



US00D964909S

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

(10) **Patent No.:** **US D964,909 S**
(45) **Date of Patent:** **** Sep. 27, 2022**

(54) **PERIMETER SENSOR HOUSING**

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- (73) Assignee: **Waymo LLC**, Mountain View, CA (US)

- (**) Term: **15 Years**
- (21) Appl. No.: **29/744,120**
- (22) Filed: **Jul. 27, 2020**

Related U.S. Application Data

- (63) Continuation-in-part of application No. 29/724,655, filed on Feb. 18, 2020, which is a continuation-in-part of application No. 29/688,902, filed on Apr. 25, 2019.
- (51) **LOC (13) Cl.** **12-16**
- (52) **U.S. Cl.**
USPC **D12/400; D10/70**
- (58) **Field of Classification Search**
USPC D10/46, 61, 62, 65, 70, 104.1; D12/174, D12/187, 188, 400

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

- D328,436 S 8/1992 Fuerst et al.
- D335,467 S 5/1993 Cheng

(Continued)

FOREIGN PATENT DOCUMENTS

- JP 1671877 S 11/2020
- KR 101998298 7/2019
- WO 2018138584 8/2018

OTHER PUBLICATIONS

Waymo, Waymo Keynote at Web Summit 2017, Dec. 3, 2017, YouTube.com. Retrieved from the internet on Feb. 1, 2022 <URL: <https://youtu.be/fWBVpto5Sgk?t=625>> (Year: 2017).*

(Continued)

Primary Examiner — Joseph Kukella
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(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a front perspective view of a perimeter sensor housing according to a first embodiment of our design; FIG. 2 is a front elevation view thereof; FIG. 3 is a back elevation view thereof; FIG. 4 is a right side elevation view thereof; FIG. 5 is a left side elevation view thereof; FIG. 6 is a top plan view thereof; FIG. 7 is a bottom plan view thereof; FIG. 8 is a front perspective view of a perimeter sensor housing according to a second embodiment of our design; FIG. 9 is a front elevation view thereof; FIG. 10 is a back elevation view thereof; FIG. 11 is a right side elevation view thereof; FIG. 12 is a left side elevation view thereof; FIG. 13 is a top plan view thereof; FIG. 14 is a bottom plan view thereof; FIG. 15 is a front perspective view of a perimeter sensor housing according to a third embodiment of our design; FIG. 16 is a front elevation view thereof; FIG. 17 is a back elevation view thereof; FIG. 18 is a right side elevation view thereof; FIG. 19 is a left side elevation view thereof; FIG. 20 is a top plan view thereof; FIG. 21 is a bottom plan view thereof. FIG. 22 is a front perspective view of a perimeter sensor housing according to a fourth embodiment of our design; FIG. 23 is a front elevation view thereof;

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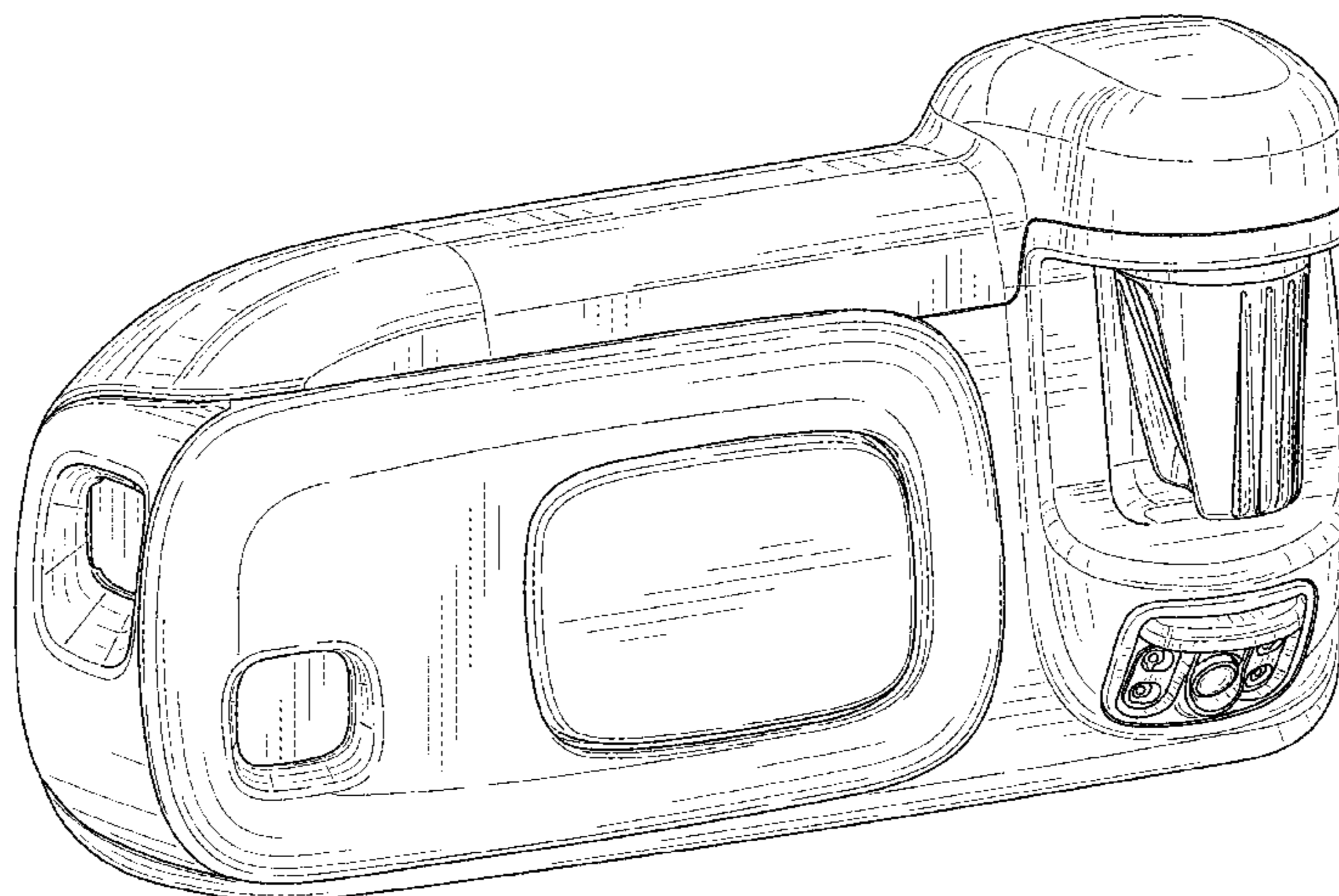


FIG. 24 is a back elevation view thereof;
 FIG. 25 is a right side elevation view thereof;
 FIG. 26 is a left side elevation view thereof;
 FIG. 27 is a top plan view thereof;
 FIG. 28 is a bottom plan view thereof;
 FIG. 29 is a front perspective view of a perimeter sensor housing according to a fifth ninth embodiment of our design;
 FIG. 30 is a front elevation view thereof;
 FIG. 31 is a back elevation view thereof;
 FIG. 32 is a right side elevation view thereof;
 FIG. 33 is a left side elevation view thereof;
 FIG. 34 is a top plan view thereof;
 FIG. 35 is a bottom plan view thereof;
 FIG. 36 is a front perspective view of a perimeter sensor housing according to a sixth embodiment of our design;
 FIG. 37 is a front elevation view thereof;
 FIG. 38 is a back elevation view thereof;
 FIG. 39 is a right side elevation view thereof;
 FIG. 40 is a left side elevation view thereof;
 FIG. 41 is a top plan view thereof;
 FIG. 42 is a bottom plan view thereof;
 FIG. 43 is a front perspective view of the perimeter sensor housing of the first embodiment positioned on a first side of an exemplary vehicle; and,
 FIG. 44 is a front perspective view of the perimeter sensor housing of the first embodiment positioned on a second side of an exemplary vehicle in a mirror image arrangement from FIG. 43.

The broken lines in the figures illustrate portions of the perimeter sensor housing that form no part of the claimed design. The broken lines shown in FIGS. 43 and 44 illustrate exemplary vehicles that form no part of the claimed design. The specific placement of the perimeter sensor housing in FIGS. 43 and 44 on the exemplary vehicles are for illustrative purposes only and do not limit placement of the perimeter sensor housing to a specific location on a vehicle or other object.

The embodiments illustrate the perimeter sensor housing for use on a first side of a vehicle or other object. Other corresponding embodiments of the perimeter sensor housing are mirror images of the illustrated embodiments. An example of such mirror image arrangements is presented in the exemplary perspective view of FIG. 44.

1 Claim, 38 Drawing Sheets

(58) Field of Classification Search

CPC ... G01S 2013/9327; G01S 2013/93271; G01S 2013/93272; G01S 2013/93274
 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

D395,408 S 6/1998 Wiesemann
 D413,277 S 8/1999 Scheibe

5,945,907 A	8/1999	Yaron et al.	
D427,101 S	6/2000	Leen	
D434,992 S	12/2000	Hiller et al.	
D445,386 S	7/2001	Sacco et al.	
D478,518 S	8/2003	Porter	
D525,888 S	8/2006	Porter	
7,109,880 B2	9/2006	Sibalich et al.	
D547,222 S	7/2007	Wilson et al.	
7,459,672 B2	12/2008	Jensen et al.	
7,517,099 B2	4/2009	Hannah	
D636,308 S *	4/2011	Reimchen	D12/187
D651,532 S	1/2012	Li et al.	
D689,385 S	9/2013	Haws	
D717,720 S	11/2014	Marino	
D726,560 S	4/2015	Gaw	
D727,181 S	4/2015	Papadourakis	
D731,905 S	6/2015	Olivieri et al.	
D739,336 S	9/2015	Berrey	
D775,978 S	1/2017	Christianson et al.	
D782,349 S	3/2017	Konotopskyi et al.	
D788,607 S	6/2017	Ji et al.	
D788,625 S	6/2017	Hsieh et al.	
D789,427 S	6/2017	Jackson et al.	
D791,994 S	7/2017	Liu	
D795,108 S	8/2017	Kondo et al.	
9,725,060 B1	8/2017	Daniel et al.	
9,862,311 B2	1/2018	Kiriyama et al.	
D818,915 S	5/2018	Kozub et al.	
D821,232 S	6/2018	Ewringmann et al.	
D822,580 S	7/2018	Eriksson et al.	
D825,355 S *	8/2018	Kató	D10/70
D825,357 S	8/2018	Ahn et al.	
D828,257 S	9/2018	Akrapovic et al.	
D834,971 S	12/2018	Ahn et al.	
D858,381 S	9/2019	Ahn et al.	
D860,013 S *	9/2019	Ahn	D10/70
10,444,752 B2	10/2019	Kim et al.	
D874,957 S *	2/2020	Ahn	D10/70
D876,252 S *	2/2020	Lee	D10/70
D881,109 S *	4/2020	Haban	D12/412
D882,426 S *	4/2020	Gross	D10/70
D897,917 S *	10/2020	Akrapovic	D12/187
D904,909 S *	12/2020	Duff	D10/70
D927,998 S *	8/2021	Ahn	D10/70
D928,639 S *	8/2021	Ahn	D10/70
D937,718 S *	12/2021	Medina	D12/187
2016/0011594 A1	1/2016	Chung et al.	
2017/0151933 A1	6/2017	Doorley et al.	
2017/0293016 A1	10/2017	McCloskey et al.	
2017/0297488 A1	10/2017	Wang et al.	
2017/0300060 A1	10/2017	Crawley	
2017/0343654 A1	11/2017	Valois et al.	
2018/0011173 A1	1/2018	Newman	
2018/0015886 A1	1/2018	Frank et al.	
2018/0017680 A1	1/2018	Pennecot et al.	
2018/0037268 A1	2/2018	Moore et al.	
2018/0086280 A1	3/2018	Nguyen	
2020/0195816 A1	6/2020	Stein et al.	

OTHER PUBLICATIONS

Automotive Report, Nikkei Automotive. Oct. 11, 2018. Japan.
 “Tekwind Co, Ltd”; retrieved Oct. 7, 2017; published Oct. 7, 2017;
 URL: <http://www.tekwind.co.jp/information/entry_642.php>.

