



US00D902870S

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

(10) **Patent No.:** **US D902,870 S**

(45) **Date of Patent:** **** Nov. 24, 2020**

(54) **CONNECTOR**

DESCRIPTION

(71) Applicant: **Molex, LLC**, Lisle, IL (US)

(72) Inventors: **Ishwarappa Ganamukhi**, Bangalore (IN); **Pierre Perez**, Aurora, IL (US)

(73) Assignee: **Molex, LLC**, Lisle, IL (US)

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

(21) Appl. No.: **29/685,536**

(22) Filed: **Mar. 28, 2019**

(51) **LOC (12) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/149**

(58) **Field of Classification Search**

USPC D13/133, 146, 147, 153, 154, 184, 149

CPC H01R 13/02; H01R 13/436; H01R 13/502;

H01R 13/504; H01R 13/506; H01R

13/64; H01R 13/4362

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D308,513 S * 6/1990 Endo et al. D13/133

D367,466 S * 2/1996 Uchiyama D13/147

(Continued)

FOREIGN PATENT DOCUMENTS

WO D205298-019 * 3/2020

OTHER PUBLICATIONS

Connector System, Jun. 17, 2020, [online], [site visited Jul. 10, 2020], Available from Internet URL: https://www.molex.com/molex/products/part-detail/crimp_housings/0310671010 (Year: 2020).*

Primary Examiner — Karen E Kearney

Assistant Examiner — Michael Chong

(74) *Attorney, Agent, or Firm* — Banner & Witcoff, Ltd.

(57) **CLAIM**

The ornamental design for a connector, as shown and described.

FIG. 1 is a front right perspective view of a connector showing our new design;
FIG. 2 is a front left perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a left side view thereof;
FIG. 6 is a right side view thereof;
FIG. 7 is a top view thereof;
FIG. 8 is a bottom view thereof;
FIG. 9 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 1-8;
FIG. 10 is a front right perspective view thereof;
FIG. 11 is a front view thereof;
FIG. 12 is a rear view thereof;
FIG. 13 is a left side view thereof;
FIG. 14 is a right side view thereof;
FIG. 15 is a top view thereof;
FIG. 16 is a bottom view thereof;
FIG. 17 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 18 is a front left perspective view thereof;
FIG. 19 is a front view thereof;
FIG. 20 is a rear view thereof;
FIG. 21 is a left side view thereof;
FIG. 22 is a right side view thereof;
FIG. 23 is a top view thereof;
FIG. 24 is a bottom view thereof;
FIG. 25 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 17-24;
FIG. 26 is a front right perspective view thereof;
FIG. 27 is a front view thereof;
FIG. 28 is a rear view thereof;
FIG. 29 is a left side view thereof;
FIG. 30 is a right side view thereof;
FIG. 31 is a top view thereof;
FIG. 32 is a bottom view thereof;
FIG. 33 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 34 is a front left perspective view thereof;

(Continued)

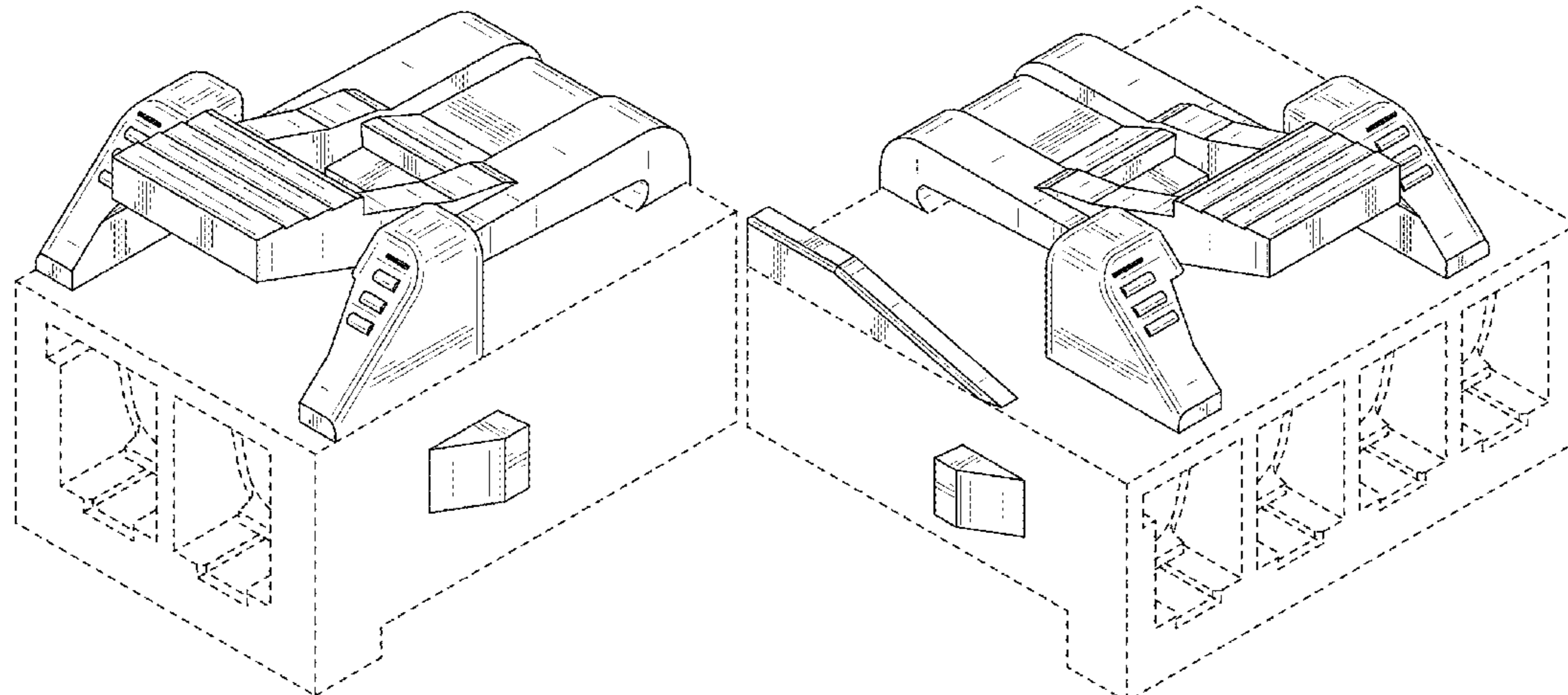


FIG. 35 is a front view thereof;
FIG. 36 is a rear view thereof;
FIG. 37 is a left side view thereof;
FIG. 38 is a right side view thereof;
FIG. 39 is a top view thereof;
FIG. 40 is a bottom view thereof;
FIG. 41 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 33-40;
FIG. 42 is a front right perspective view thereof;
FIG. 43 is a front view thereof;
FIG. 44 is a rear view thereof;
FIG. 45 is a left side view thereof;
FIG. 46 is a right side view thereof;
FIG. 47 is a top view thereof;
FIG. 48 is a bottom view thereof;
FIG. 49 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 50 is a front left perspective view thereof;
FIG. 51 is a front view thereof;
FIG. 52 is a rear view thereof;
FIG. 53 is a left side view thereof;
FIG. 54 is a right side view thereof;
FIG. 55 is a top view thereof;
FIG. 56 is a bottom view thereof;
FIG. 57 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 49-56;
FIG. 58 is a front right perspective view thereof;
FIG. 59 is a front view thereof;
FIG. 60 is a rear view thereof;
FIG. 61 is a left side view thereof;
FIG. 62 is a right side view thereof;
FIG. 63 is a top view thereof;
FIG. 64 is a bottom view thereof;
FIG. 65 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 66 is a front left perspective view thereof;
FIG. 67 is a front view thereof;
FIG. 68 is a rear view thereof;
FIG. 69 is a left side view thereof;
FIG. 70 is a right side view thereof;
FIG. 71 is a top view thereof;
FIG. 72 is a bottom view thereof;
FIG. 73 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 65-72;
FIG. 74 is a front right perspective view thereof;
FIG. 75 is a front view thereof;
FIG. 76 is a rear view thereof;
FIG. 77 is a left side view thereof;
FIG. 78 is a right side view thereof;
FIG. 79 is a top view thereof;
FIG. 80 is a bottom view thereof;
FIG. 81 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 82 is a front left perspective view thereof;
FIG. 83 is a front view thereof;
FIG. 84 is a rear view thereof;
FIG. 85 is a left side view thereof;
FIG. 86 is a right side view thereof;
FIG. 87 is a top view thereof;
FIG. 88 is a bottom view thereof;

FIG. 89 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 81-88;
FIG. 90 is a front right perspective view thereof;
FIG. 91 is a front view thereof;
FIG. 92 is a rear view thereof;
FIG. 93 is a left side view thereof;
FIG. 94 is a right side view thereof;
FIG. 95 is a top view thereof;
FIG. 96 is a bottom view thereof;
FIG. 97 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 98 is a front left perspective view thereof;
FIG. 99 is a front view thereof;
FIG. 100 is a rear view thereof;
FIG. 101 is a left side view thereof;
FIG. 102 is a right side view thereof;
FIG. 103 is a top view thereof;
FIG. 104 is a bottom view thereof;
FIG. 105 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 97-104;
FIG. 106 is a front right perspective view thereof;
FIG. 107 is a front view thereof;
FIG. 108 is a rear view thereof;
FIG. 109 is a left side view thereof;
FIG. 110 is a right side view thereof;
FIG. 111 is a top view thereof;
FIG. 112 is a bottom view thereof;
FIG. 113 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 114 is a front left perspective view thereof;
FIG. 115 is a front view thereof;
FIG. 116 is a rear view thereof;
FIG. 117 is a left side view thereof;
FIG. 118 is a right side view thereof;
FIG. 119 is a top view thereof;
FIG. 120 is a bottom view thereof;
FIG. 121 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 113-120;
FIG. 122 is a front right perspective view thereof;
FIG. 123 is a front view thereof;
FIG. 124 is a rear view thereof;
FIG. 125 is a left side view thereof;
FIG. 126 is a right side view thereof;
FIG. 127 is a top view thereof;
FIG. 128 is a bottom view thereof;
FIG. 129 is a front right perspective view of an alternate embodiment of the connector showing our new design;
FIG. 130 is a front left perspective view thereof;
FIG. 131 is a front view thereof;
FIG. 132 is a rear view thereof;
FIG. 133 is a left side view thereof;
FIG. 134 is a right side view thereof;
FIG. 135 is a top view thereof;
FIG. 136 is a bottom view thereof;
FIG. 137 is a front left perspective view of an alternate embodiment of the connector showing our new design which is a mirror image of the connector of FIGS. 129-136;
FIG. 138 is a front right perspective view thereof;
FIG. 139 is a front view thereof;
FIG. 140 is a rear view thereof;
FIG. 141 is a left side view thereof;

FIG. 142 is a right side view thereof;
 FIG. 143 is a top view thereof; and,
 FIG. 144 is a bottom view thereof.

The broken lines immediately adjacent to the shaded areas define the bounds of the claimed design and form no part thereof. The broken lines depicting the remainder of the connector show features that form no part of the claimed design.

1 Claim, 96 Drawing Sheets

(56)

References Cited

U.S. PATENT DOCUMENTS

D388,767 S * 6/1998 Akins D13/147
 D425,869 S * 5/2000 Yokomizo D13/147

D459,704 S * 7/2002 Chen D13/147
 D463,370 S * 9/2002 Chen D13/147
 D524,751 S * 7/2006 Lee D13/147
 D748,580 S * 2/2016 Endo D13/146
 D748,588 S * 2/2016 Endo D13/147
 D791,082 S 7/2017 Li et al.
 D791,705 S 7/2017 Li et al.
 D791,706 S * 7/2017 Li D13/147
 D791,707 S * 7/2017 Li D13/147
 D792,851 S * 7/2017 Li D13/147
 D792,852 S * 7/2017 Li D13/147
 D792,853 S * 7/2017 Li D13/147
 D802,538 S * 11/2017 Li D13/147
 D803,162 S * 11/2017 Li D13/147
 D840,938 S * 2/2019 Hsu D13/147

