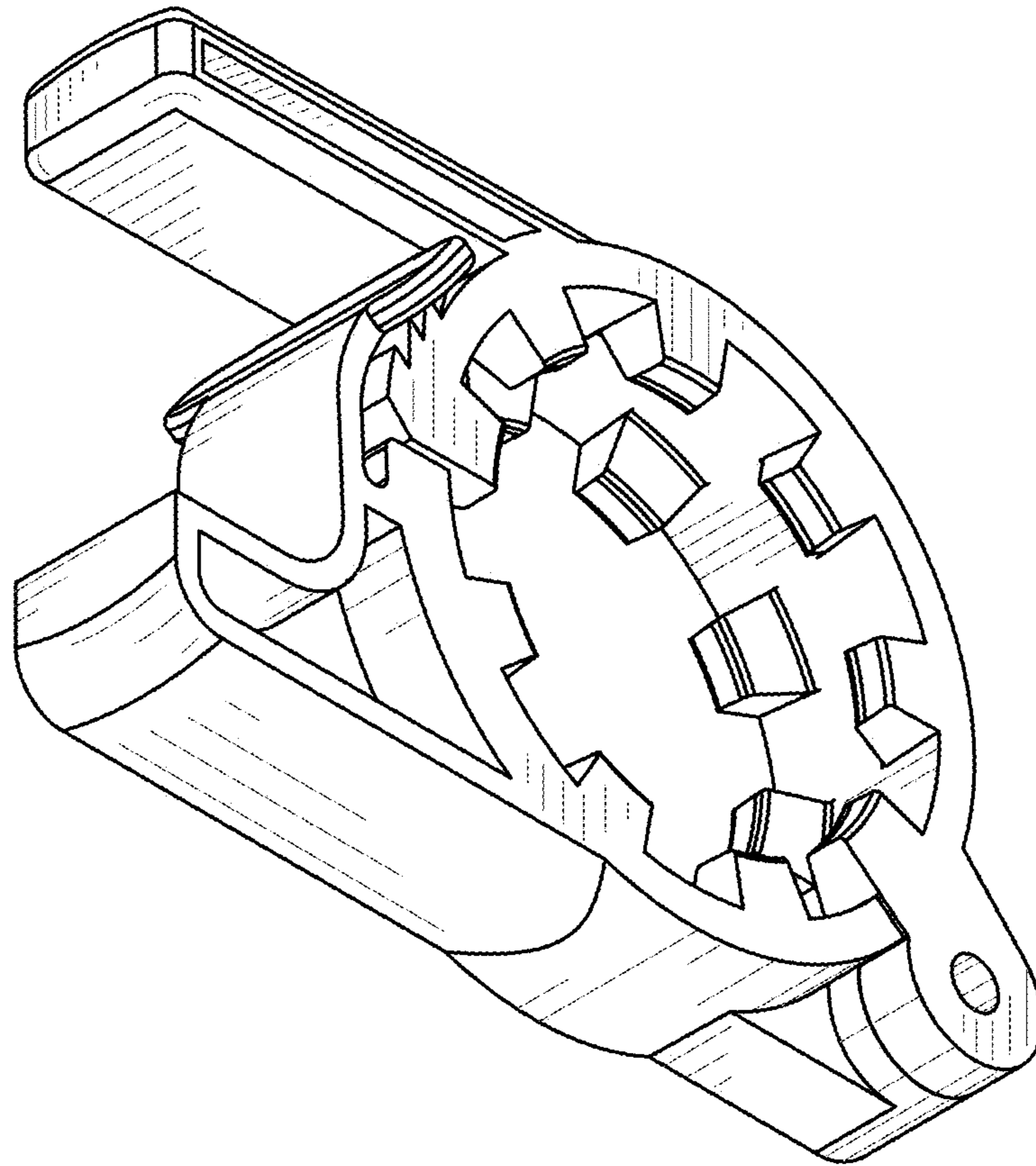


FIG. 4

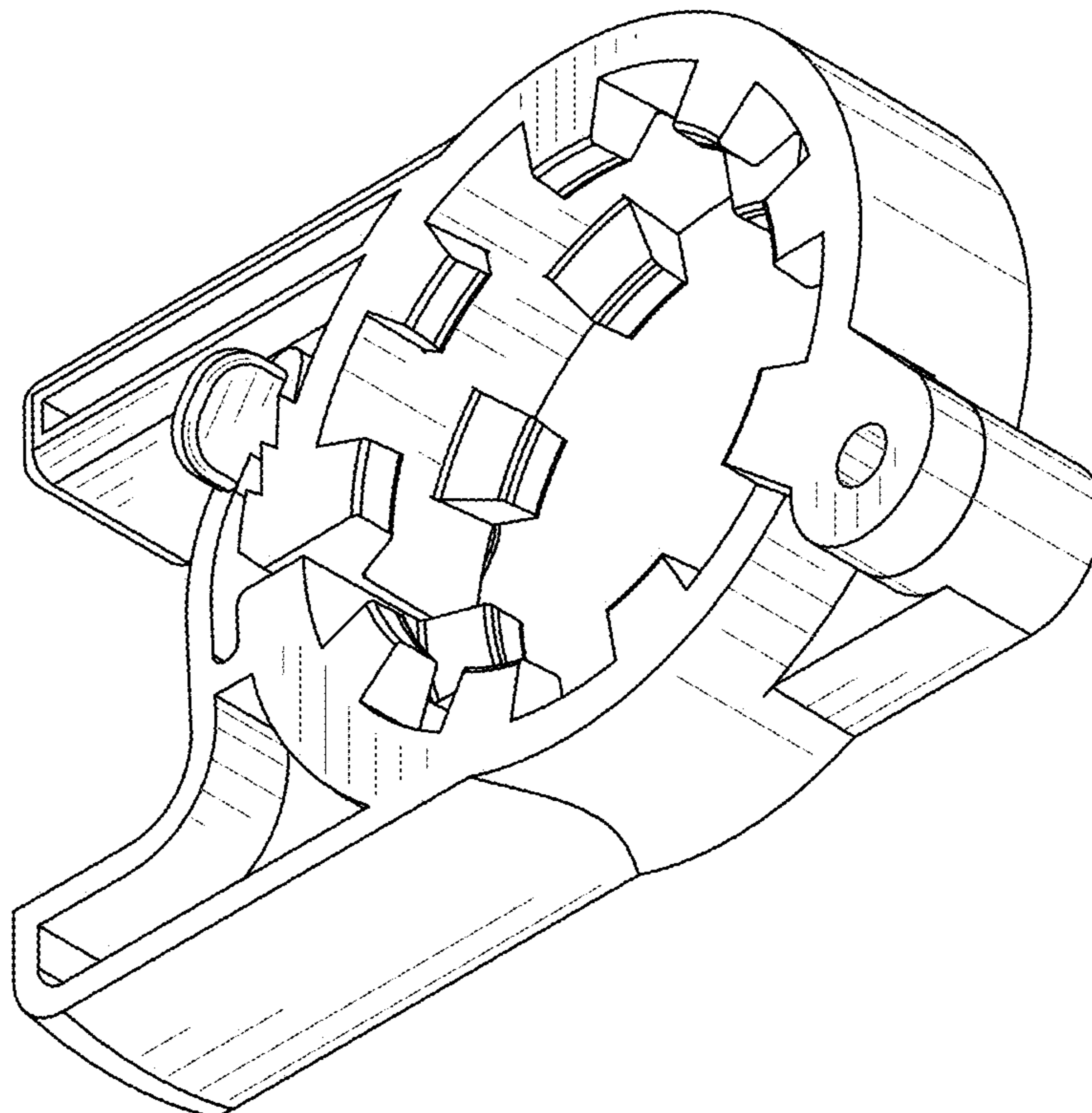