* cited by examiner

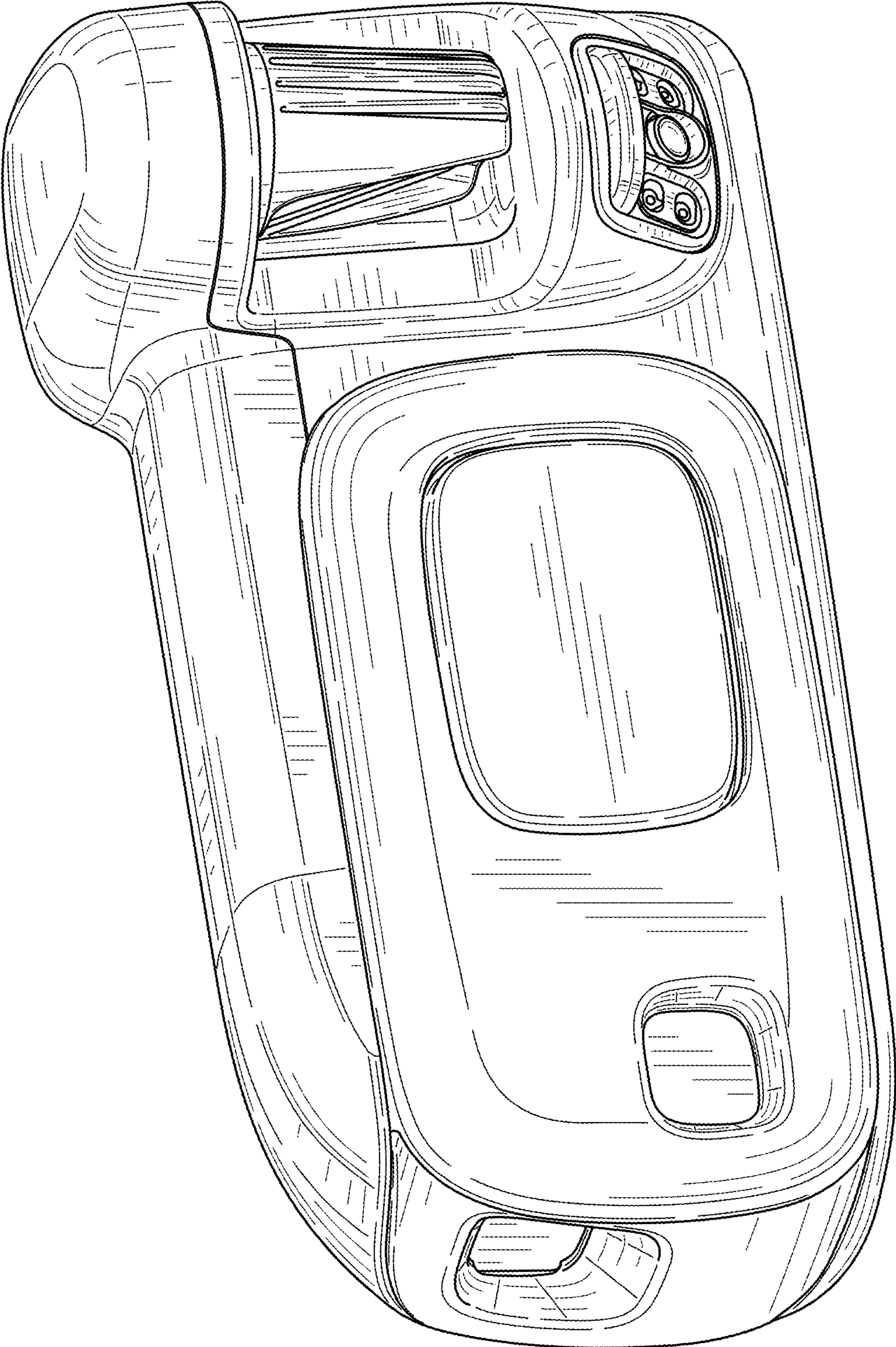


FIG. 1

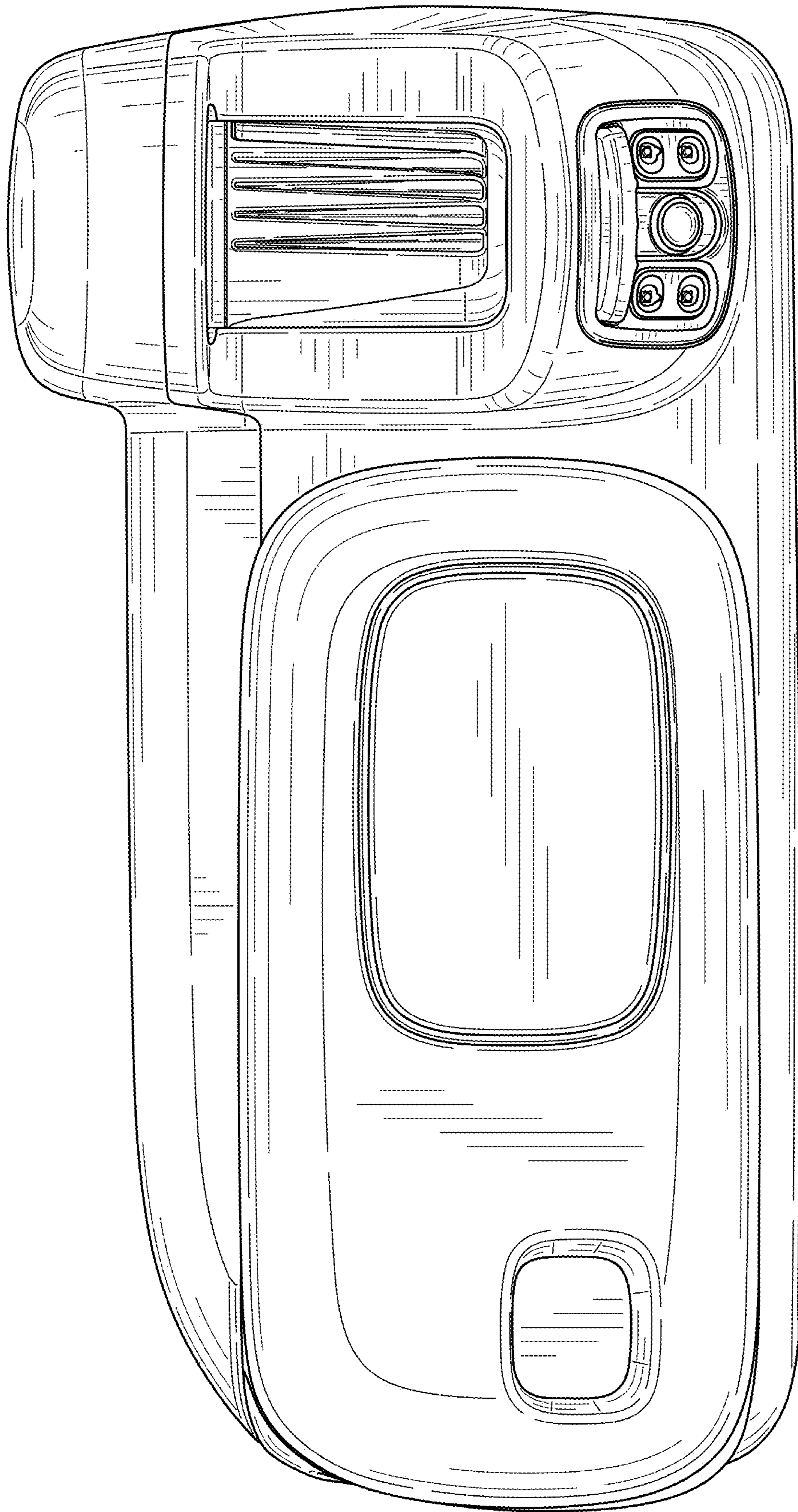


FIG. 2

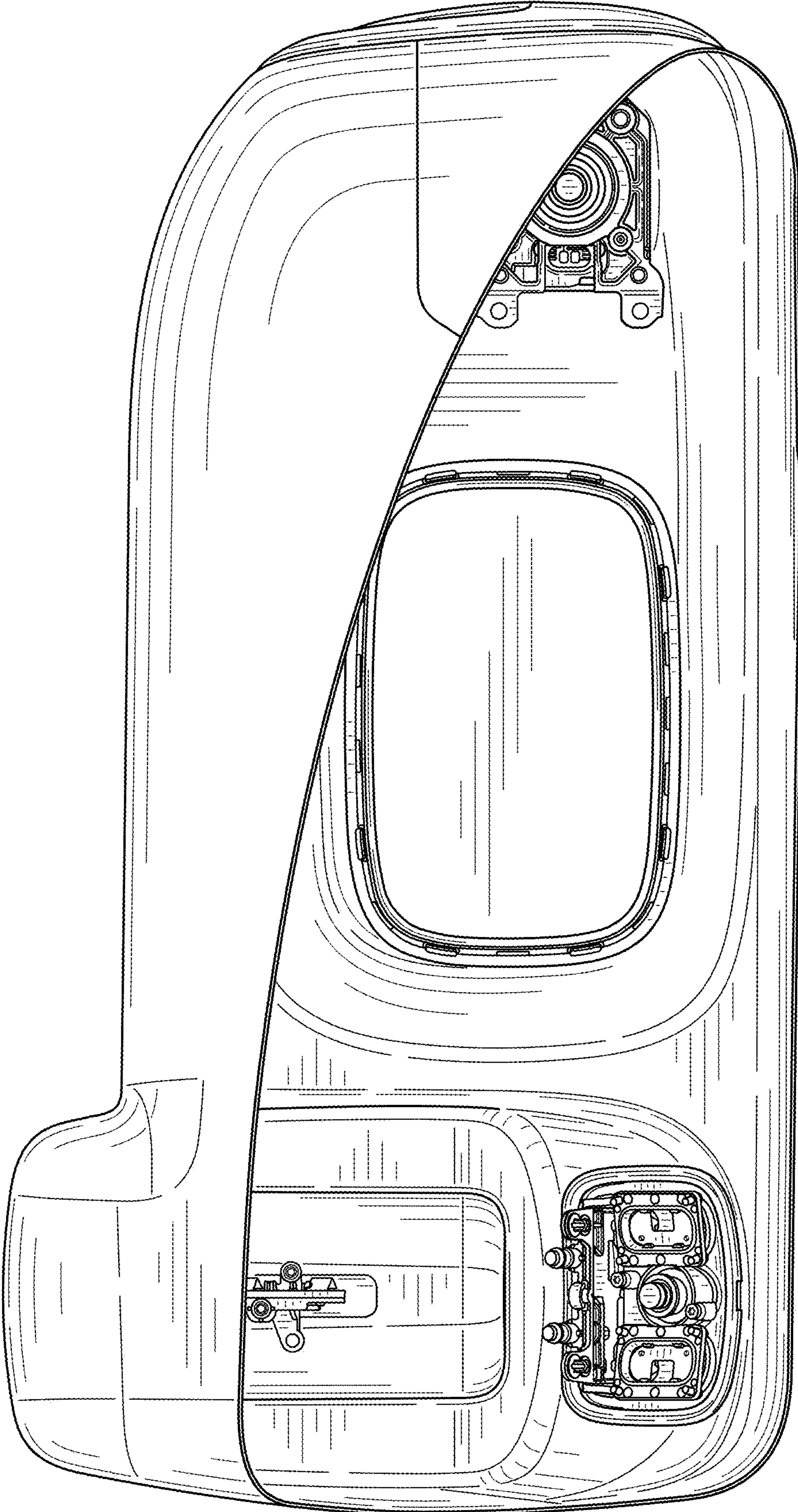


FIG. 3

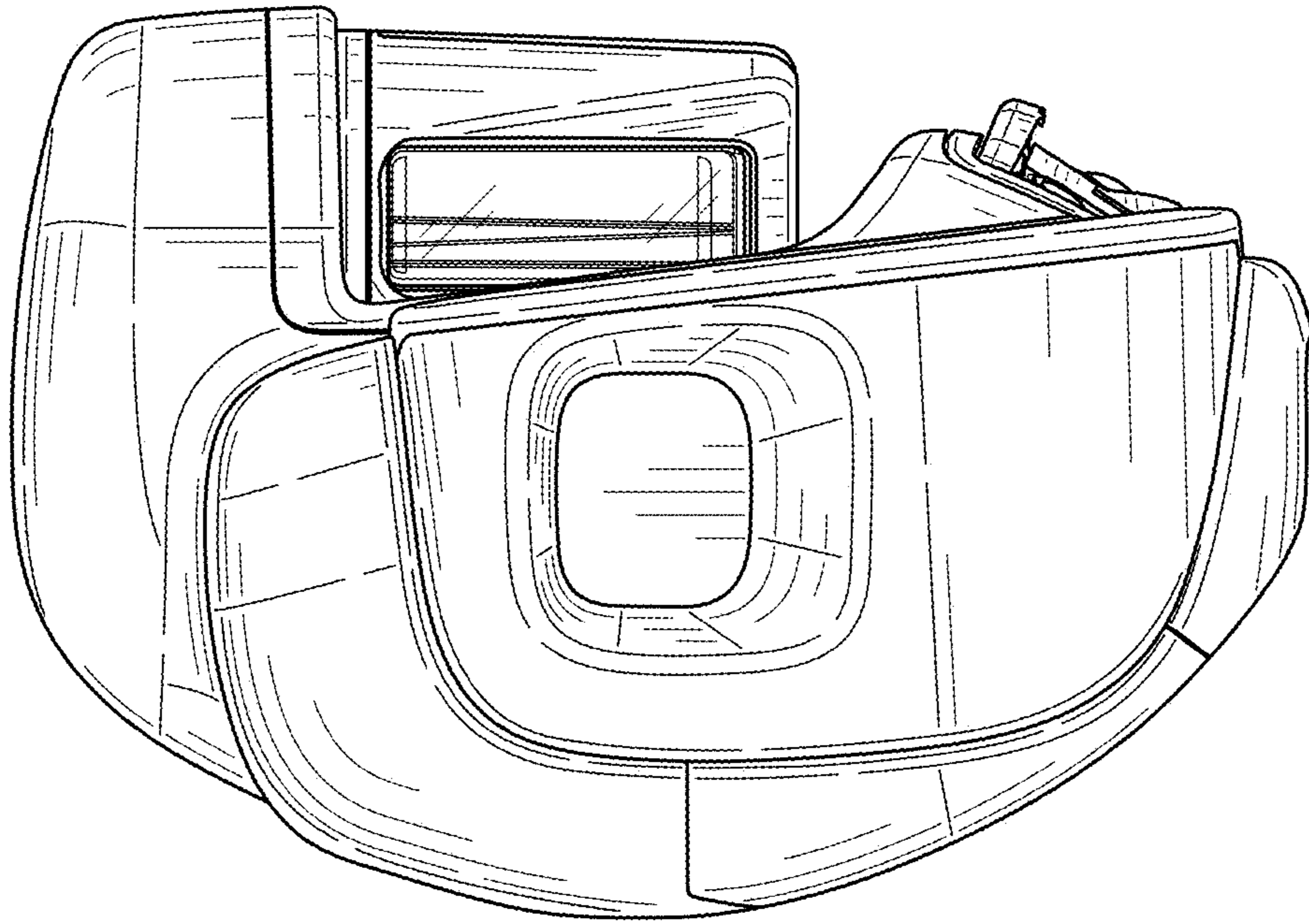


FIG. 5

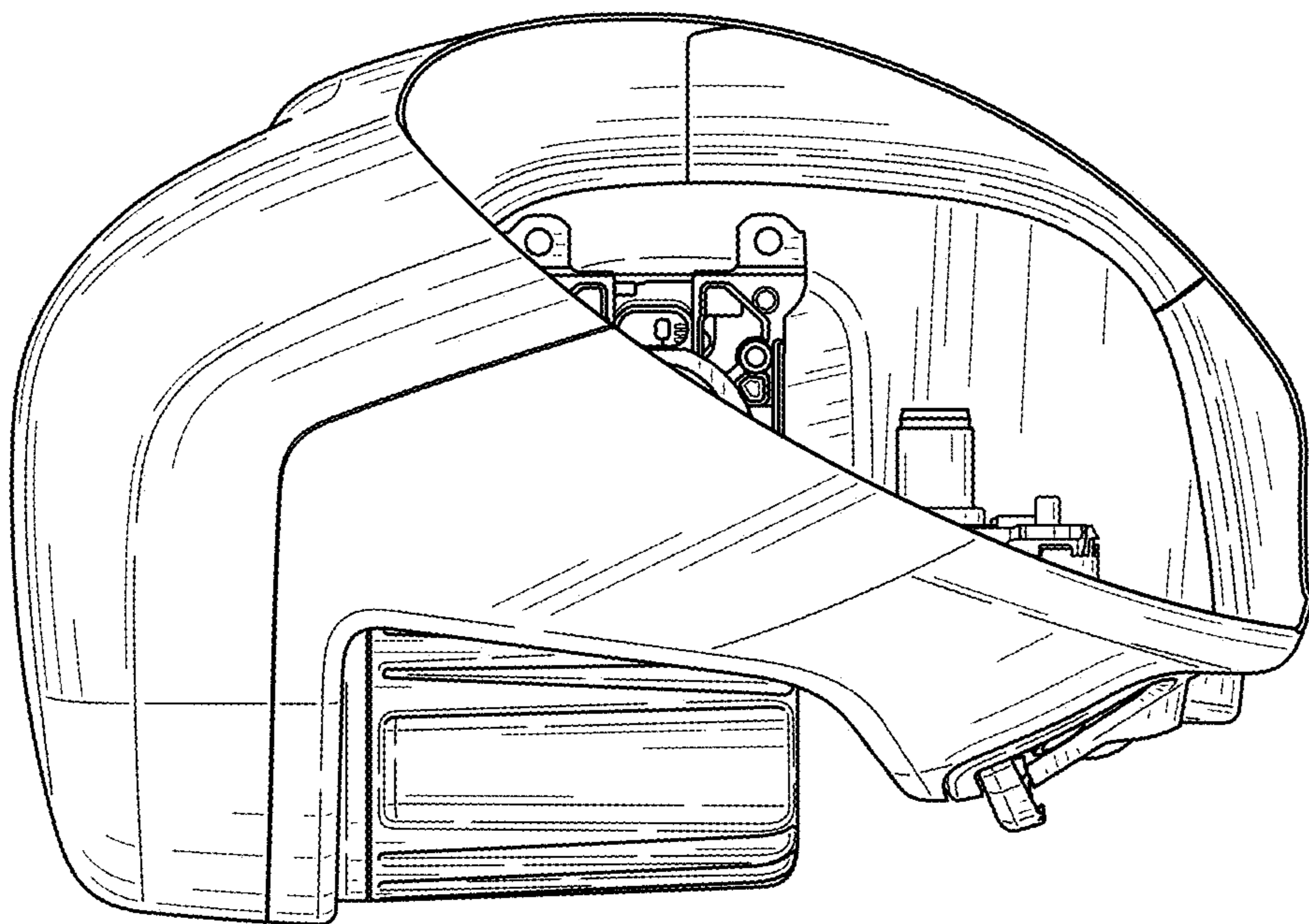


FIG. 4

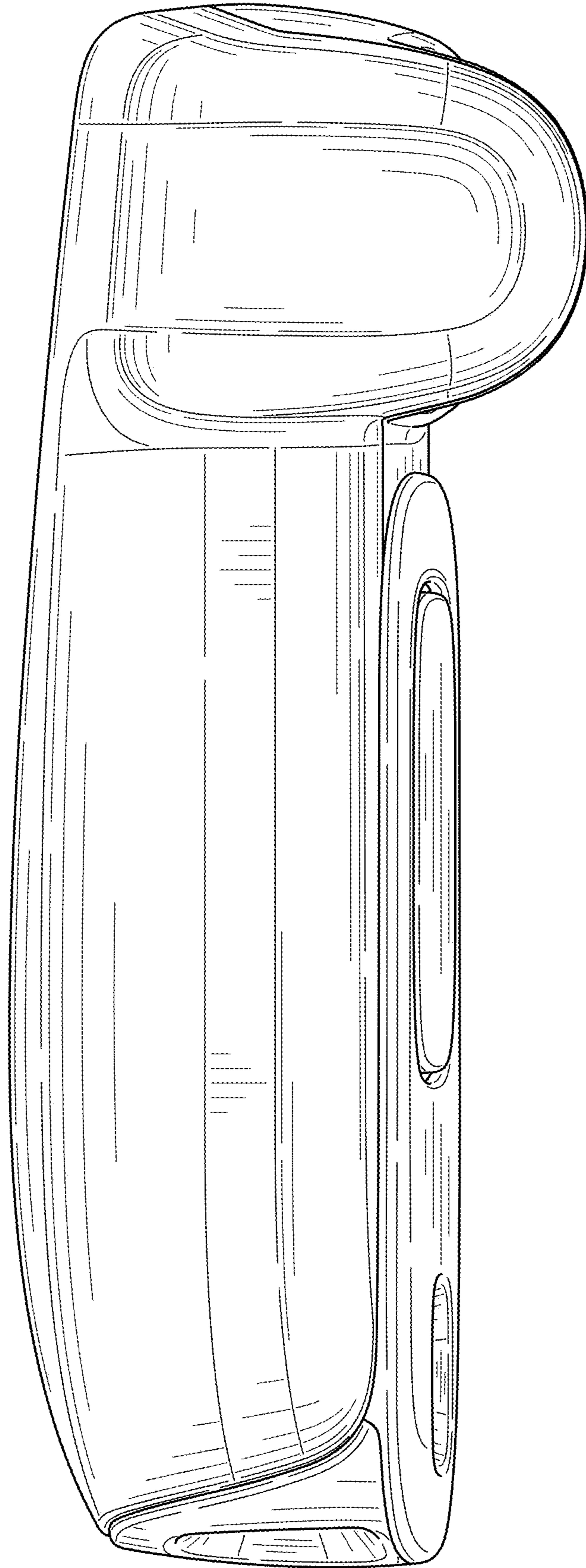


FIG. 6

