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(12) United States Design Patent

Kenchappa

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(54) **HEAT SINK**

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(73) Assignee: **DENSO International America, Inc.**, Southfield, MI (US)

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

(21) Appl. No.: **29/532,048**

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(51) **LOC (10) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/179**

(58) **Field of Classification Search**
USPC D13/179, 122, 182
CPC H01L 23/34; H01L 3/1024; H01L 33/64; H01L 23/367; H01L 23/3672; H01L 23/46; H01L 23/467; H01L 23/473; G06F 1/20; H05K 7/20972; B23P 2700/10; F28F 2215/00; F28F 2215/08
See application file for complete search history.

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Primary Examiner — Jennifer Rivard
Assistant Examiner — April Rivas

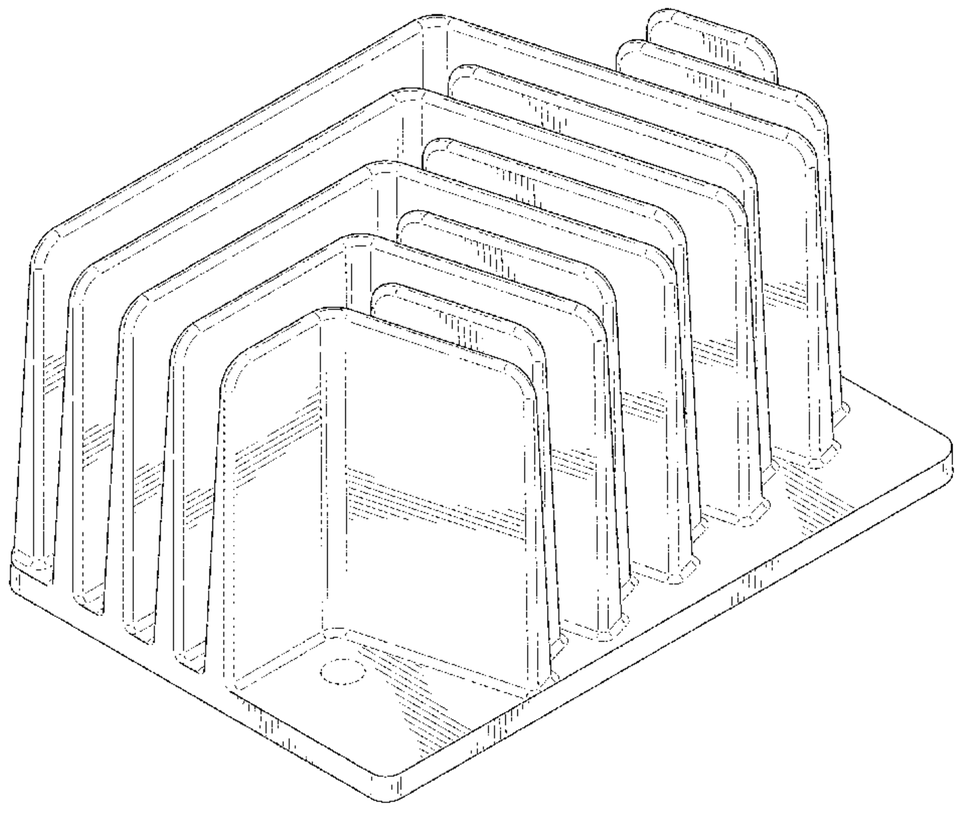
(57) **CLAIM**

The ornamental design for a heat sink, as shown and described.

DESCRIPTION

FIG. **1** is a front perspective view illustrating the claimed heat sink design.
FIG. **2** is a rear perspective view thereof;
FIG. **3** is a front view thereof;
FIG. **4** is a rear view thereof;
FIG. **5** is a left view thereof;
FIG. **6** is a right view thereof;
FIG. **7** is a top view thereof; and,
FIG. **8** is a bottom view thereof.
The broken lines in the drawing illustrate portions of the heat sink that form no part of the claimed design
The article of the present design relates to a heat sink for an electronic component and other sources are operating at excessively high temperatures in open/closed area in automotive industry, such as a Head-up Display (HUD) for a vehicle. The HUD has a light source to project an image or graphics on a windshield of the vehicle. The heat sink includes a bottom plate and a plurality of fins arranged parallel to the vehicle moving direction on the bottom plate. It will extract more heat at the time of acceleration and deceleration of the vehicle. The bottom plate is configured to be attached to the light source and prevent the light source from operating at excessively high temperatures. The typical fin structure gains the surface area and improves the efficiency of heat exchange.

