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(12) United States Design Patent

Lee

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(54) **DRIVING UNIT FOR A CAMERA LENS**

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(*) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/633,362**

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(51) **LOC (12) Cl.** **16-05**

(52) **U.S. Cl.**
USPC **D16/219**

(58) **Field of Classification Search**
USPC D16/200, 218, 219; D13/182, 184, 199
CPC G02B 27/646; G02B 7/08; G02B 7/09; G02B 7/04; G03B 3/10; H02K 11/02; H02K 11/215
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,319,886	B1 *	11/2012	Wang	G02B 7/08 348/202
9,578,244	B2 *	2/2017	Cho	G02B 13/0015
9,720,251	B2 *	8/2017	Han	G02B 27/646
9,778,481	B2 *	10/2017	Sato	G02B 27/64
10,126,522	B2 *	11/2018	Kudo	G02B 7/04
10,139,586	B2 *	11/2018	Chan	G02B 7/026
10,509,193	B2 *	12/2019	Hu	G02B 7/04
10,520,699	B2 *	12/2019	Park	G02B 7/028
10,531,003	B2 *	1/2020	Park	G03B 3/10
10,531,012	B2 *	1/2020	Park	H04N 5/2253
10,578,828	B2 *	3/2020	Lee	G02B 7/09
2011/0194199	A1 *	8/2011	Lim	G02B 7/023 359/824
2012/0092551	A1 *	4/2012	Ohishi	G02B 7/08 348/374

(Continued)

OTHER PUBLICATIONS

Bi-direction type autofocus actuator, published Jul. 8, 2015 [online], [retrieved Jul. 8, 2019], Available from Internet, URL: https://www.eenewseurope.com/news/bi-direction-type-autofocus-actuator.*

(Continued)

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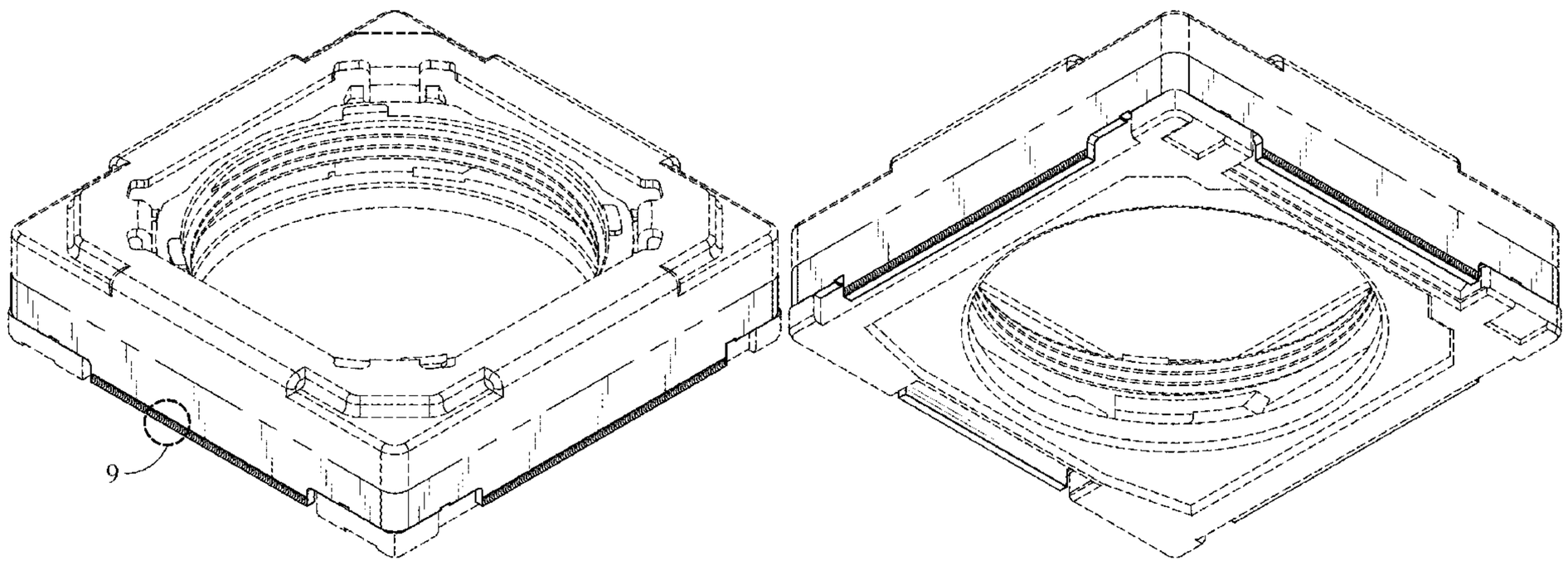
(57) **CLAIM**

The ornamental design for a driving unit for a camera lens, as shown and described.