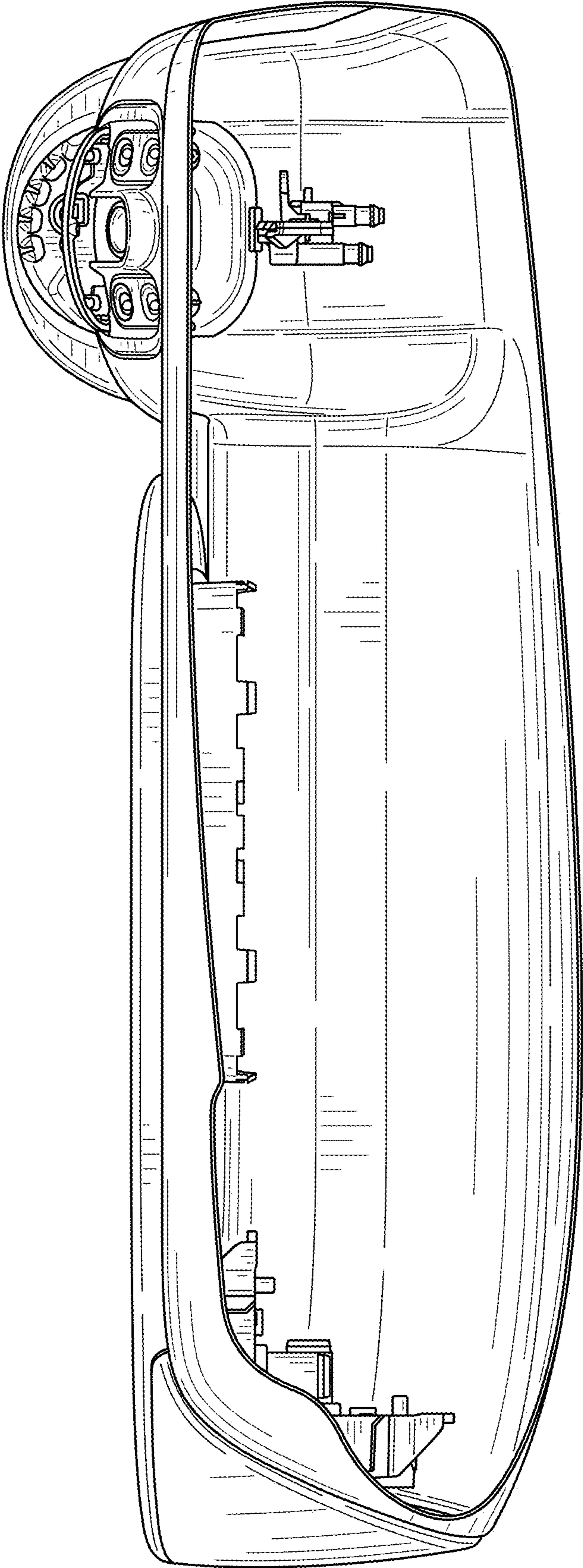


FIG. 7

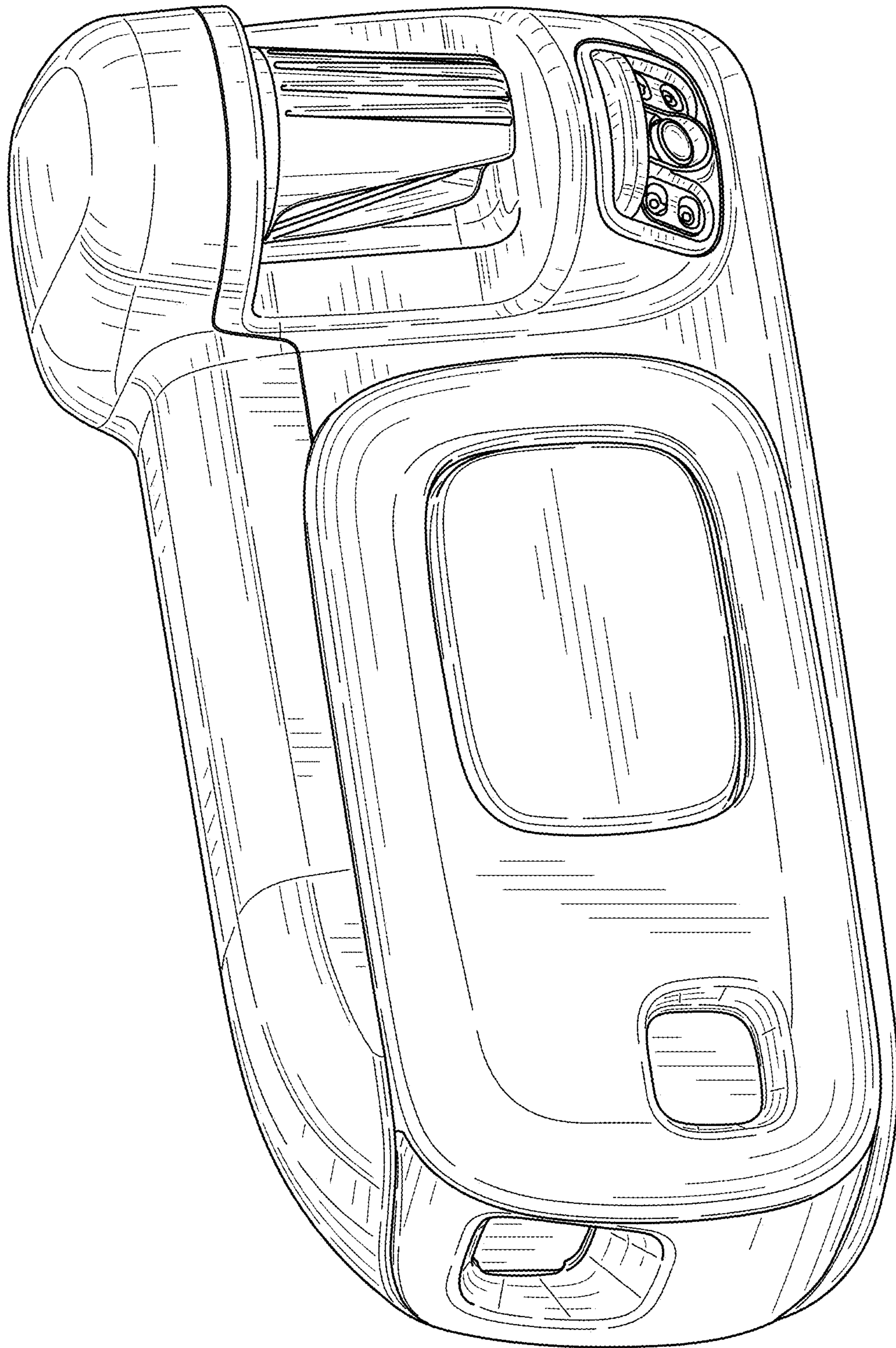


FIG. 8

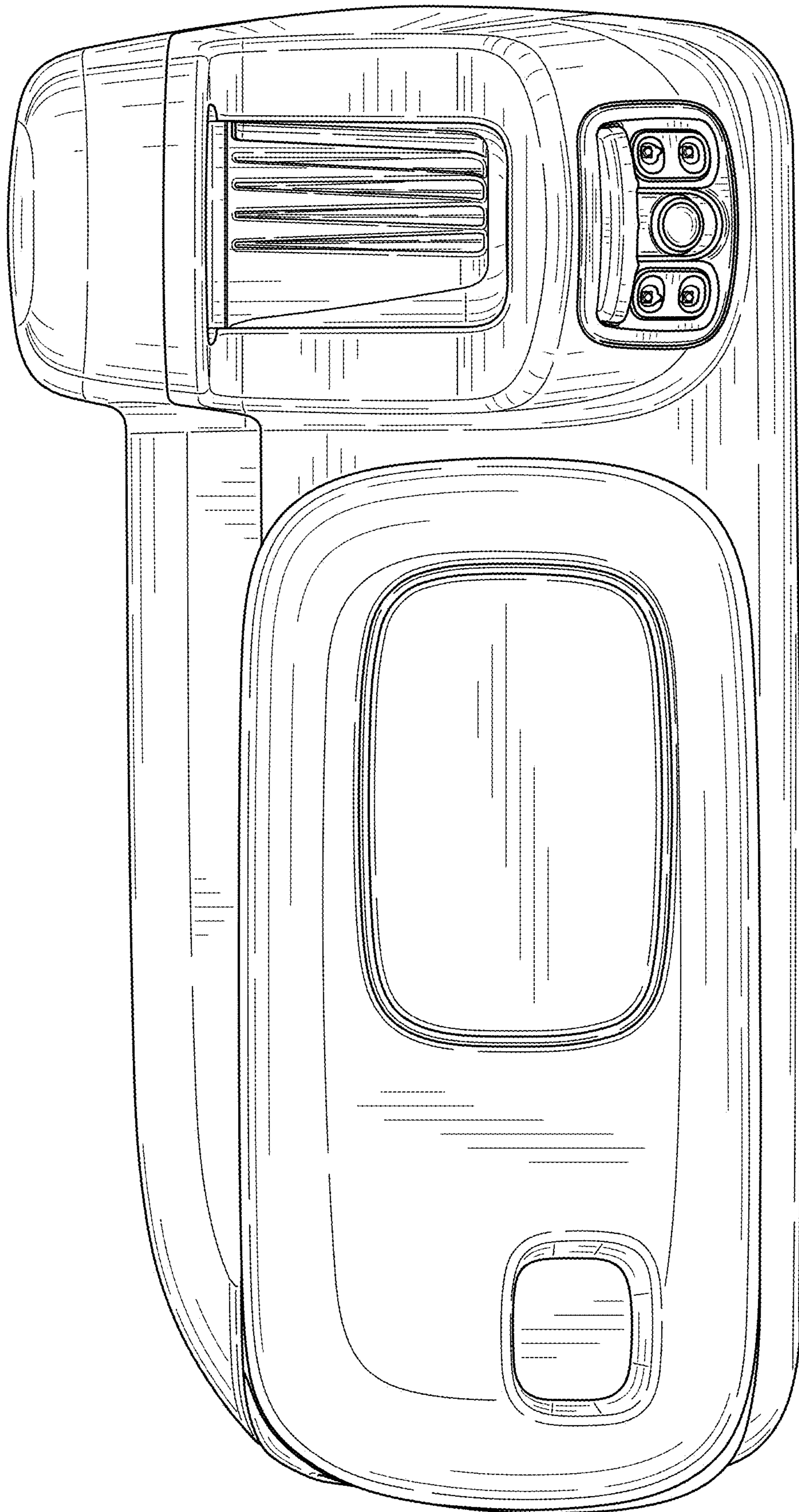


FIG. 9

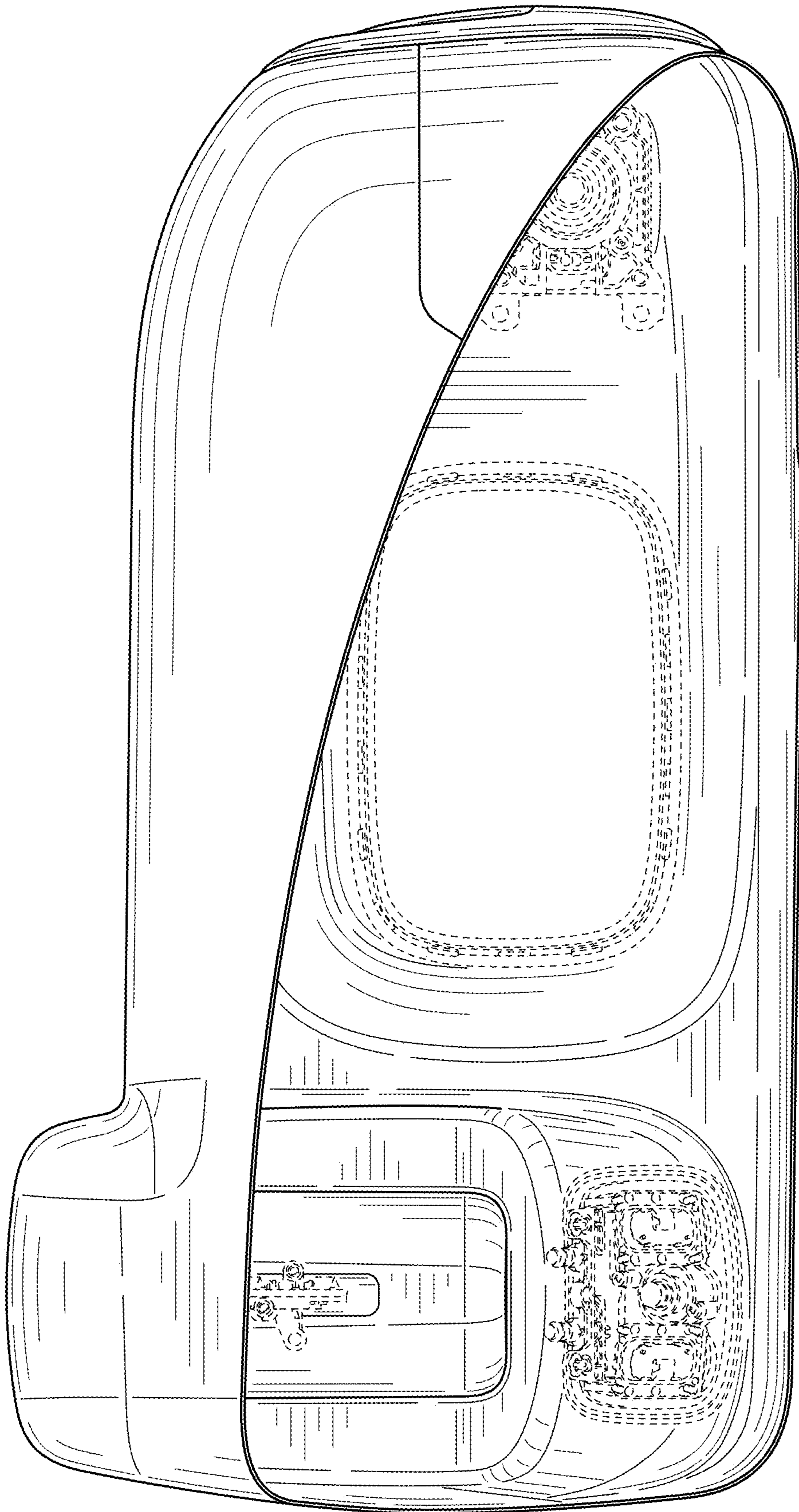


FIG. 10

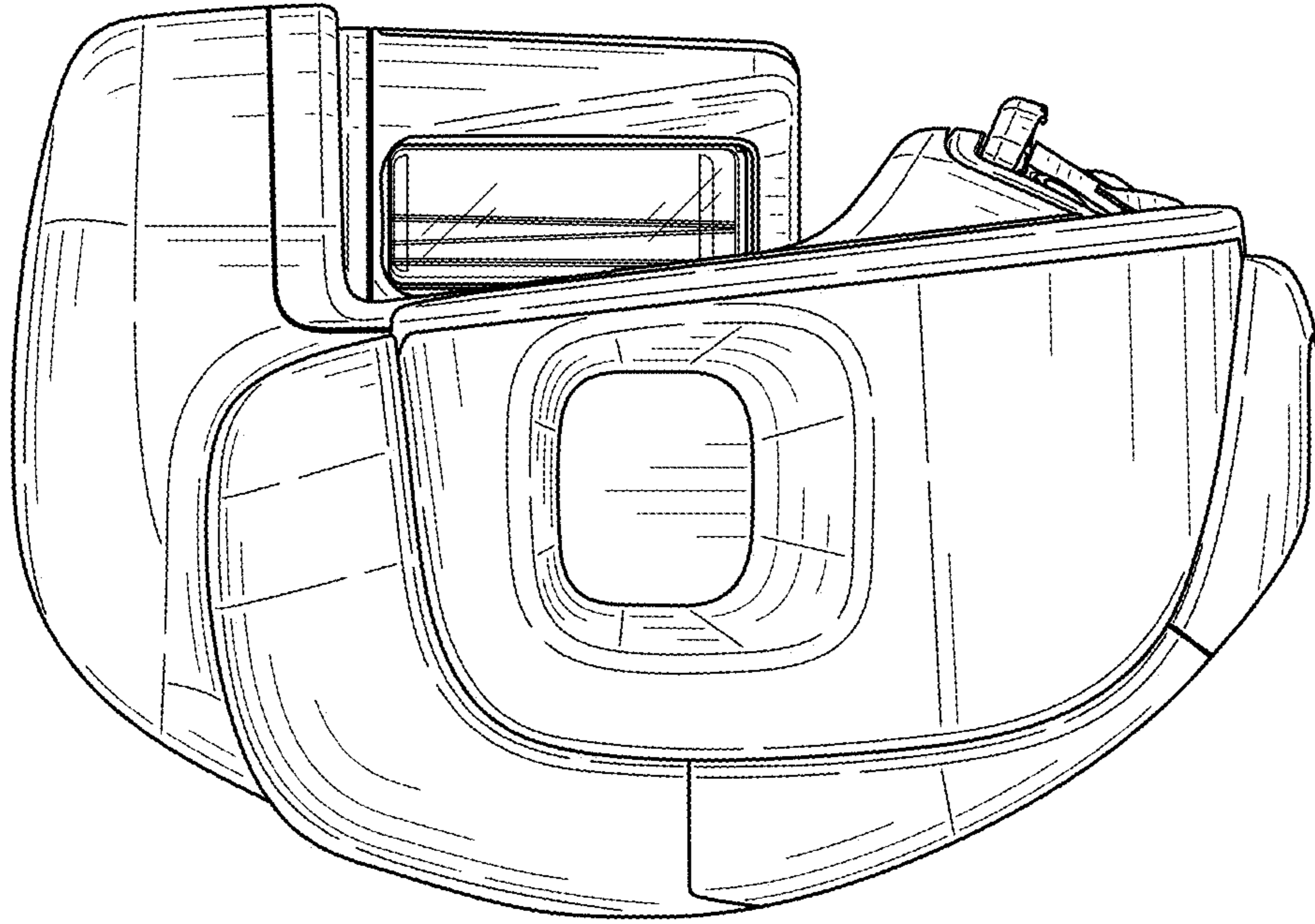


FIG. 12

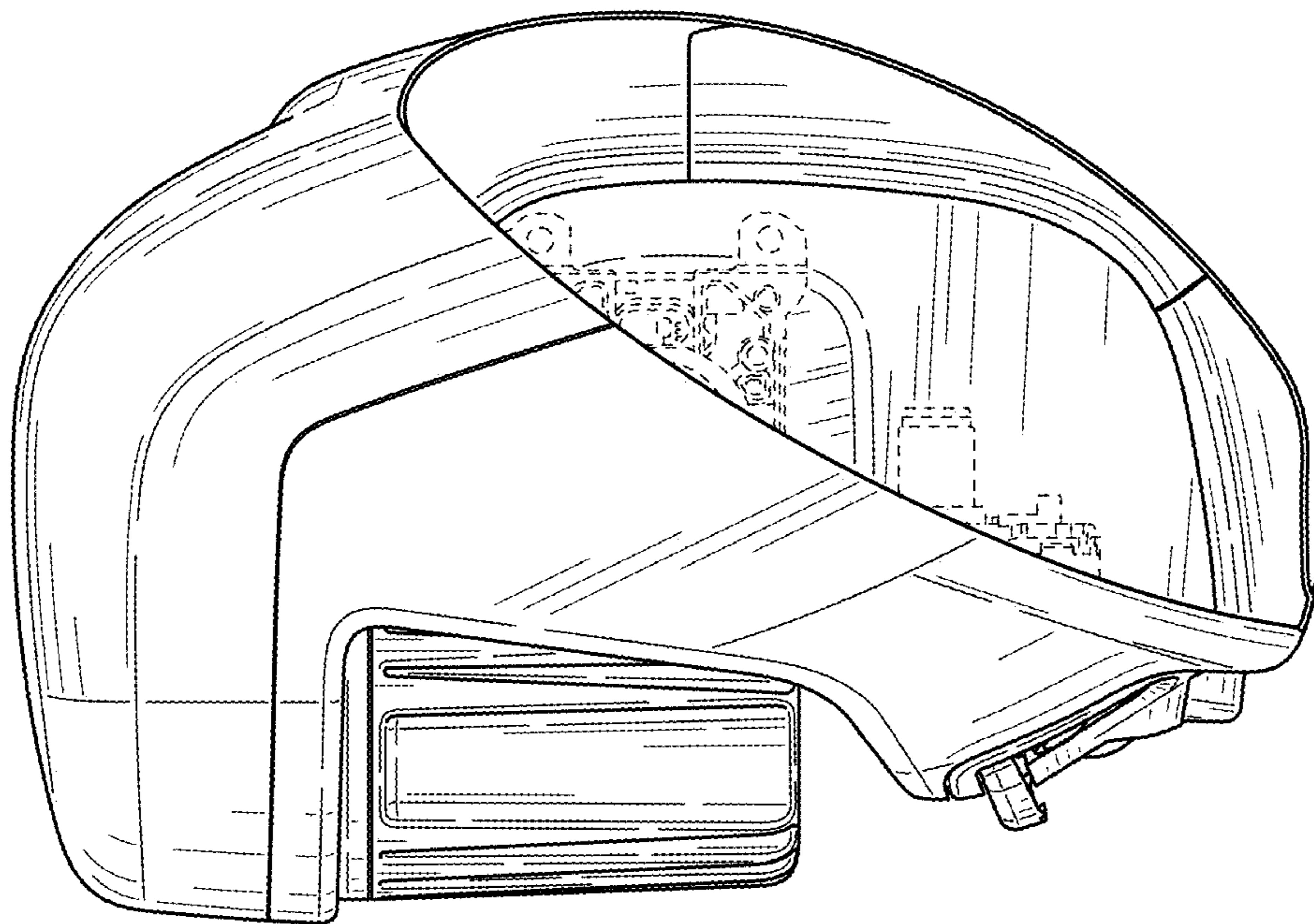


FIG. 11