1 Claim, 8 Drawing Sheets



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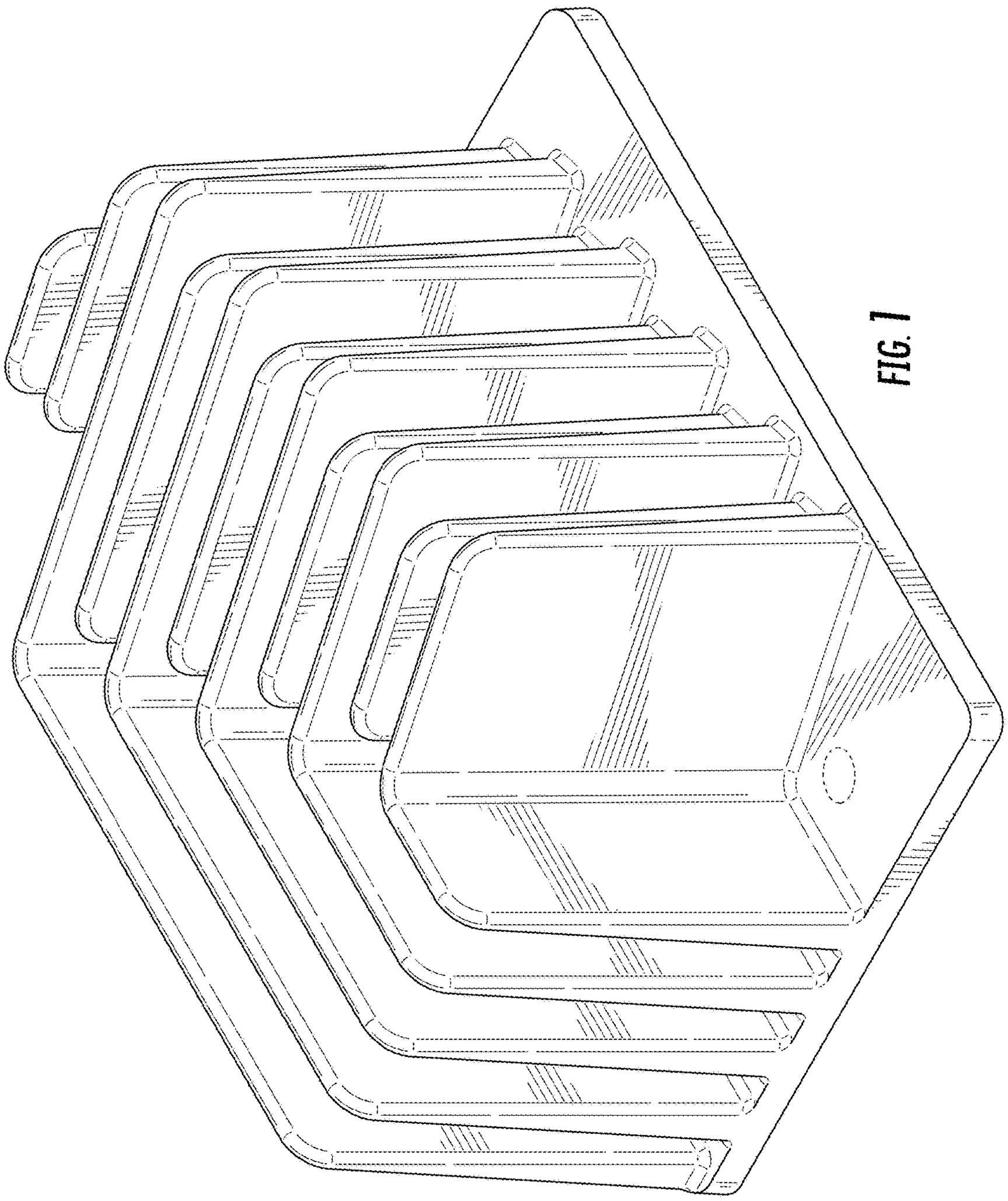