* cited by examiner

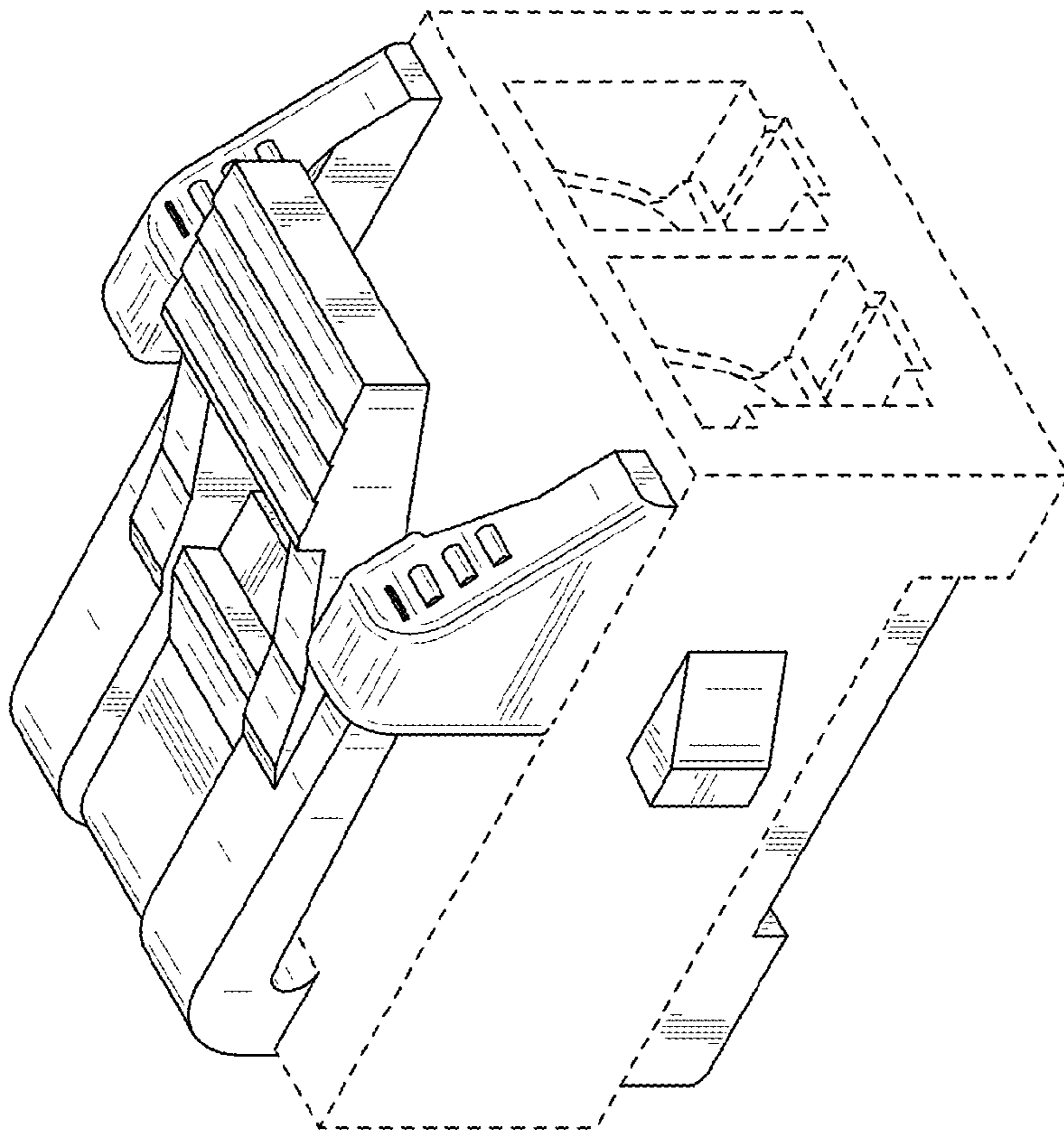


FIG. 2

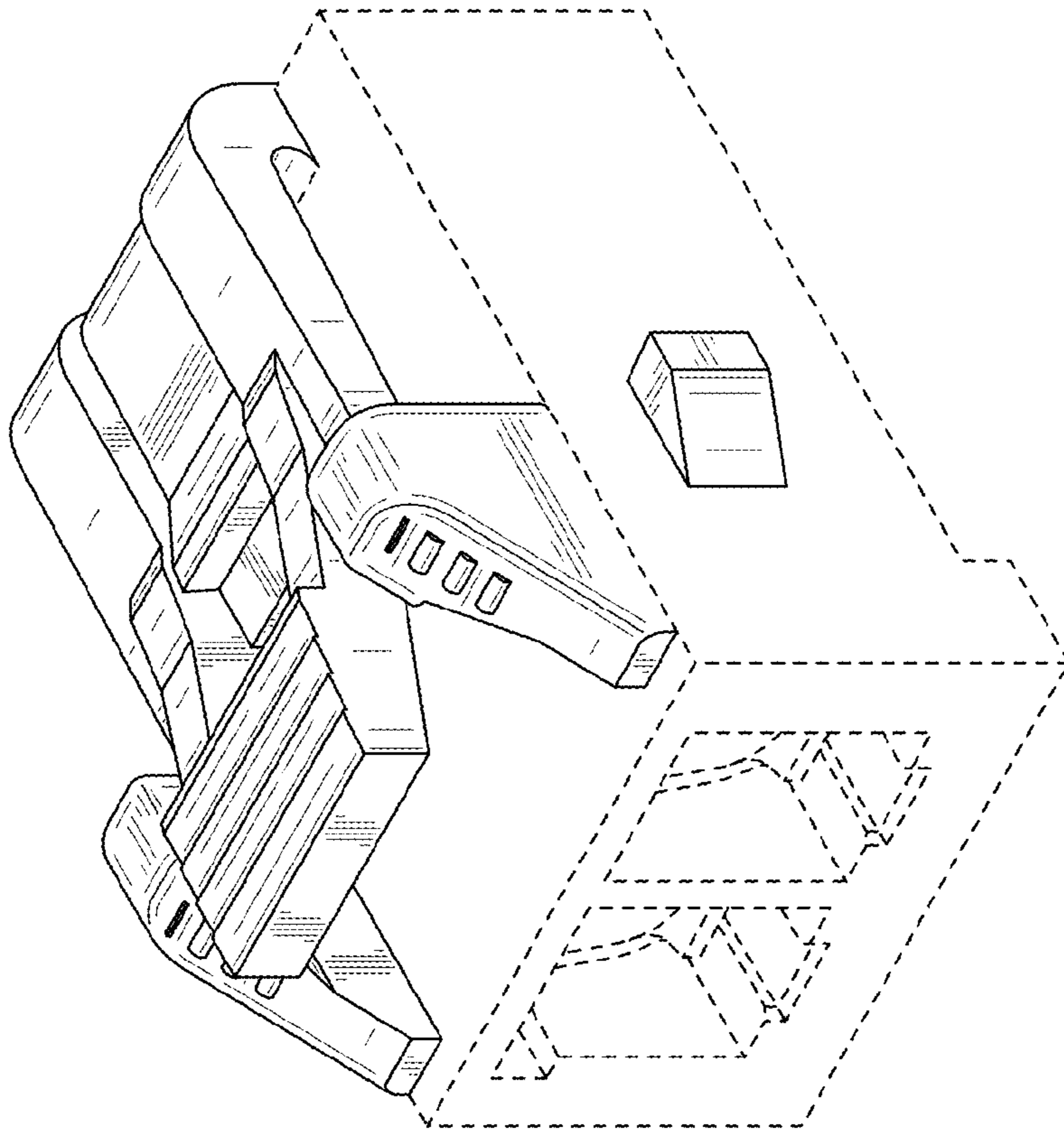


FIG. 1

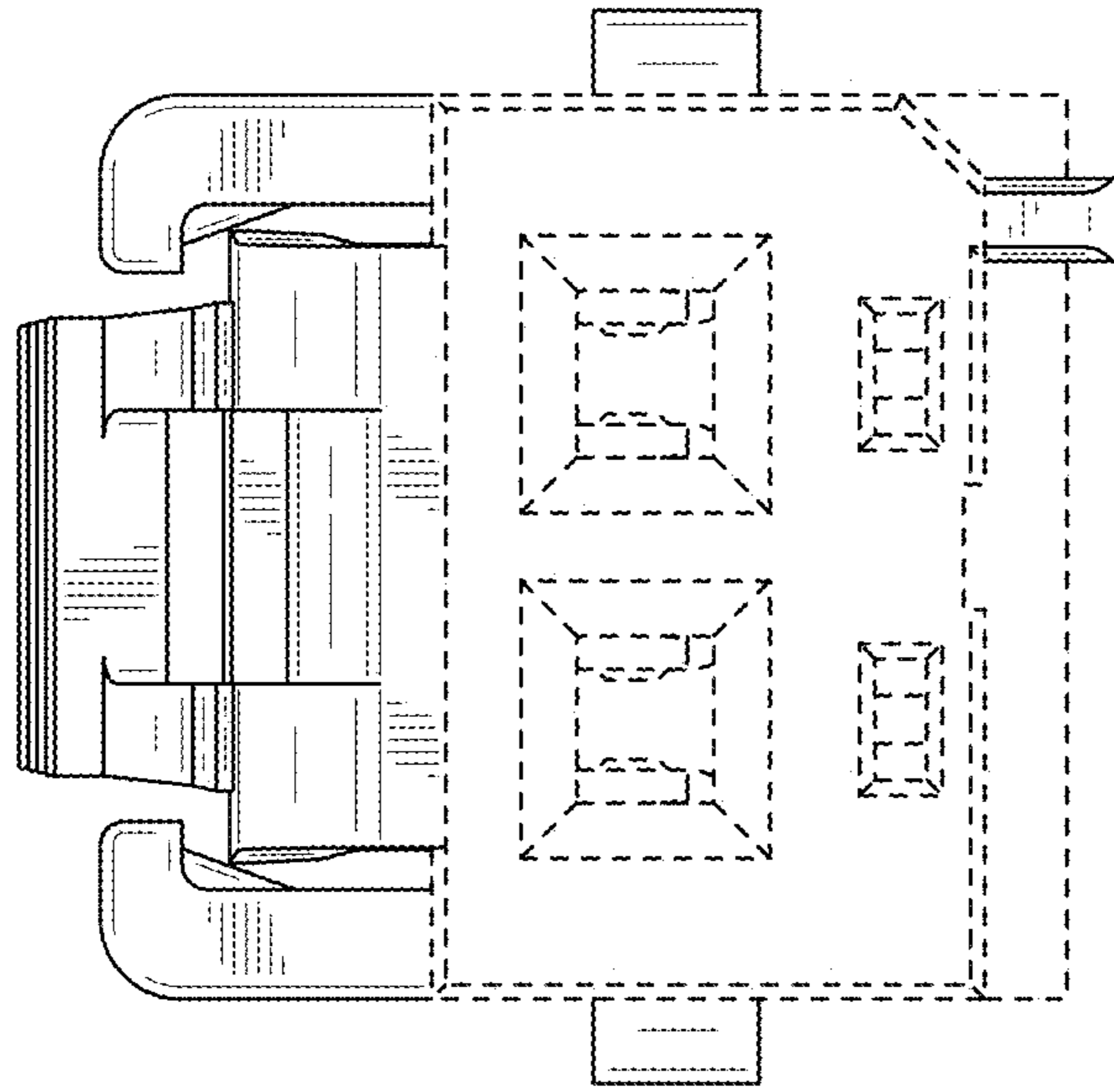


FIG. 3

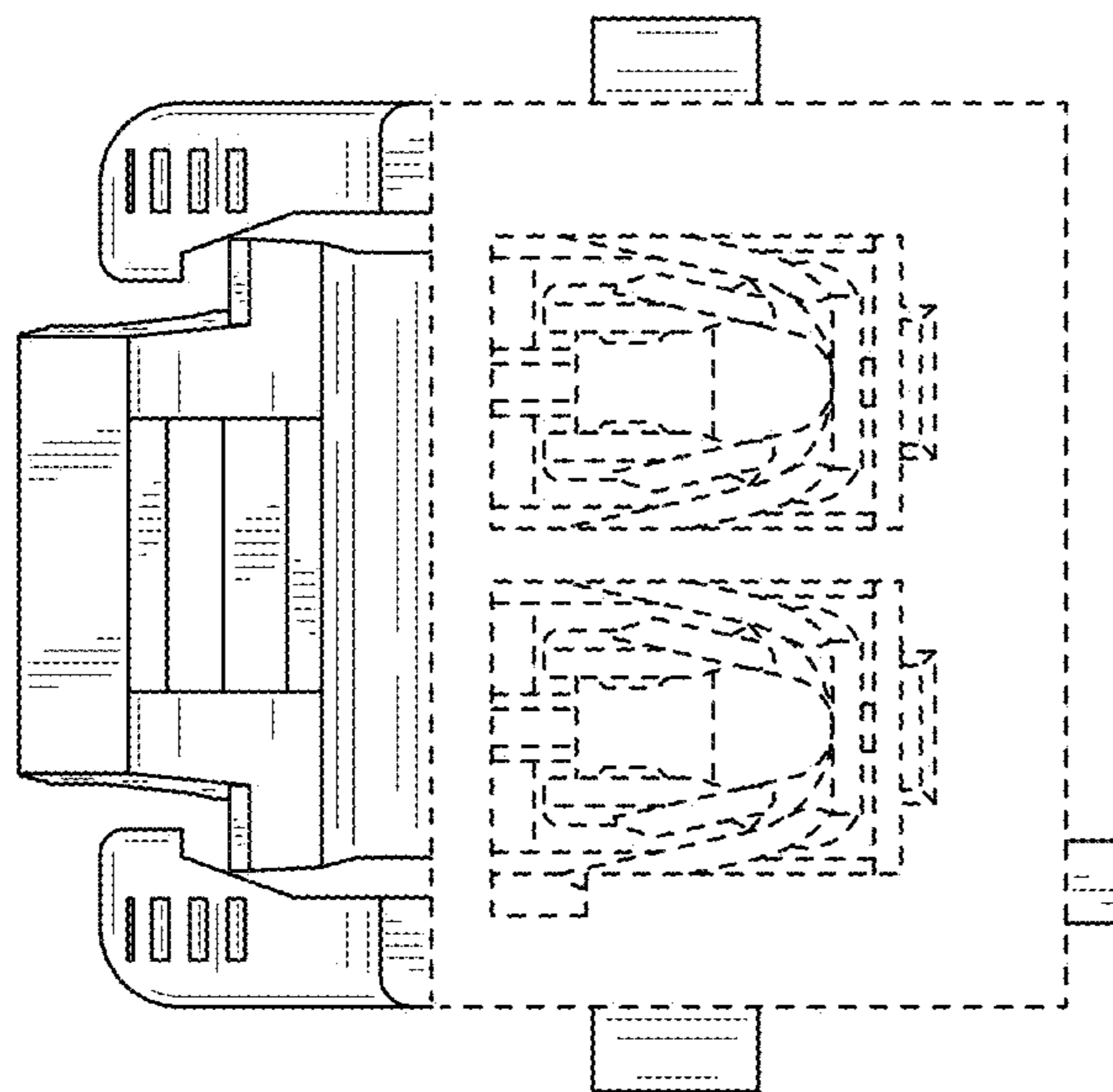


FIG. 4

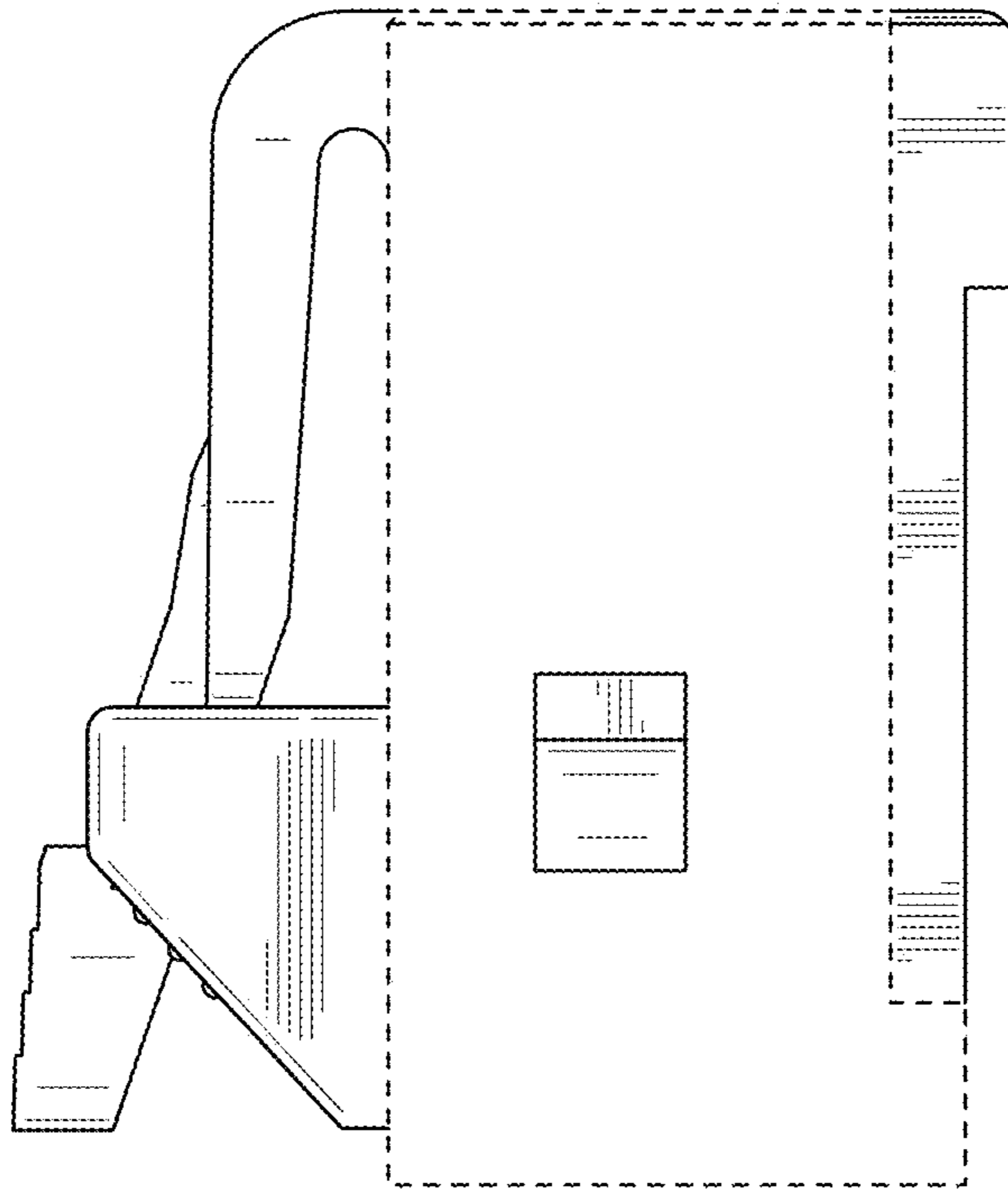


FIG. 5

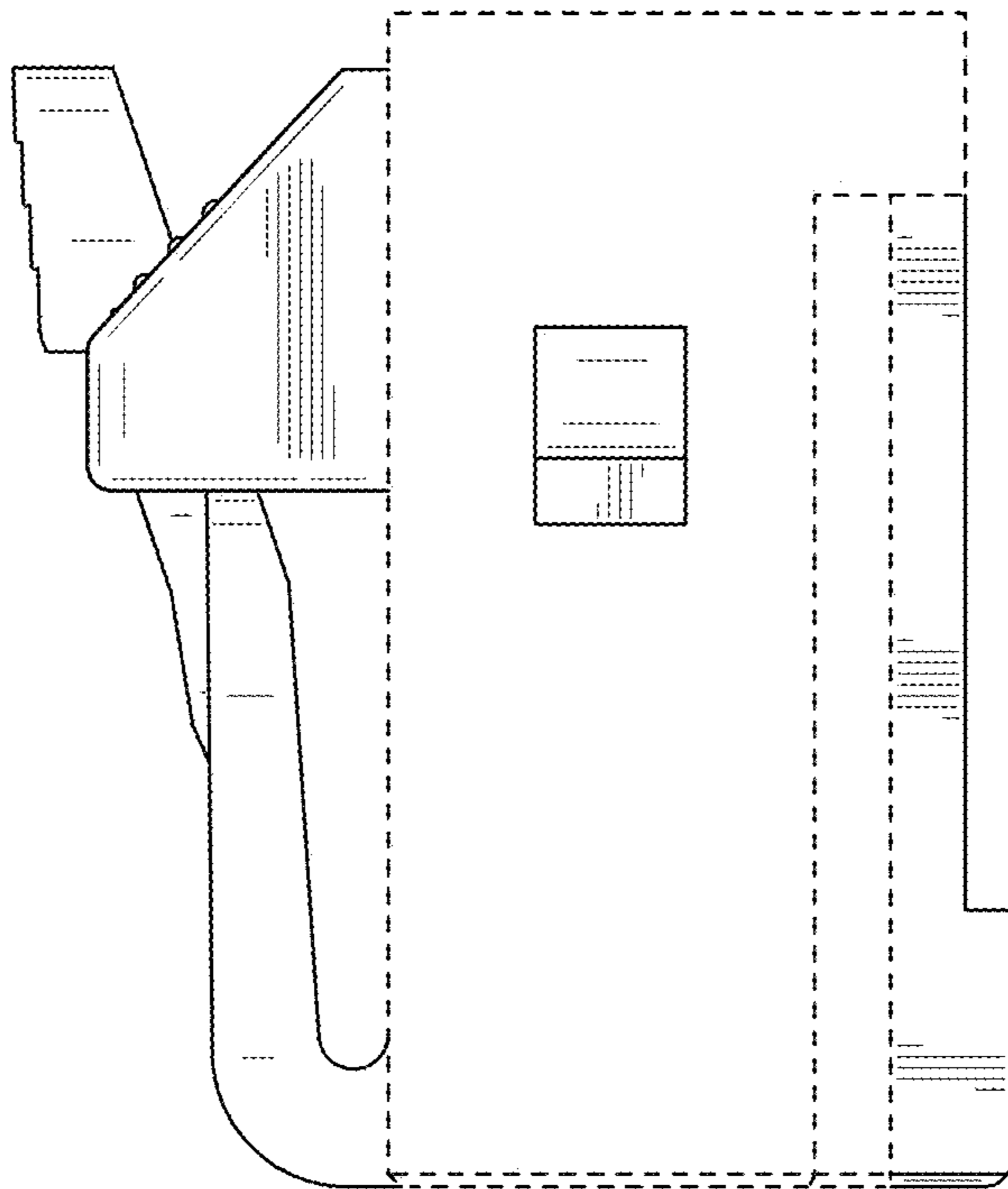


FIG. 6

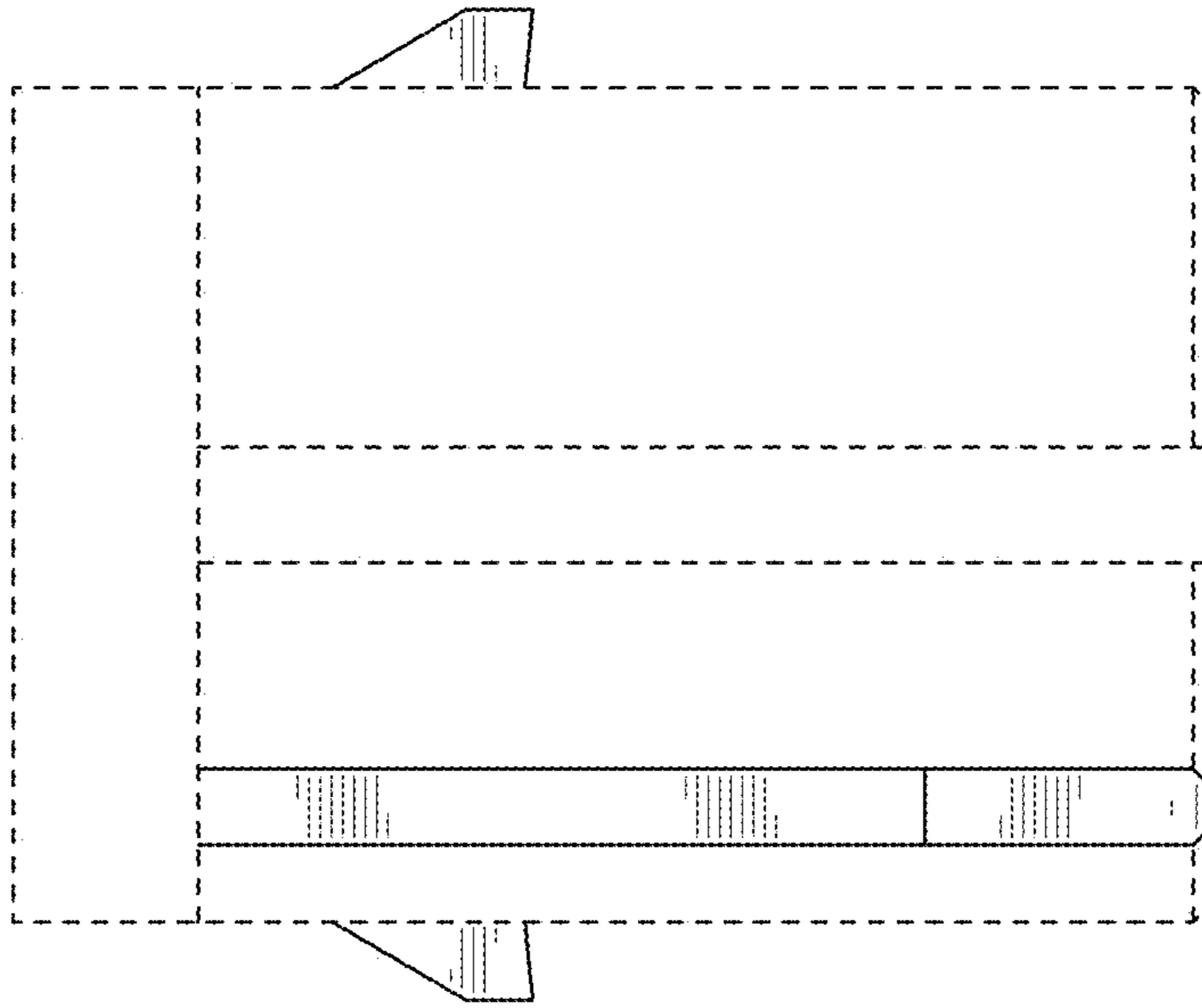


FIG. 8

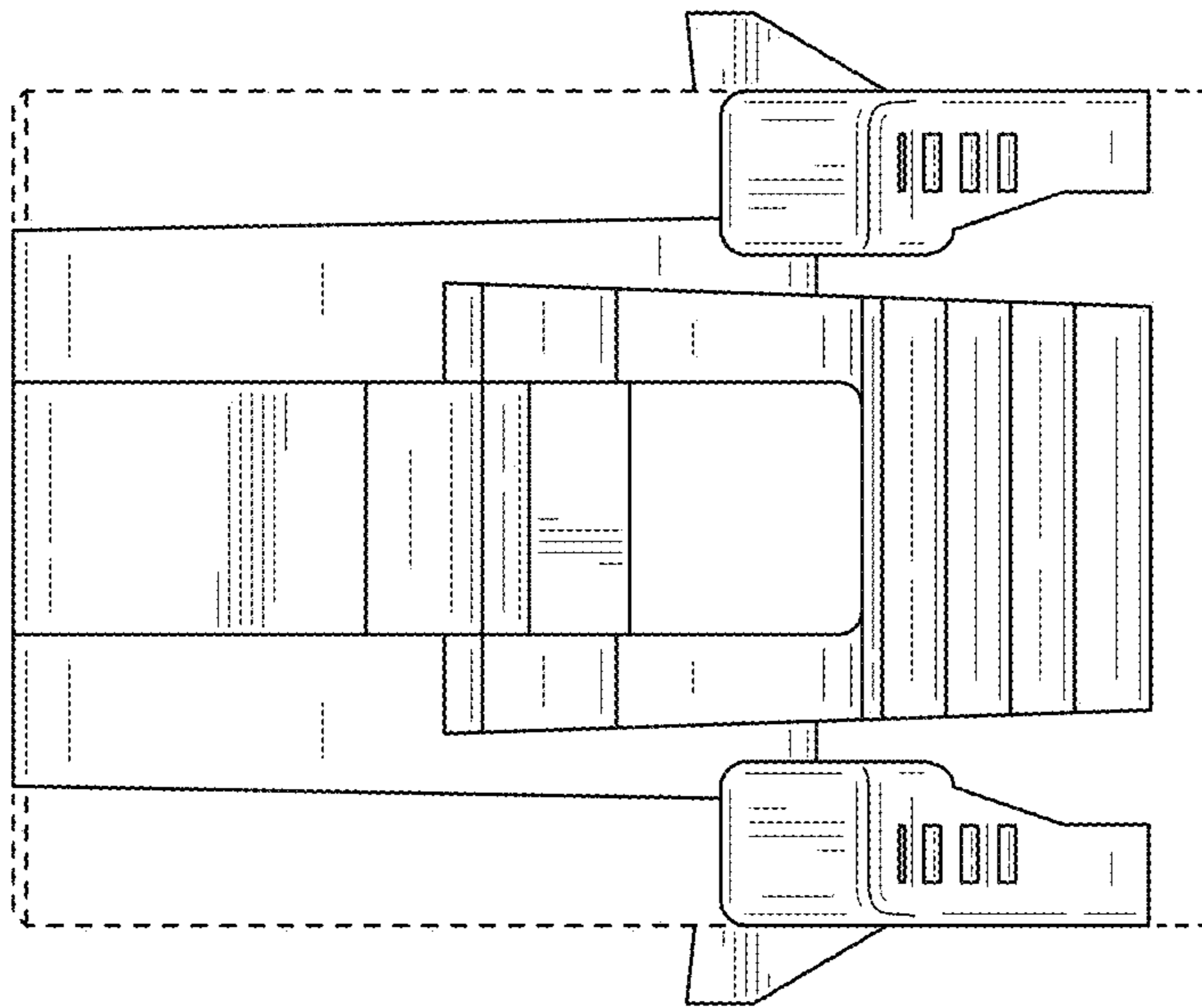


FIG. 7

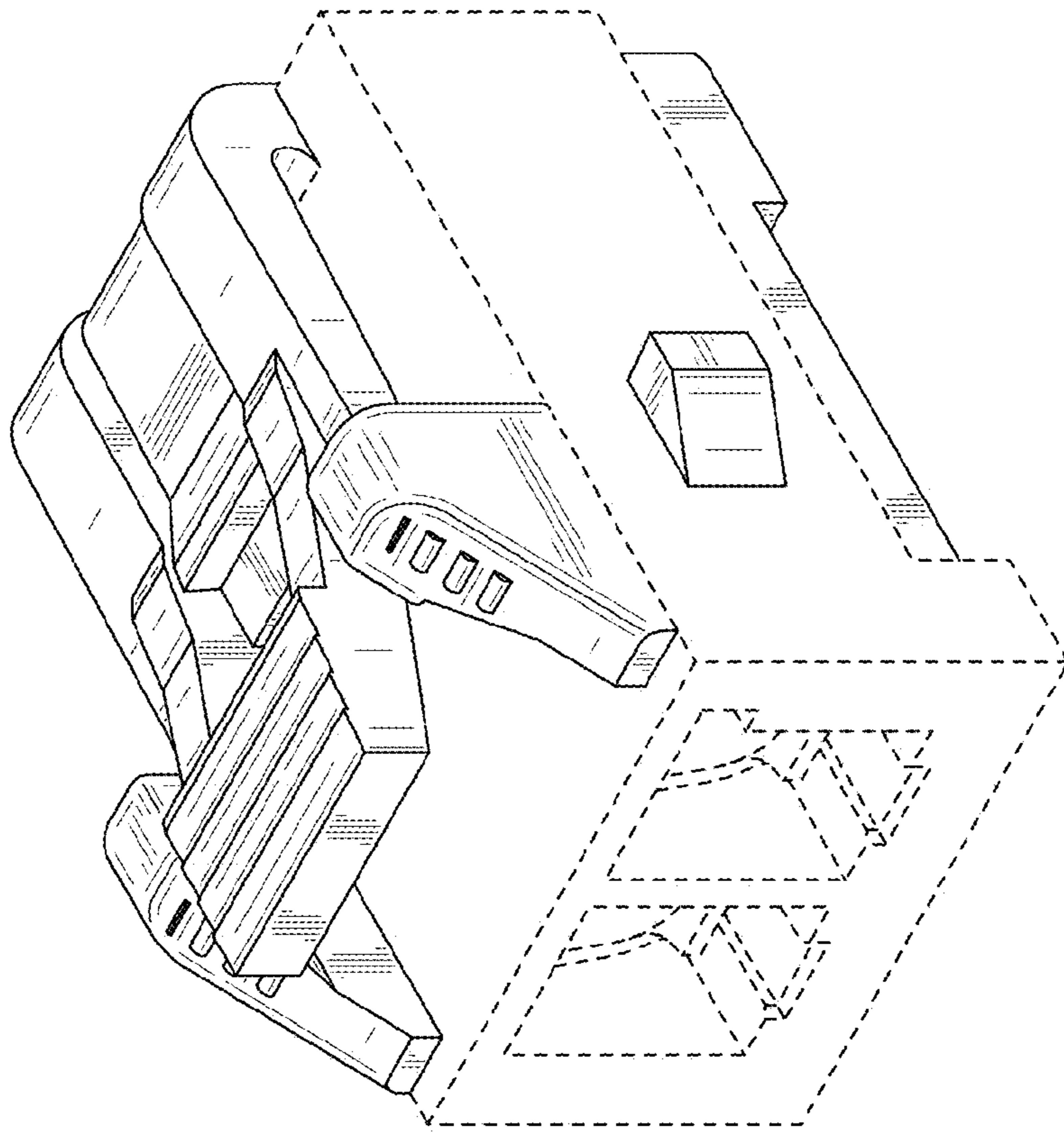


FIG. 10

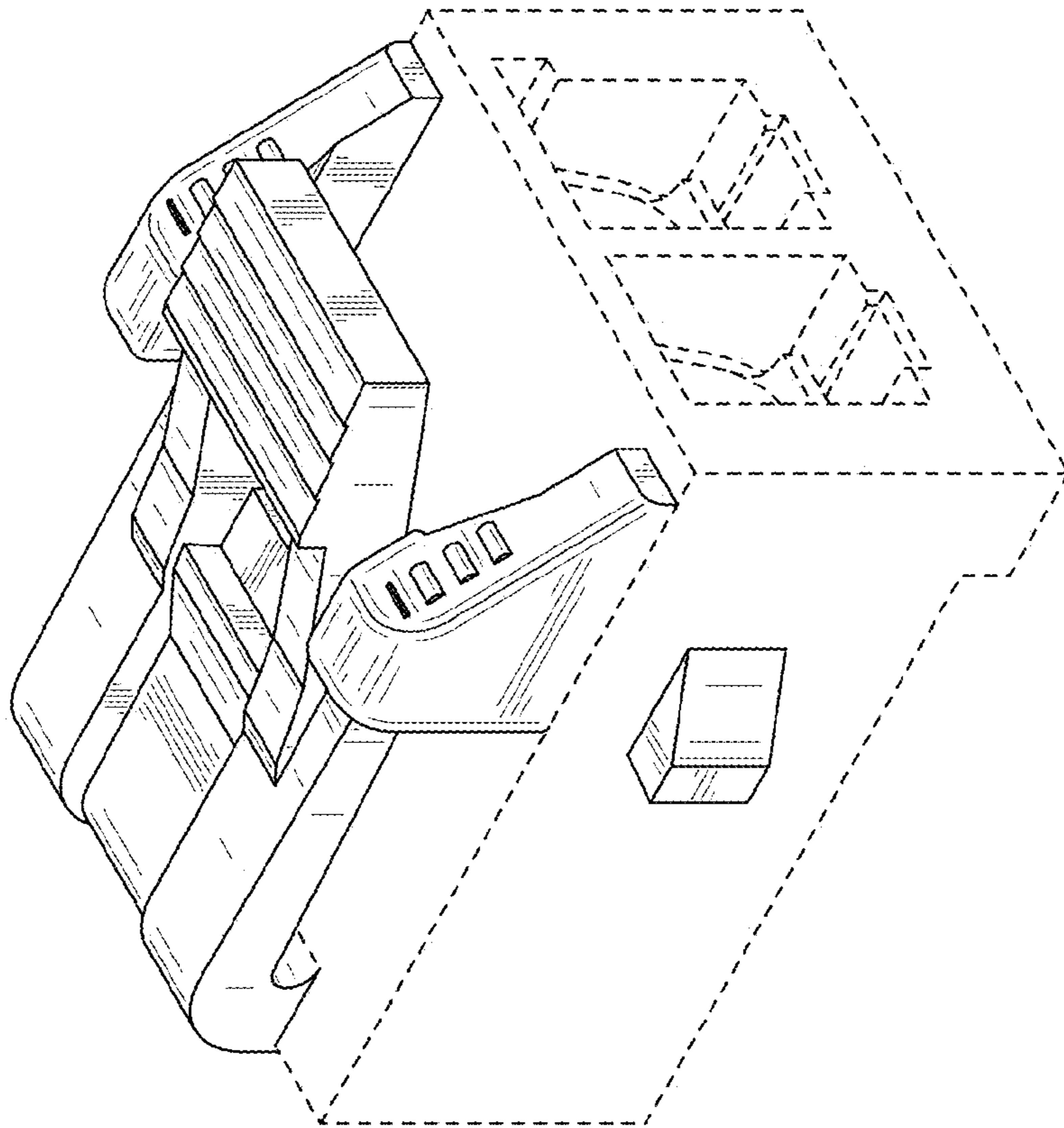


FIG. 9

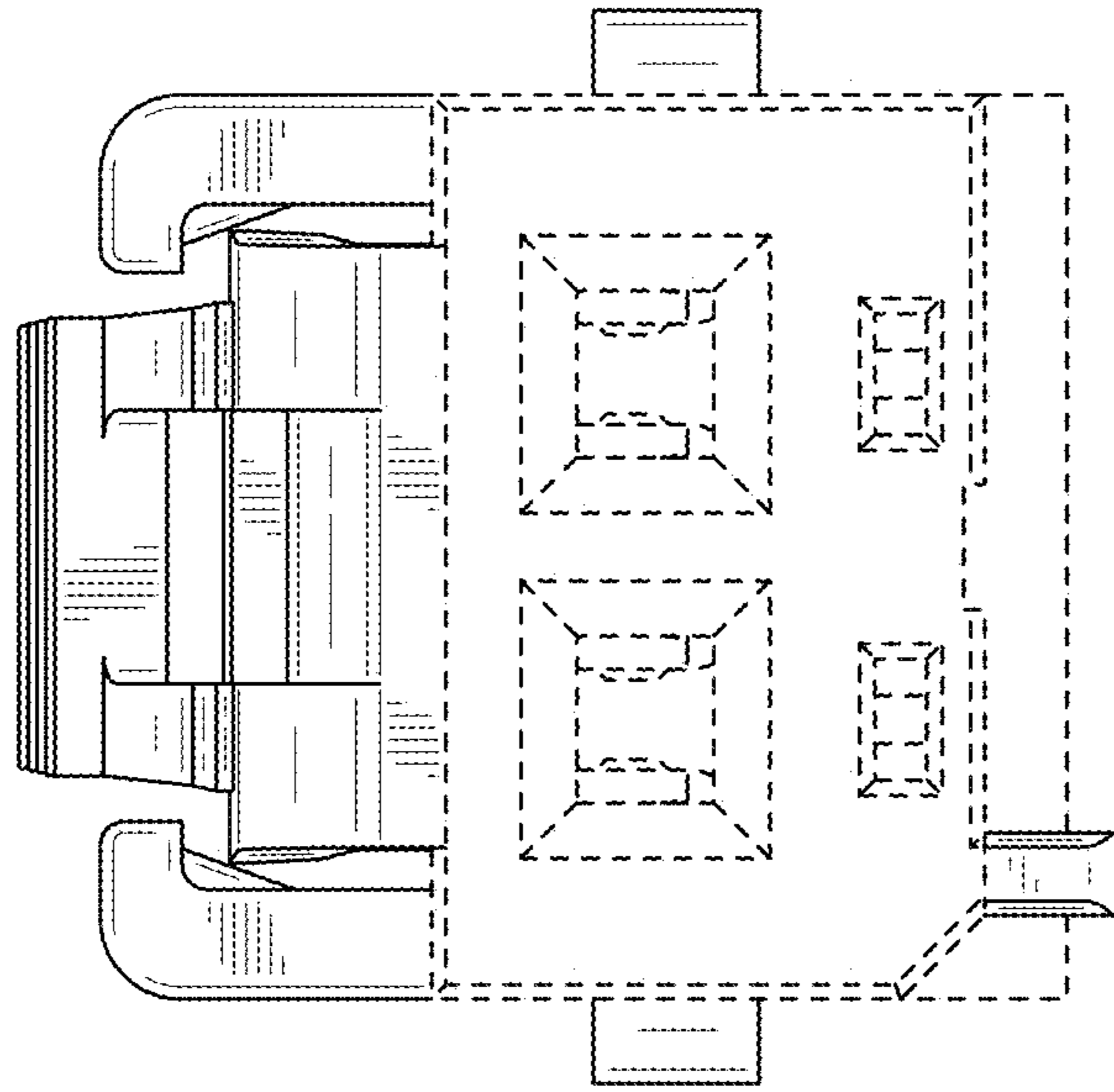


FIG. 11

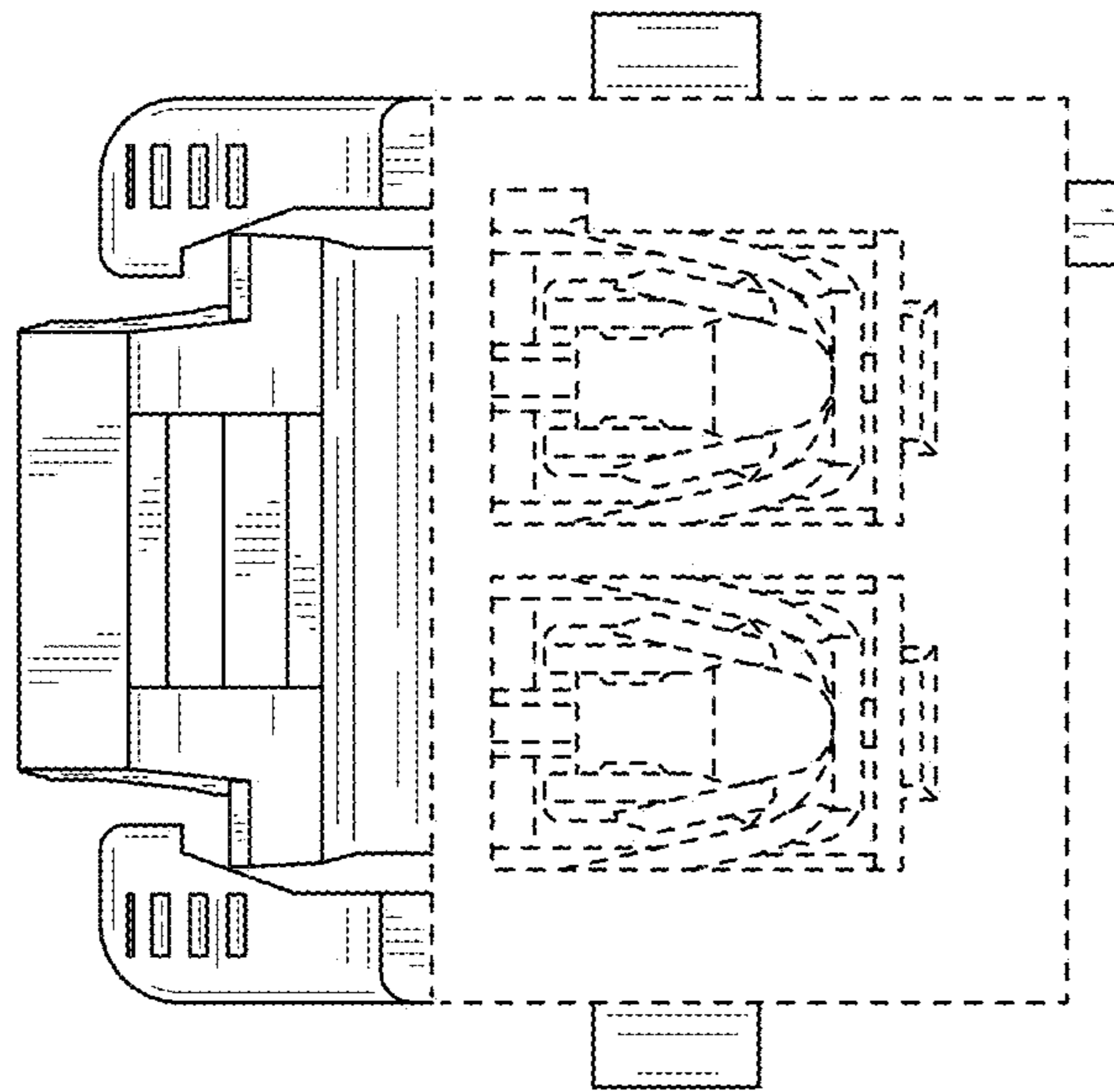


FIG. 12

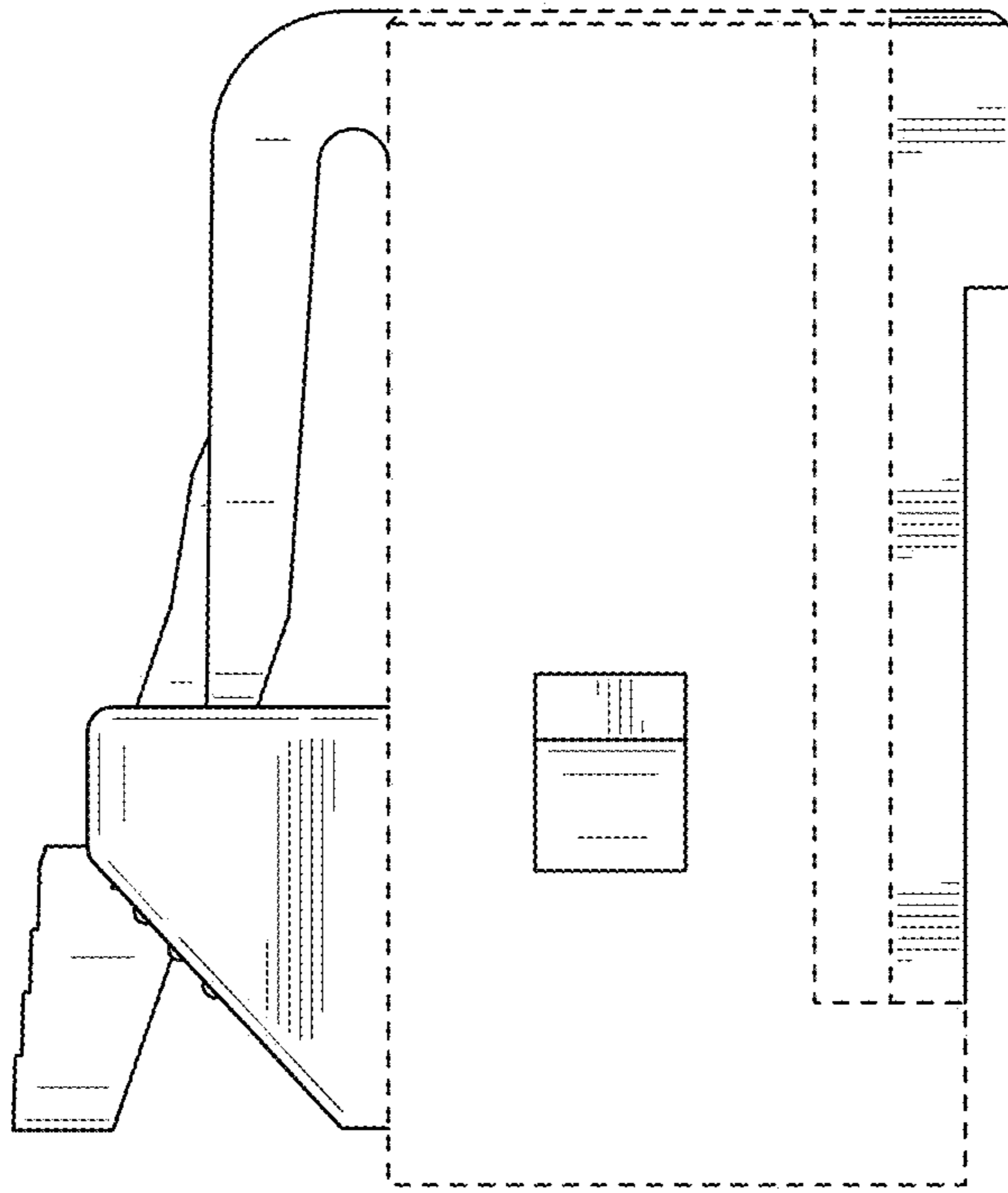


FIG. 13

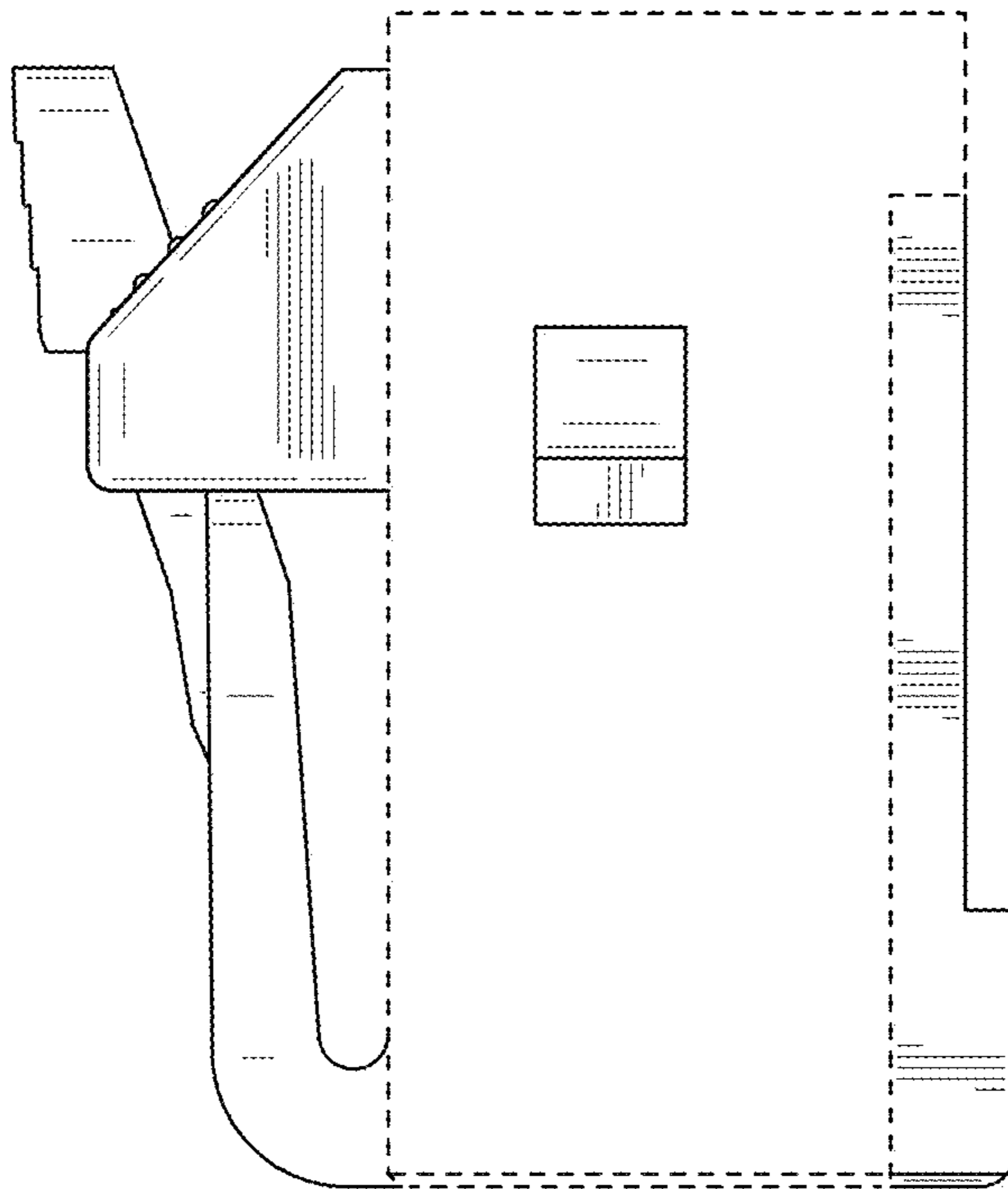


FIG. 14

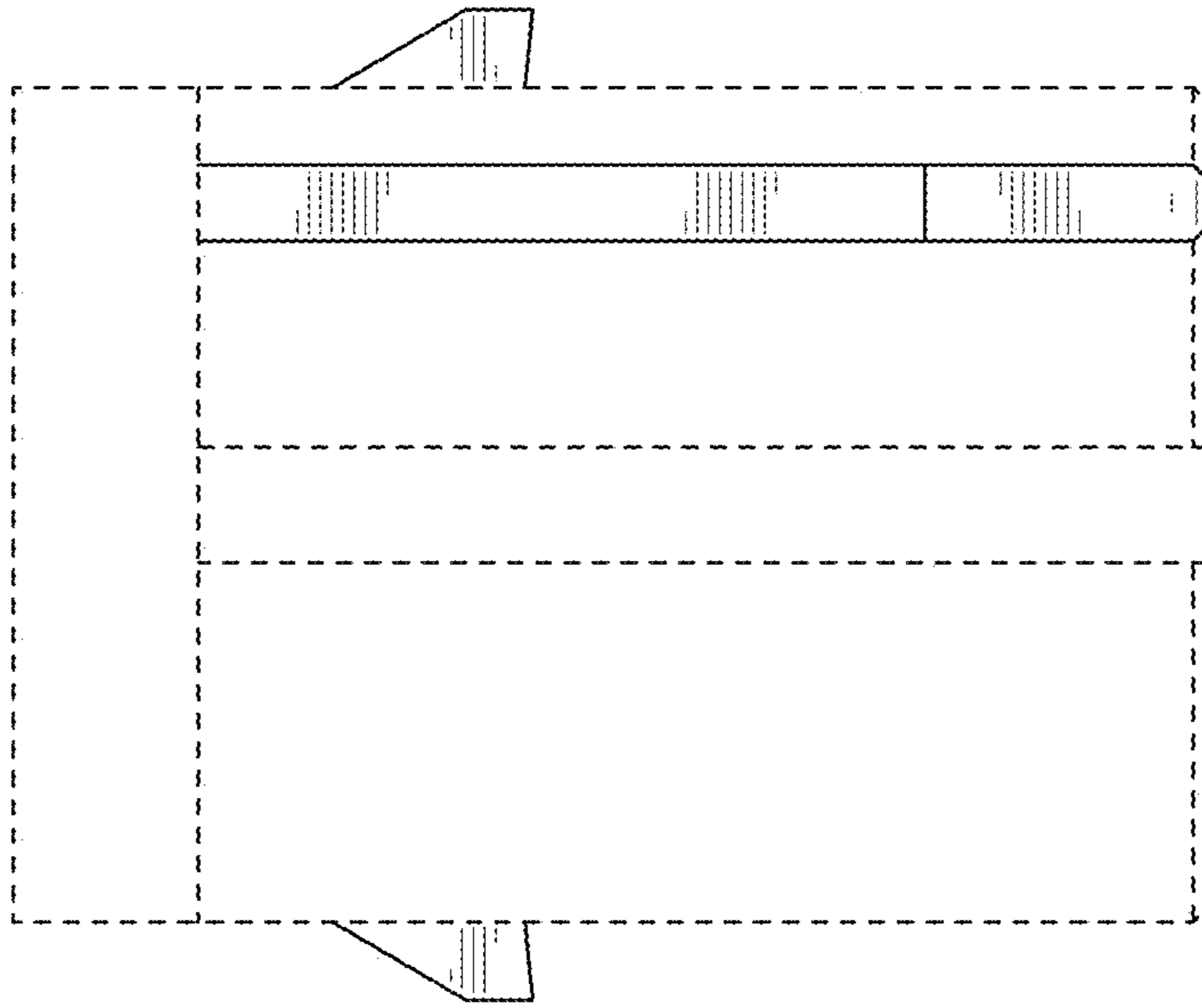


FIG. 16

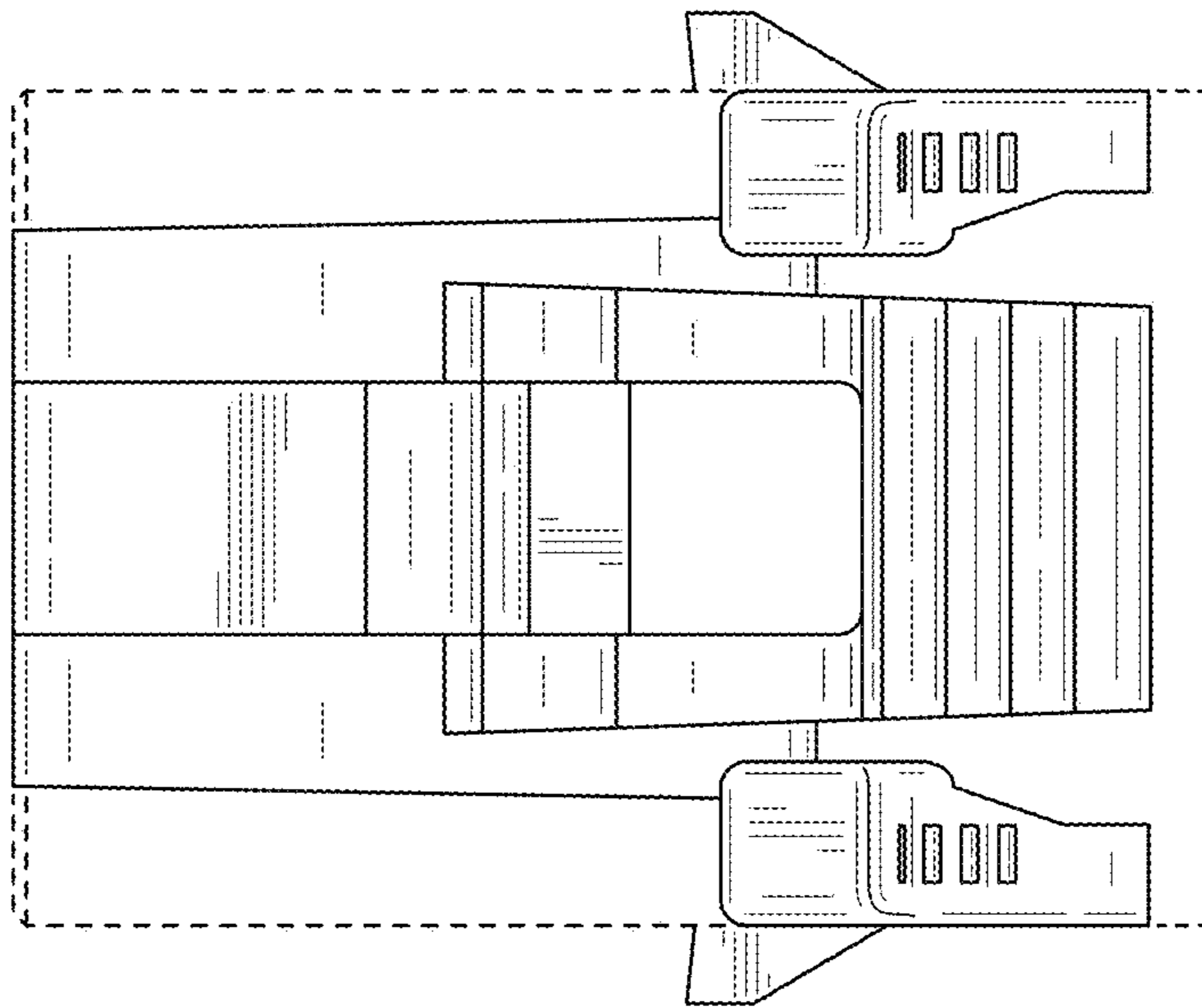


FIG. 15

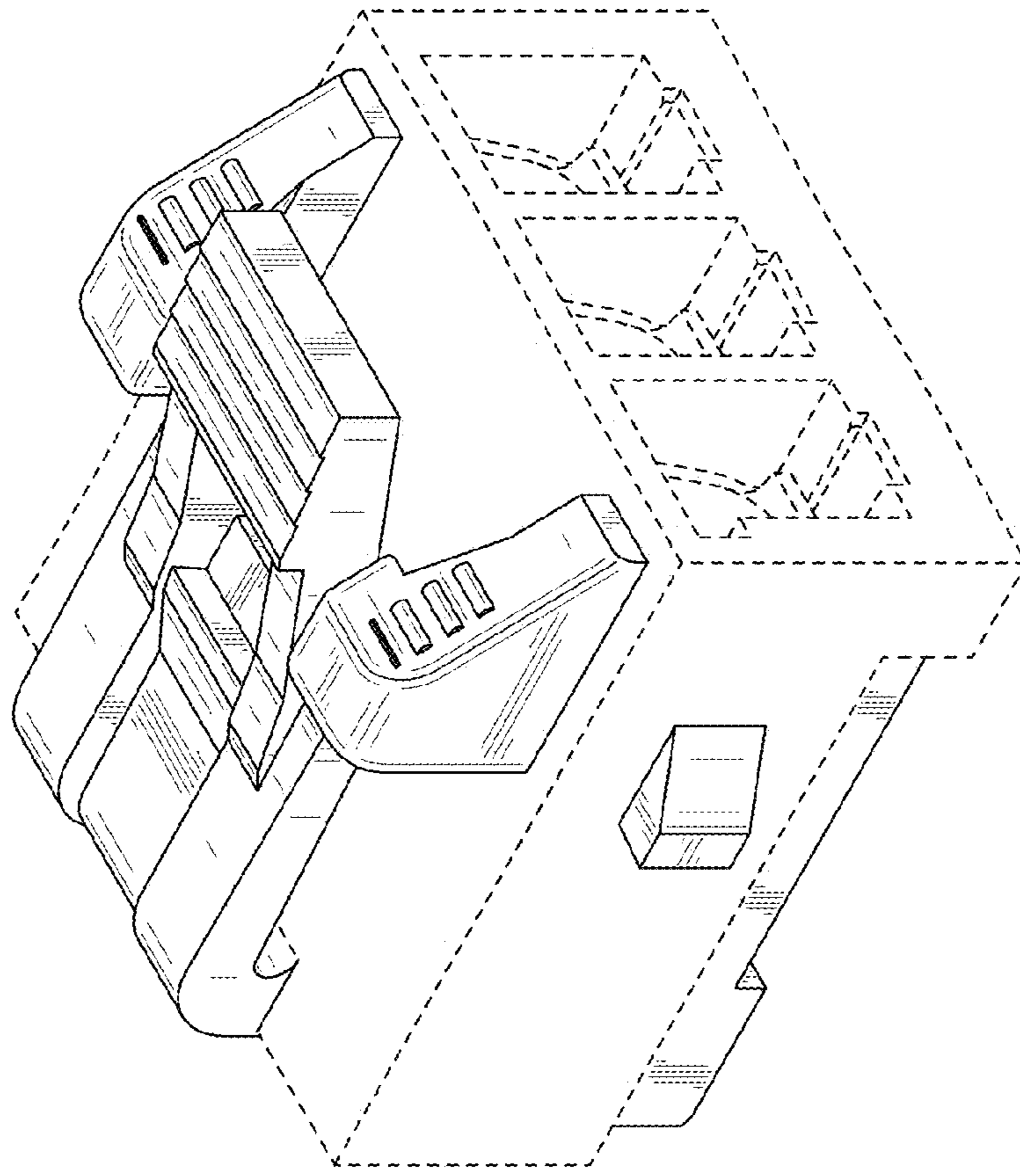


FIG. 18

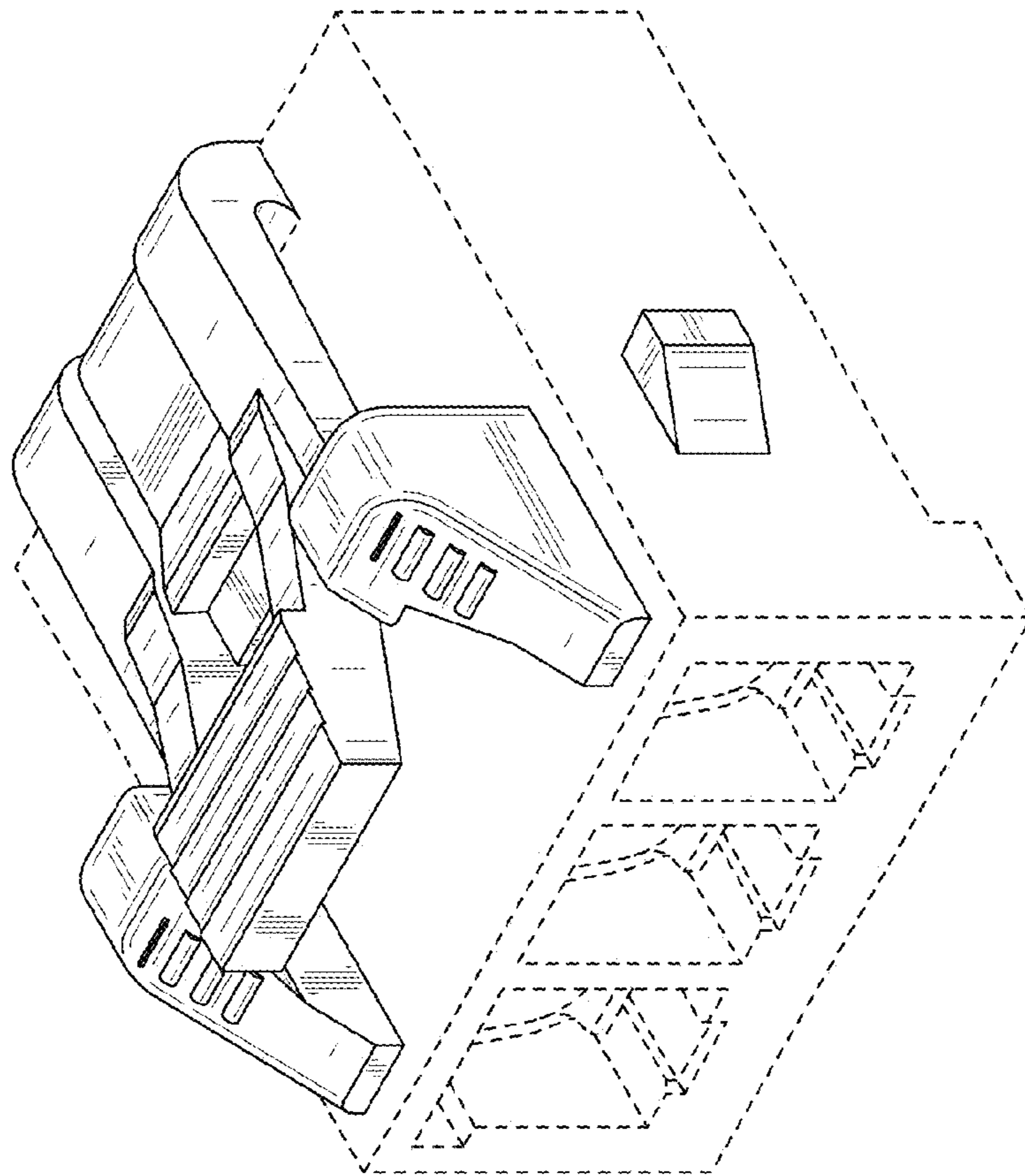


FIG. 17

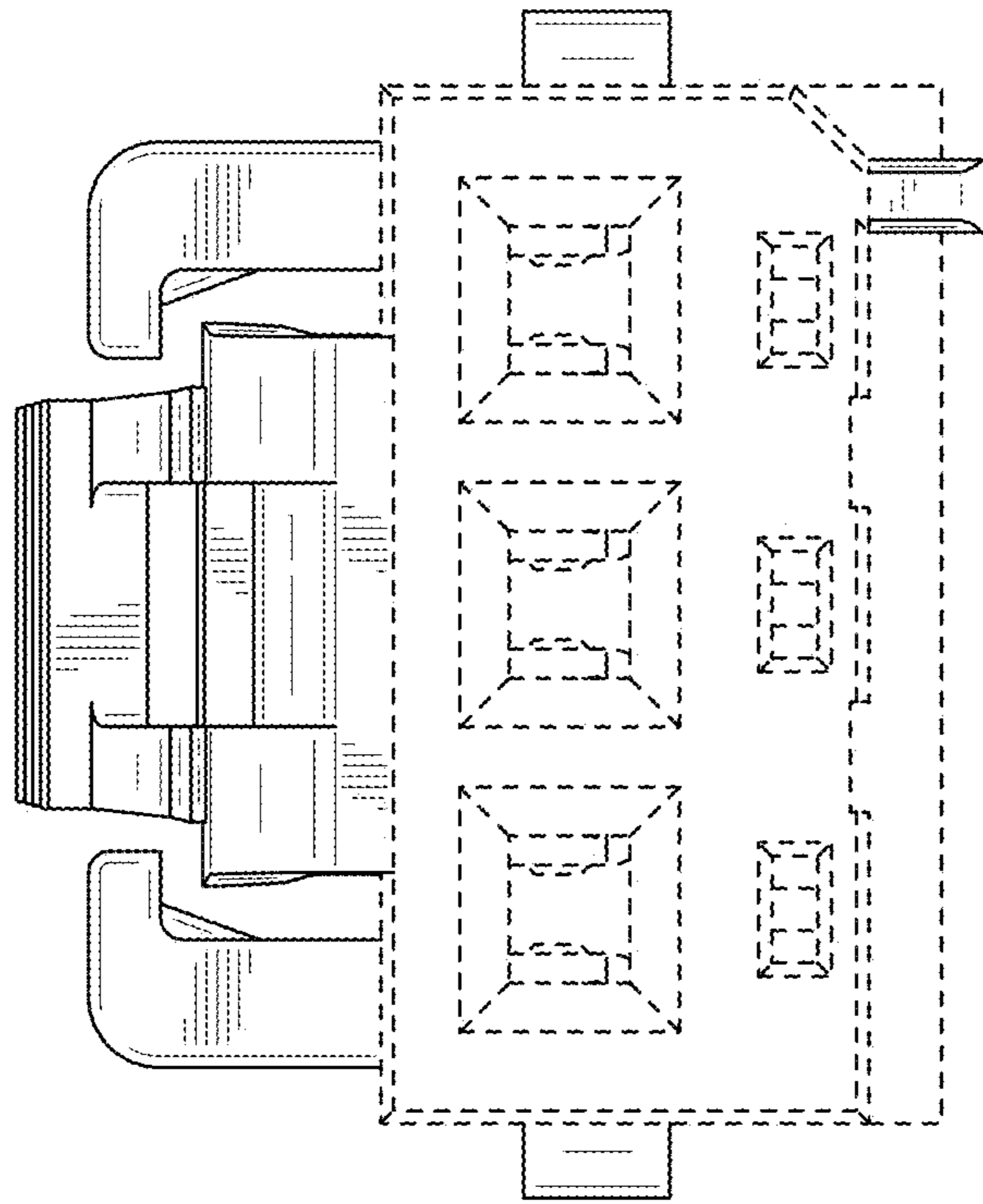


FIG. 19

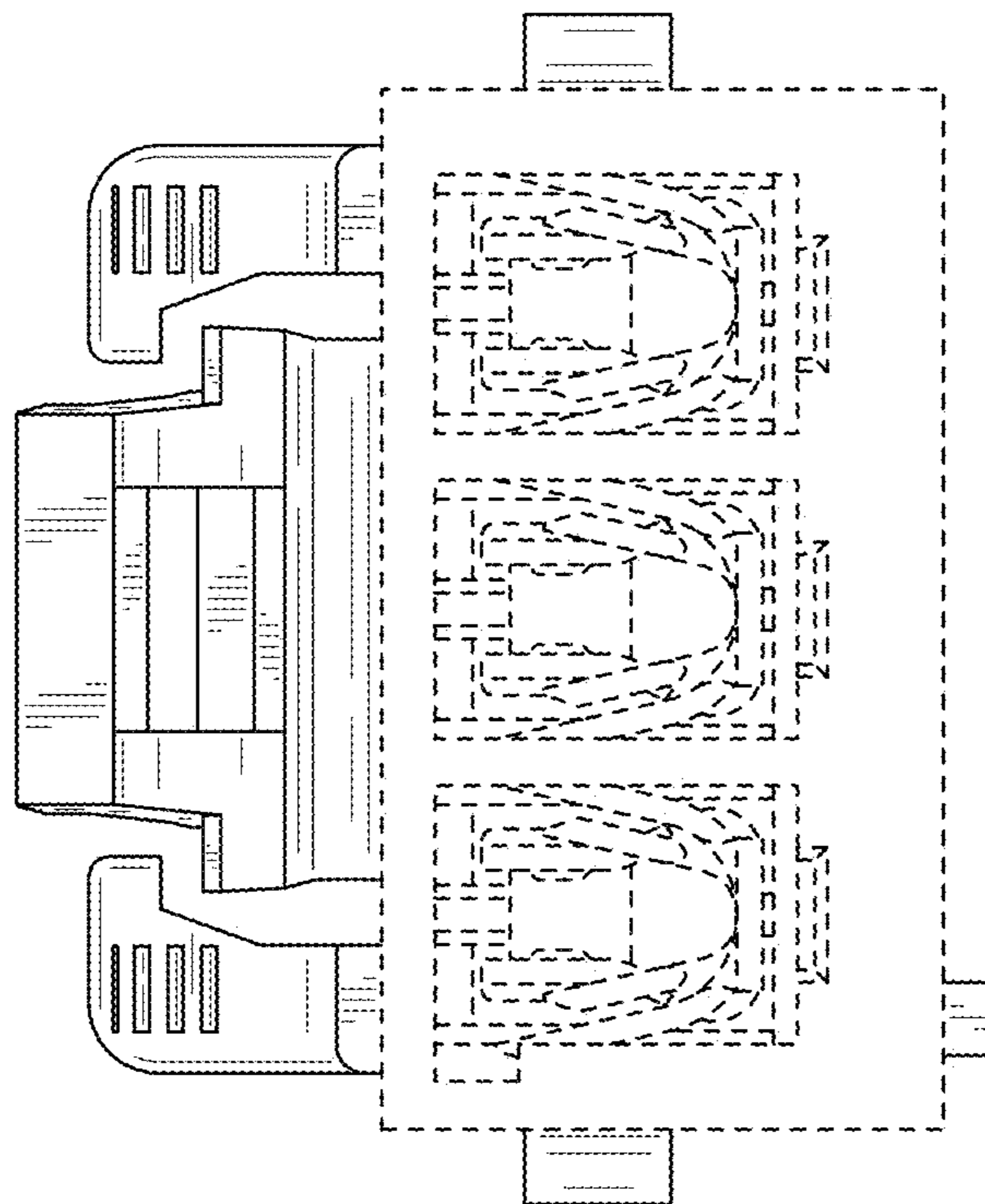


FIG. 20

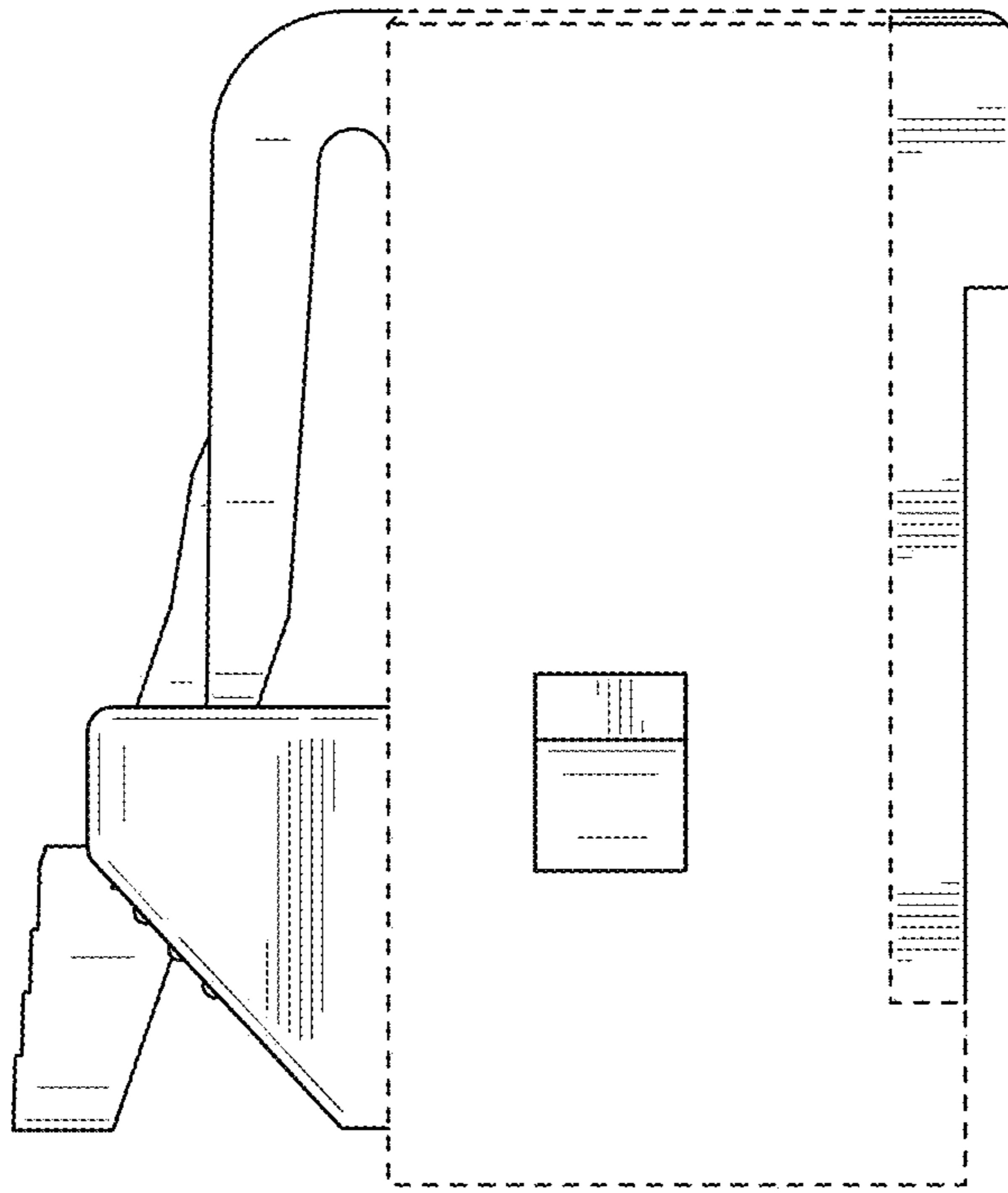