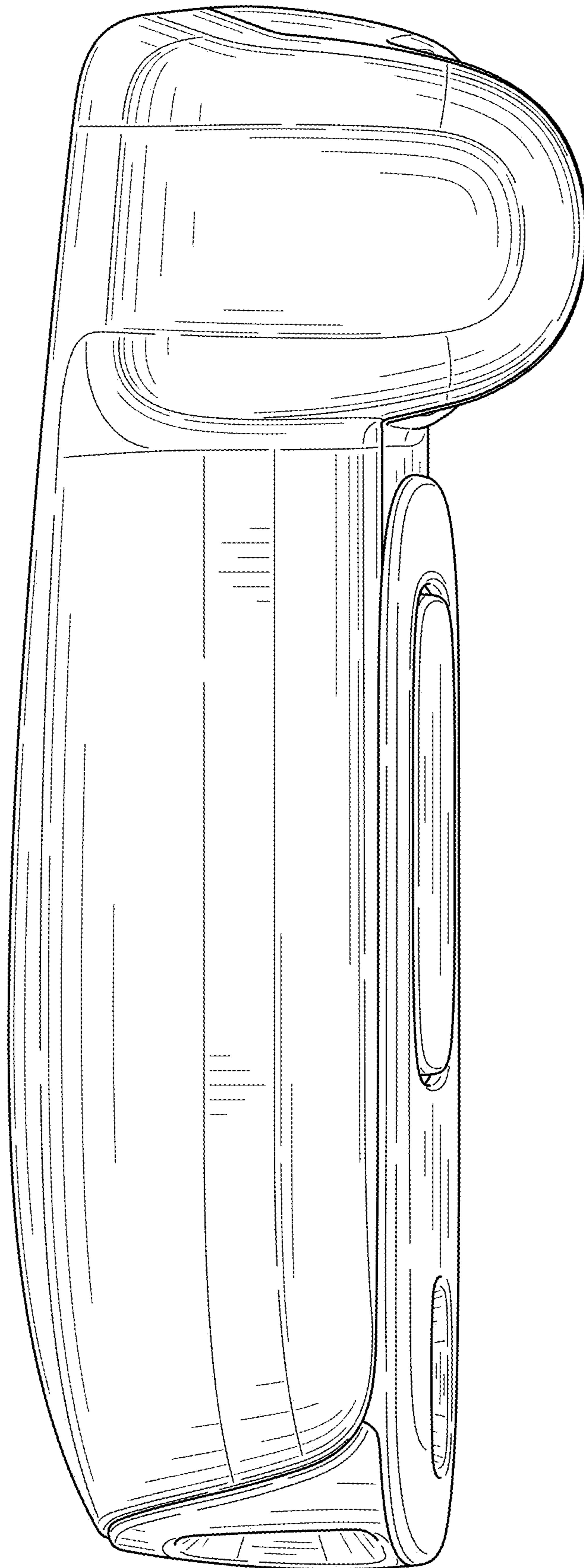


FIG. 13

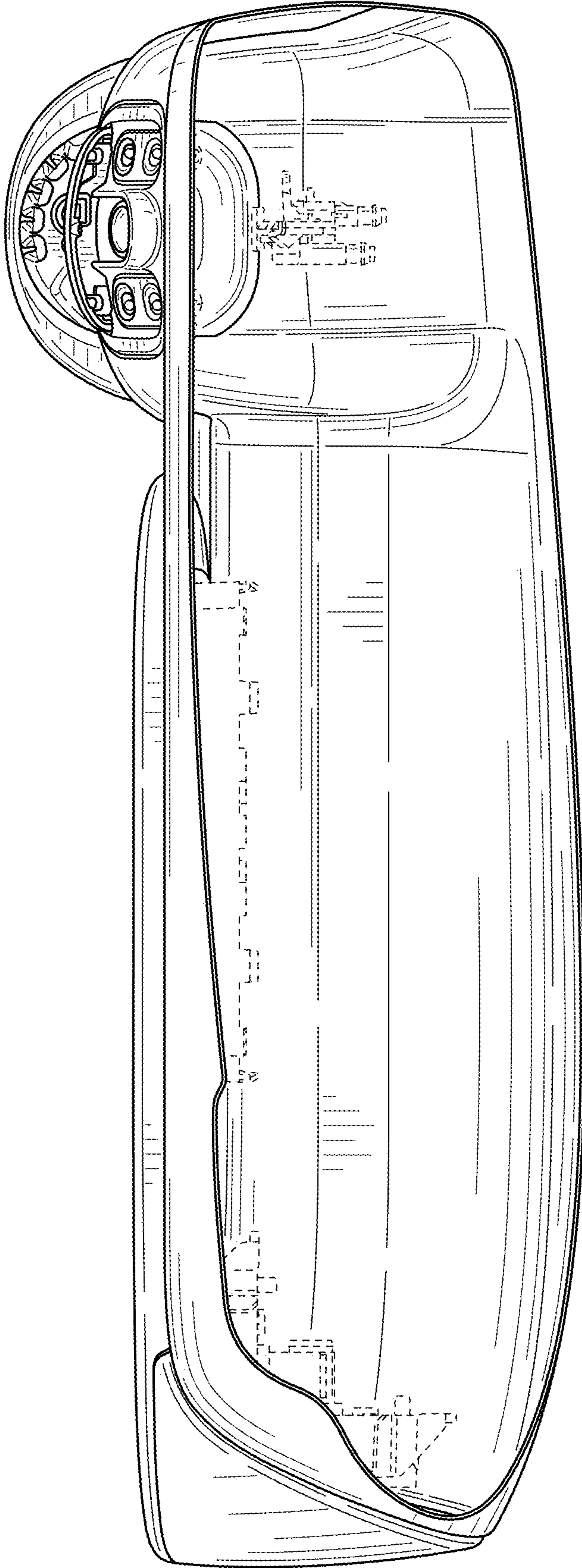


FIG. 14

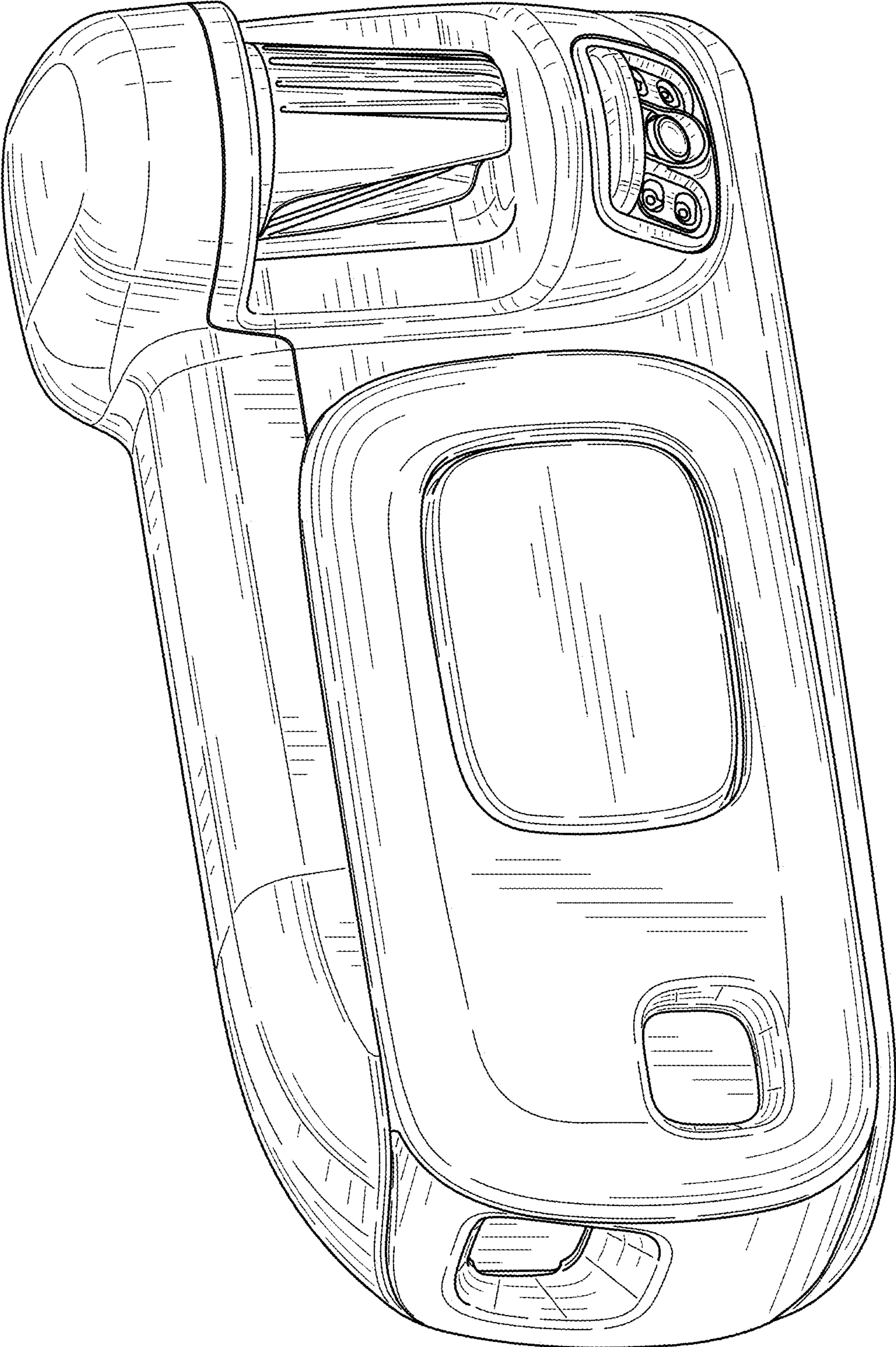


FIG. 15

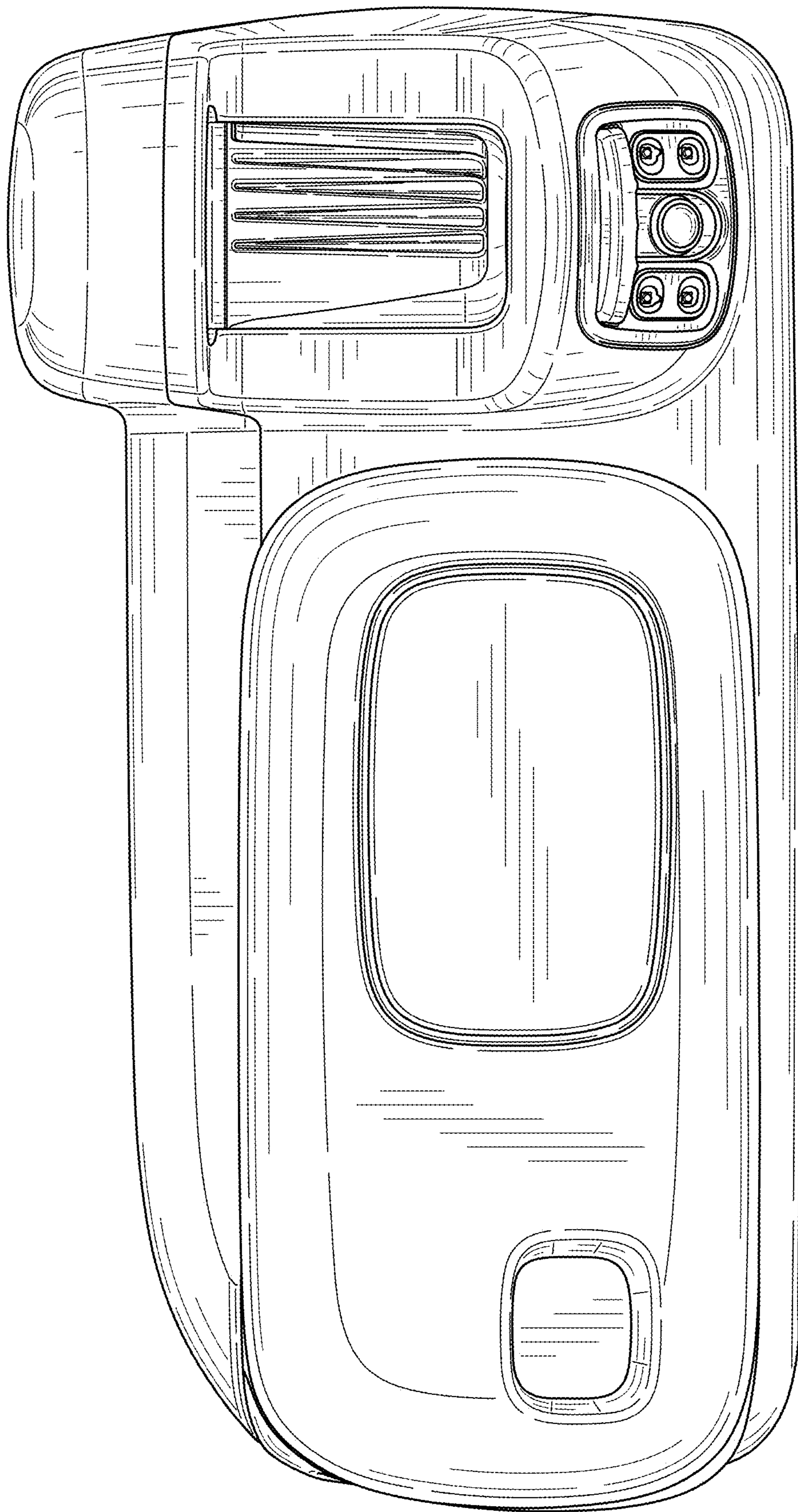


FIG. 16

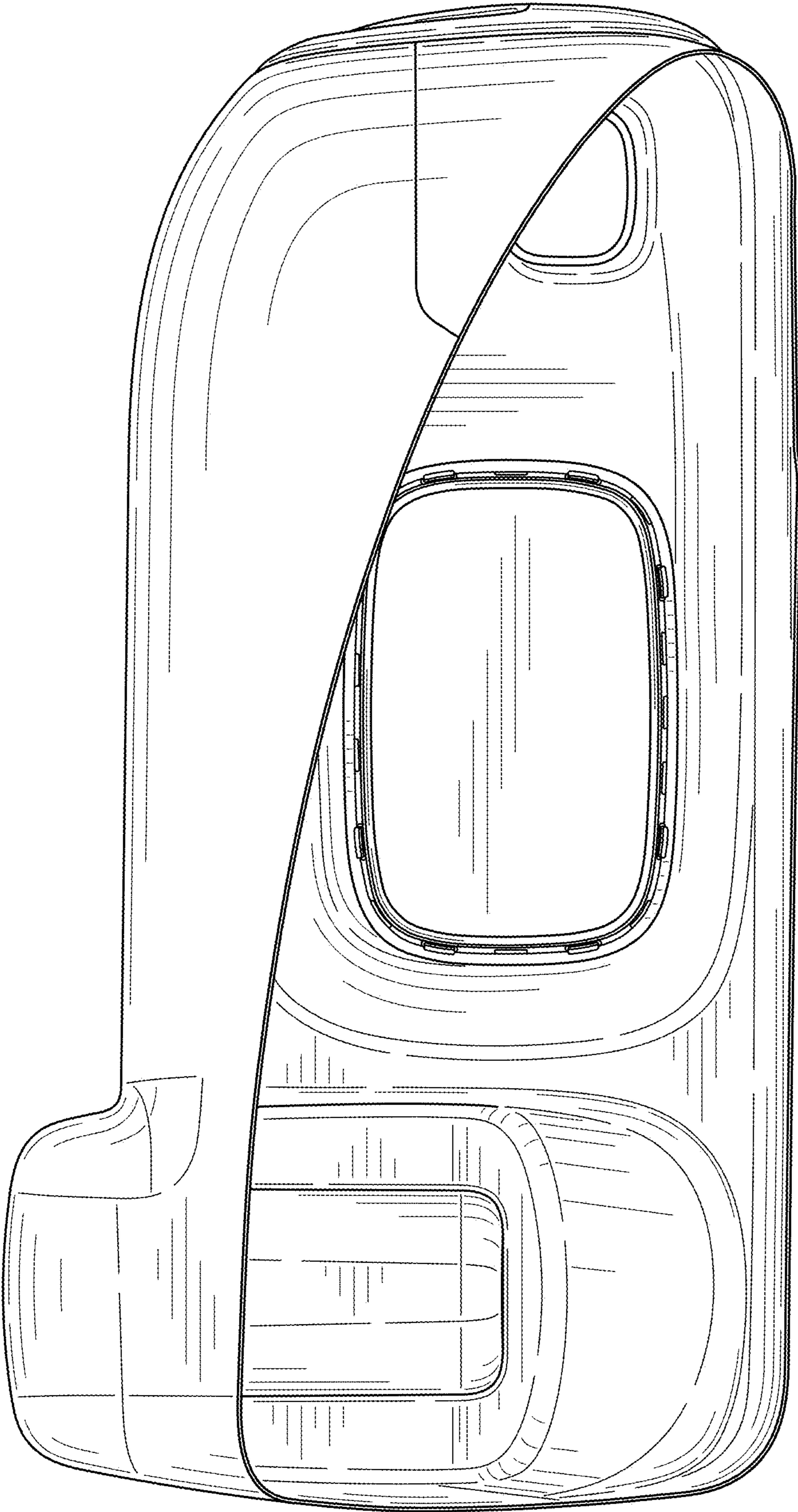


FIG. 17

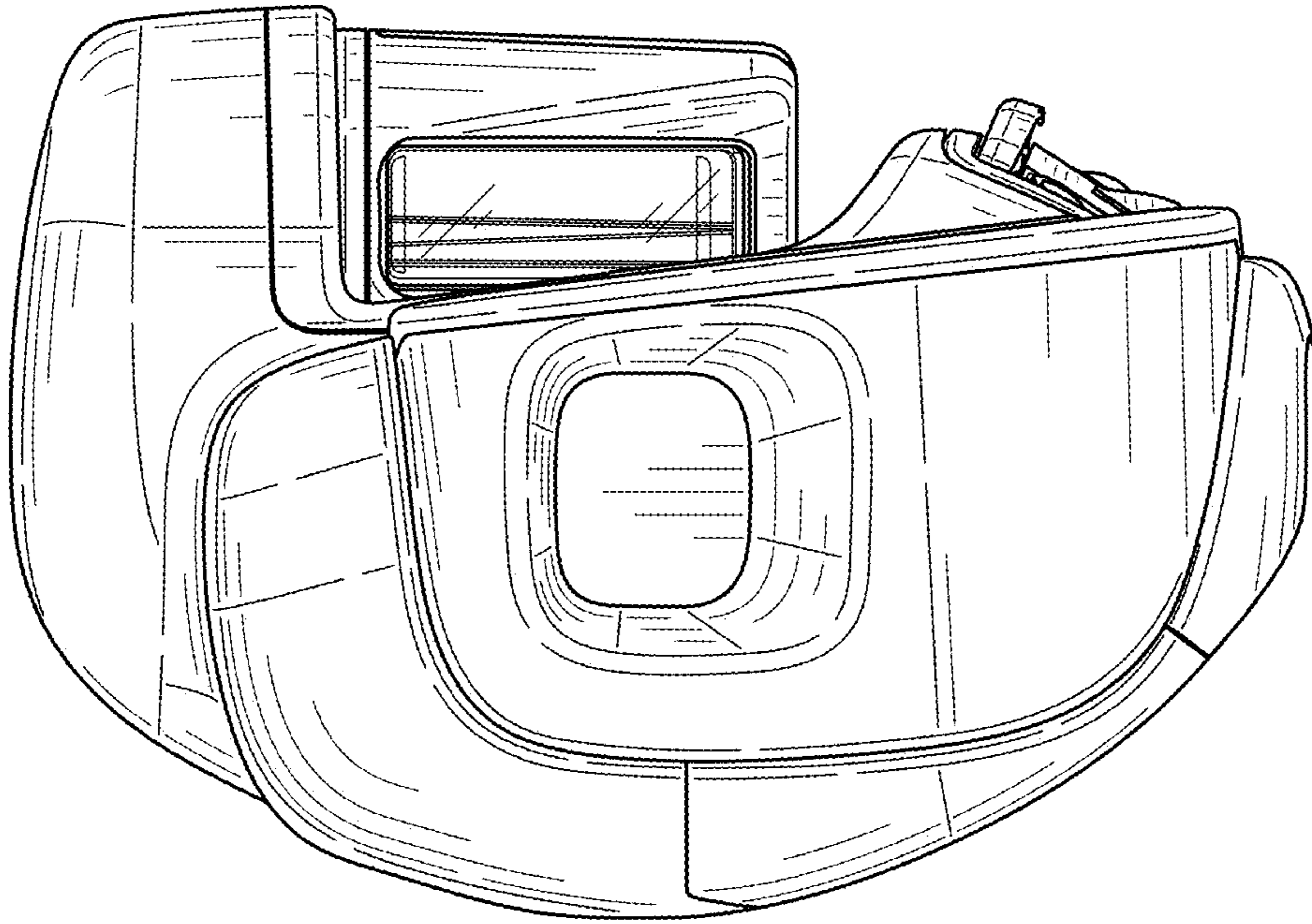


FIG. 19

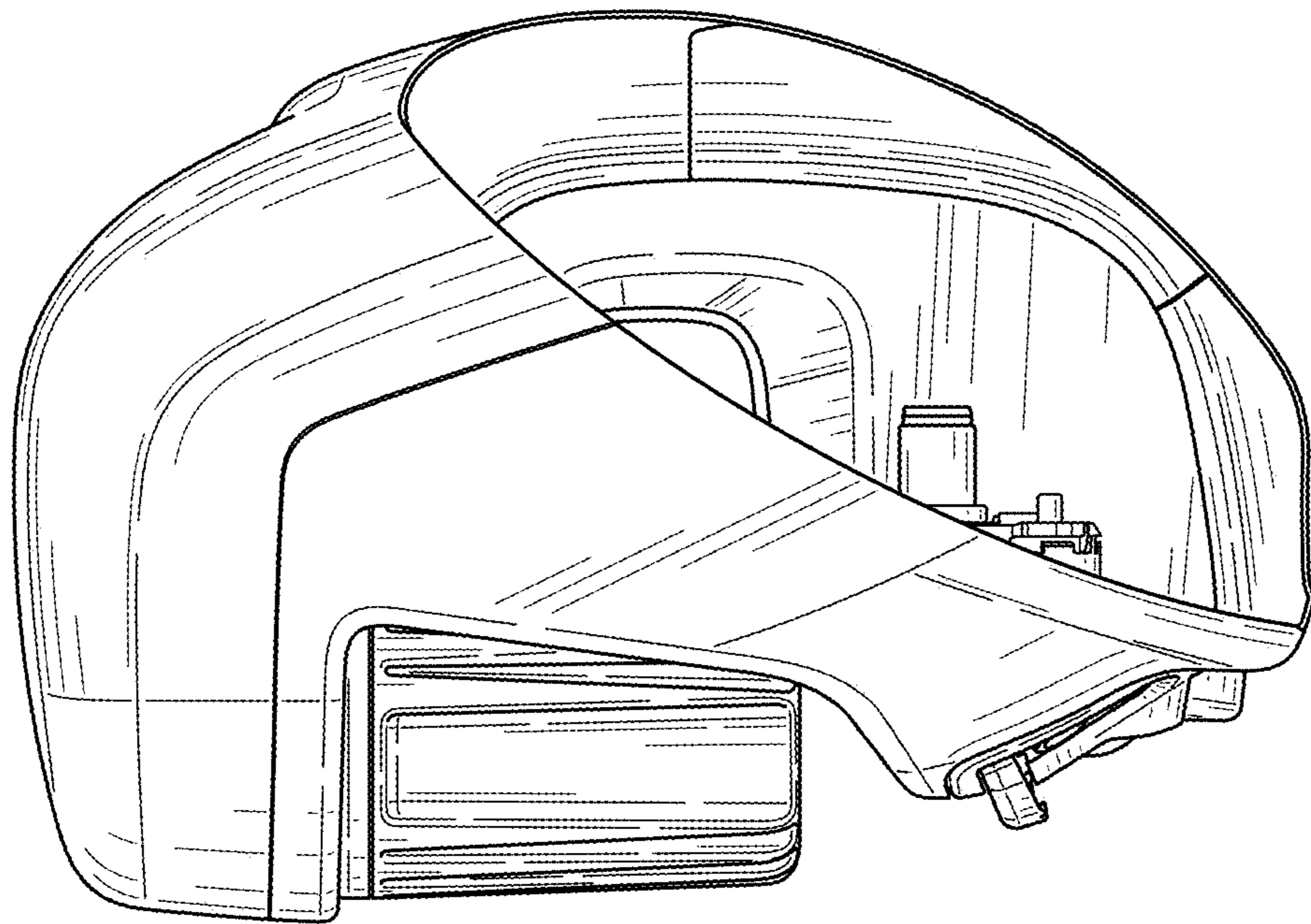


