



US00D558670S

(12) **United States Design Patent** (10) **Patent No.:** **US D558,670 S**
Ritterling et al. (45) **Date of Patent:** **** Jan. 1, 2008**

(54) **BATTERY**

4,893,067 A 1/1990 Bhagwat et al.

(75) Inventors: **Douglas K. Ritterling**, Anderson, SC (US); **Taku Ohi**, Greer, SC (US); **Kenneth M. Brazell**, Piedmont, SC (US); **Scott D. Bublitz**, Hartland, WI (US); **Michael W. Phillips**, Milwaukee, WI (US); **Thomas J. Edwards**, Lisbon, WI (US); **Michael L. Welliver**, Milwaukee, WI (US); **Todd M. Gehring**, Hartland, WI (US)

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2231260 A1 6/1999

(Continued)

OTHER PUBLICATIONS

Juzkow, Marc, "Development of a BB-2590/U rechargeable lithium-ion battery," Journal of Power Sources, vol. 80 (1999), p. 286-92, Elsevier Science S.A., 1999.

(Continued)

(73) Assignee: **Milwaukee Electric Tool Corporation**, Brookfield, WI (US)

(**) Term: **14 Years**

Primary Examiner—Cathron C. Brooks

Assistant Examiner—Rosemary K. Tarcza

(21) Appl. No.: **29/251,531**

(74) *Attorney, Agent, or Firm*—Michael Best & Friedrich LLP

(22) Filed: **Jan. 9, 2006**

(51) **LOC (8) Cl.** **13-02**

(52) **U.S. Cl.** **D13/119; D13/103**

(58) **Field of Classification Search** D13/102–106, D13/110, 118–121, 182, 184; 429/1, 7, 46, 429/96–100, 163–164, 176; 361/824
 See application file for complete search history.

(57) **CLAIM**

We claim the ornamental design for a battery, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a battery.

FIG. 2 is a rear perspective view of the battery shown in FIG. 1.

FIG. 3 is a front view of the battery shown in FIG. 1.

FIG. 4 is a left side view of the battery shown in FIG. 1.

FIG. 5 is a right side view of the battery shown in FIG. 1; and,

FIG. 6 is a top view of the battery shown in FIG. 1.

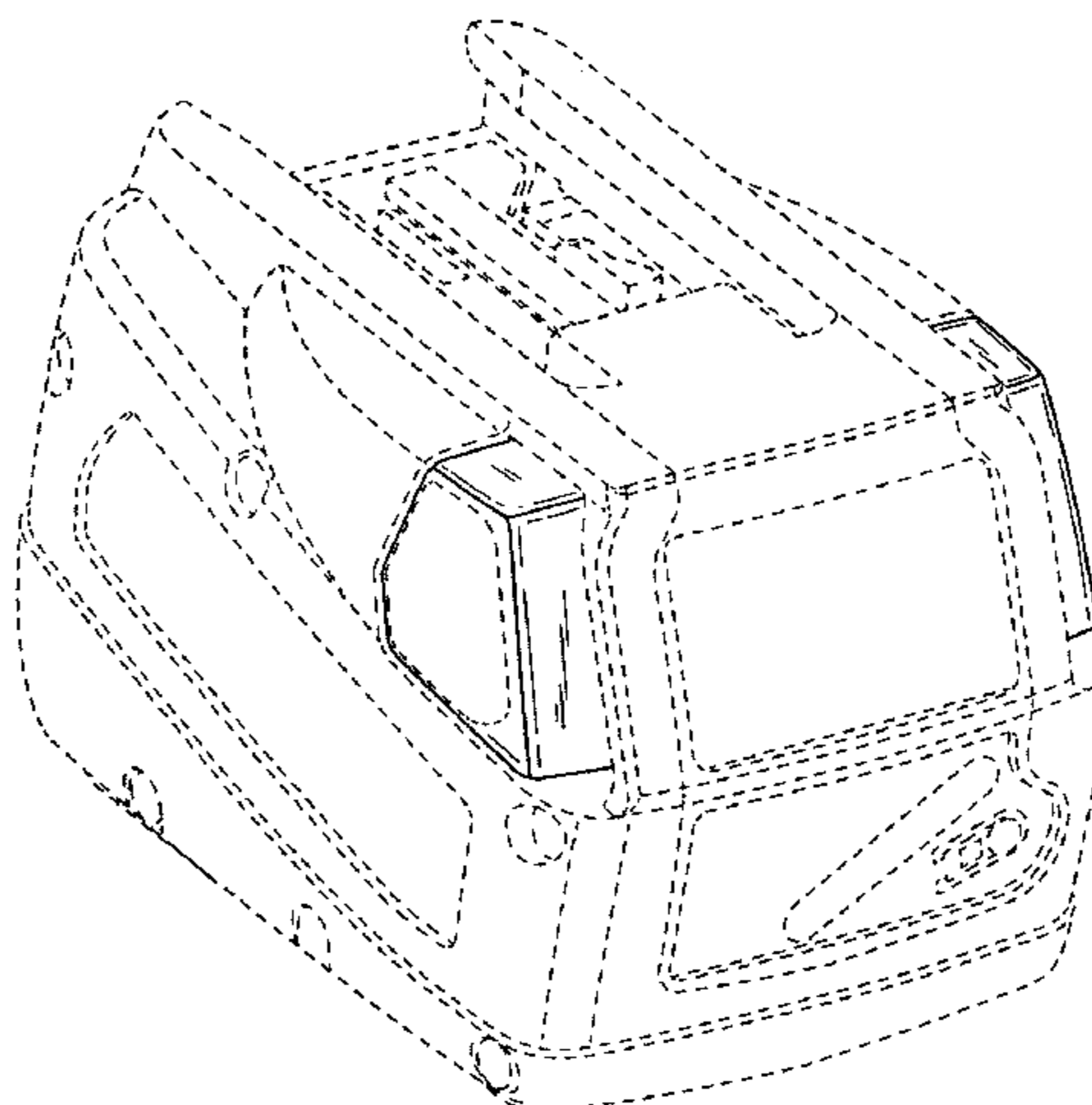
The present application is directed to the shape and contour of the design illustrated in the drawings. The broken lines showing of the environment are for illustrative purposes only and form no part of the claimed design. The broken lines which define the boundaries of the claimed design form no part thereof.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,656,199 A	1/1928	Hodgson
3,852,652 A	12/1974	Jasinski
3,906,369 A	9/1975	Pitman et al.
D260,886 S	9/1981	Taylor
4,342,953 A	8/1982	Collins
D266,501 S	10/1982	Stefanik
D278,142 S	3/1985	Chan
D278,426 S	4/1985	Lanci et al.
D285,554 S	9/1986	Beaumont et al.
D295,529 S	5/1988	Masaki et al.
D296,529 S	7/1988	Larson et al.
D301,135 S	5/1989	Schappler
D301,331 S	5/1989	Rhodin
4,829,226 A	5/1989	Nakamura et al.
4,845,650 A	7/1989	Meade et al.