FIG. 7

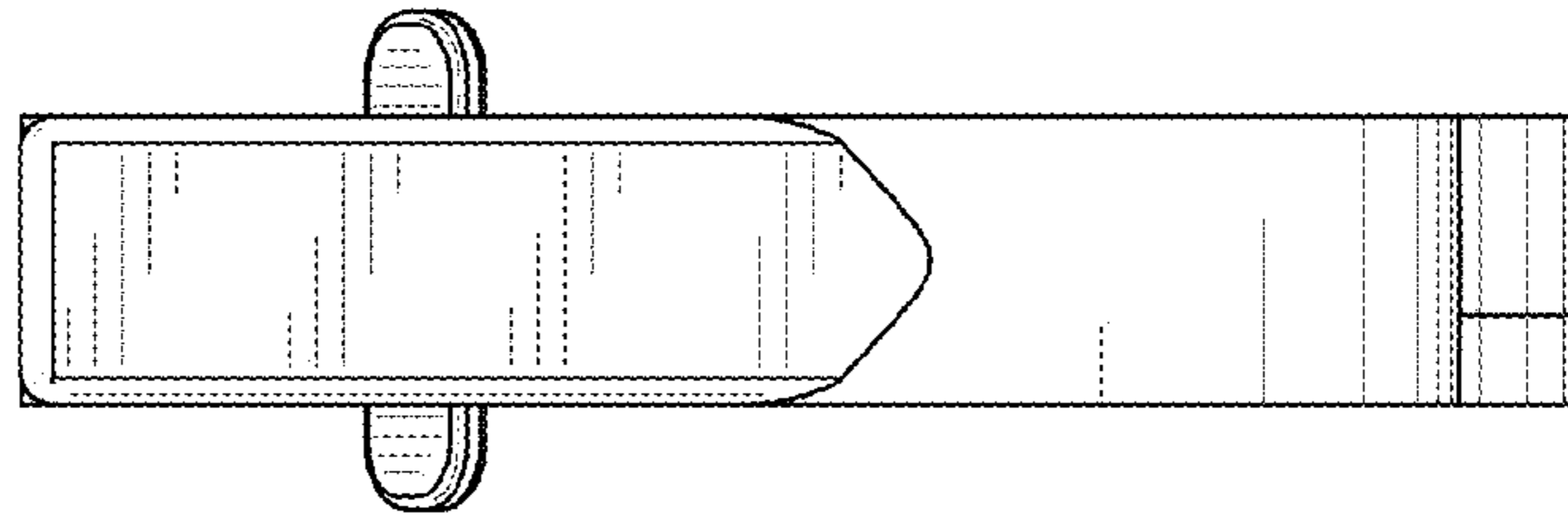


FIG. 9