FIG. 18

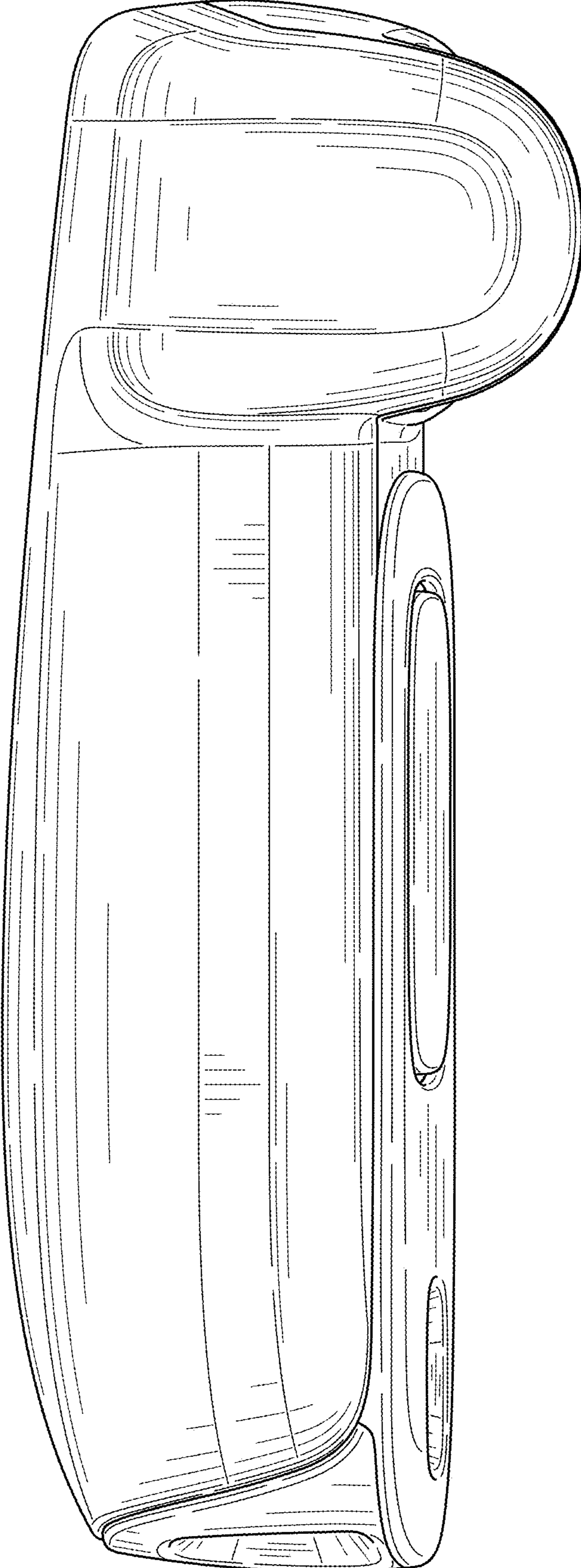


FIG. 20

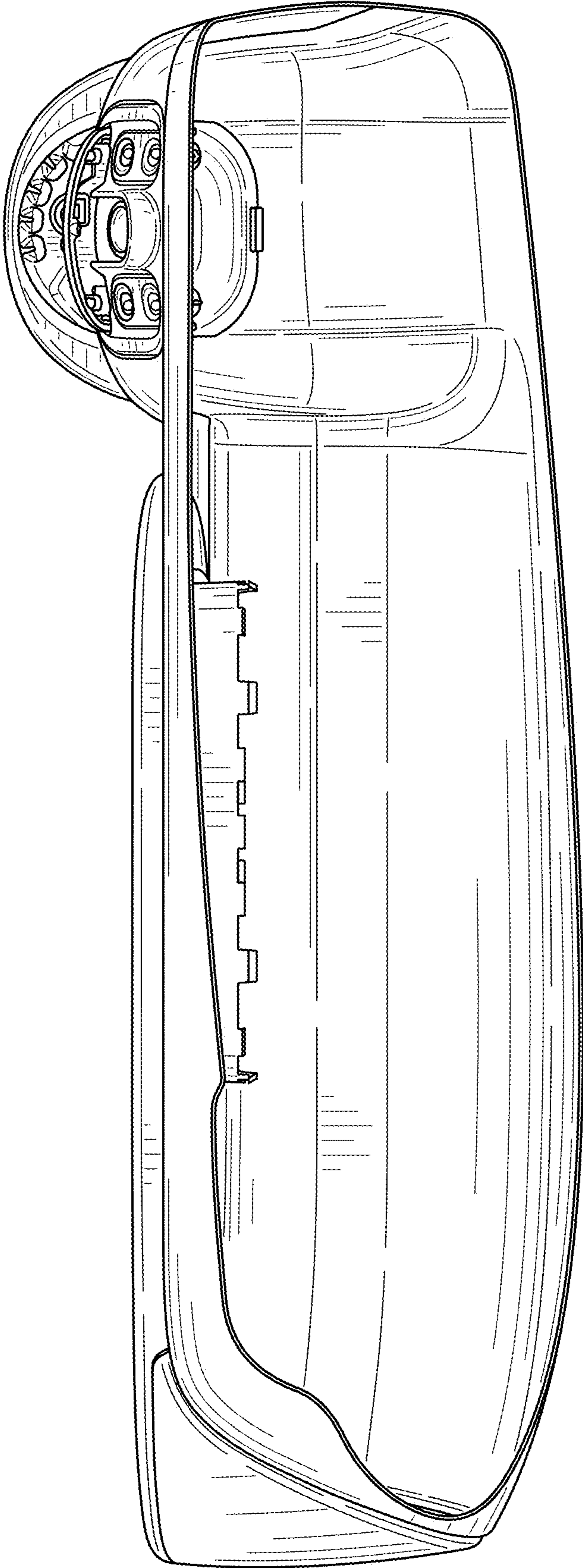


FIG. 21

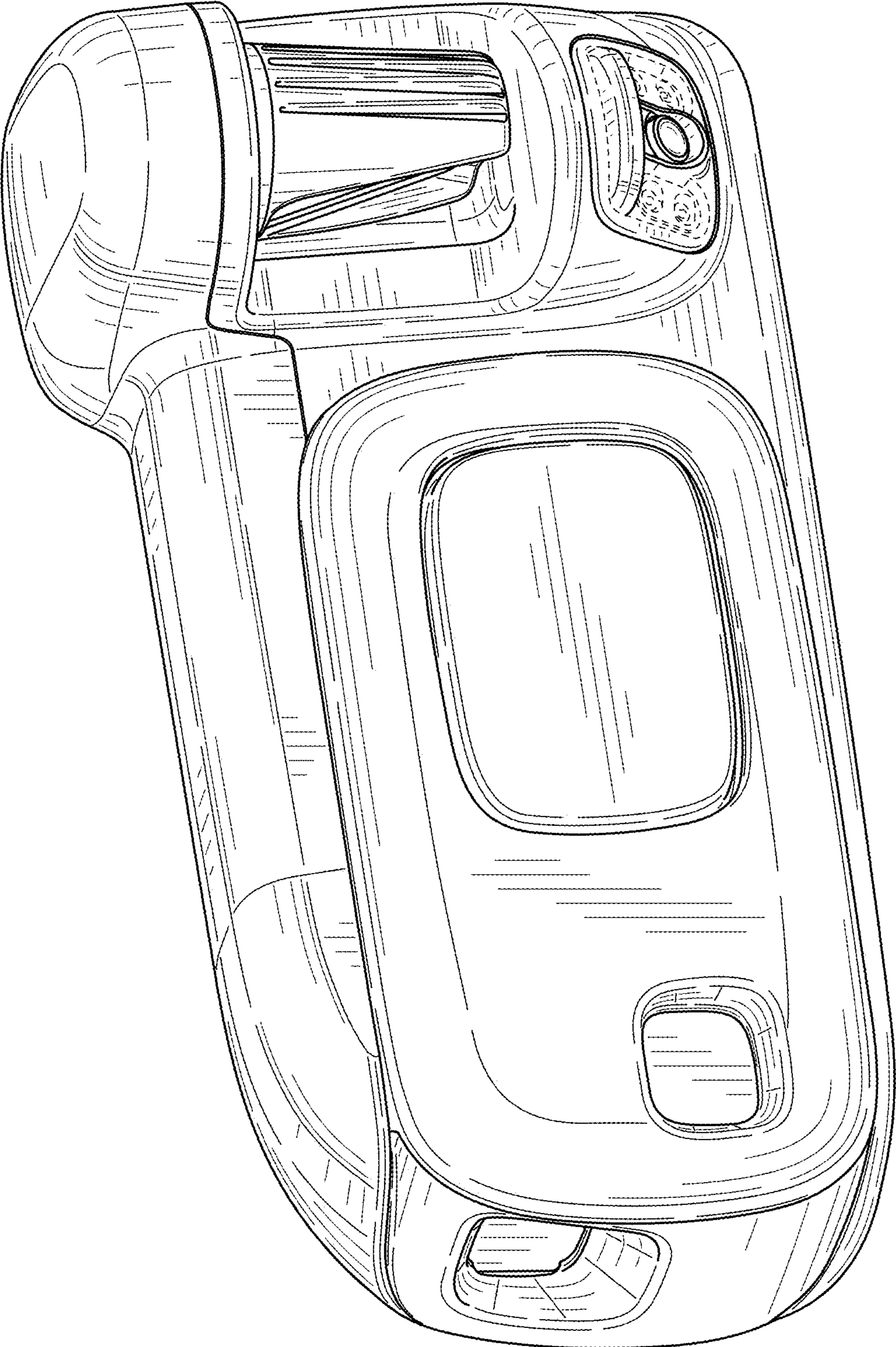


FIG. 22

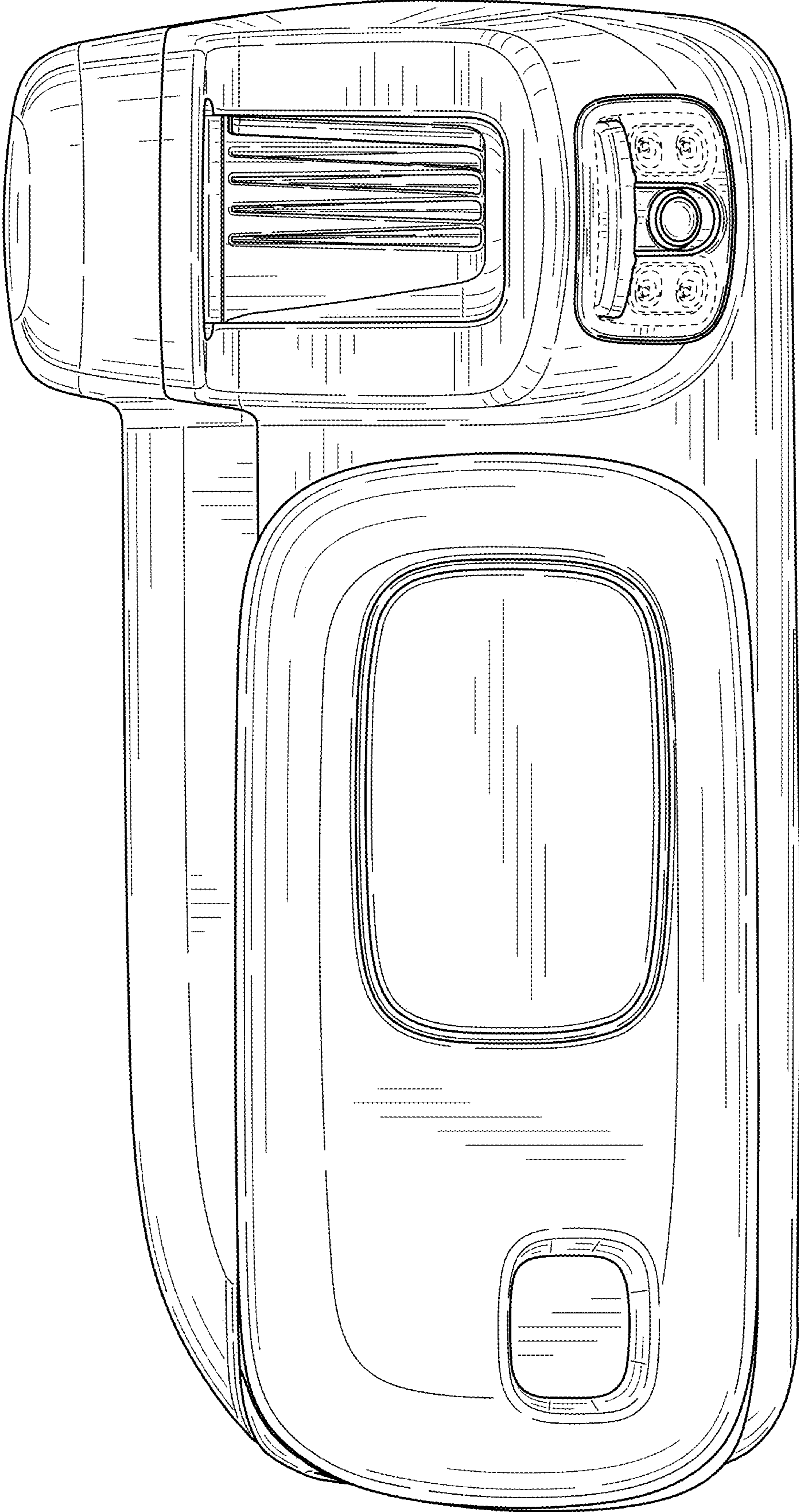


FIG. 23

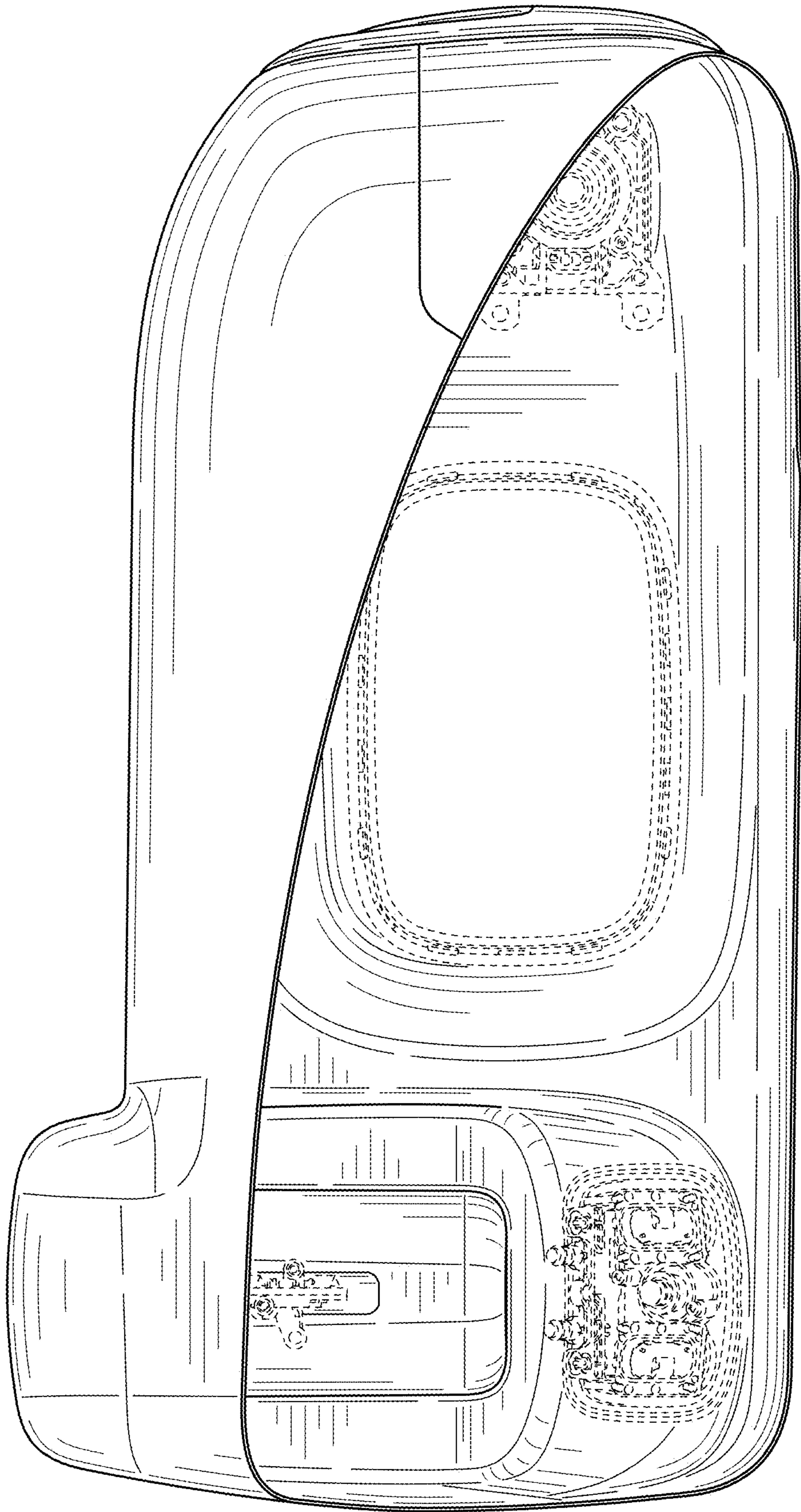


FIG. 24

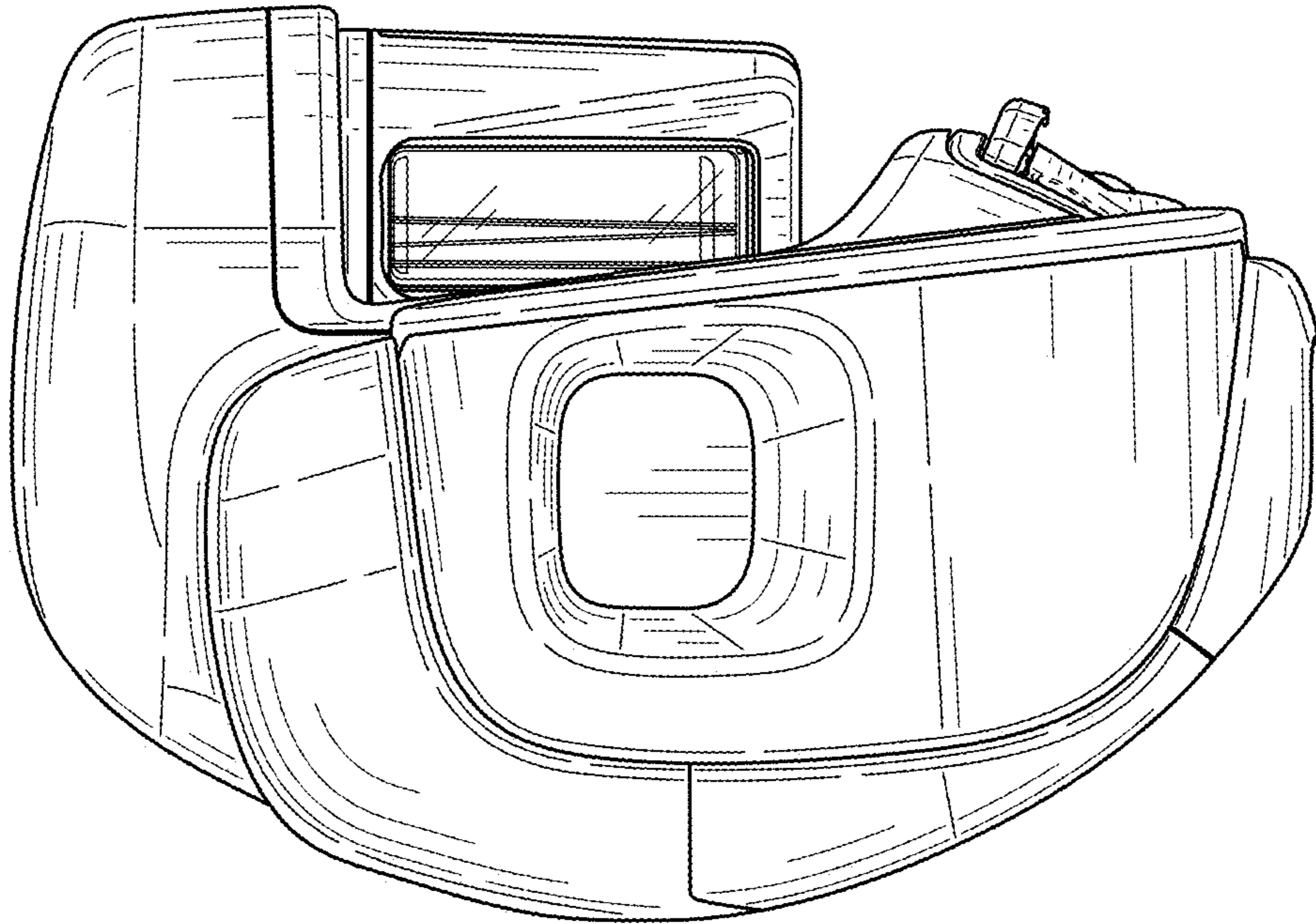


FIG. 26