1 Claim, 5 Drawing Sheets



US D558,670 S

U.S. PATENT DOCUMENTS

4,973,896	A	11/1990	Shiga et al.
D313,391	S	1/1991	Pudwill
D321,338	S	11/1991	Sakamoto et al.
D322,060	S	12/1991	Iino
D323,809	S *	2/1992	Ross, Jr. D13/103
5,144,217	A	9/1992	Gardner et al.
5,179,337	A	1/1993	Staarman et al.
5,200,686	A	4/1993	Lee
5,206,097	A	4/1993	Burns et al.
5,213,913	A	5/1993	Anthony, III et al.
5,268,630	A	12/1993	Bhagwat et al.
5,280,229	A	1/1994	Faude et al.
5,298,821	A	3/1994	Michel
5,350,993	A	9/1994	Toya et al.
5,355,073	A	10/1994	Nguyen
5,371,453	A	12/1994	Fernandez
5,391,972	A	2/1995	Gardner et al.
5,406,187	A	4/1995	Harrison
5,438,248	A	8/1995	Hyuck
5,547,775	A	8/1996	Eguchi et al.
D374,860	S	10/1996	Amero, Jr. et al.
5,567,542	A	10/1996	Bae
5,592,064	A	1/1997	Morita
5,598,085	A	1/1997	Hasler
5,606,242	A	2/1997	Hull et al.
D382,535	S	8/1997	Chiang
5,684,387	A	11/1997	Patino
5,686,808	A	11/1997	Lutz
5,691,620	A	11/1997	Nagai et al.
5,691,623	A	11/1997	Tsantilis
D387,728	S	12/1997	Kawakami et al.
D388,792	S	1/1998	Nykerk
5,710,504	A	1/1998	Pascual et al.
5,744,937	A	4/1998	Cheon
5,757,163	A	5/1998	Brotto et al.
D396,686	S	8/1998	Bay et al.
5,789,900	A	8/1998	Hasegawa et al.
D398,900	S	9/1998	Roman
D401,216	S	11/1998	Person et al.
5,835,351	A	11/1998	Ulanski et al.
5,894,212	A	4/1999	Balogh
5,902,080	A	5/1999	Kopras
5,903,423	A	5/1999	Okano et al.
5,909,101	A	6/1999	Matsumoto et al.
5,912,546	A	6/1999	Sakou et al.
D412,485	S	8/1999	Kato et al.
5,986,430	A	11/1999	Fernandez et al.
D417,648	S	12/1999	Clowers et al.
5,998,966	A	12/1999	Gaza
6,002,237	A	12/1999	Gaza
6,040,683	A	3/2000	Mottier
6,066,938	A	5/2000	Hyodo et al.
6,075,341	A	6/2000	White et al.
6,084,523	A	7/2000	Gelnovatch et al.
D431,230	S	9/2000	Began
6,114,831	A	9/2000	Attimont et al.
6,124,698	A	9/2000	Sakakibara
D432,986	S	10/2000	Krumenacker et al.
D436,343	S	1/2001	Harrington et al.
D436,917	S	1/2001	Hayakawa et al.
6,175,211	B1	1/2001	Brotto
6,175,213	B1	1/2001	Centa et al.
6,181,102	B1	1/2001	Andrews et al.
6,191,554	B1	2/2001	Nakane et al.
6,196,874	B1	3/2001	Wu
6,204,640	B1	3/2001	Sakakibara
D440,936	S	4/2001	Burns
6,215,275	B1	4/2001	Bean
6,218,806	B1	4/2001	Brotto et al.
6,229,280	B1	5/2001	Sakoh et al.
D443,274	S	6/2001	Loughnane et al.