FIG. 21

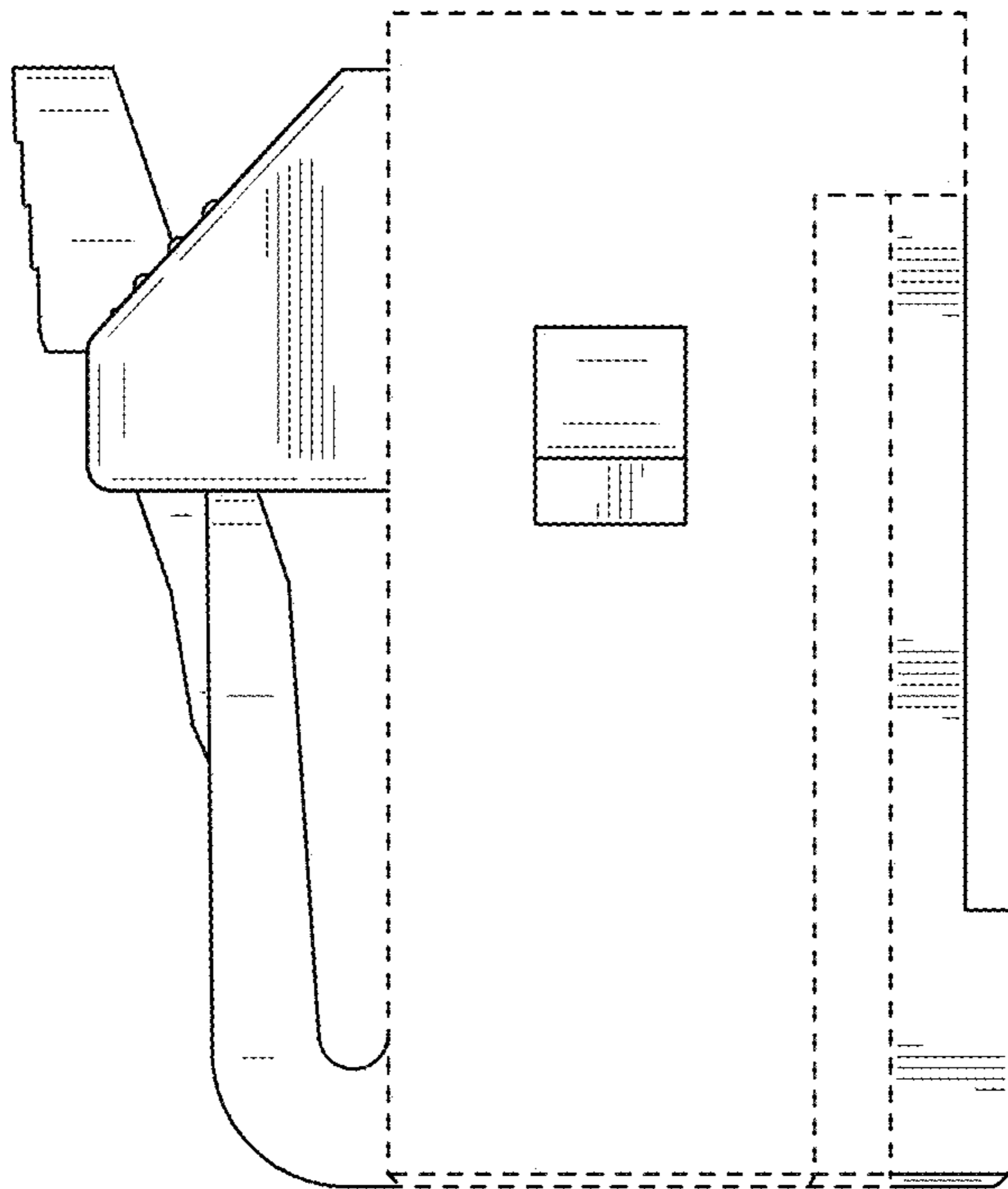


FIG. 22

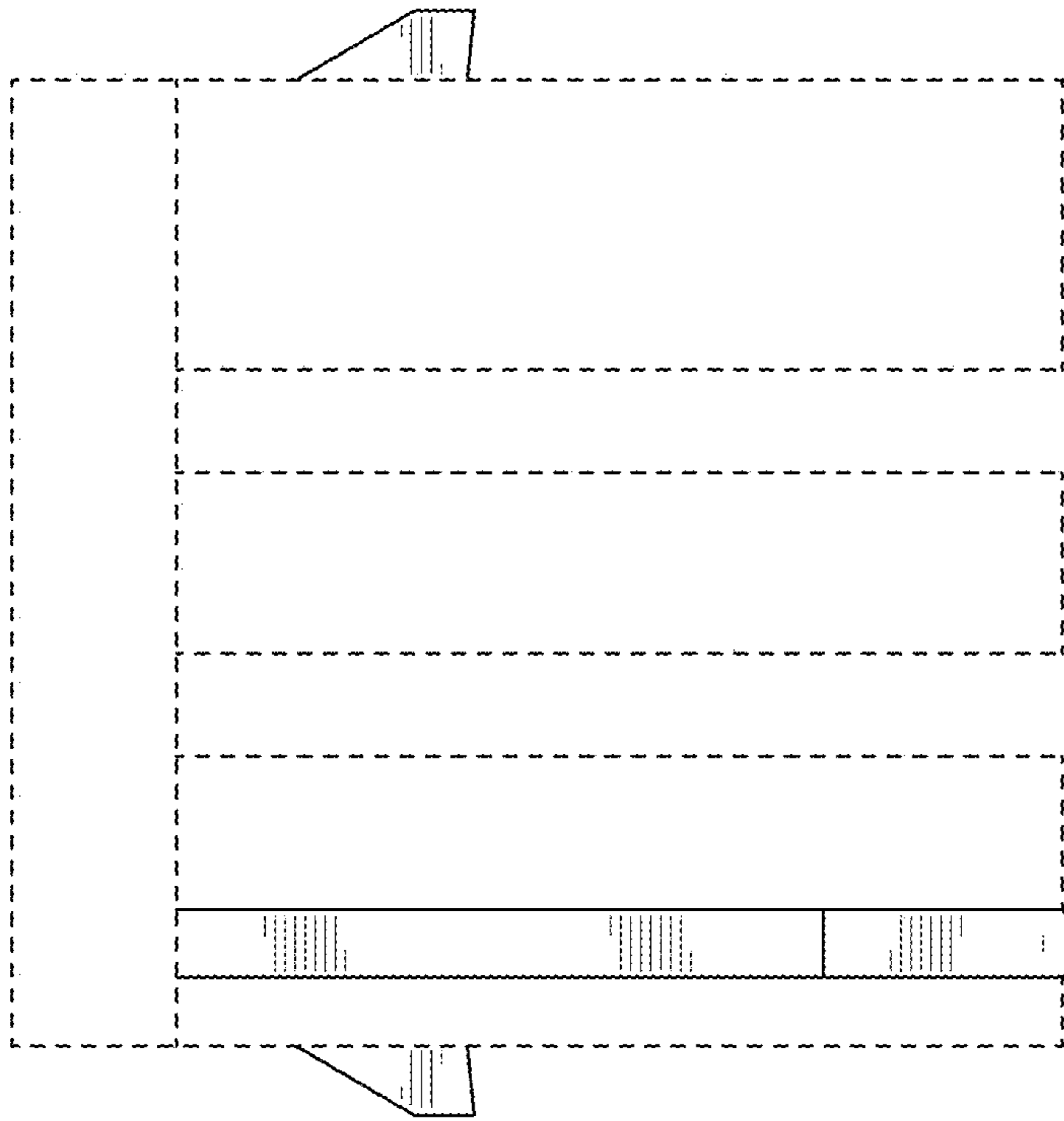


FIG. 24

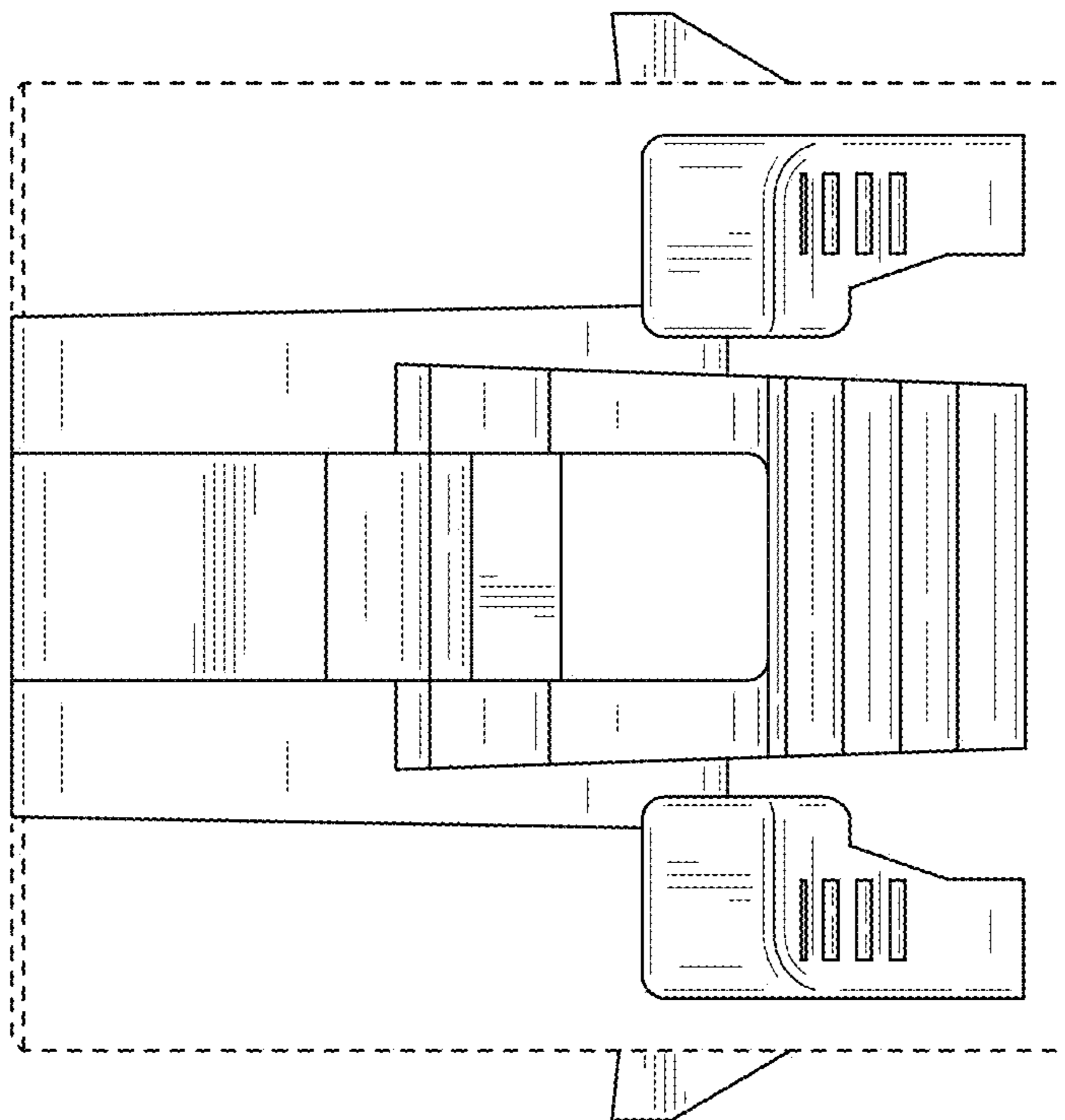


FIG. 23

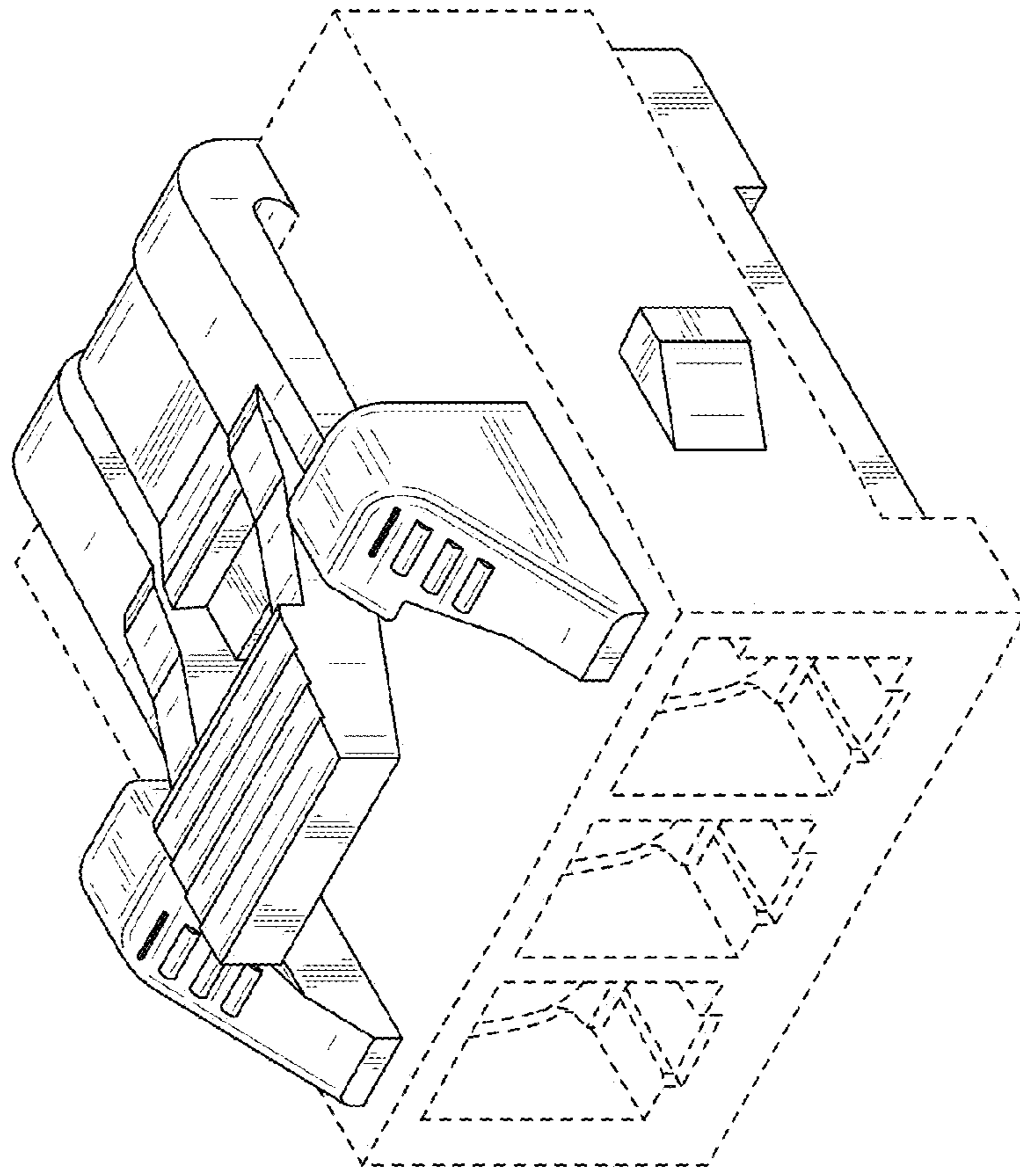


FIG. 26

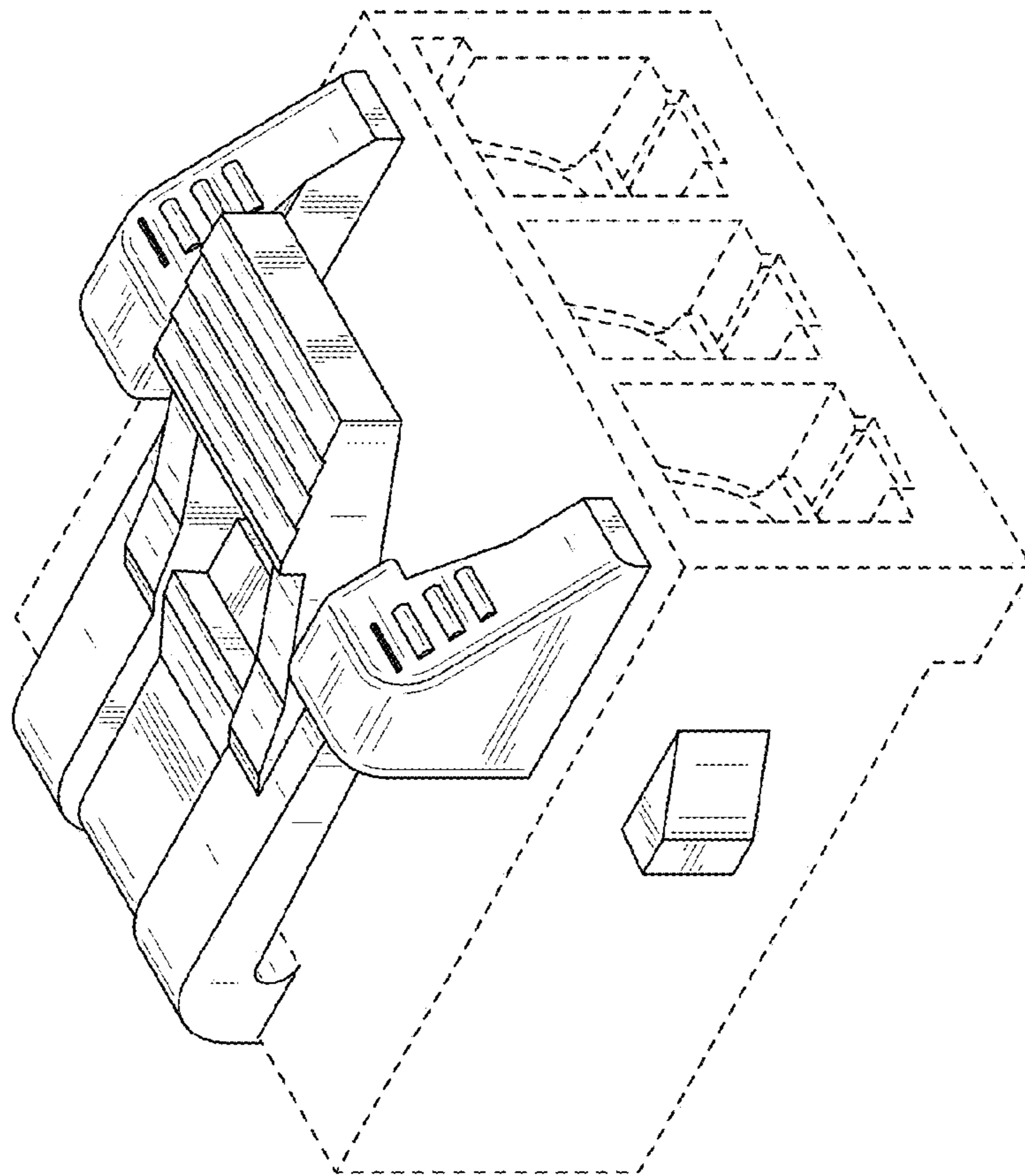


FIG. 25

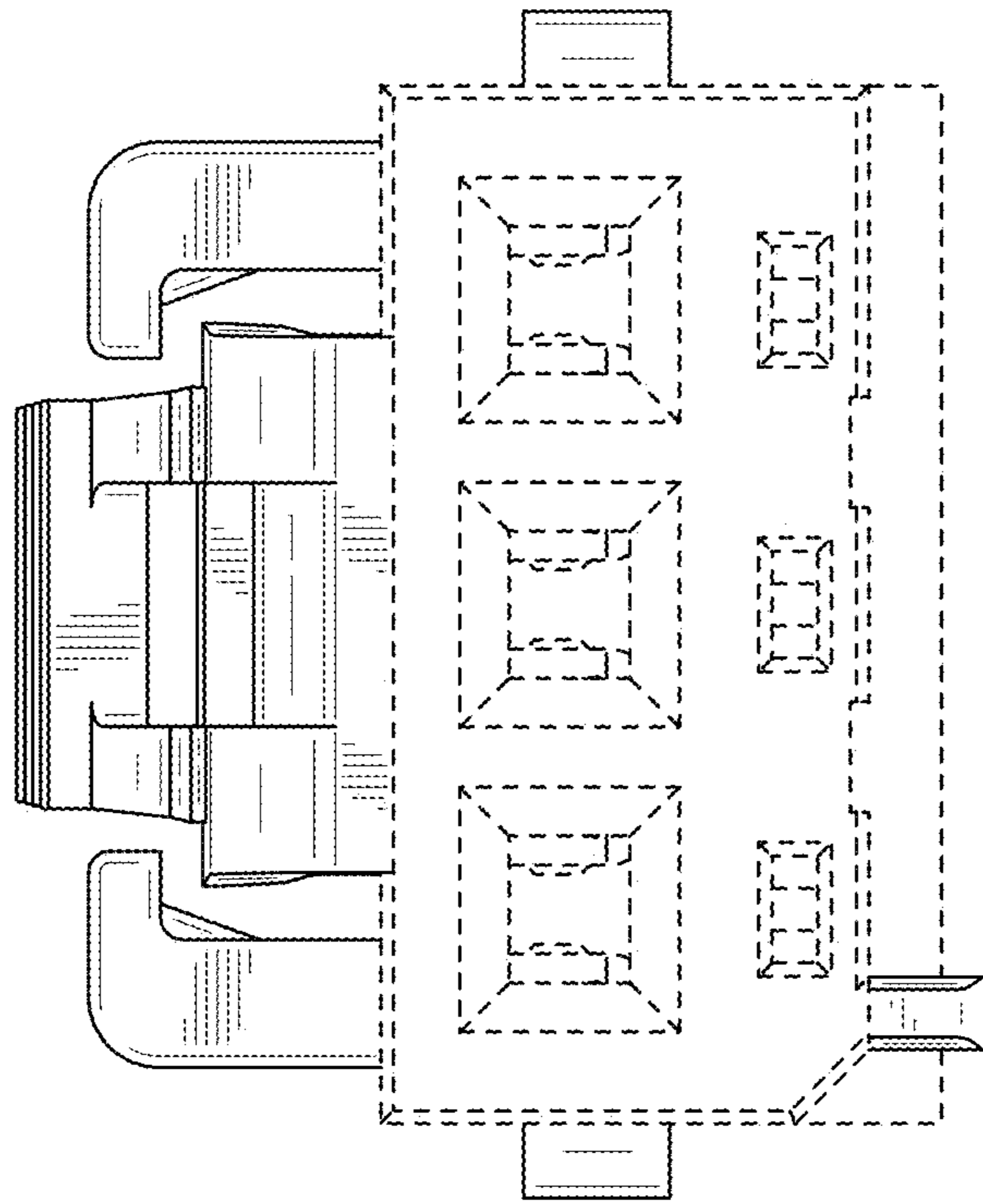


FIG. 27

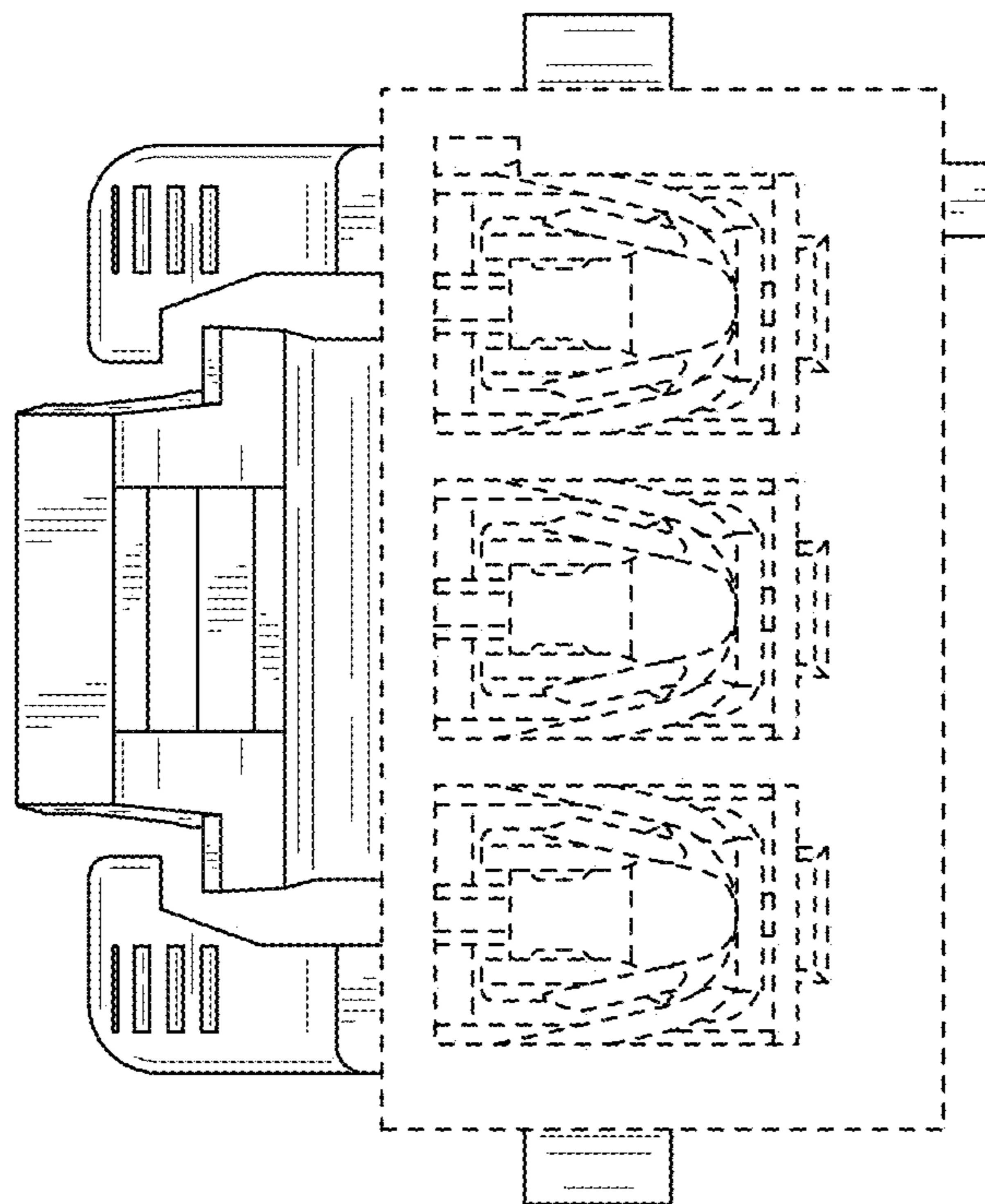


FIG. 28

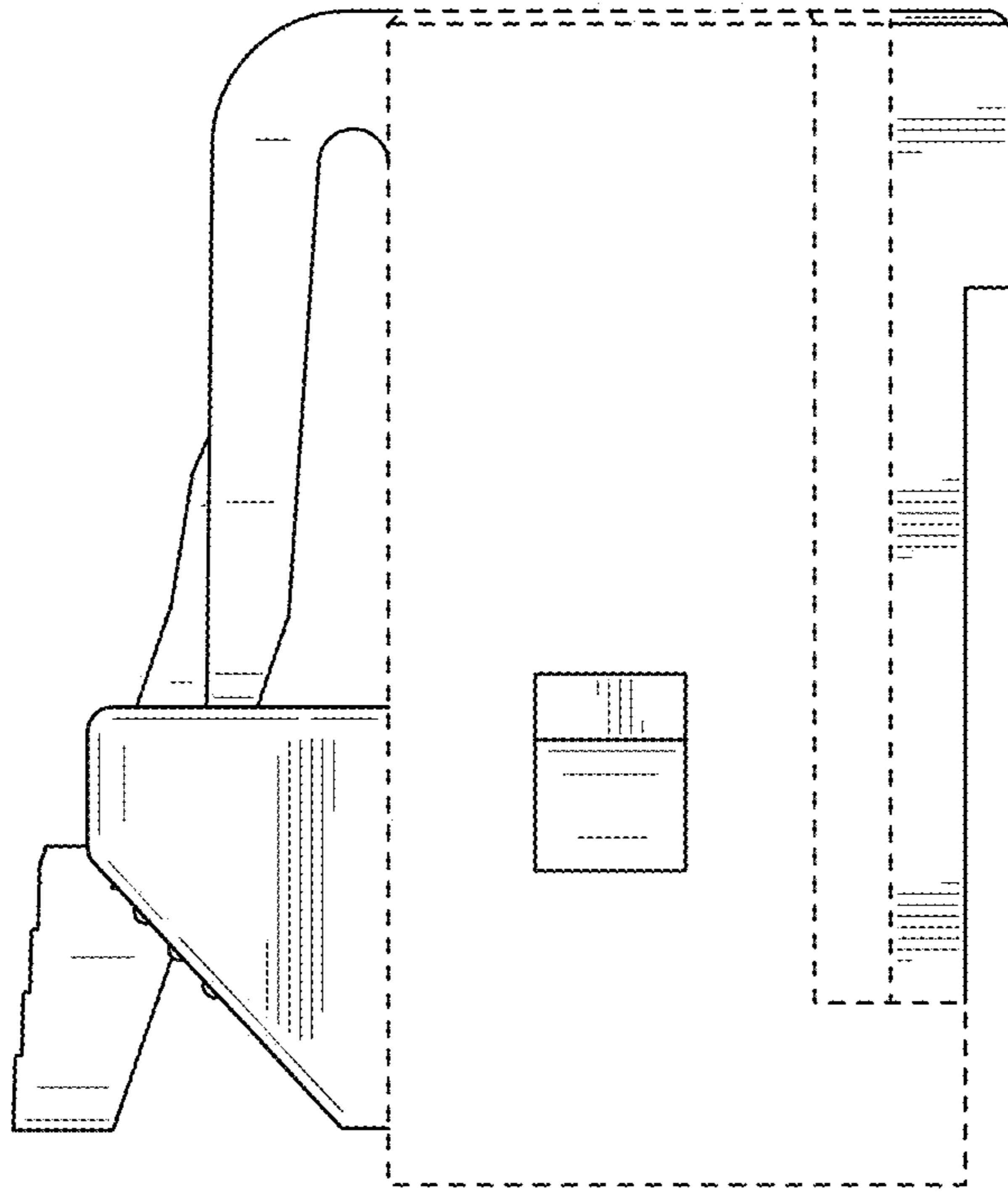


FIG. 30

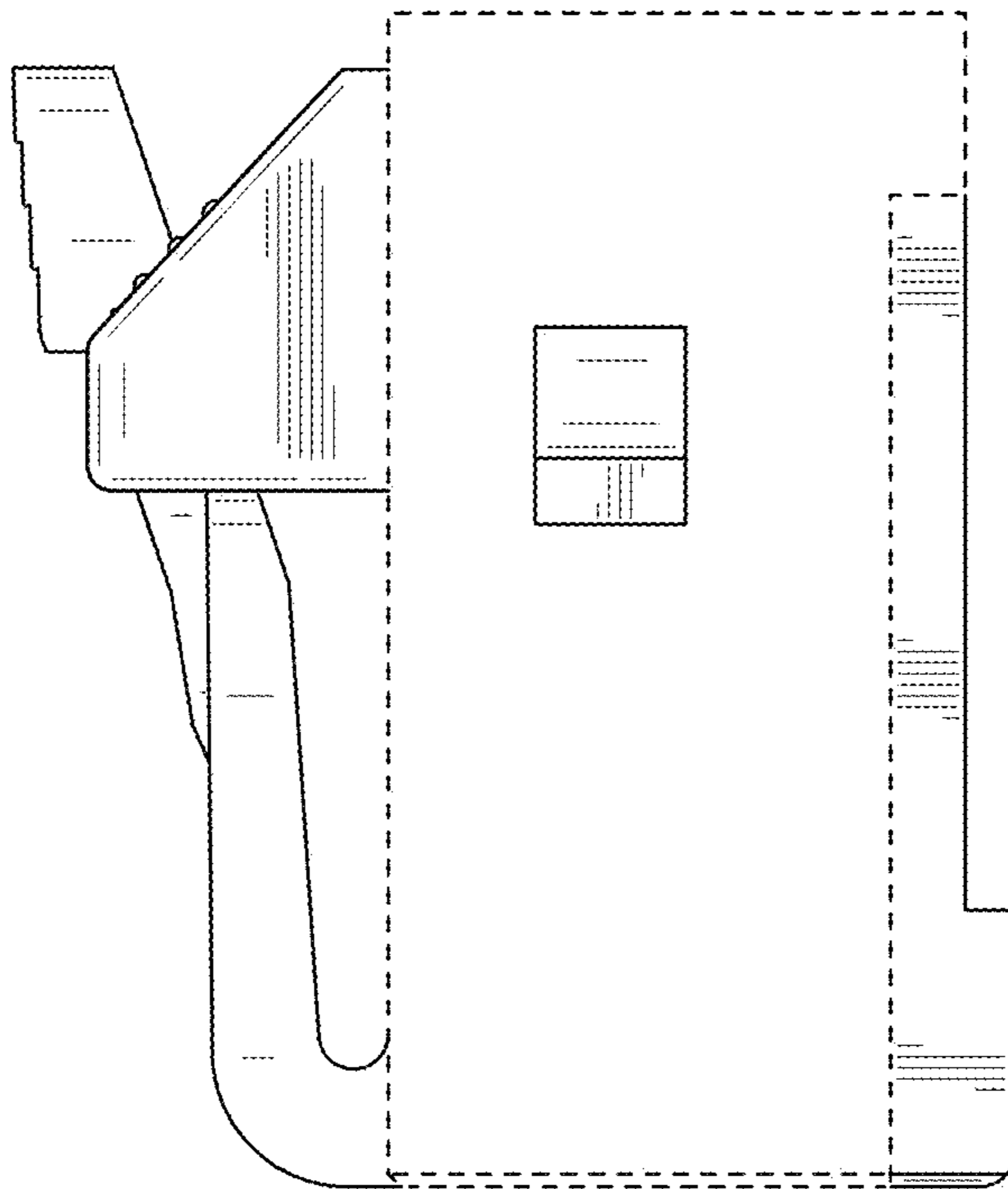


FIG. 29

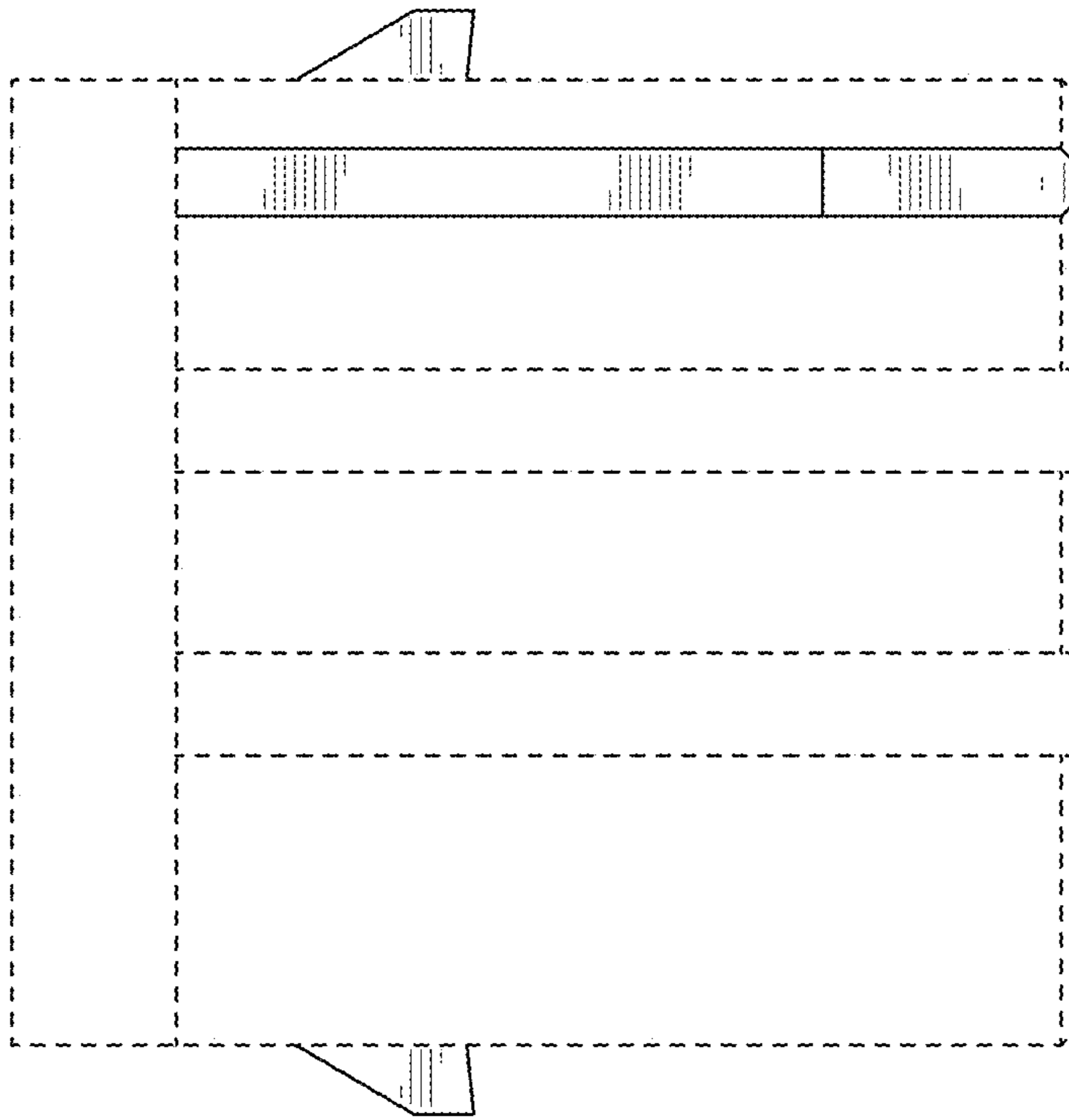


FIG. 32

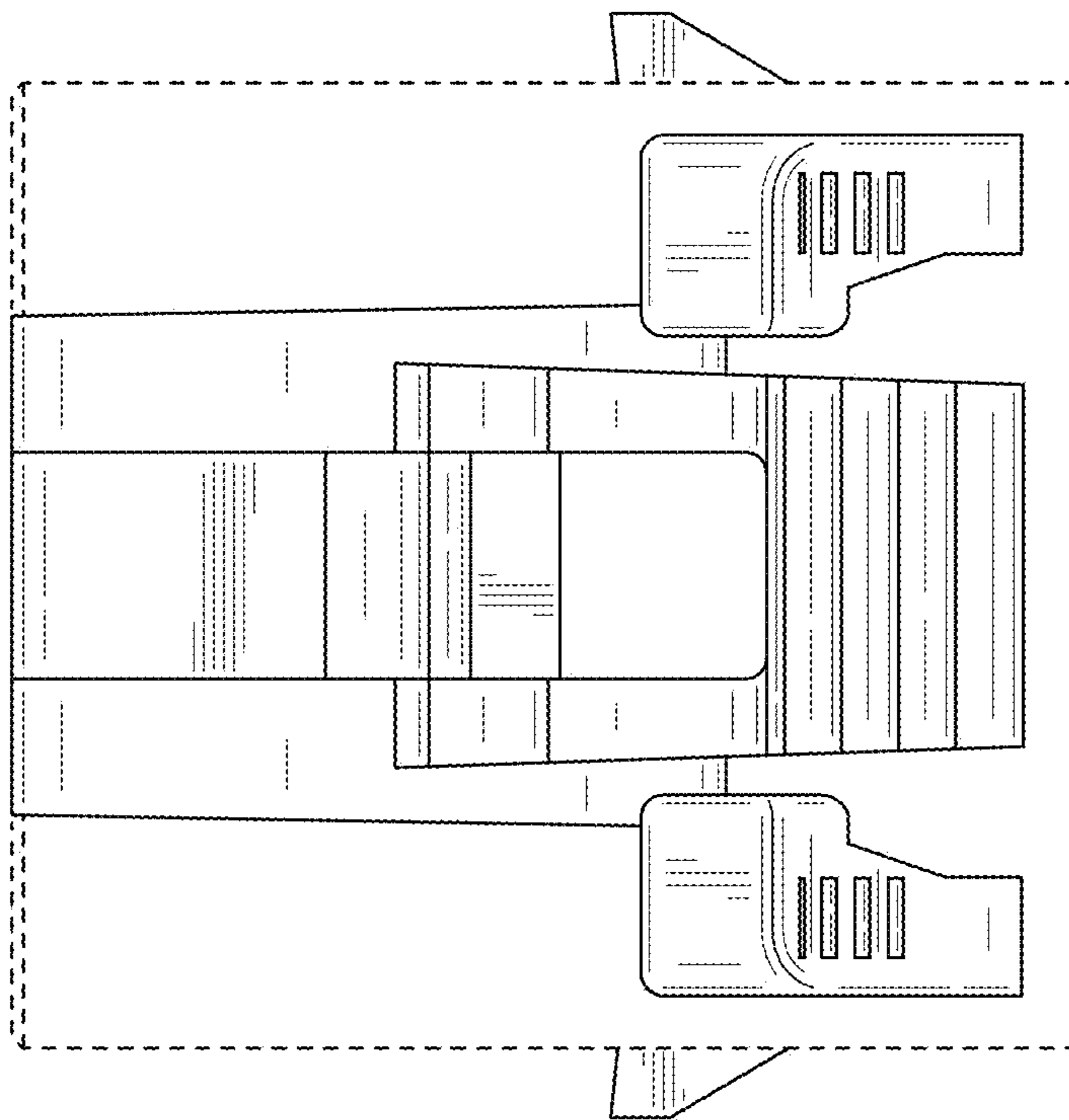


FIG. 31

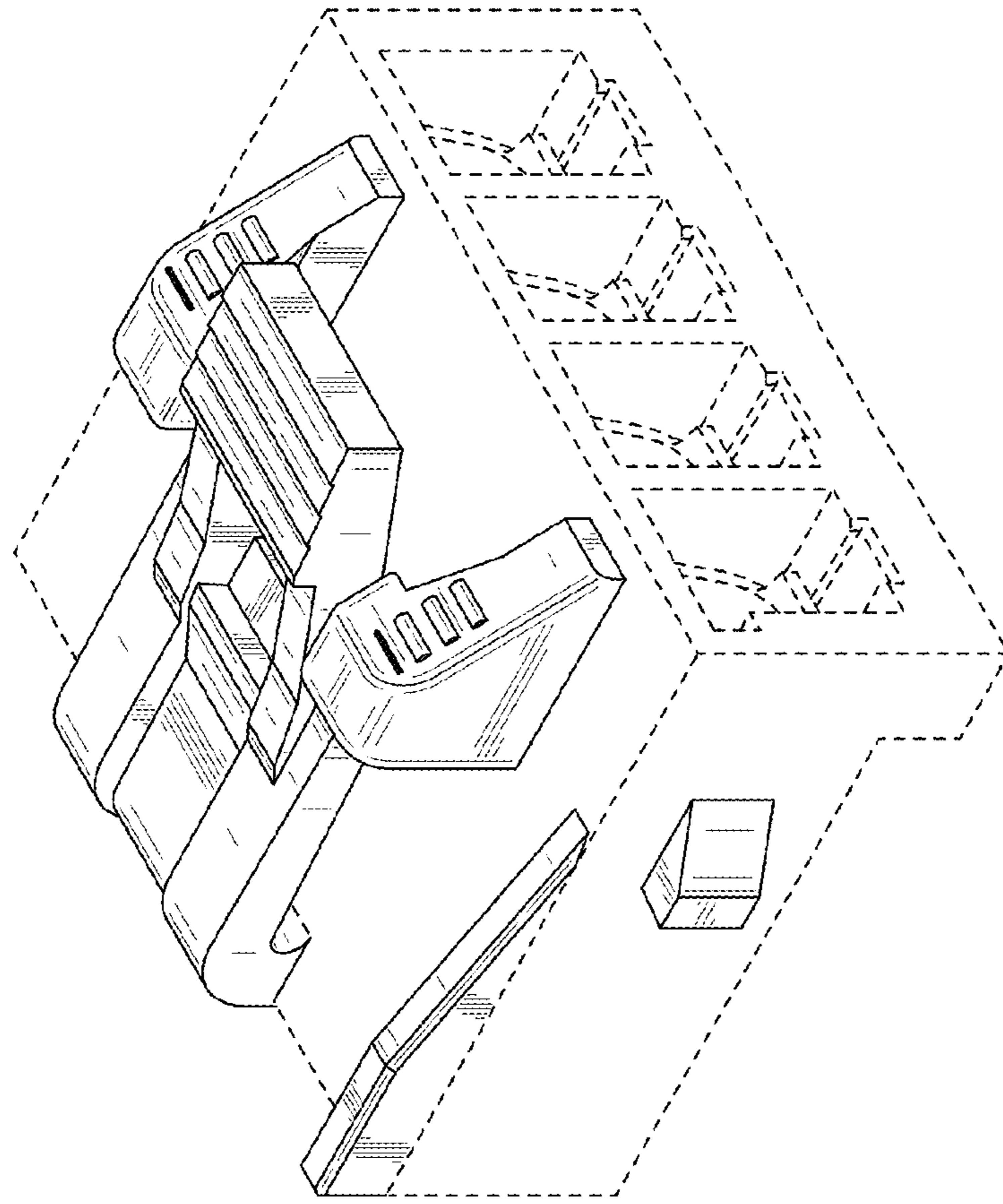


FIG. 34

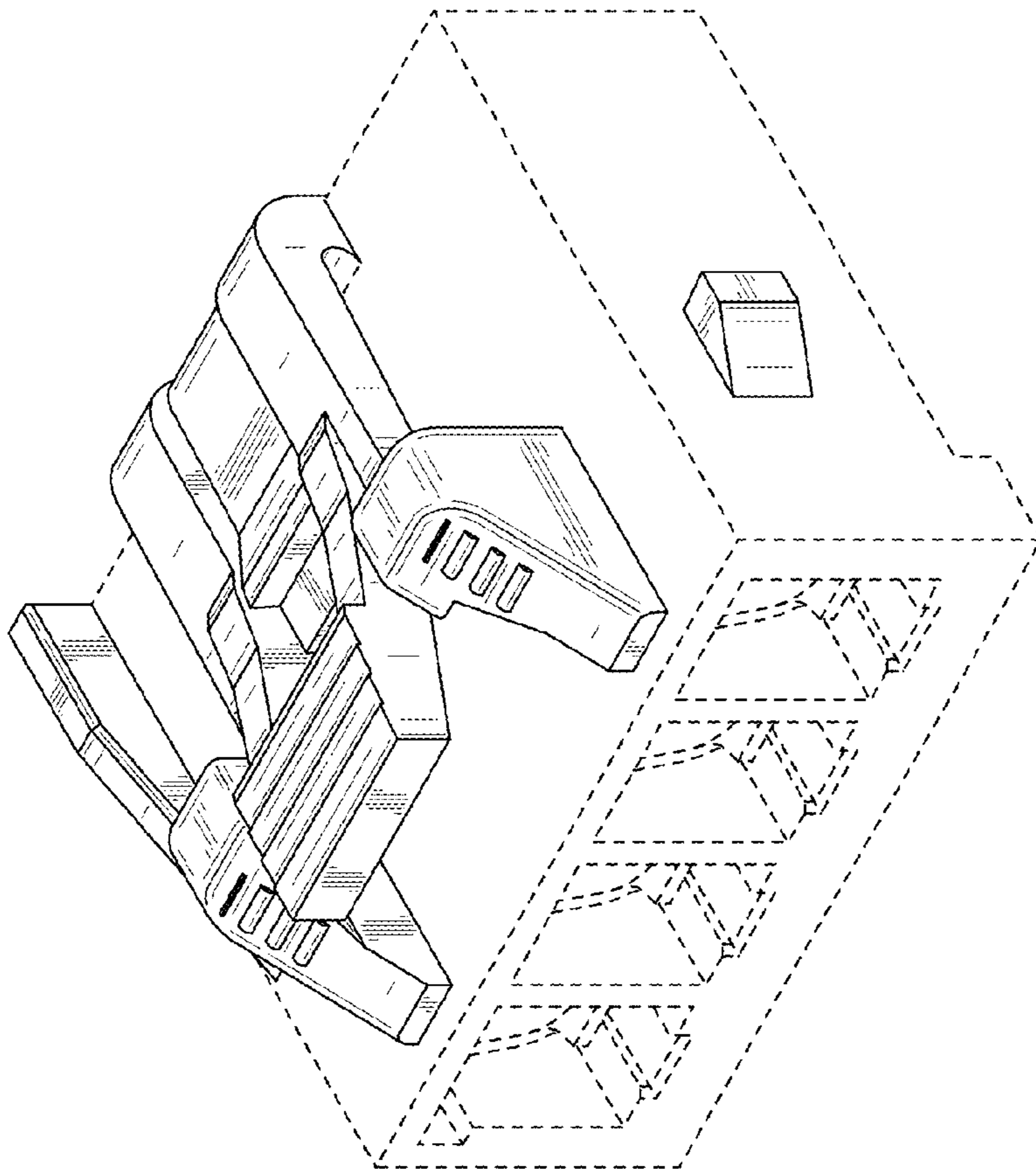


FIG. 33

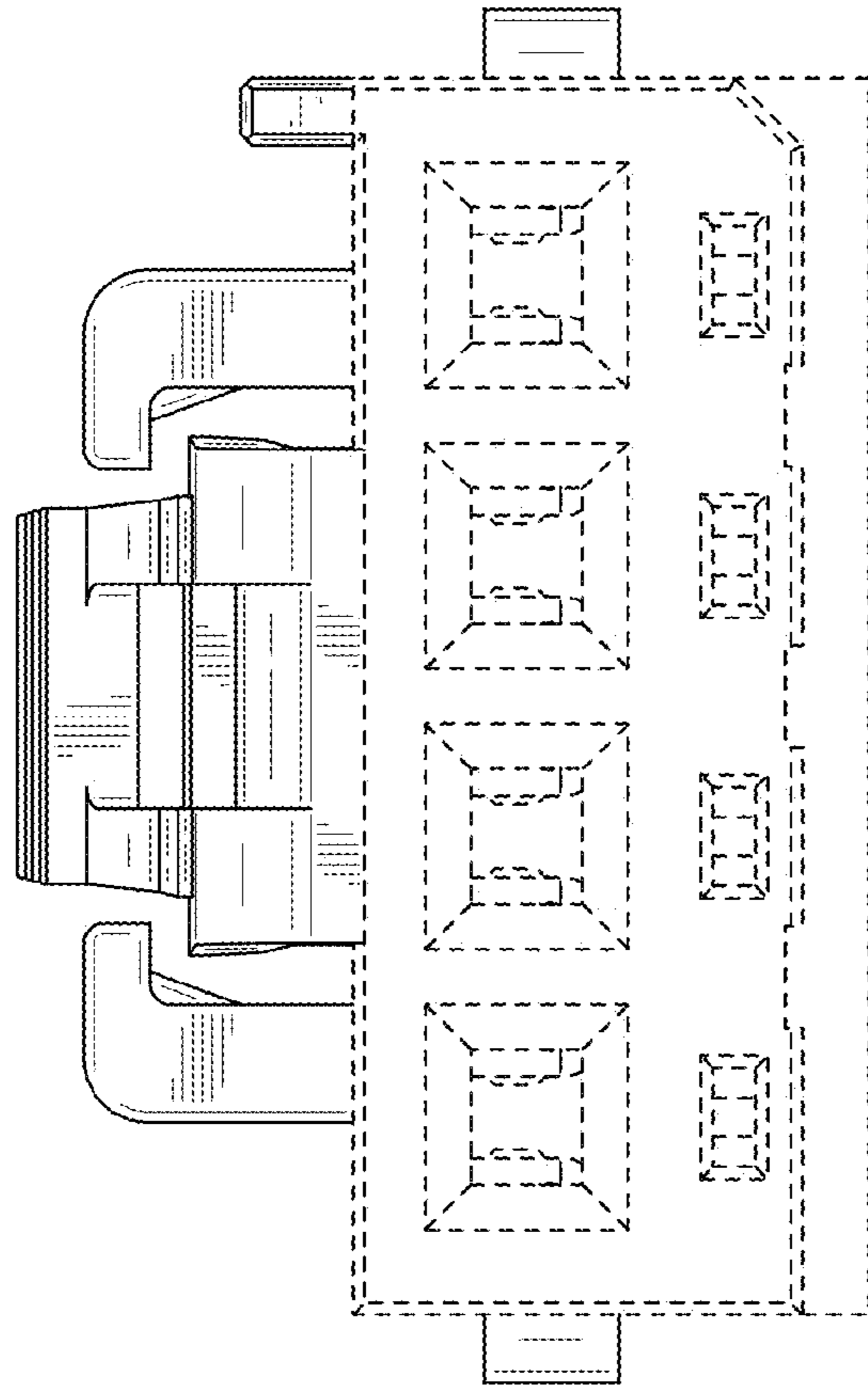


FIG. 35

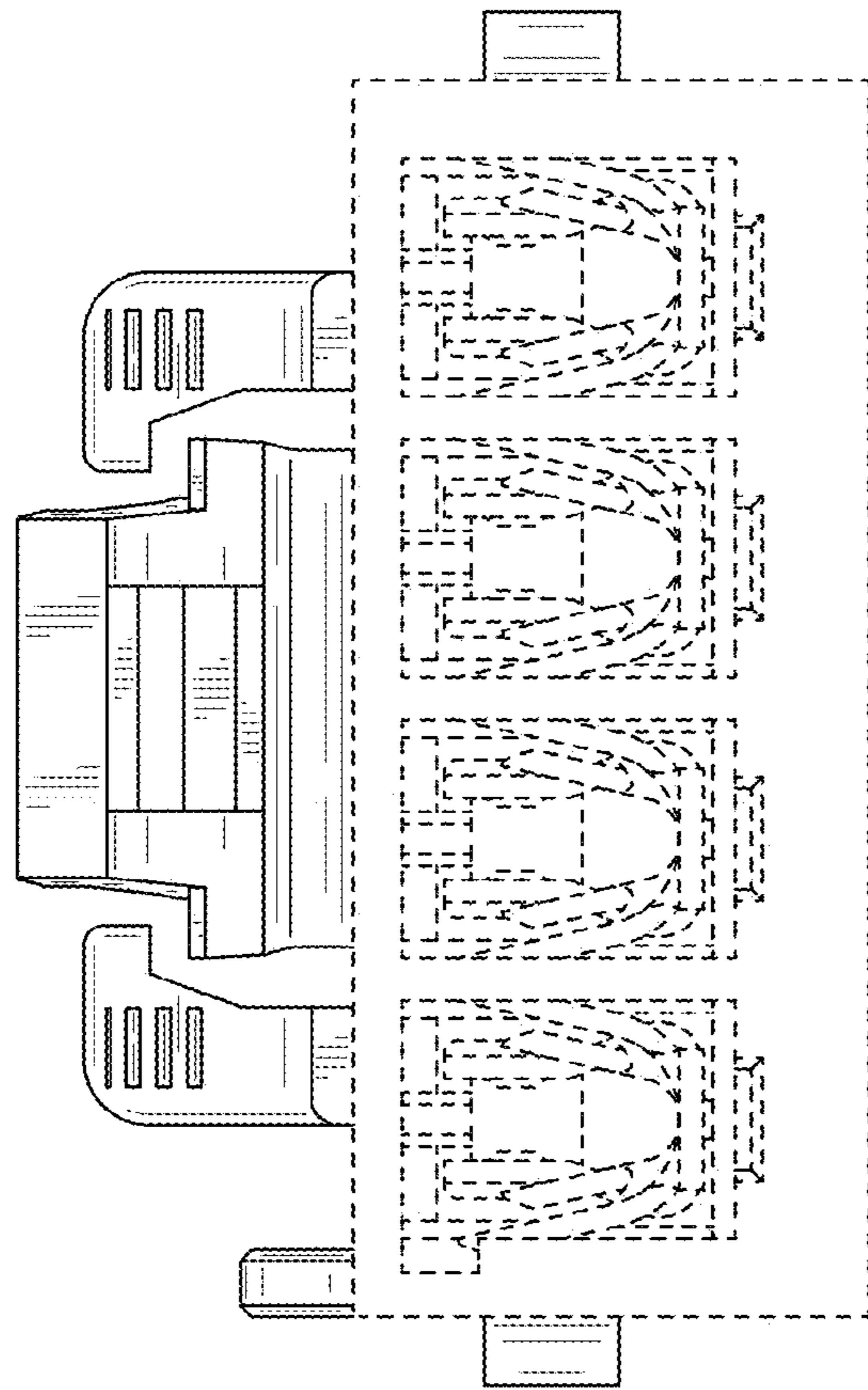


FIG. 36

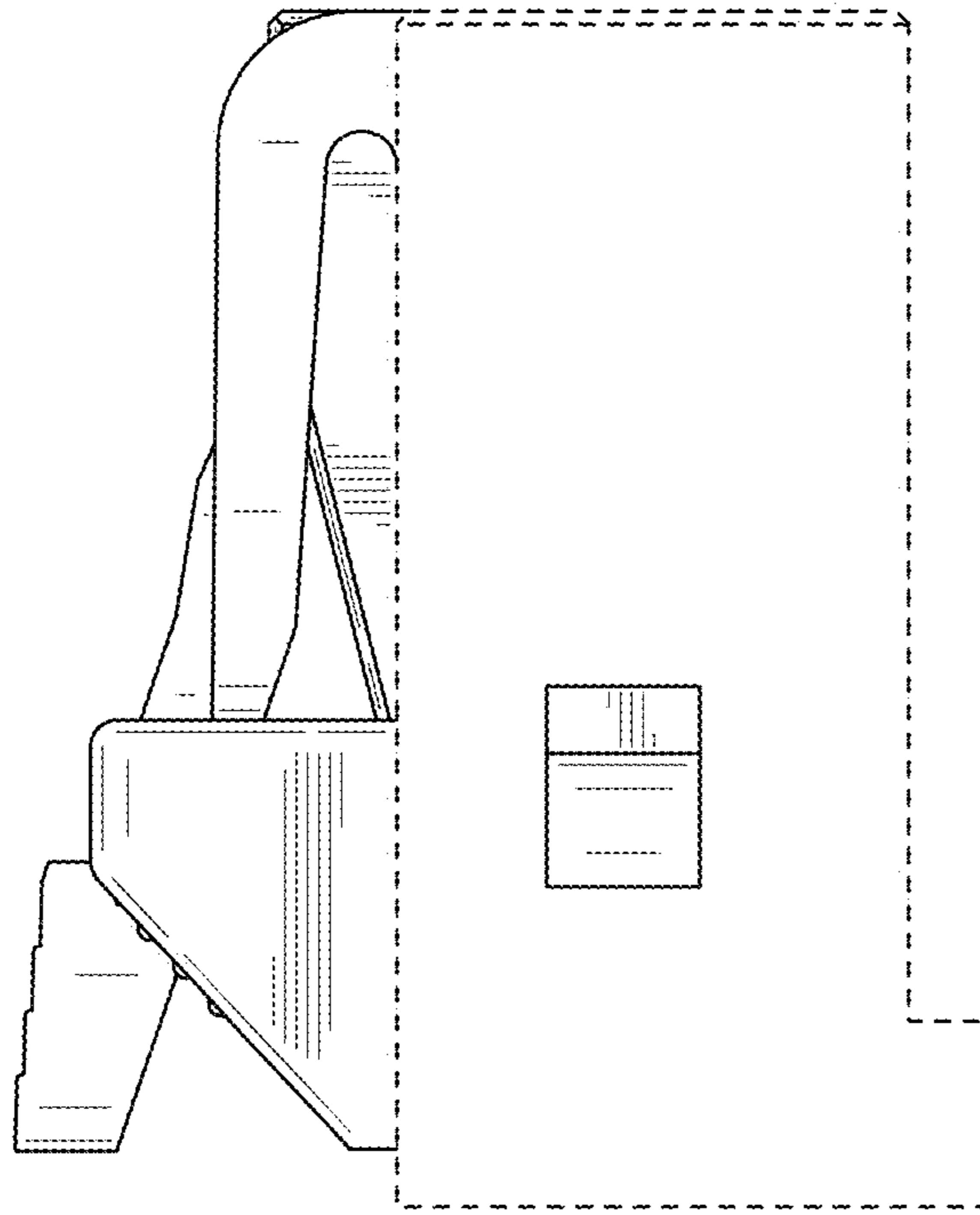


FIG. 38

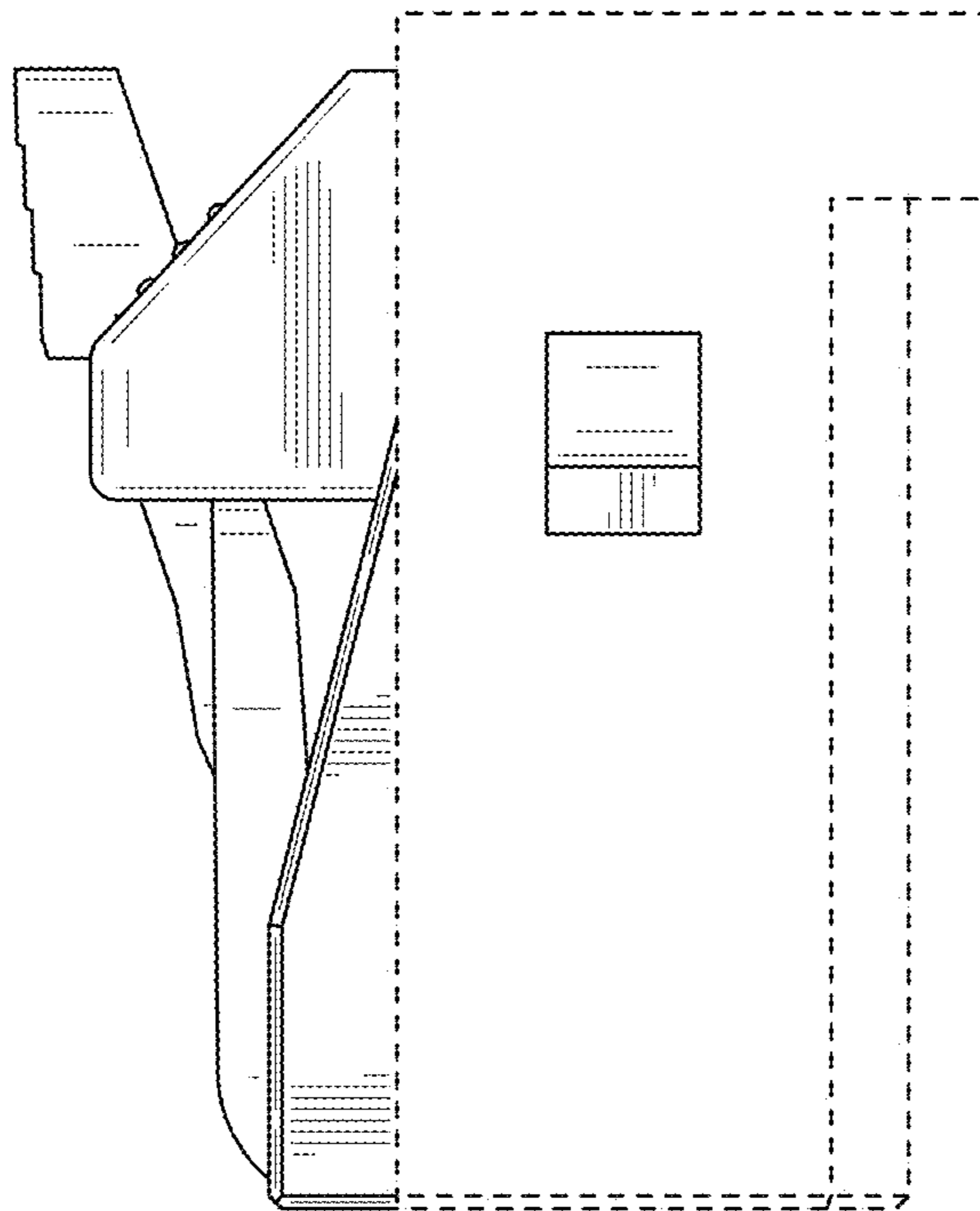


FIG. 37

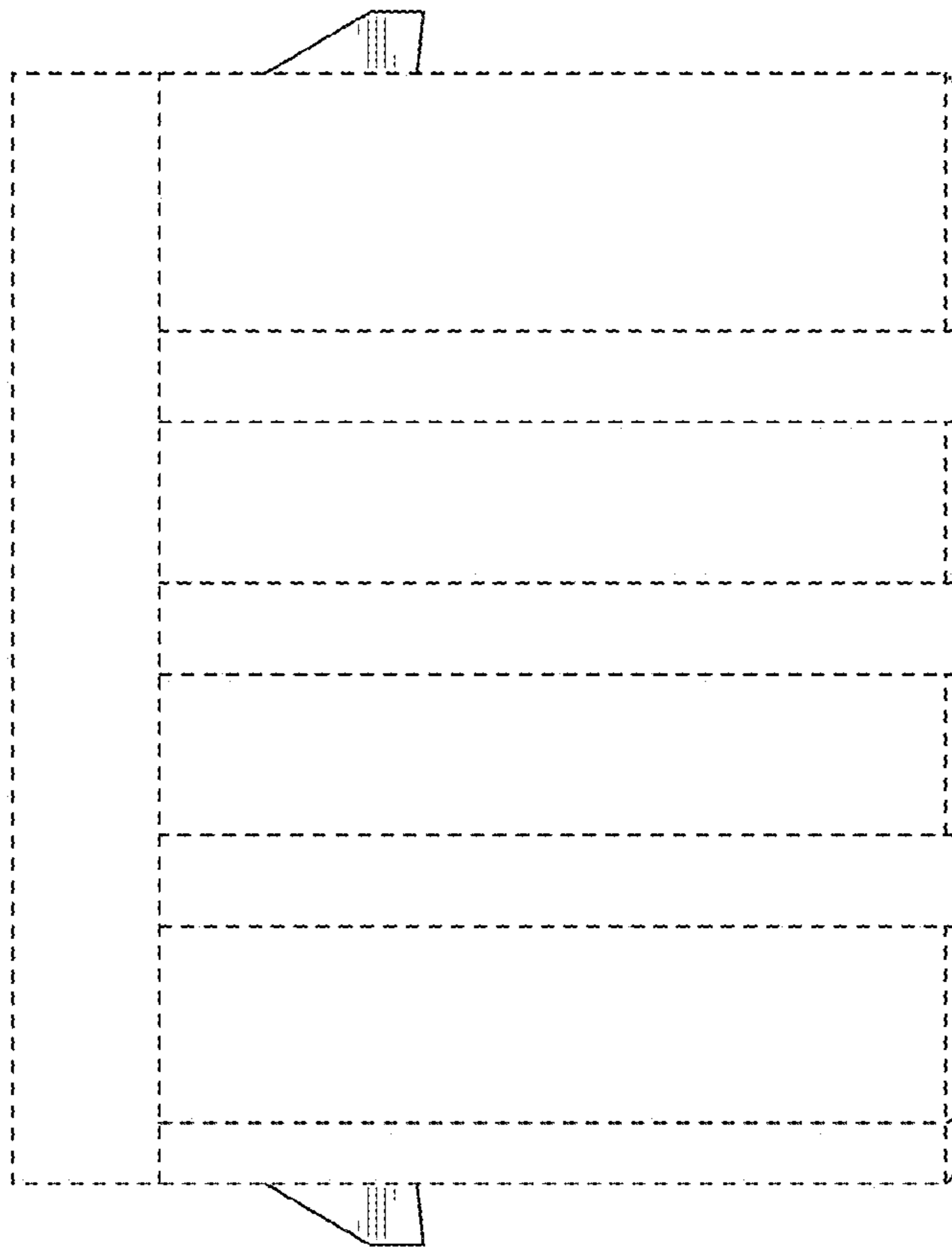


FIG. 40

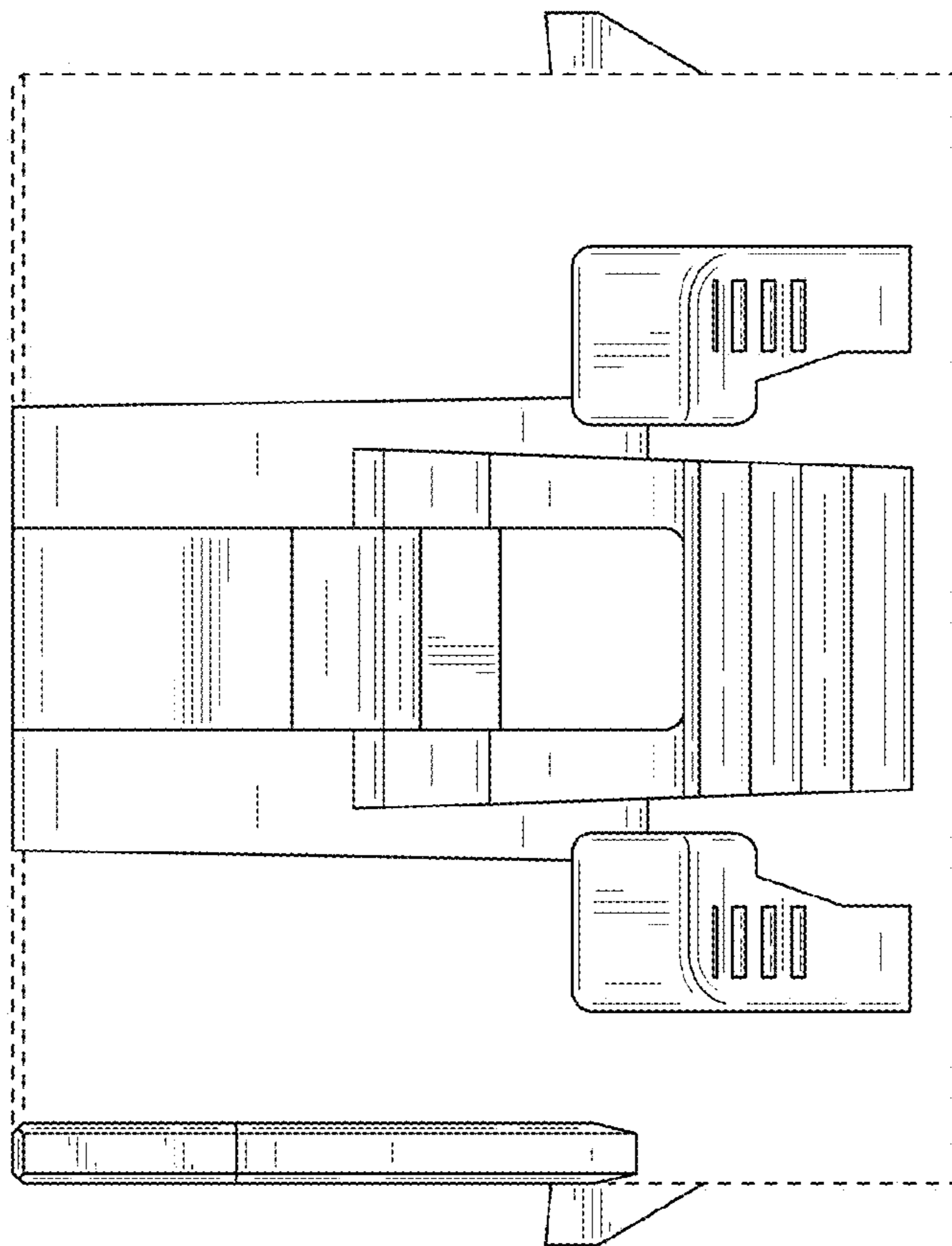


FIG. 39

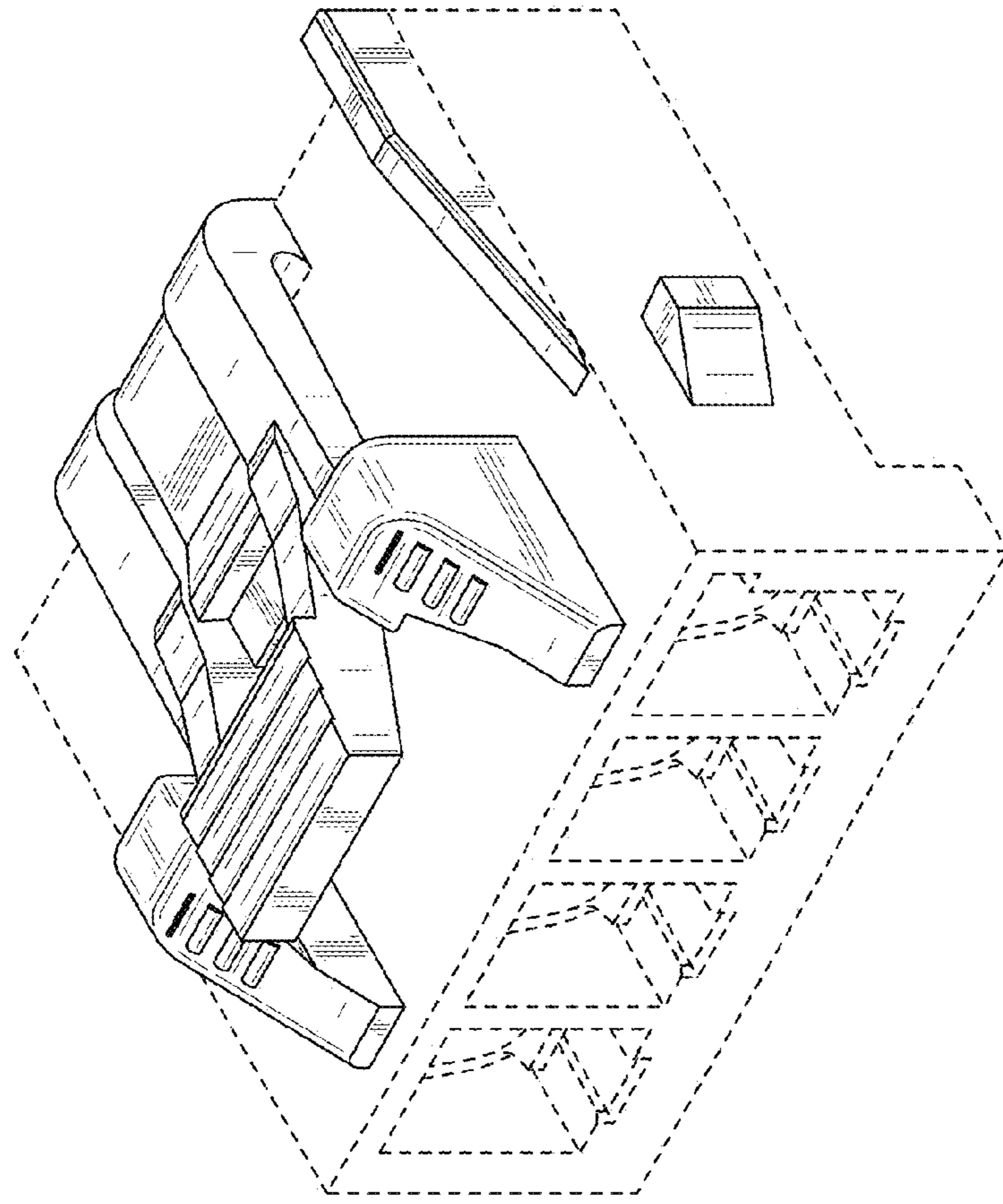


FIG. 42