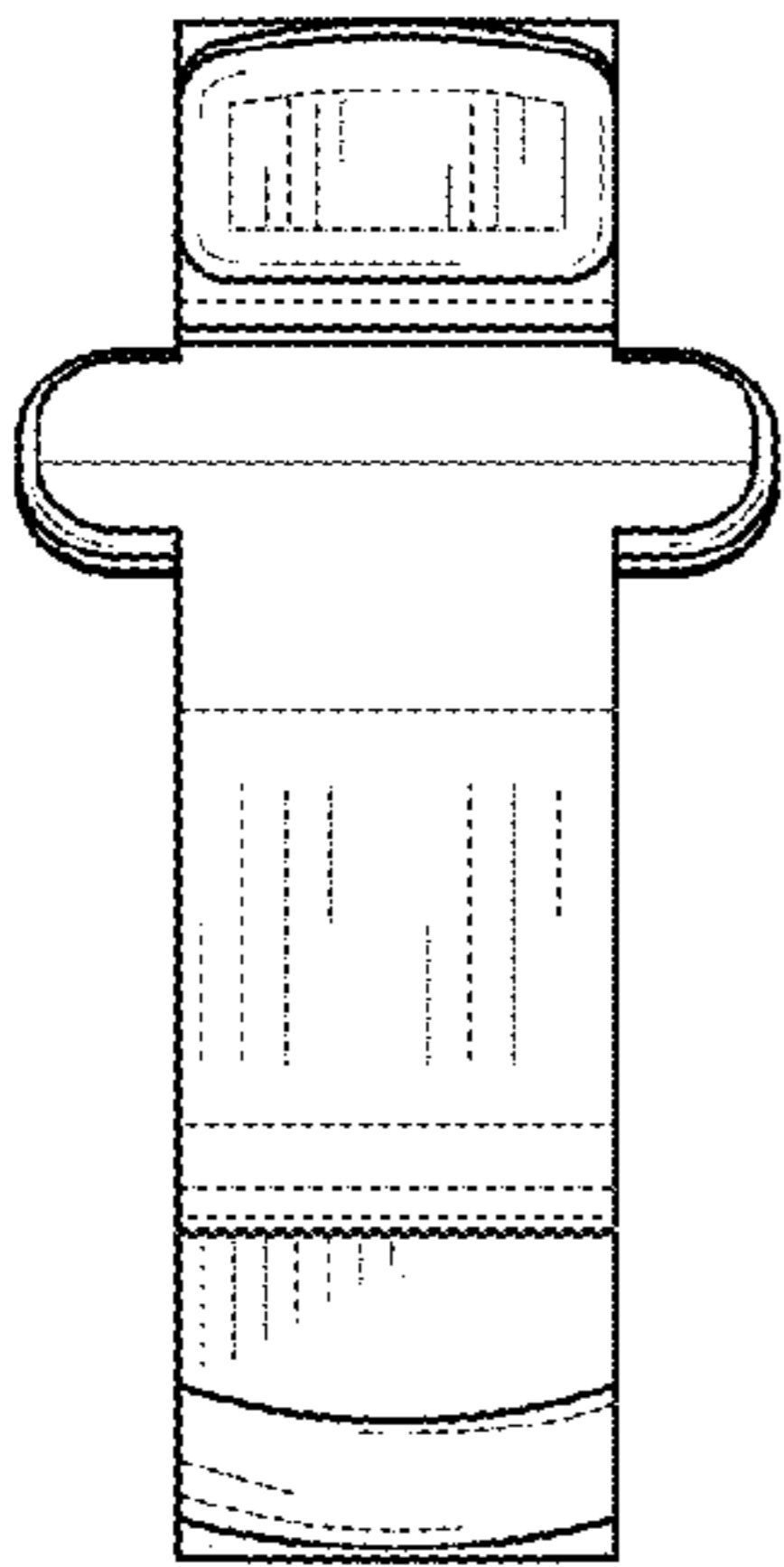


FIG. 5

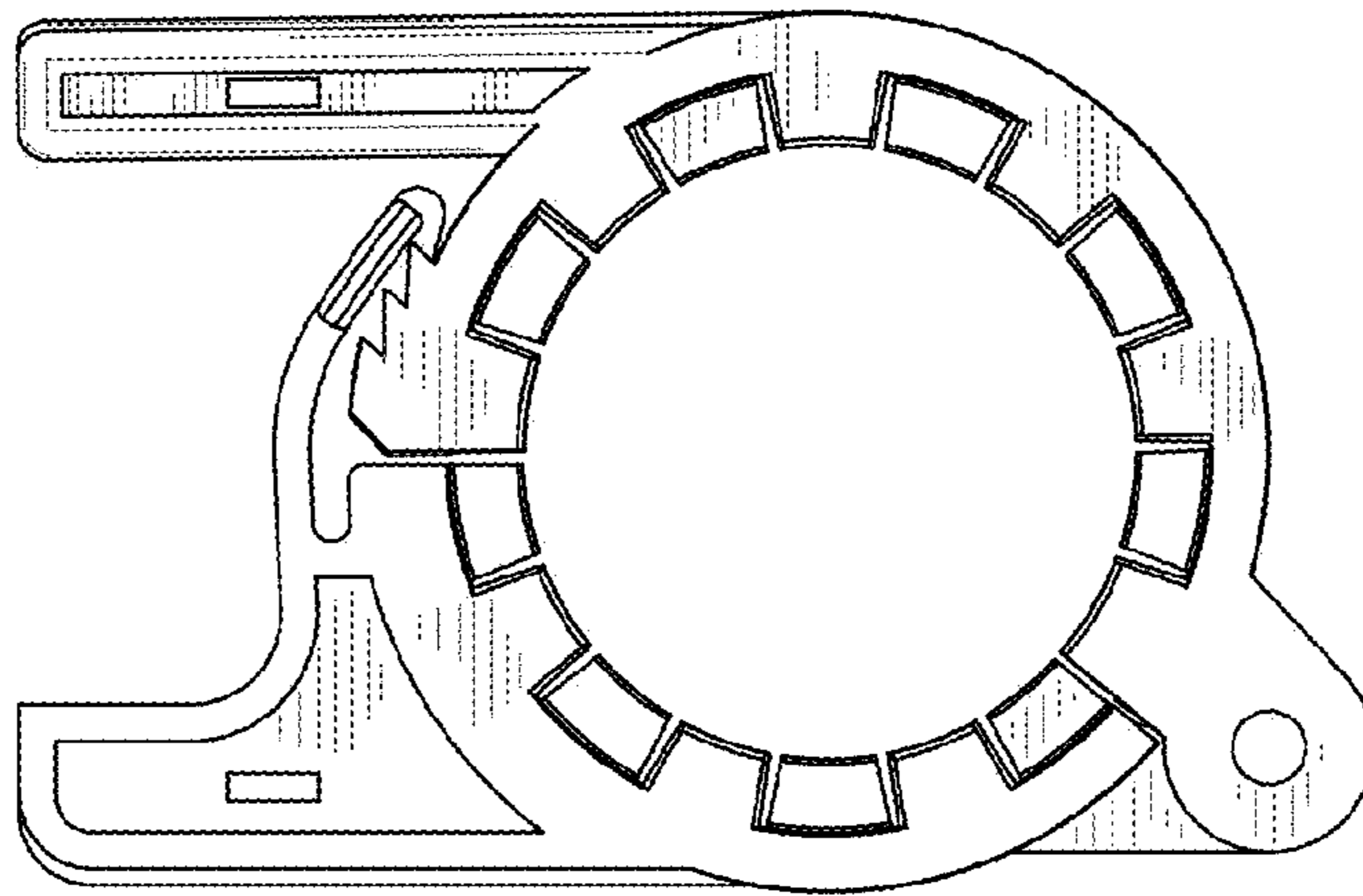


