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(12) **United States Design Patent** (10) **Patent No.:** **US D971,149 S**
Smith et al. (45) **Date of Patent:** **** Nov. 29, 2022**

(54) **BLADELESS TURBINE IMPELLER**

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

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Related U.S. Application Data

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14, 2018, now Pat. No. Des. 918,142.

(51) **LOC (13) Cl.** **13-01**

(52) **U.S. Cl.**
USPC **D13/118**

(58) **Field of Classification Search**

USPC D13/112, 113, 118, 122, 173, 182, 184,
D13/199; D15/5, 7; D8/352, 354;
D23/249, 254

CPC . F01D 1/36; F01D 11/02; F16K 51/00; Y10T
137/2273; F04D 29/66; F04D 17/16;
F04D 17/161

See application file for complete search history.

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(57) **CLAIM**

The ornamental design for a bladeless turbine impeller, as
shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a bladeless turbine impeller
showing our new design;

FIG. 2 is a top plan view thereof;

FIG. 3 is a bottom plan view thereof;

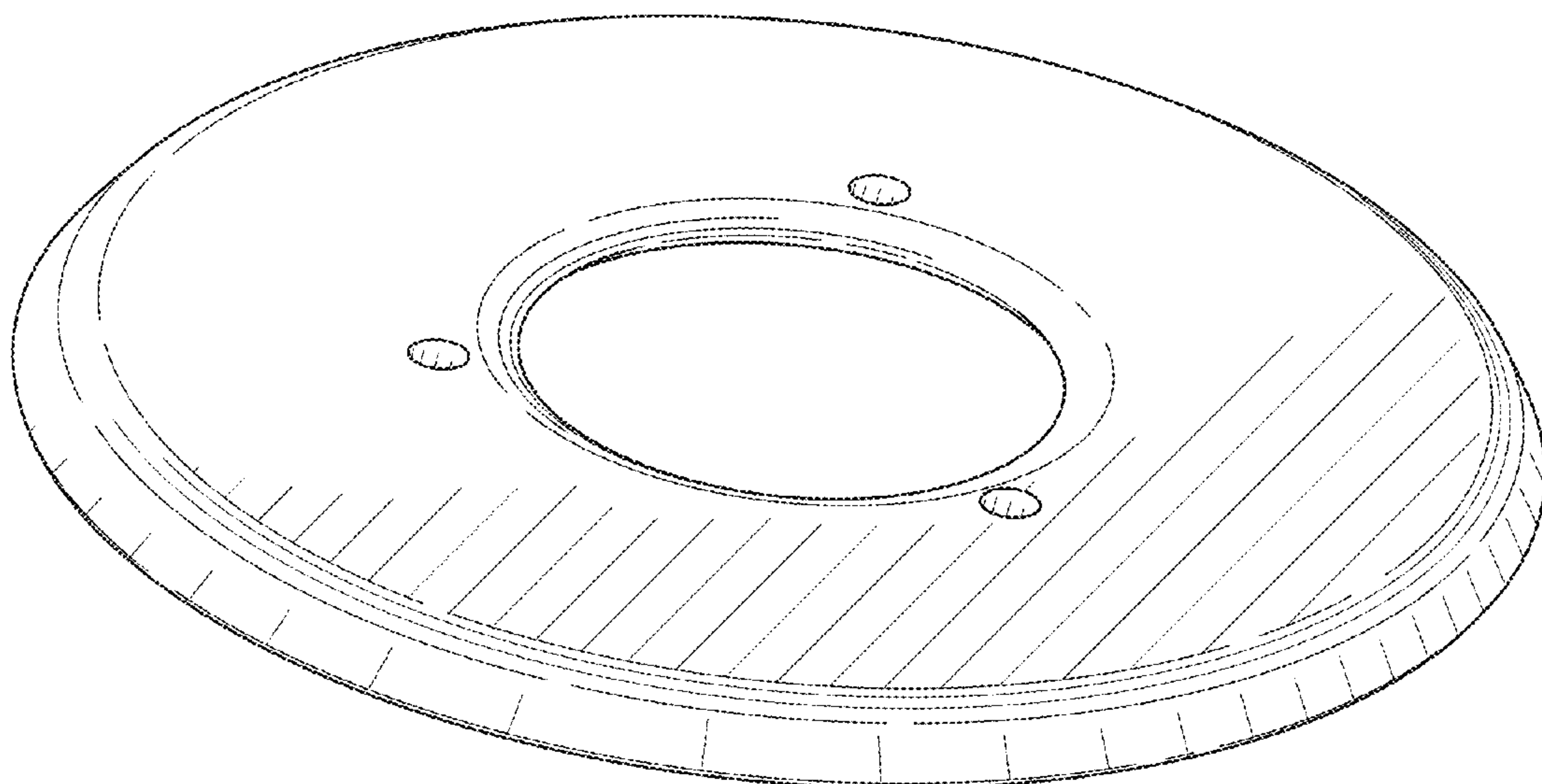
FIG. 4 is a front-side elevational view, the rear-side eleva-
tional view, the right-side elevational view and the left-side
elevational view being identical;