FIG. 1

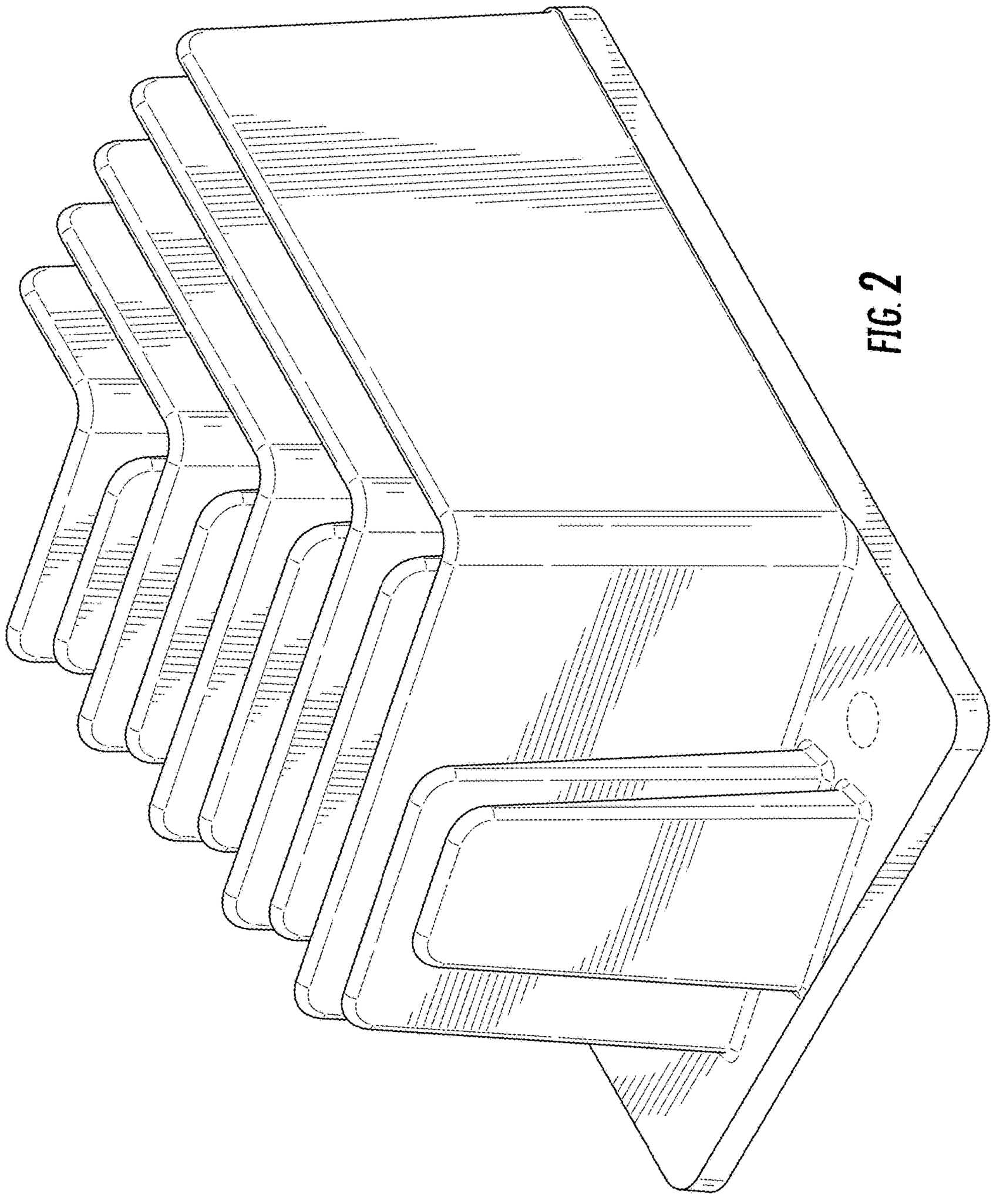

FIG. 2