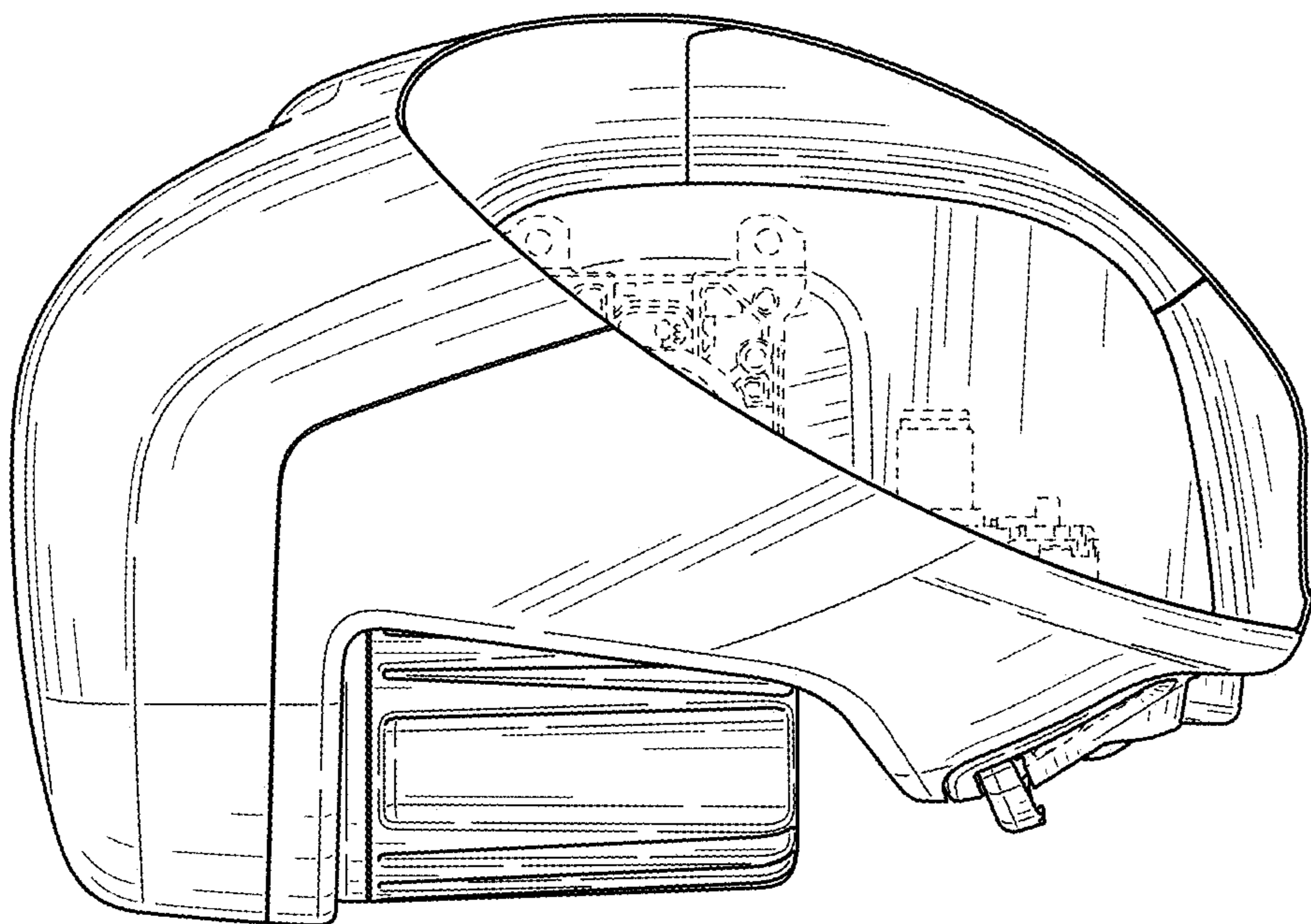


FIG. 25

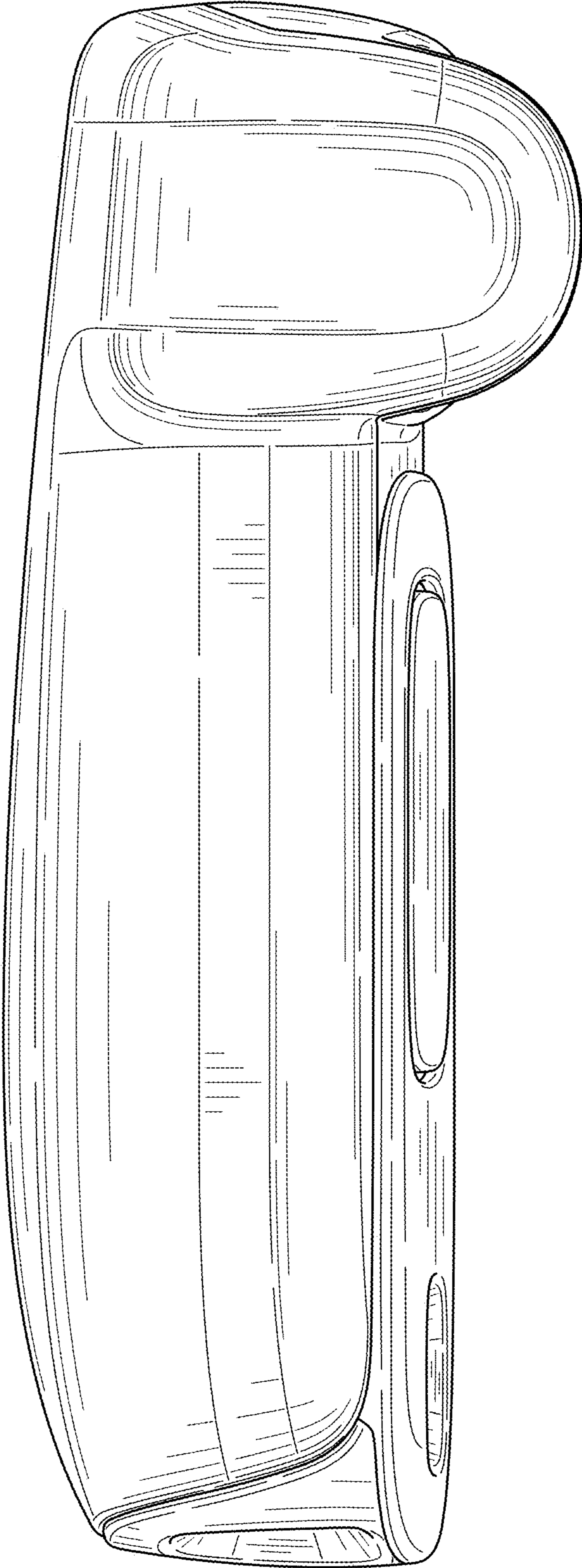


FIG. 27

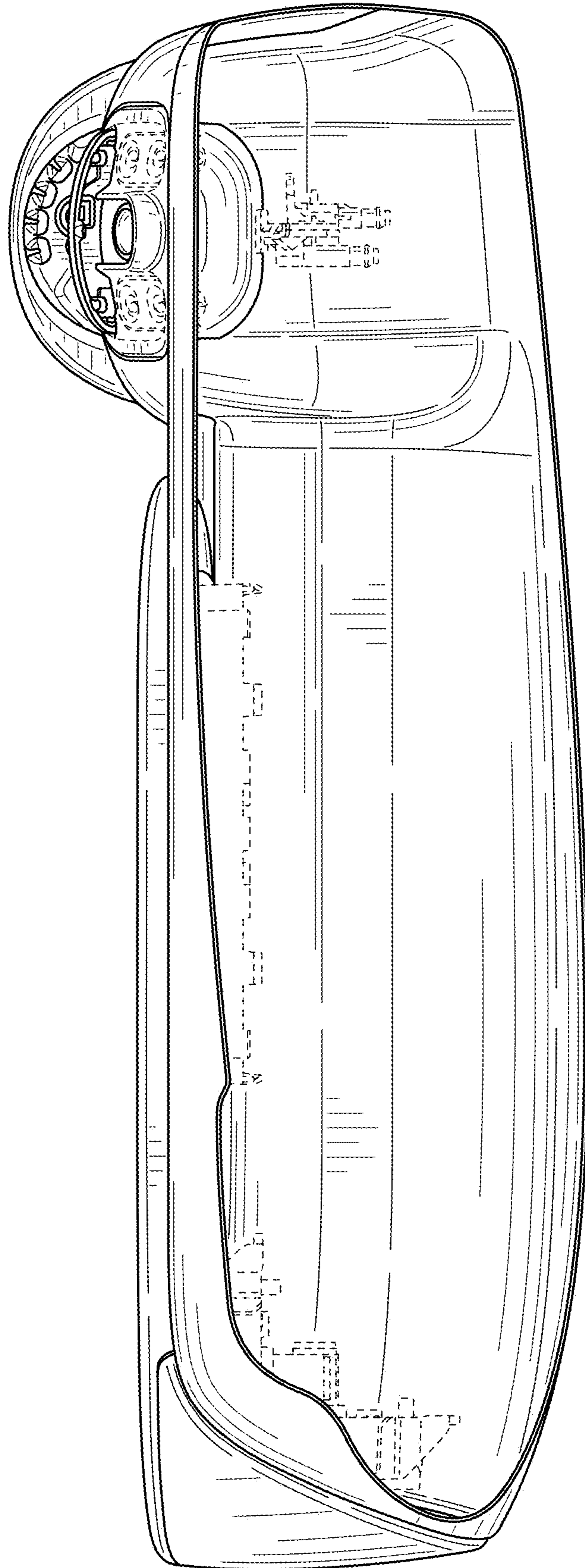


FIG. 28

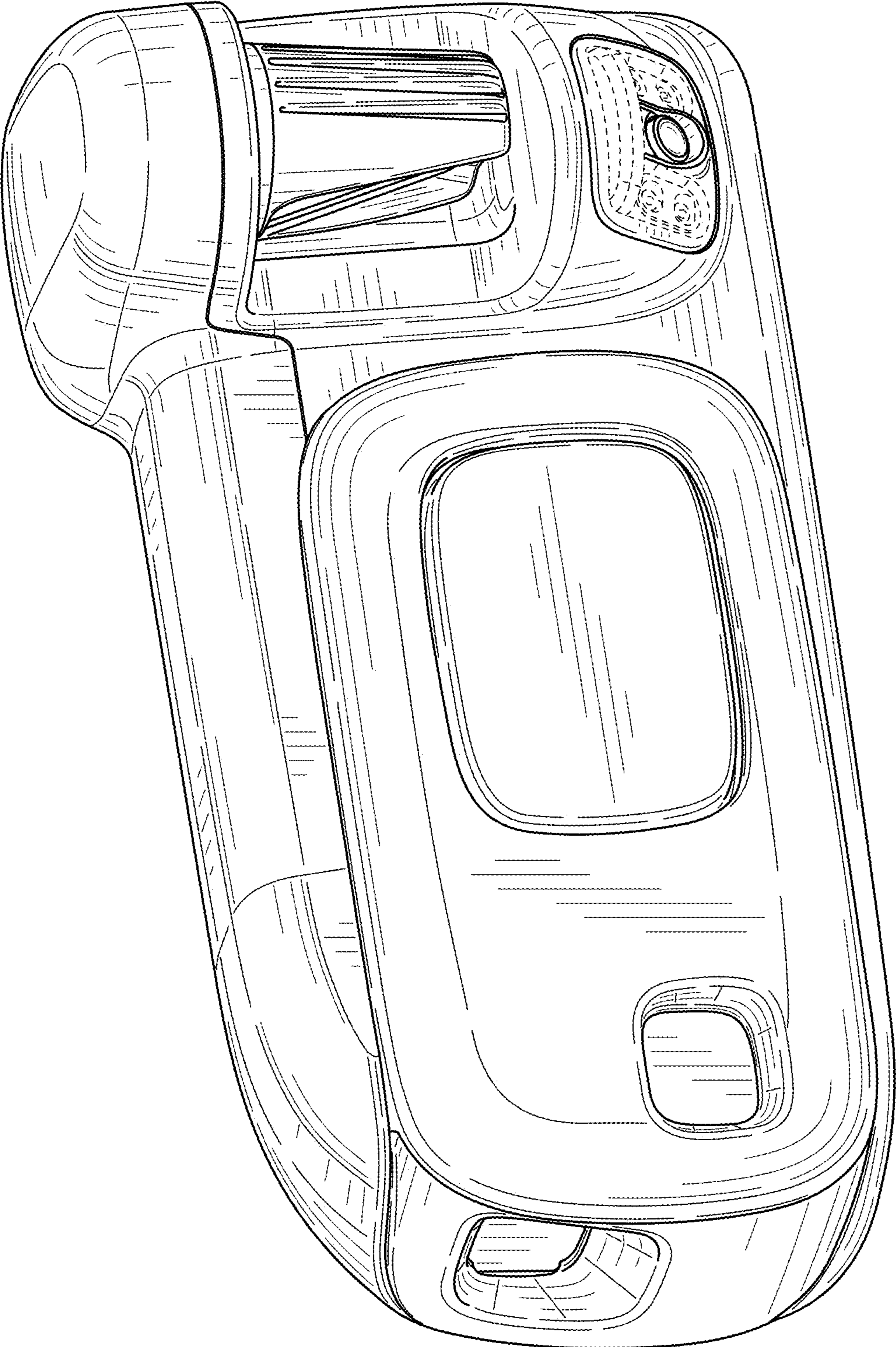


FIG. 29

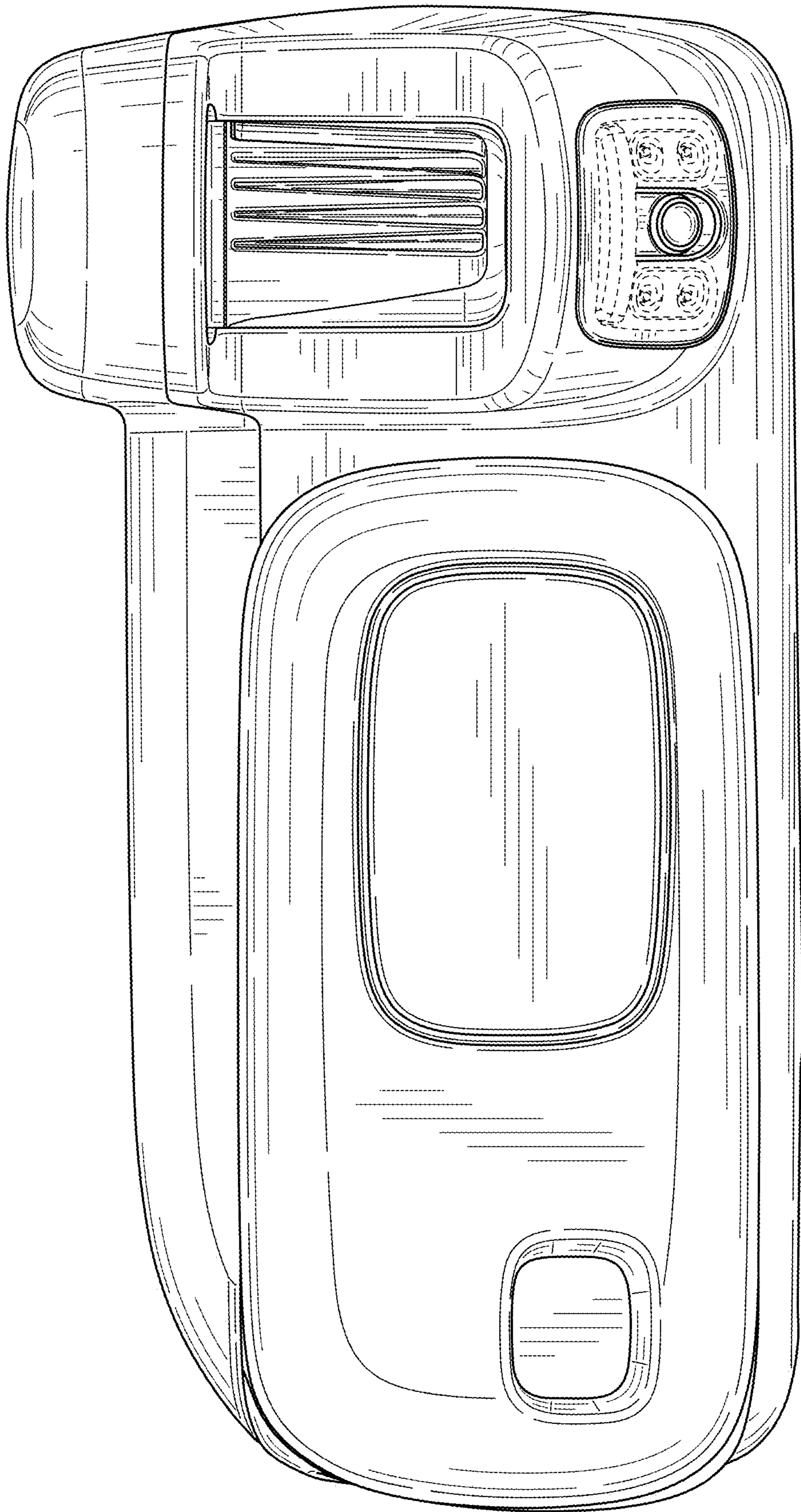


FIG. 30

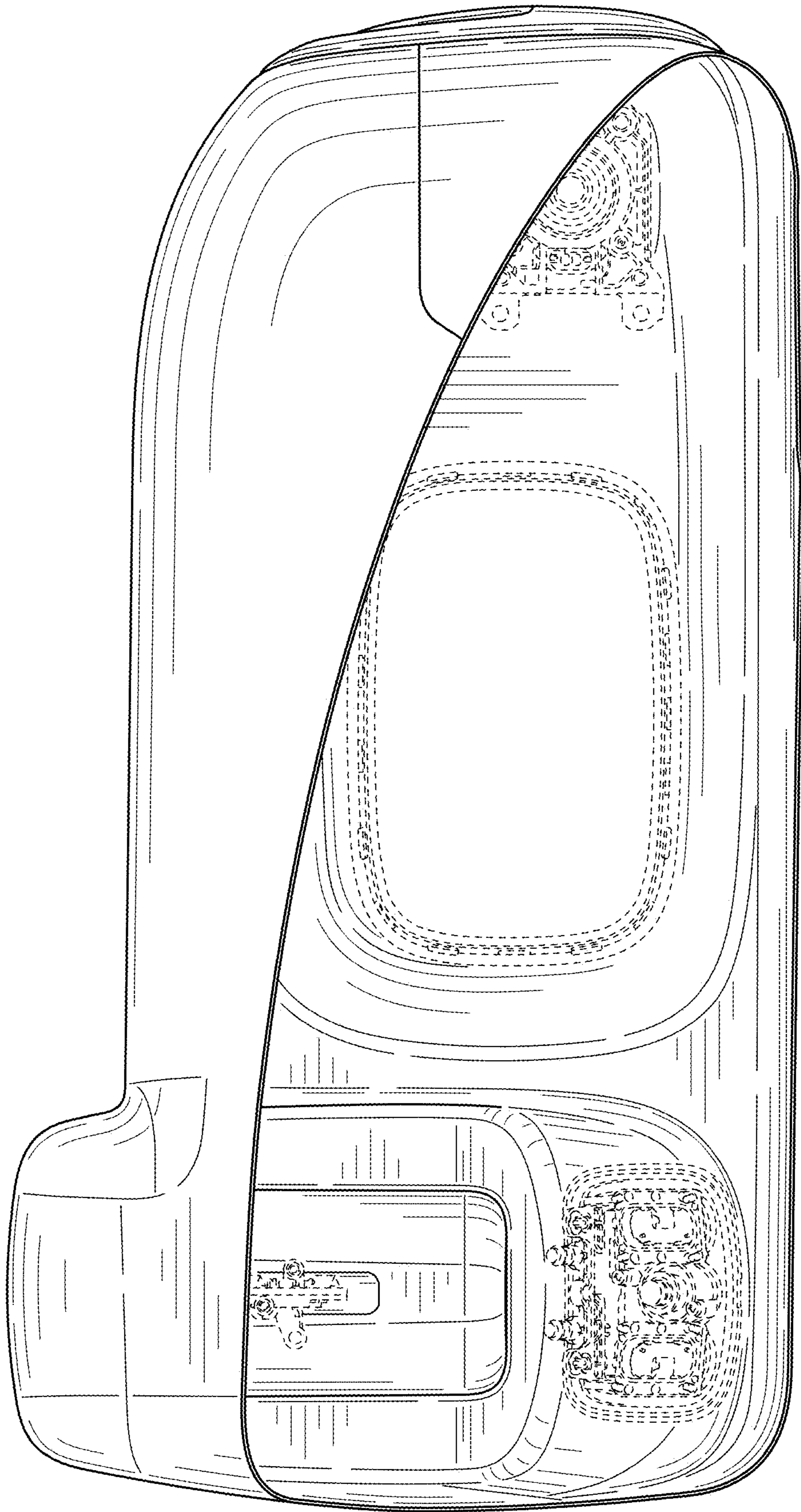


FIG. 31