FIG. 10

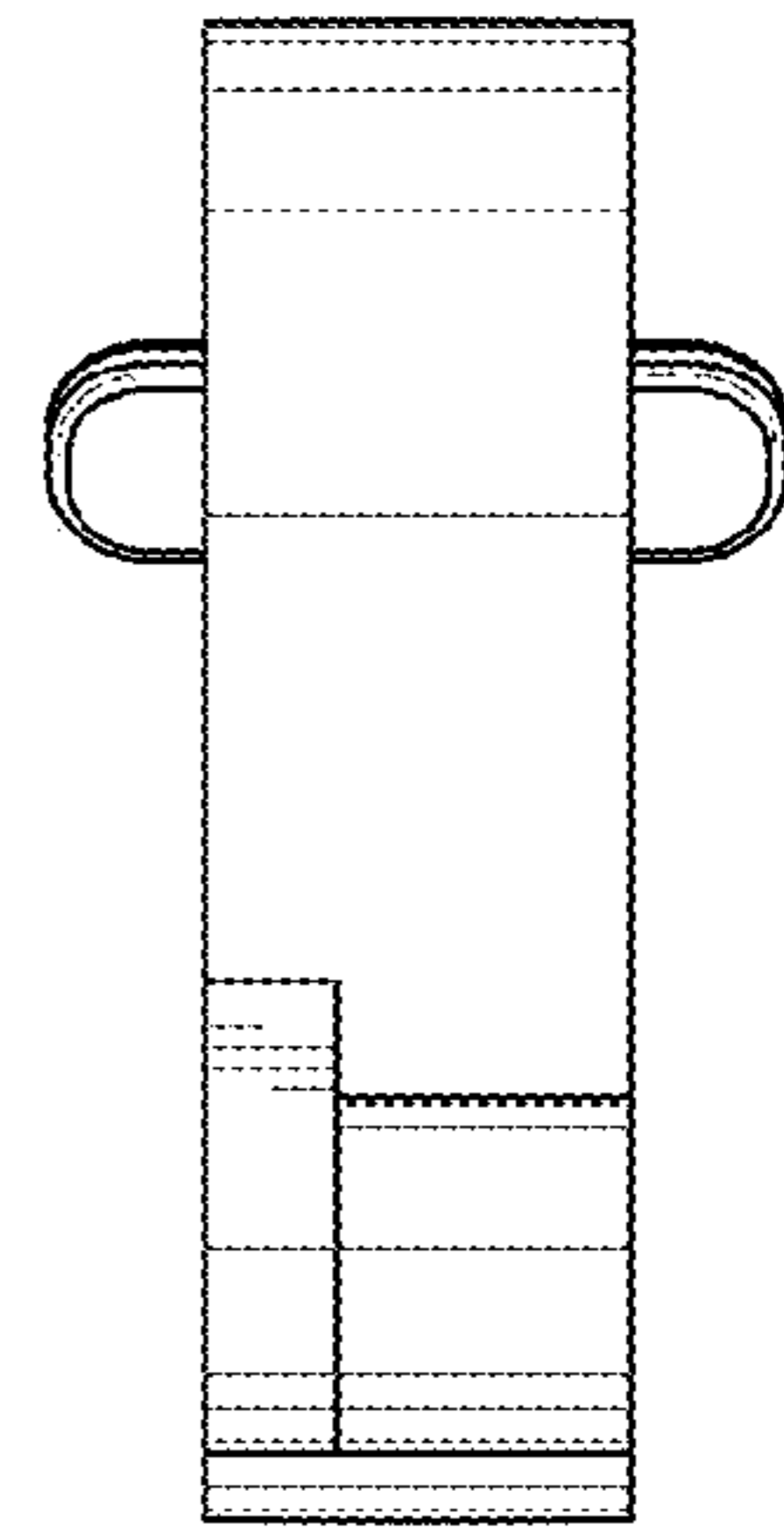


FIG. 8