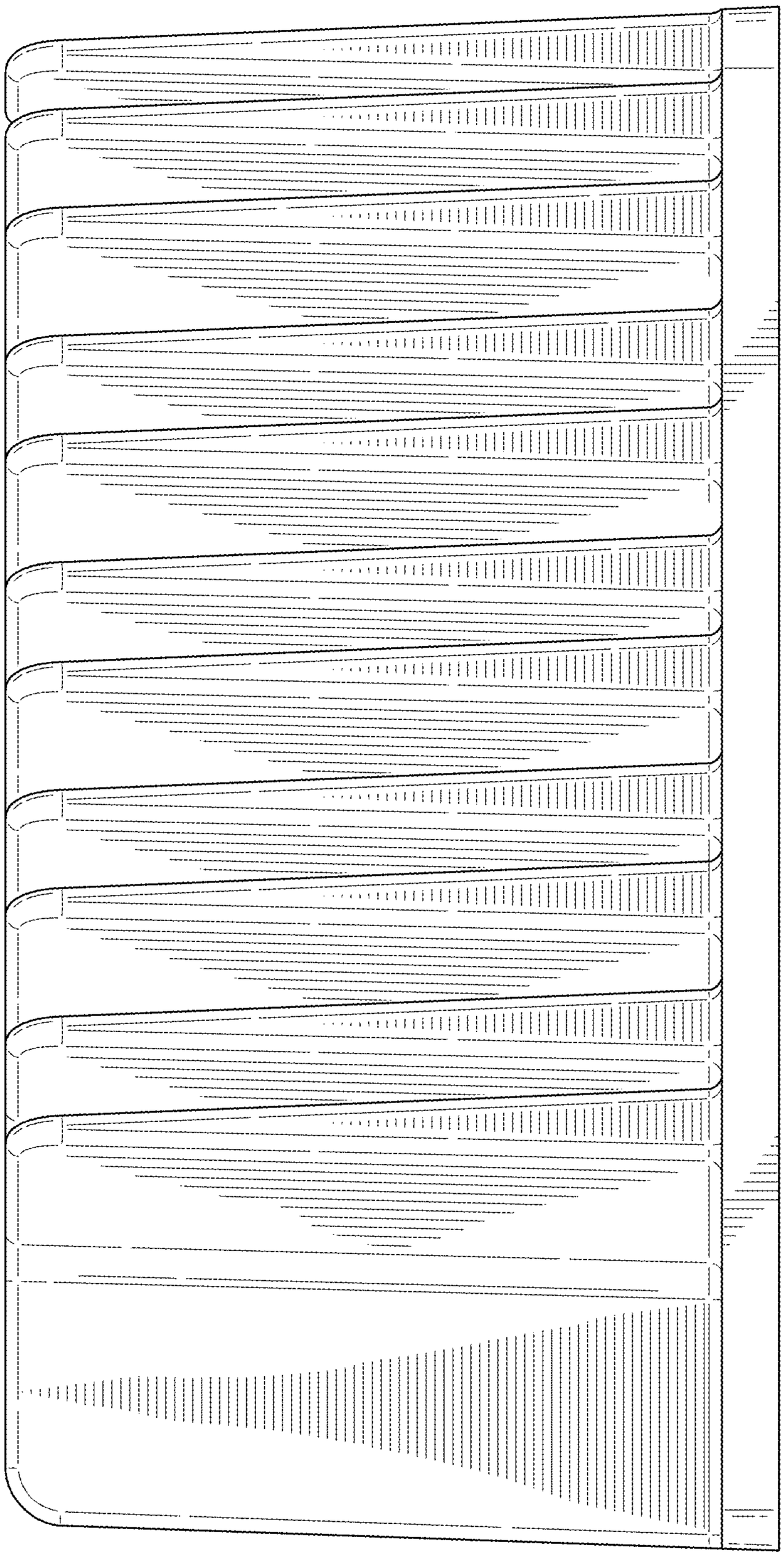

FIG. 3