6,275,004	B1	8/2001	Tamai et al.
D448,724	S	10/2001	Hsiao
D450,338	S	11/2001	Hamamura
6,326,101	B1	12/2001	White et al.
6,329,788	B1	12/2001	Bailey, Jr. et al.
6,331,761	B1	12/2001	Kumar et al.
6,337,557	B1	1/2002	Kates et al.
D456,002	S	4/2002	Kato et al.
D458,932	S	6/2002	Huang
D460,413	S	7/2002	Zurwelle et al.
6,433,510	B1	8/2002	Ribellino et al.
6,452,362	B1	9/2002	Choo
D467,867	S	12/2002	Hsiao
6,500,581	B2	12/2002	White et al.
6,508,313	B1	1/2003	Carney et al.
6,509,114	B1	1/2003	Nakai et al.
6,525,511	B2	2/2003	Kubale et al.
6,537,694	B1	3/2003	Sugiura et al.
6,621,246	B2	9/2003	Kubale et al.
D483,012	S *	12/2003	Hsu D13/103
D484,850	S	1/2004	Johnson
D487,426	S	3/2004	Johnson
D494,130	S	8/2004	Johnson et al.
D501,823	S	2/2005	Johnson et al.
6,924,620	B2	8/2005	Santana, Jr.
6,965,214	B2	11/2005	Kubale et al.
D513,730	S	1/2006	Johnson
D514,060	S *	1/2006	Wong et al. D13/103
D516,020	S *	2/2006	Wong et al. D13/103
D516,504	S	3/2006	Okuda et al.
D521,447	S	5/2006	Ono et al.
2001/0001533	A1	5/2001	Andersen et al.
2002/0125860	A1	9/2002	Schworm et al.
2002/0157516	A1	10/2002	Judge
2003/0096158	A1	5/2003	Takano et al.
2004/0081882	A1	4/2004	Ontl
2004/0106036	A1	6/2004	Geis et al.

FOREIGN PATENT DOCUMENTS

DE	3637669	A1	5/1988
DE	19617805	A1	11/1996
DE	10153083	A1	5/2003
EP	0265144	A2	4/1988
EP	0419806	A2	4/1991
EP	0669692	A1	8/1995
EP	0767524	A2	4/1997
EP	1017149	A2	7/2000
EP	1039612	A2	9/2000
EP	1049187	A2	11/2000
EP	1191616	A1	3/2002
EP	1266725	A1	12/2002
GB	2289581	A	11/1995
GB	2293060	A	3/1996
GB	2336955	A	3/1999
GB	2354891	A	4/2001
GB	2354892	A	4/2001
GB	2396755	A	6/2004
JP	8196042	A	7/1996
JP	2000102185	A	4/2000
JP	2001112182	A	4/2001
JP	2001143678	A	5/2001
JP	2001218376	A	8/2001
JP	2002008732	A	1/2002
JP	2002369400	A	12/2002
RO	116233	B1	11/2000
WO	9314548	A1	7/1993
WO	9621954	A1	7/1996
WO	9963613	A1	12/1999
WO	0049699	A1	8/2000
WO	0103231	A1	1/2001

