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(12) **United States Design Patent**
Bray

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(54) **WINGSAIL**

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

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(30) **Foreign Application Priority Data**

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(51) **LOC (10) Cl.** **12-06**

(52) **U.S. Cl.**
USPC **D12/317; D12/303**

(58) **Field of Classification Search**
USPC D12/300, 303, 304, 315, 318;
114/39.11, 39.12, 39.13, 39.14, 39.15,
114/39.21, 39.24, 39.25, 39.26, 39.28,
114/39.31, 102.1, 102.13, 102.29, 102.31,
114/102.32, 102.33, 343, 355; D21/544
See application file for complete search history.

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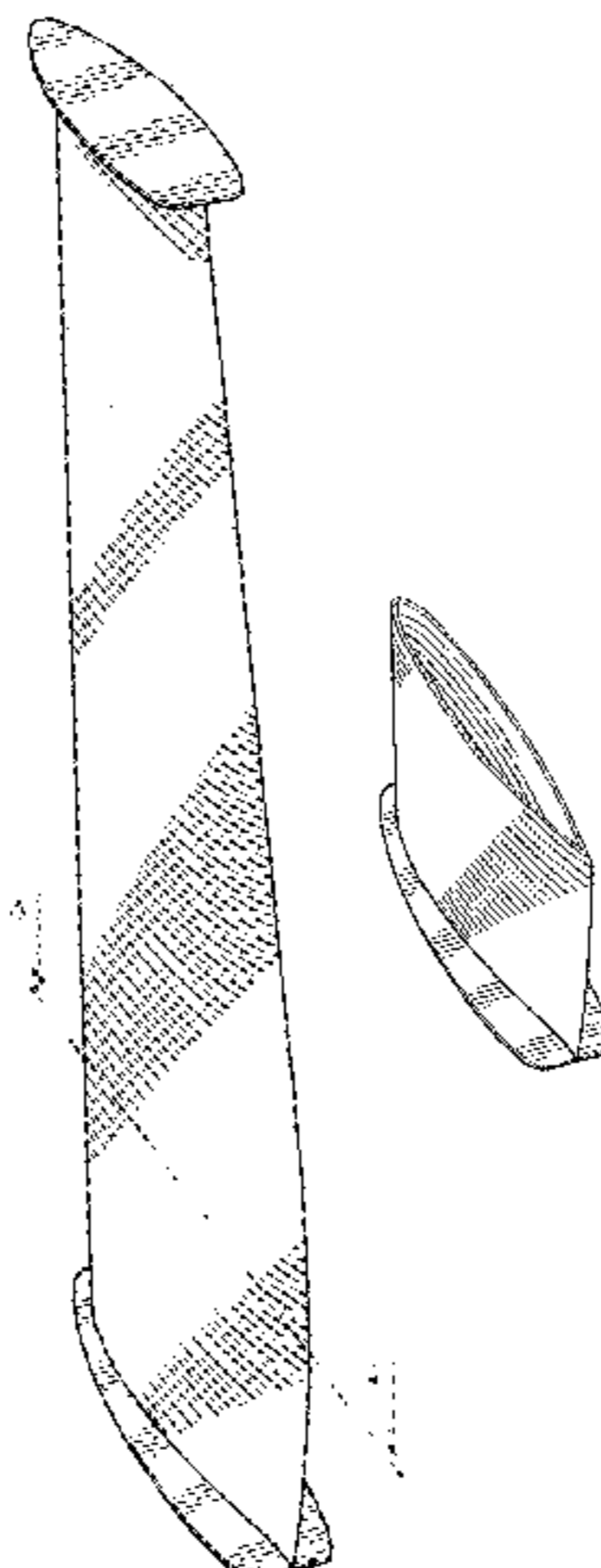
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Primary Examiner — Cynthia M Chin

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(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a right front perspective view the design in a neutral condition;

FIG. 2 is a left front perspective view of the design of FIG. 1;

FIG. 3 is a left rear perspective view of the design of FIG. 1;

FIG. 4 is a cross-sectional left rear perspective view of the design of FIG. 1, taken along line 4-4 of FIG. 3;

FIG. 5 is a front elevational view of the design of FIG. 1;

FIG. 6 is a rear elevational view of the design of FIG. 1;

FIG. 7 is a top plan view of the design of FIG. 1;

FIG. 8 is a bottom plan view of the design of FIG. 1;