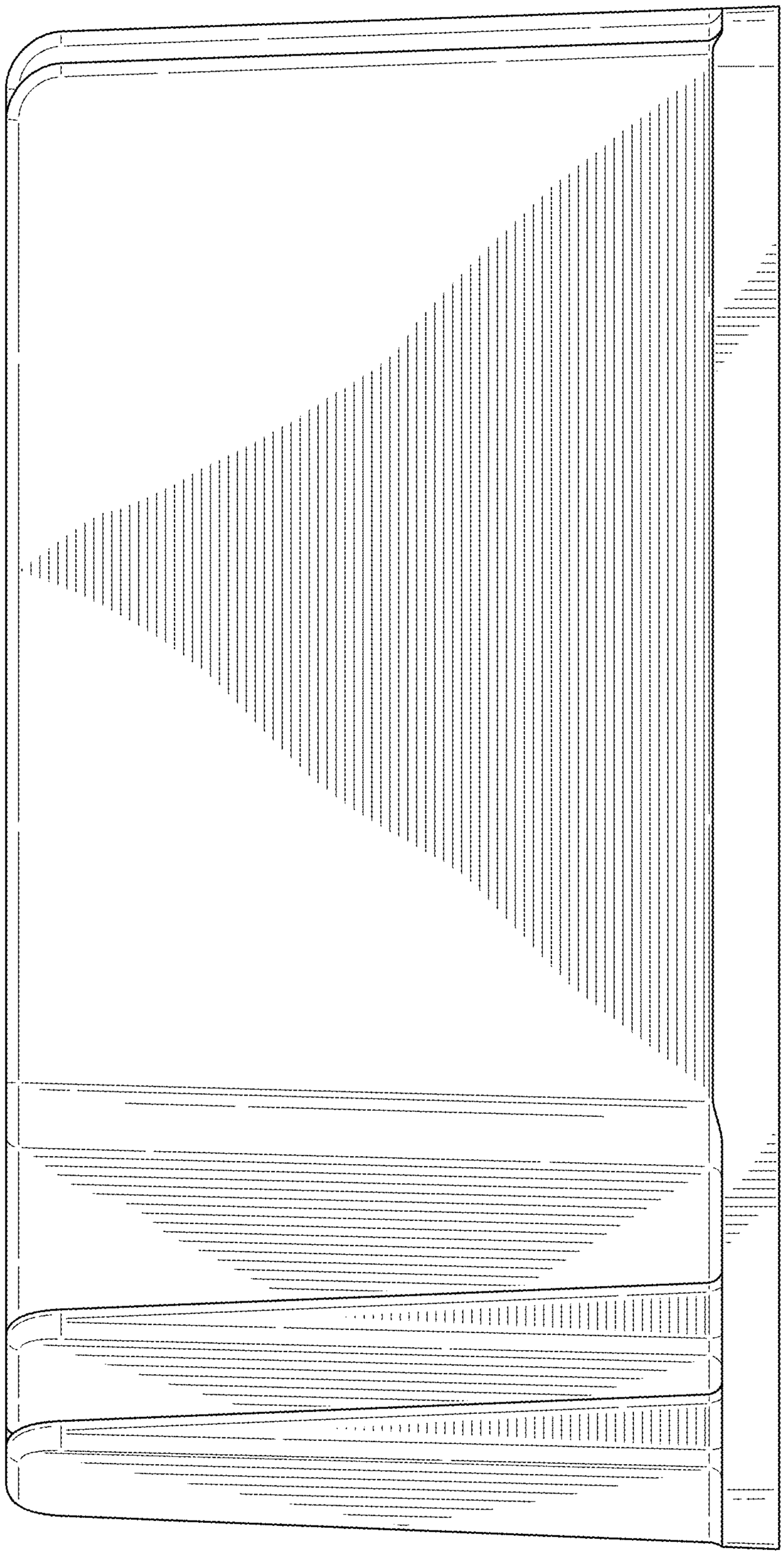

FIG. 4