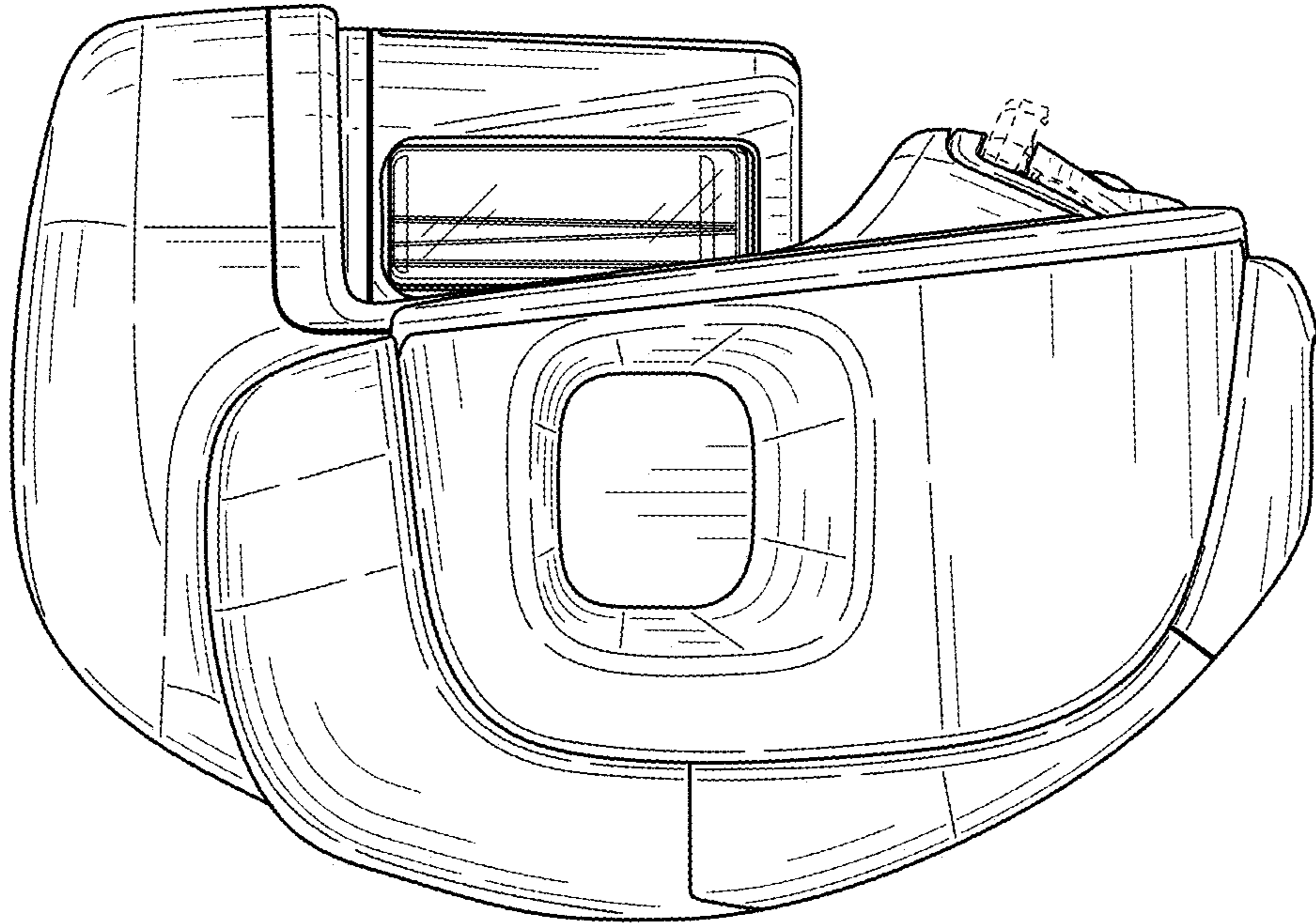


FIG. 33

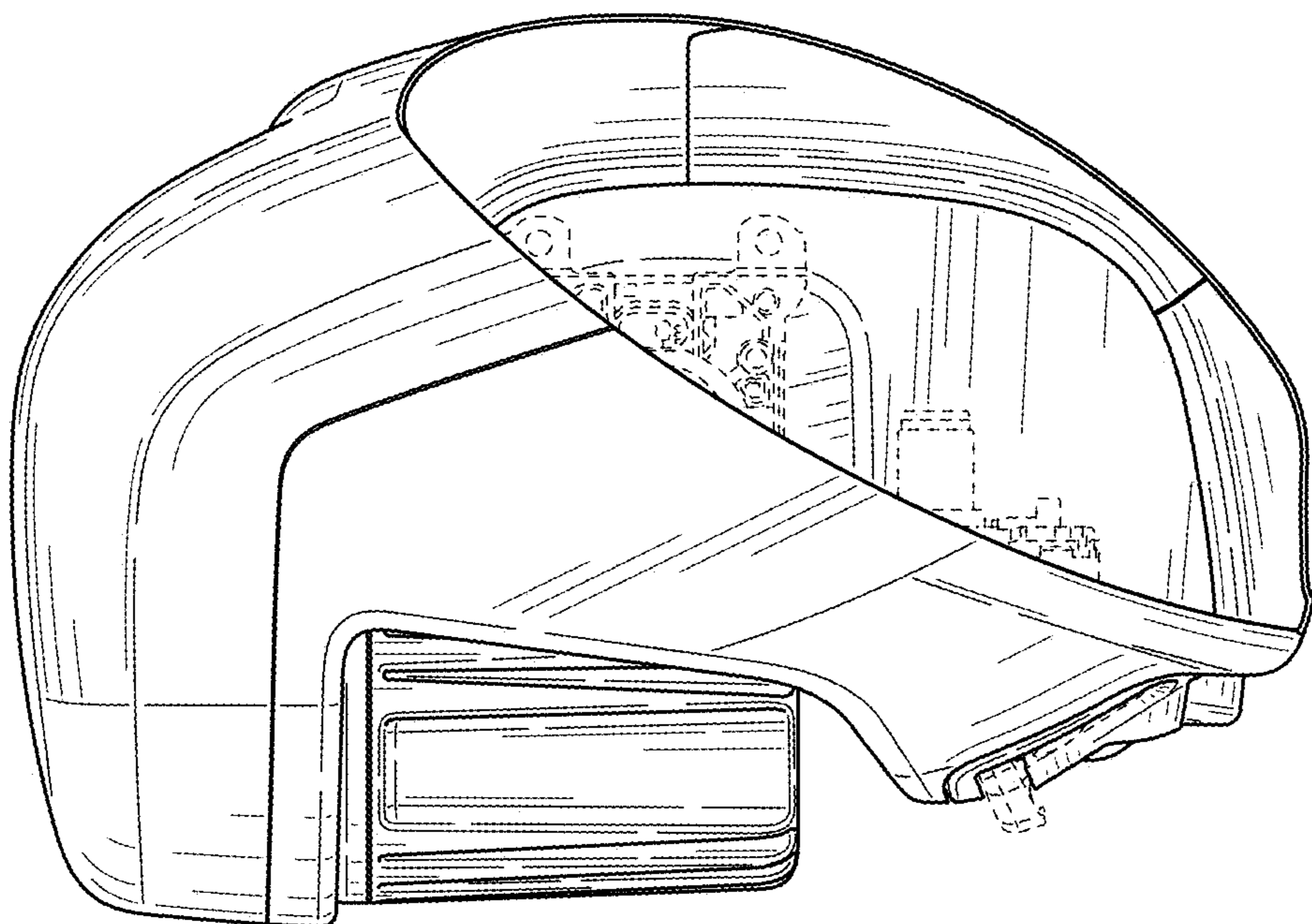


FIG. 32

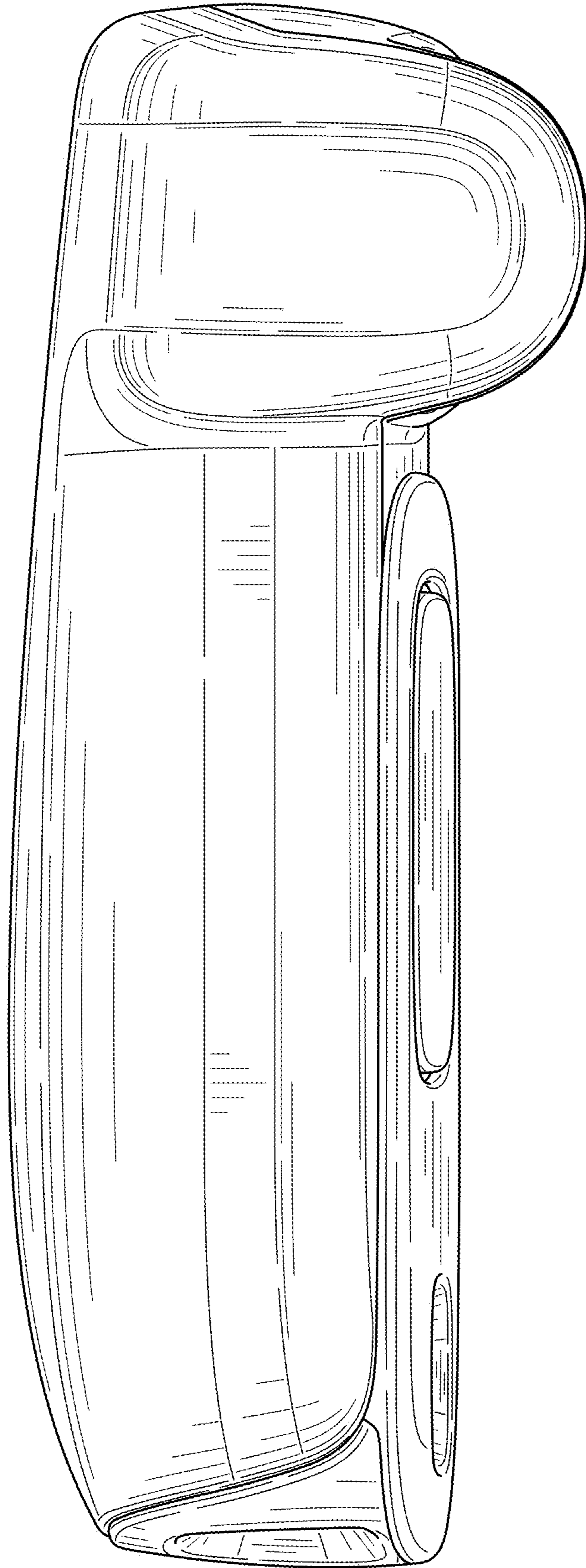


FIG. 34

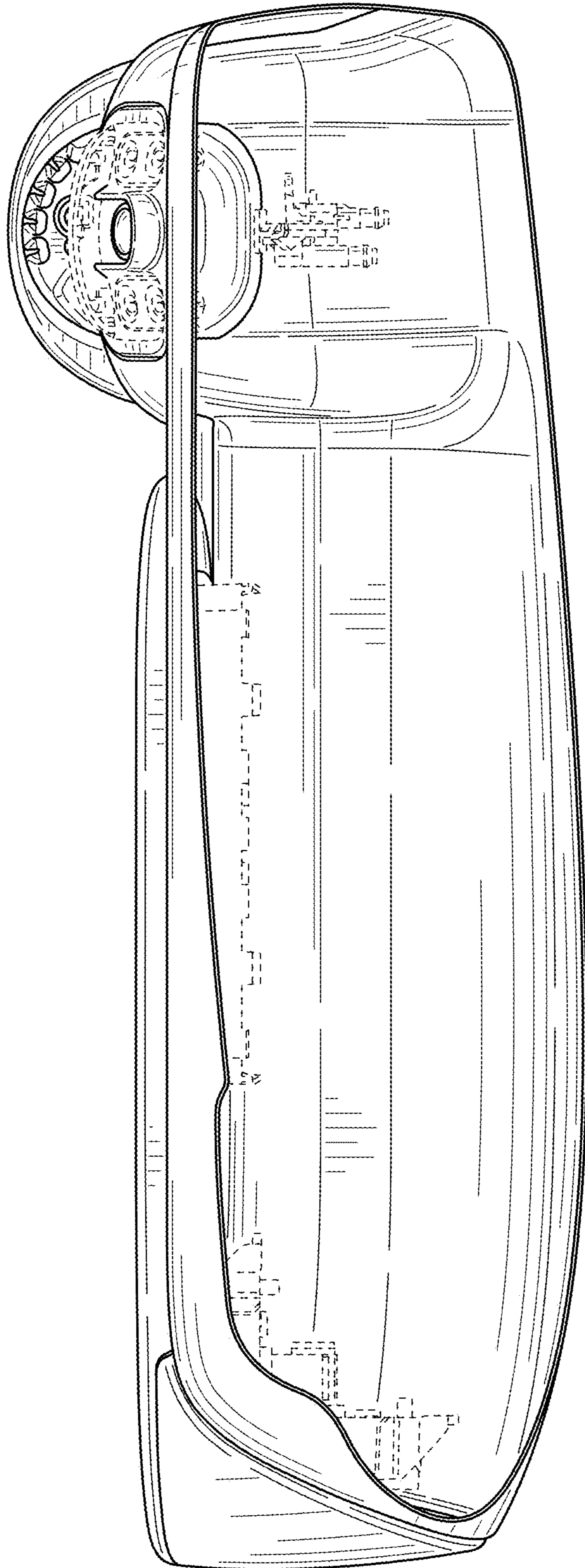


FIG. 35

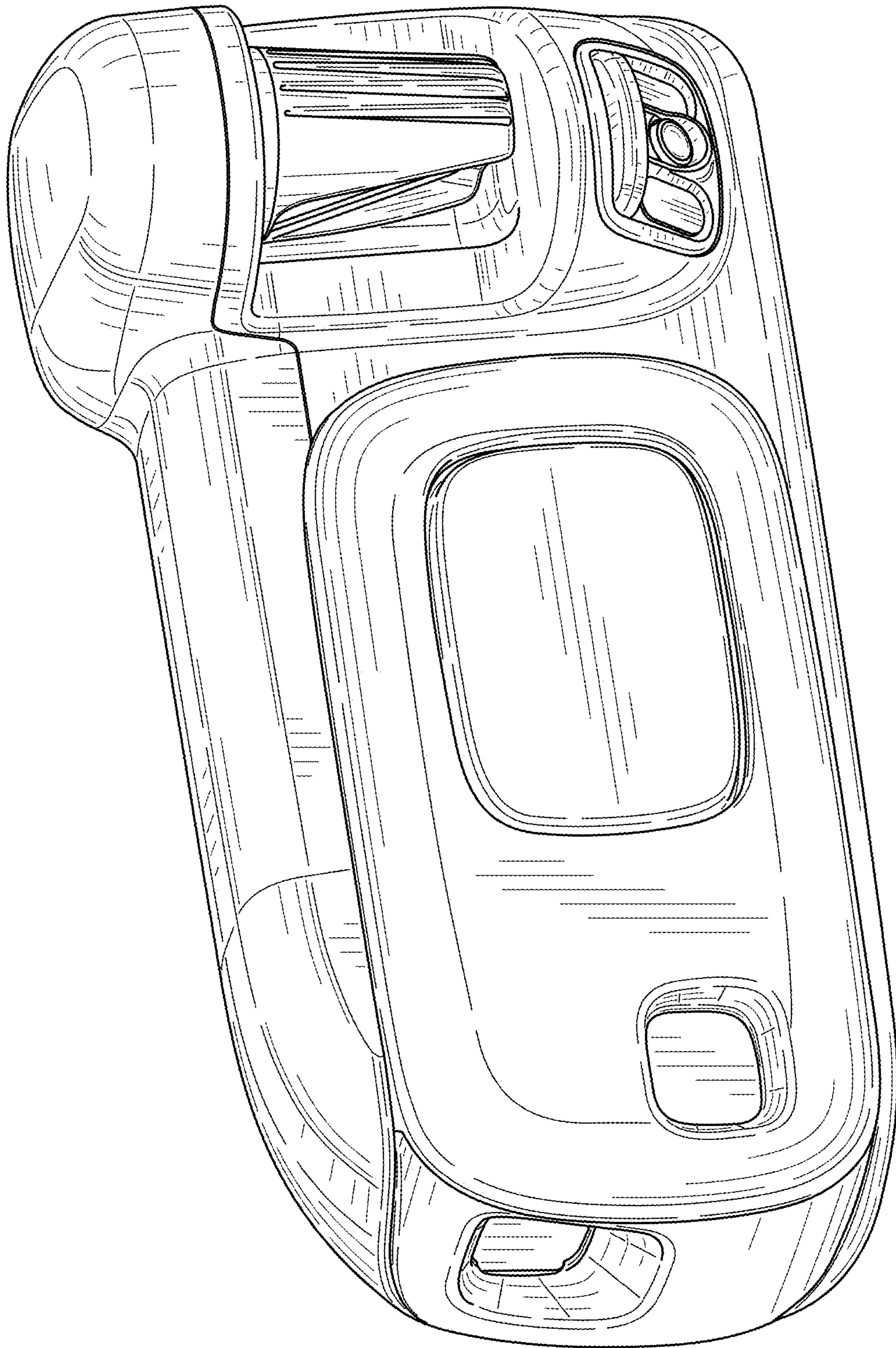


FIG. 36

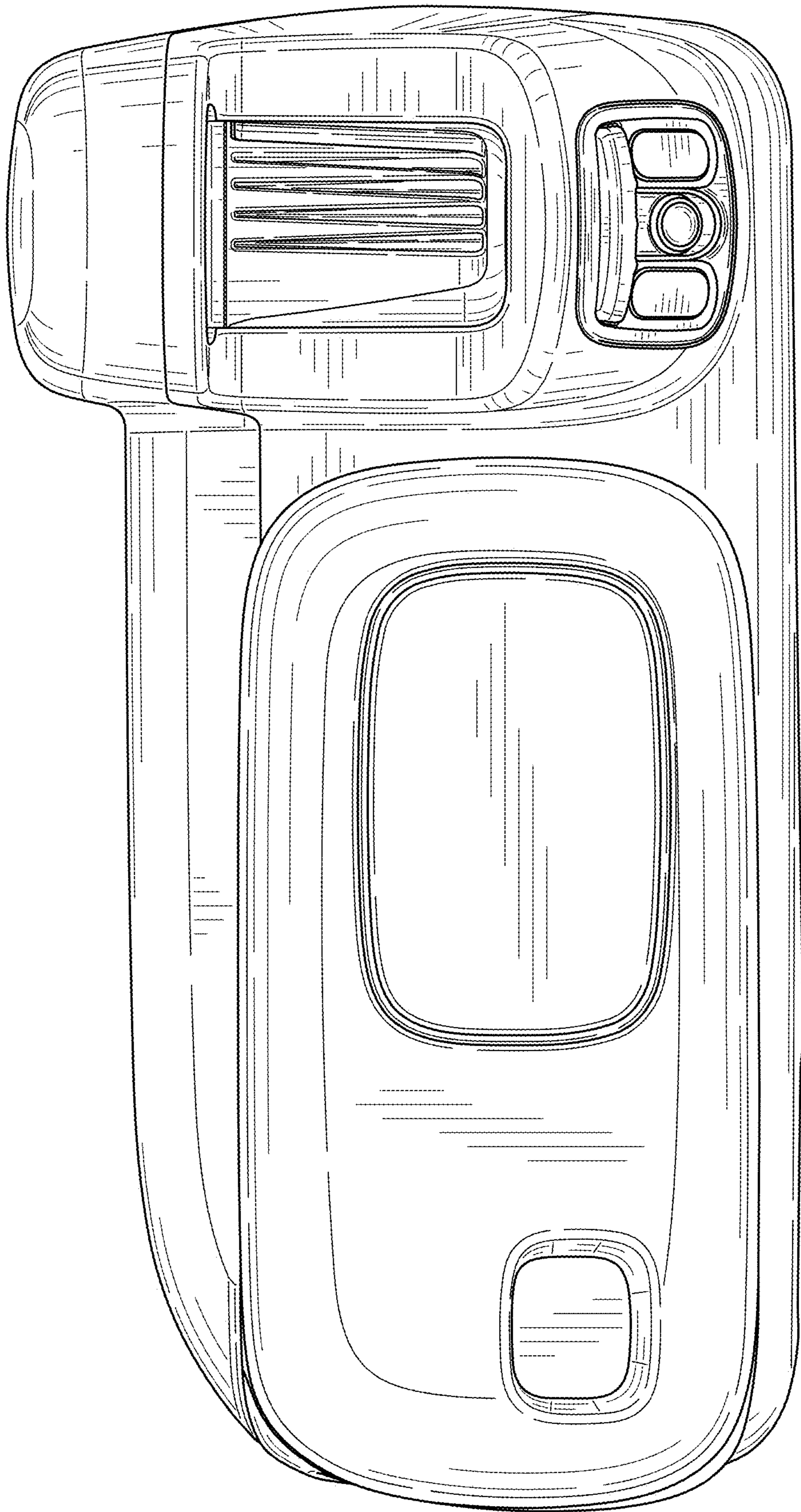


FIG. 37

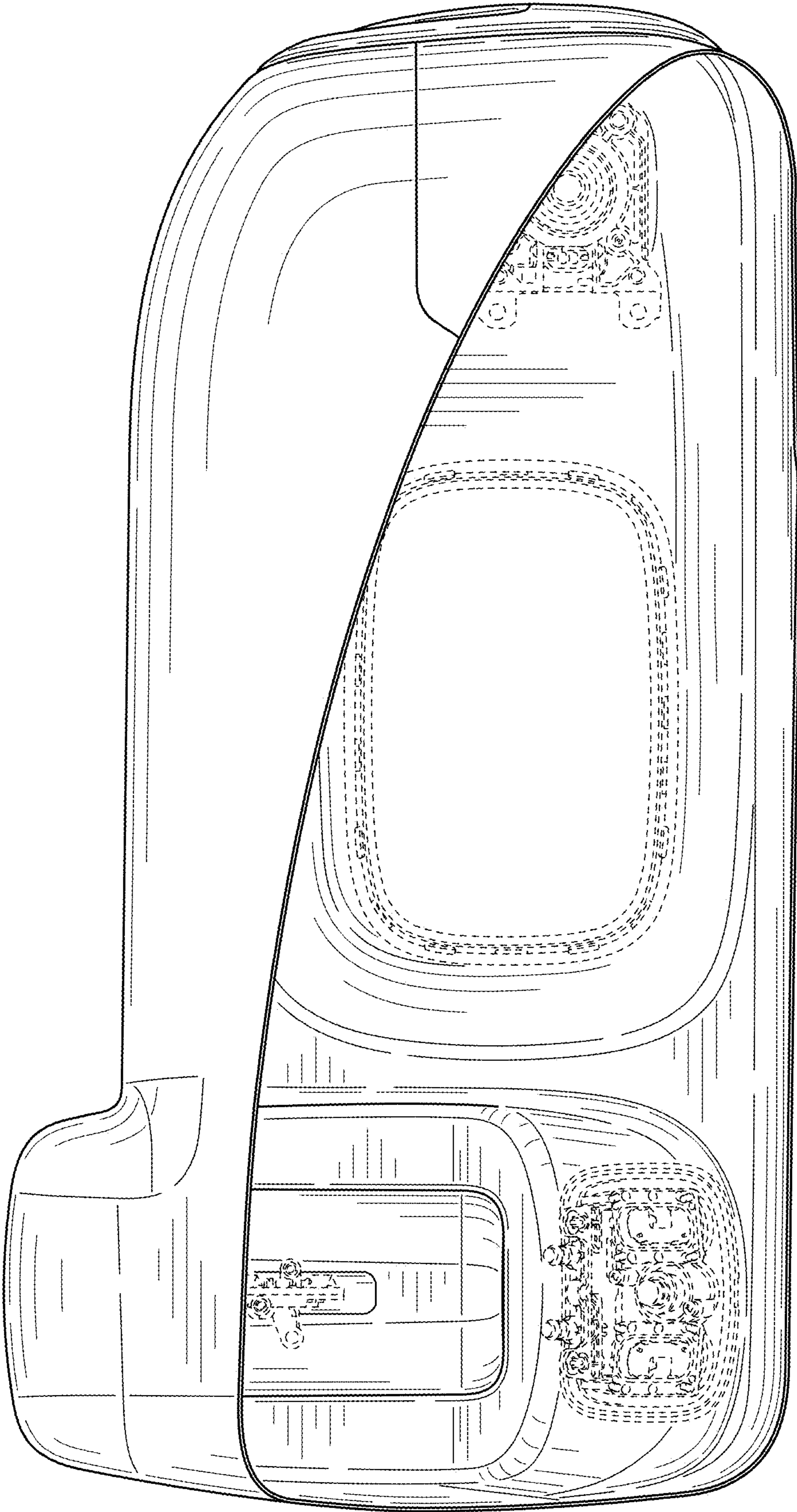