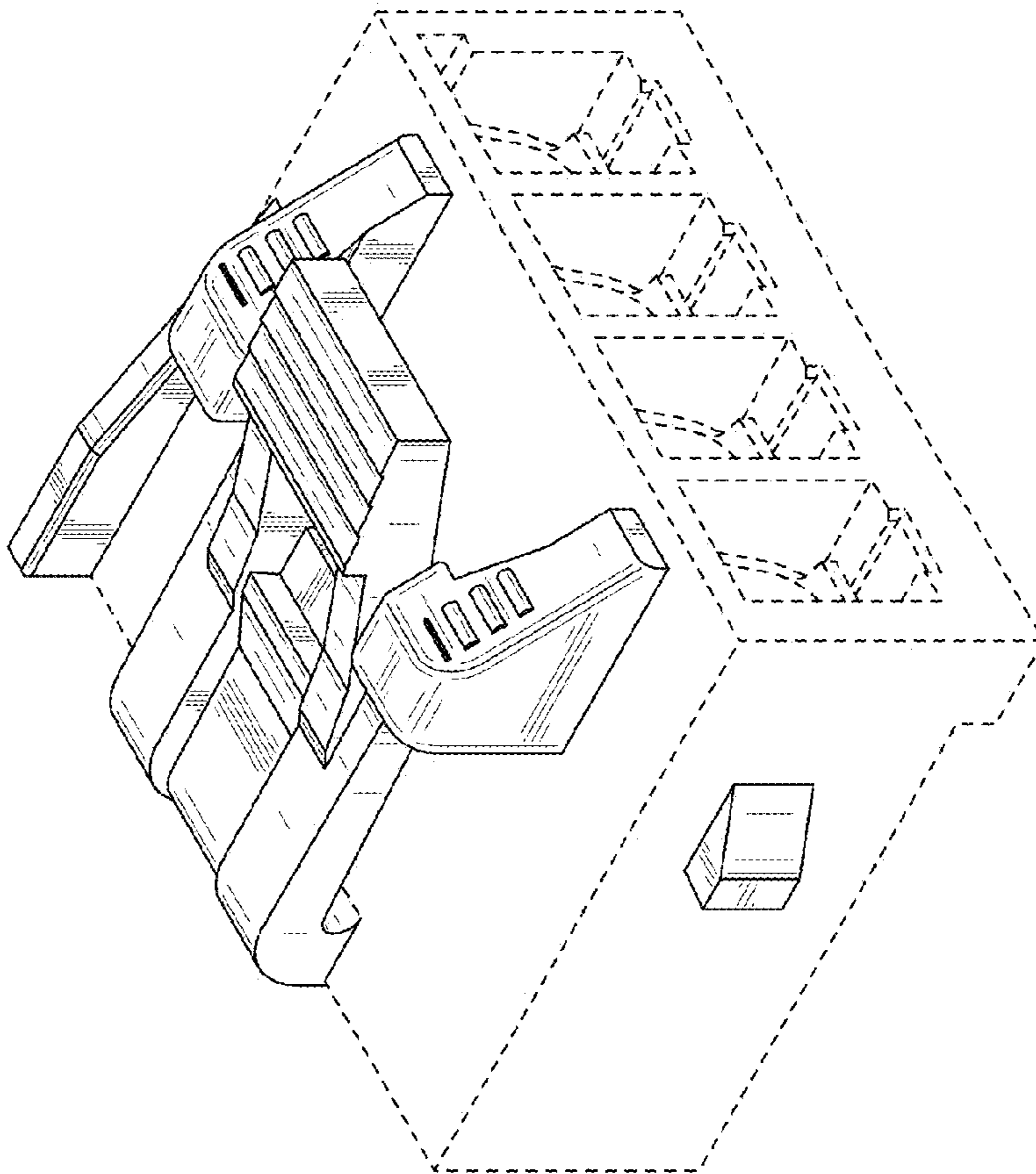


FIG. 41

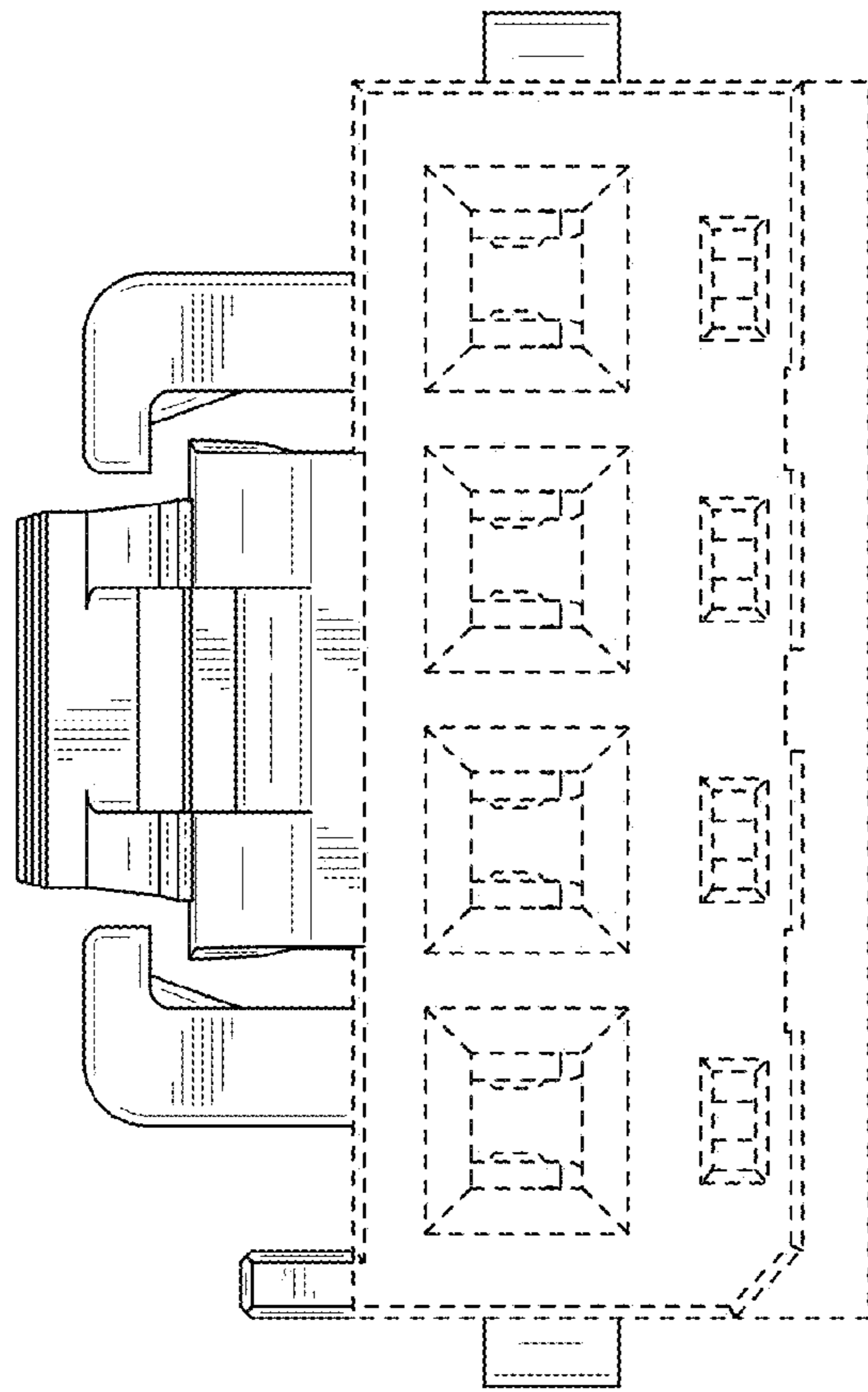


FIG. 44

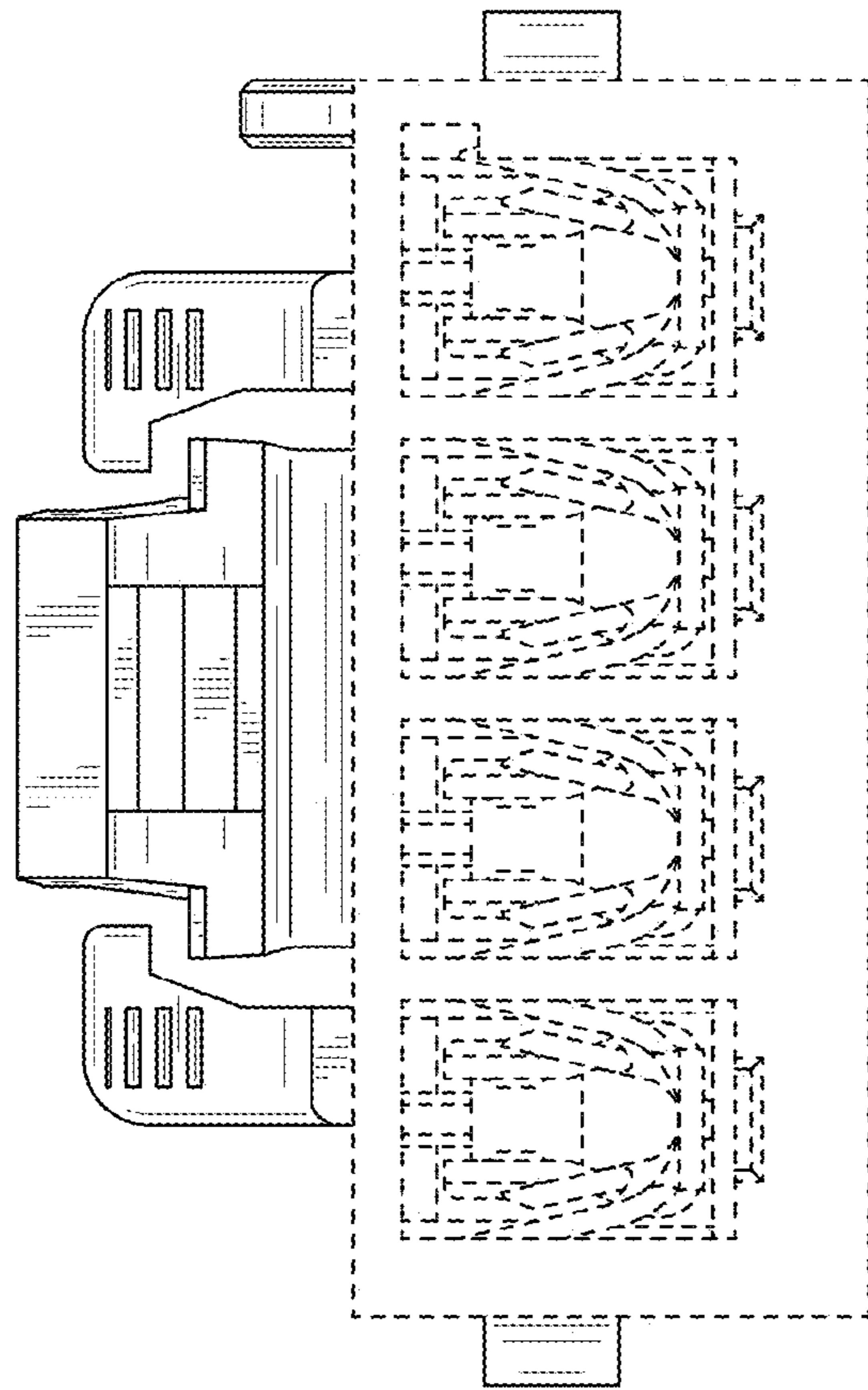


FIG. 43

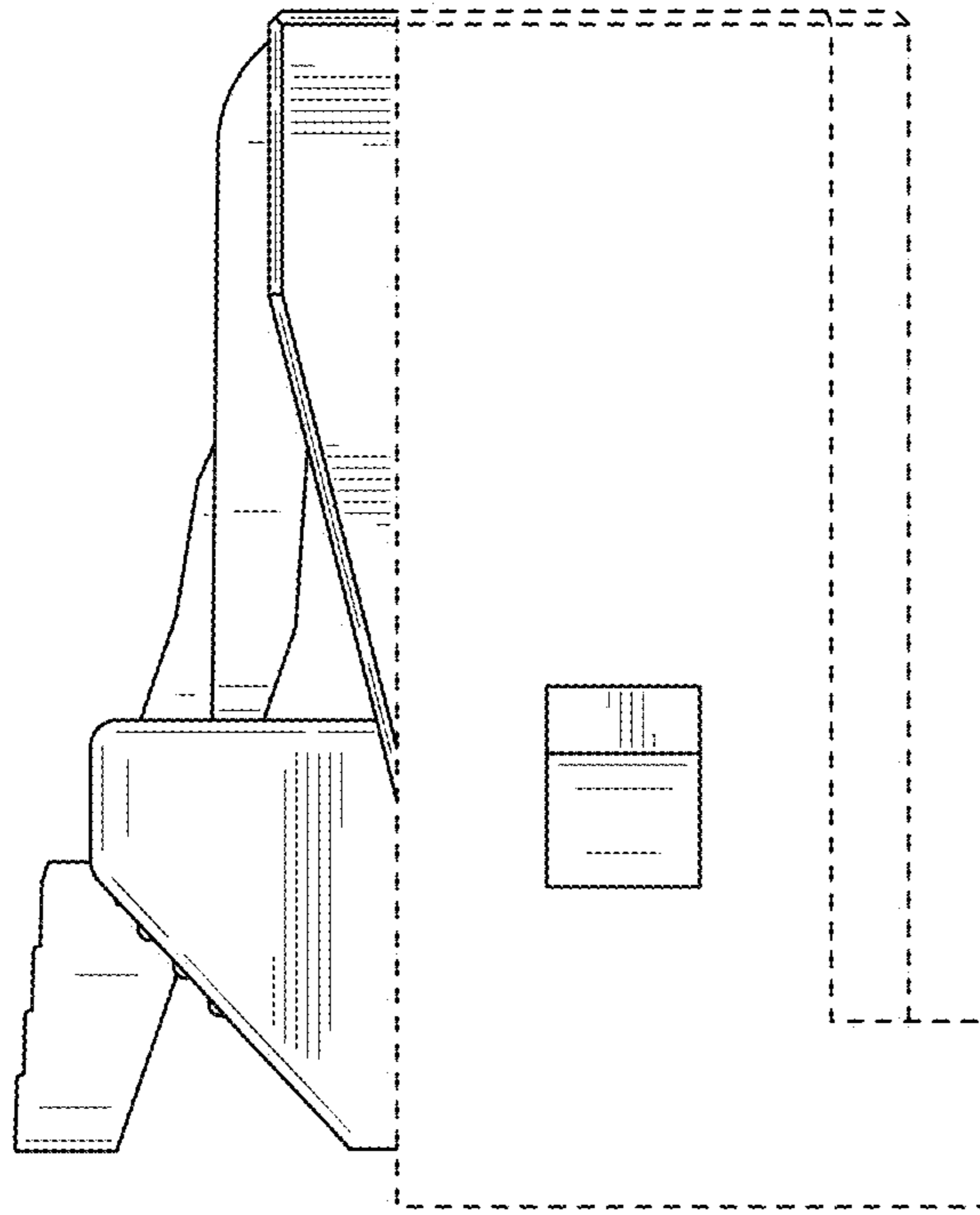


FIG. 46

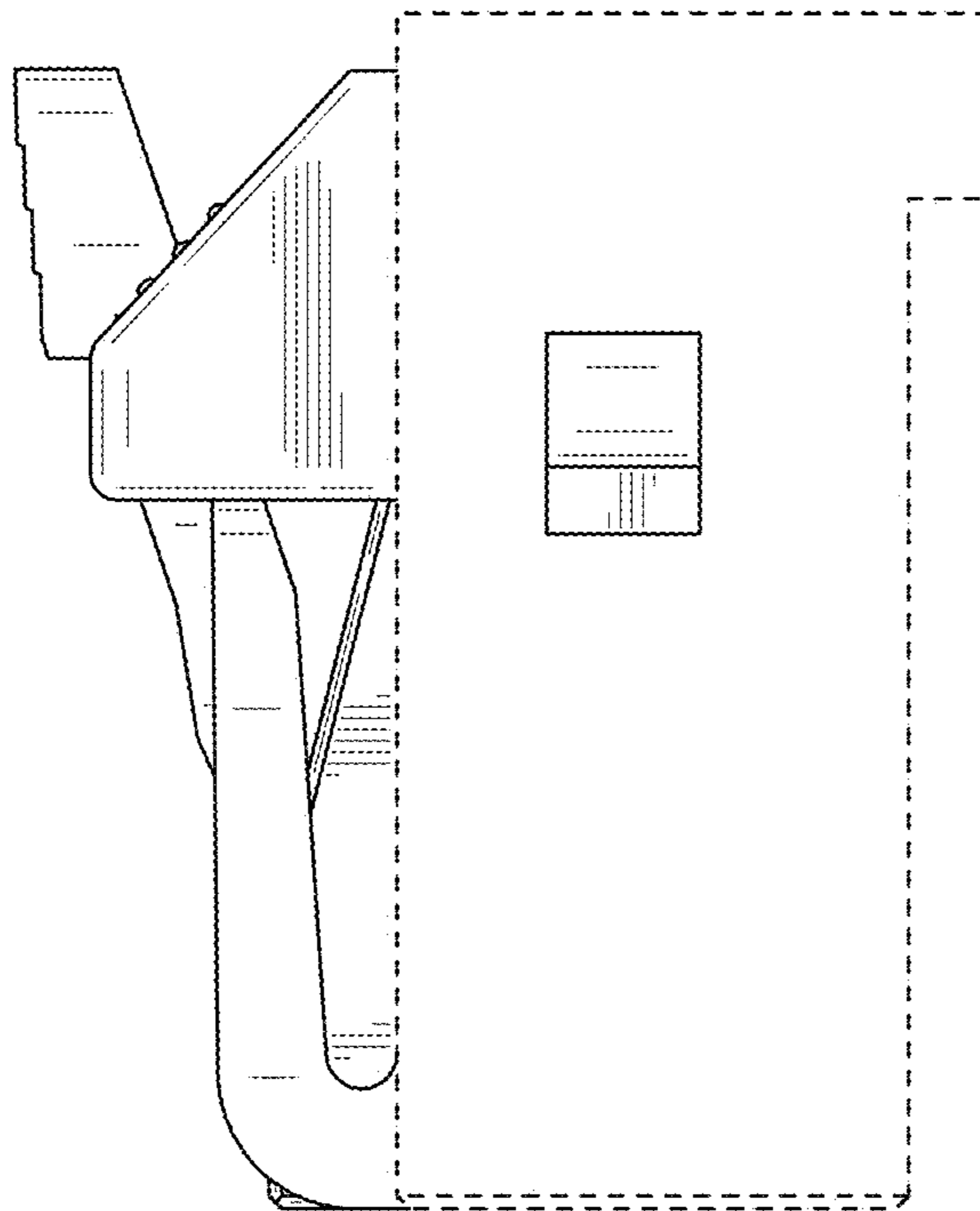


FIG. 45

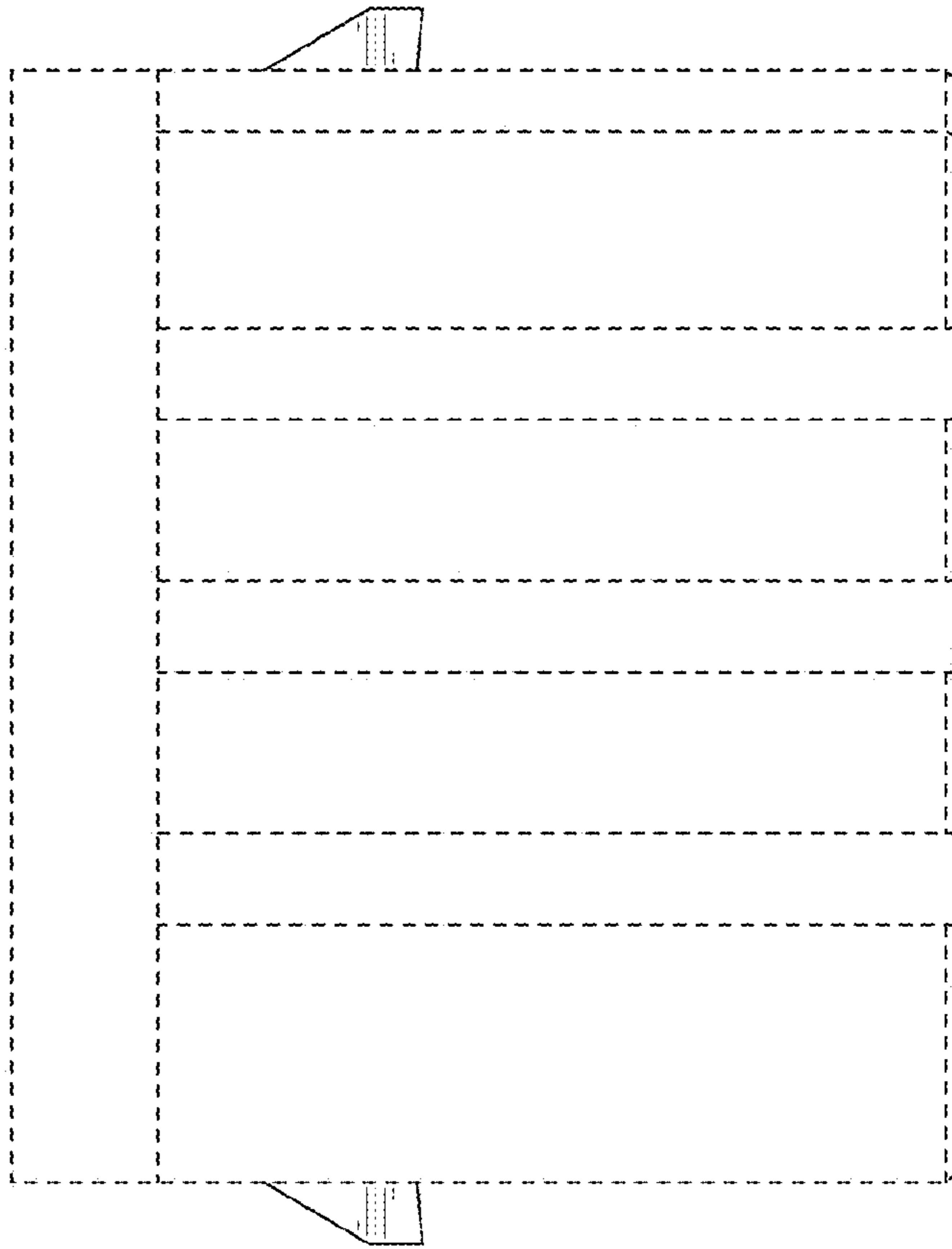


FIG. 48

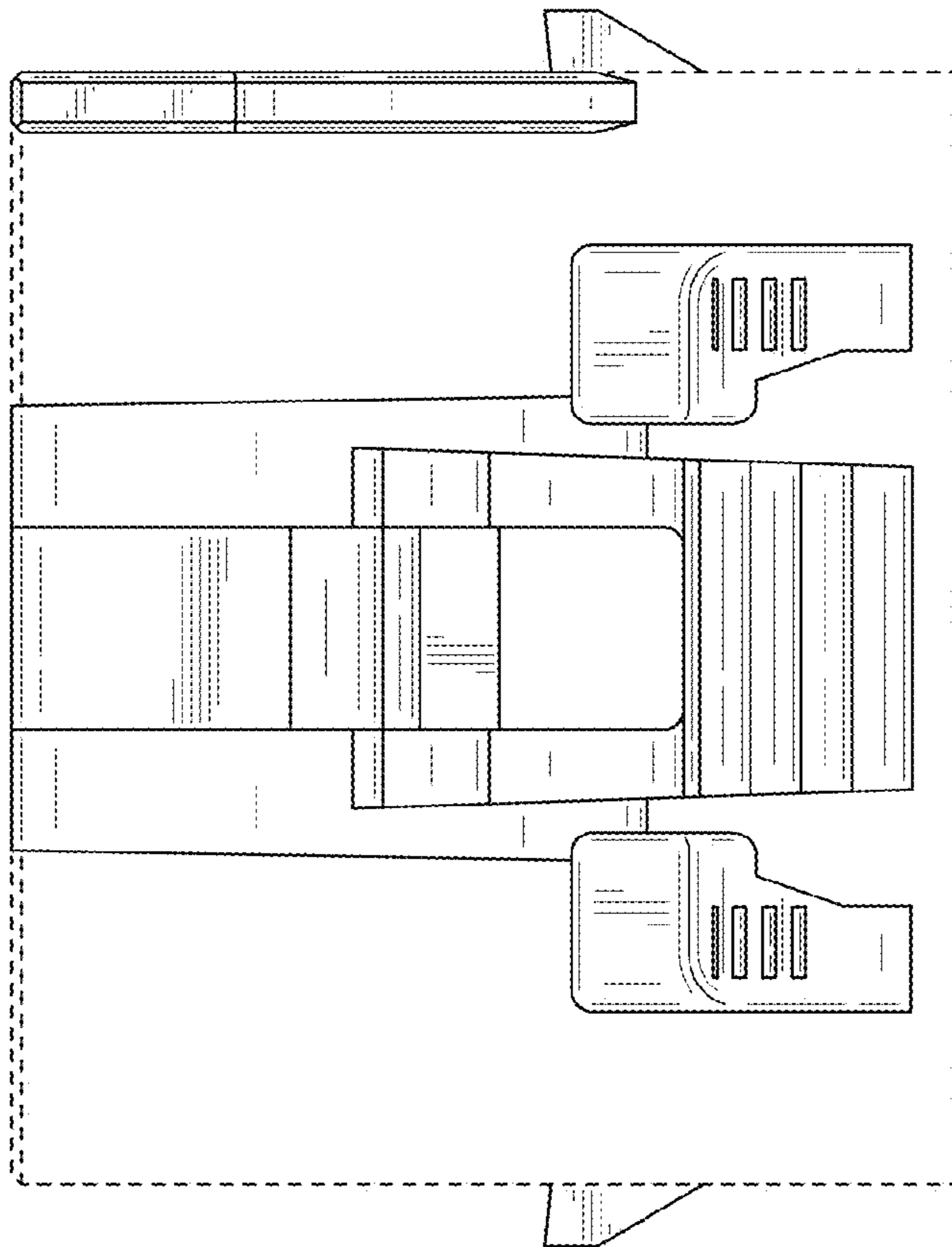


FIG. 47

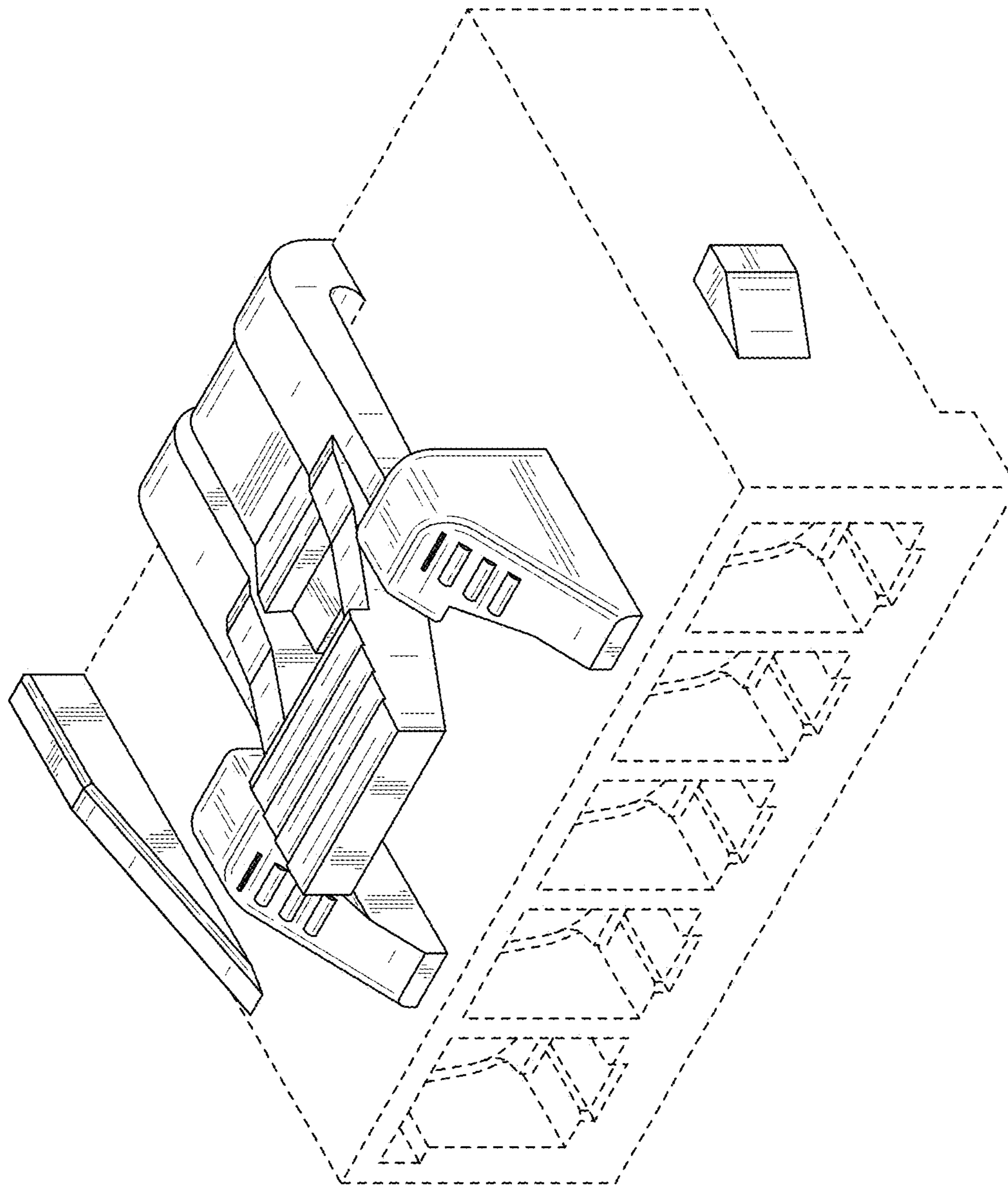


FIG. 49

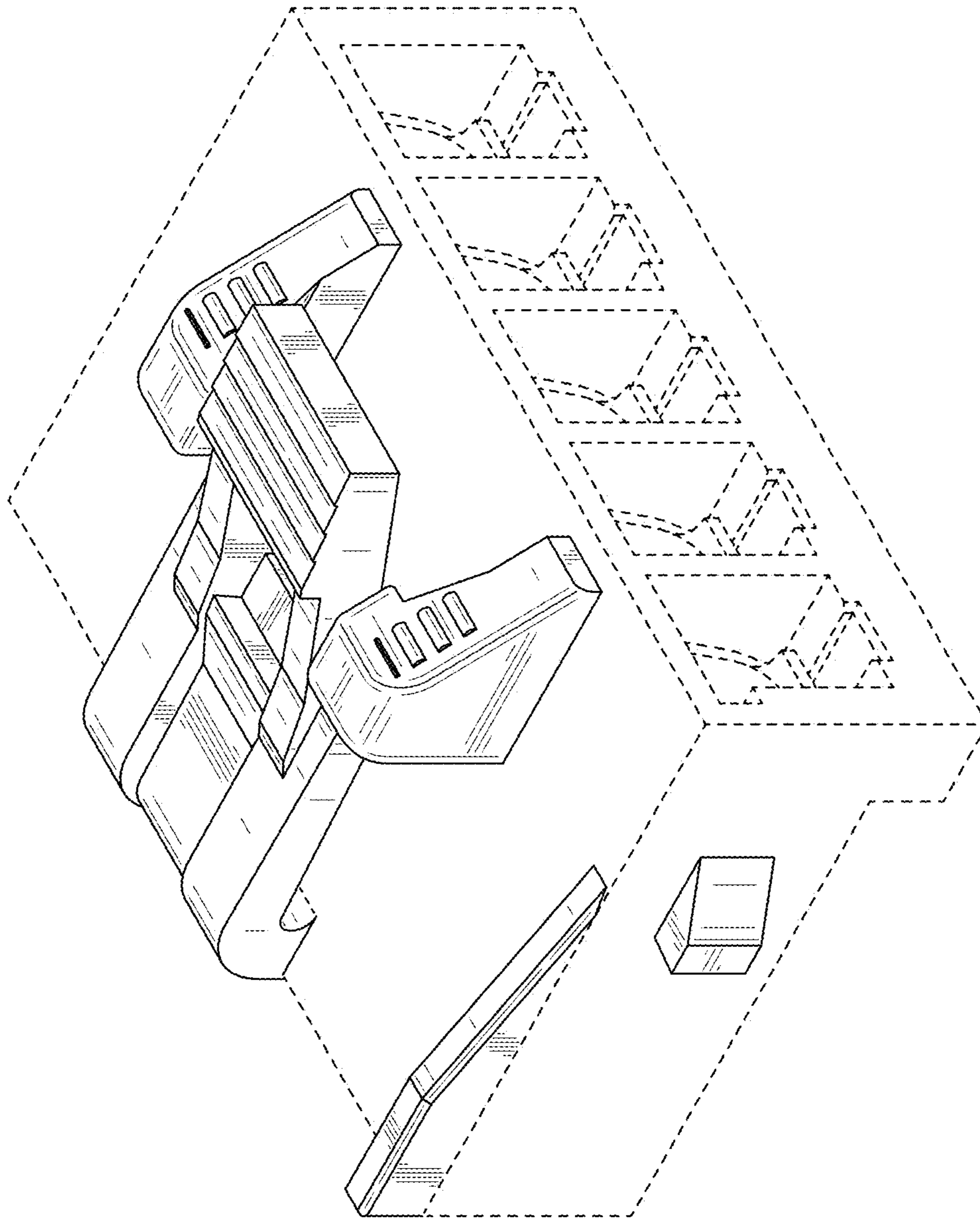


FIG. 50

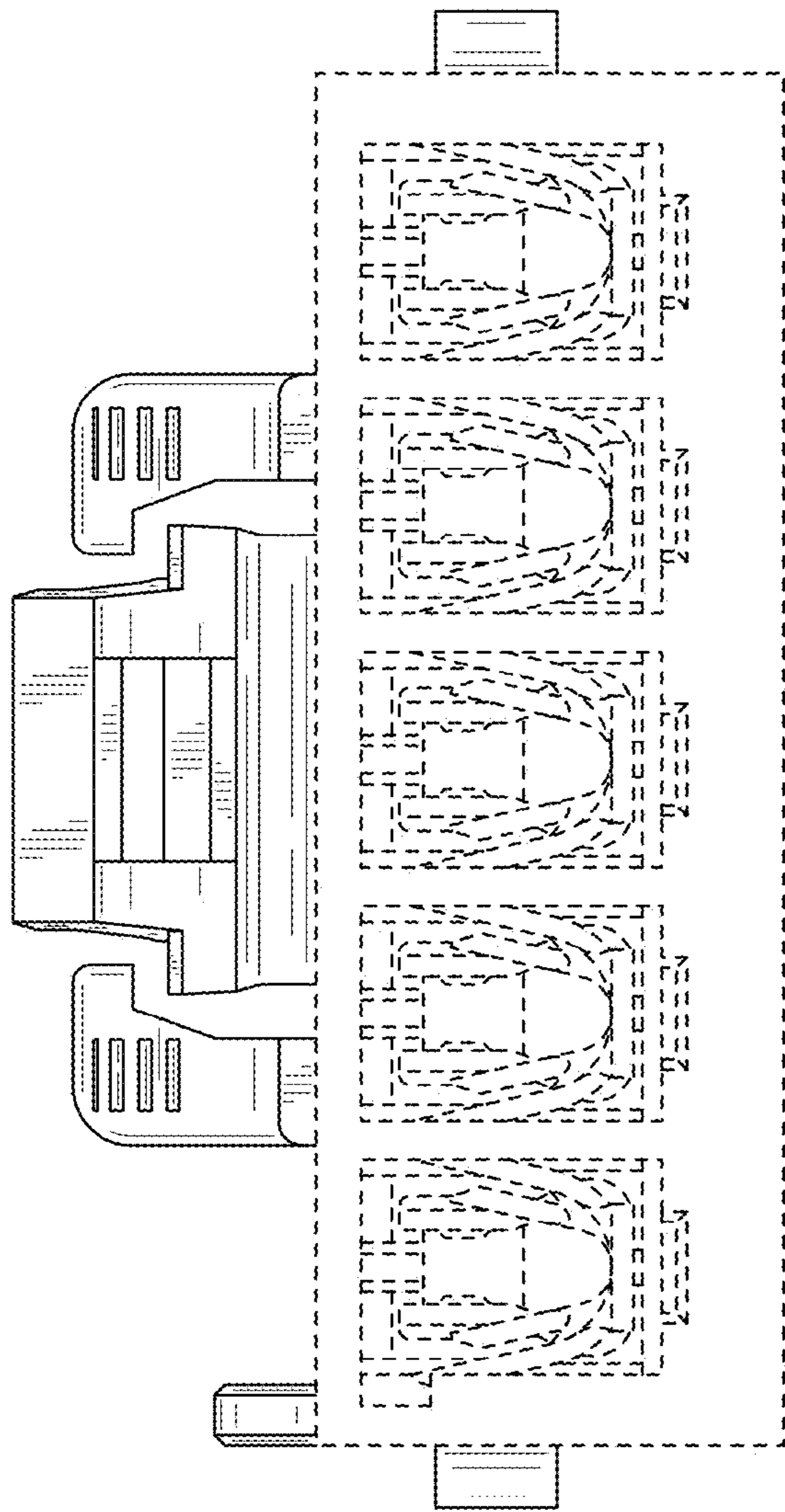


FIG. 51

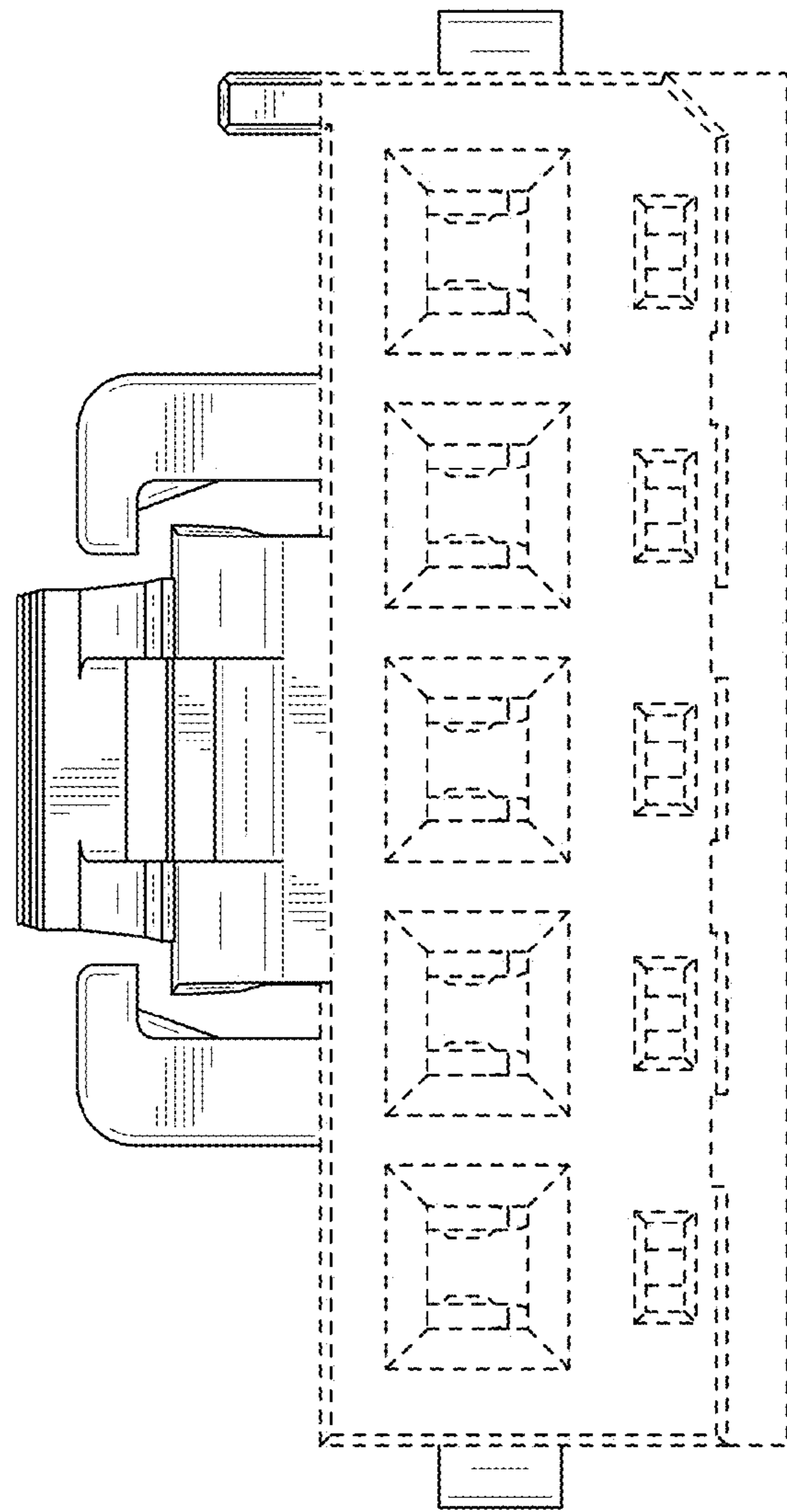


FIG. 52

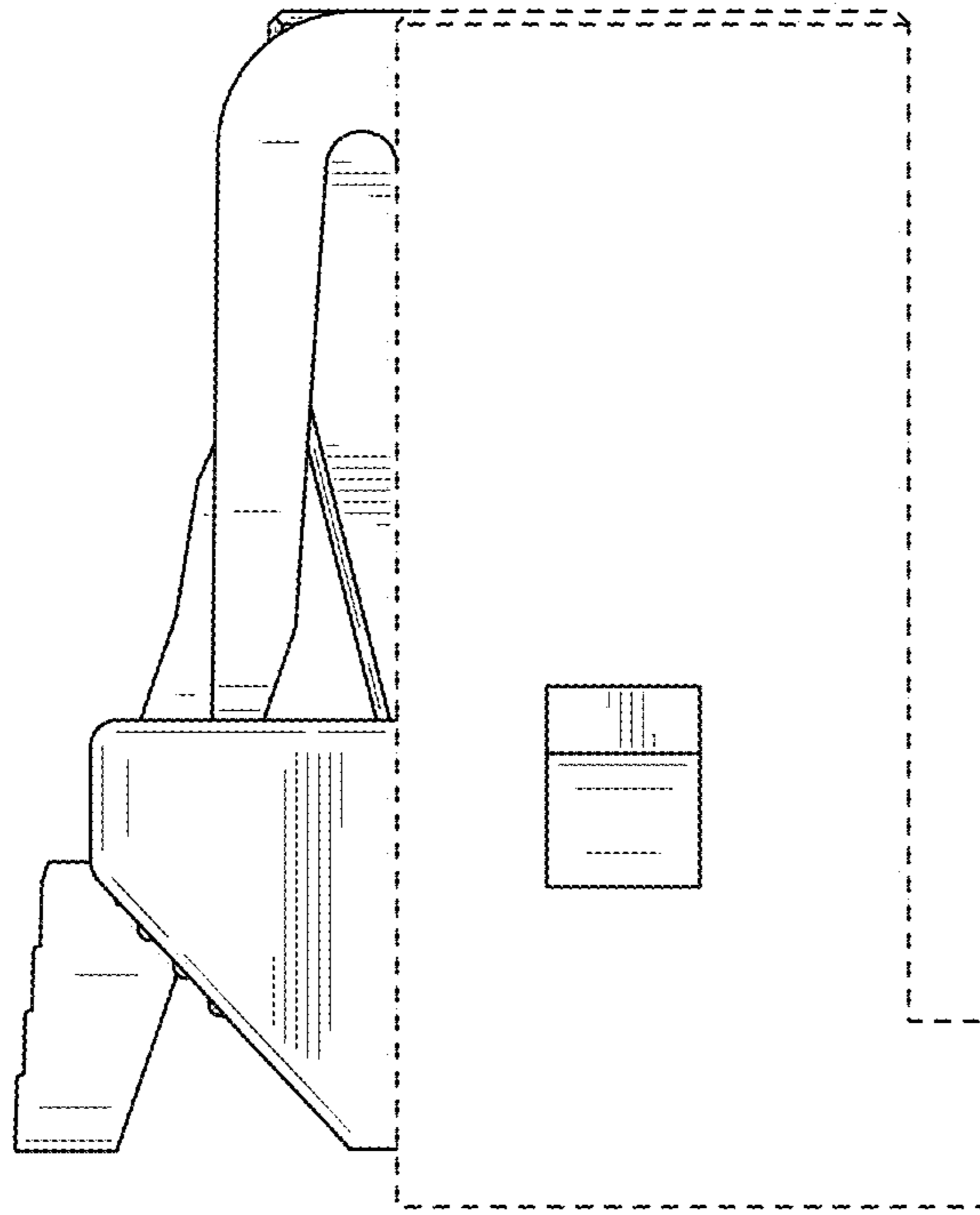


FIG. 54

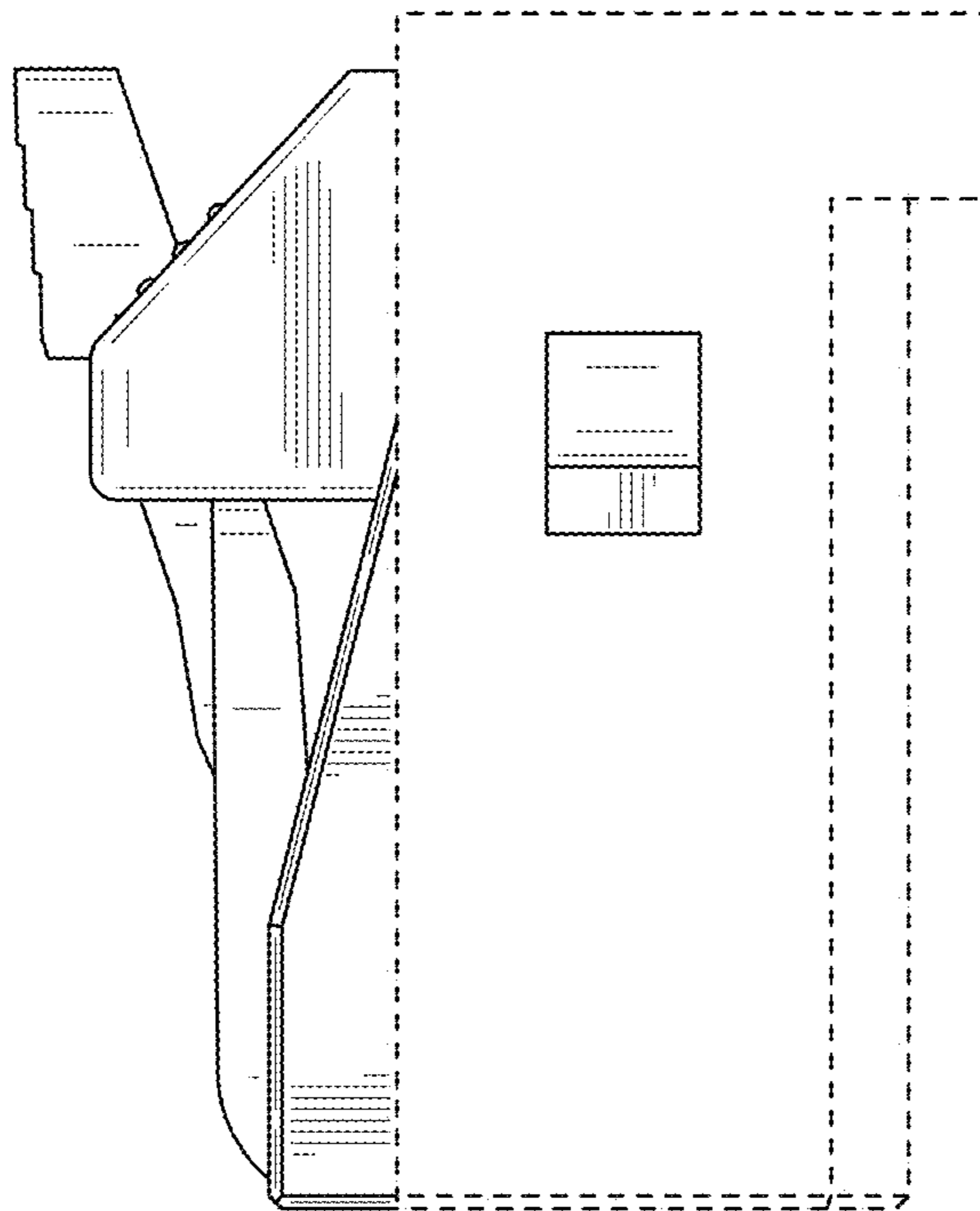


FIG. 53

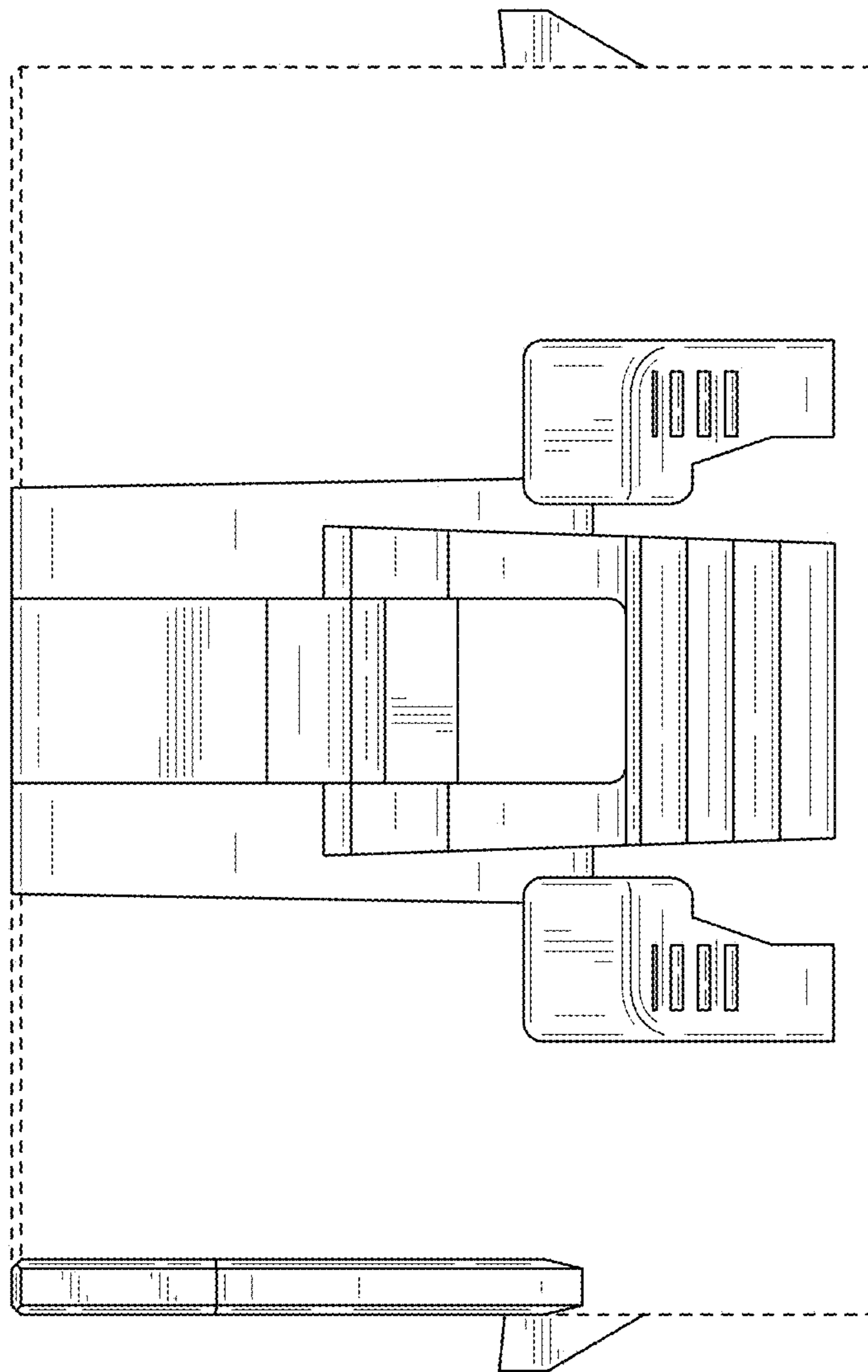


FIG. 55

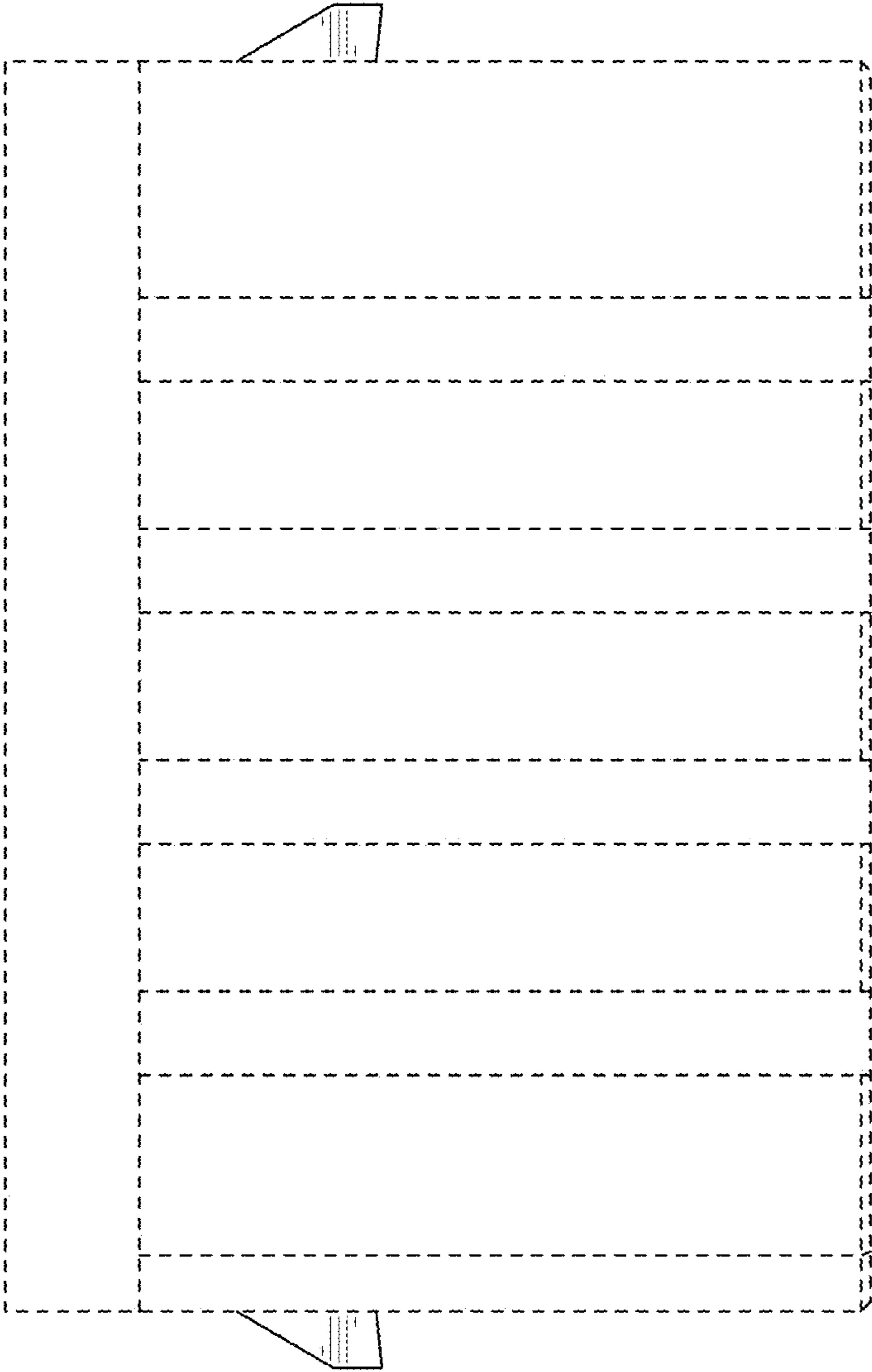


FIG. 56

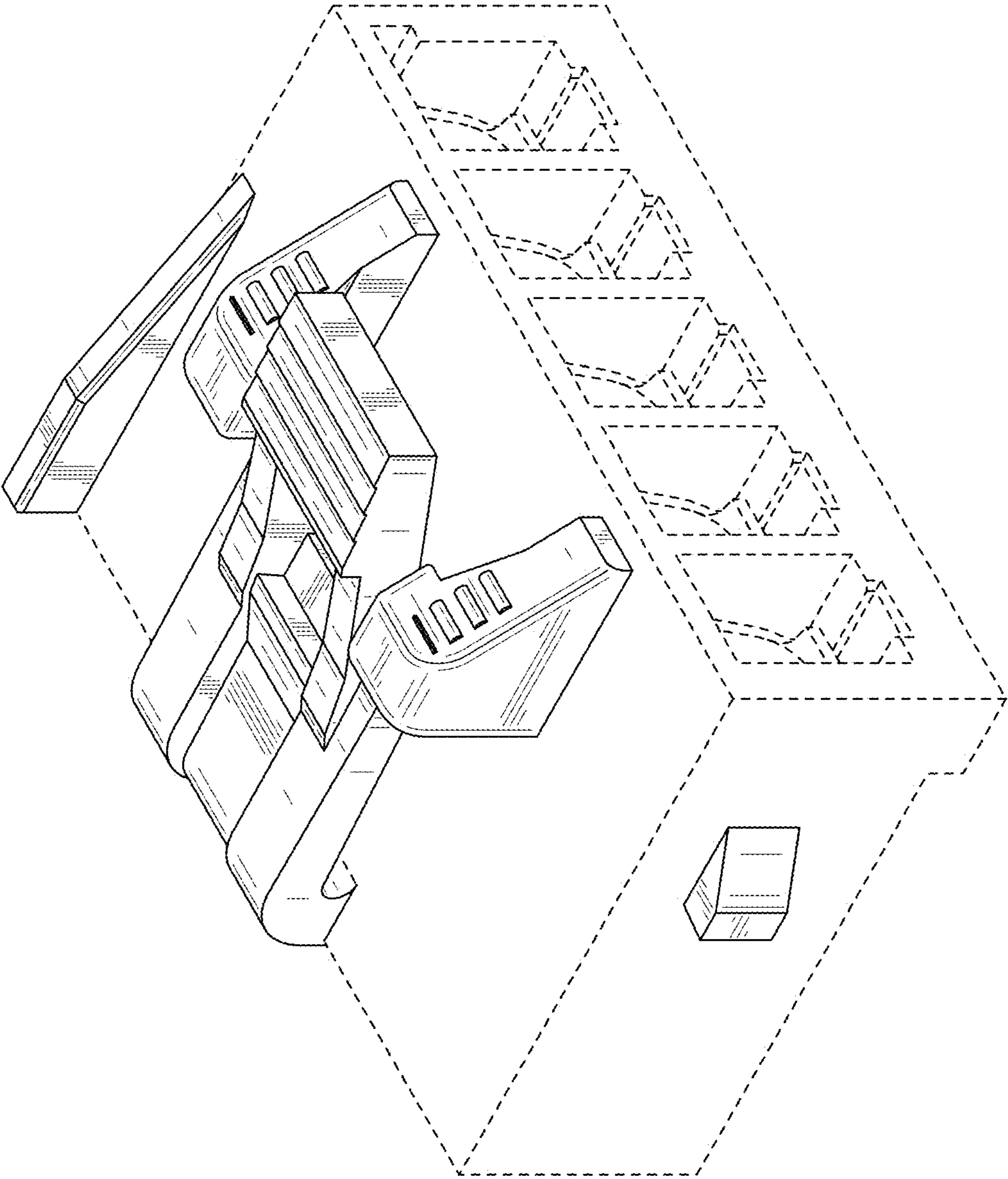


FIG. 57

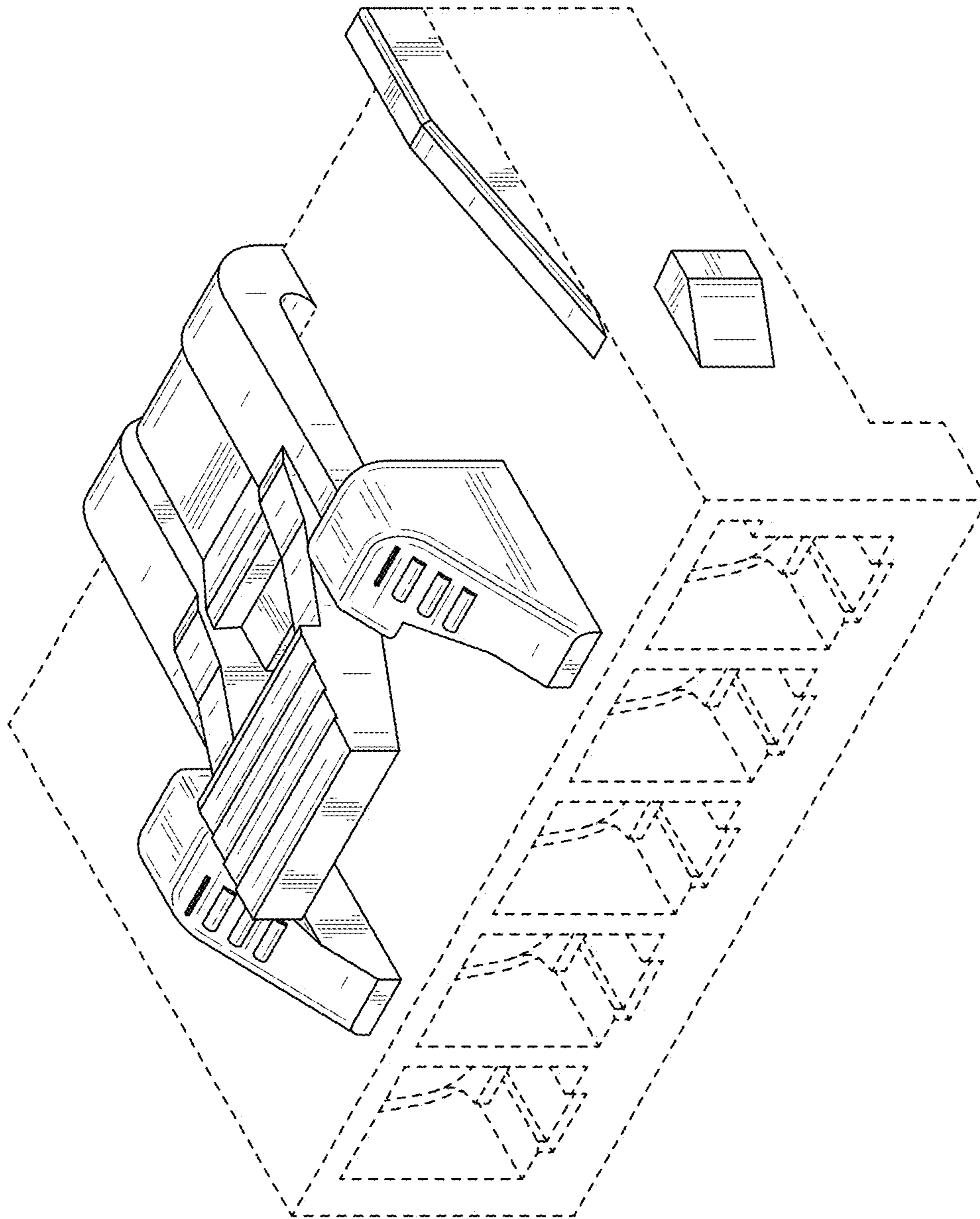


FIG. 58

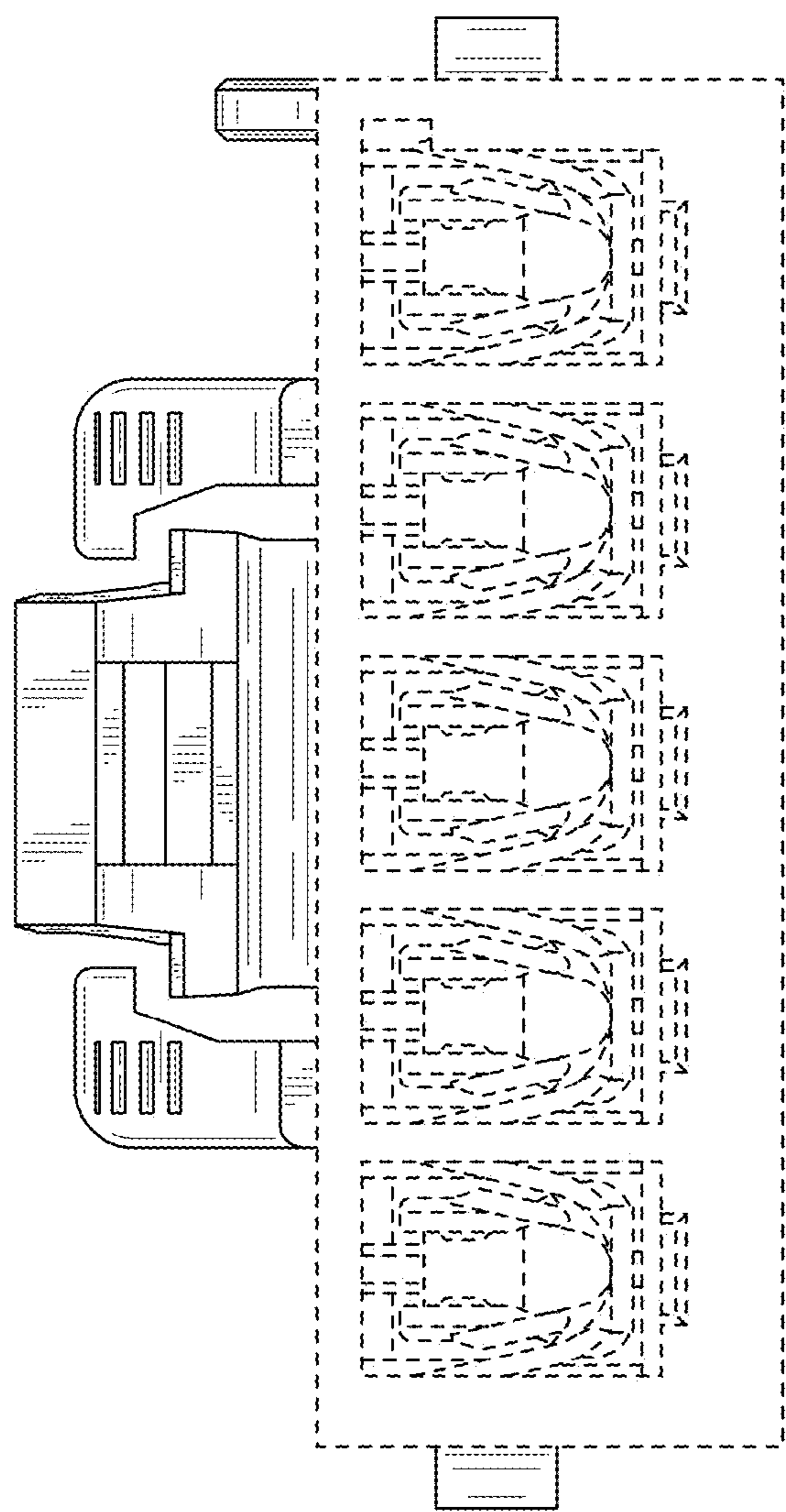


FIG. 59

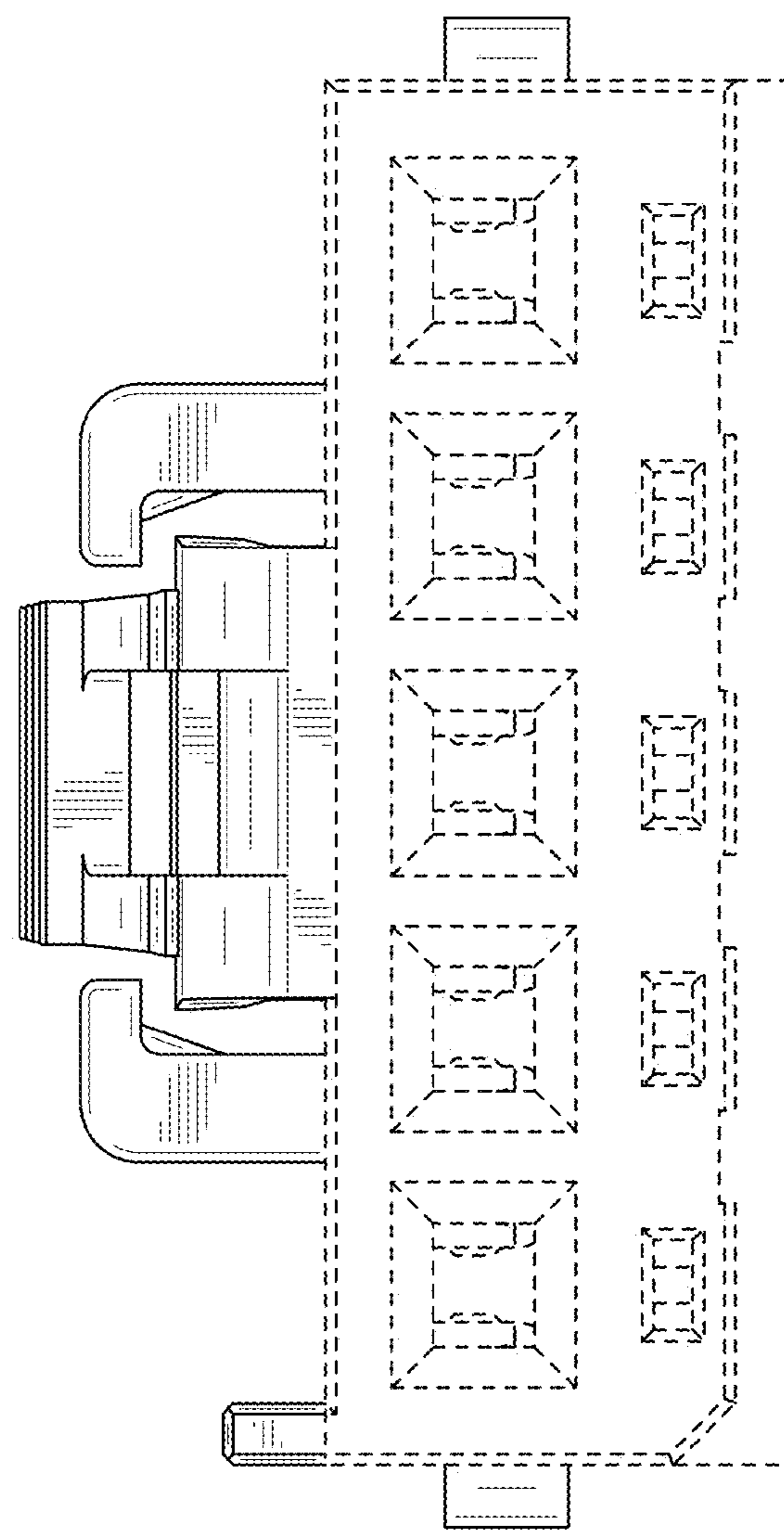


FIG. 60

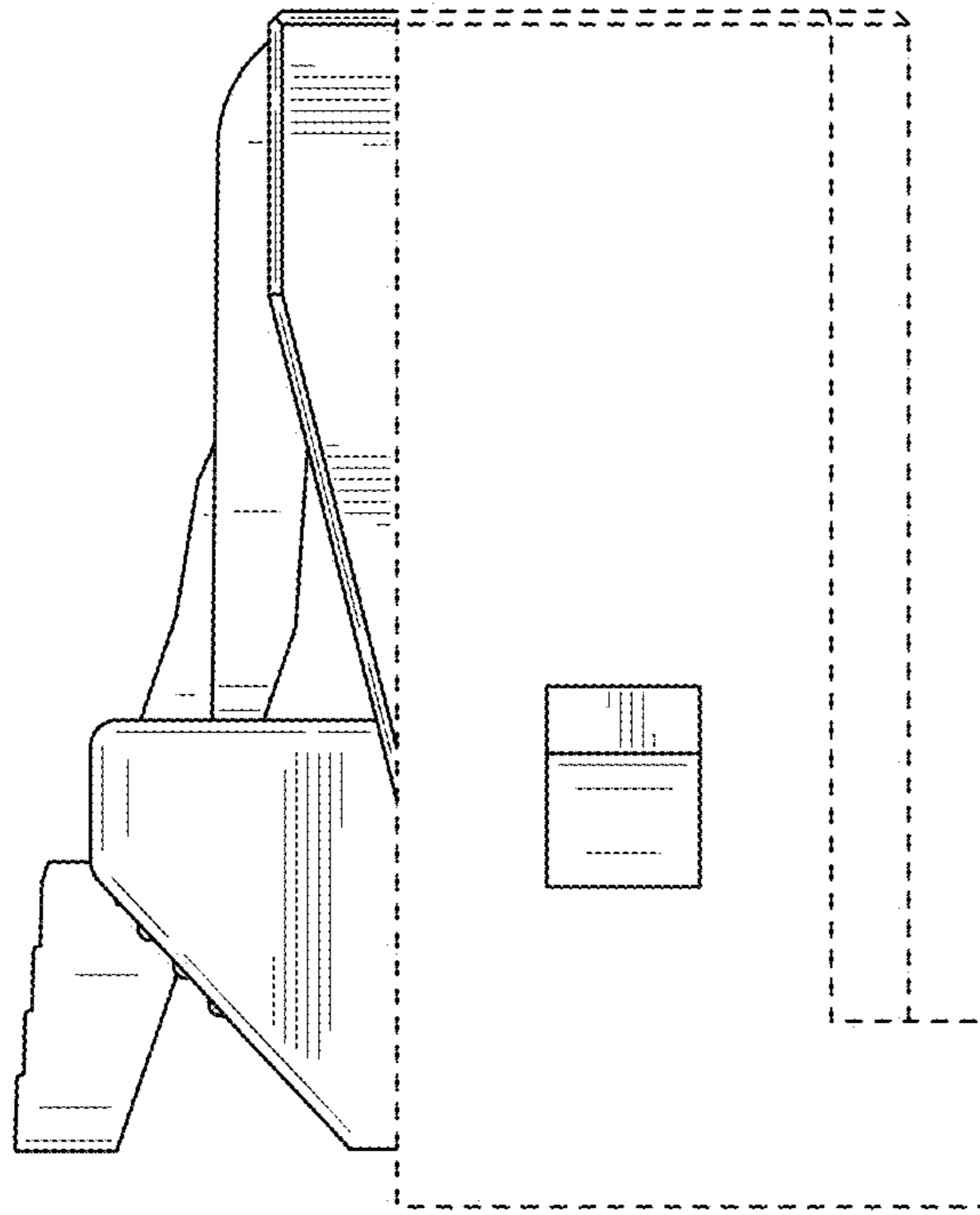


FIG. 62

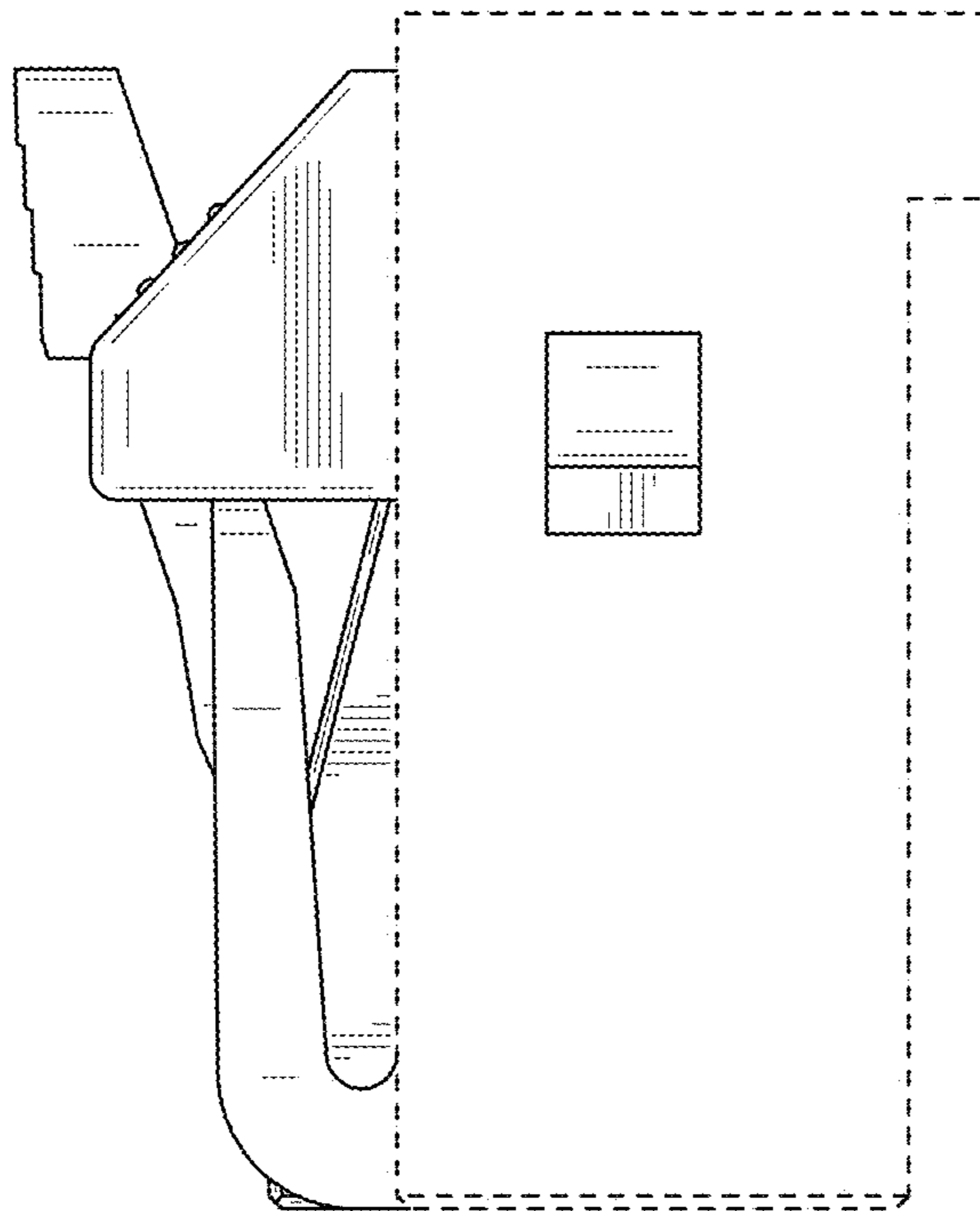


FIG. 61