OTHER PUBLICATIONS

- Kim, Heesook P., et al., "Development of High Power Lithium/Thionyl Chloride Reserve Battery," Proceedings of the Symposium on Batteries For Portable Applications and Electric Vehicles, The Electrochemical Society, vol. 97-18, p. 504-11, 1997.
- Sack, Thomas T., J. Croydon Tice, and Ran Reynolds, "Segmented Battery Charger for High Energy 28V Lithium Ion Battery," IEEE AESS Systems Magazine, vol. 16, Sep. 2001, p. 15-18, IEEE, 2001.
- Smart, M.C., et al., "Performance Characteristics of Yardney Lithium-Ion Cells for the Mars 2001 Lander Application," AIAA-2000-2914, vol. 1, p. 629-37, Society of Automotive Engineers, Inc., 2000.
- Smart, M.C., et al., "Lithium-Ion Cell Technology Demonstration for Future NASA Applications," 37th Intersociety Energy Conversion Engineering Conference, Smart-IECEC Paper 2002-20134, p. 297-304, IEEE, 2002.
- Stassen, I., and G. Hambitzer, "Metallic lithium batteries for high power applications," Journal of Power Sources, vol. 105 (2002), p. 145-50, Elsevier Science B.V., 2002.
- Dantona Industries, Inc. list of tool batteries entitled "New Power Tool Programs from Dantona", dated Sep. 2001.
- Article entitled "Makita Launches Nickel Metal Hydride", http://www.makita.com/Press_Item_View.asp?id=32, visited Apr. 17, 2002.
- Article entitled "Makita's Nickel-Metal Hydride Batteries Reach a New Level", http://www.makita.com/Press_Item_View.asp?id=30, visited Apr. 17, 2002.
- Article entitled "1 Hour Charger", http://www.boschtools.com/Tools=and=Accessories/Accessories/acc_specifications.htm?item_no=BC001, visited Apr. 17, 2002.
- Article entitled "Professional Cordless Tools", http://www.panasonic.com/commercial_building/power_tools/press/pr8.html, visited Apr. 16, 2002.
- * cited by examiner