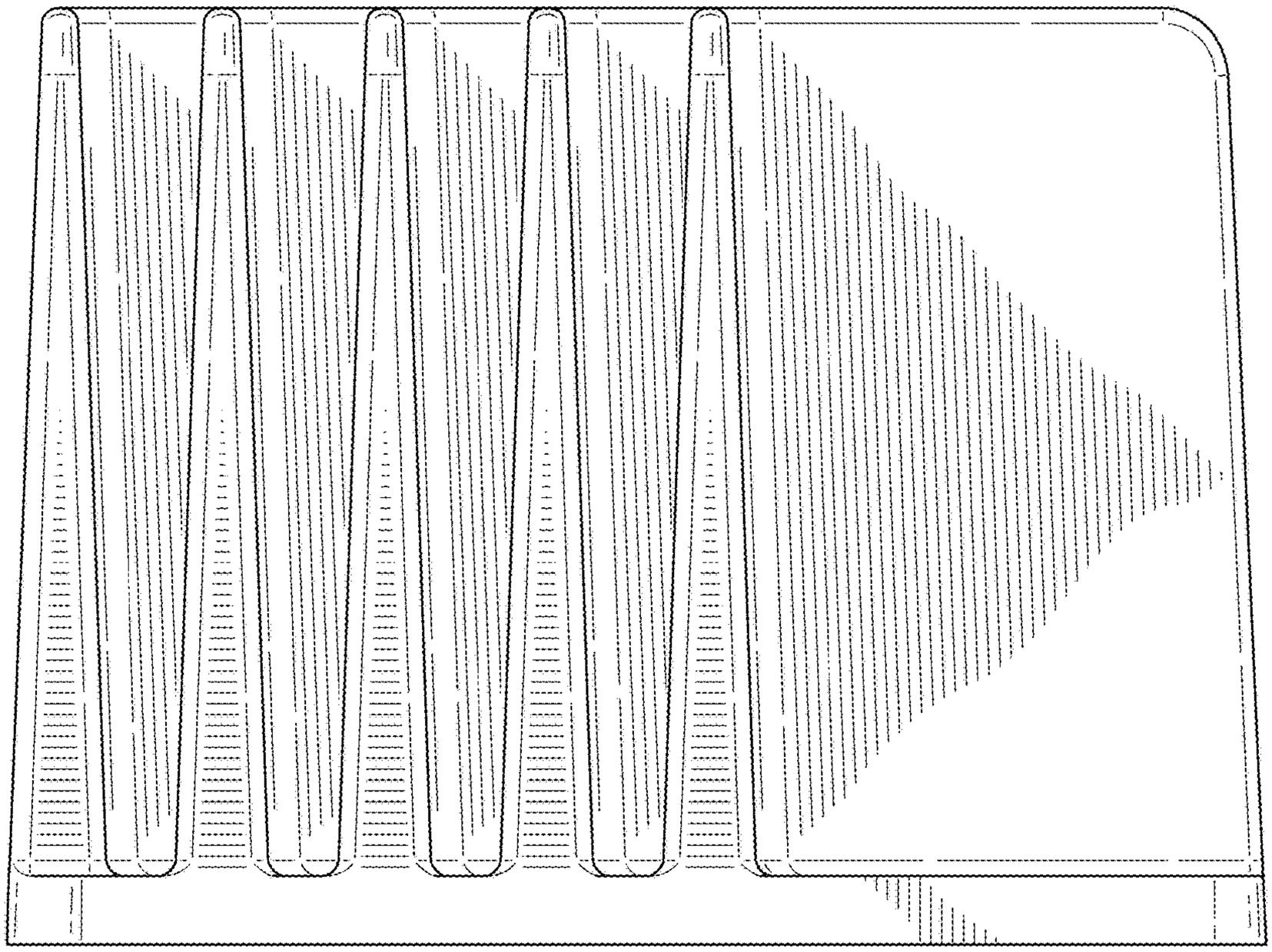

FIG. 5

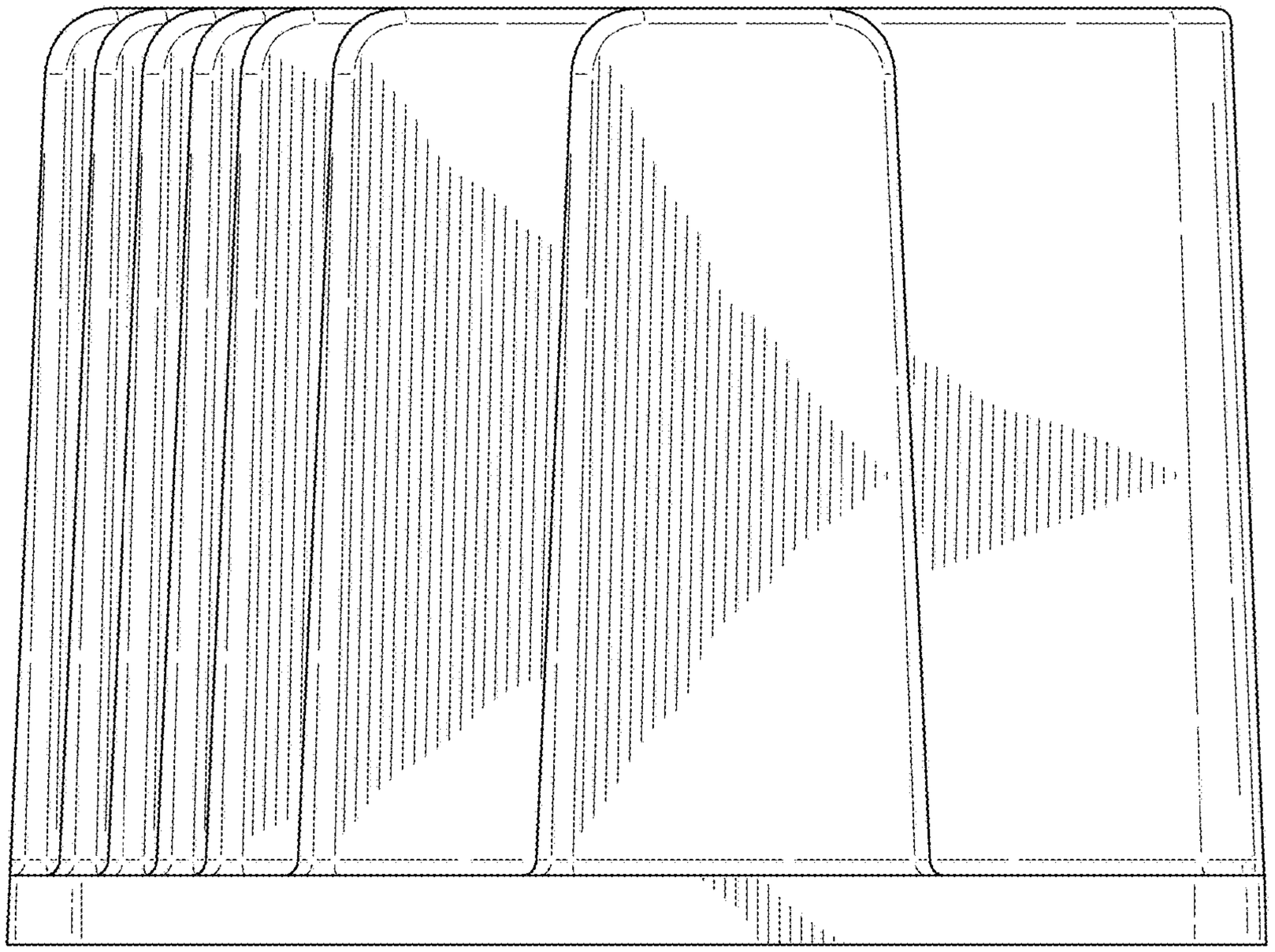