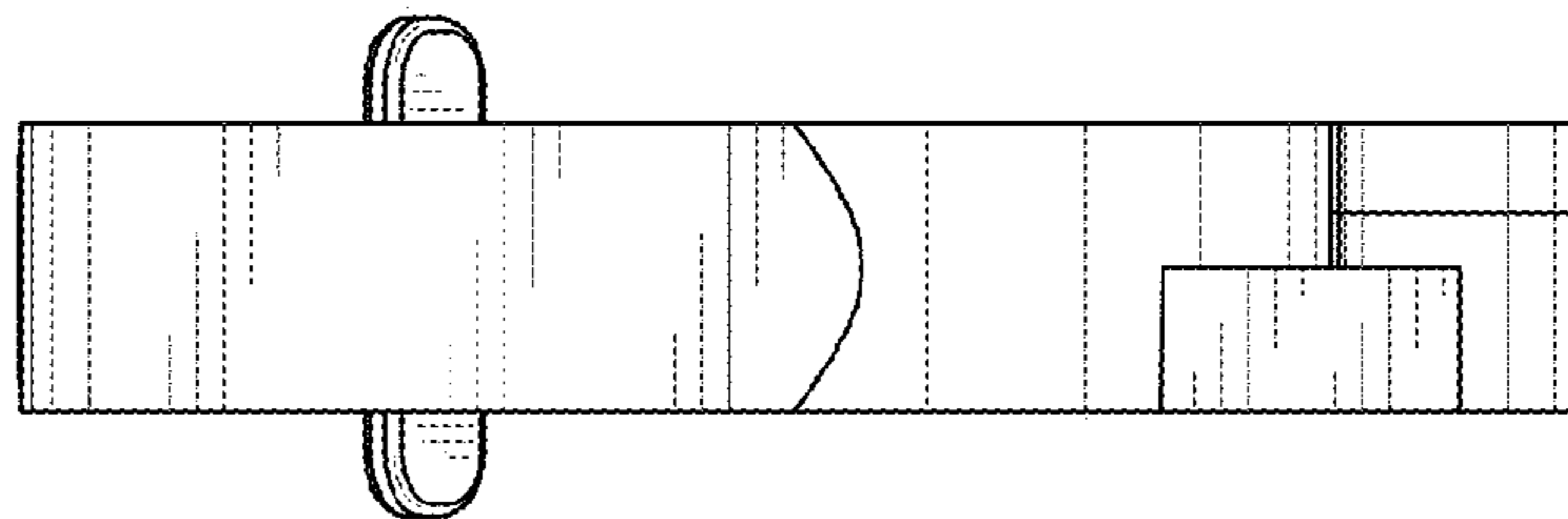


FIG. 6

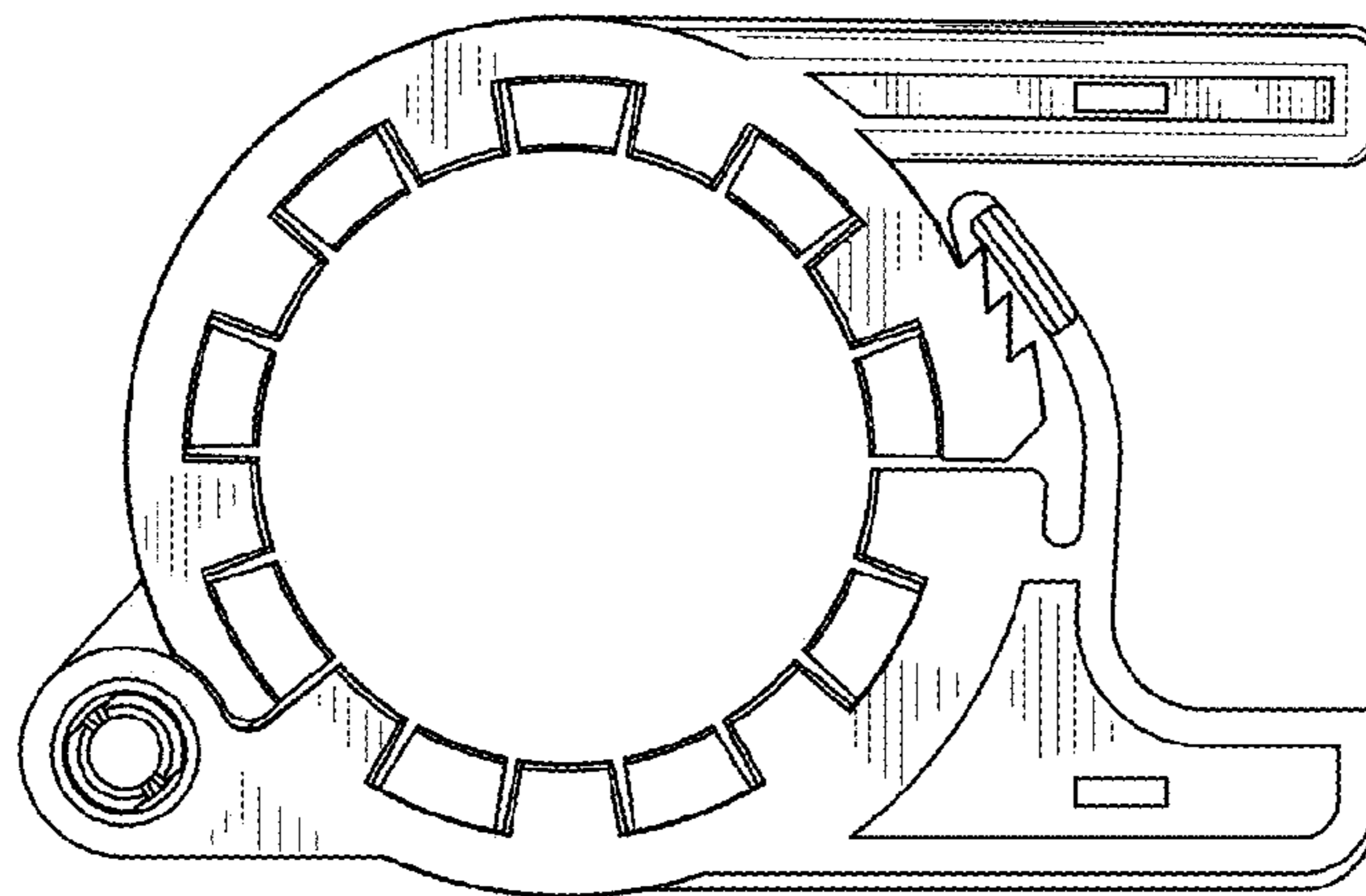