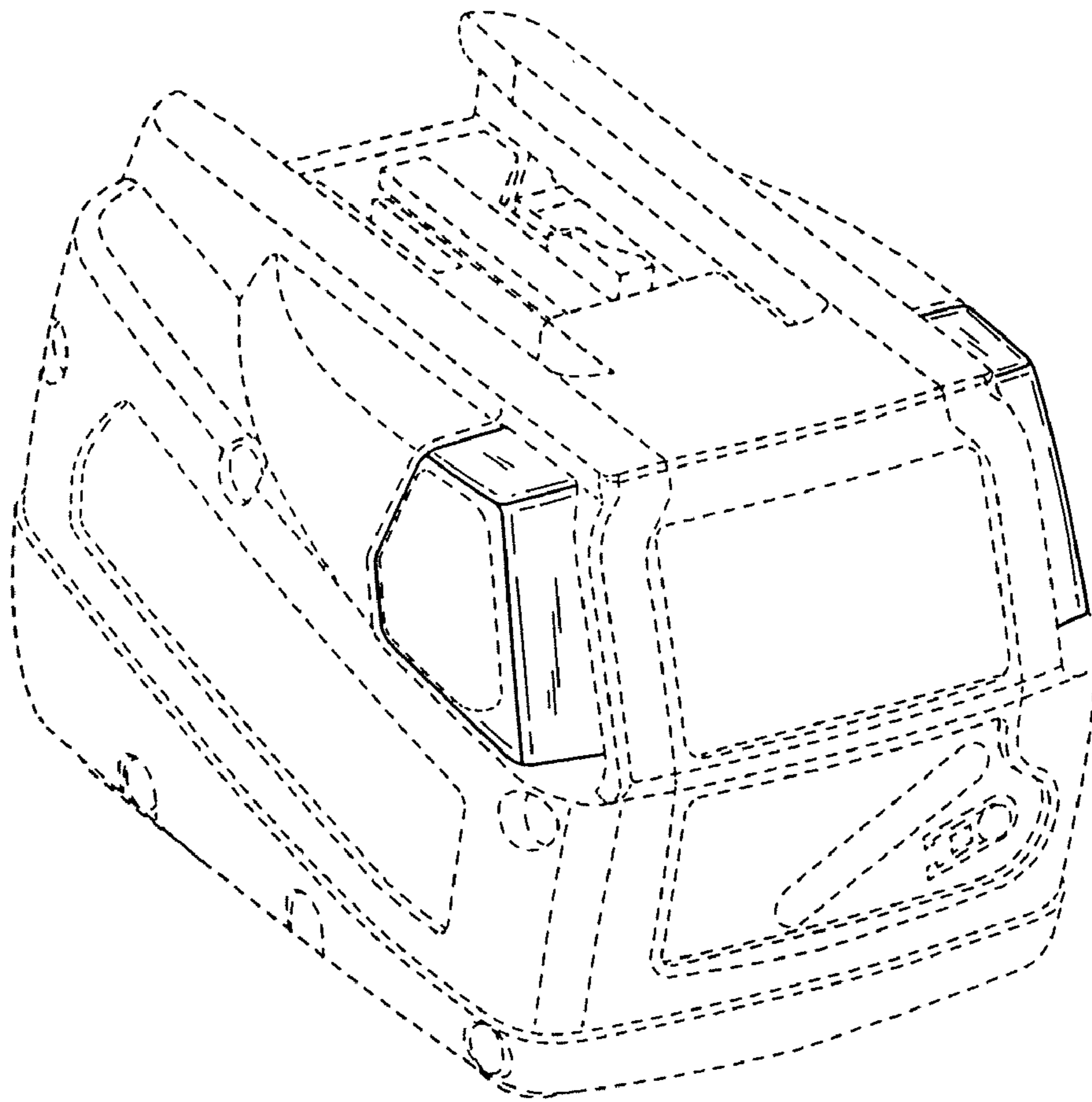


FIG. 1

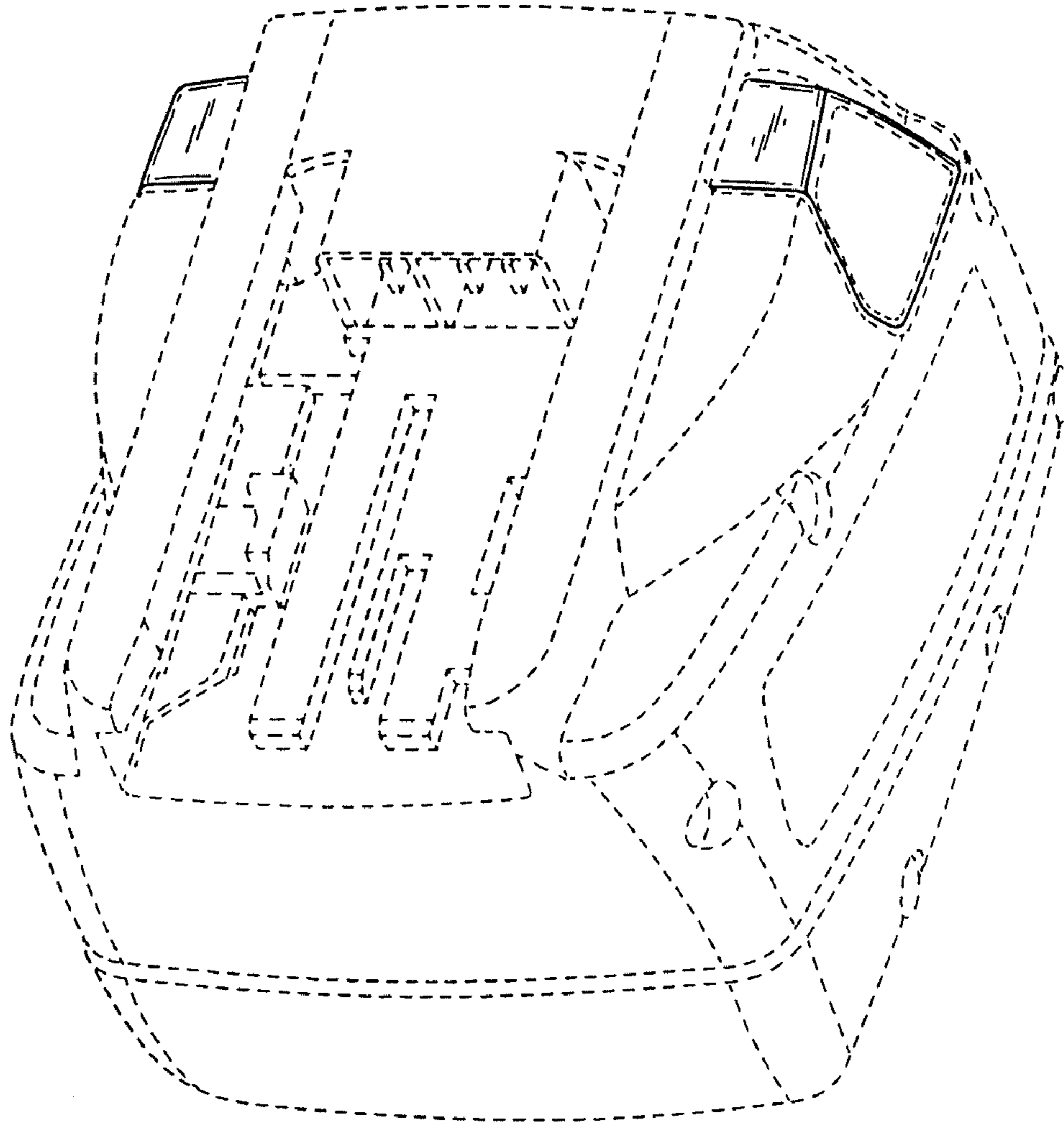