FIG. 9 is a right-side elevational view of the design of FIG. 1;

FIG. 10 is a left-side elevational view of the design of FIG. 1;

FIG. 11 is a right front perspective view of the design in a first deformed alternate condition having a first reflexed camber aerofoil section;

FIG. 12 is a left front perspective view of the design of FIG. 11;

FIG. 13 is a left rear perspective view of the design of FIG. 11;

FIG. 14 is a cross-sectional left rear perspective view of the design of FIG. 11, taken along line 14-14 of FIG. 13;

FIG. 15 is a front elevational view of the design of FIG. 11;

FIG. 16 is a rear elevational view of the design of FIG. 11;

FIG. 17 is a top plan view of the design of FIG. 11;

FIG. 18 is a bottom plan view of the design of FIG. 11;

FIG. 19 is a right-side elevational view of the design of FIG. 11;

FIG. 20 is a left-side elevational view of the design of FIG. 11;

FIG. 21 is a right front perspective view of the design in a second deformed alternate condition having a second reflexed camber aerofoil section; FIG. 22 is a left front perspective view of the design of FIG. 21;

FIG. 23 is a left rear perspective view of the design of FIG. 21;

FIG. 24 is a cross-sectional left rear perspective view of the design of FIG. 21, taken along line 24-24 of FIG. 23;

FIG. 25 is a front elevational view of the design of FIG. 21;

FIG. 26 is a rear elevational view of the design of FIG. 21;

FIG. 27 is a top plan view of the design of FIG. 21;

FIG. 28 is a bottom plan view of the design of FIG. 21;

FIG. 29 is a right-side elevational view of the design of FIG. 21; and,

FIG. 30 is a left-side elevational view of the design of FIG. 21.

The wingsail as shown in the accompanying figures comprises of an operatively upper end plate, an operatively lower end plate and an aerofoil extending between the operatively upper and lower end plates. The aerofoil of the wingsail comprises a leading edge and a trailing edge, the leading edge being inclined operatively forwardly as it extends between the operatively lower end plate and the operatively upper end plate.

In FIGS. 1 to 10, the wingsail is shown in a neutral condition with the aerofoil having an aerofoil section being symmetrical about a neutral camber line passing between the leading and trailing edges. In FIGS. 11 to 20, the wingsail is shown in a first deformed condition with the aerofoil taking a first reflexed camber aerofoil section shape, as clearly shown illustrated in FIG. 14. In FIGS. 21 to 30, the wingsail is shown in a second deformed condition with the aerofoil taking a second reflexed camber aerofoil section shape, as clearly shown illustrated in FIG. 24.