FIG. 6

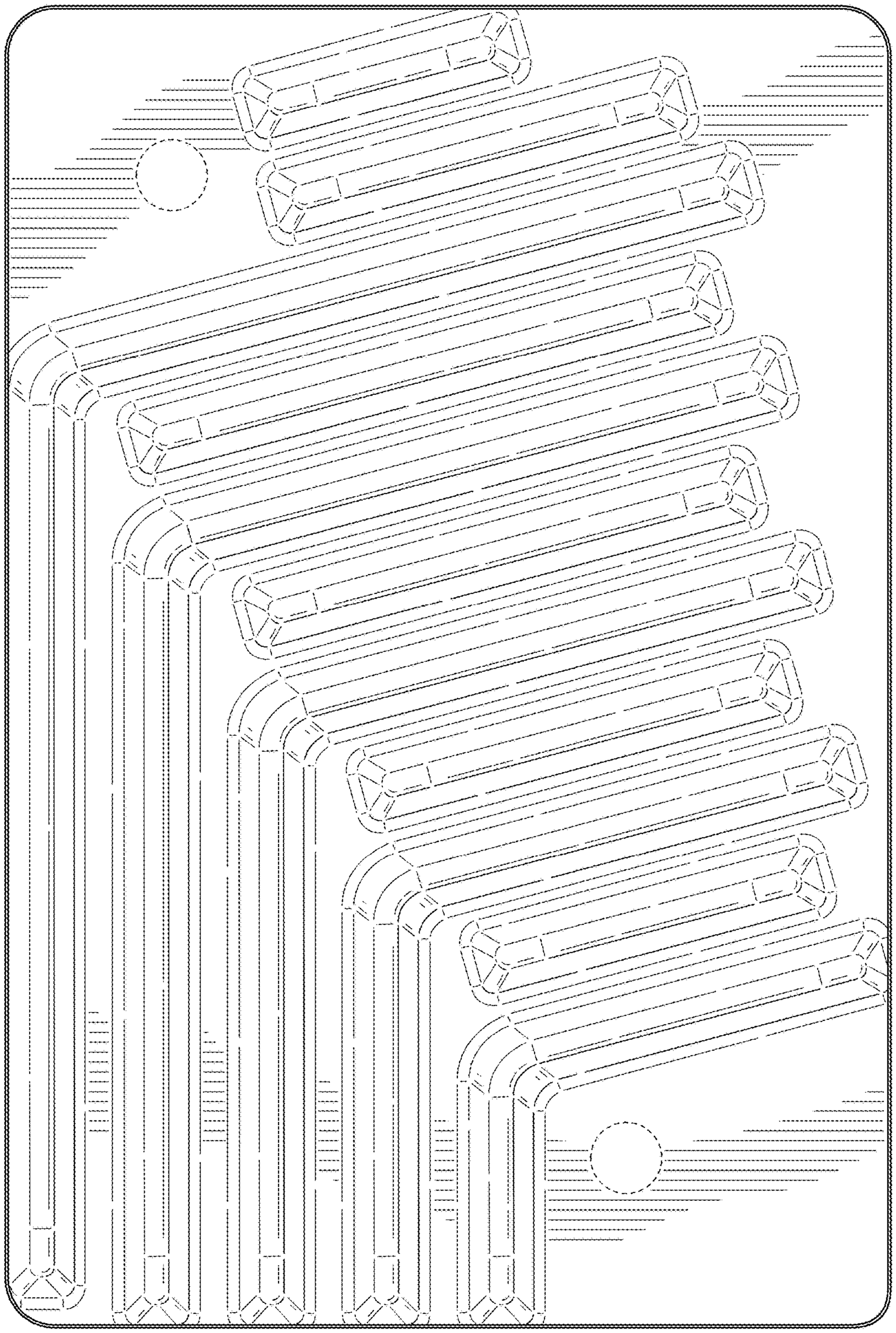