FIG. 2

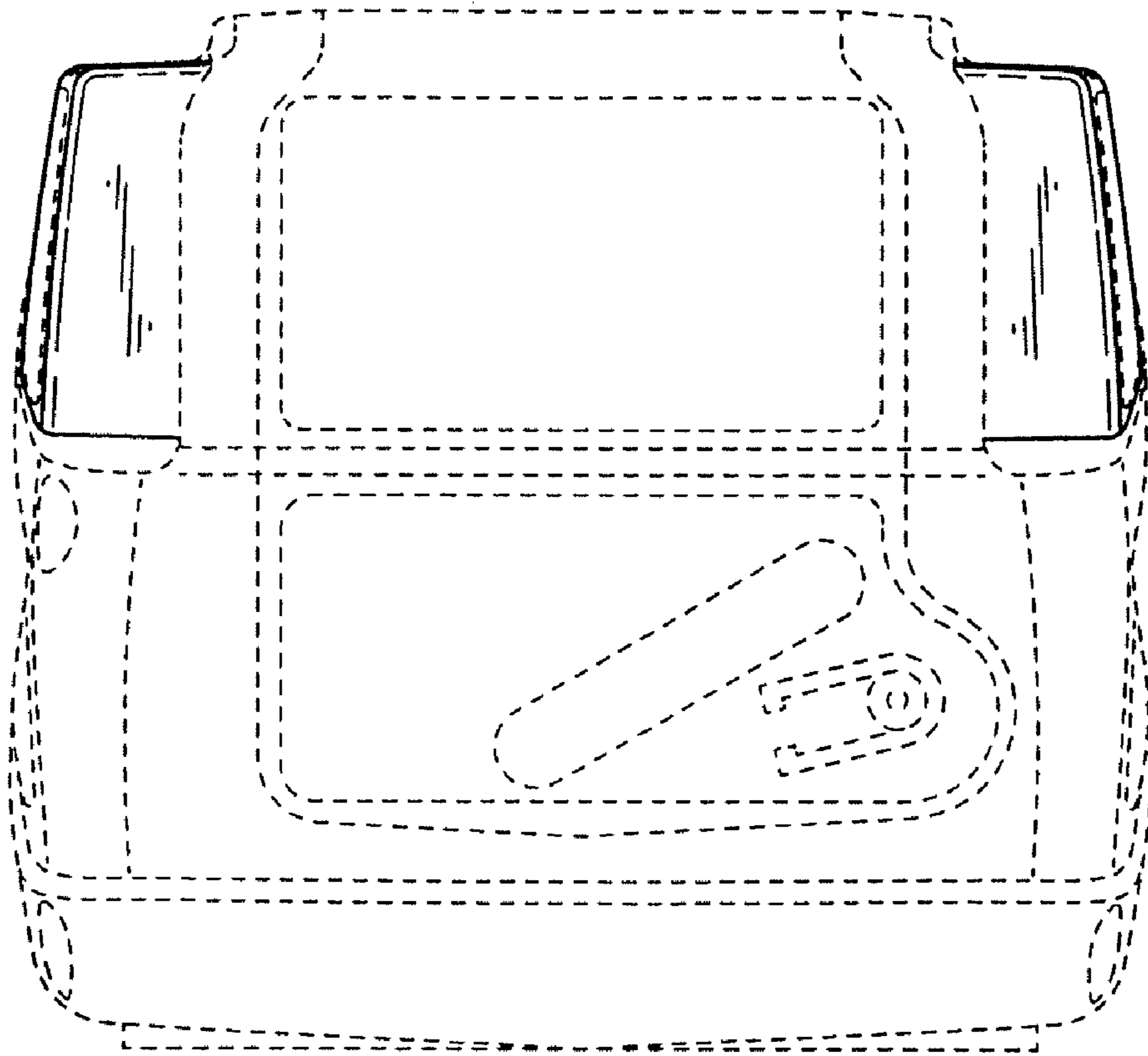


FIG. 3