FIG. 11

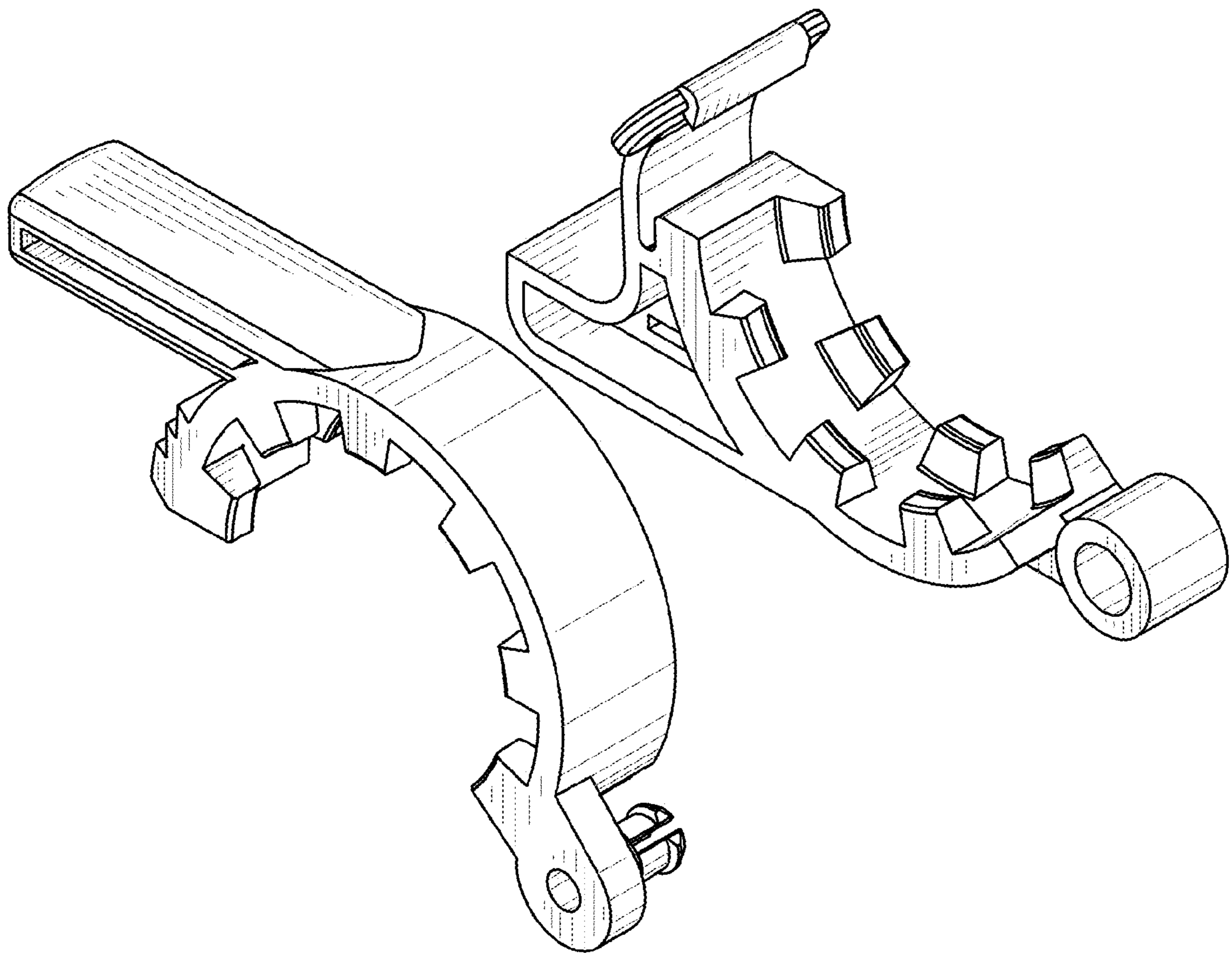


FIG. 12