FIG. 5 is a cross-sectional view taken along line 5-5 of FIG.
2; and,

FIG. 6 is a perspective view thereof, shown in environmen-
tal use.

The broken lines shown represent environmental subject
matter and form no part of the claimed design. Furthermore,
broken line 5-5 appearing in FIG. 2 represent designation
lines for cross-sectional views and form no part of the
claimed design. Applicant notes that the markings on the
drawings are for shading purposes only, and are not to be
considered a part of the design of the present invention.

1 Claim, 4 Drawing Sheets



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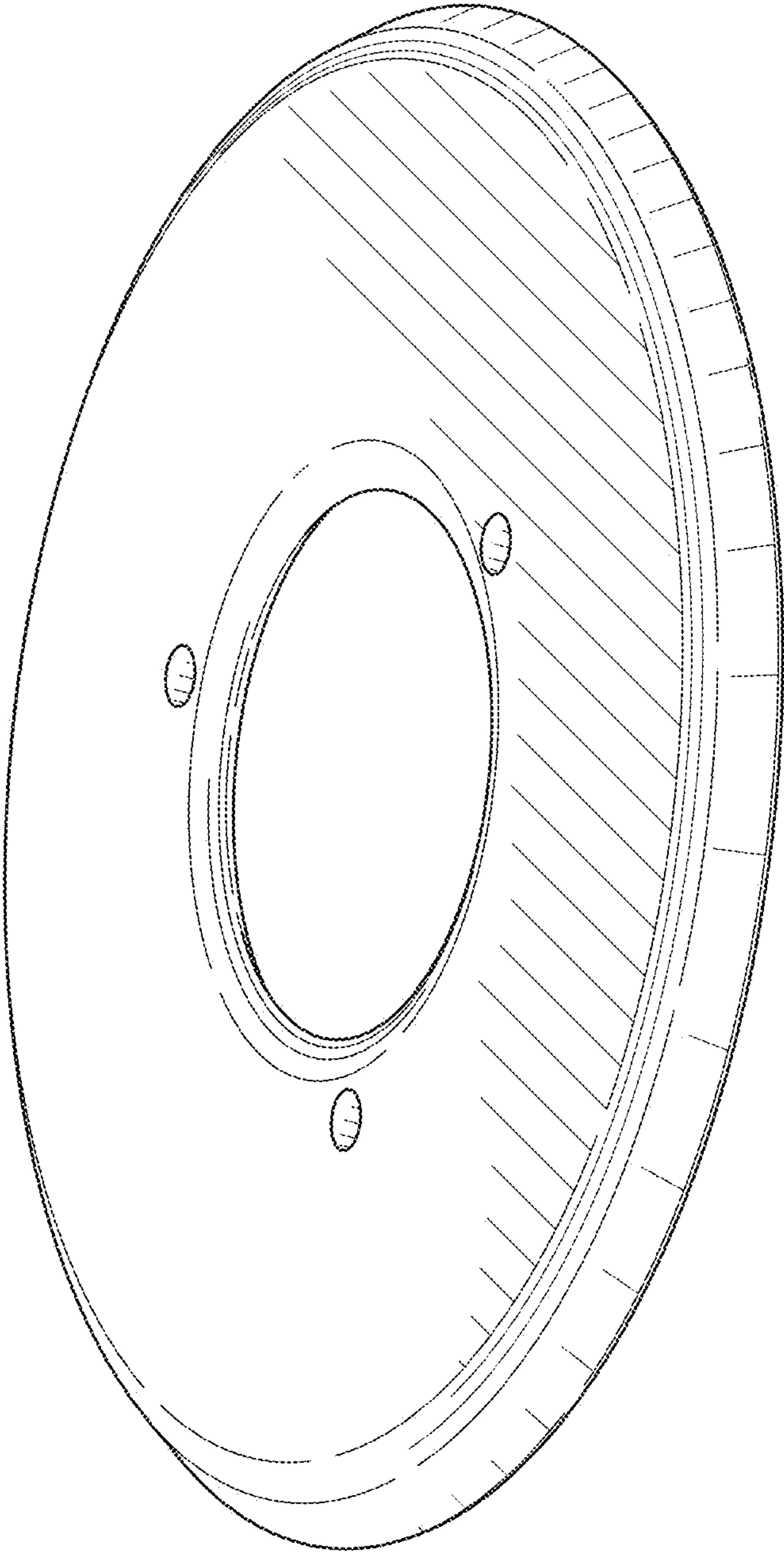