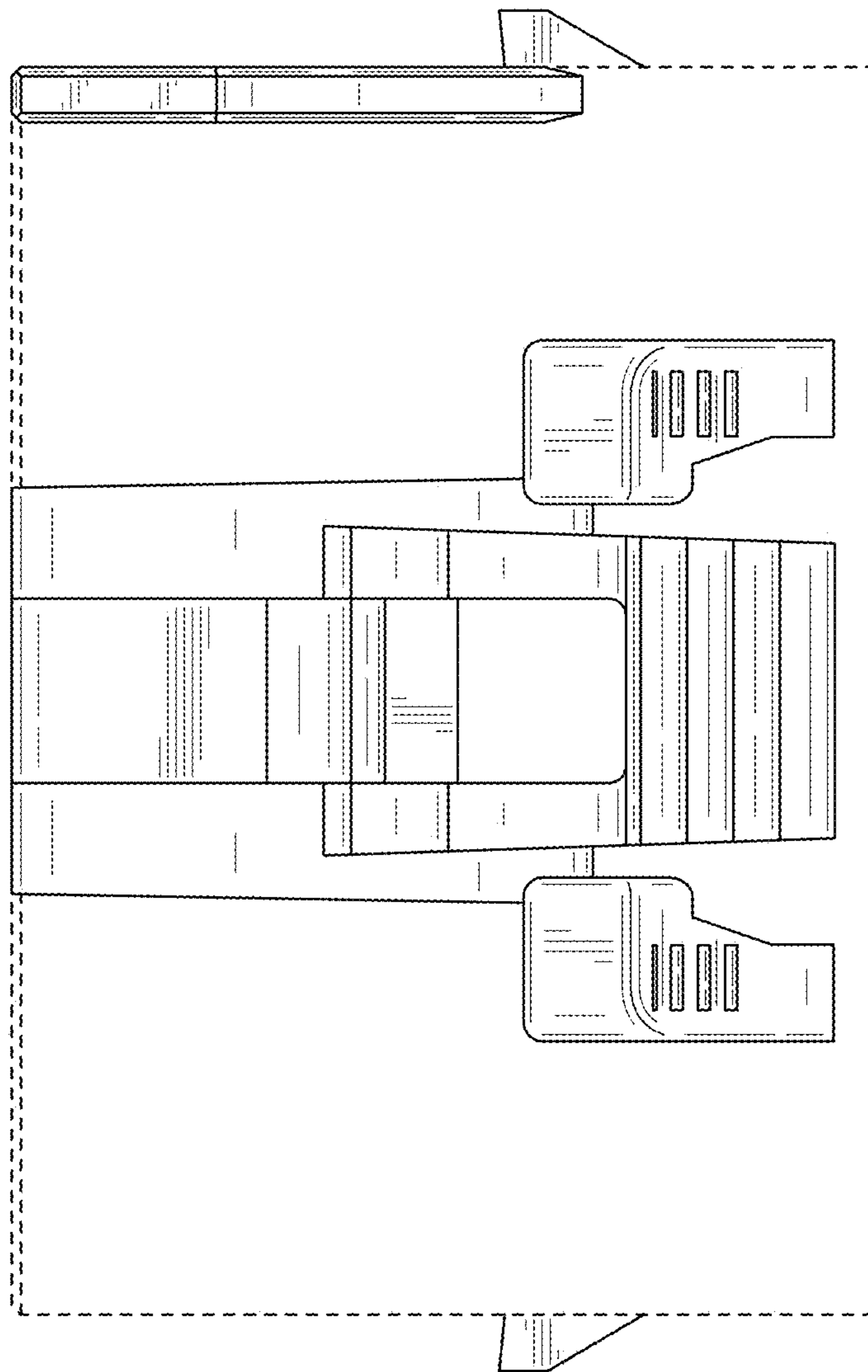


FIG. 63

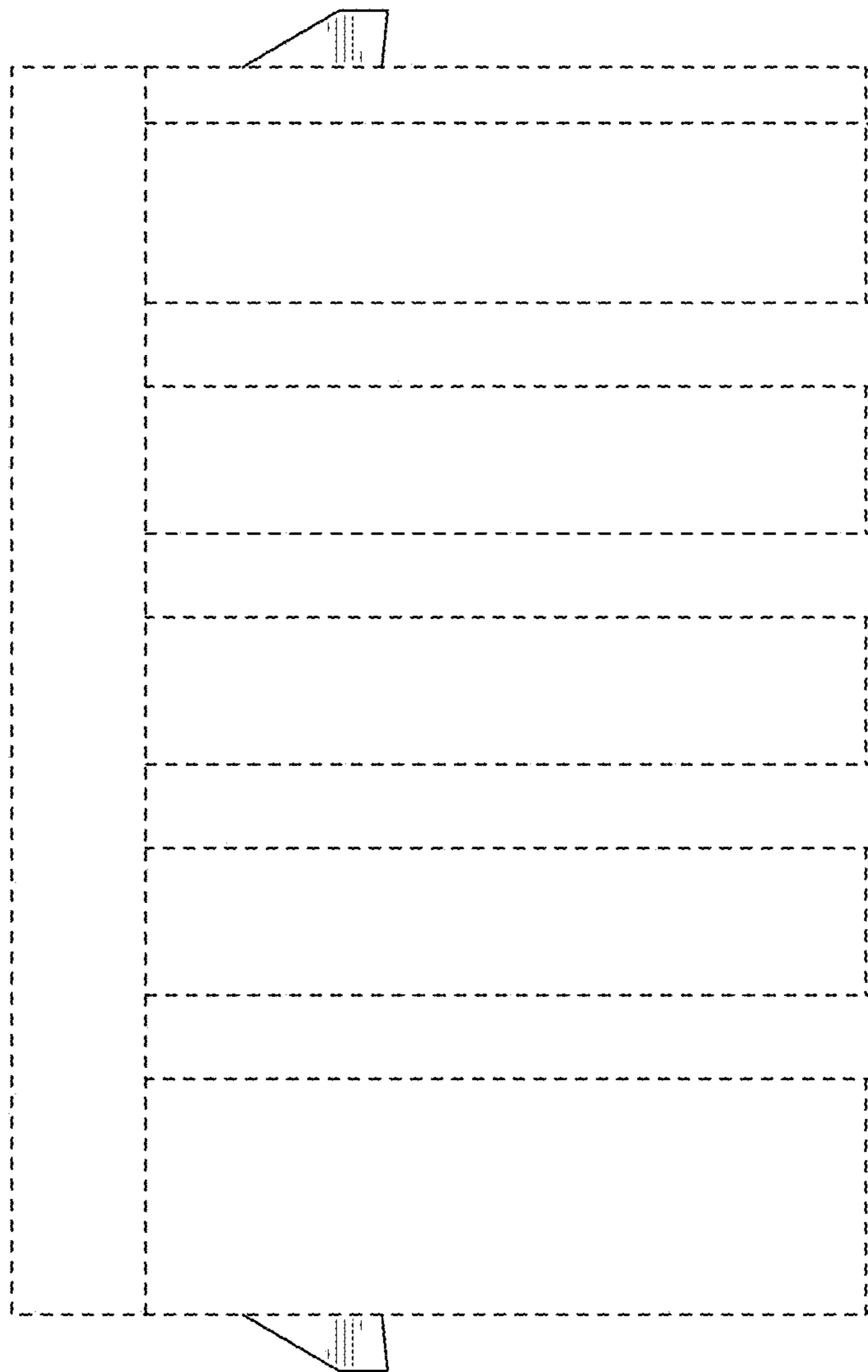


FIG. 64

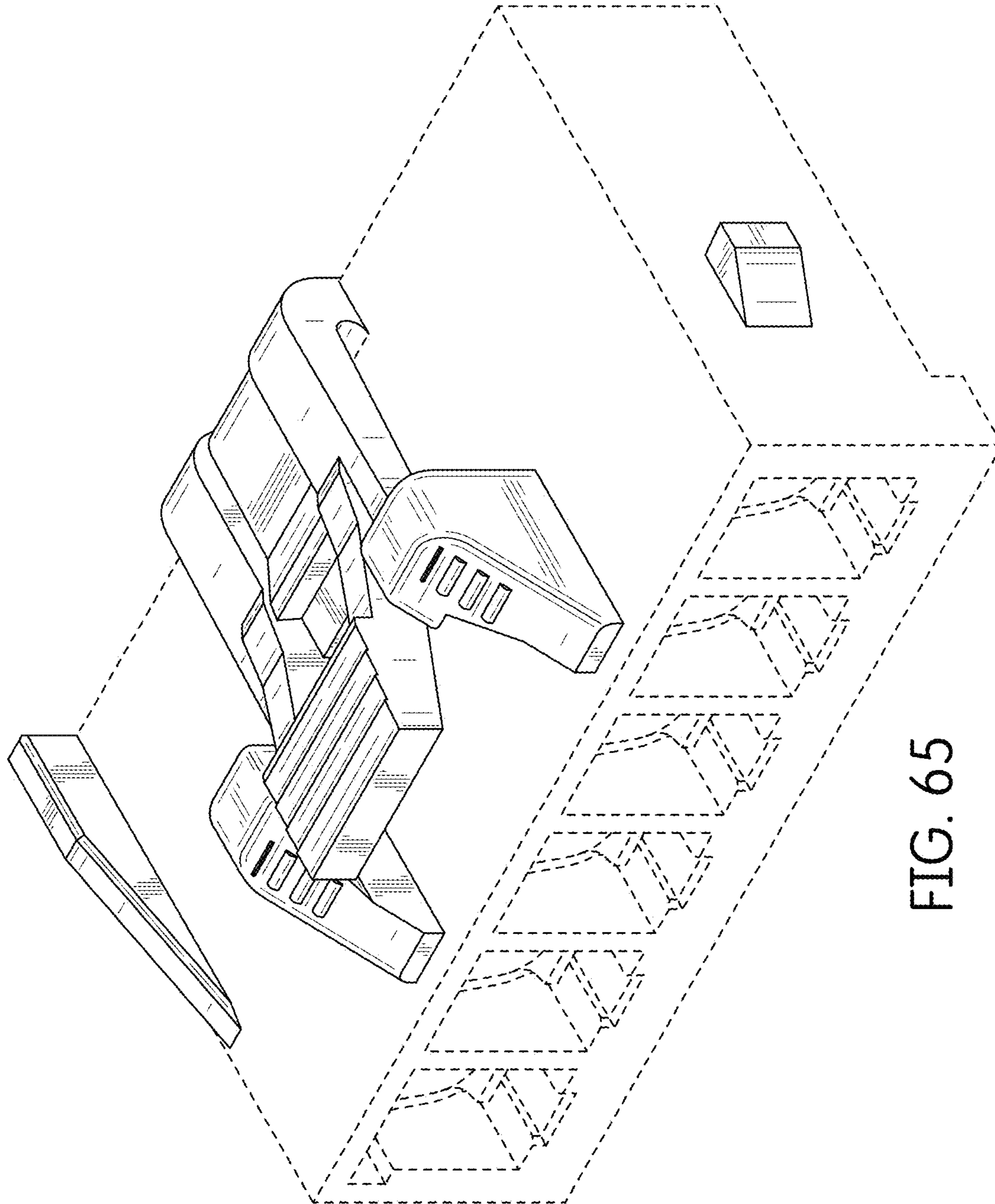


FIG. 65

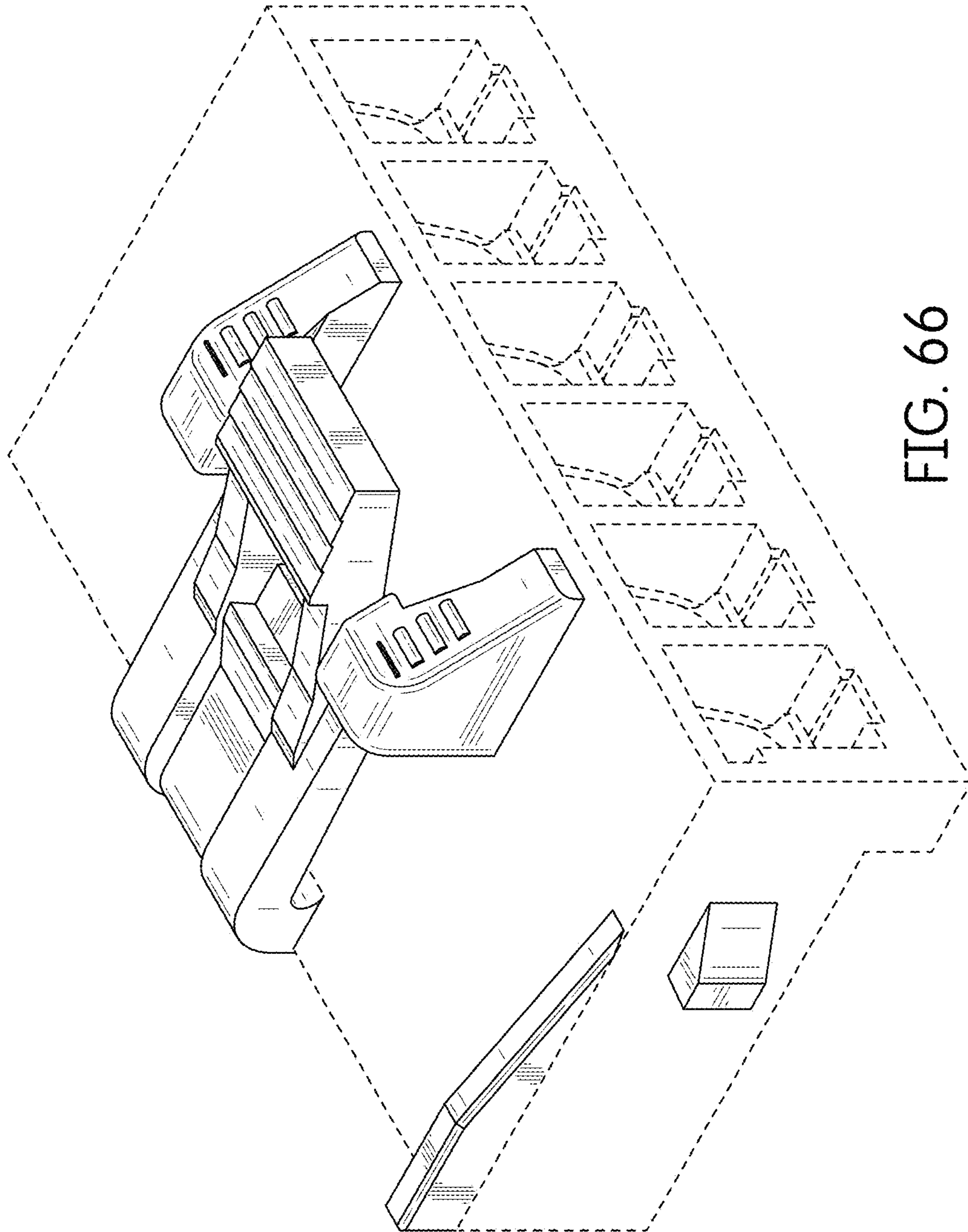


FIG. 66

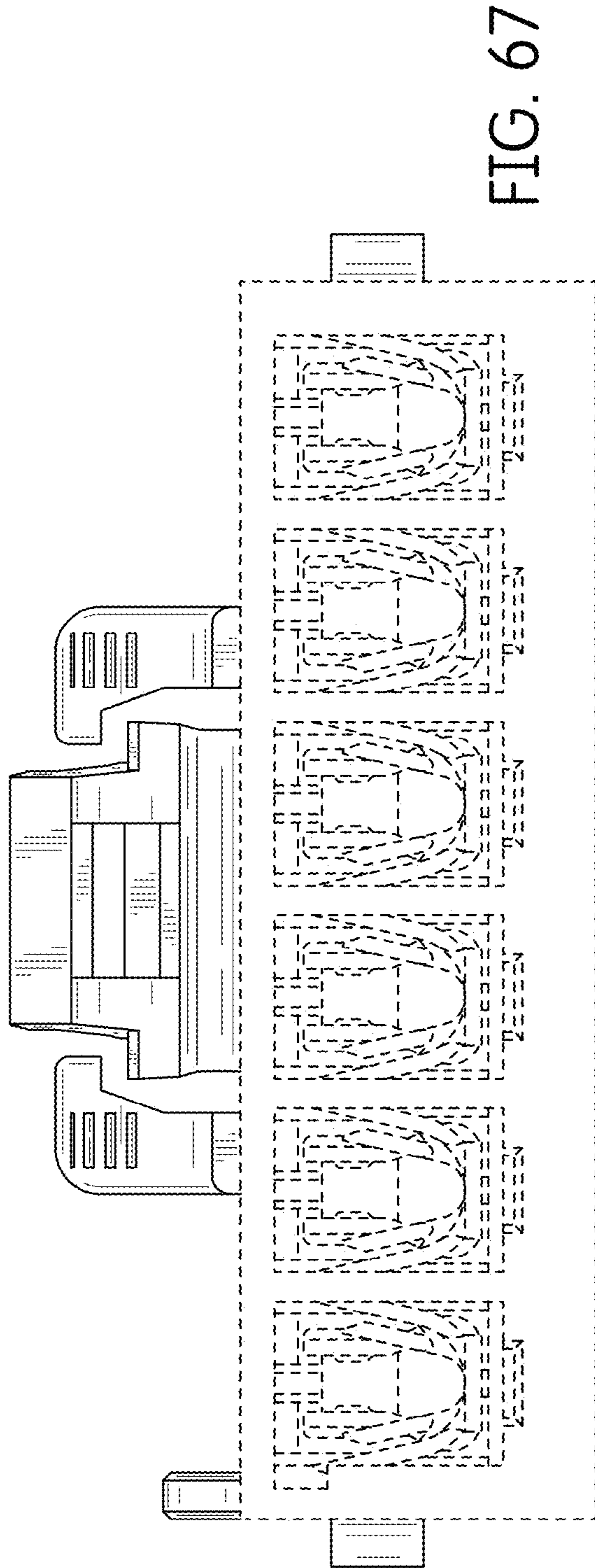


FIG. 67

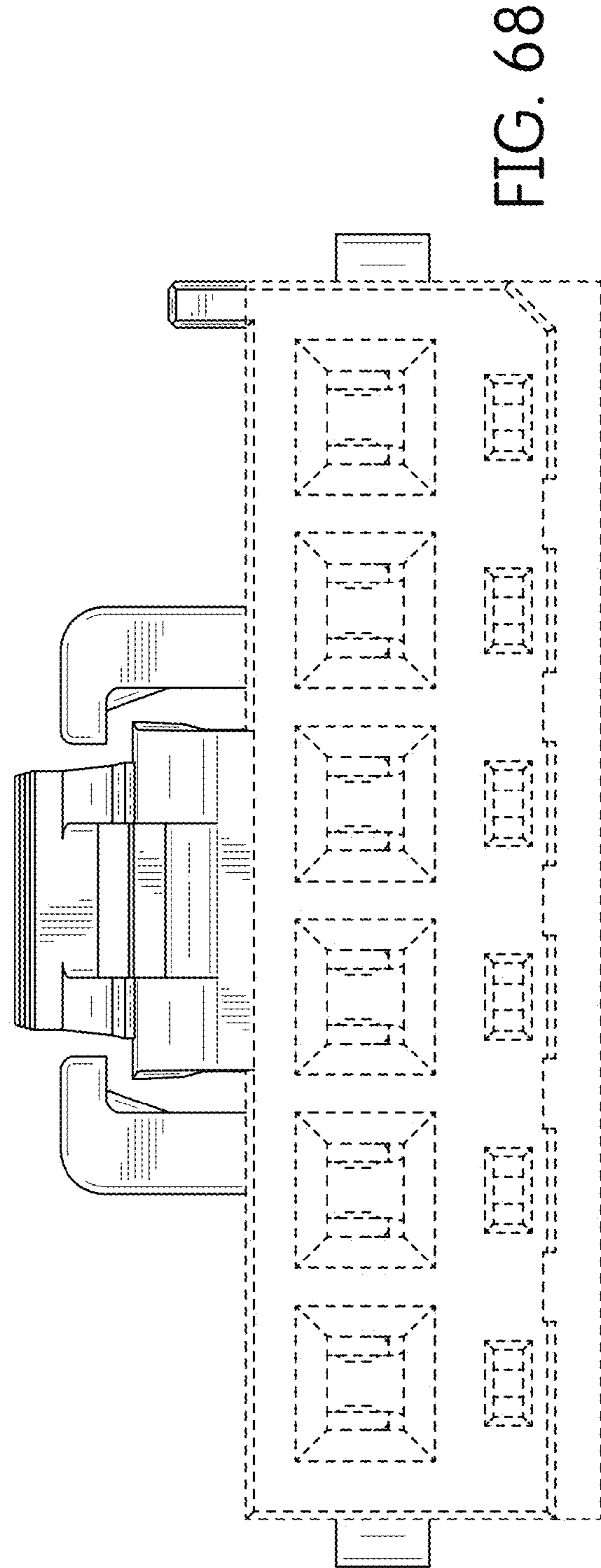


FIG. 68

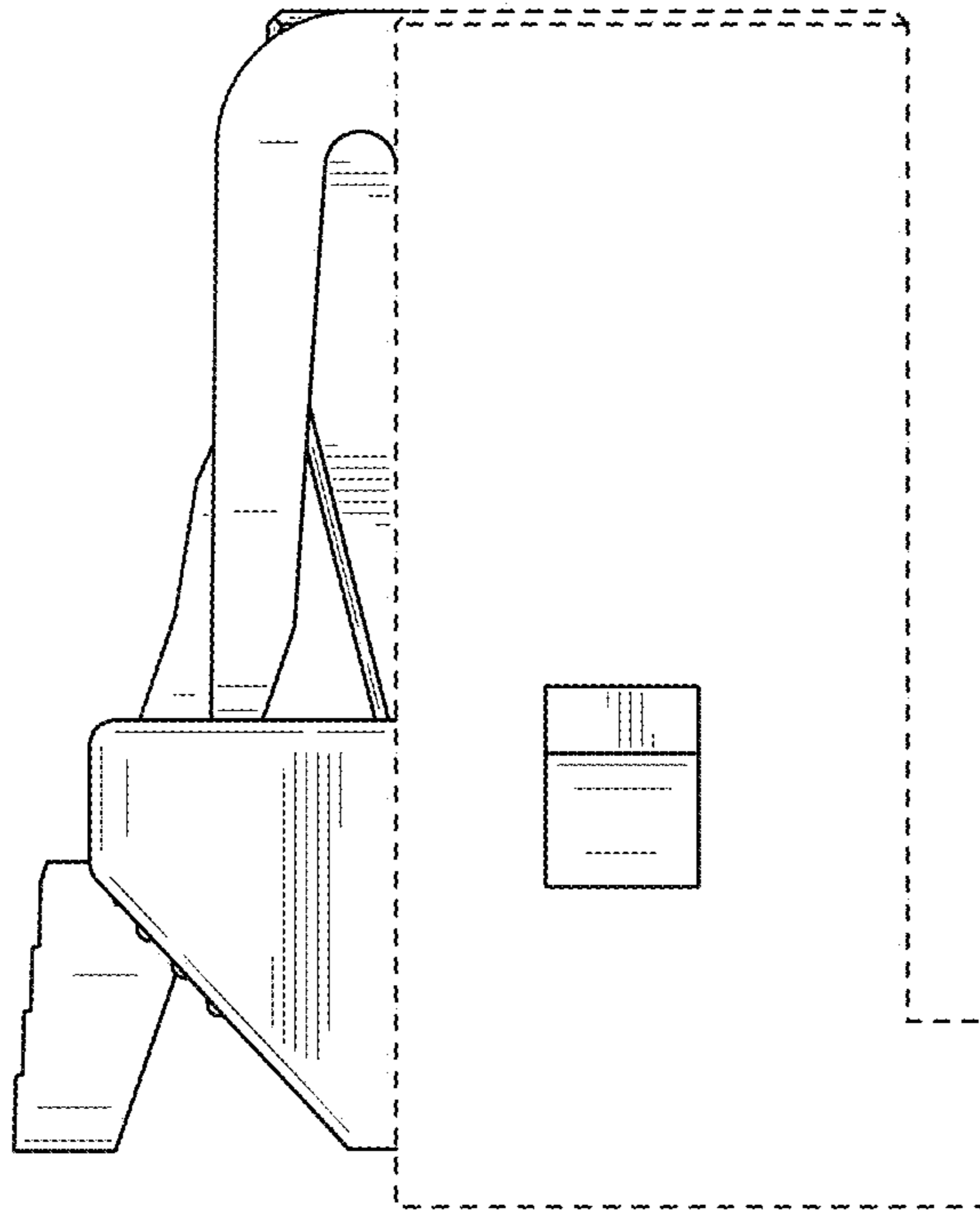


FIG. 69

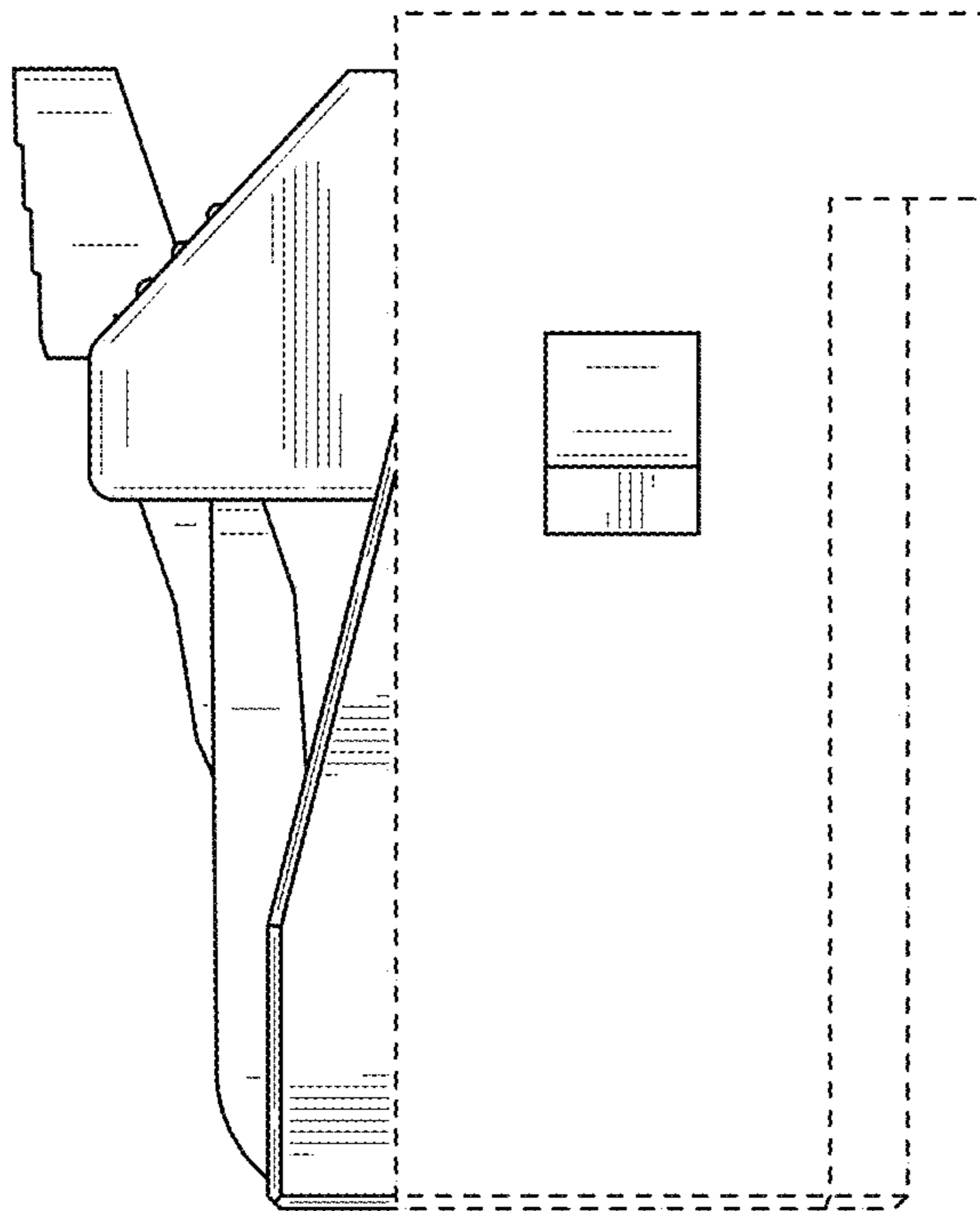


FIG. 70

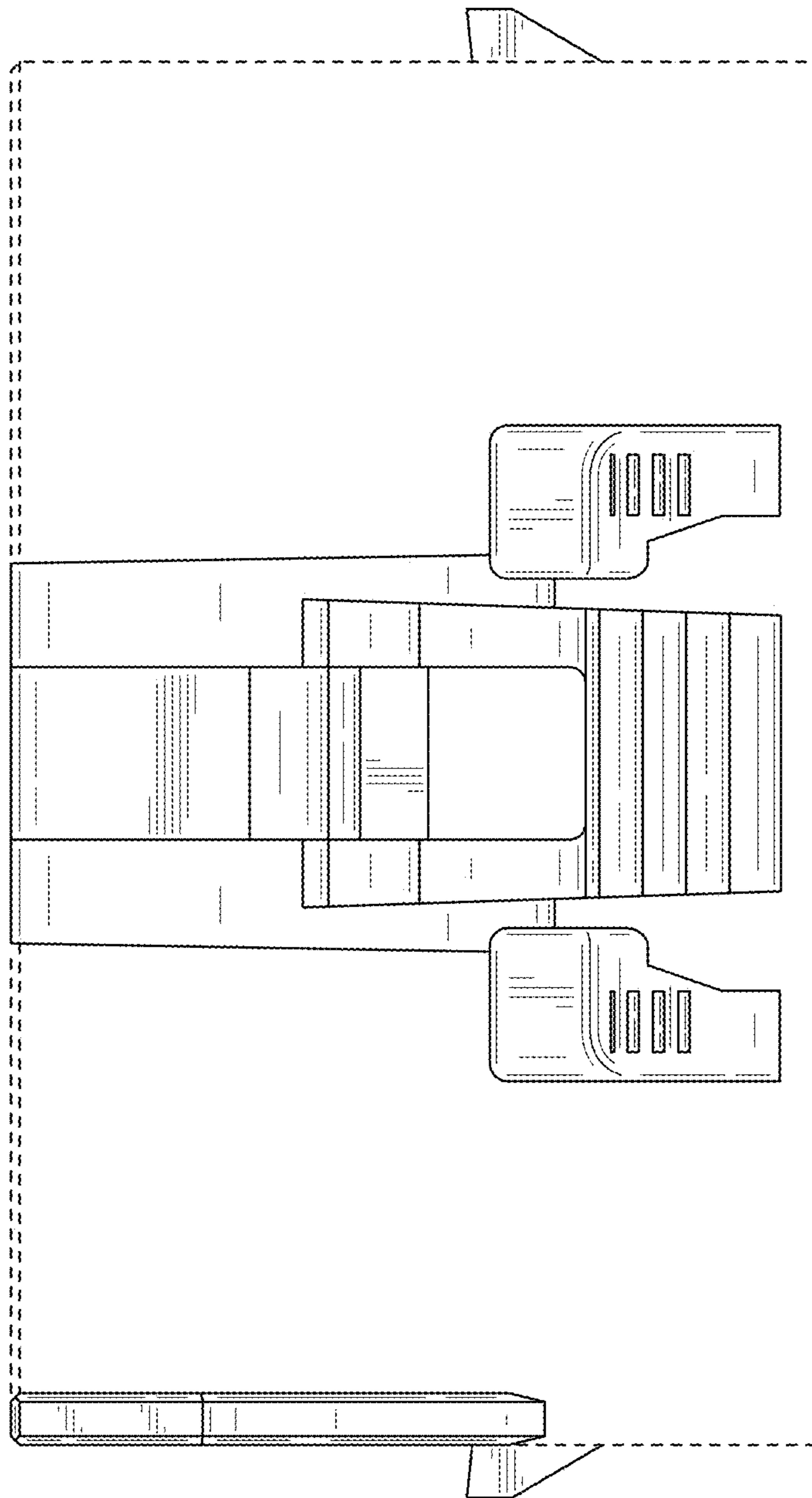


FIG. 71

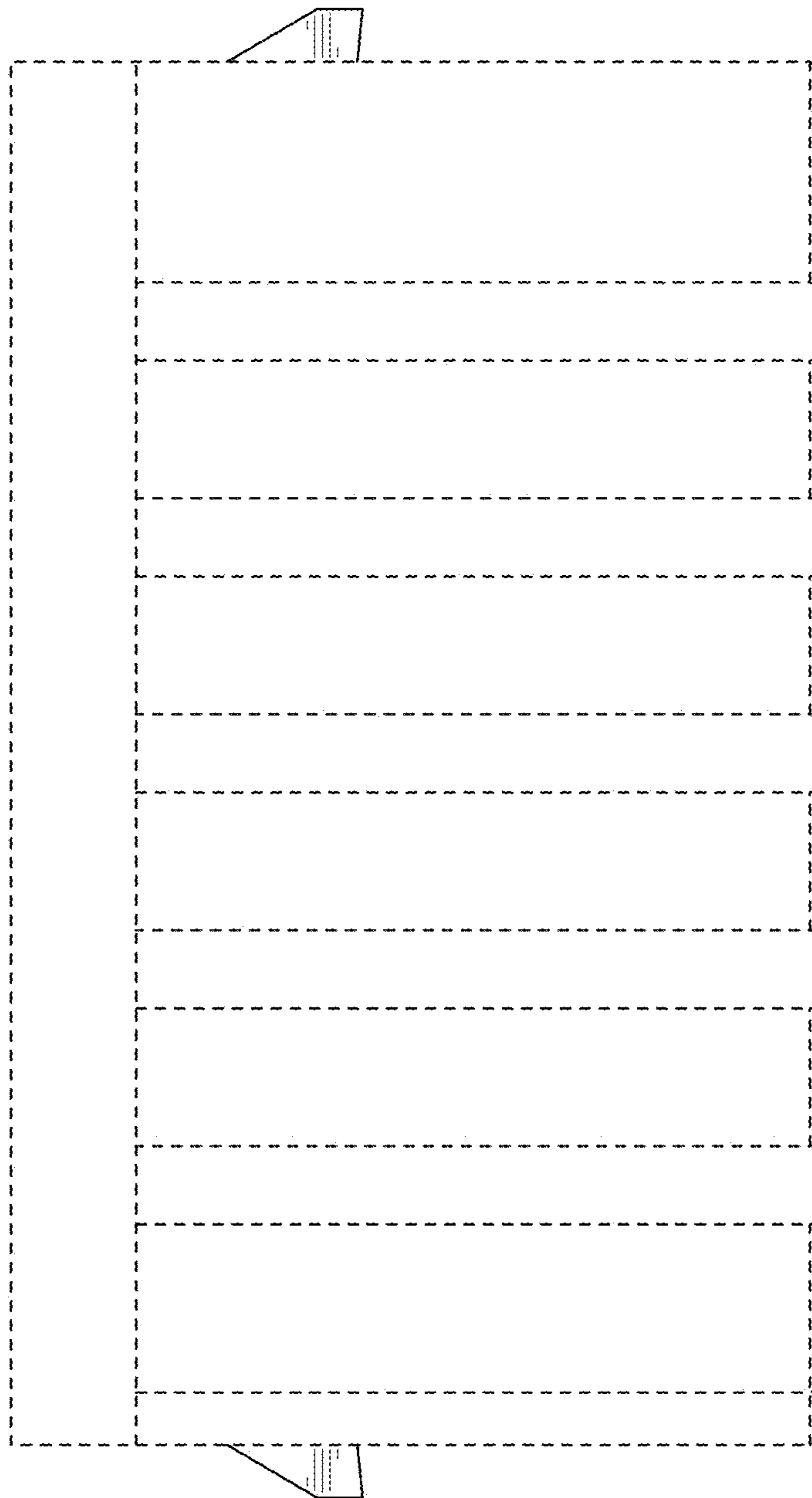


FIG. 72

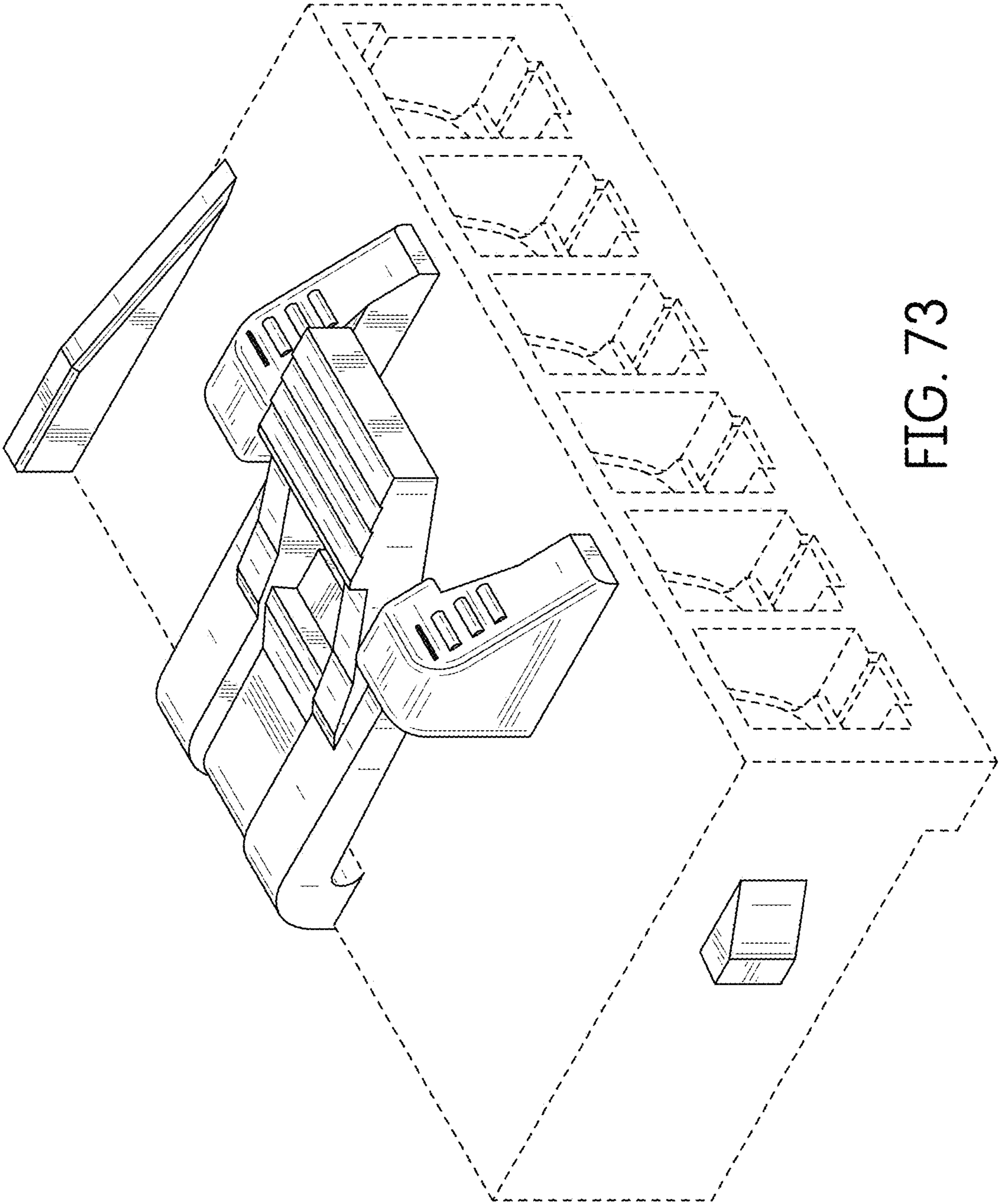


FIG. 73

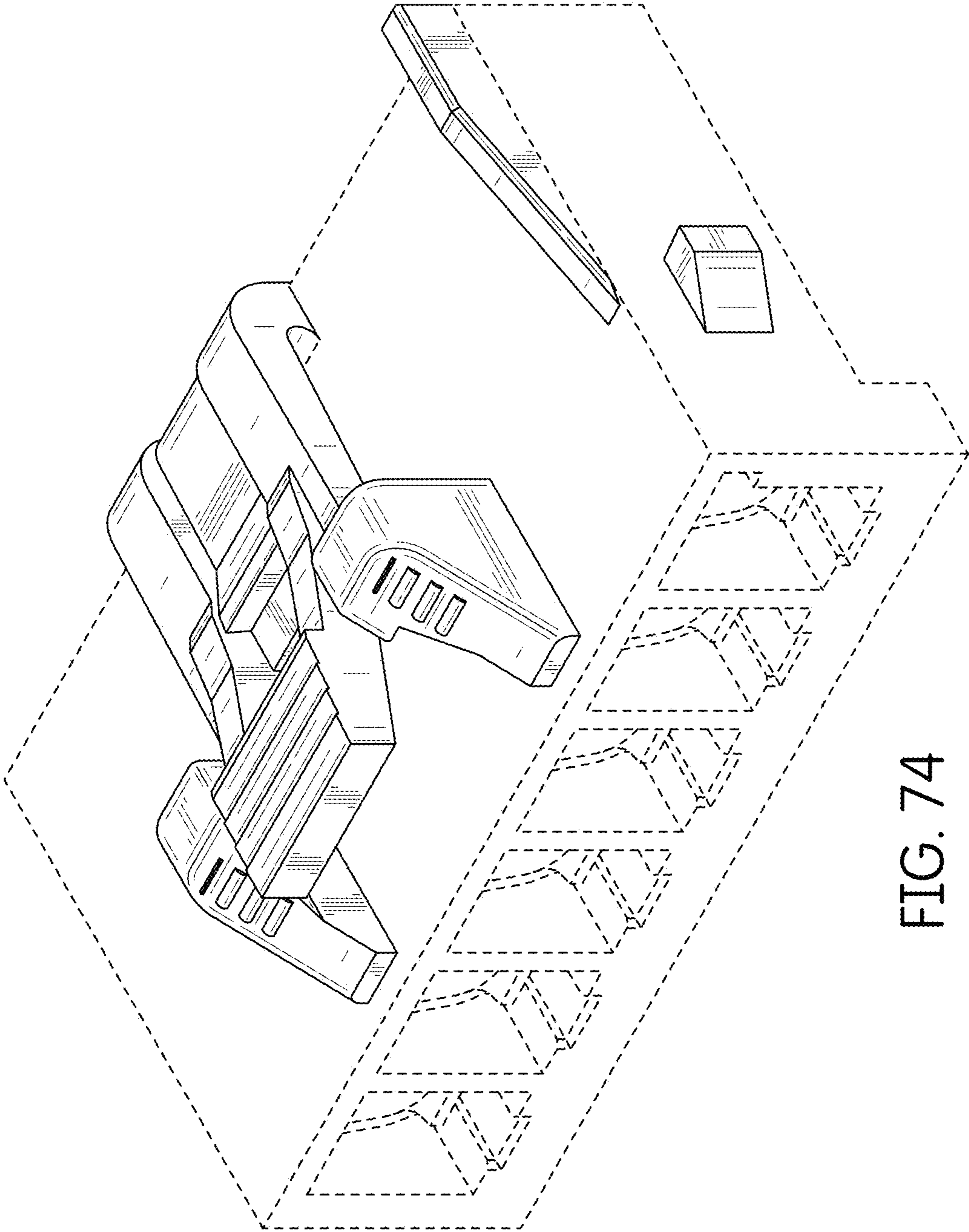
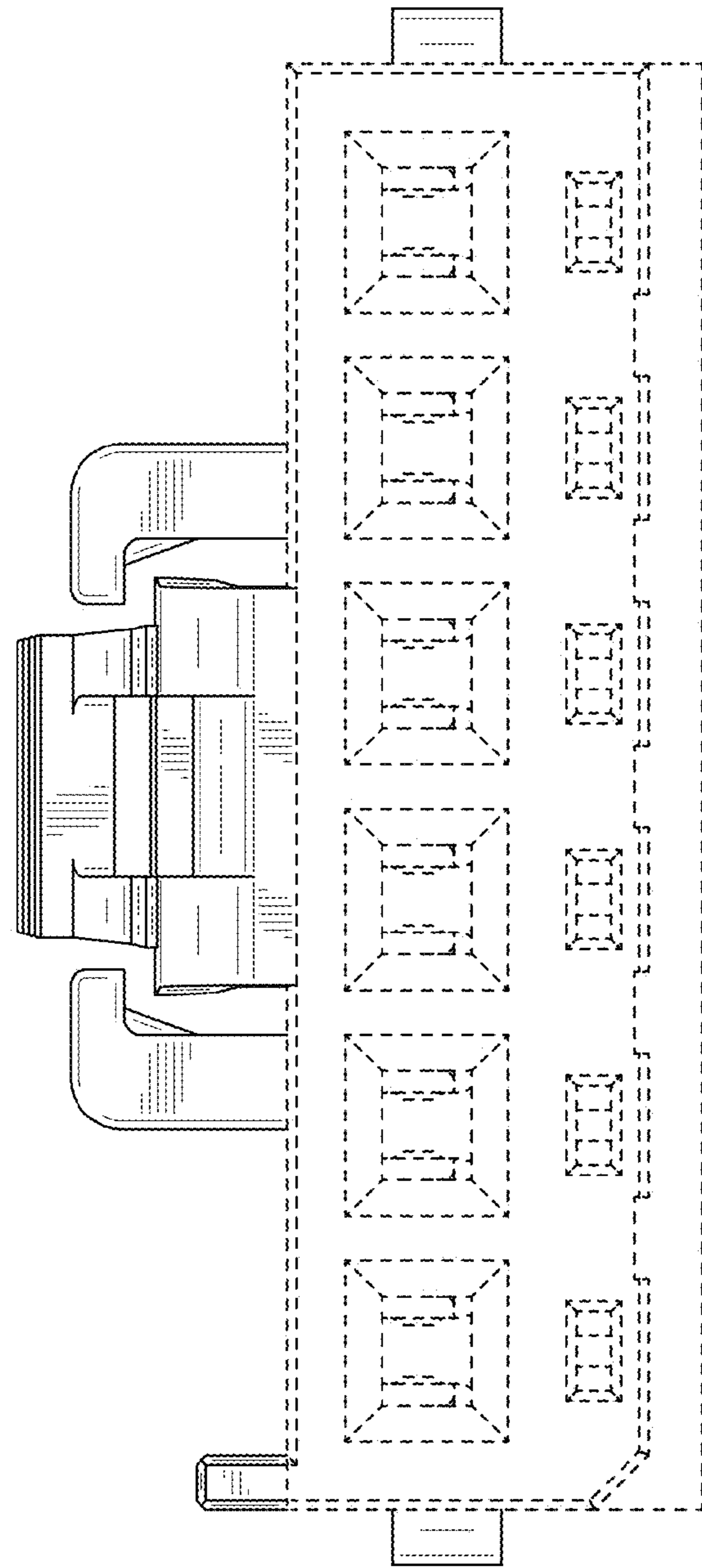
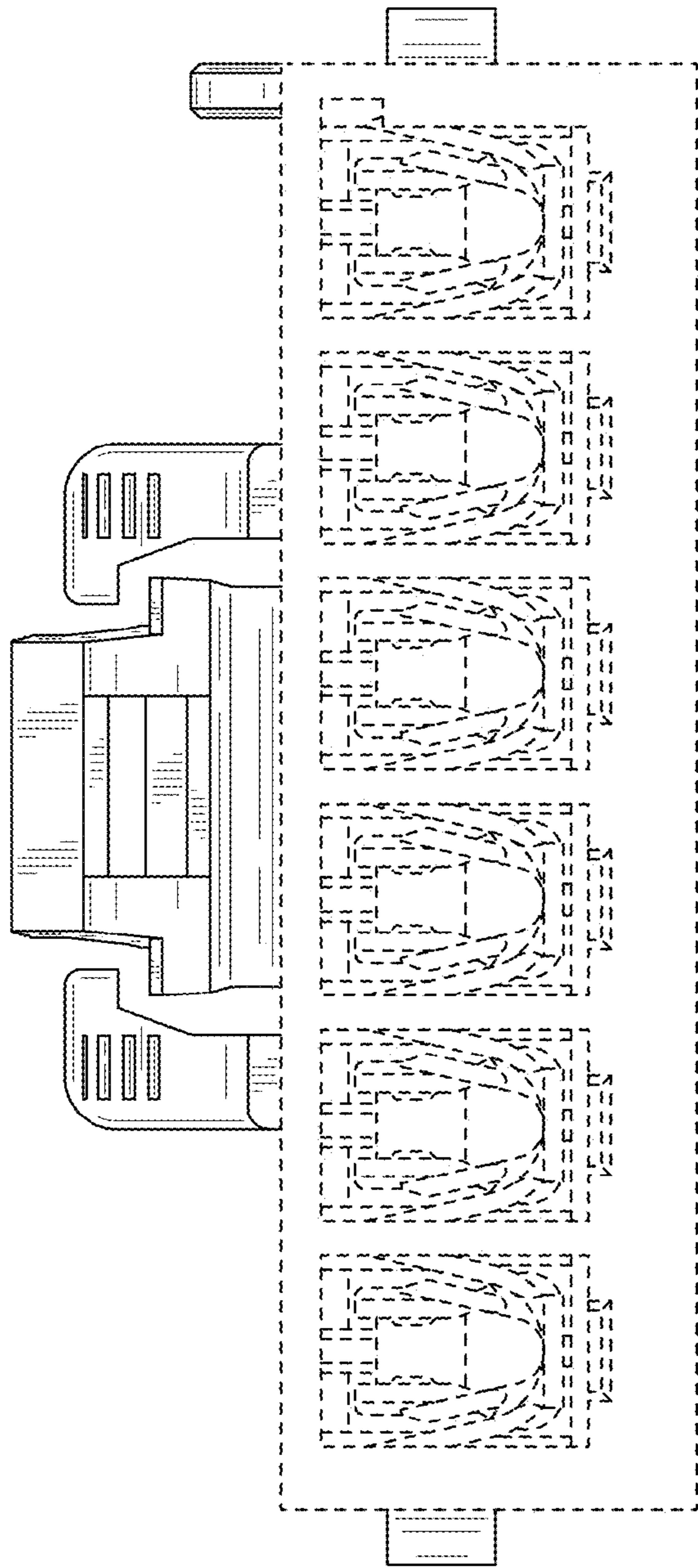


FIG. 74



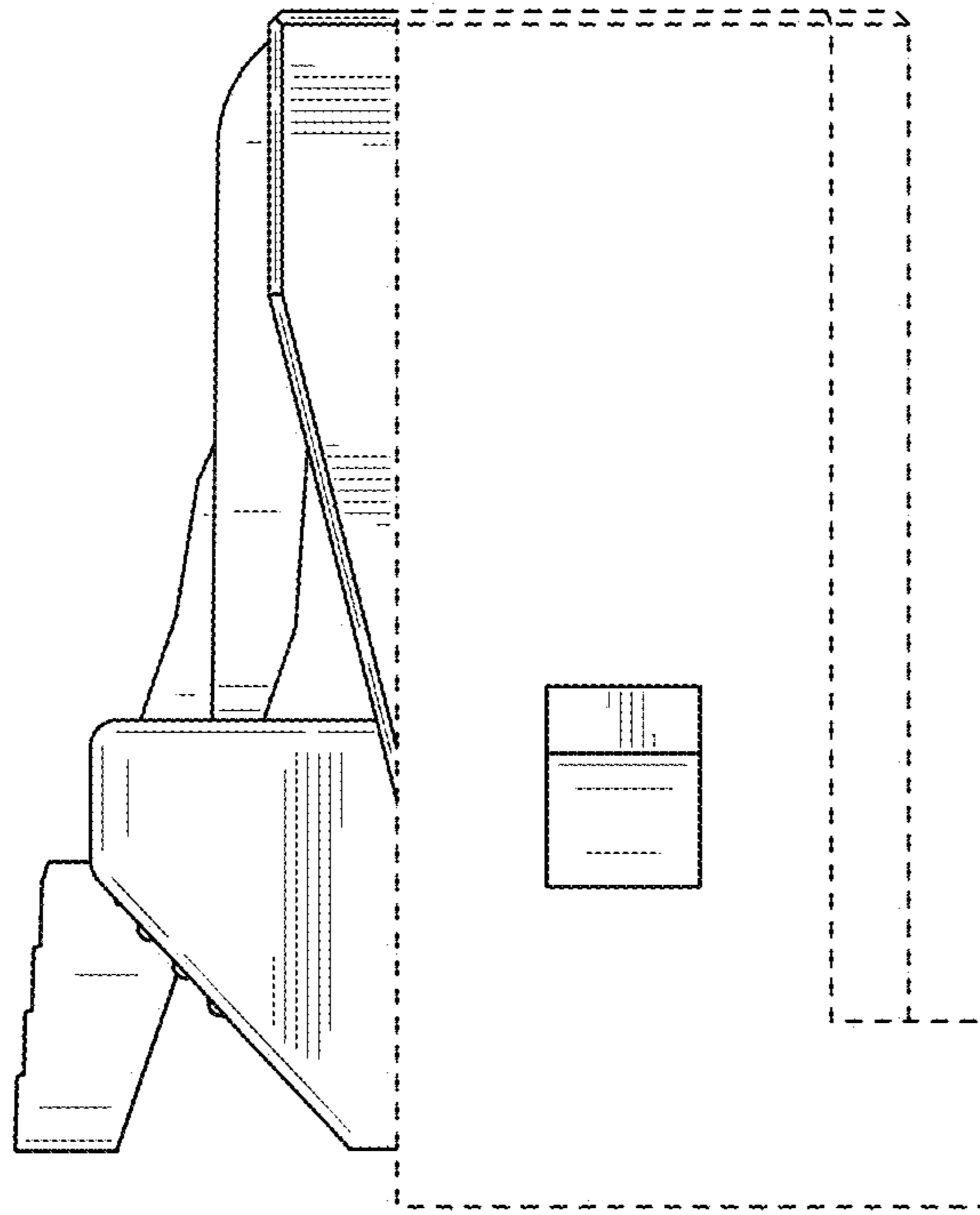


FIG. 78

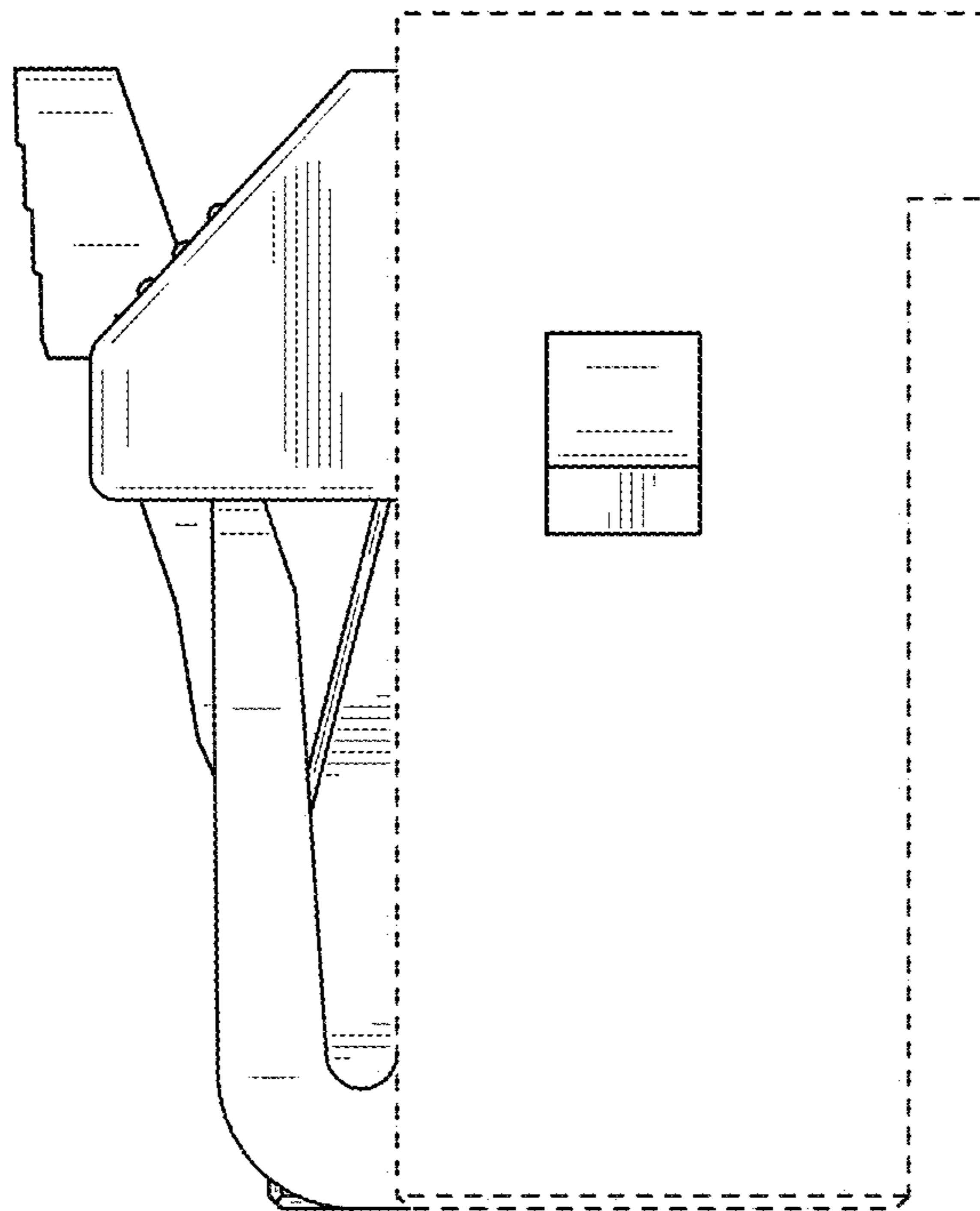


FIG. 77

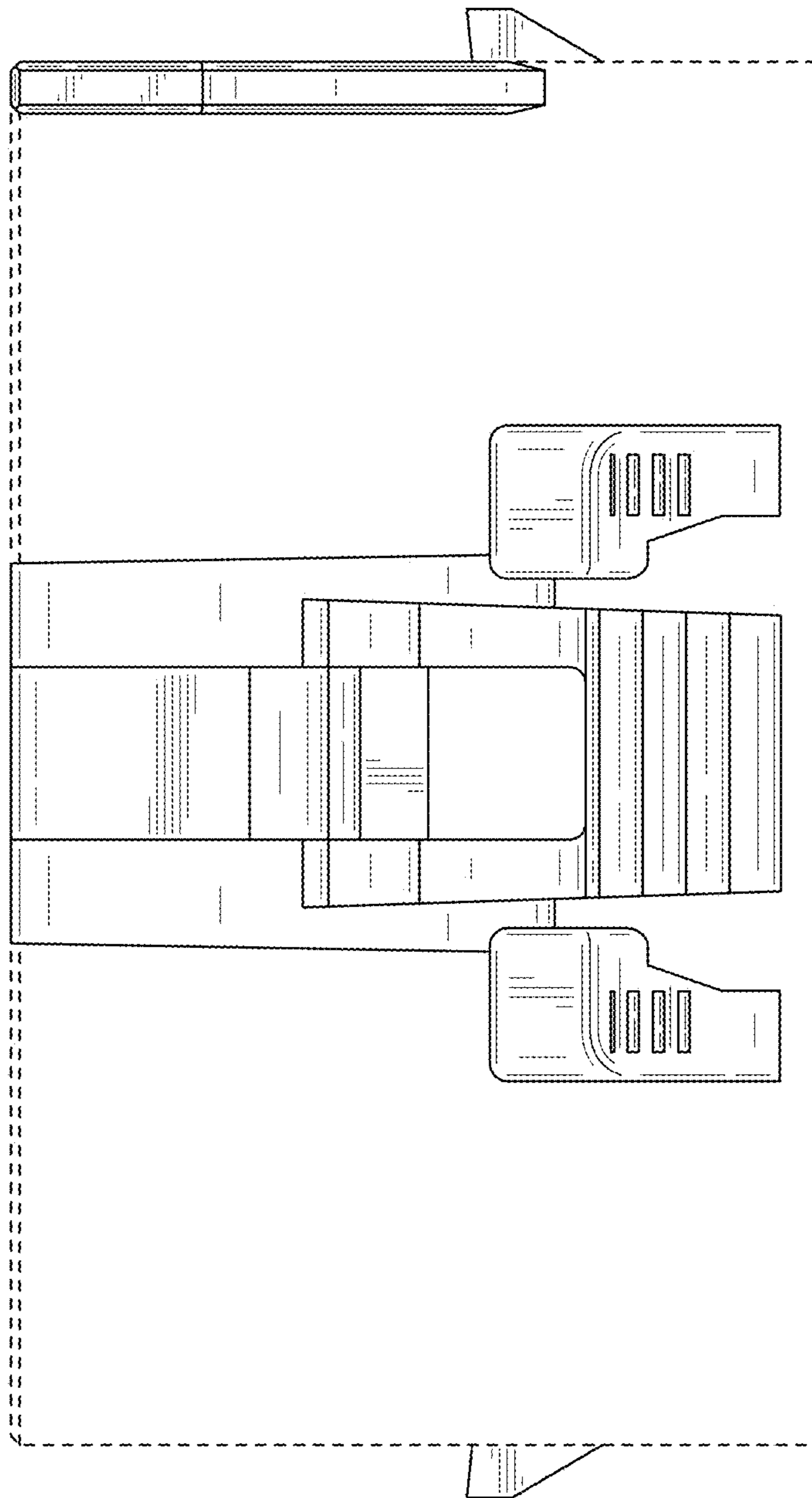


FIG. 79

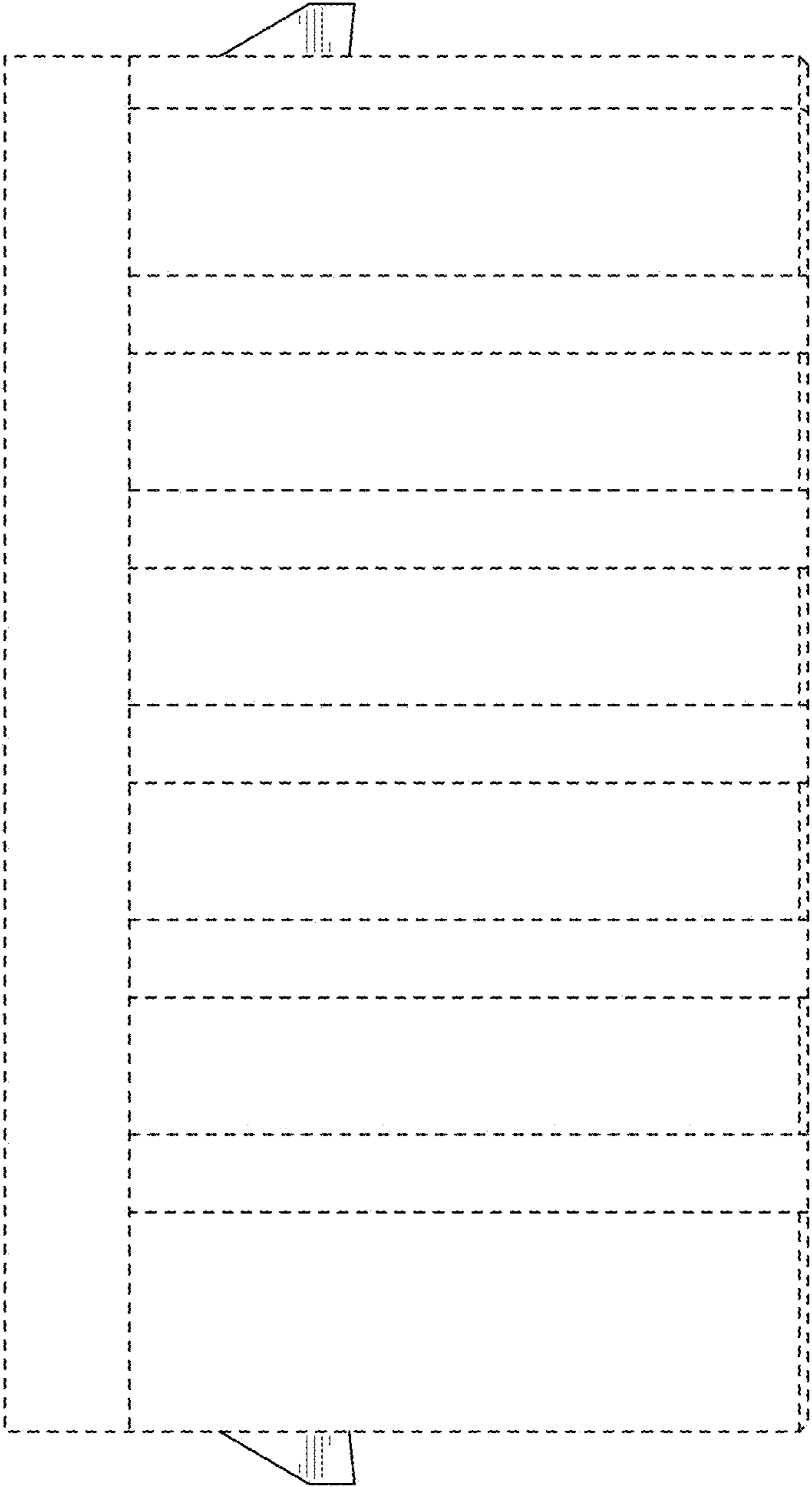


FIG. 80

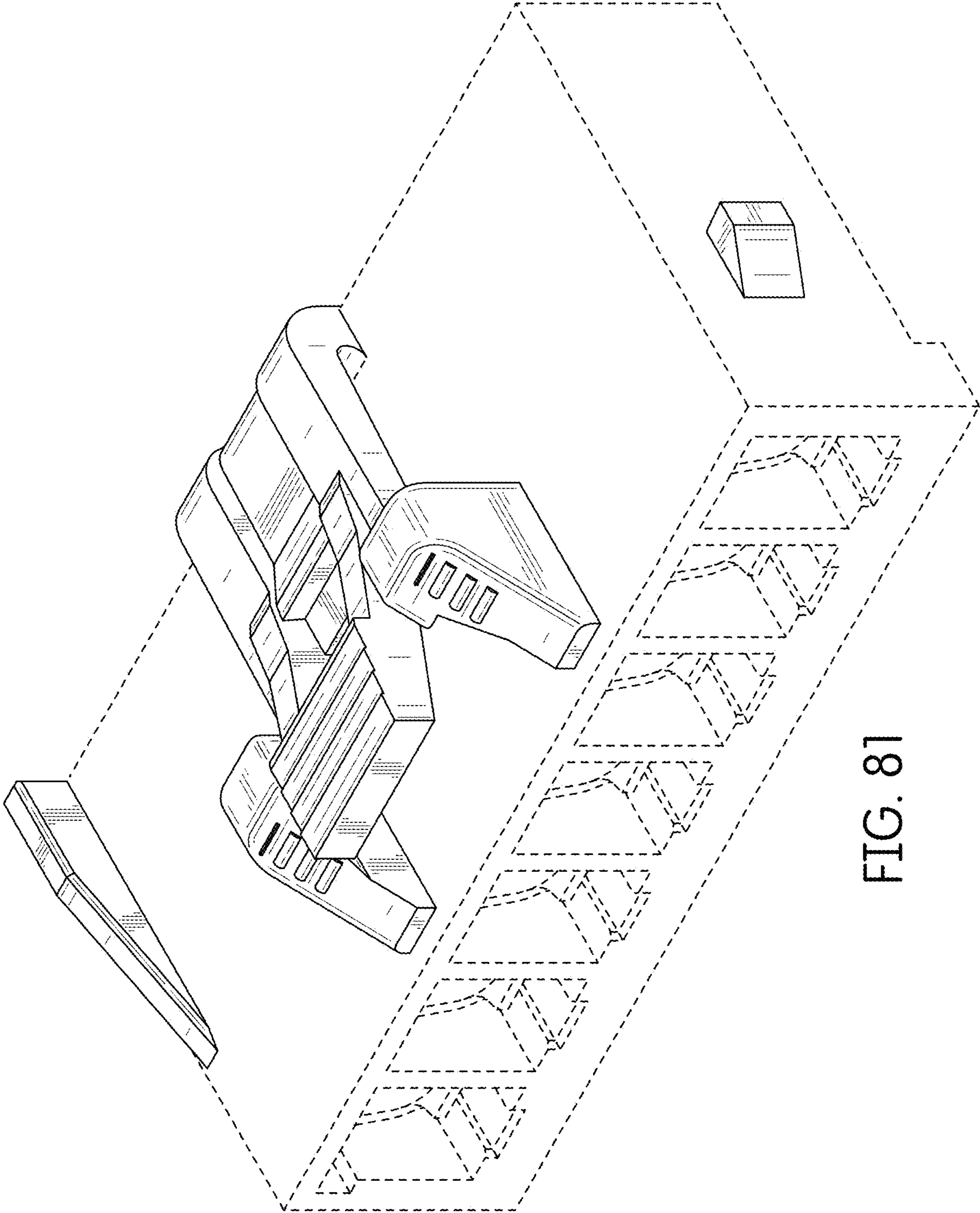


FIG. 81

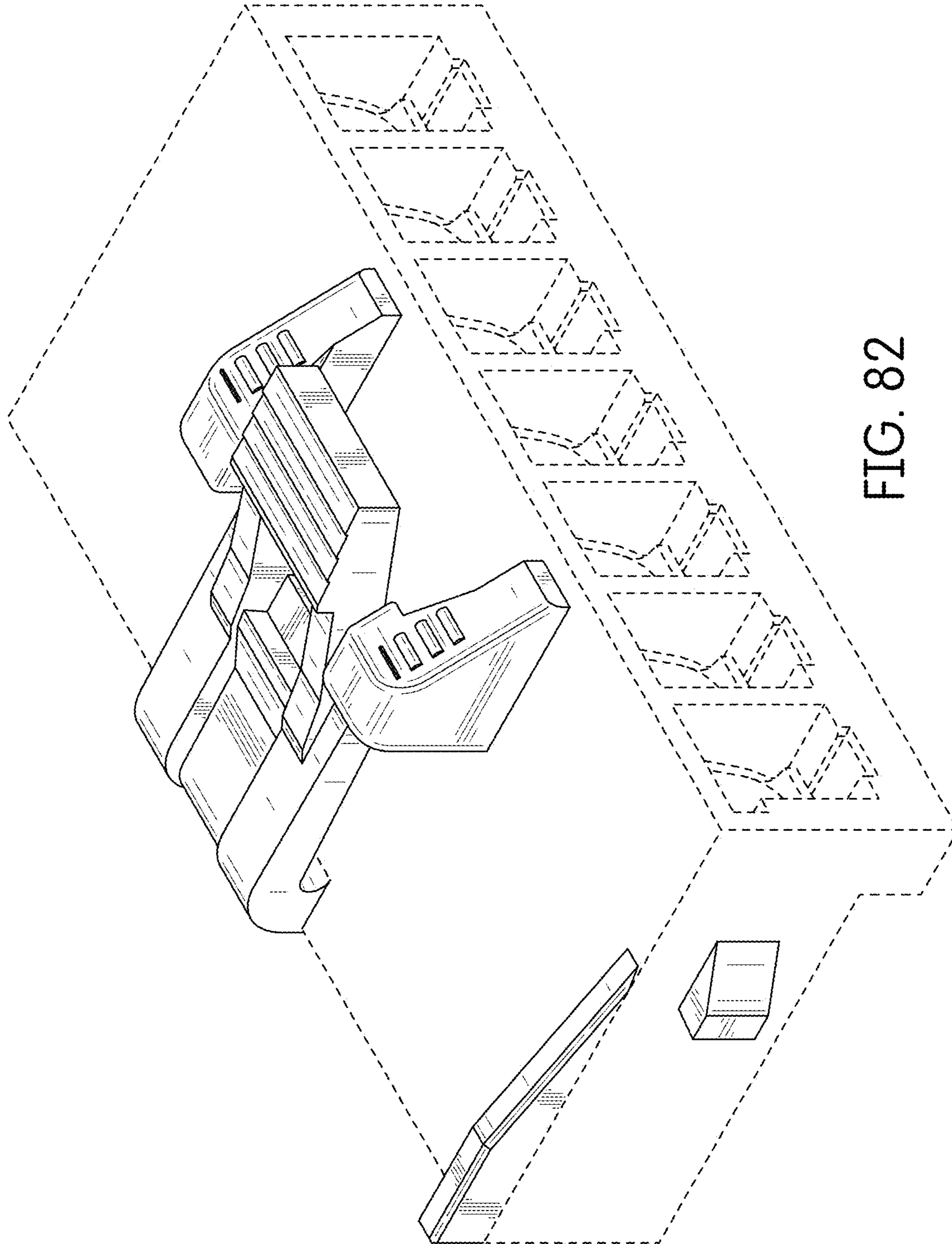
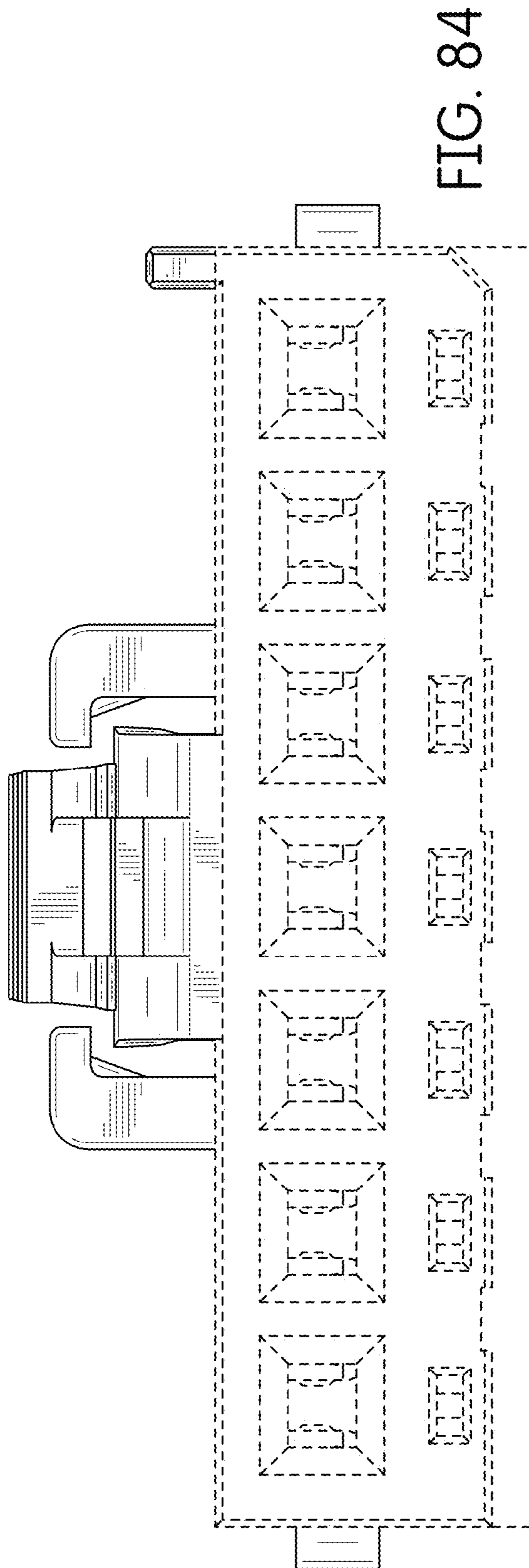
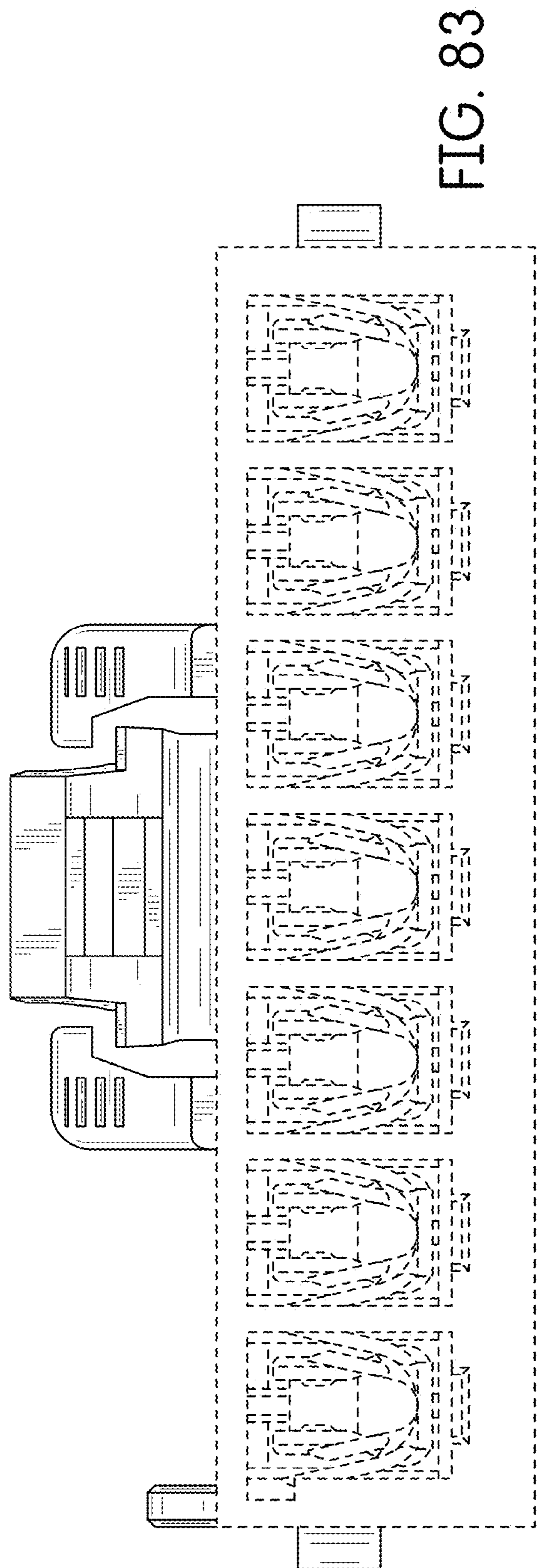