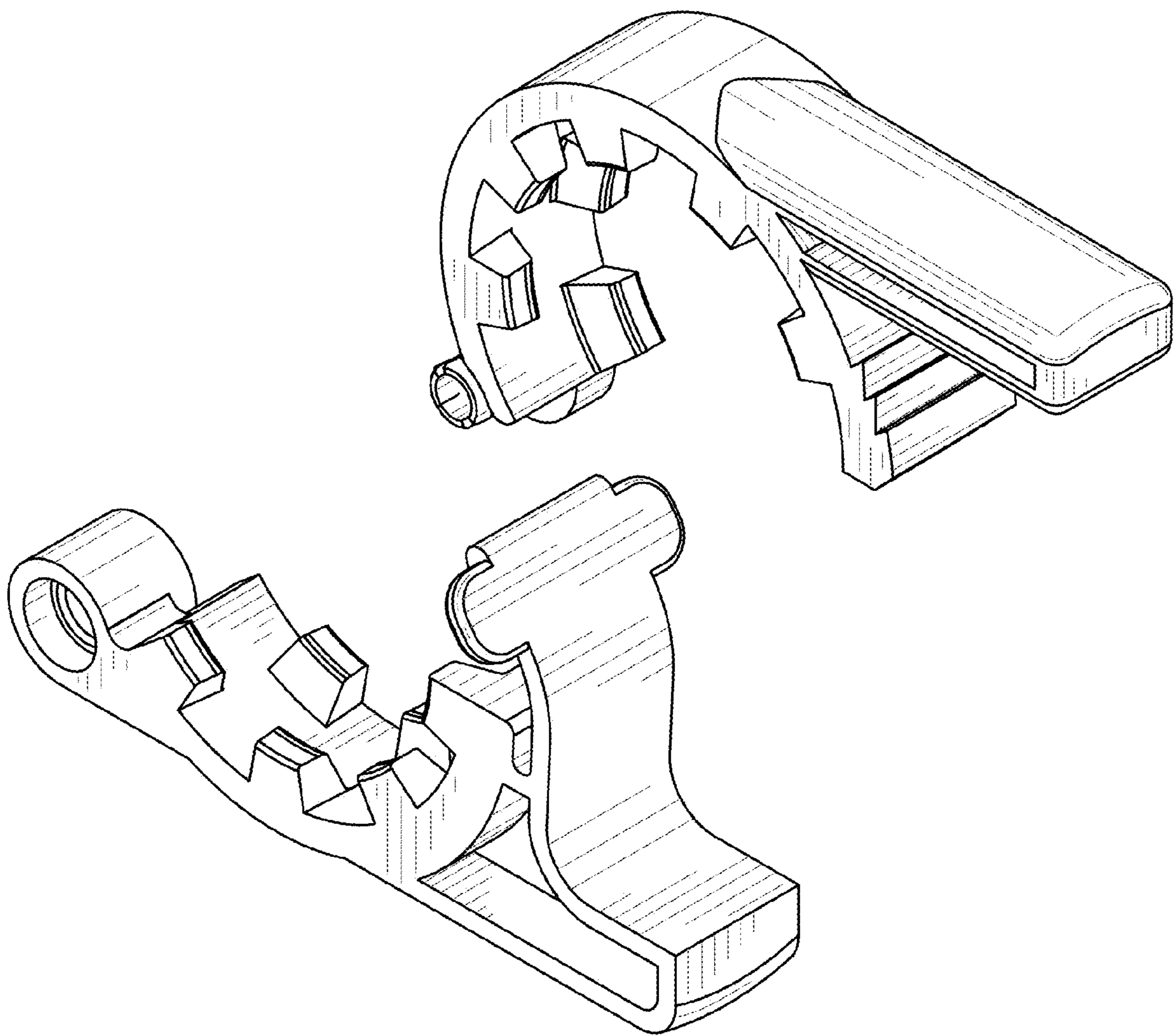
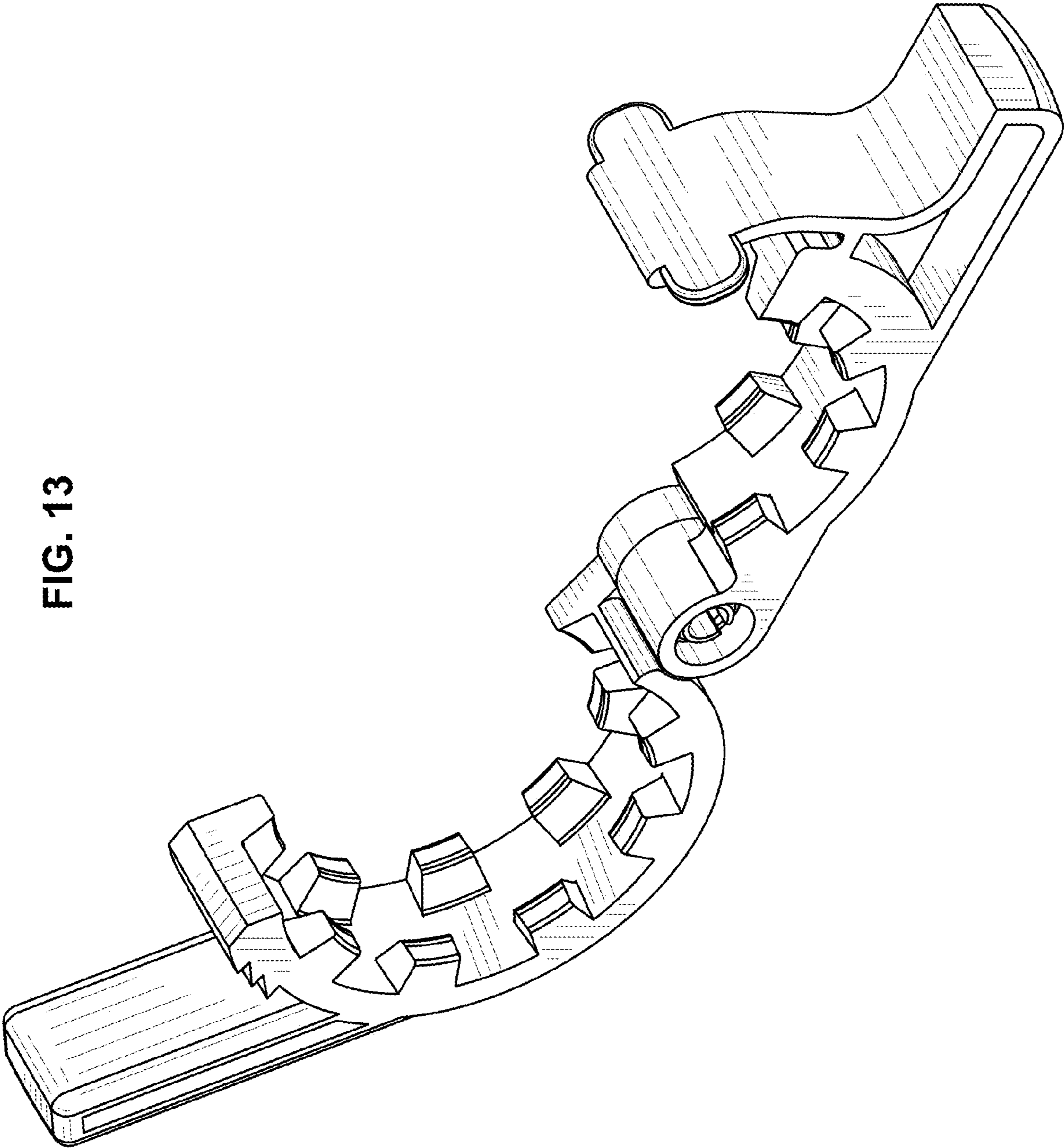