DESCRIPTION

FIG. **1** is a top perspective view of a driving unit for a camera lens showing our new design;
FIG. **2** is a front elevation view thereof;
FIG. **3** is a rear elevation view thereof;
FIG. **4** is a left side elevation view thereof;
FIG. **5** is a right side elevation view thereof;
FIG. **6** is a top plan view thereof;
FIG. **7** is a bottom plan view thereof;
FIG. **8** is a bottom perspective view thereof; and,
FIG. **9** is an enlarged bottom perspective view of the portion of the driving unit for a camera lens shown within the area designated as "**9**" in FIG. **1**.
The broken lines shown in the drawings depict portions of the driving unit for a camera lens that form no part of the claimed design. The dot-dash lines shown in the drawing depict the boundary of the claim and form no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

2014/0072289 A1* 3/2014 Lim G03B 13/36 396/55
2014/0132813 A1* 5/2014 Chen H04N 5/2257 348/308
2014/0355120 A1* 12/2014 Yeo G03B 3/10 359/557
2015/0153540 A1* 6/2015 Lee H02K 41/0356 348/357
2015/0160471 A1* 6/2015 Dong G02B 7/08 359/557
2015/0177478 A1* 6/2015 Hagiwara G02B 7/09 359/824
2015/0253583 A1* 9/2015 Cho G02B 13/0015 348/360
2015/0309282 A1* 10/2015 Lee G02B 7/09 359/814
2015/0323758 A1* 11/2015 Lee G03B 3/10 359/824
2015/0362696 A1* 12/2015 Han G02B 27/646 359/824
2016/0025951 A1* 1/2016 Park G02B 27/646 359/824
2016/0077305 A1* 3/2016 Park G02B 7/09 359/824
2016/0085085 A1* 3/2016 Lu G02B 7/08 359/557
2016/0103331 A1* 4/2016 Lee G02B 7/08 359/557
2016/0109680 A1* 4/2016 Park G02B 7/08 359/824
2016/0161757 A1* 6/2016 Hee G02B 27/646 359/557
2016/0170170 A1* 6/2016 Go G02B 7/09 359/557
2016/0178925 A1* 6/2016 Park G02B 7/09 359/557
2017/0139225 A1* 5/2017 Lim G02B 27/646
2017/0153409 A1* 6/2017 Chan G02B 7/026
2017/0315376 A1* 11/2017 Hu G02B 27/646
2018/0106980 A1* 4/2018 Yu G02B 7/10
2018/0372988 A1* 12/2018 Hu H02K 41/0356
2019/0011663 A1* 1/2019 Weng G02B 13/009
2019/0115818 A1* 4/2019 Yu H02K 41/0356
2019/0121157 A1* 4/2019 Chan G02B 27/646
2019/0204616 A1* 7/2019 Yeo G02B 27/646
2019/0243087 A1* 8/2019 Osaka H04M 1/0264
2019/0285828 A1* 9/2019 Hsu G02B 7/08
2019/0288022 A1* 9/2019 Hsu G02B 7/021
2019/0294026 A1* 9/2019 Sugawara G02B 7/09
2019/0346284 A1* 11/2019 Liu G02B 7/09
2019/0346656 A1* 11/2019 Ho G03B 13/36
2019/0361153 A1* 11/2019 Wang H04N 5/2253
2019/0369464 A1* 12/2019 Kao G03B 5/00
2019/0377154 A1* 12/2019 Zhang G02B 7/08
2019/0377241 A1* 12/2019 Lee G03B 5/00
2019/0384034 A1* 12/2019 Min G03B 5/02
2019/0391361 A1* 12/2019 Wu G02B 7/09
2019/0391362 A1* 12/2019 Wu G02B 7/09
2020/0012071 A1* 1/2020 Cho H04N 5/23287
2020/0036301 A1* 1/2020 Wu H04N 5/2257
2020/0064587 A1* 2/2020 Yu G02B 7/09
2020/0110239 A1* 4/2020 Hu G02B 7/006