FIG. 82



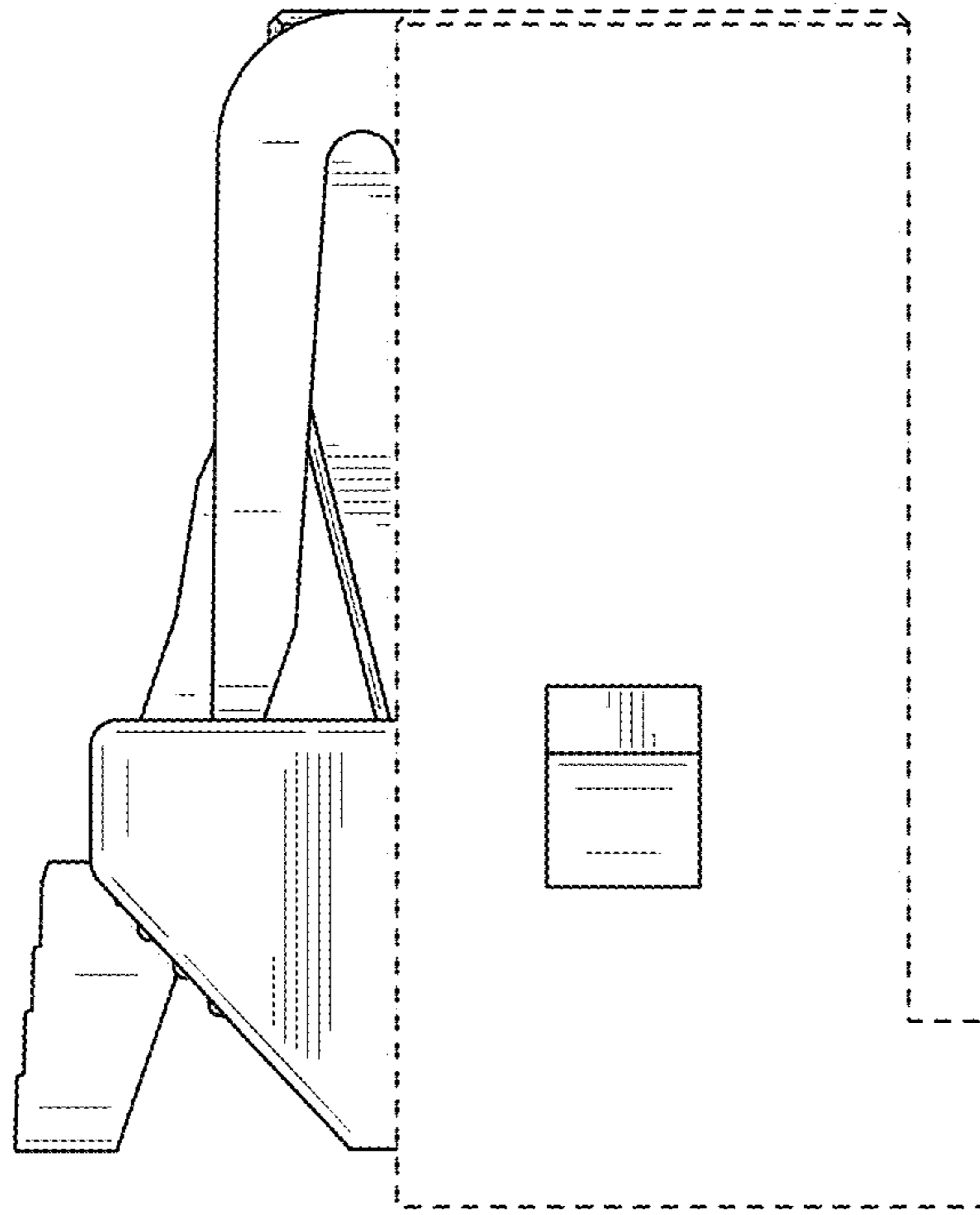


FIG. 86

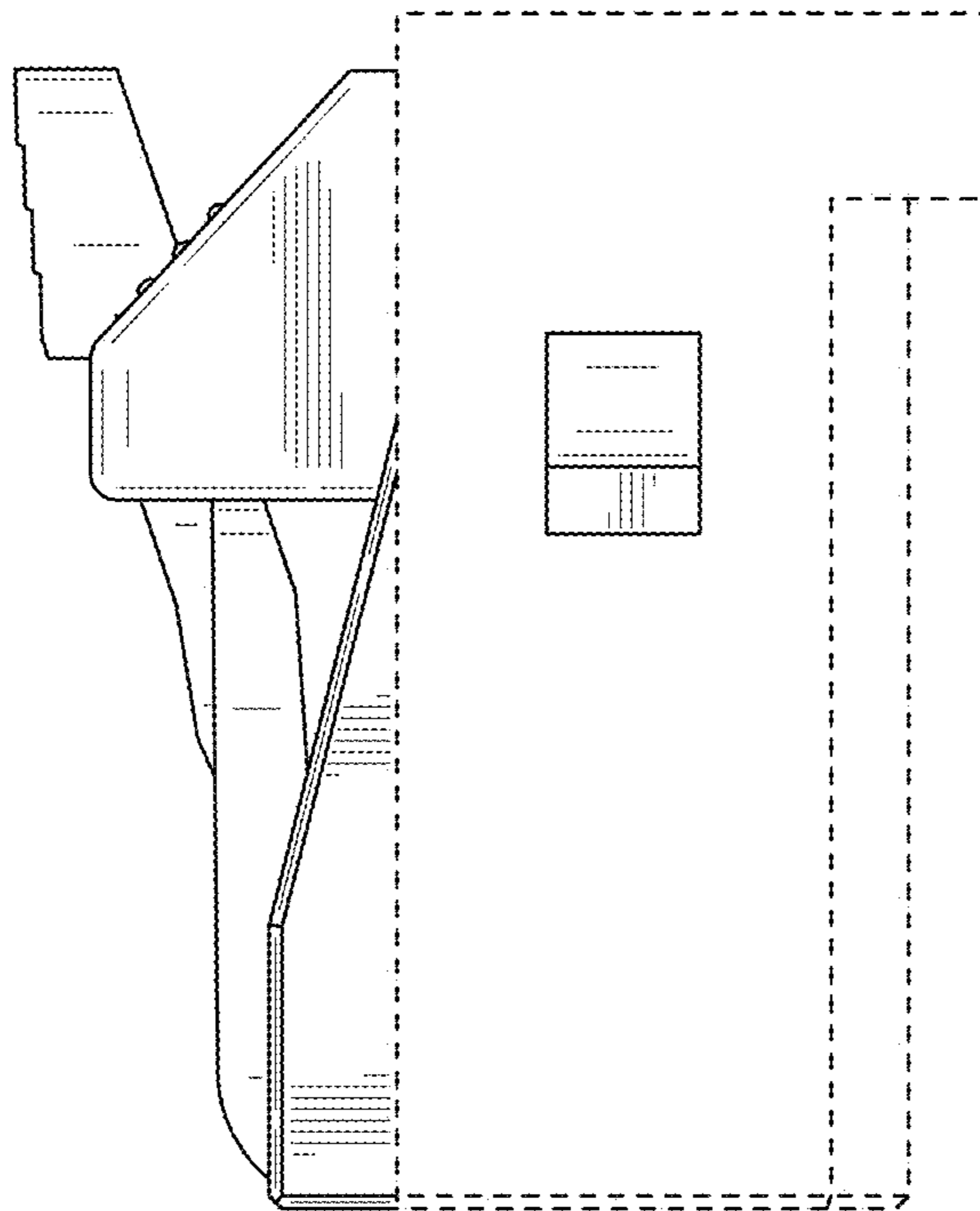


FIG. 85

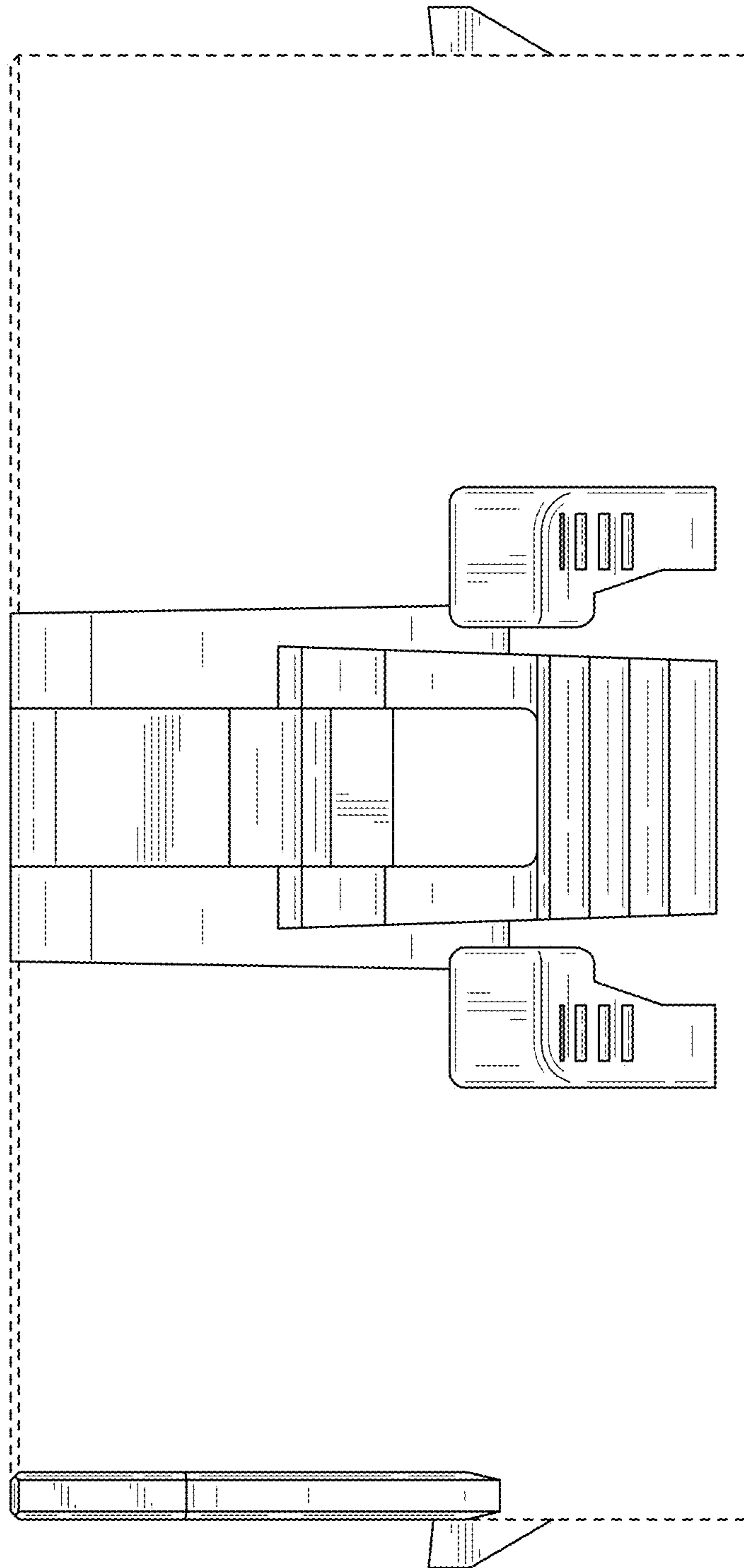


FIG. 87

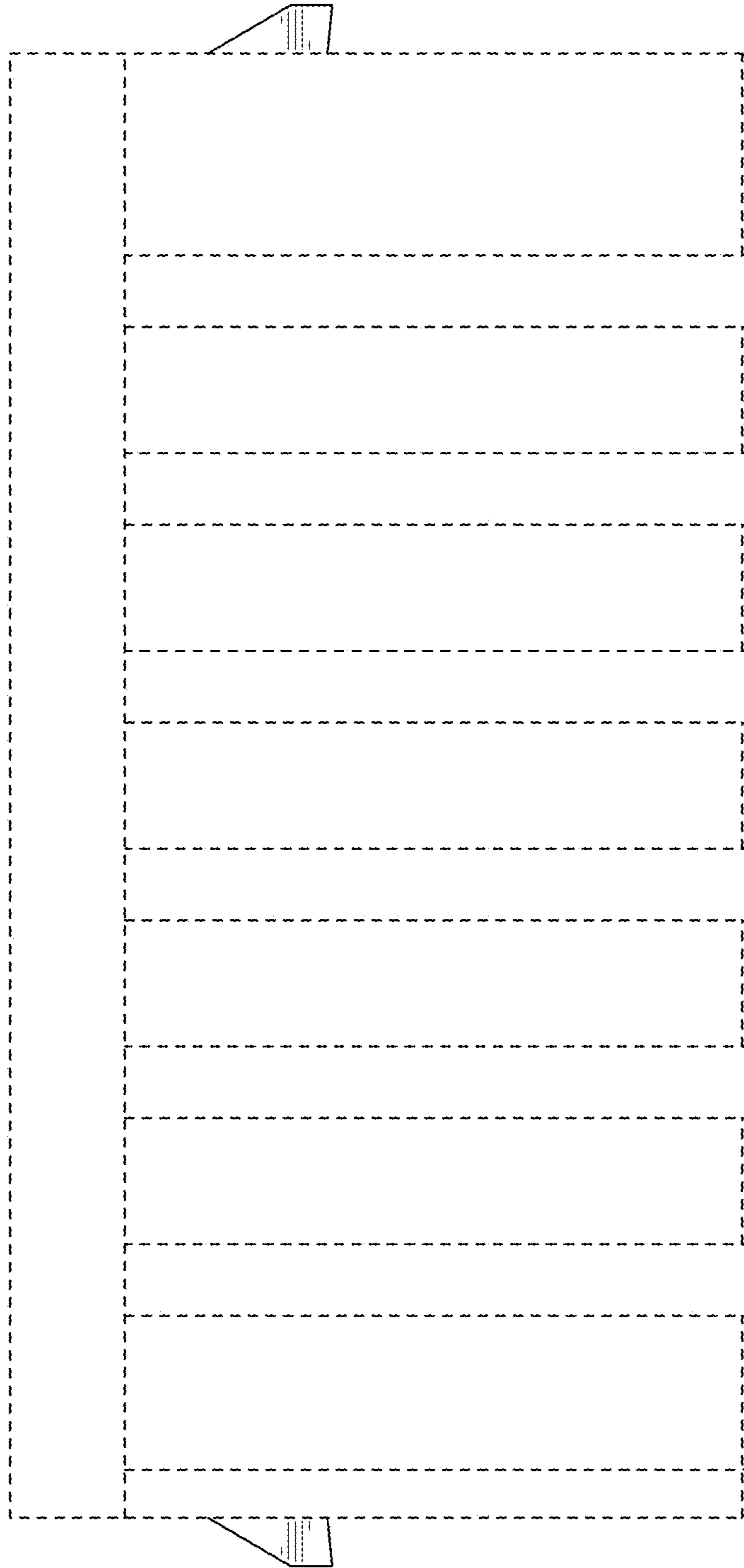


FIG. 88

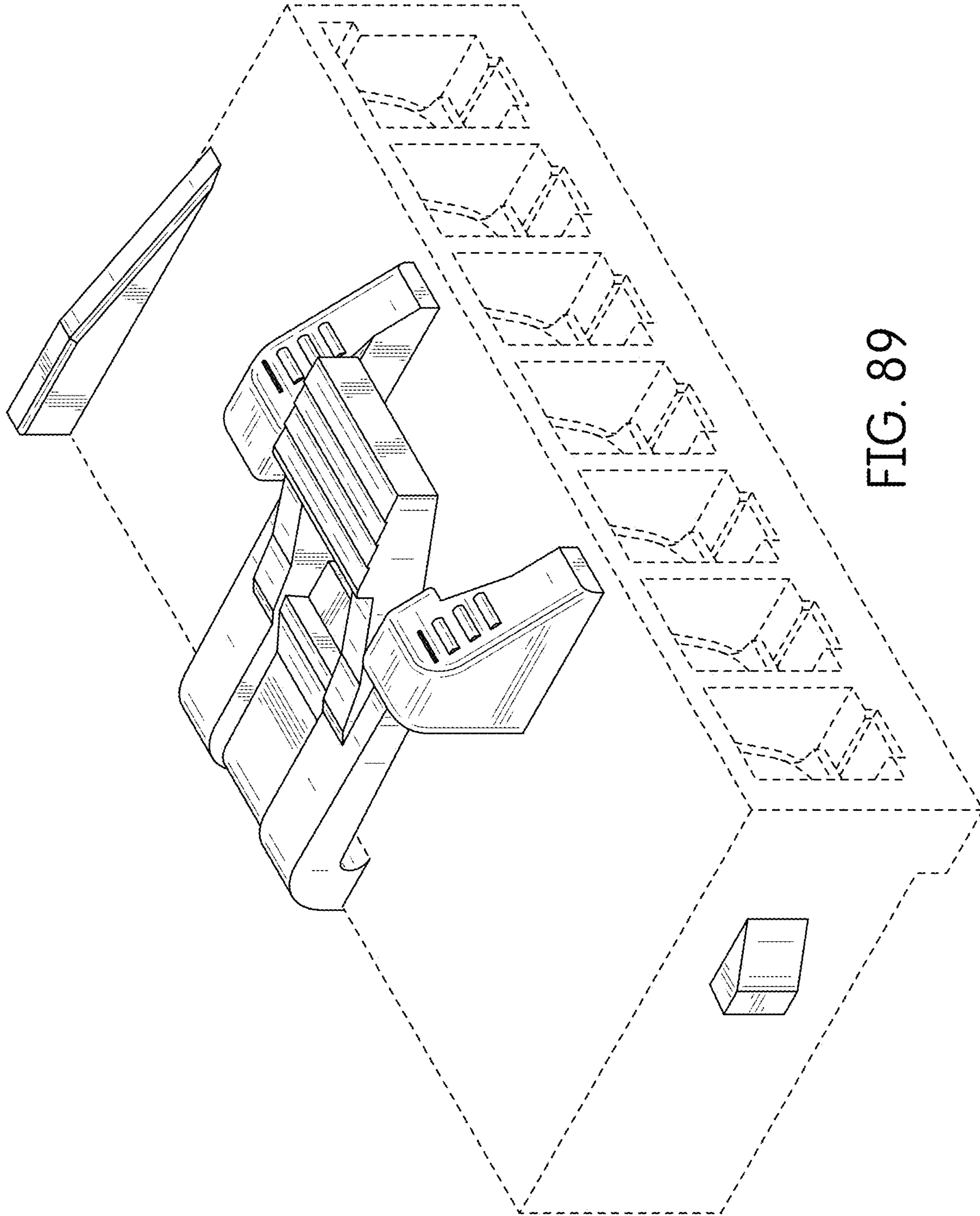


FIG. 89

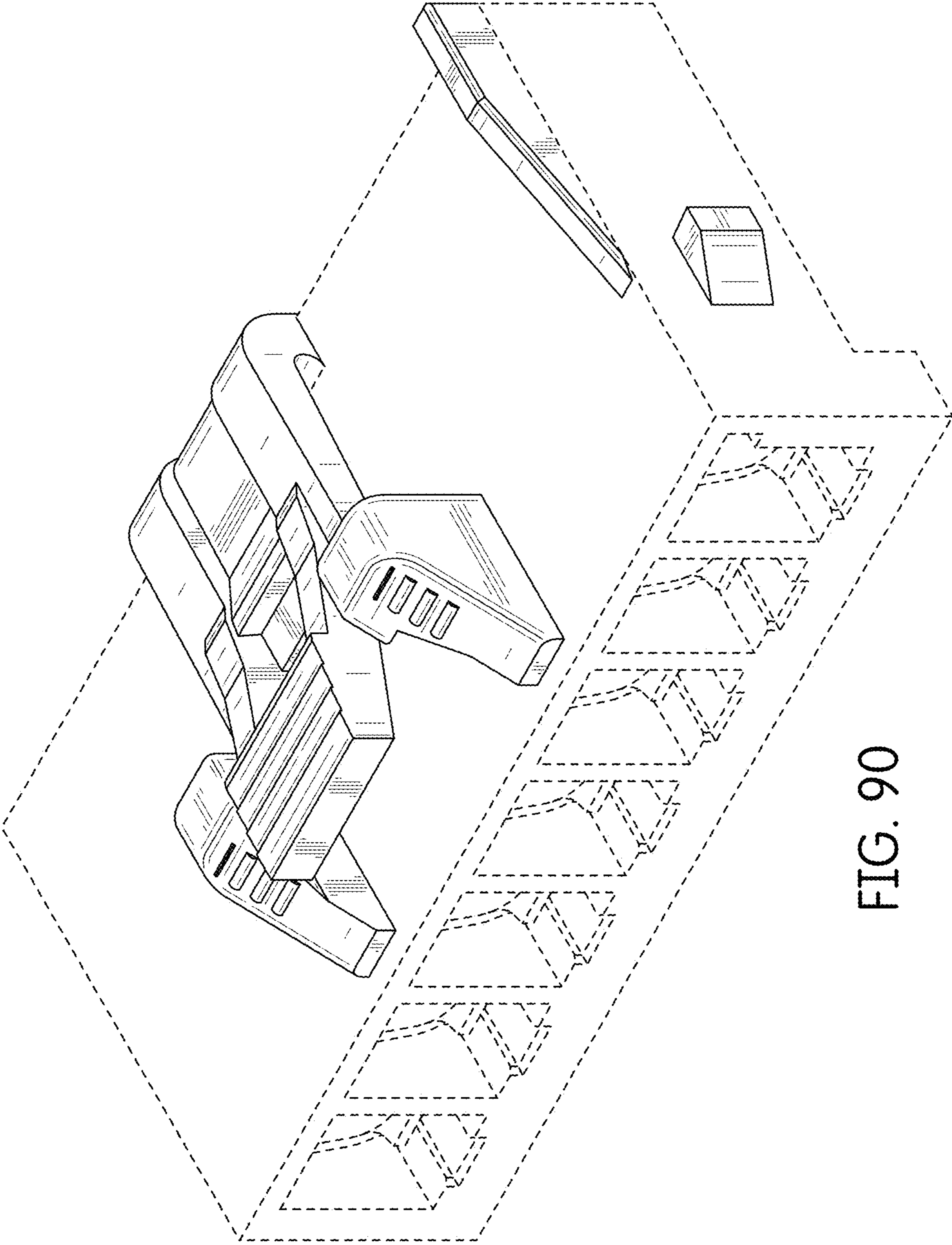
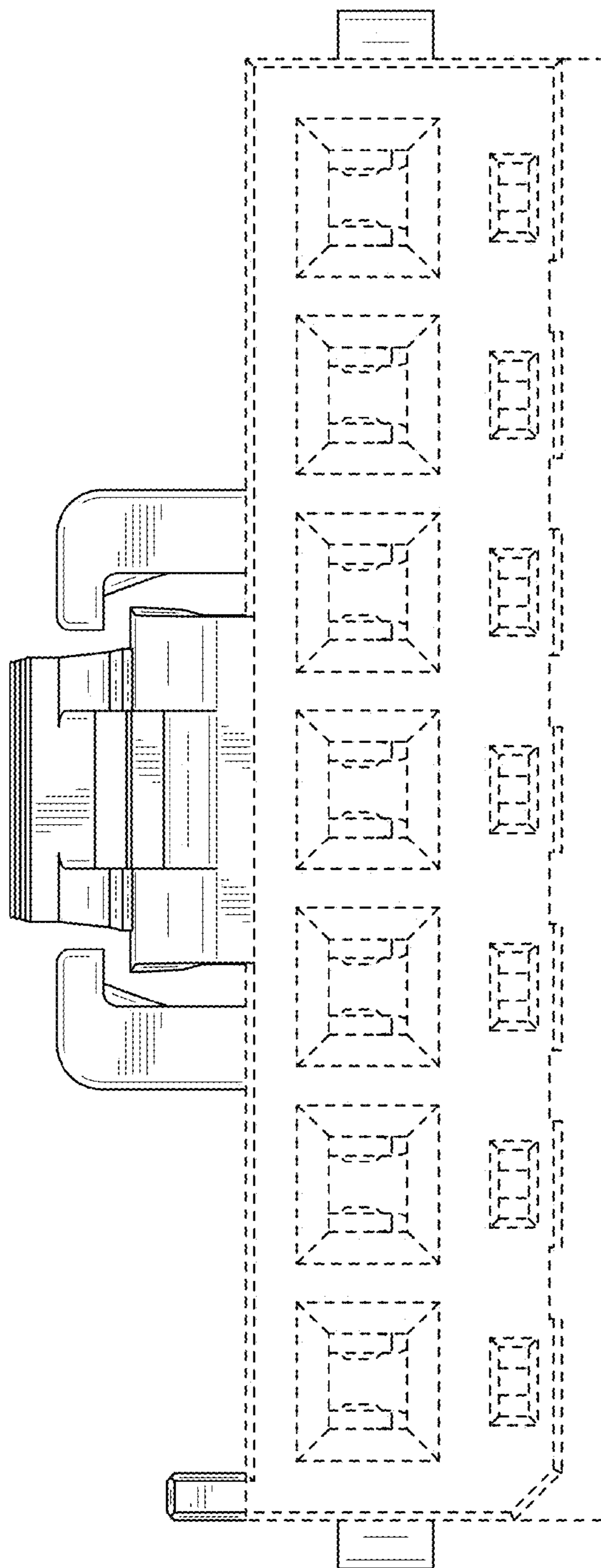
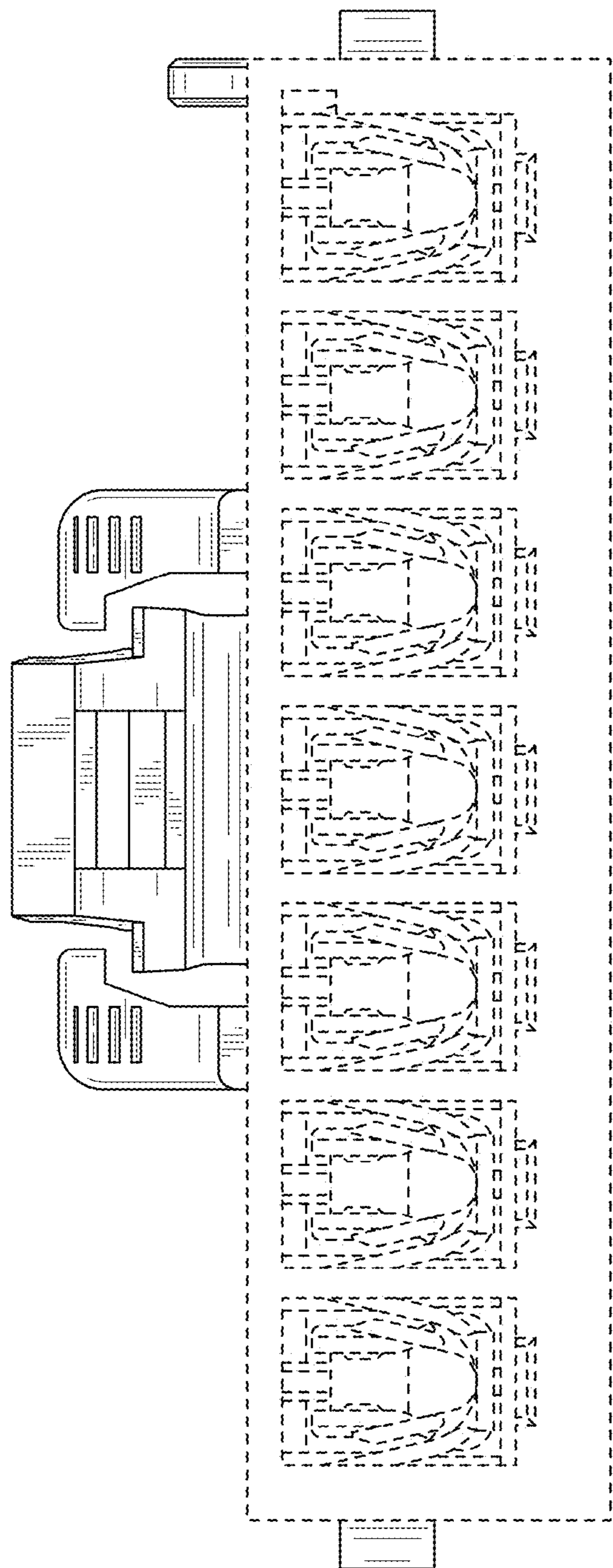