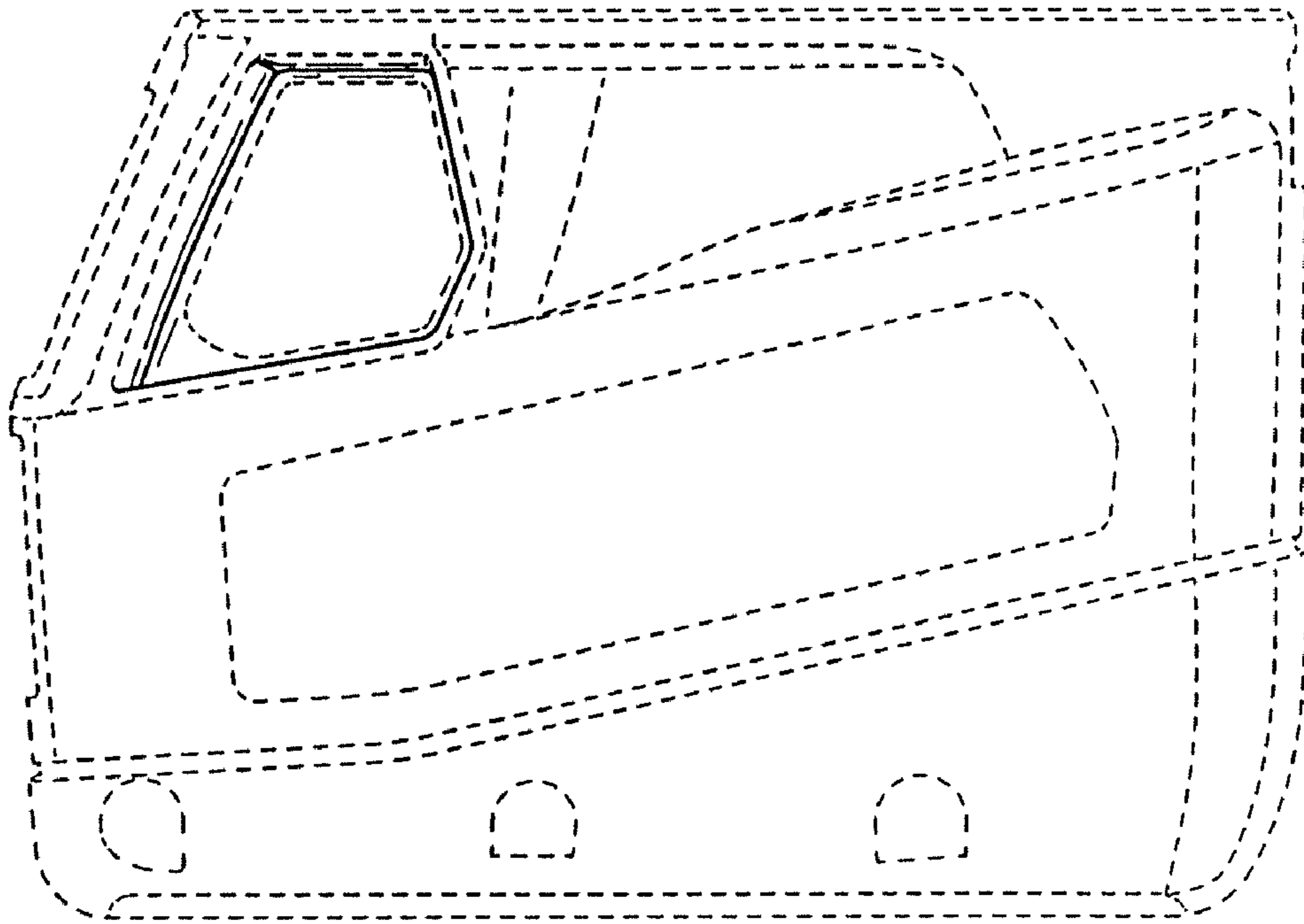


FIG. 4

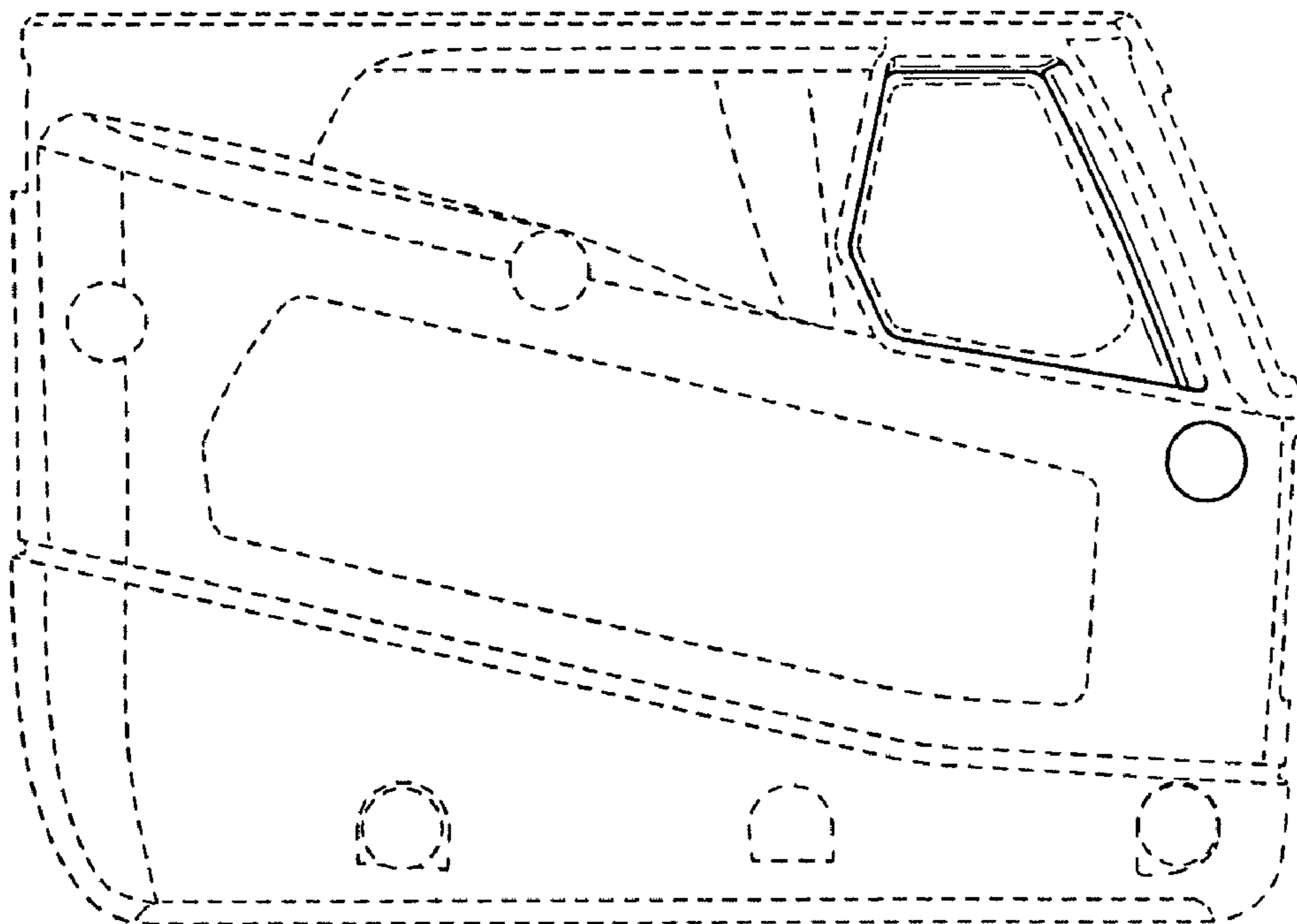