OTHER PUBLICATIONS

Apple Camera Autofocus, published Jan. 15, 2014 [online], [retrieved Jul. 8, 2019], Available from Internet, URL: https://ipadhelp.com/iphone/apple-camera-patent-published-prepares-for-improved-autofocus-and-ois-in-iphone-6/.*

Stack of dimes (mig welds), published Feb. 14, 2007 [online], [retrieved Apr. 27, 2020], Available from Internet, URL: https://forum.millerwelds.com/forum/welding-projects/917-stack-of-dimes-mig-welds.*

* cited by examiner

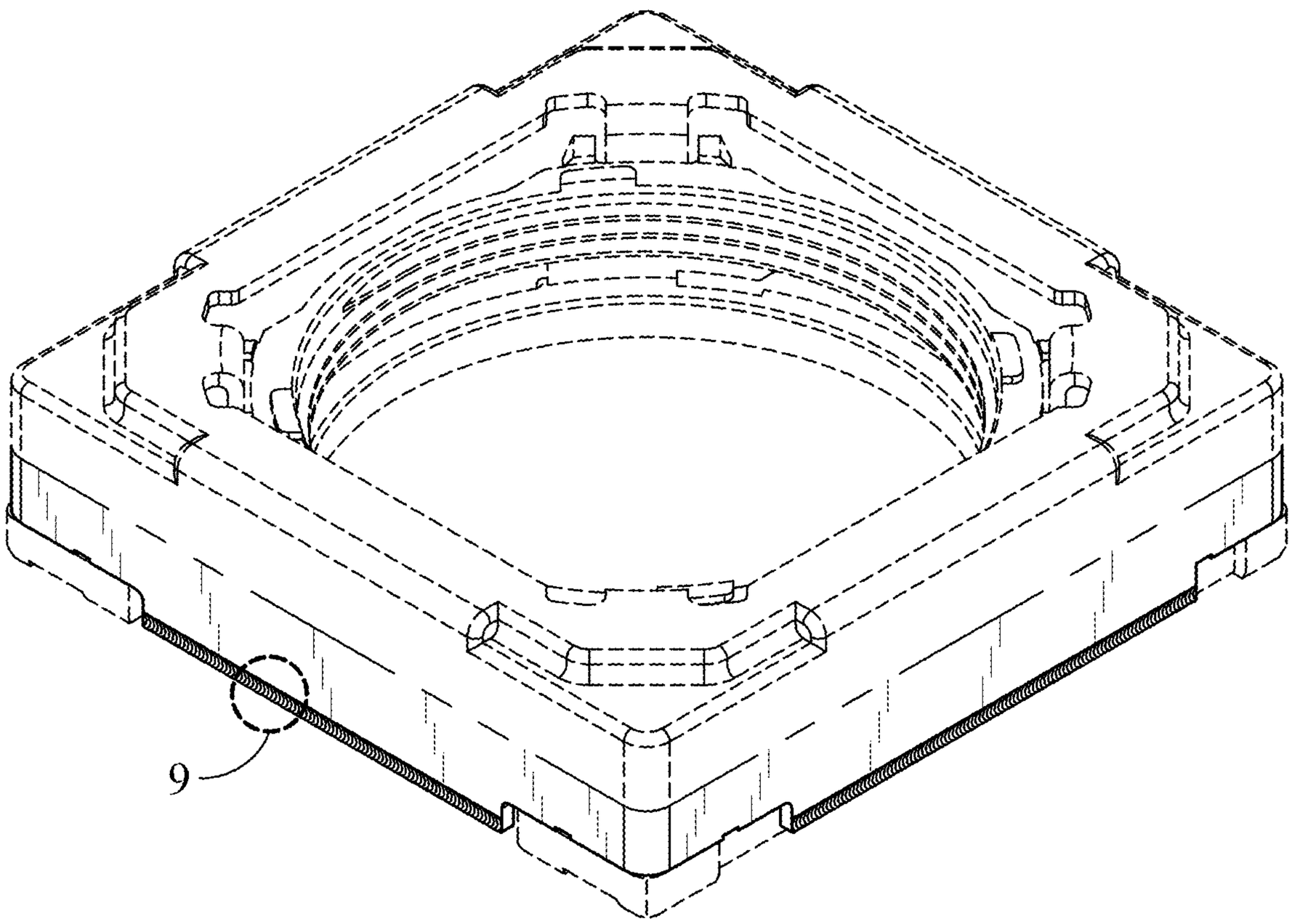


FIG. 1

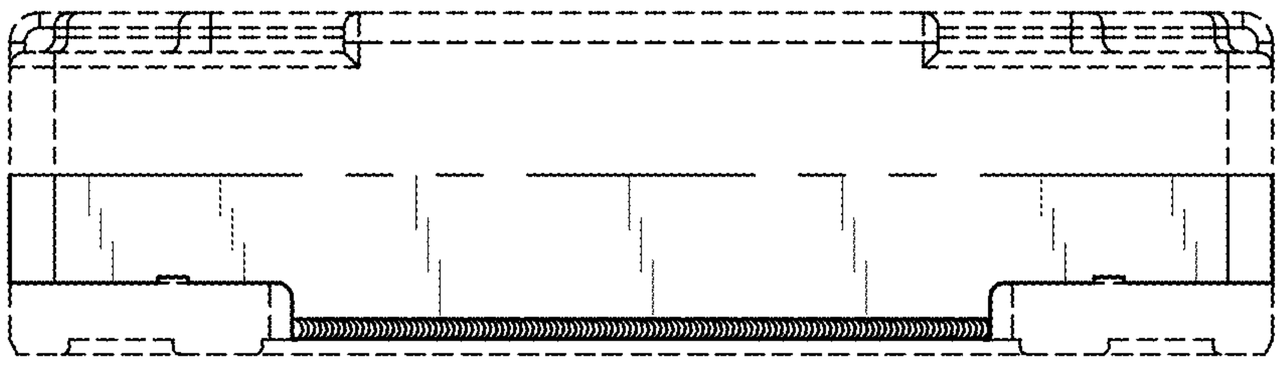


FIG. 2

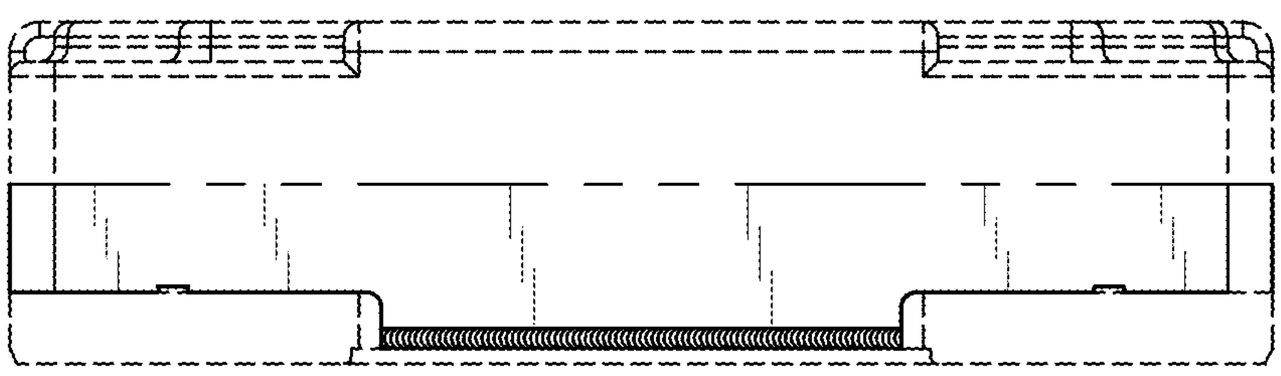