FIG. 13



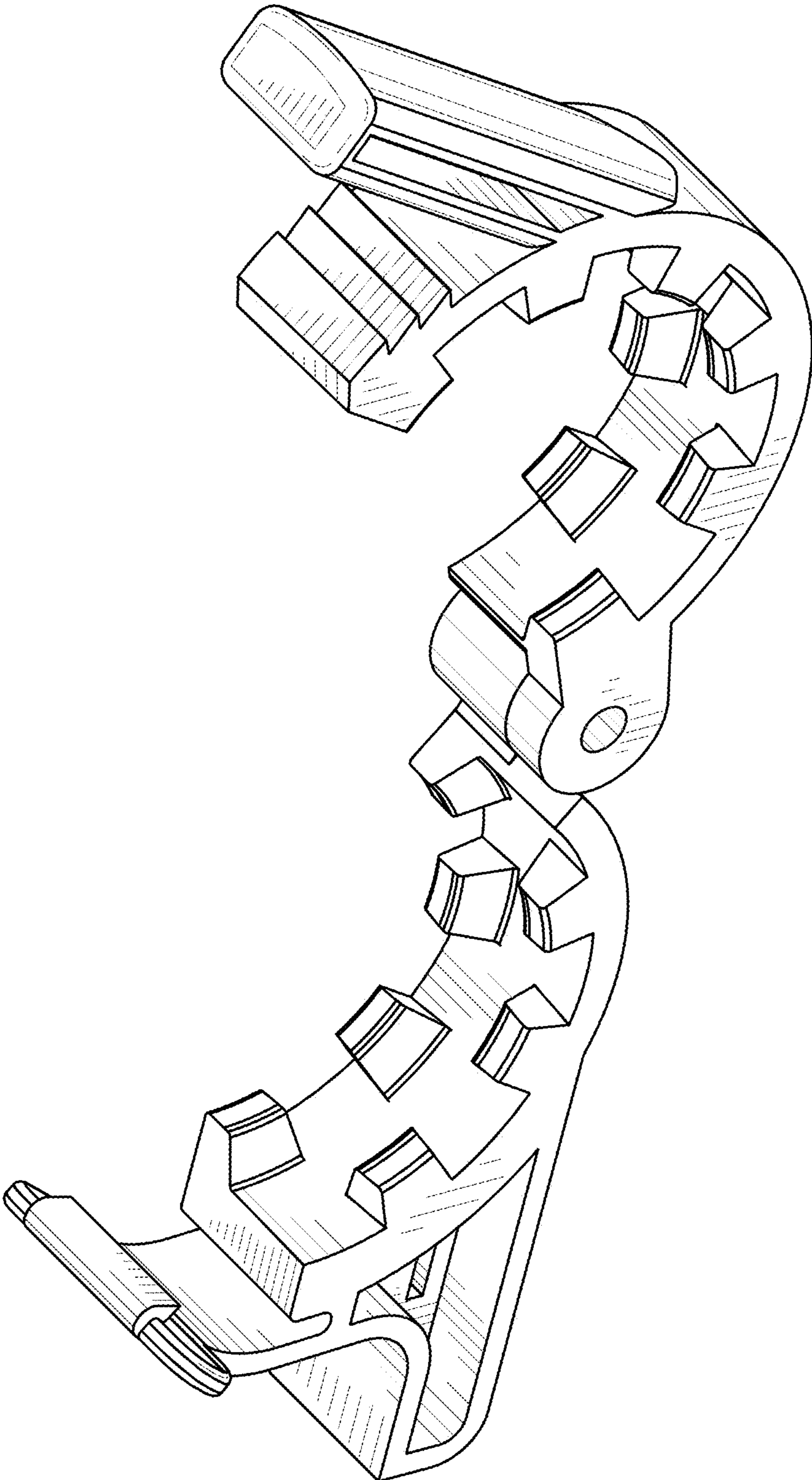


FIG. 14