FIG. 1

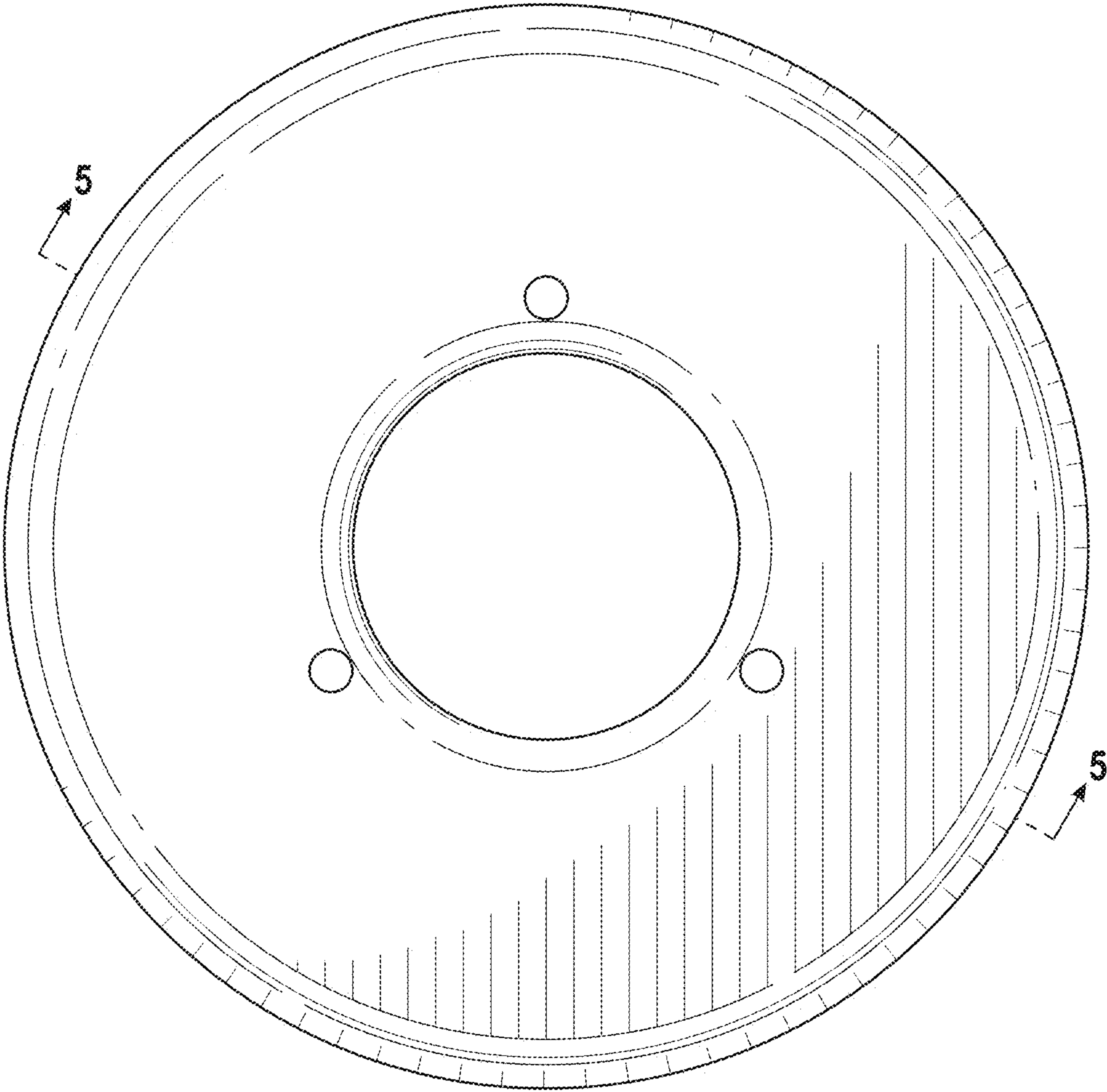


FIG. 2

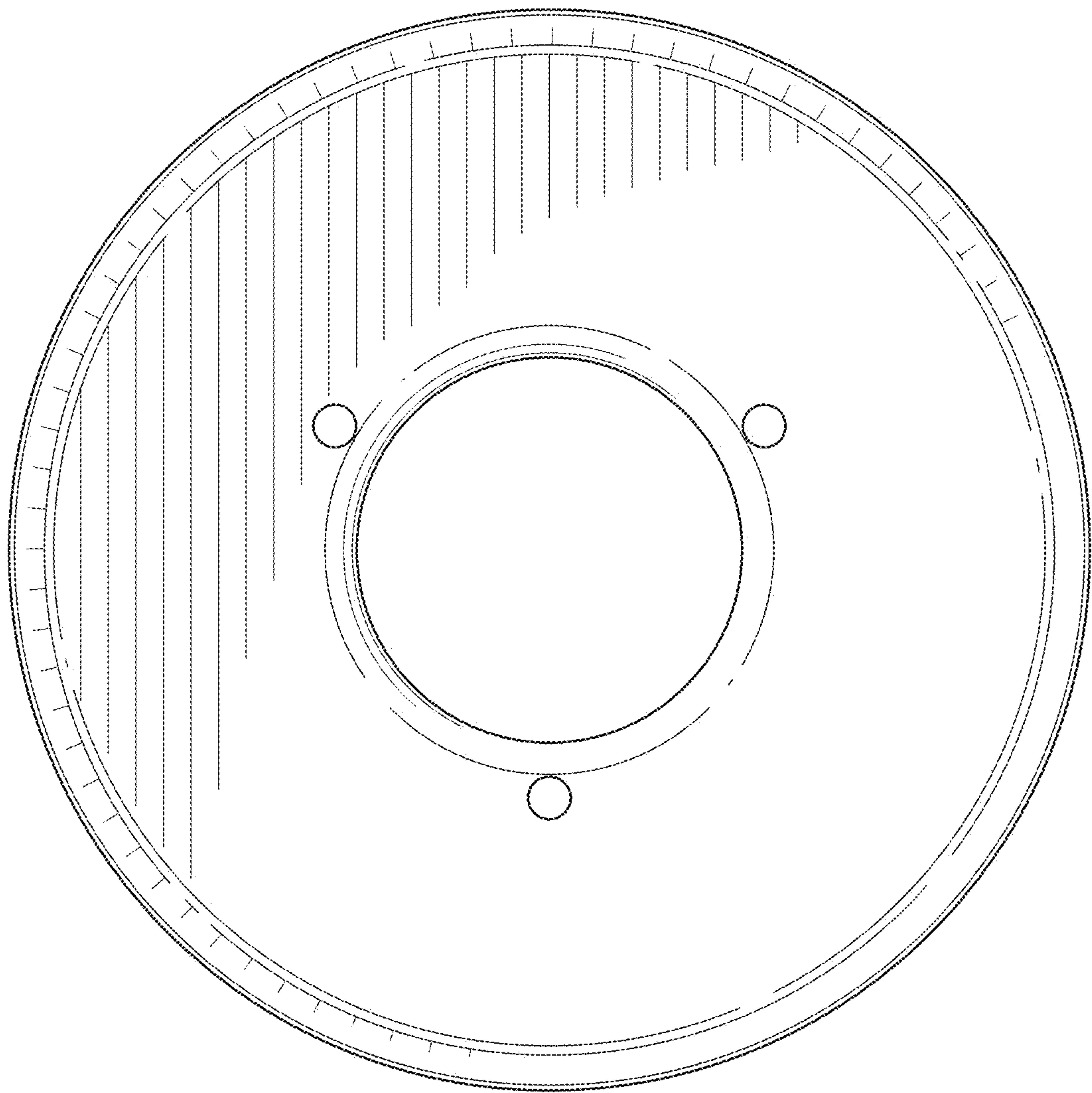