FIG. 90



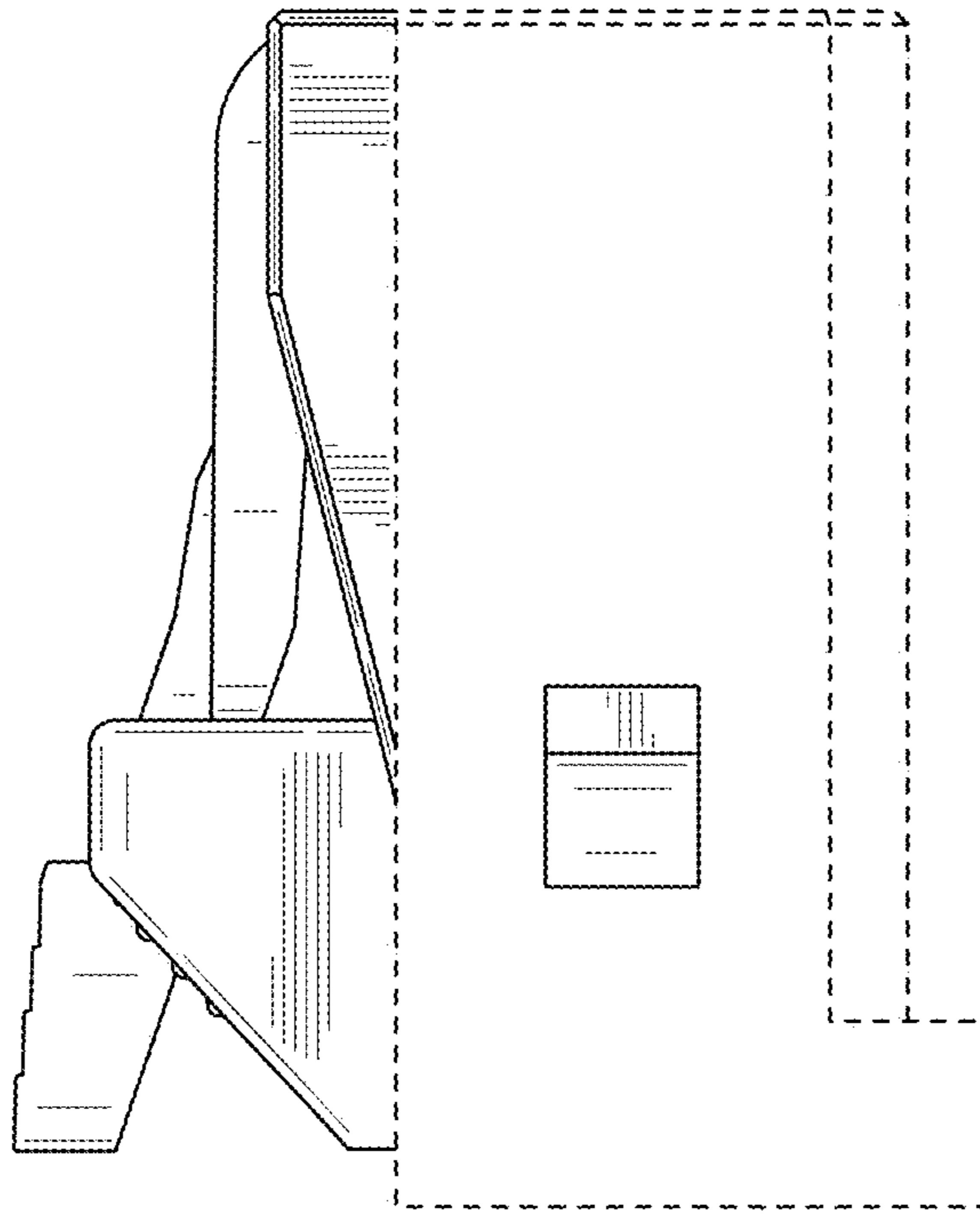


FIG. 94

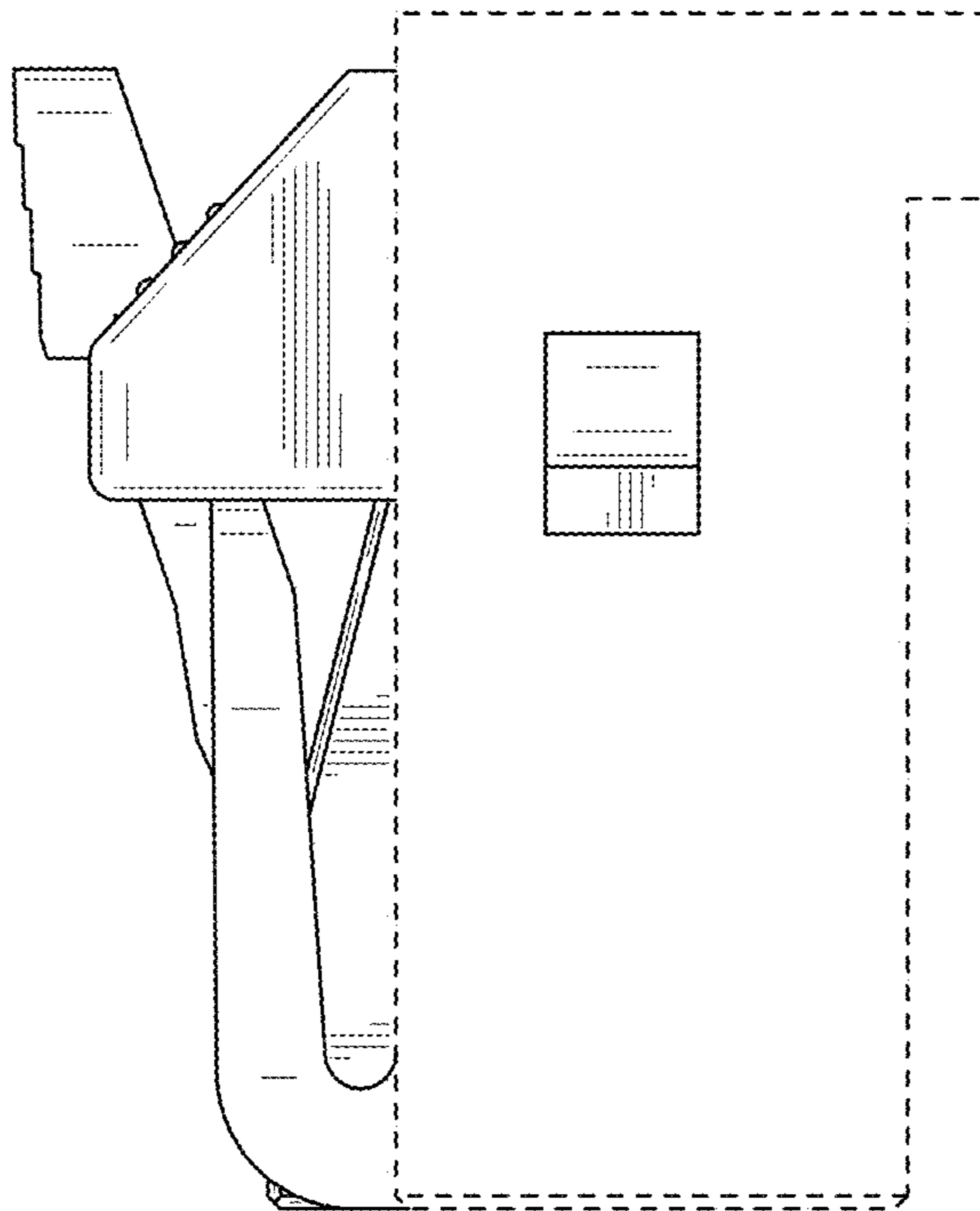


FIG. 93

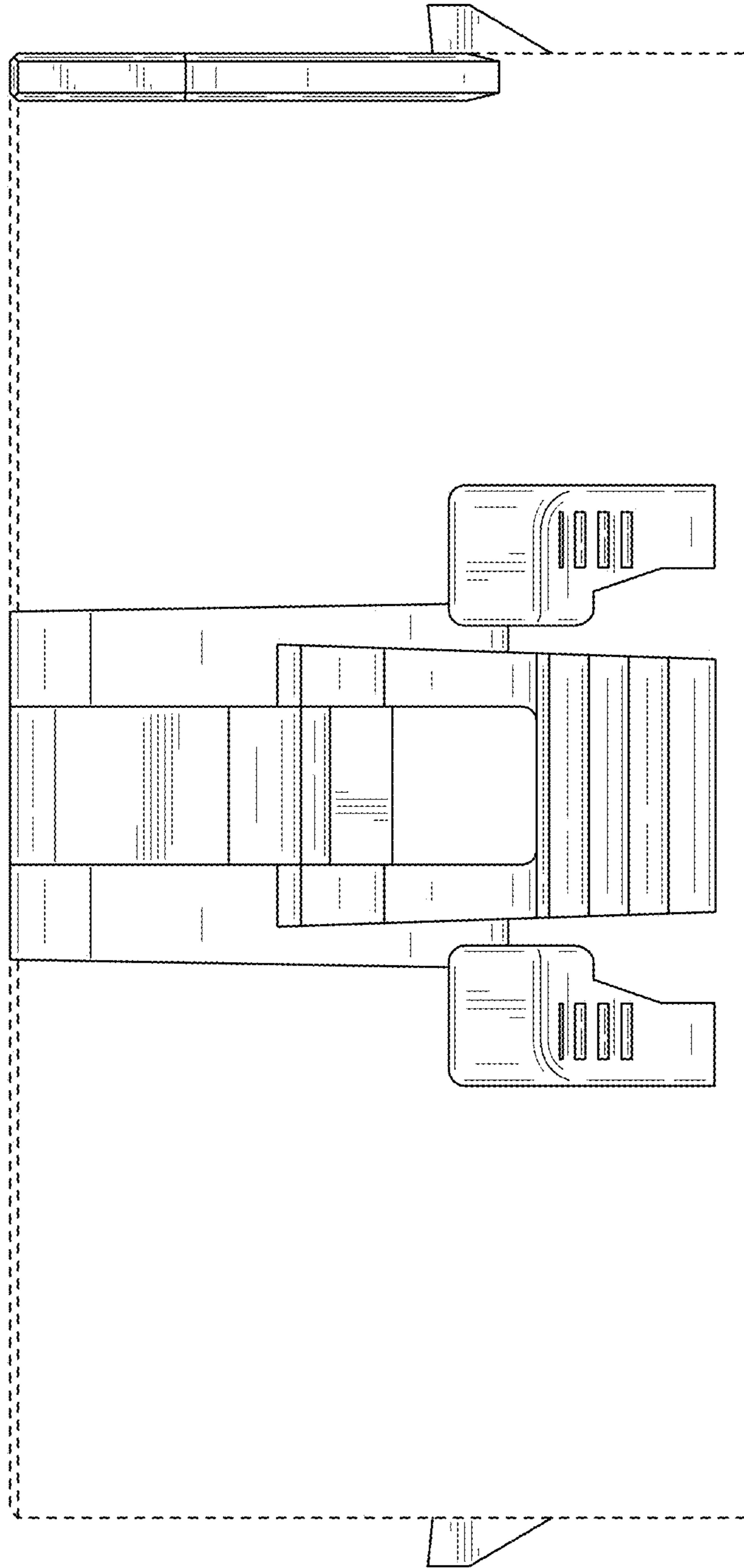


FIG. 95

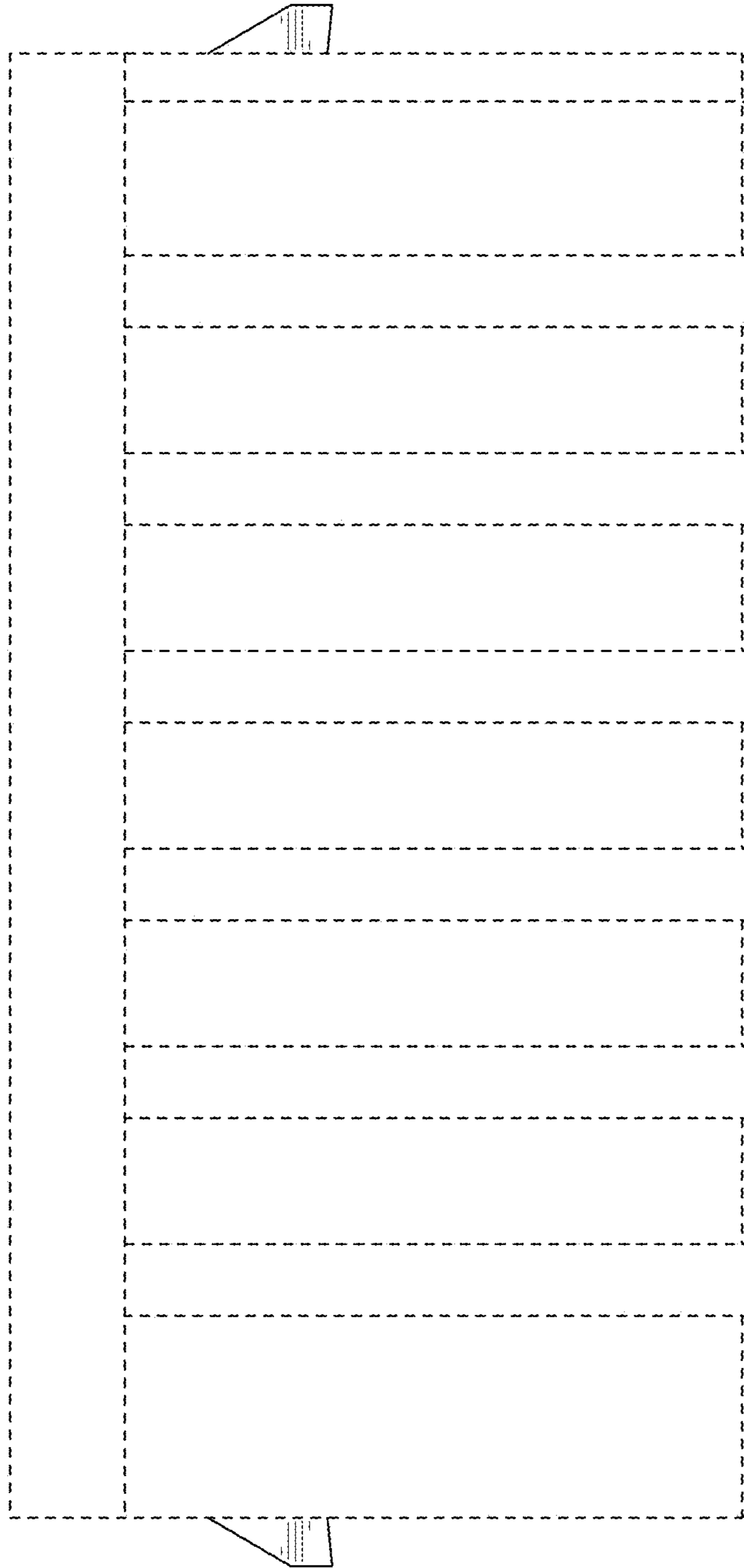


FIG. 96

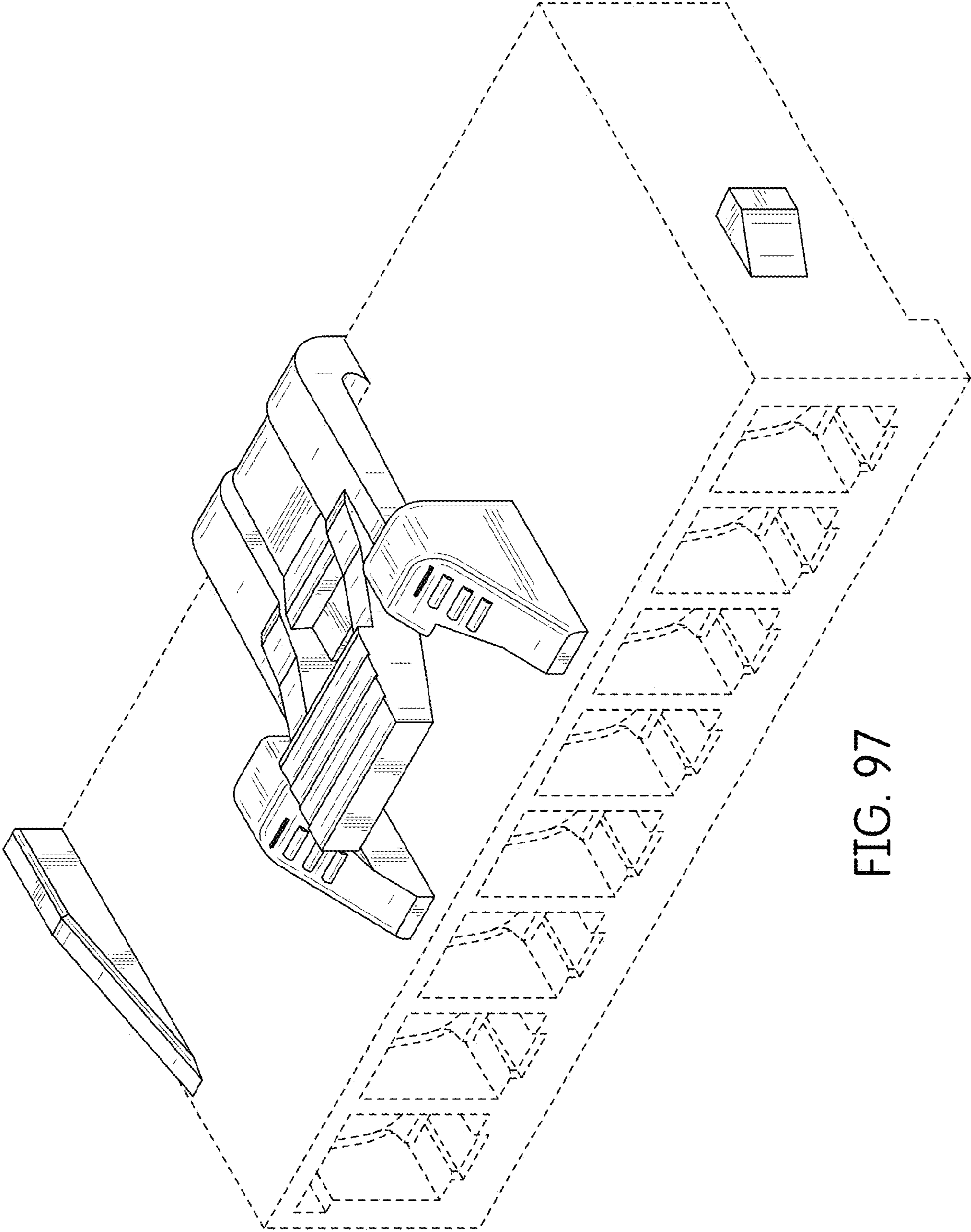


FIG. 97

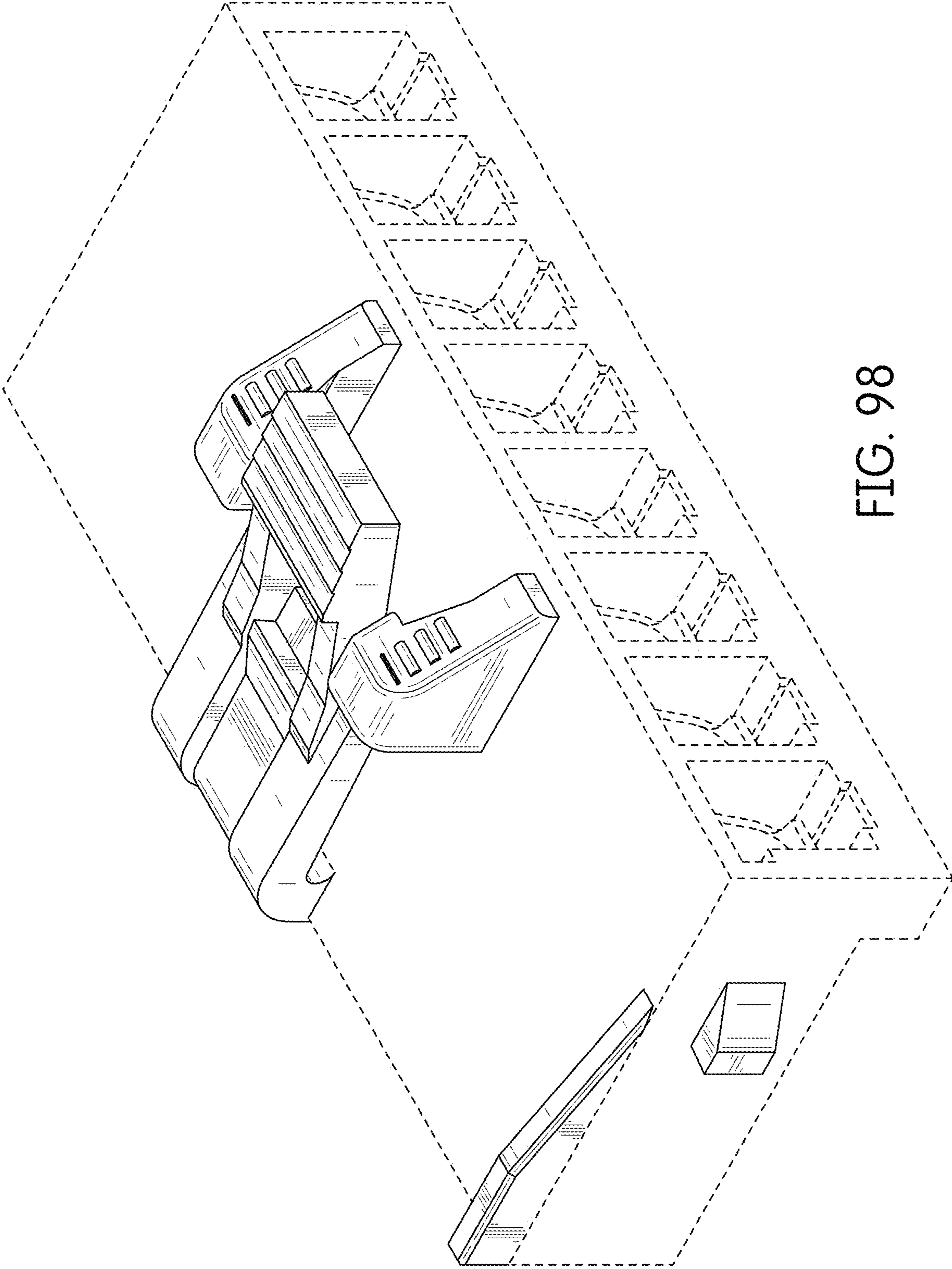


FIG. 98

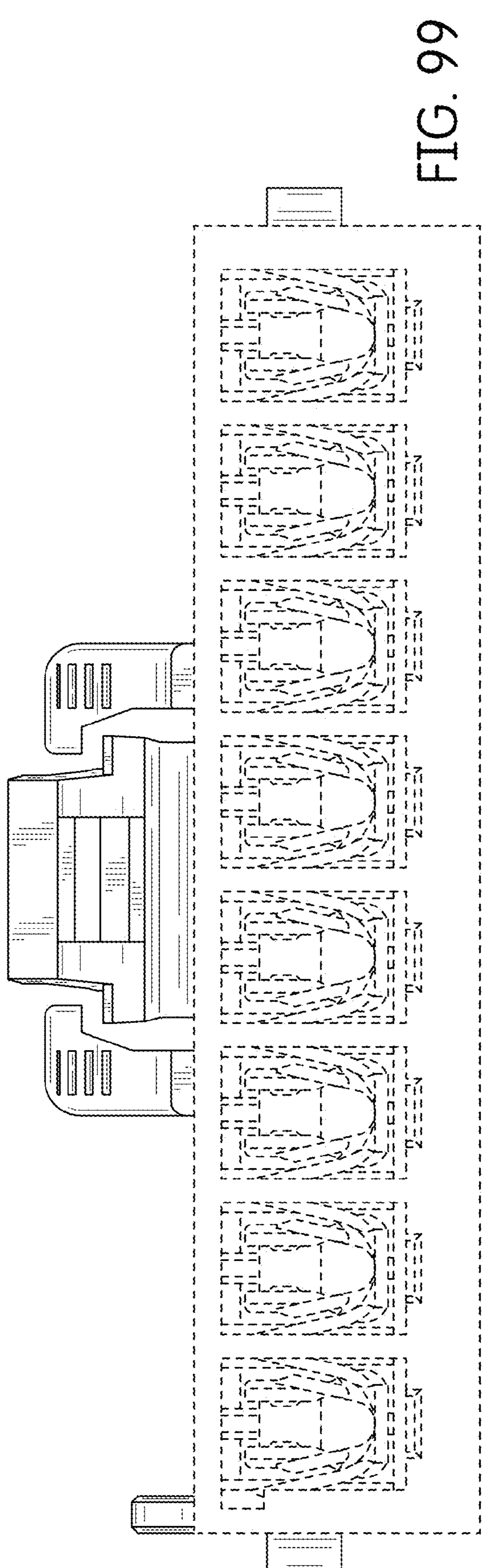


FIG. 99

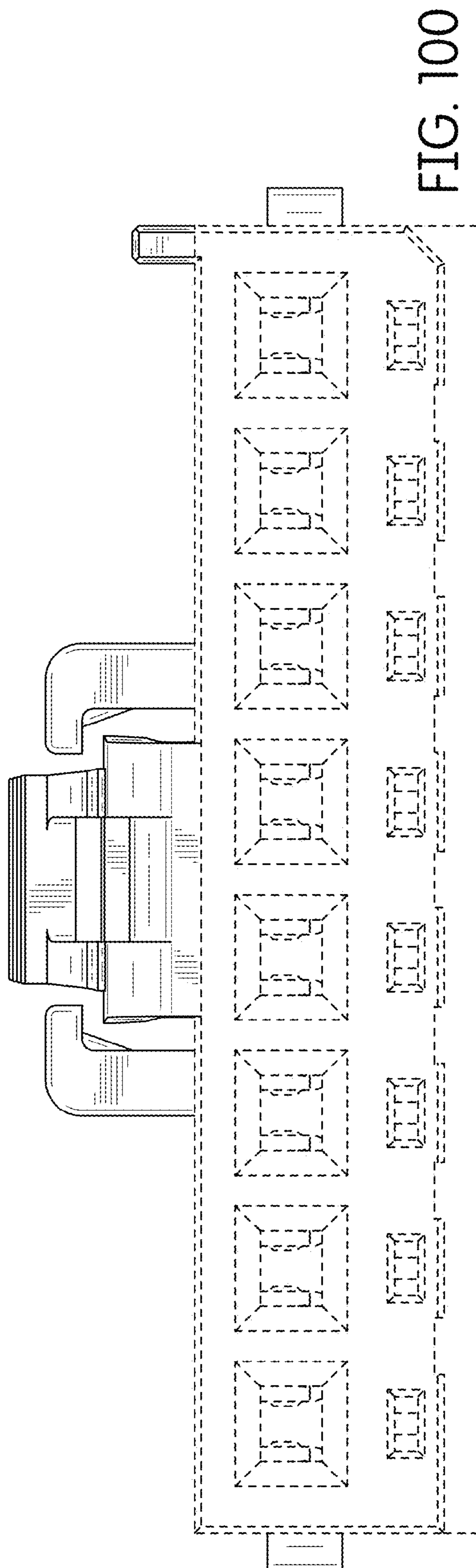


FIG. 100

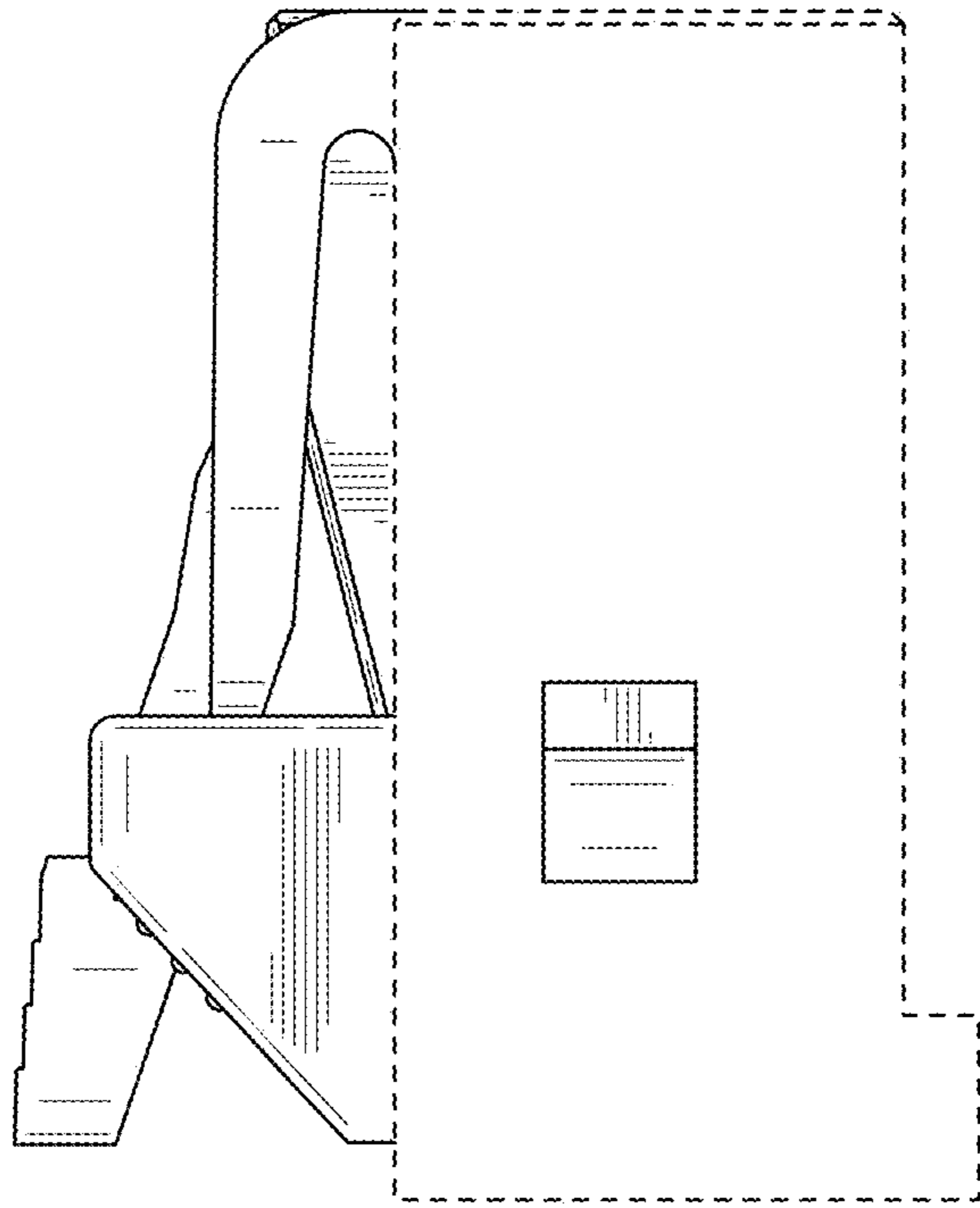


FIG. 102

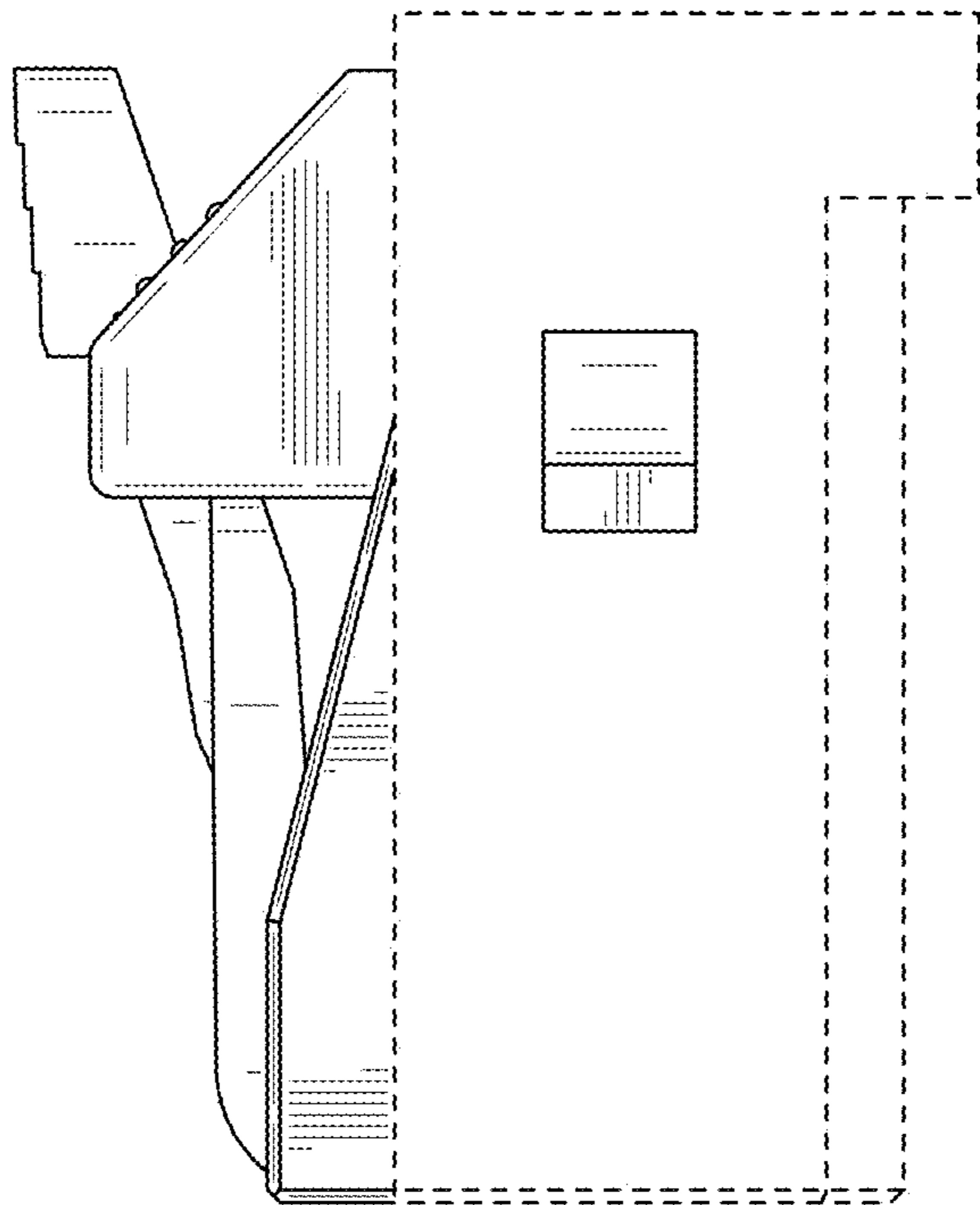


FIG. 101

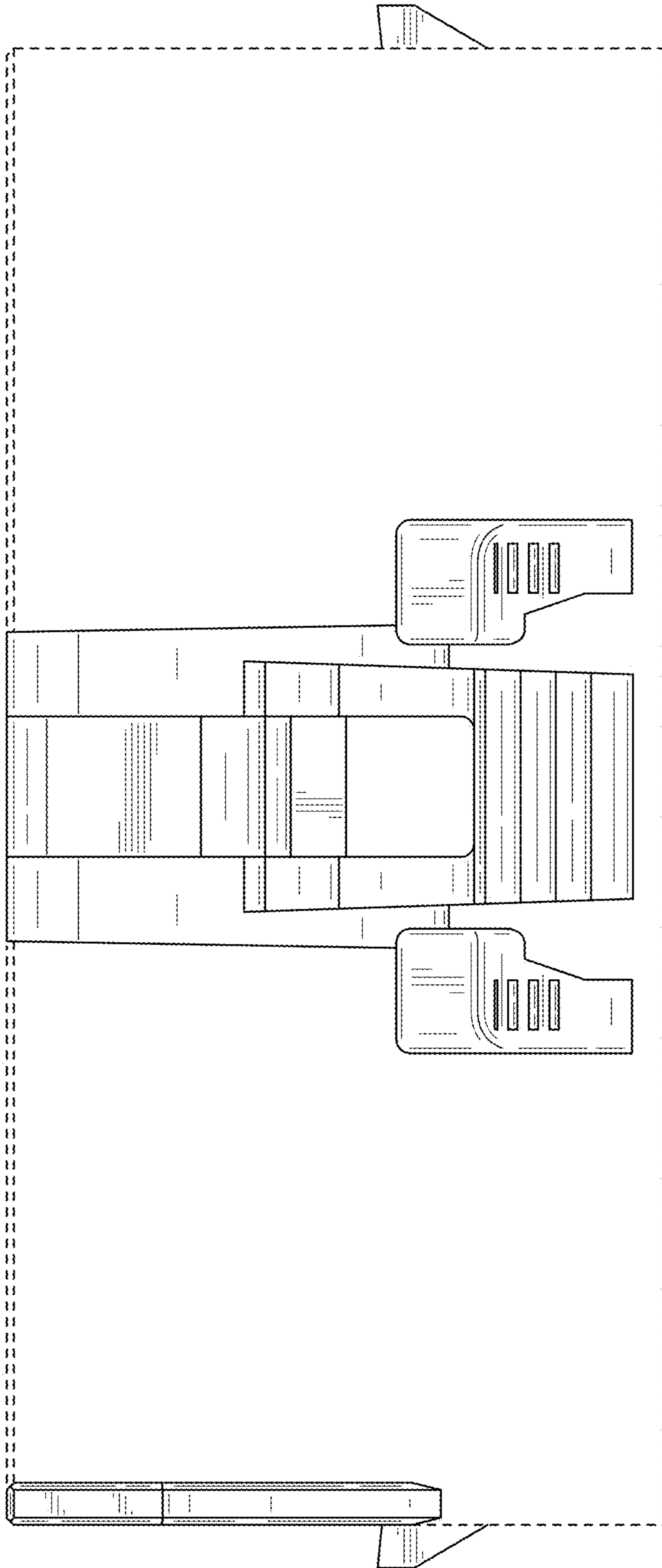


FIG. 103

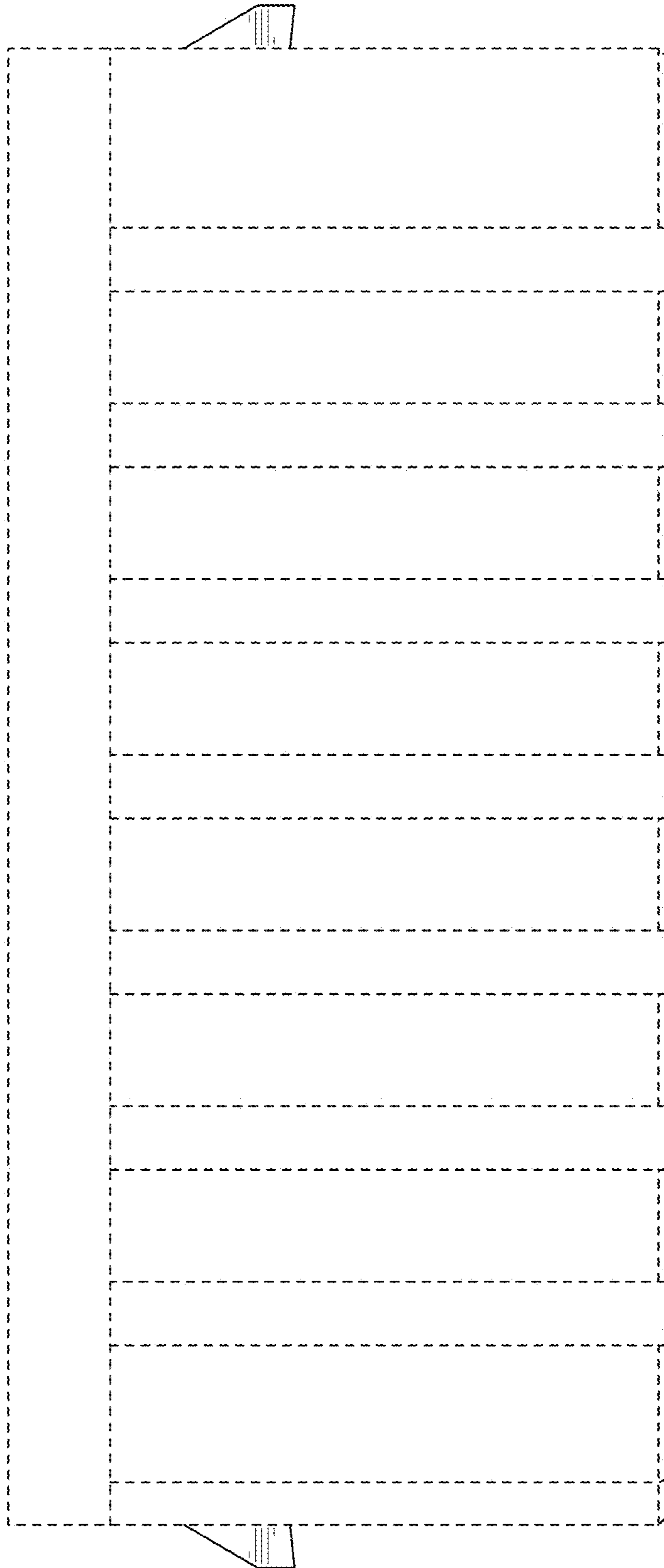


FIG. 104

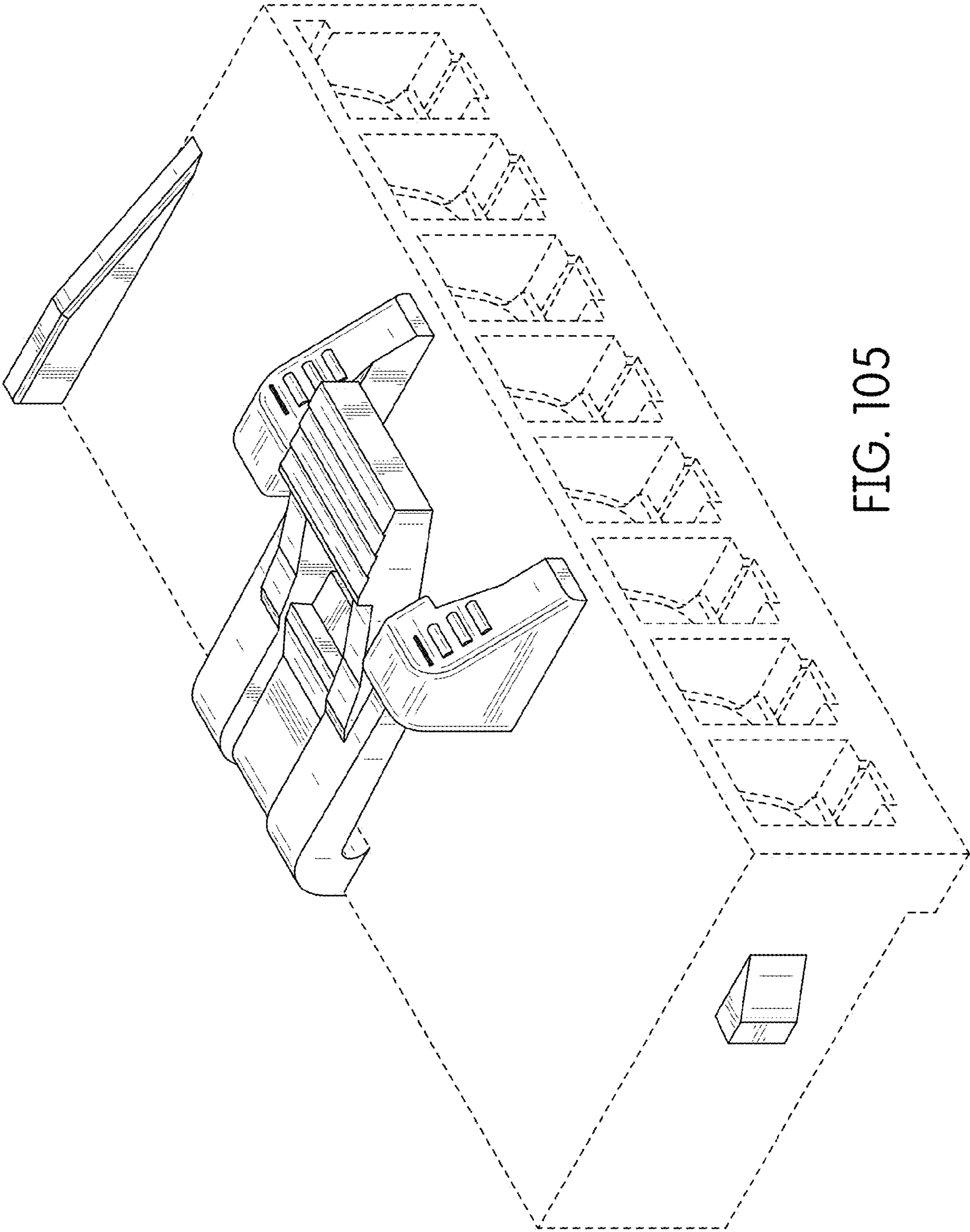


FIG. 105

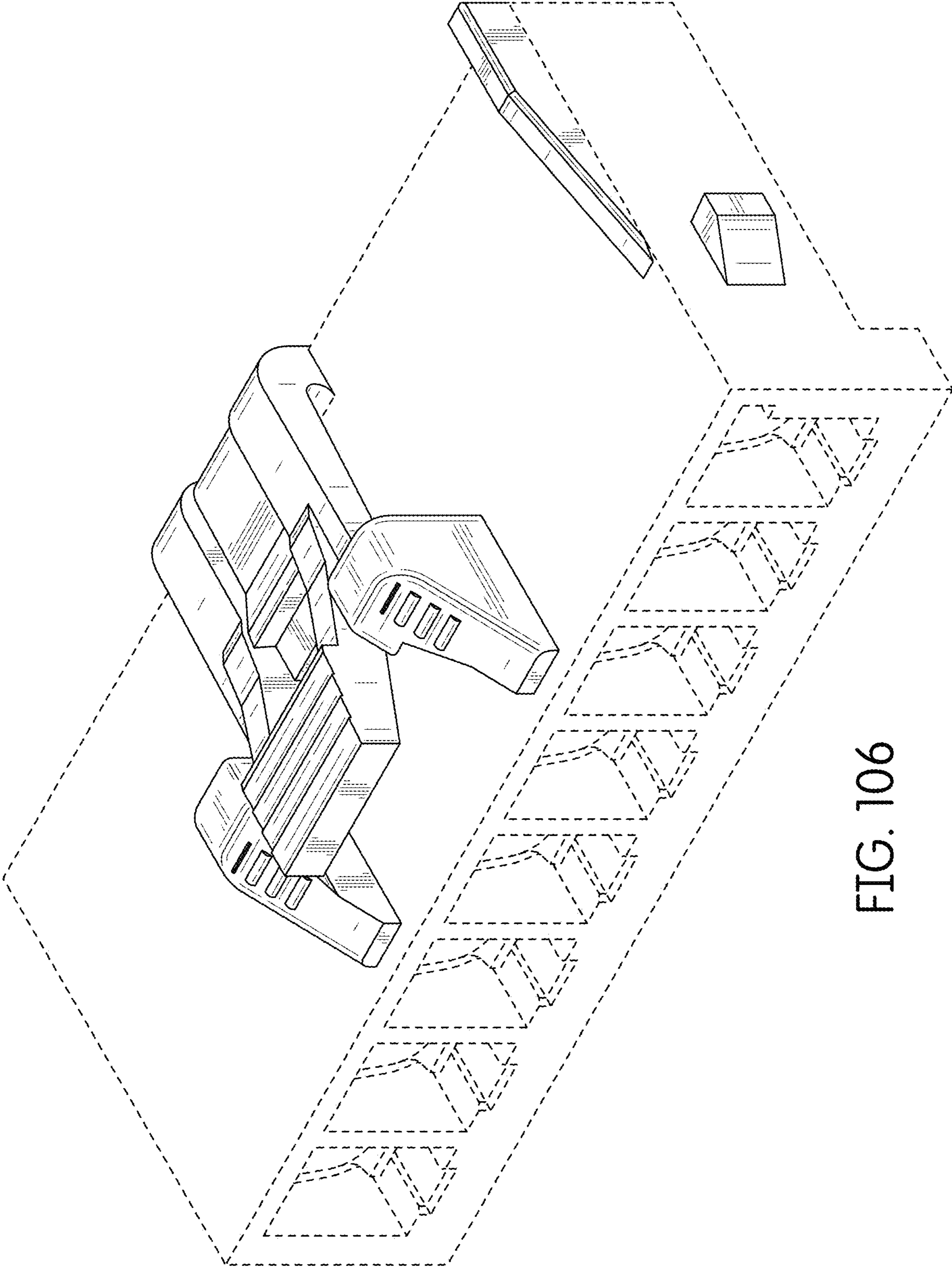


FIG. 106

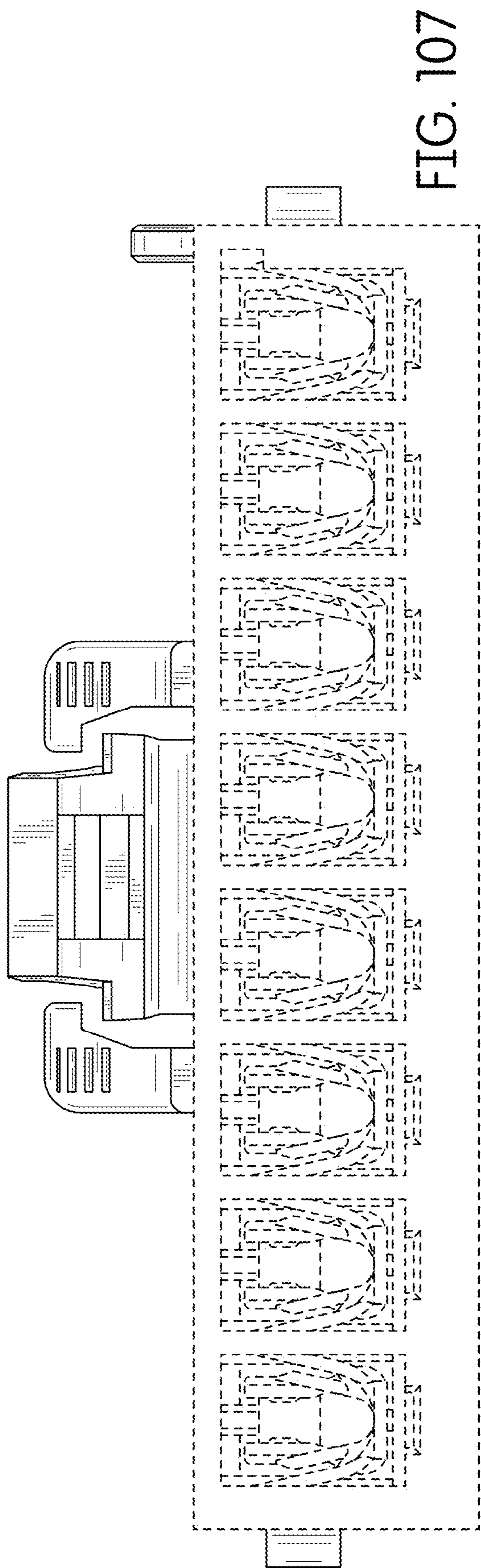


FIG. 107

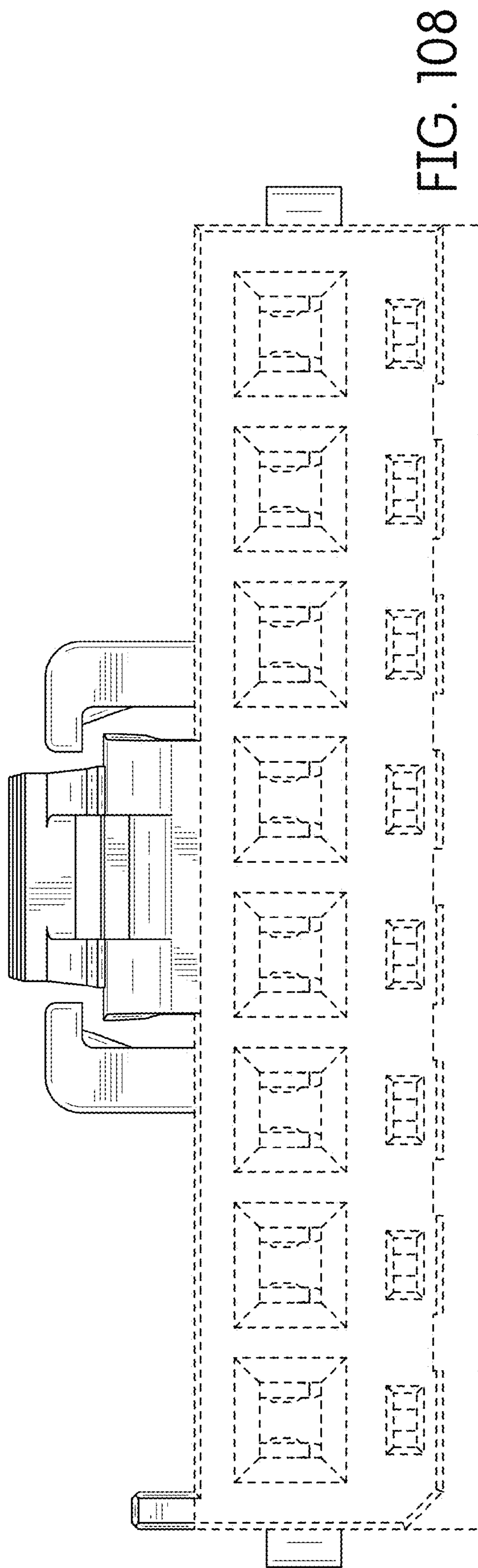


FIG. 108

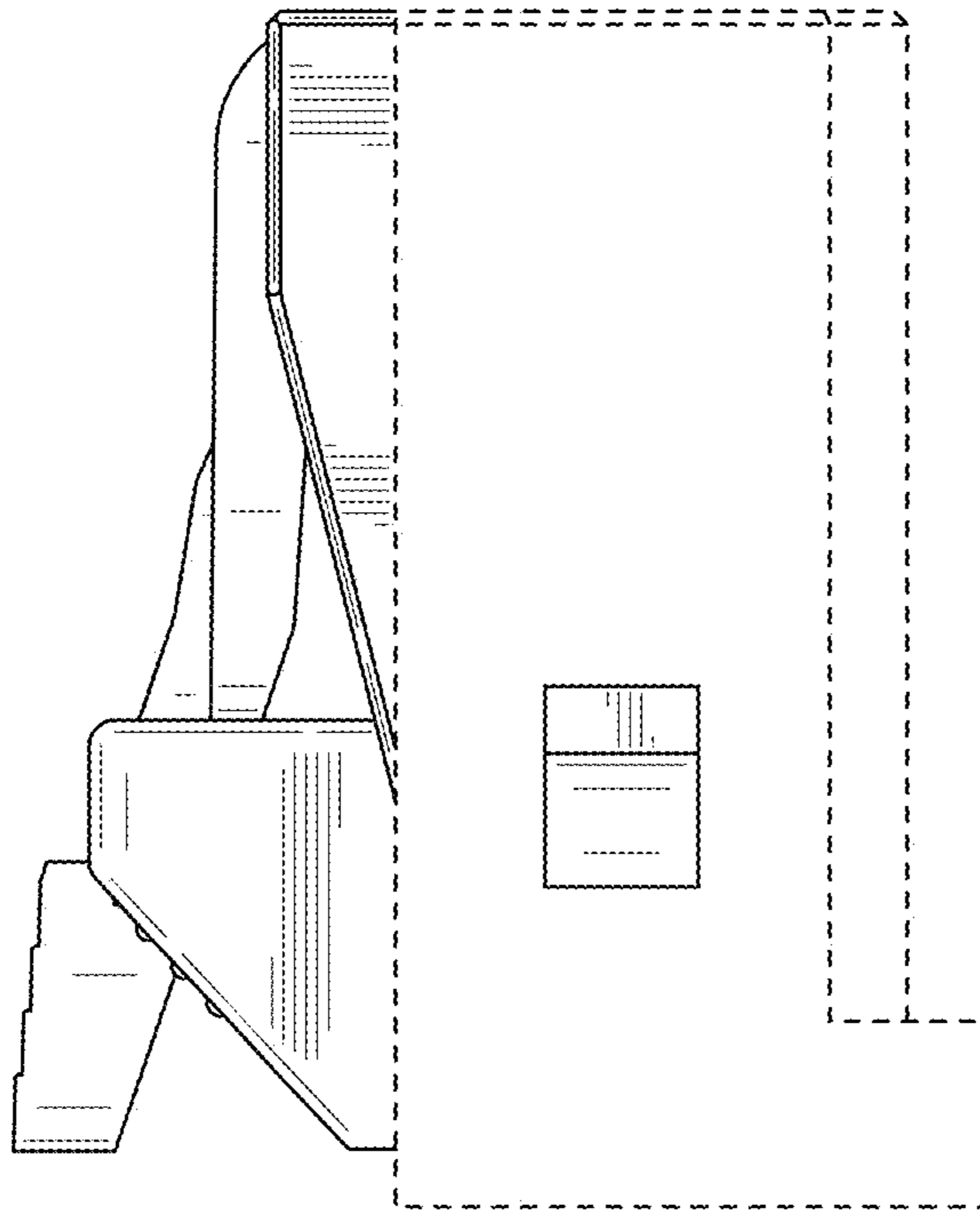


FIG. 110

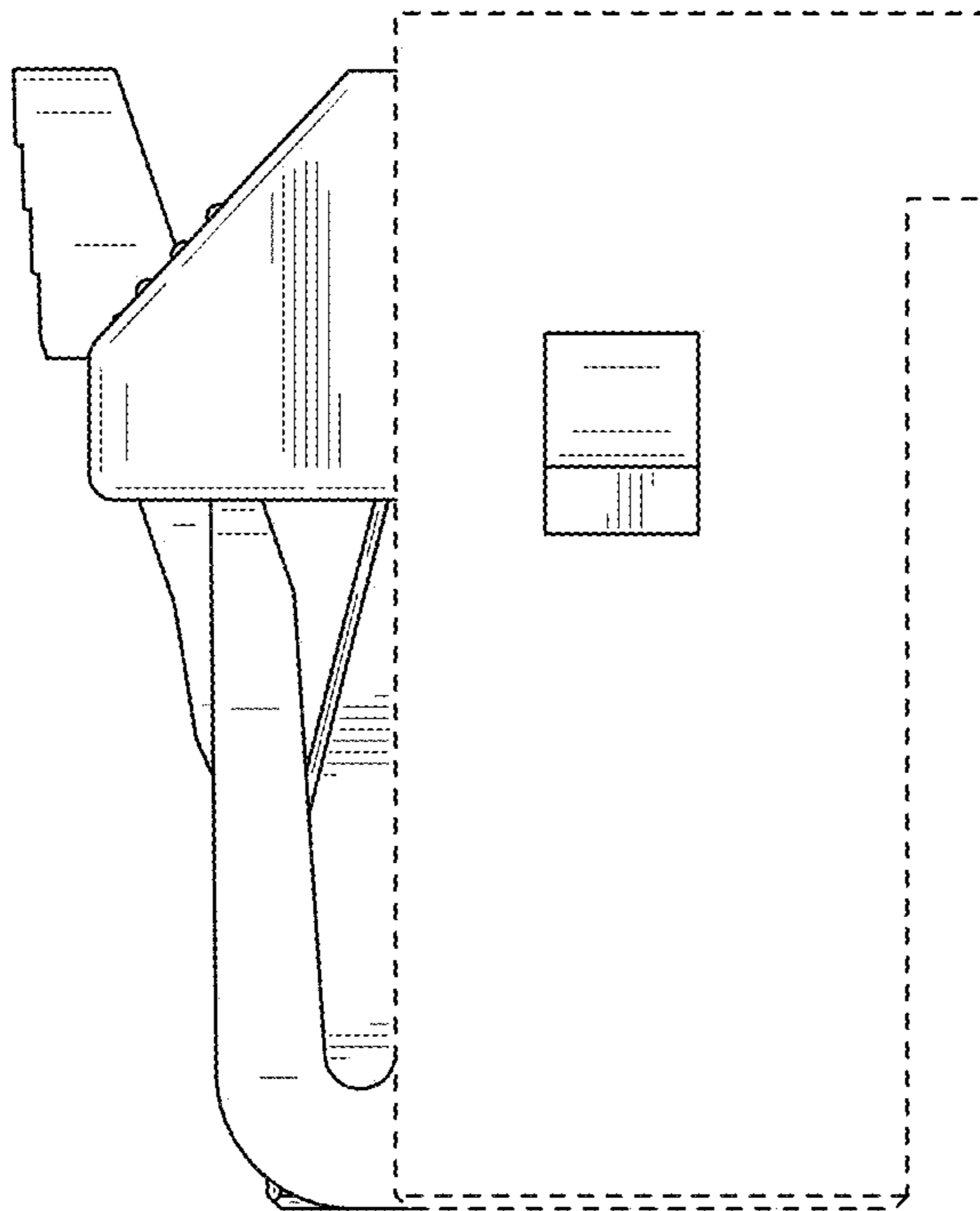


FIG. 109

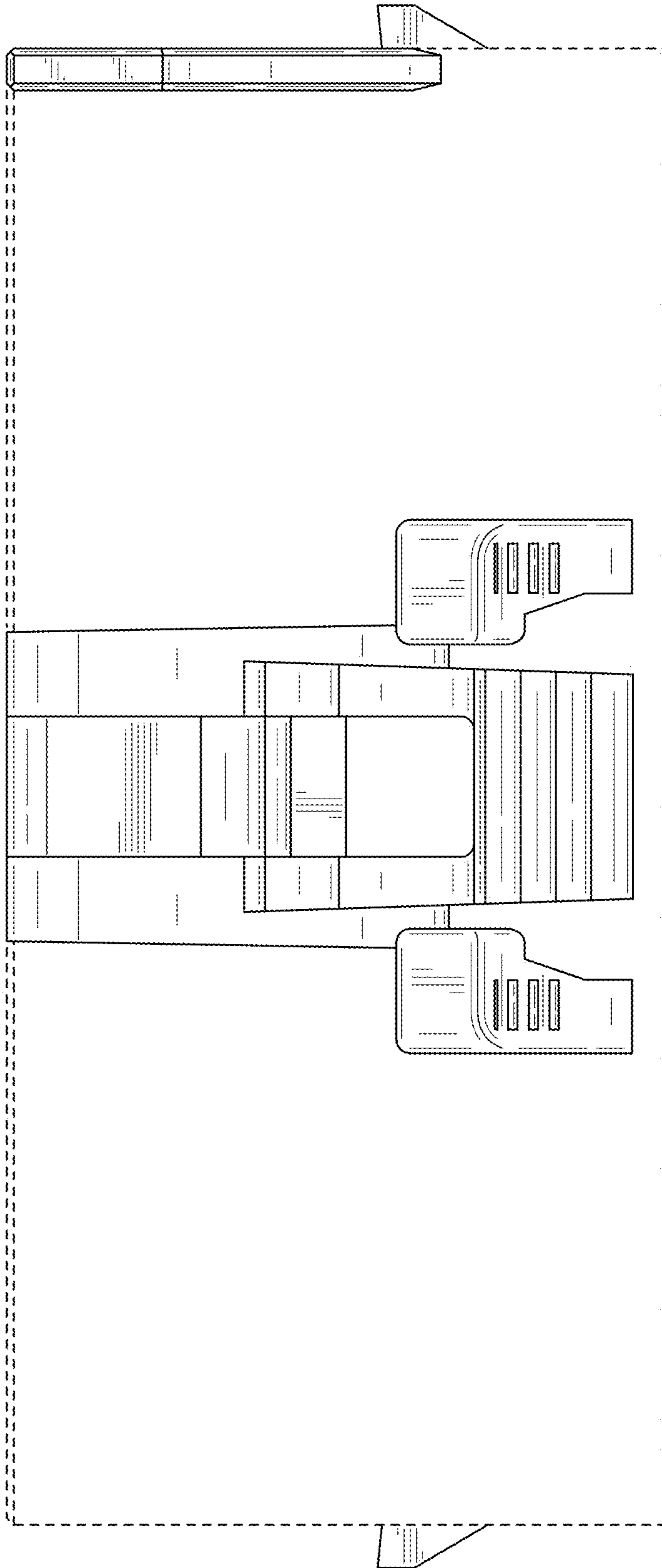


FIG. 111

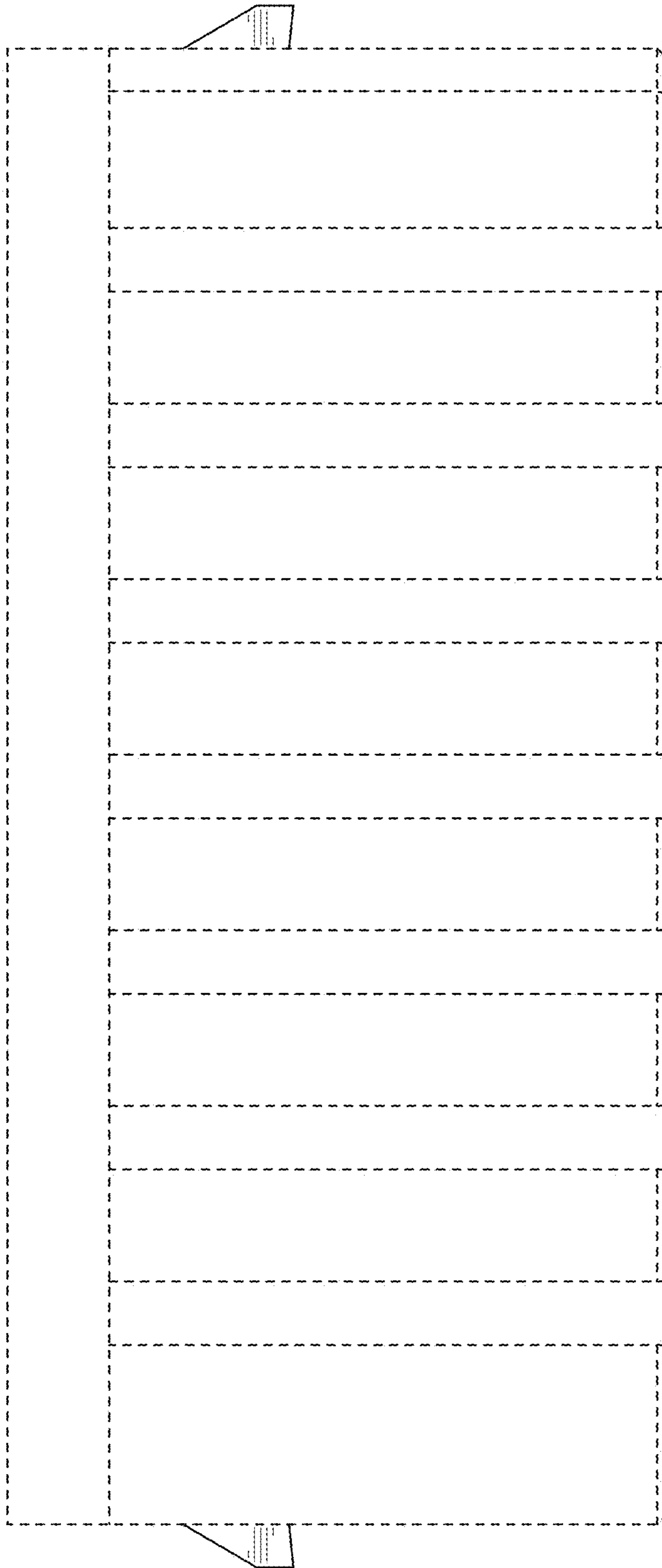


FIG. 112

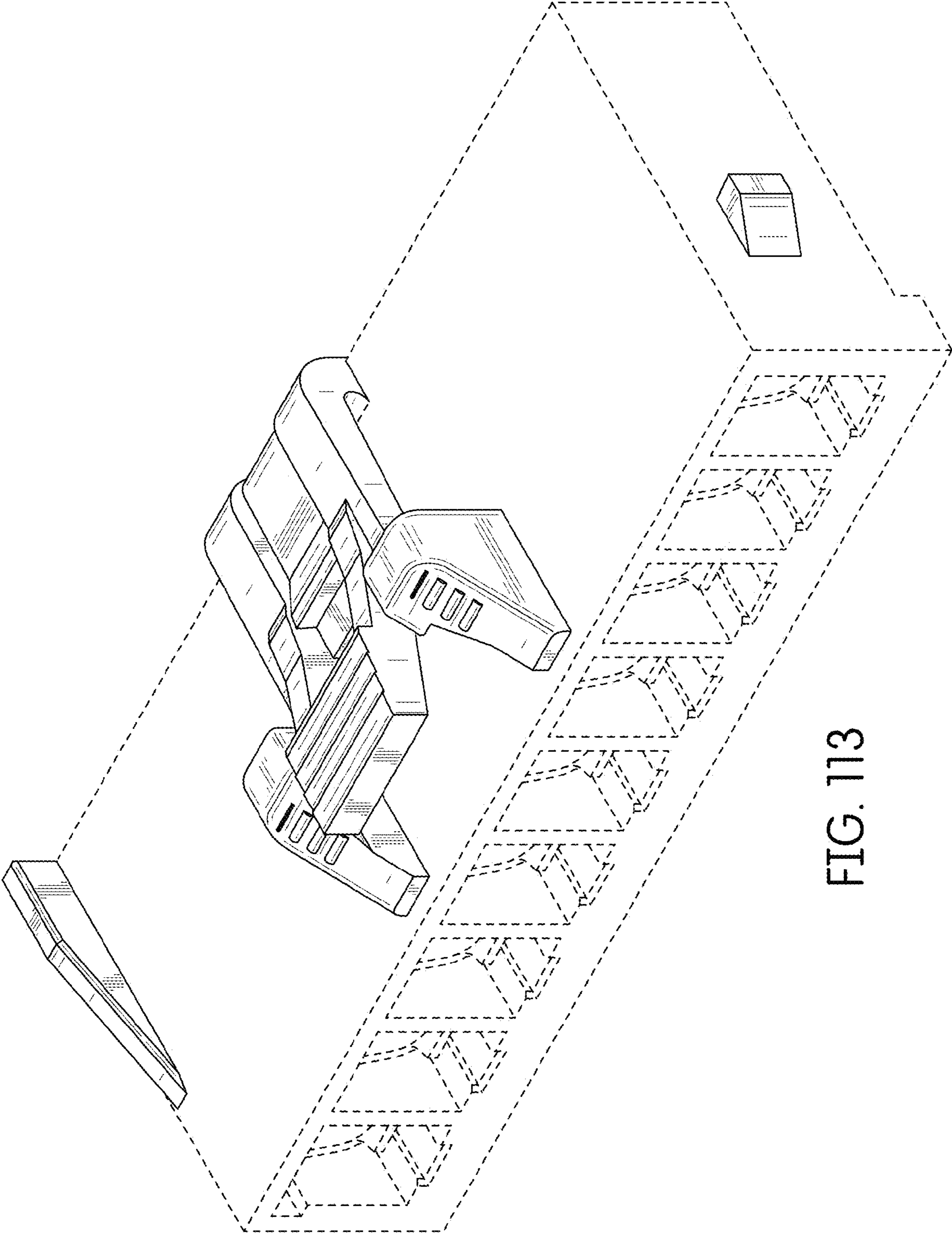


FIG. 113

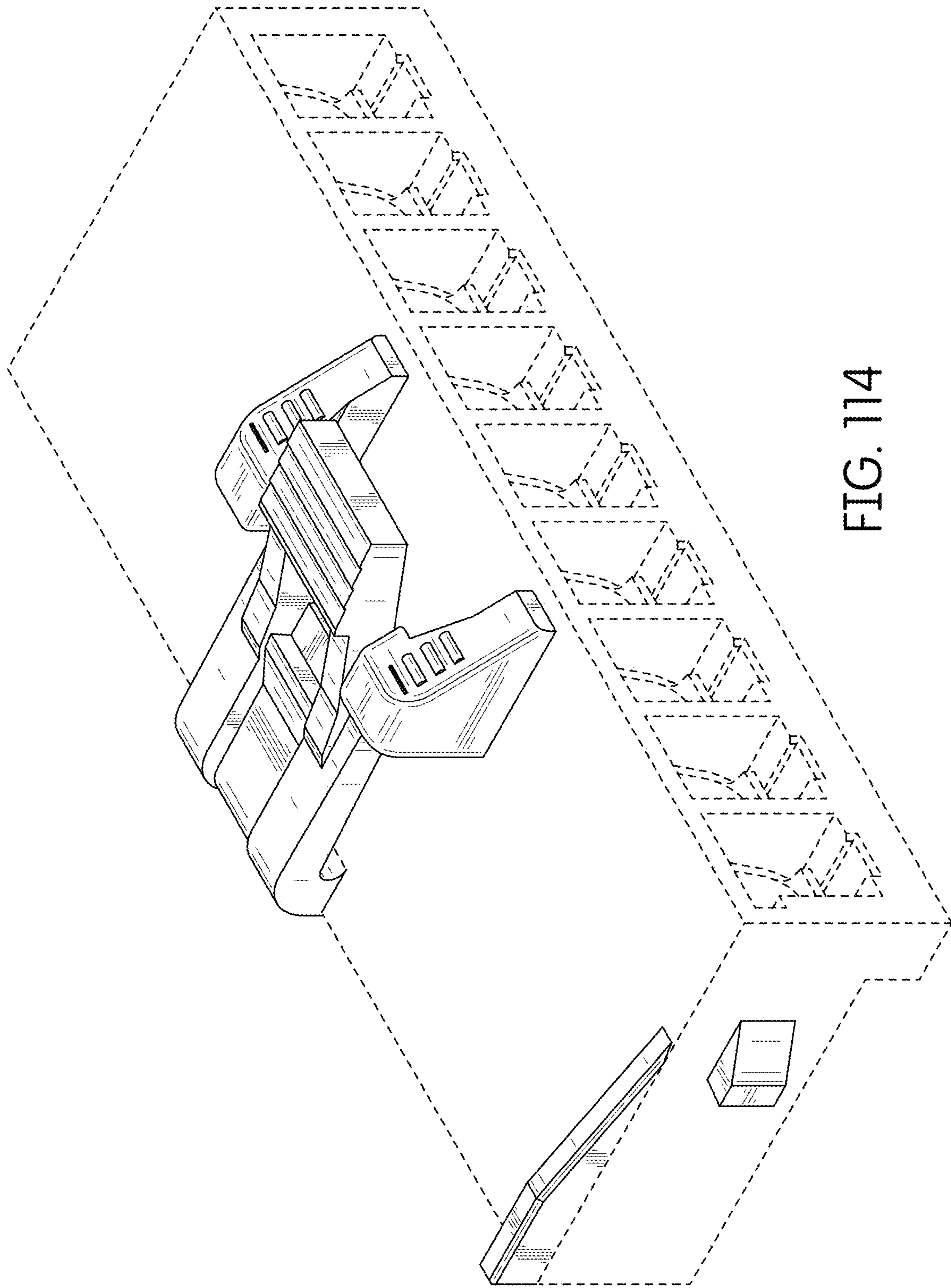


FIG. 114

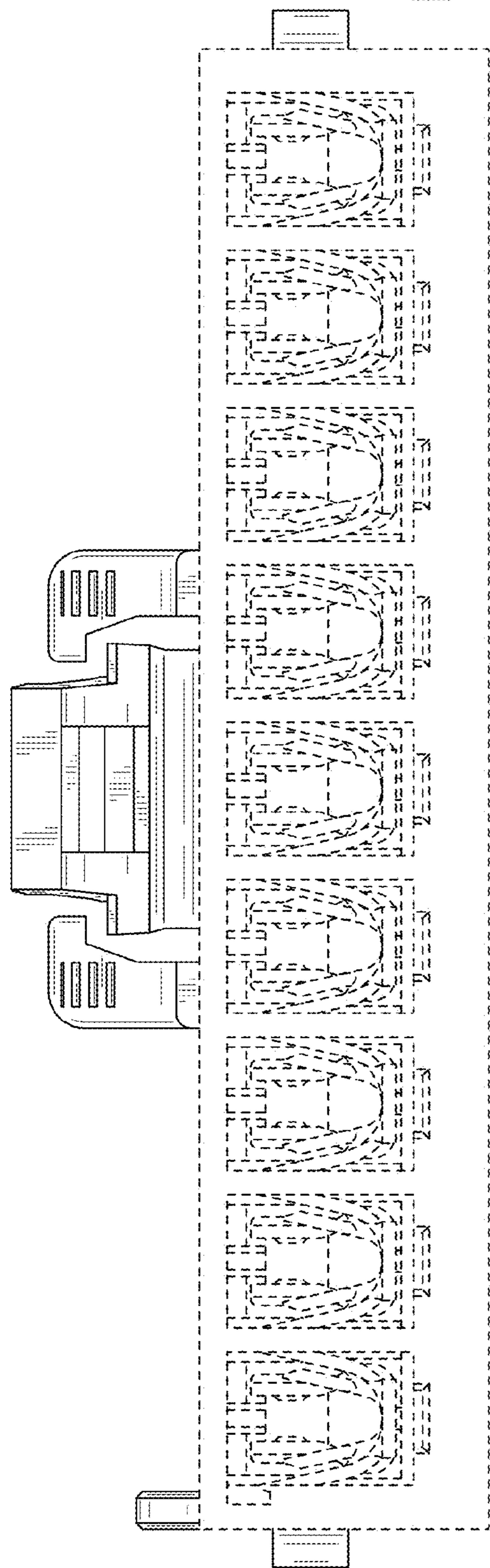


FIG. 115

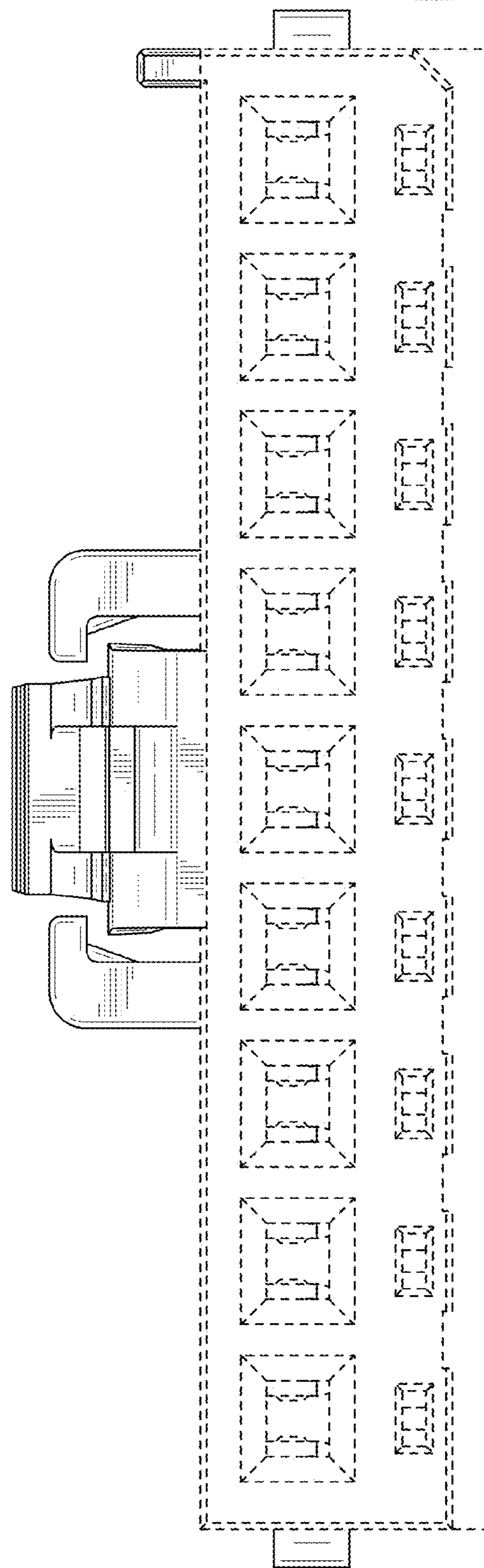


FIG. 116

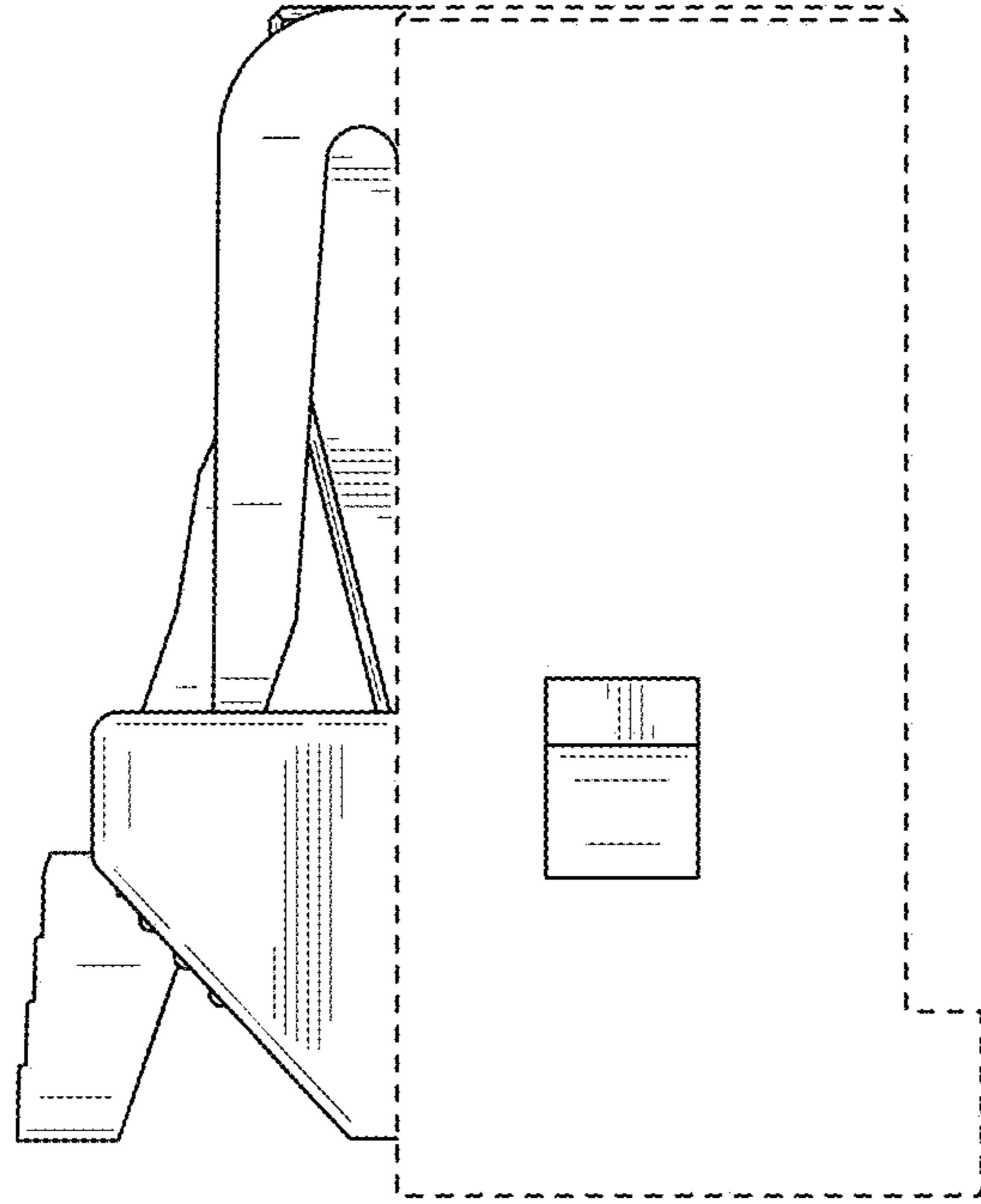


FIG. 118

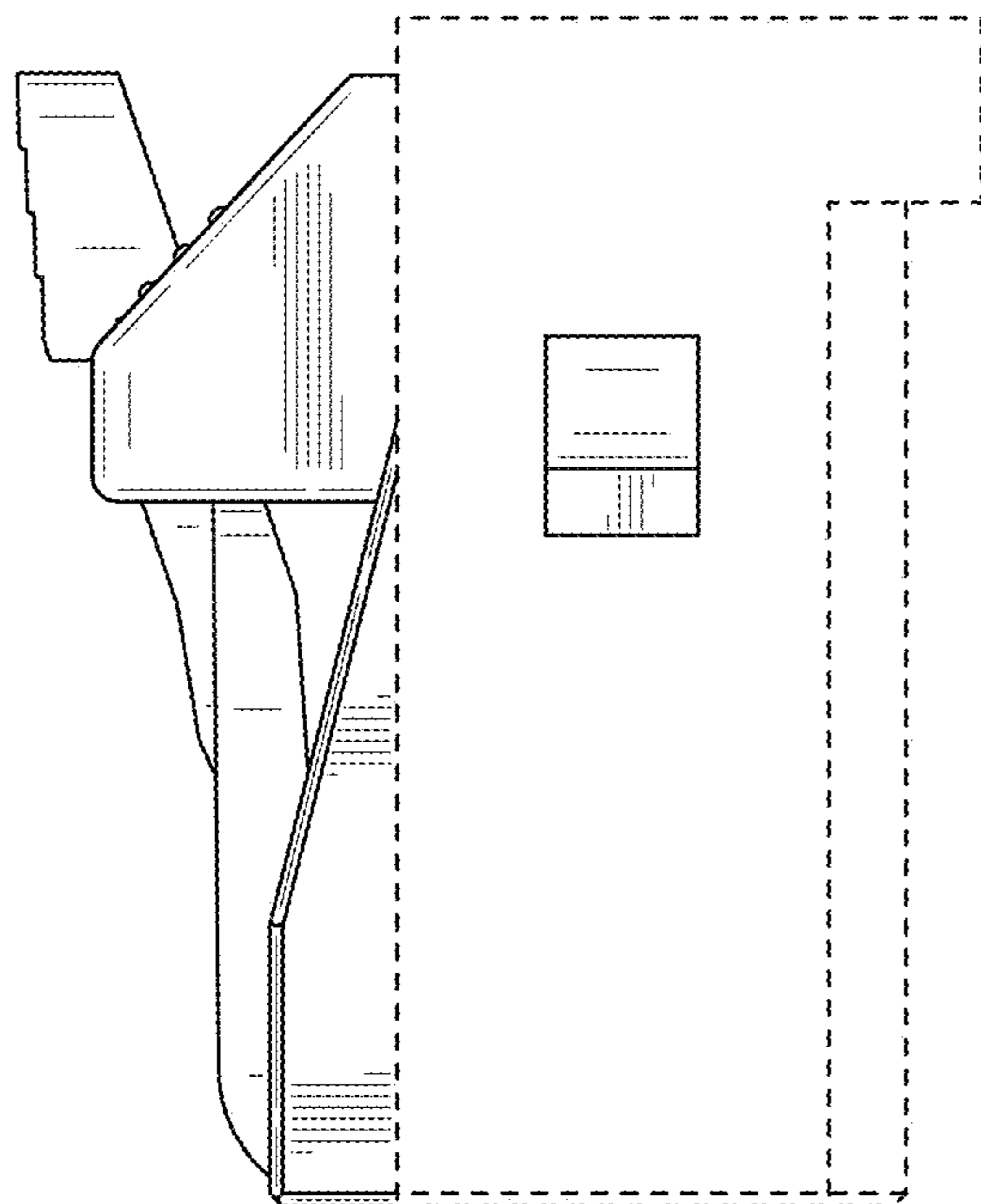


FIG. 117

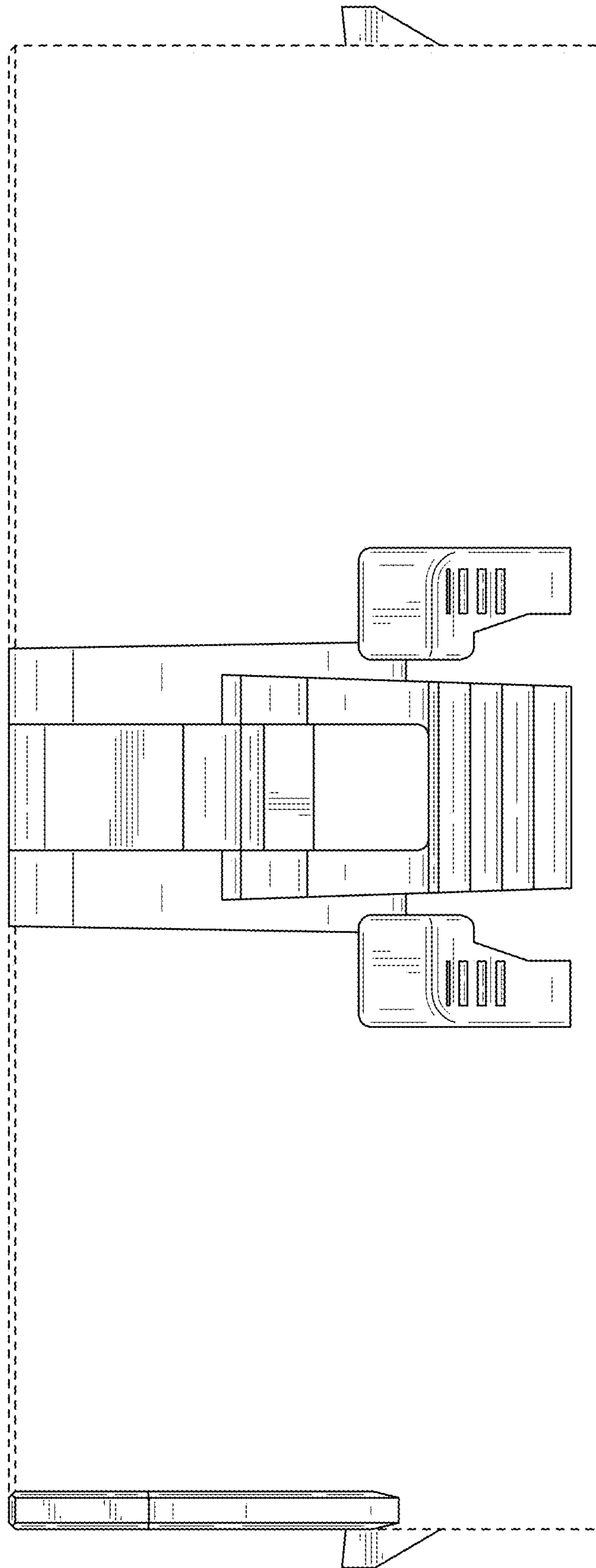


FIG. 119

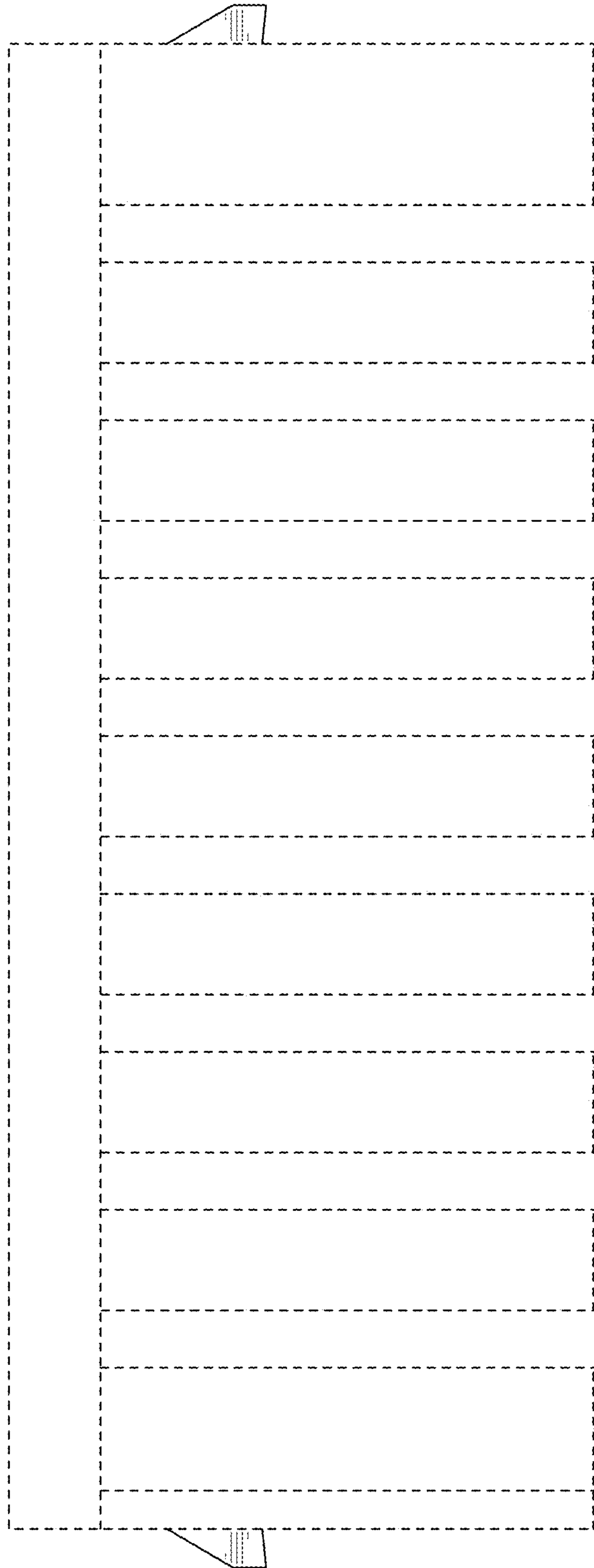


FIG. 120

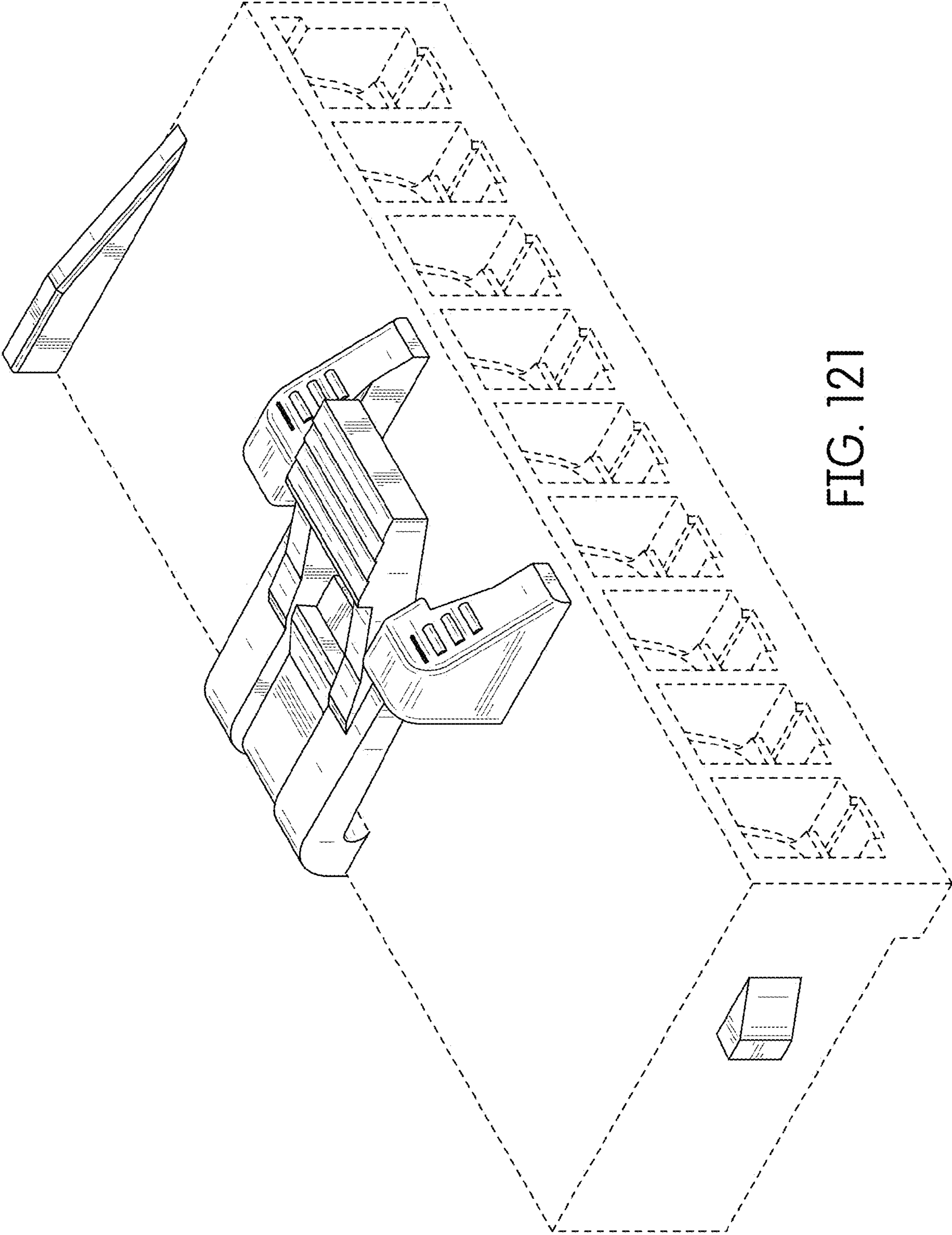


FIG. 121

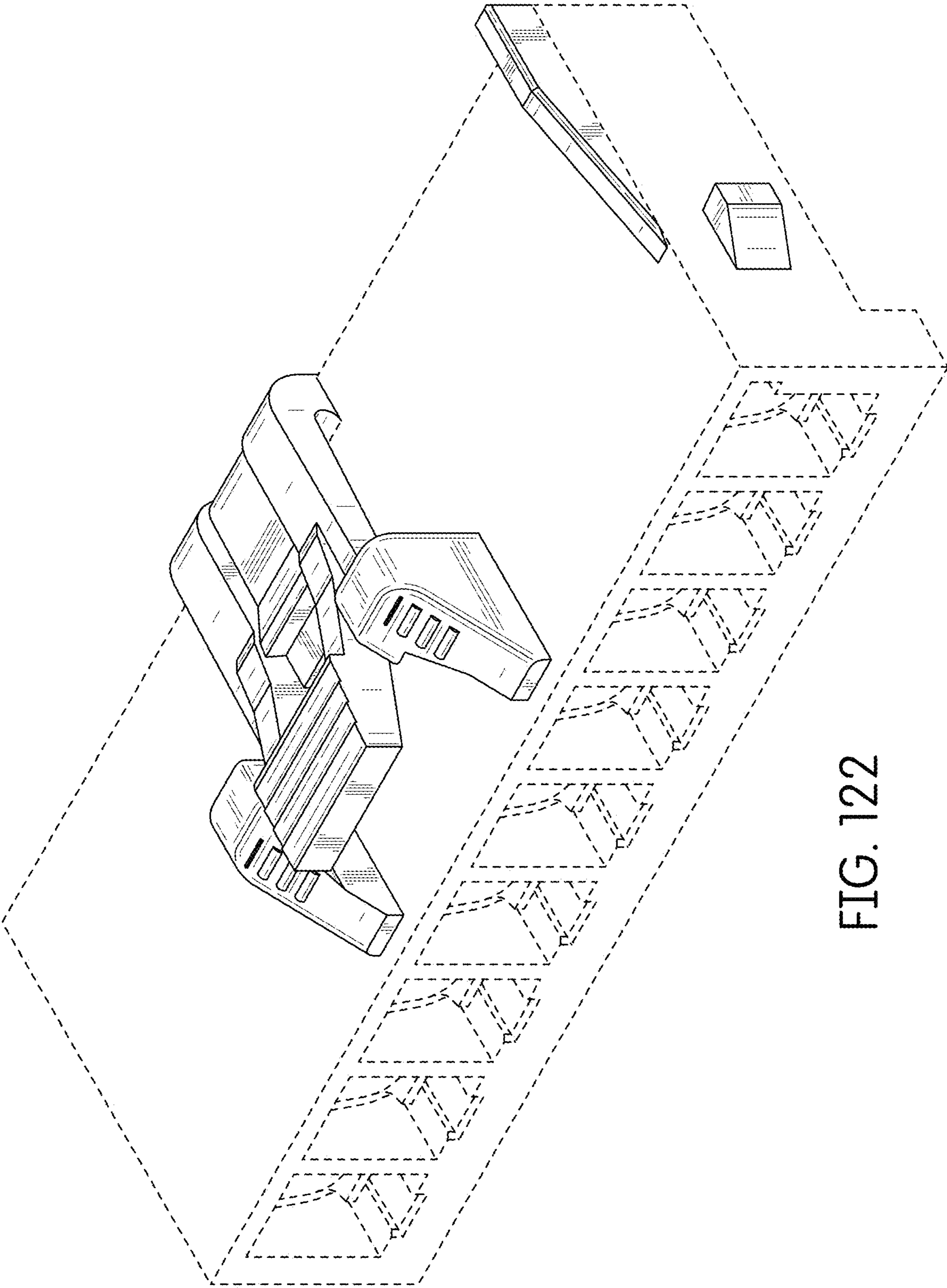
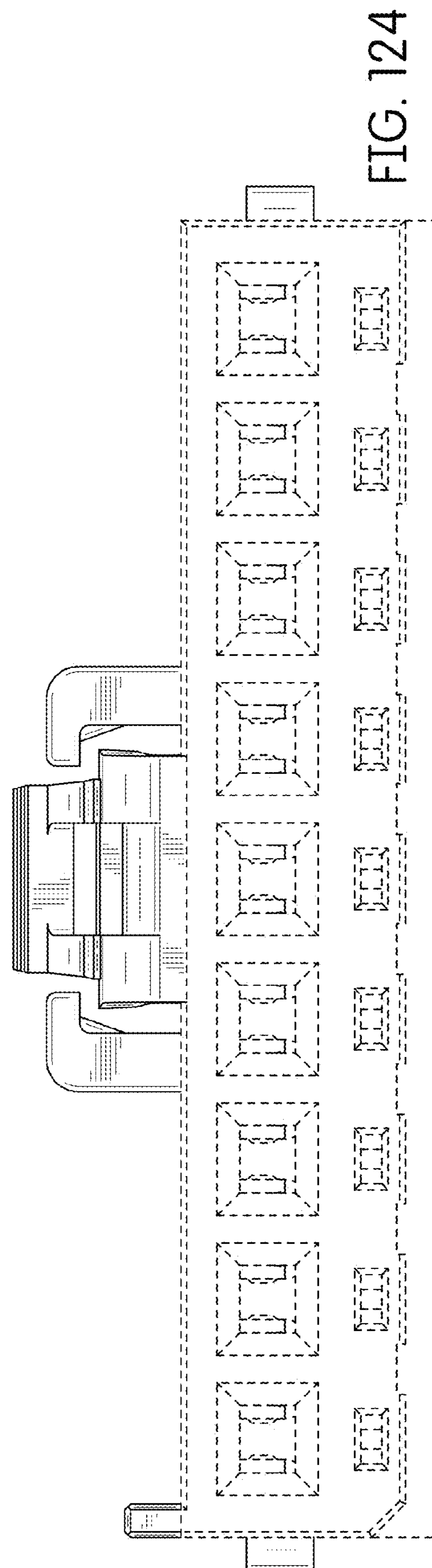
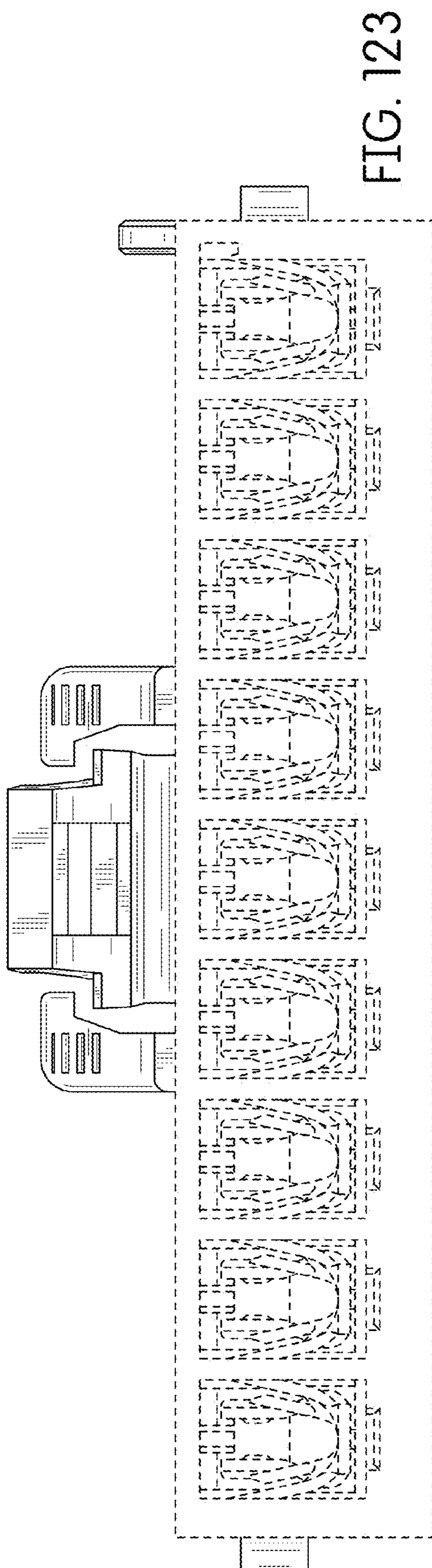