FIG. 38

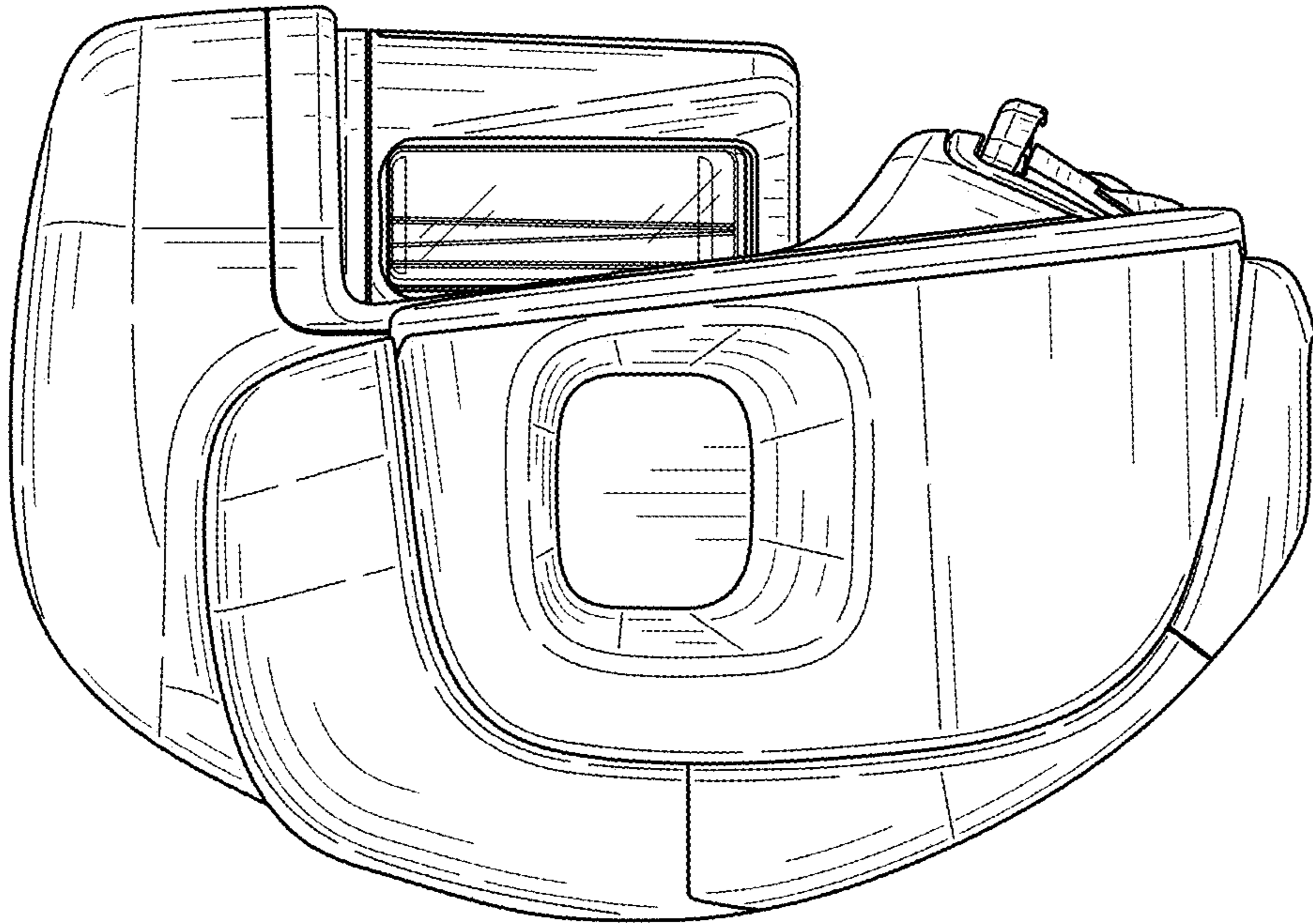


FIG. 40

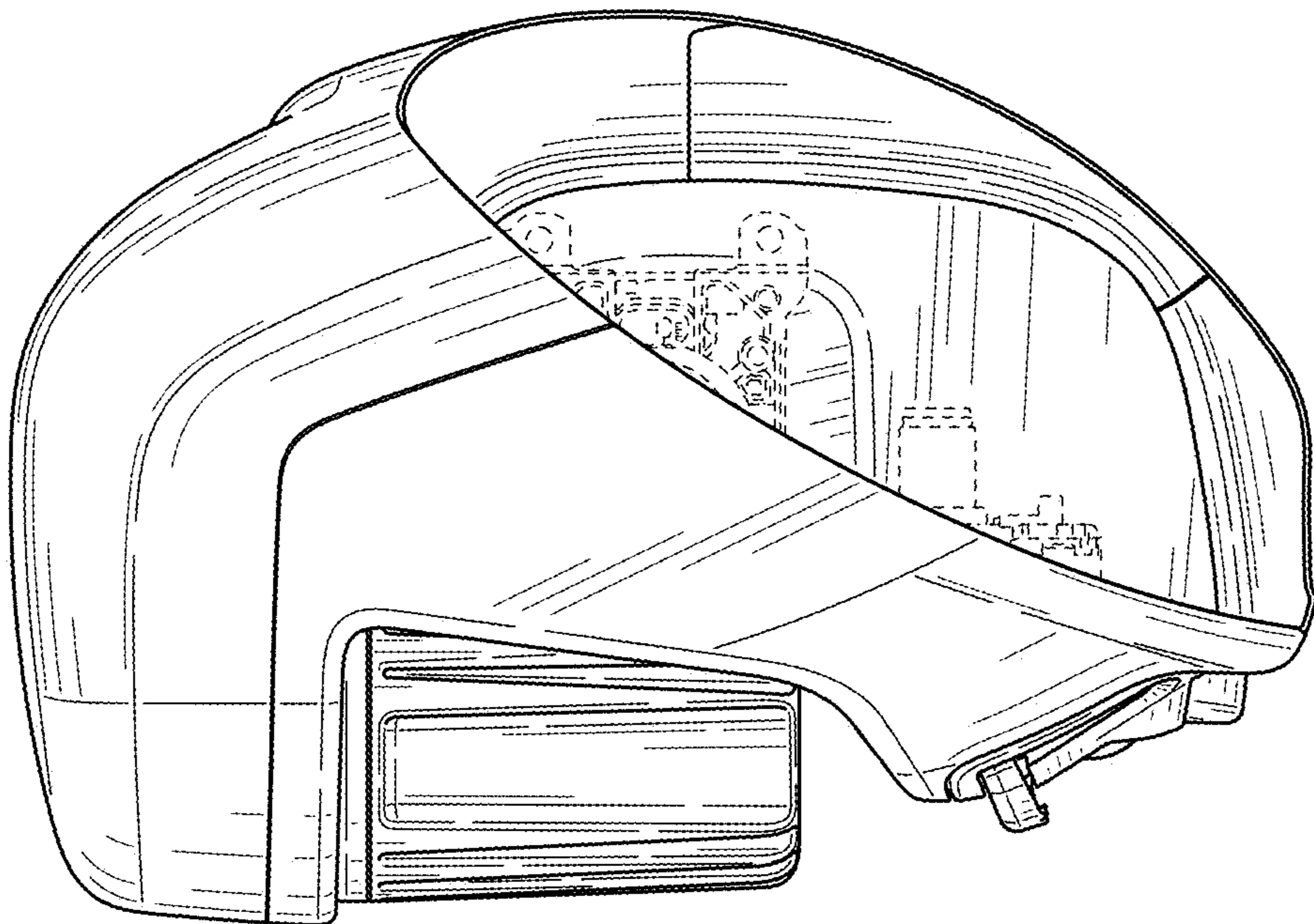


FIG. 39

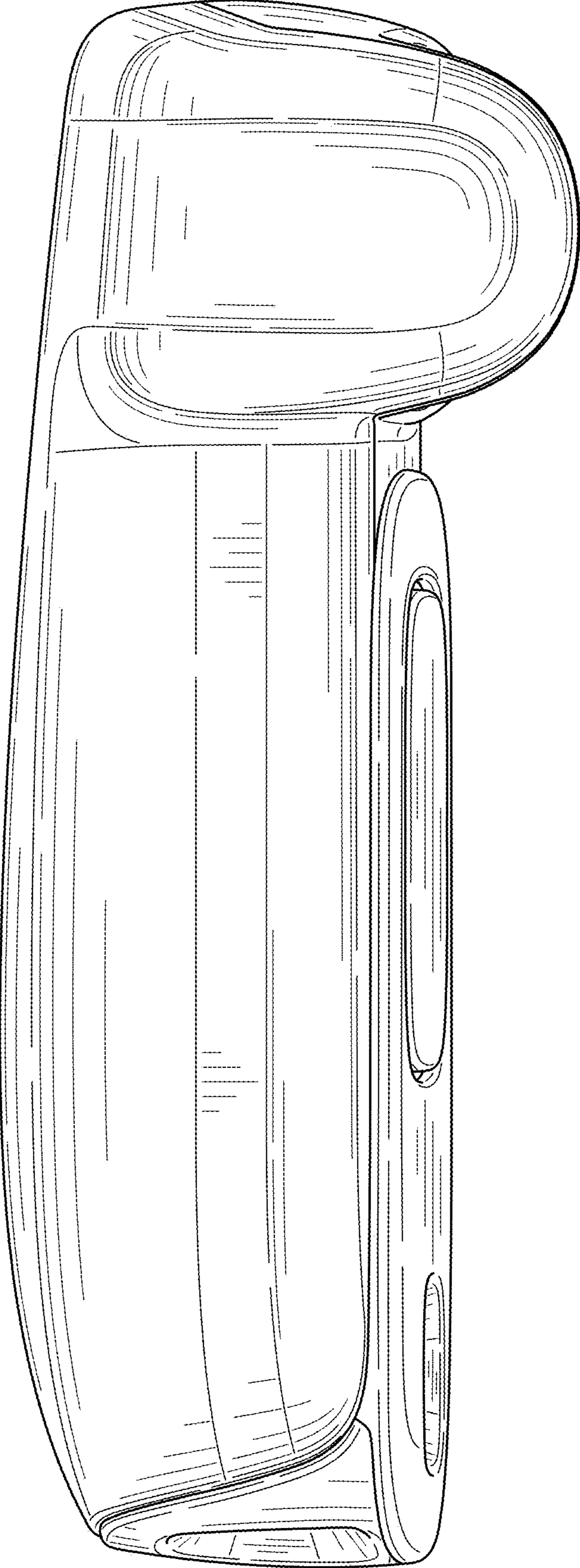


FIG. 41

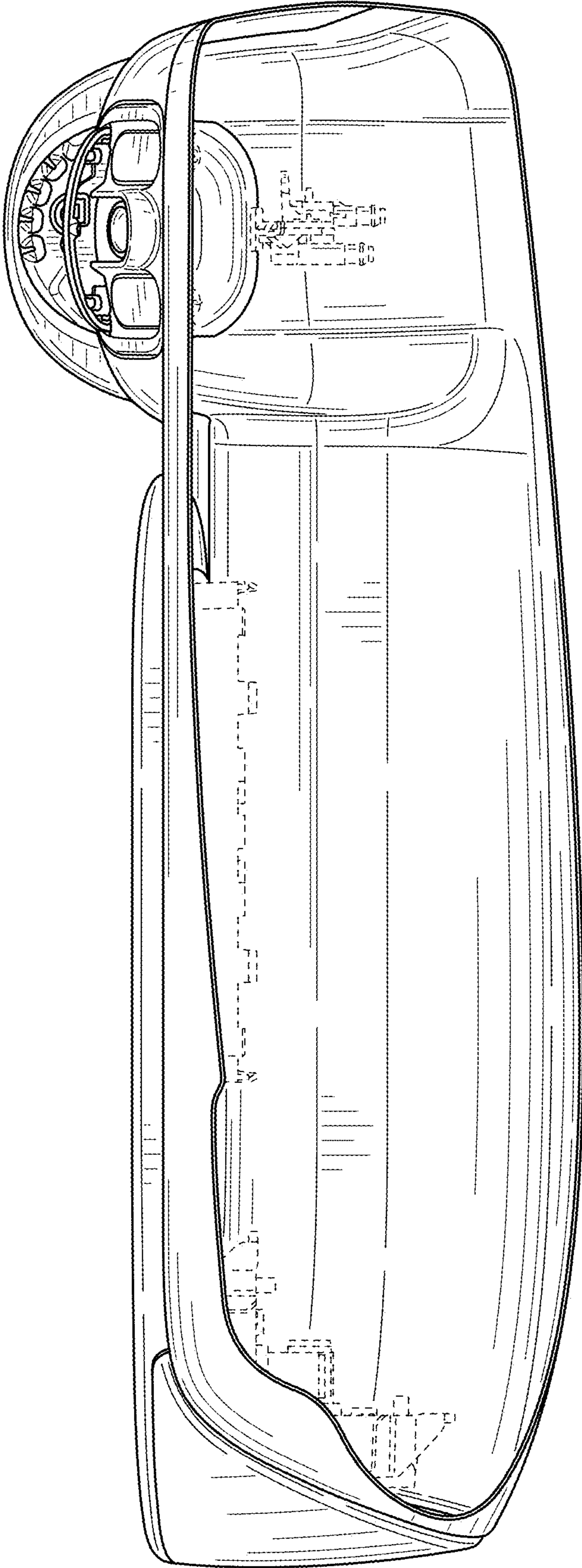


FIG. 42

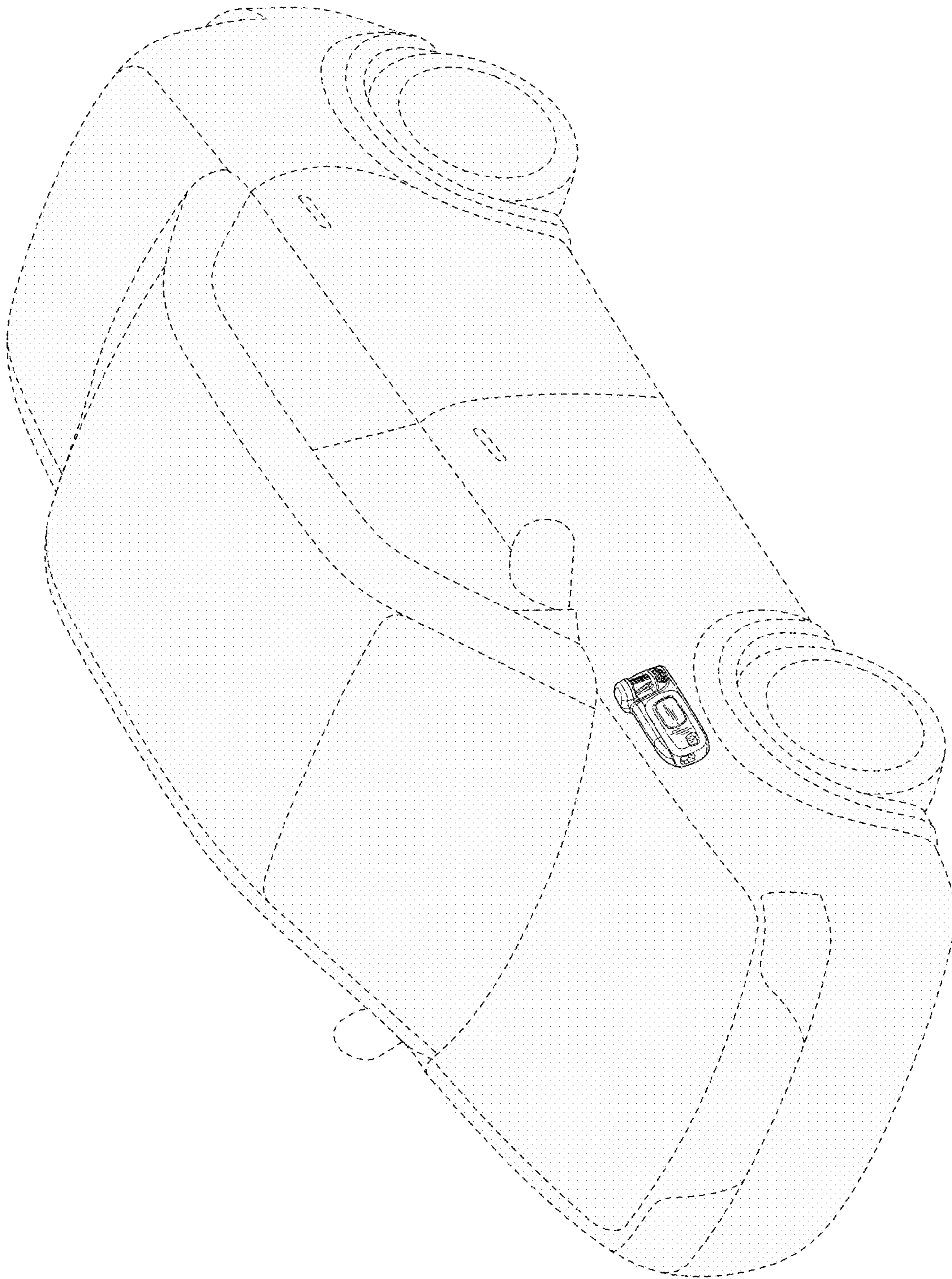


FIG. 43

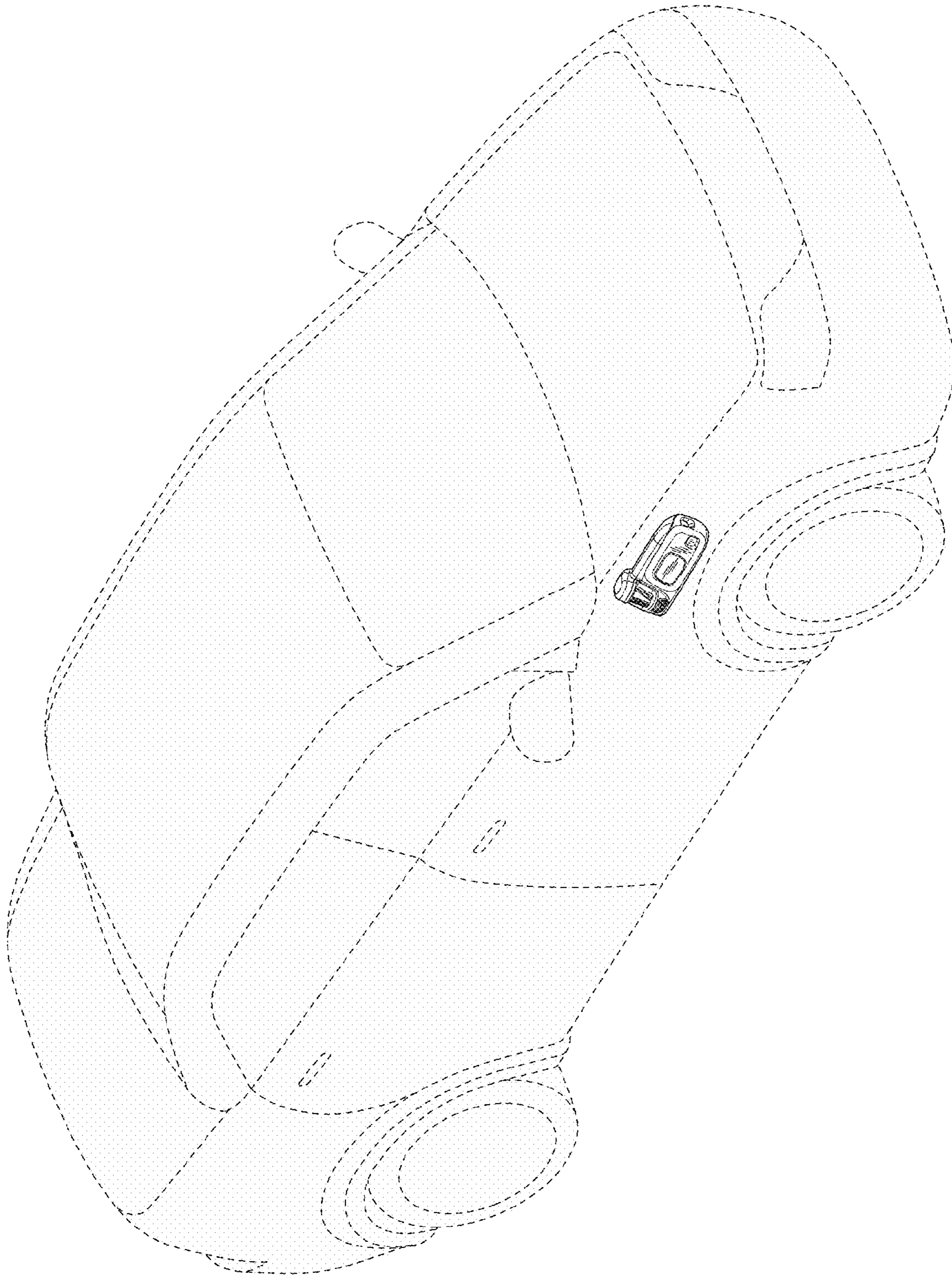


FIG. 44