FIG. 3

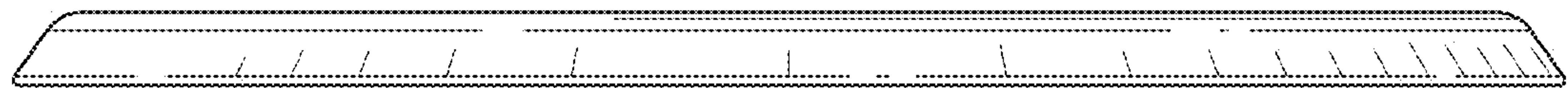


FIG. 4

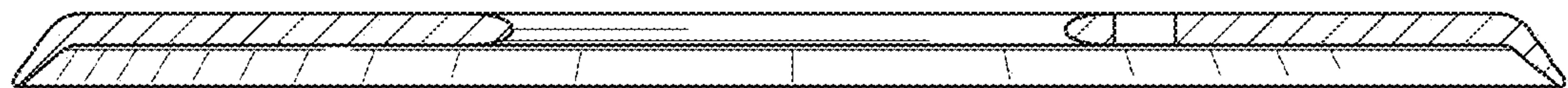


FIG. 5

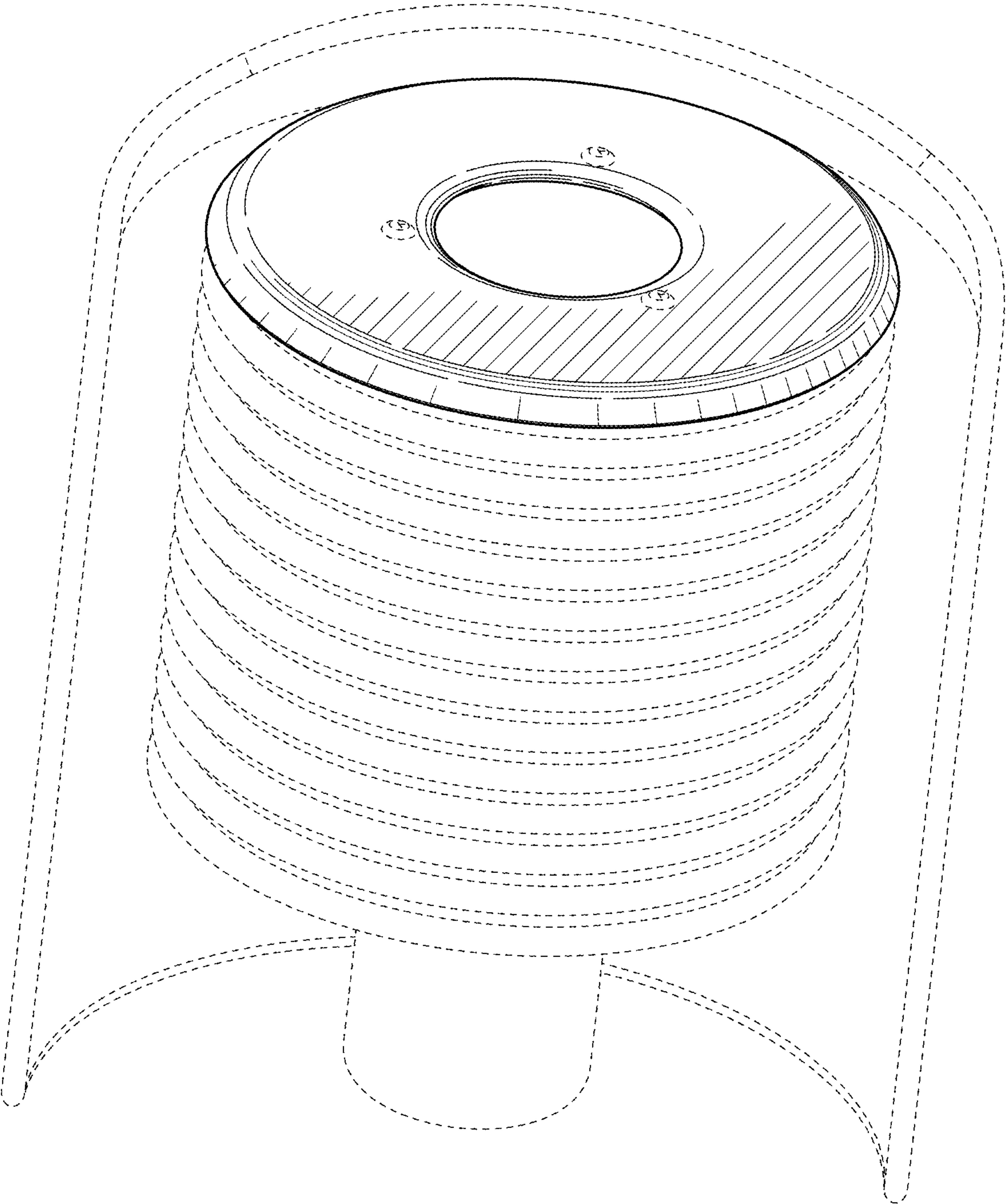


FIG. 6