FIG. 7

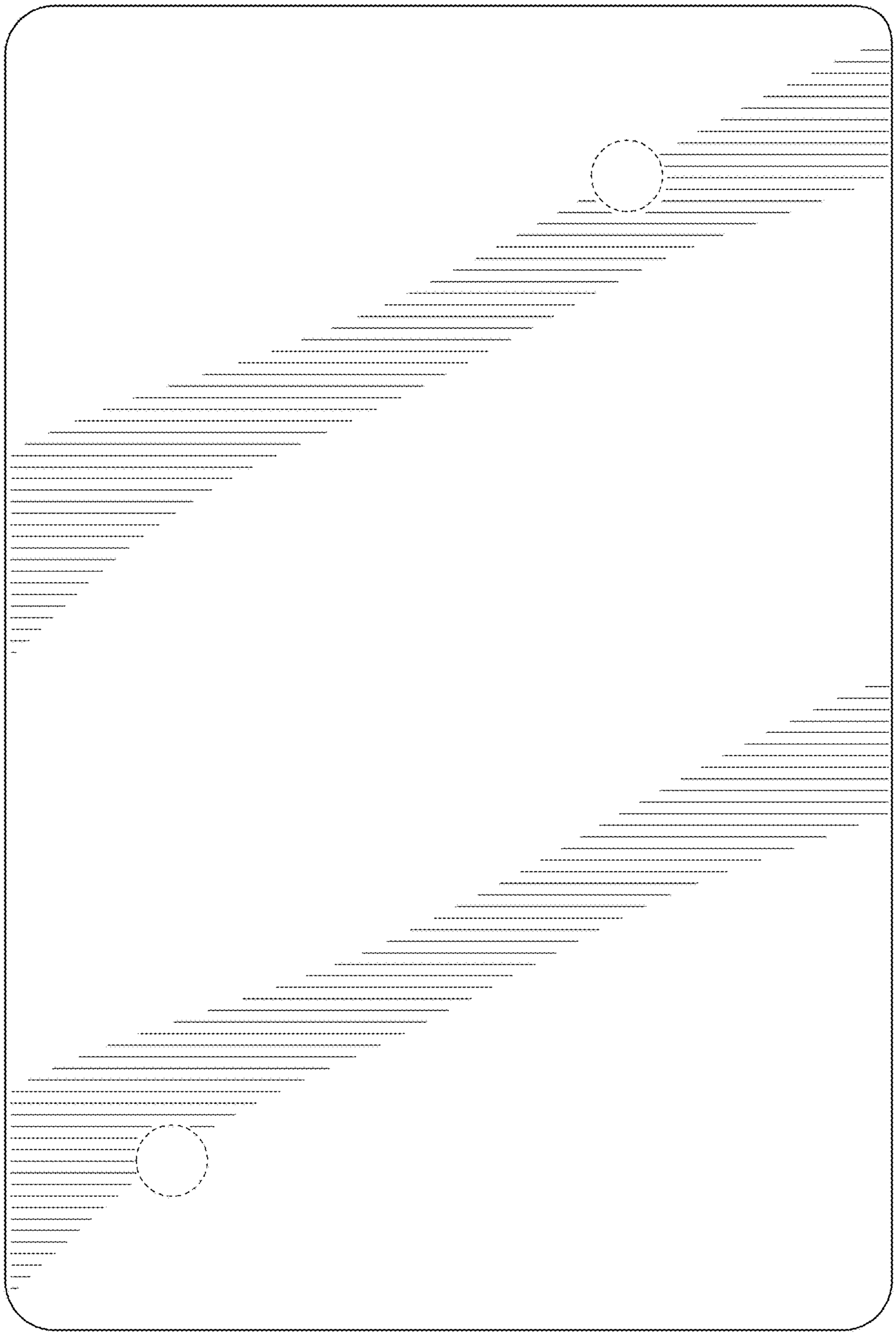

FIG. 8