FIG. 3

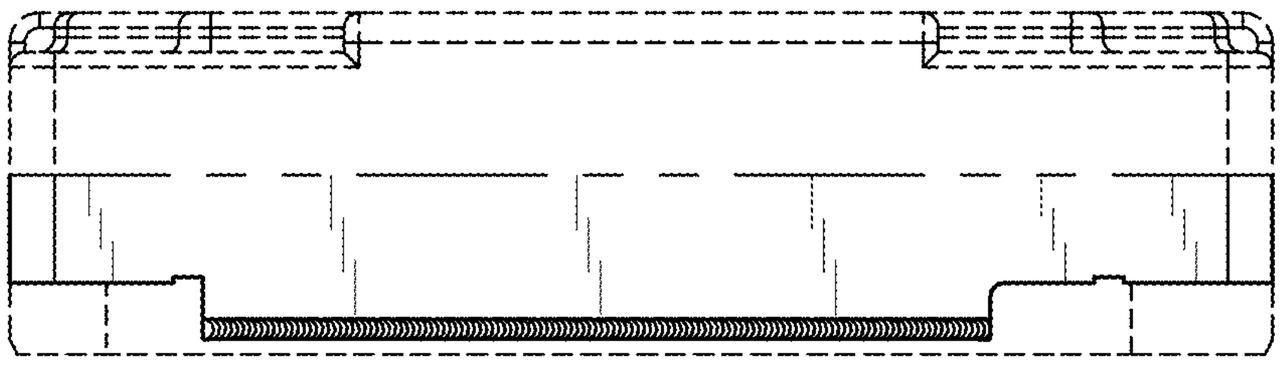


FIG. 4

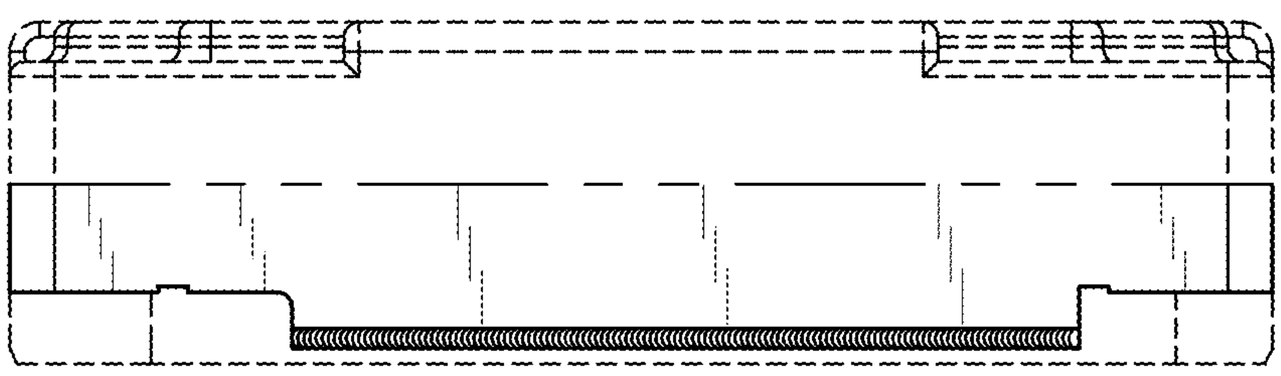


FIG. 5

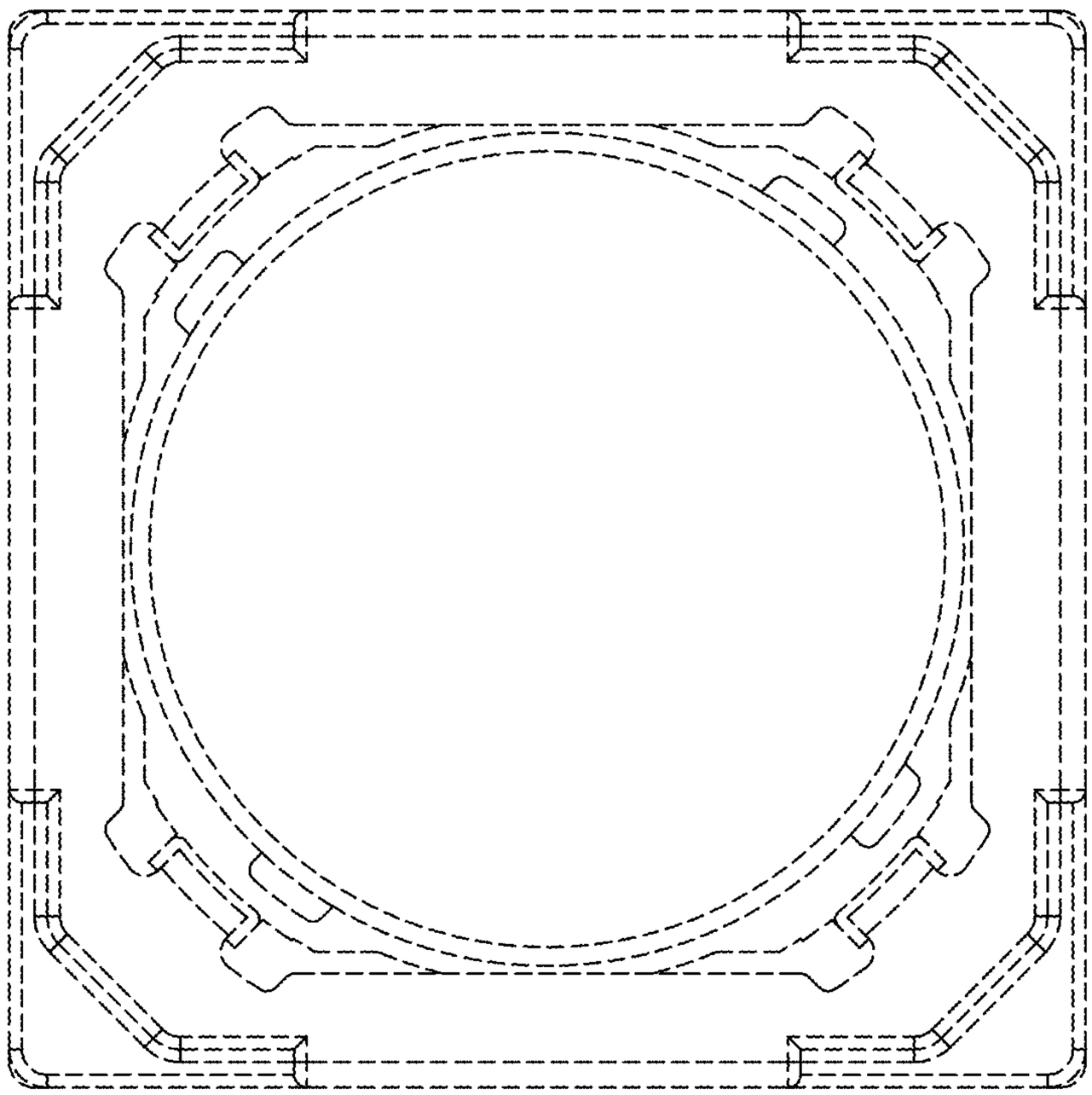