FIG. 122



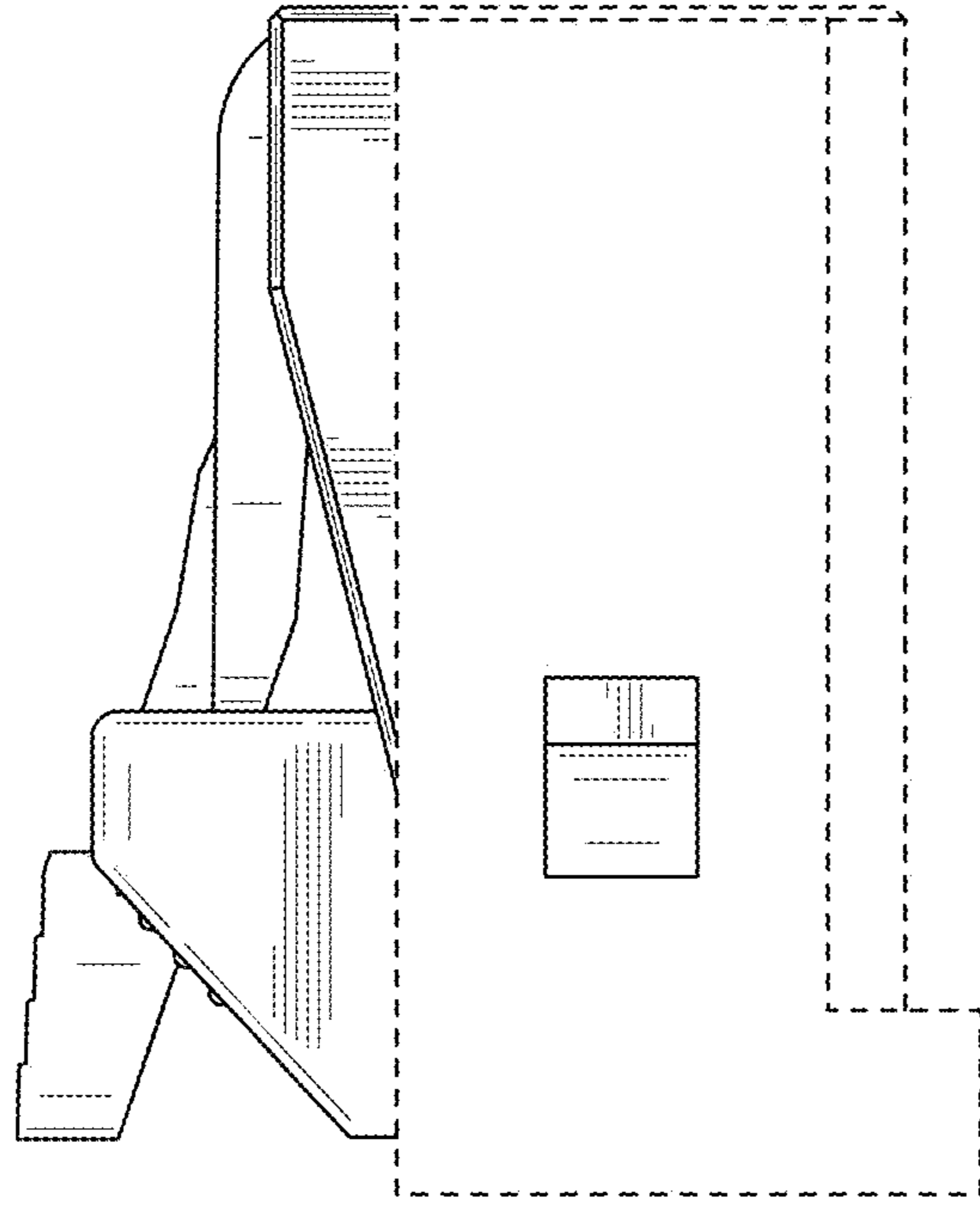


FIG. 126

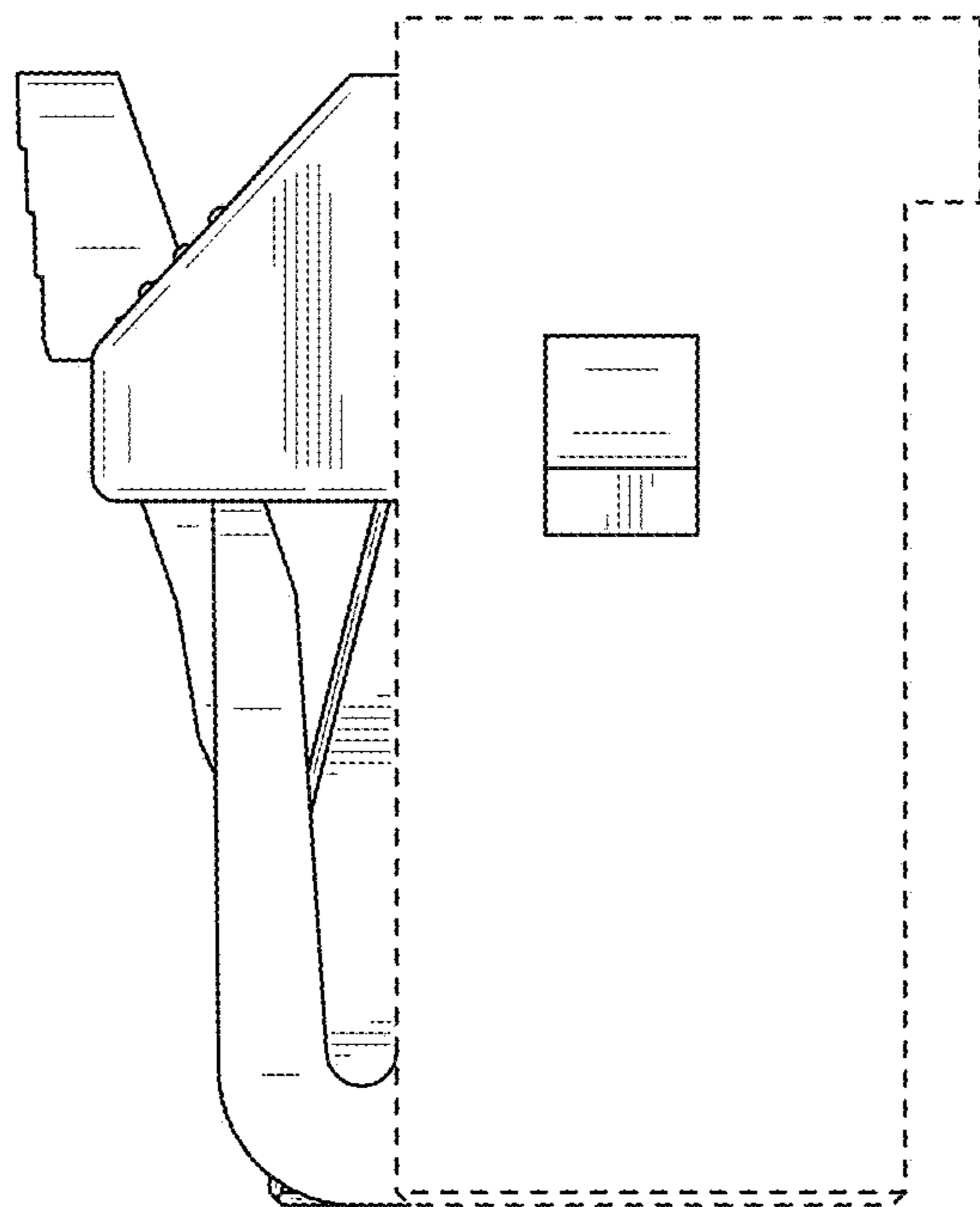


FIG. 125

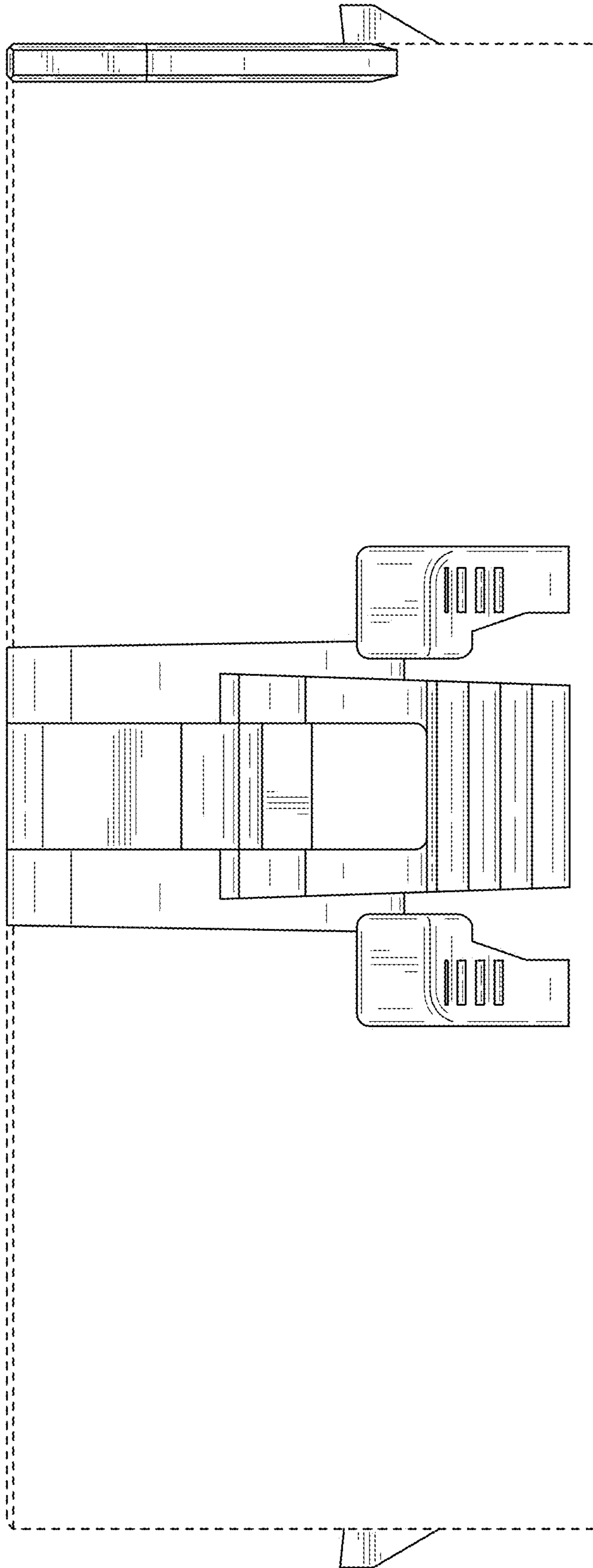


FIG. 127

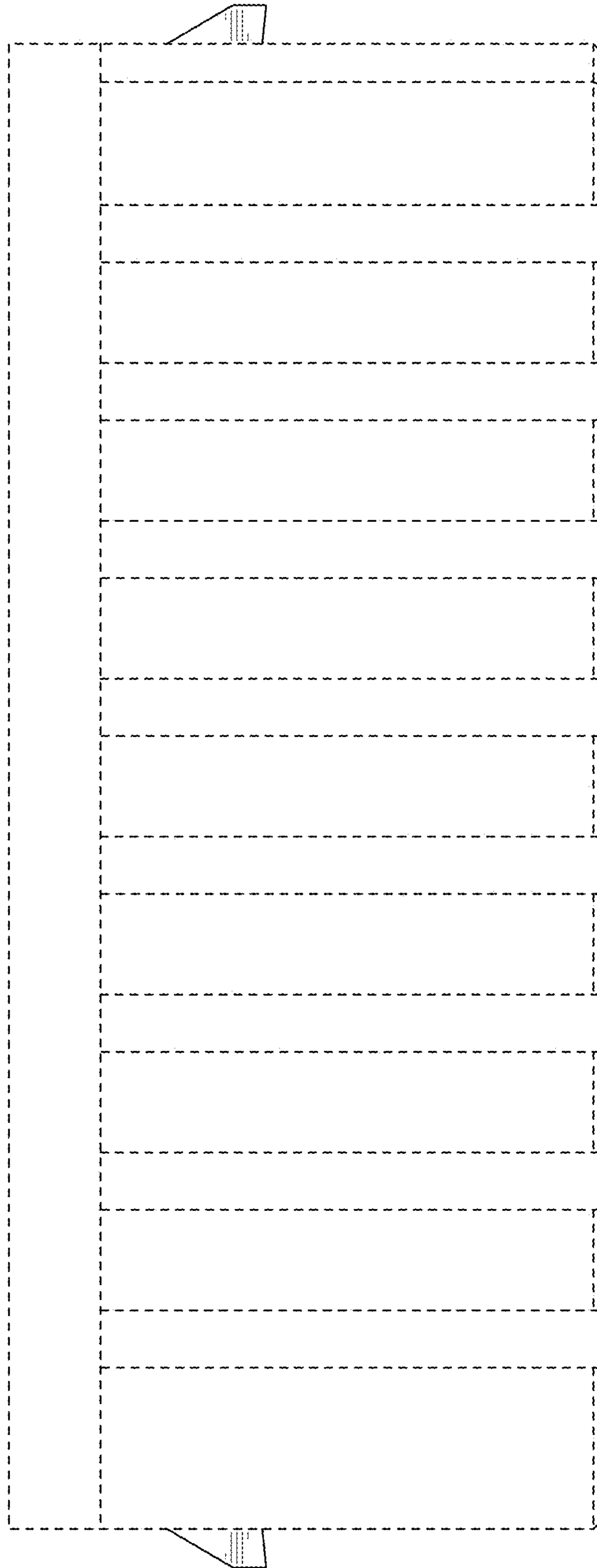


FIG. 128

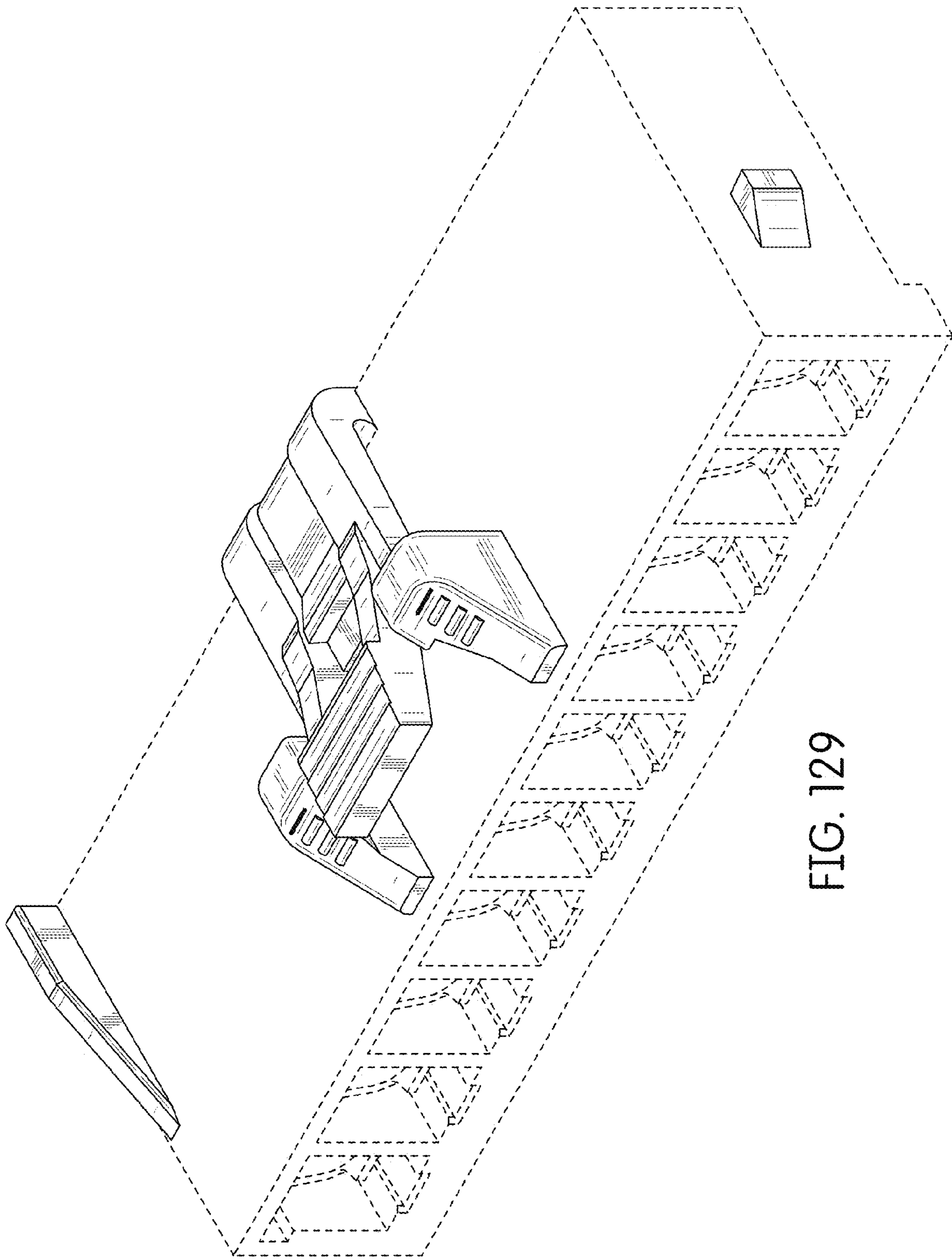


FIG. 129

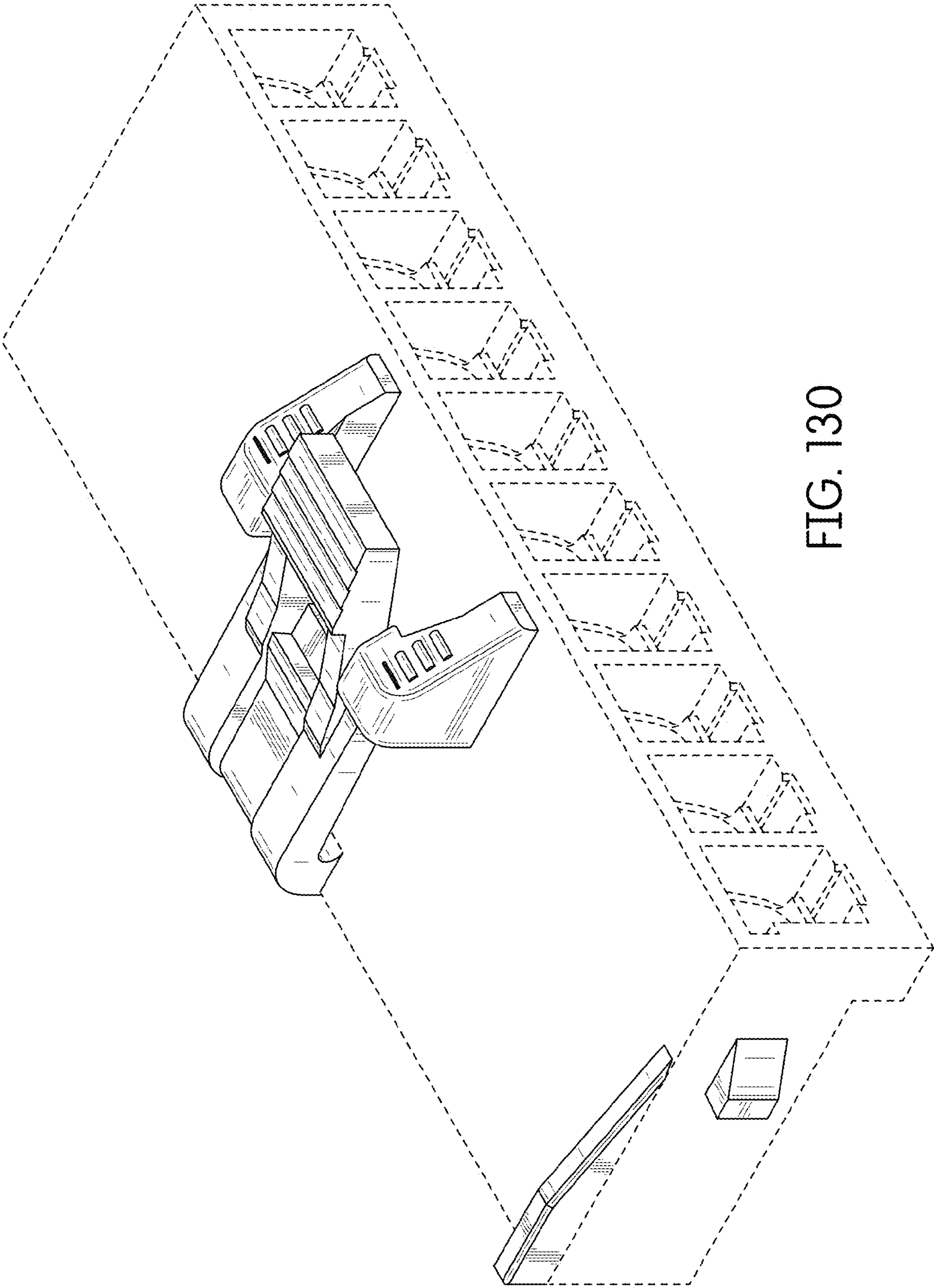


FIG. 130

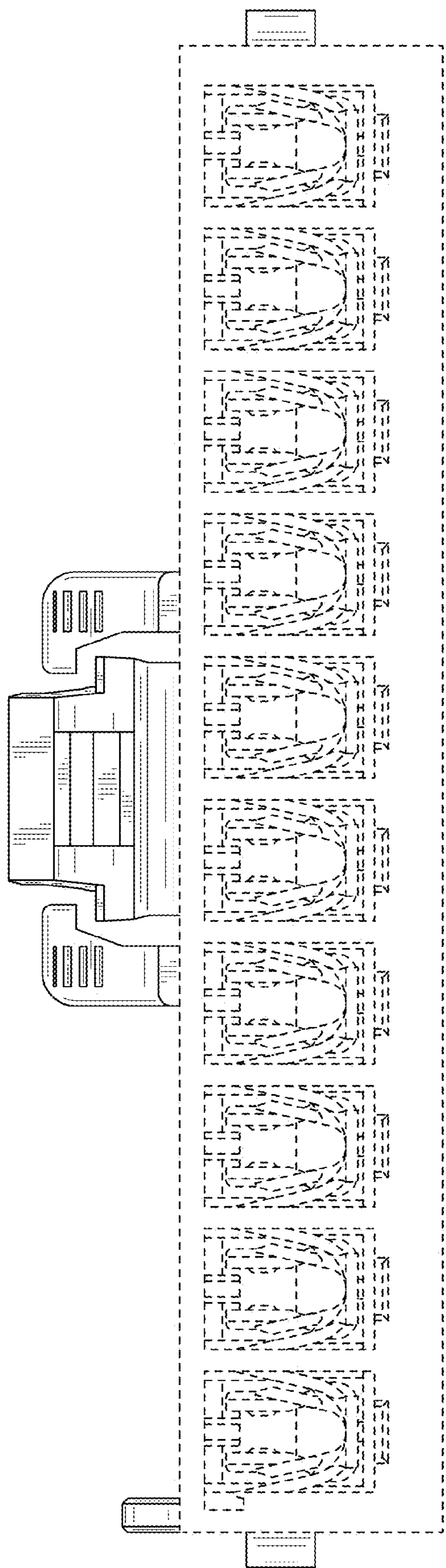


FIG. 131

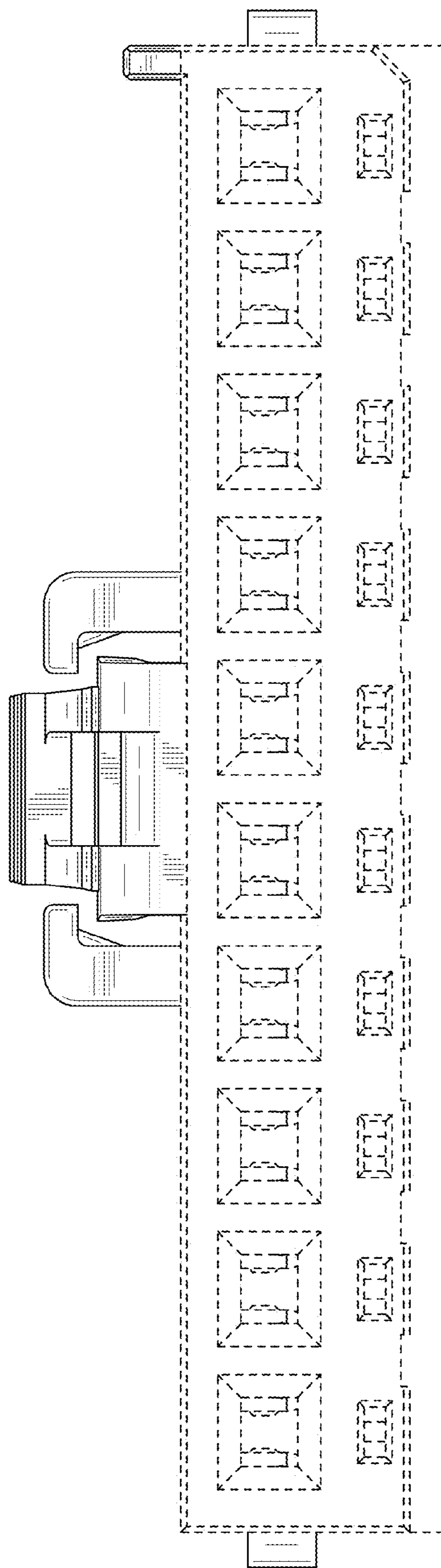


FIG. 132

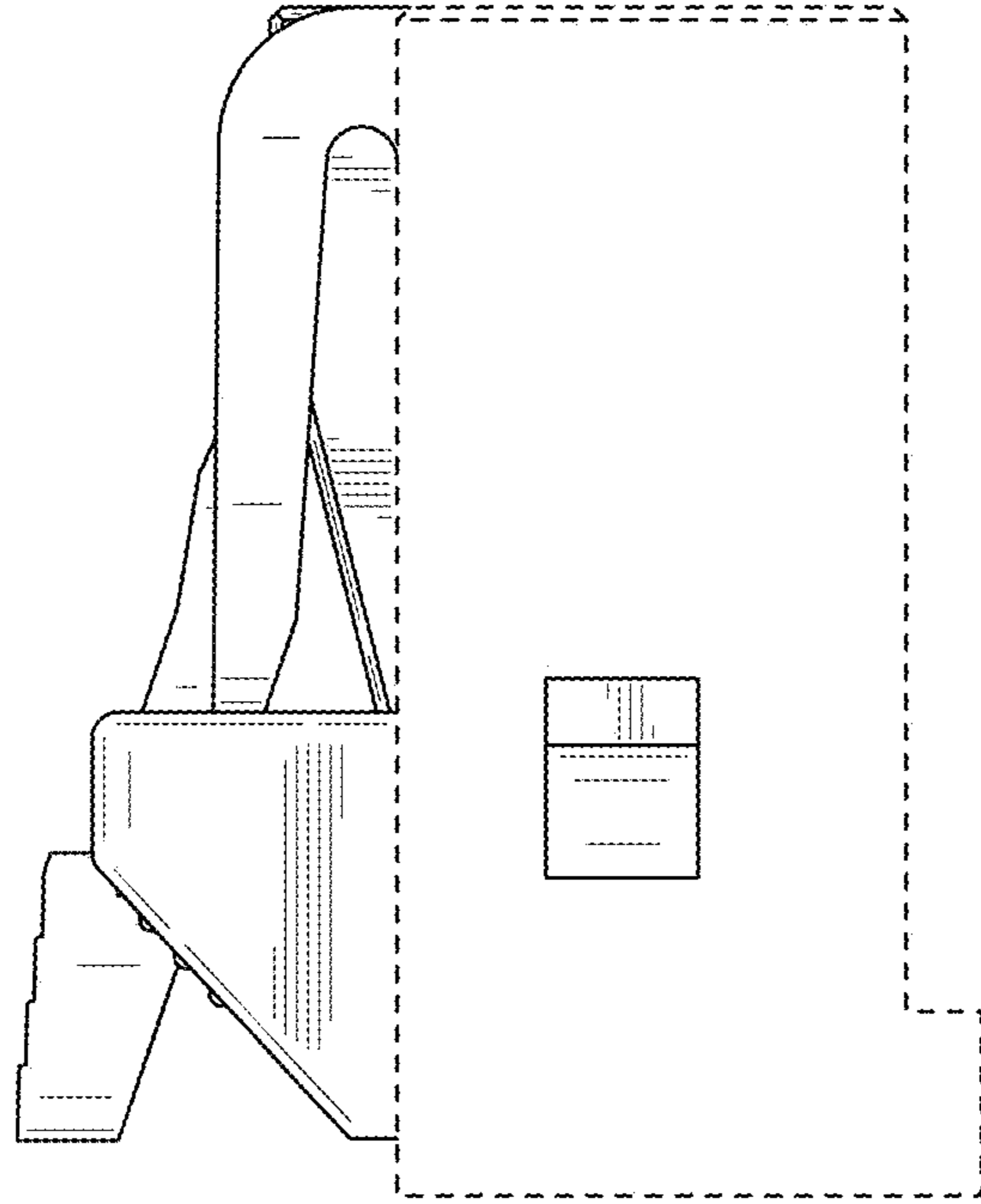


FIG. 134

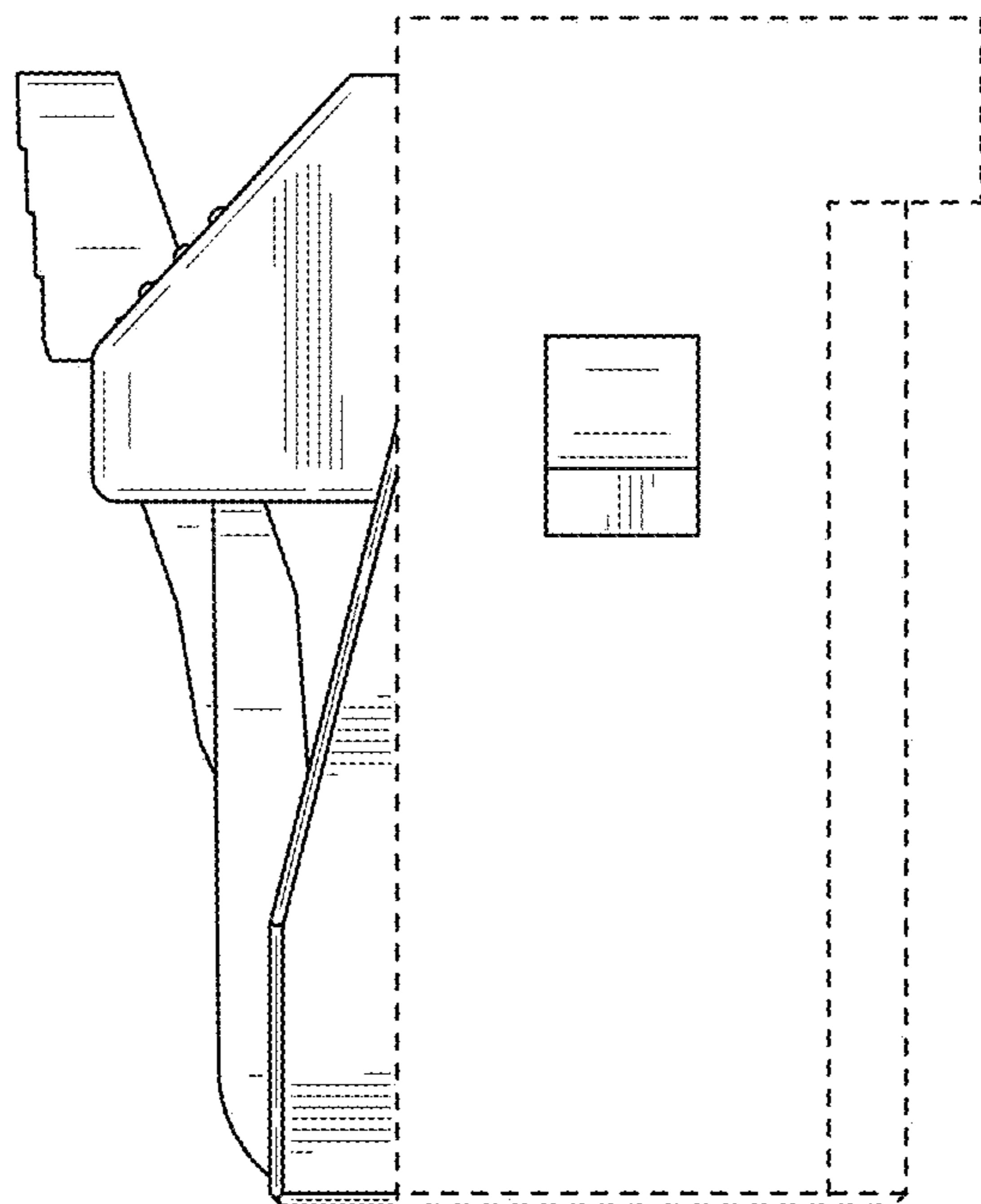


FIG. 133

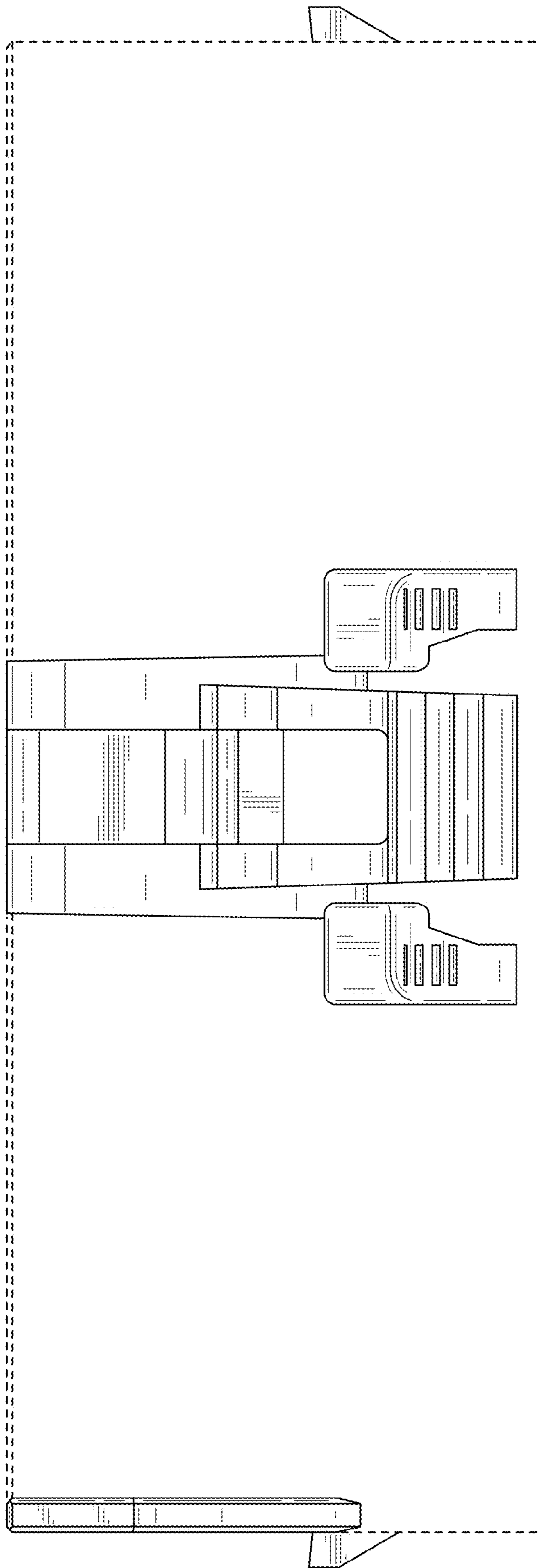


FIG. 135

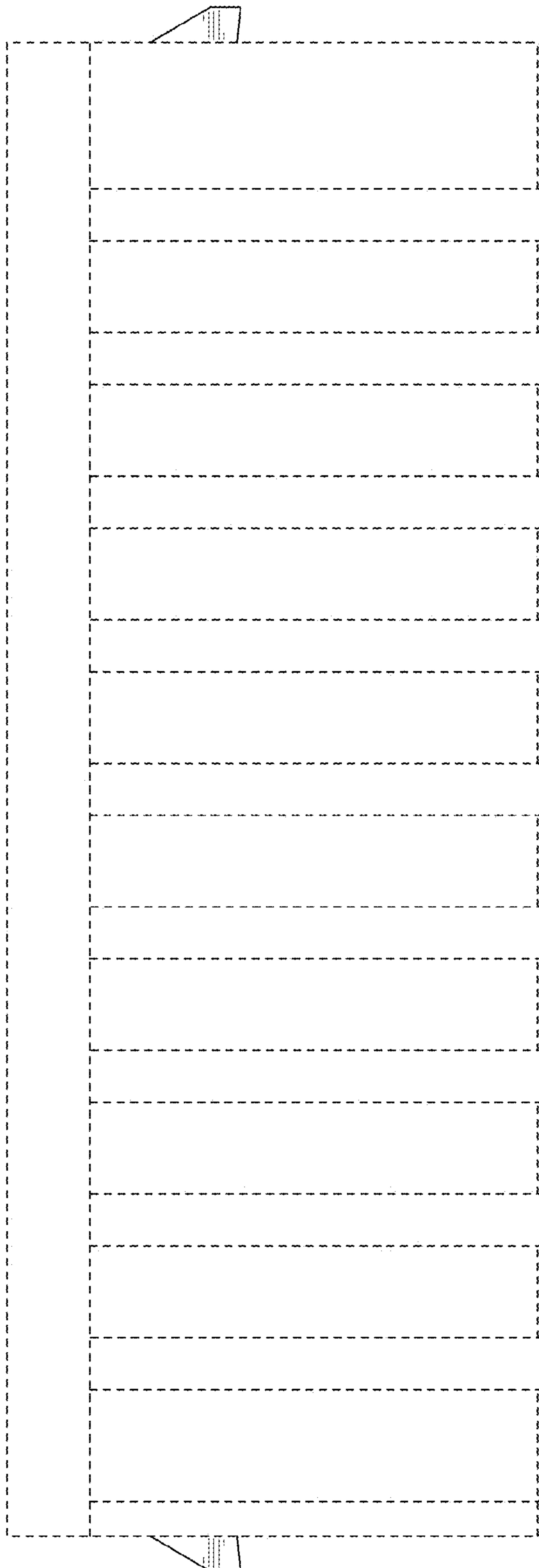


FIG. 136

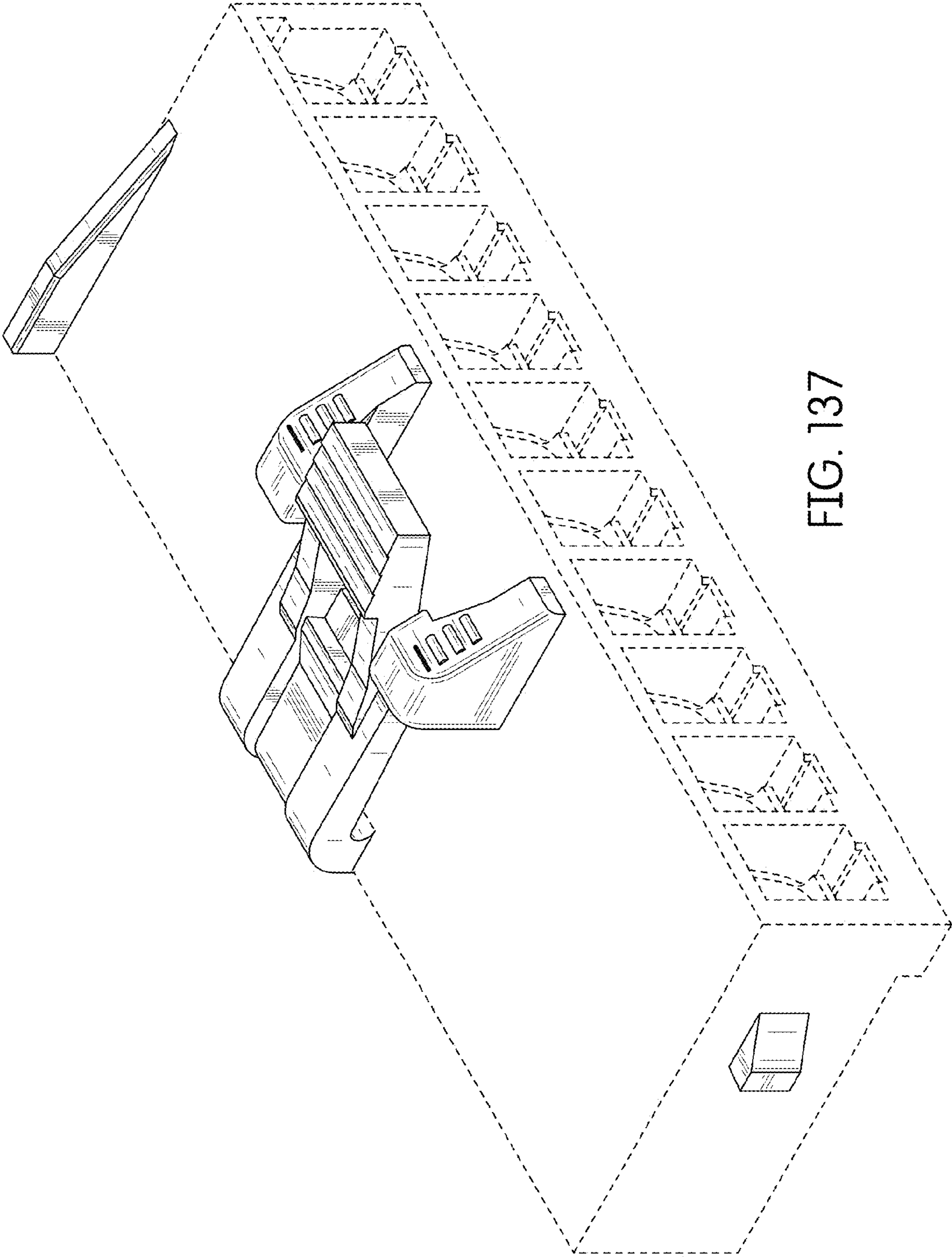


FIG. 137

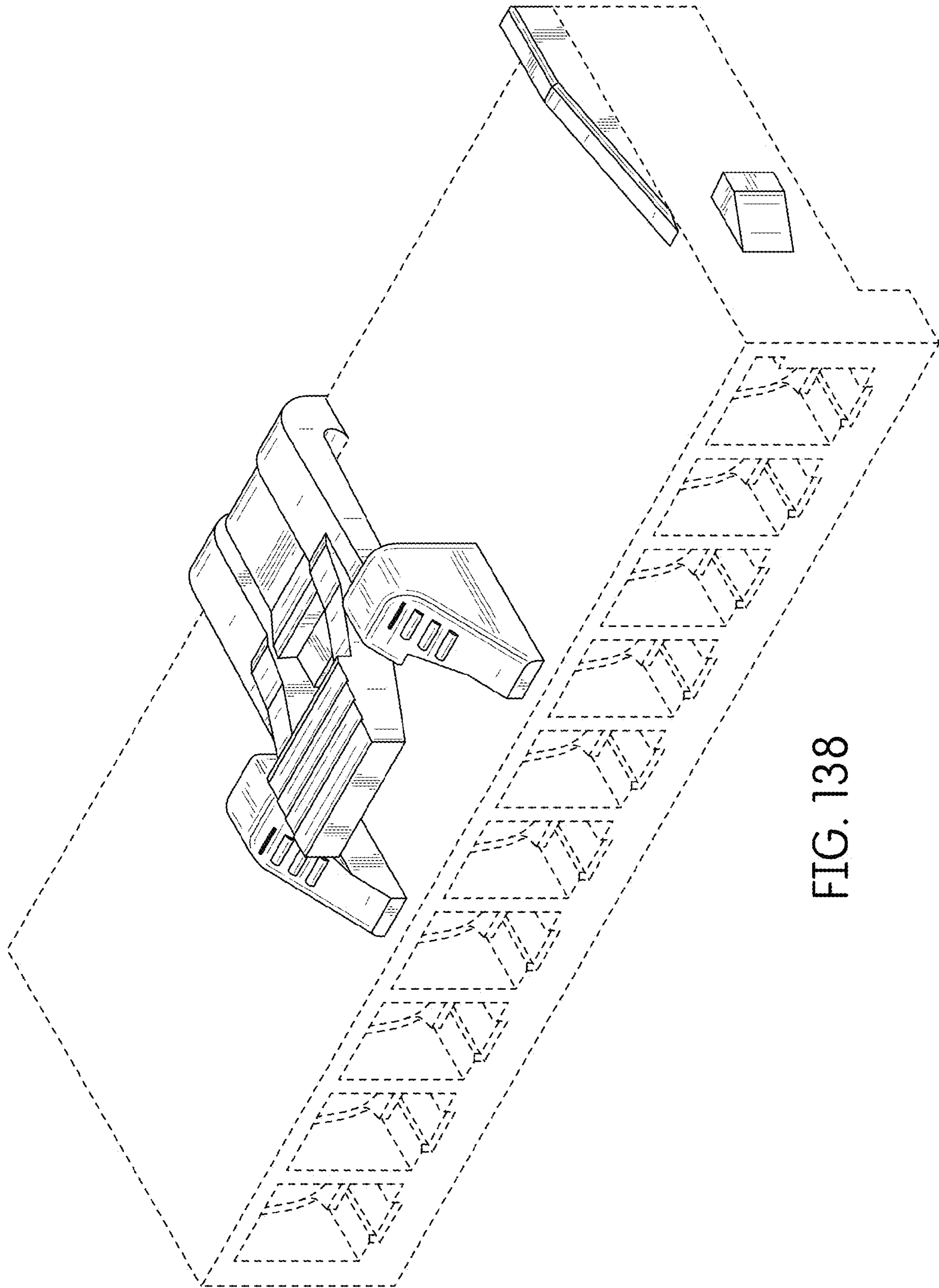


FIG. 138

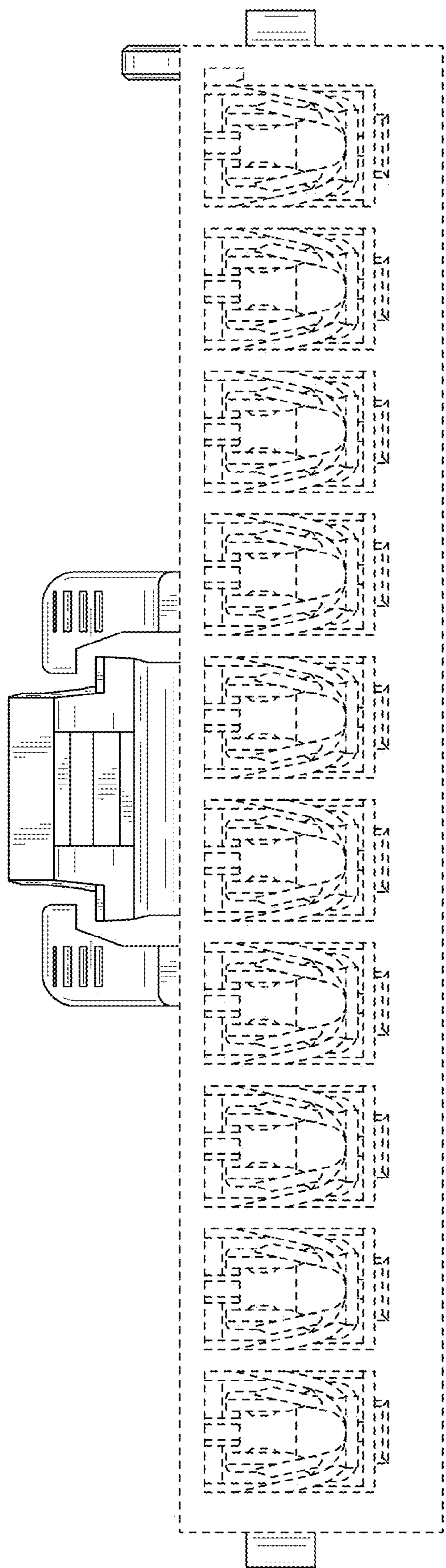


FIG. 139

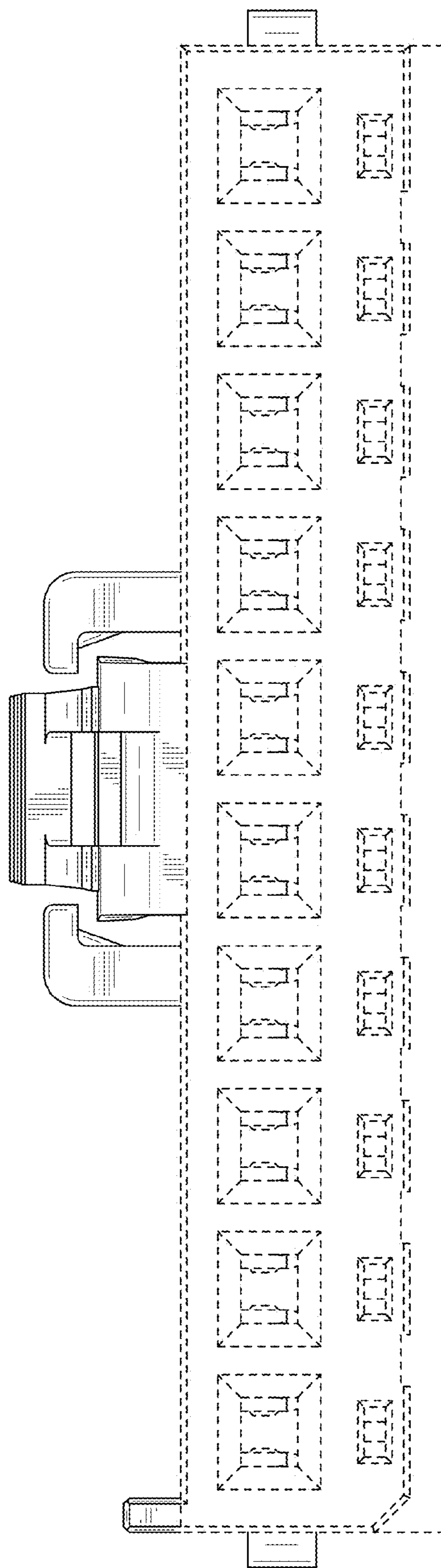


FIG. 140

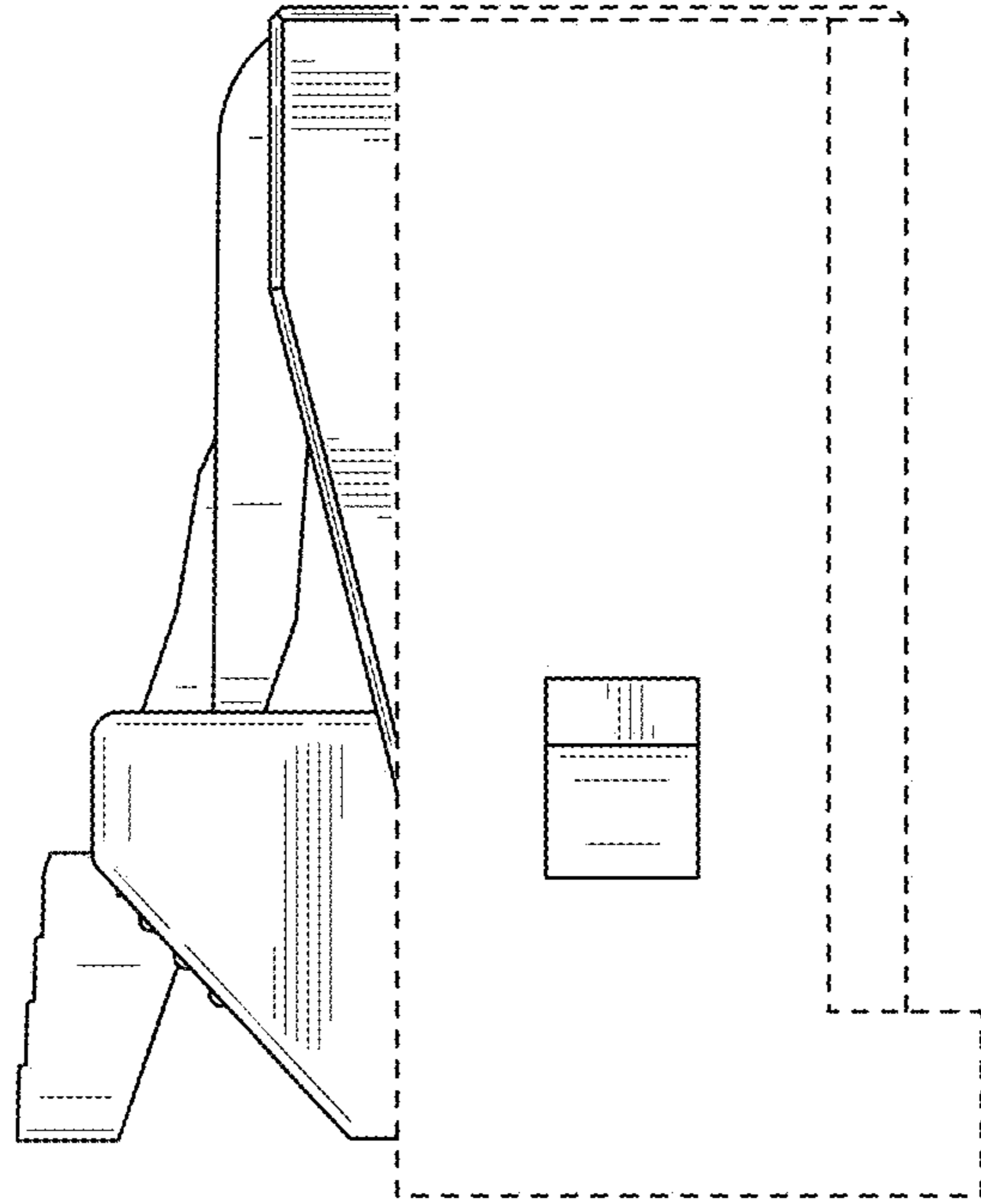


FIG. 142

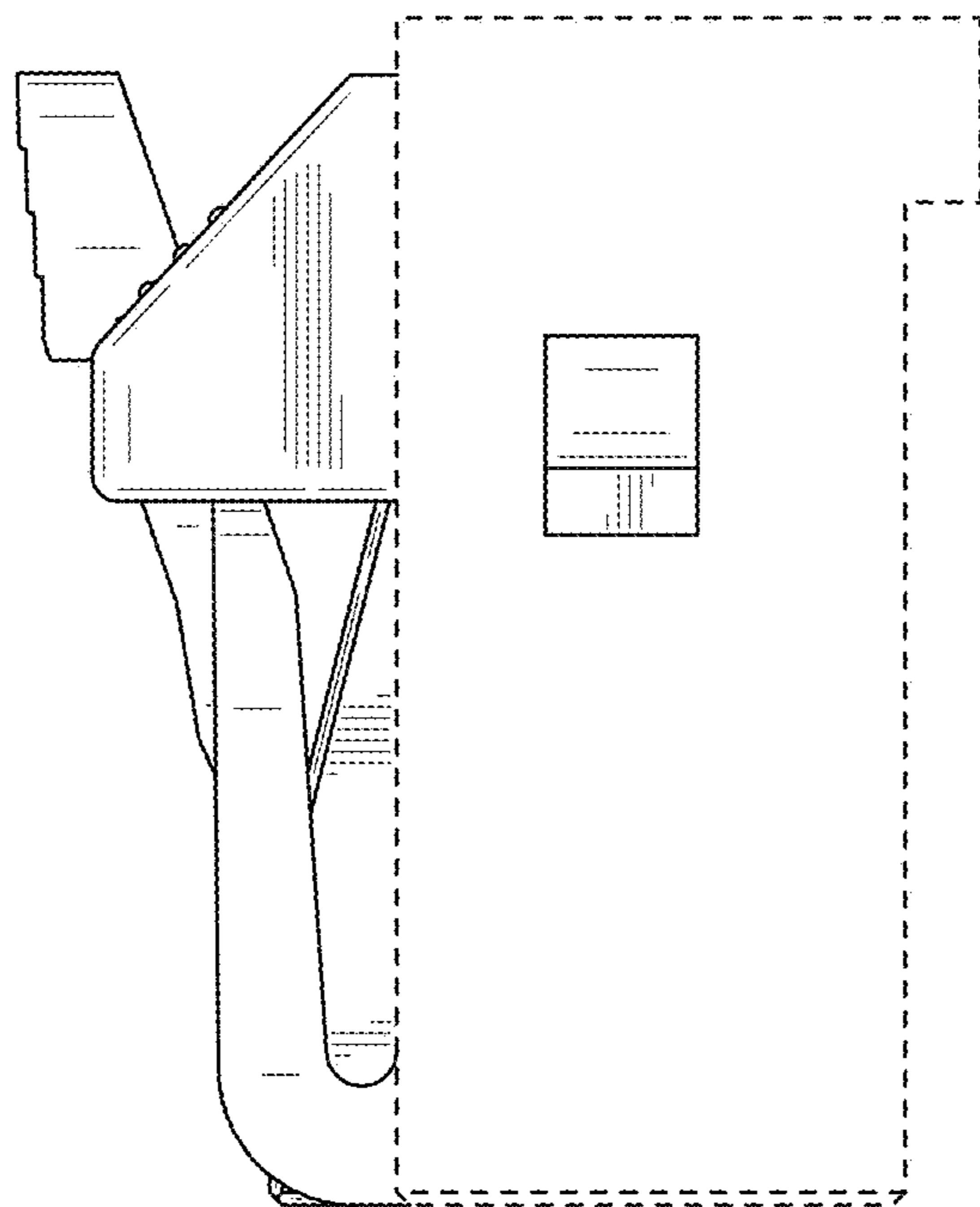


FIG. 141

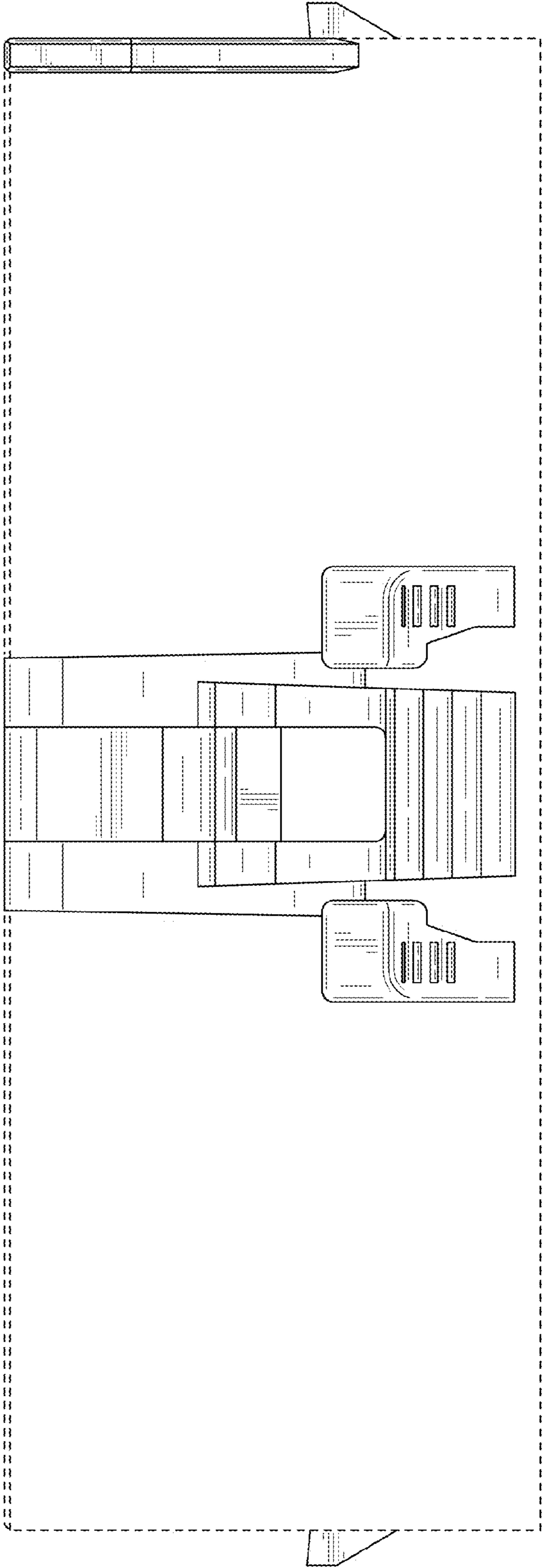


FIG. 143

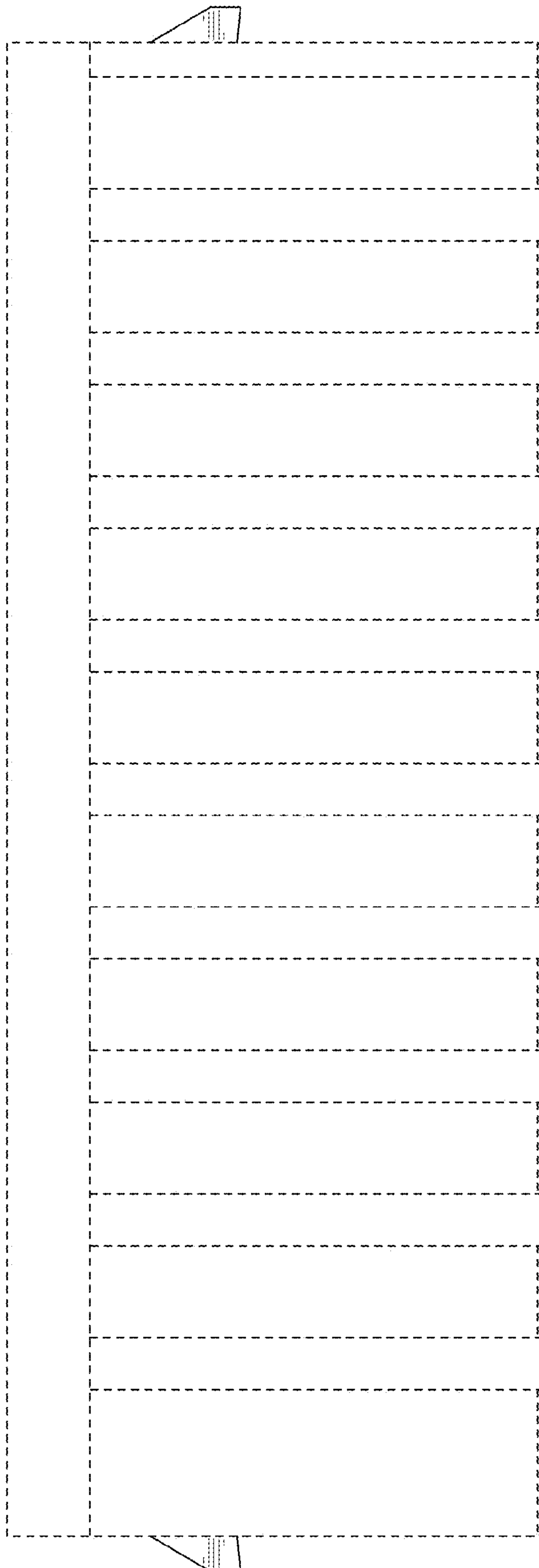


FIG. 144