FIG. 5

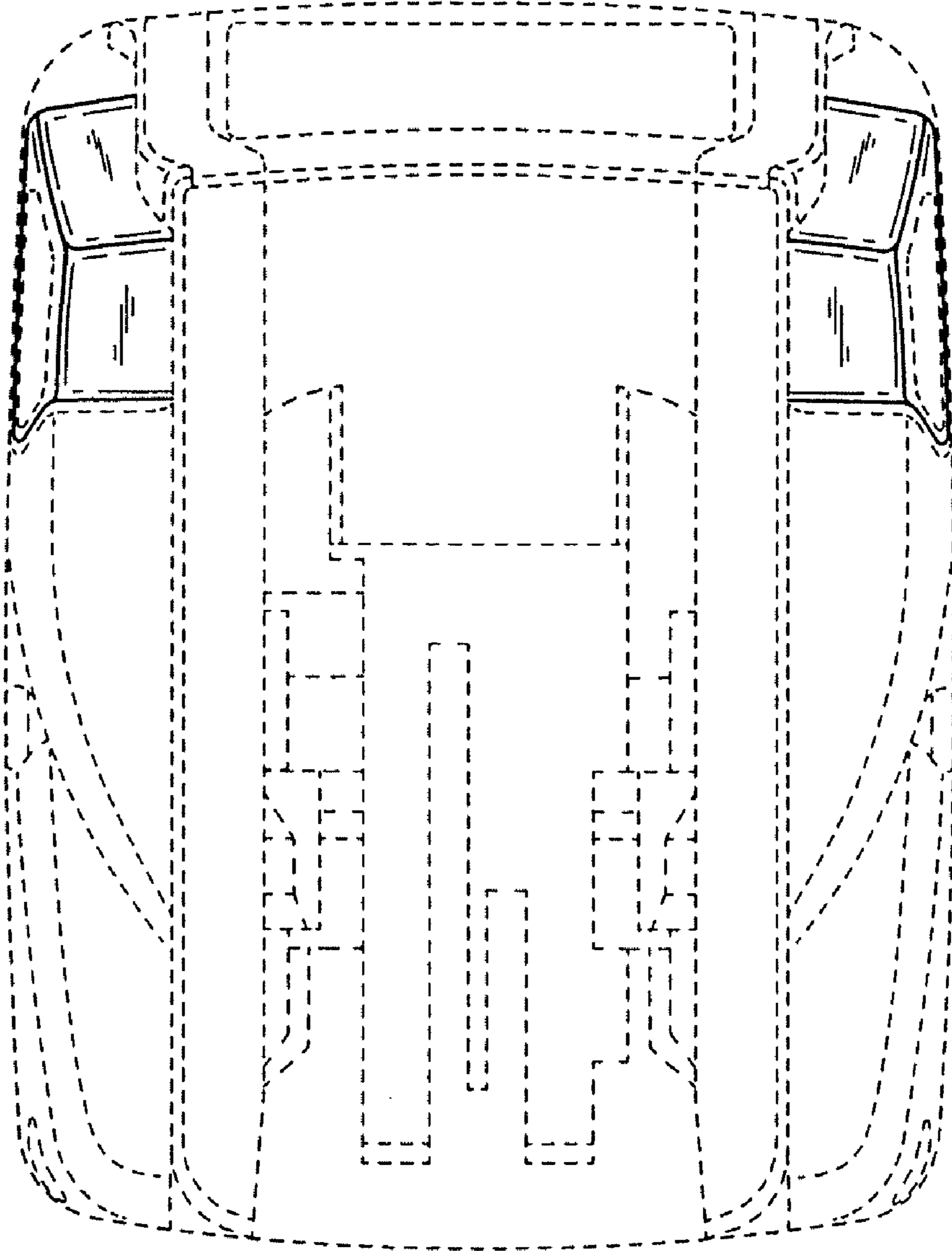


FIG. 6