FIG. 6

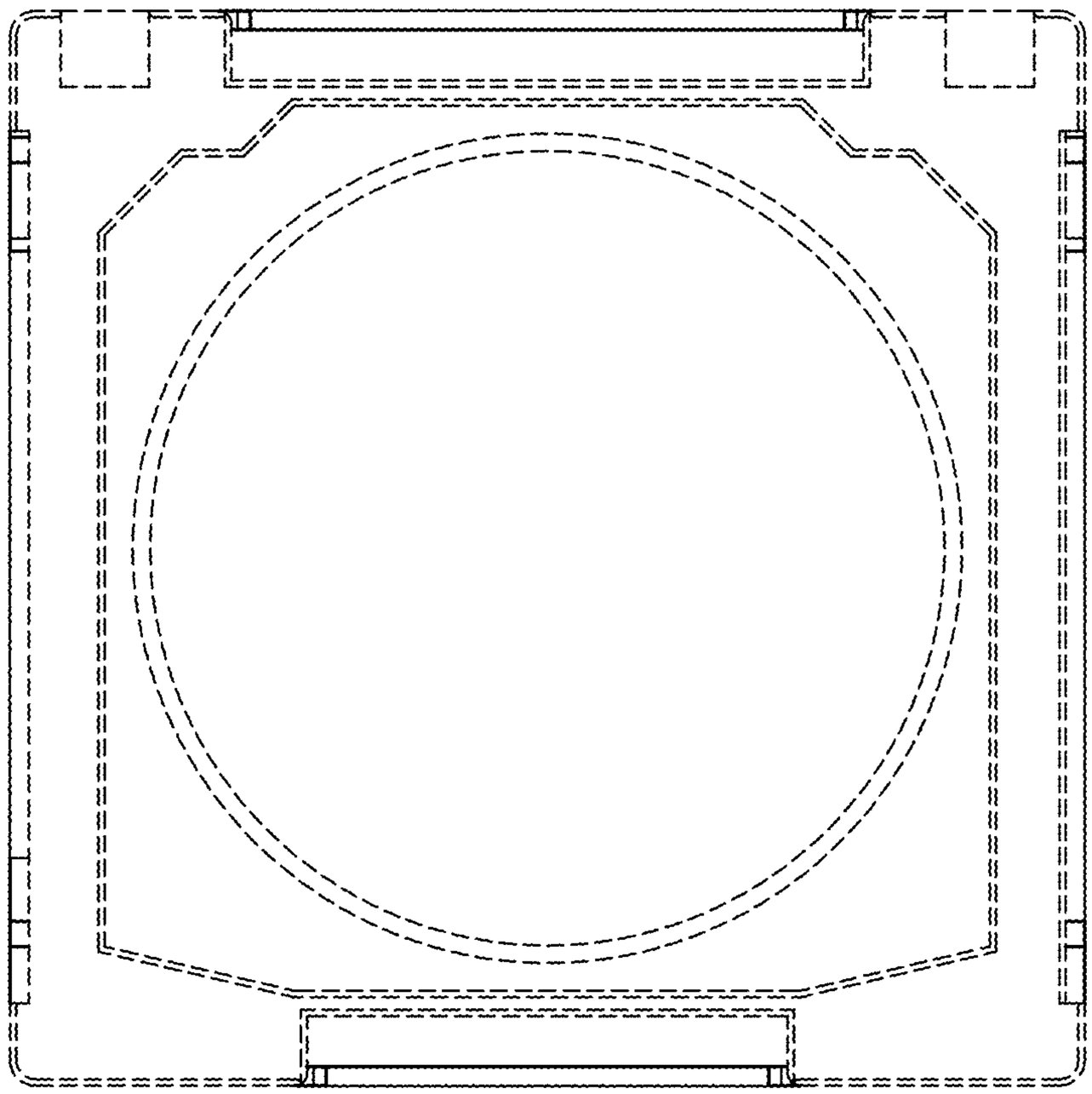


FIG. 7

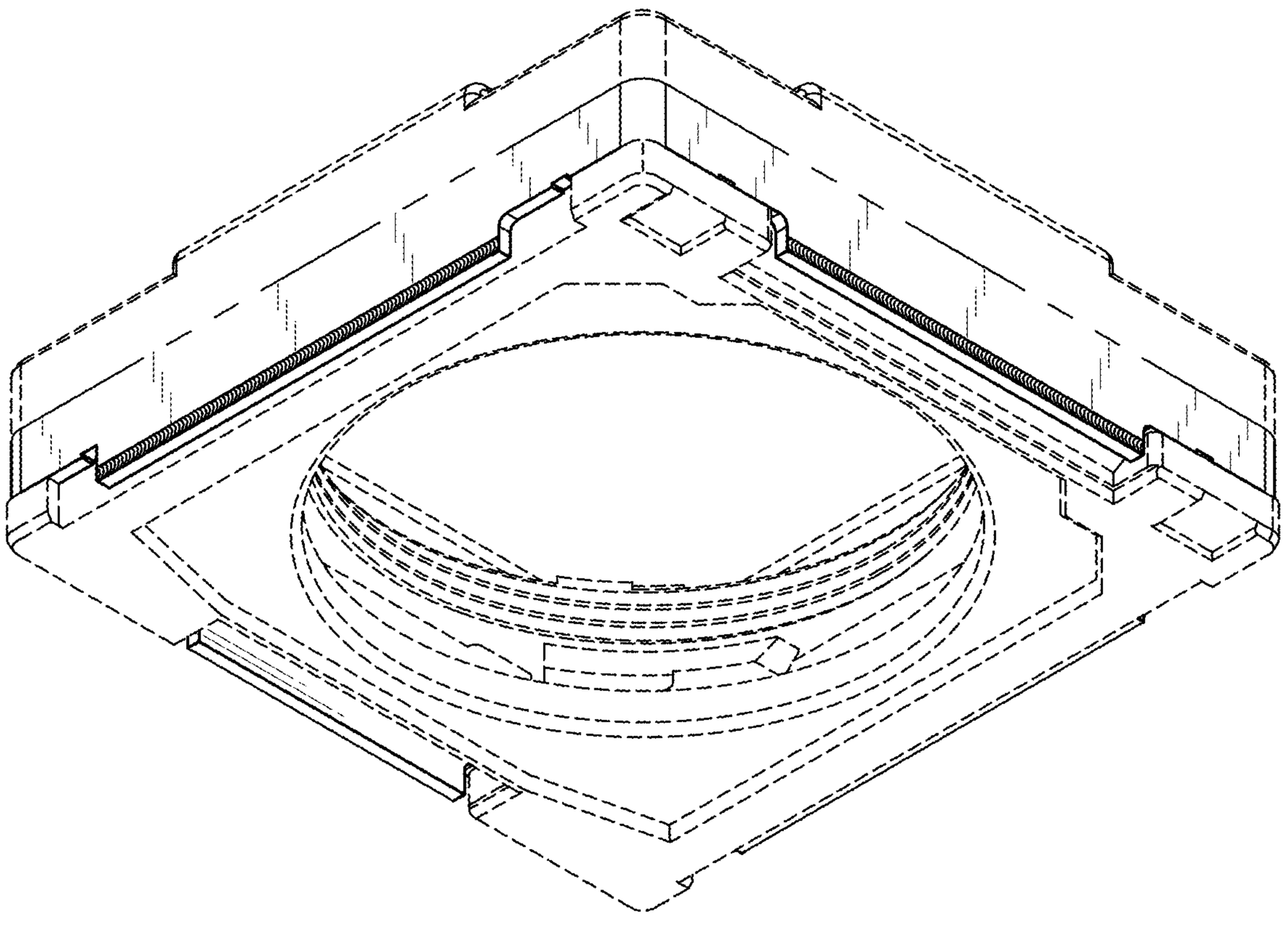


FIG. 8

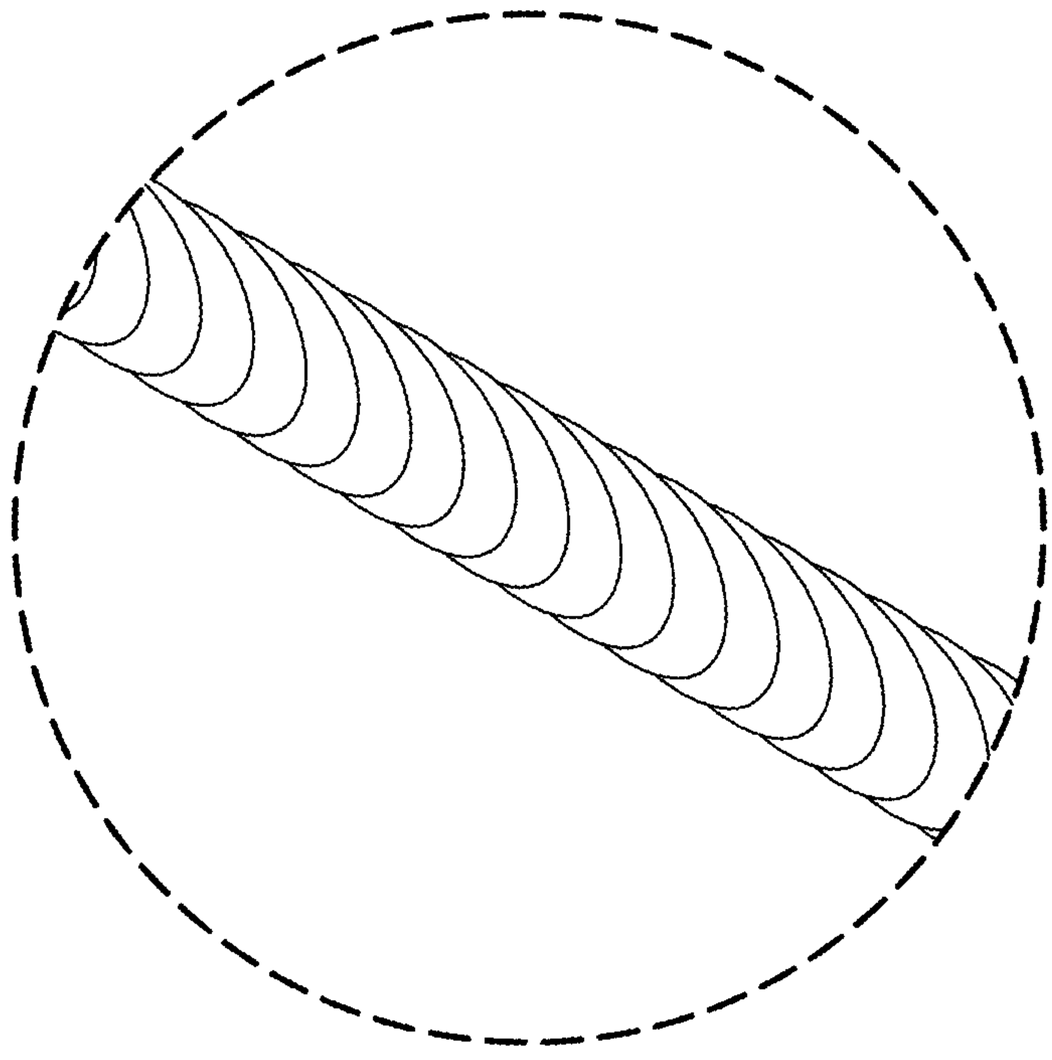


FIG. 9