1 Claim, 30 Drawing Sheets

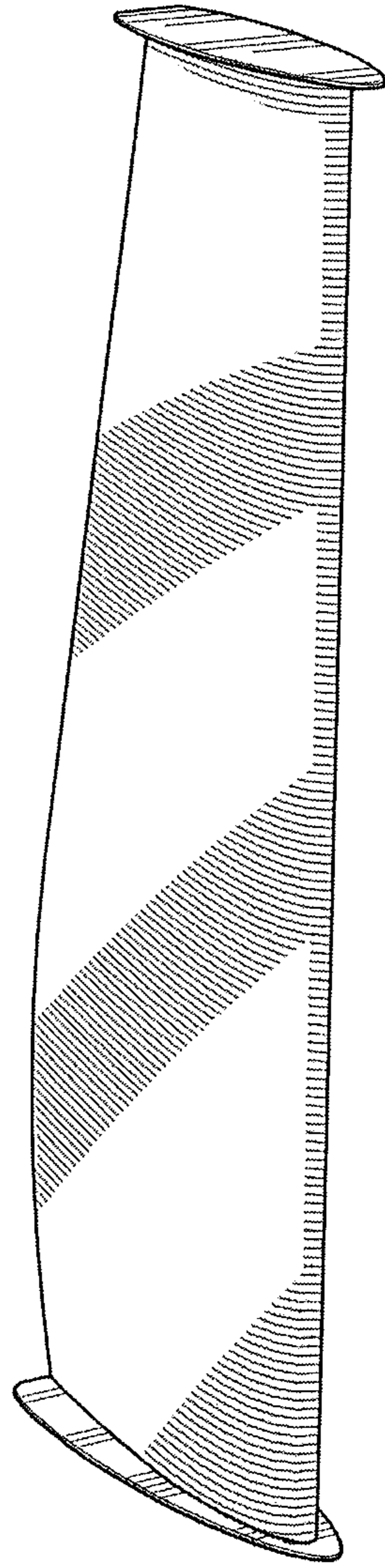


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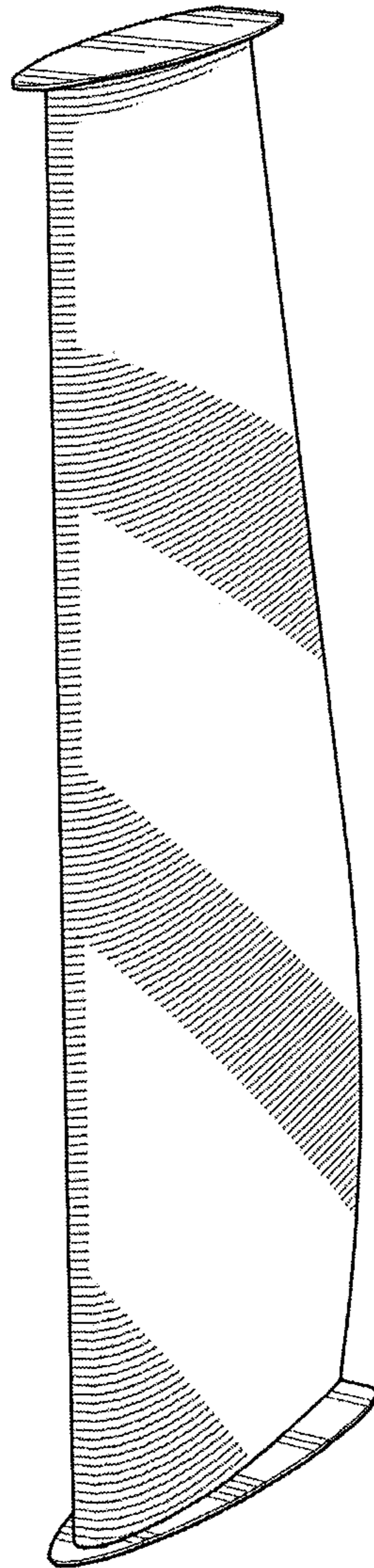


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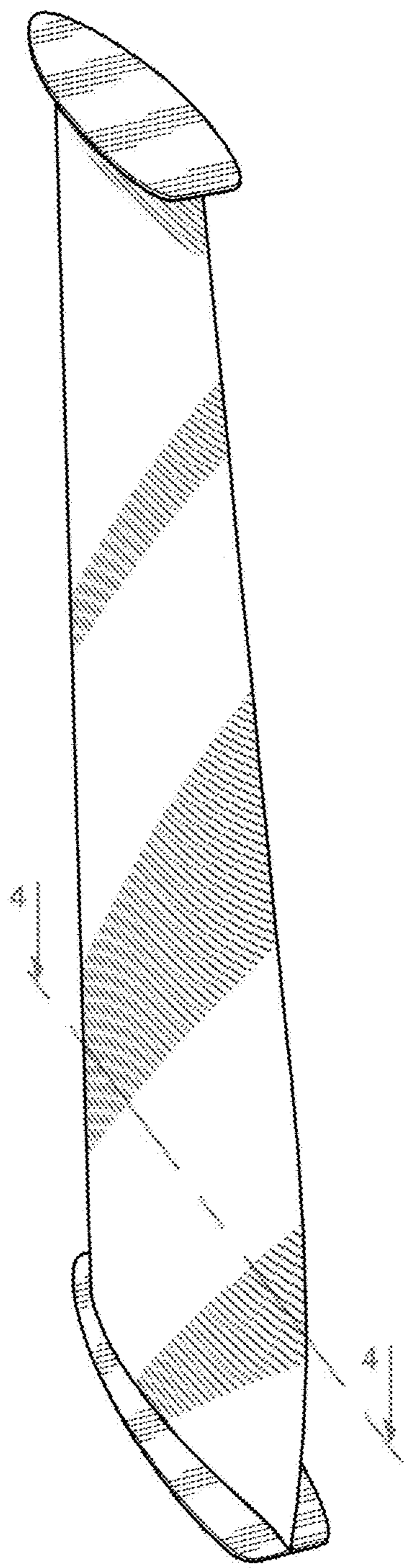


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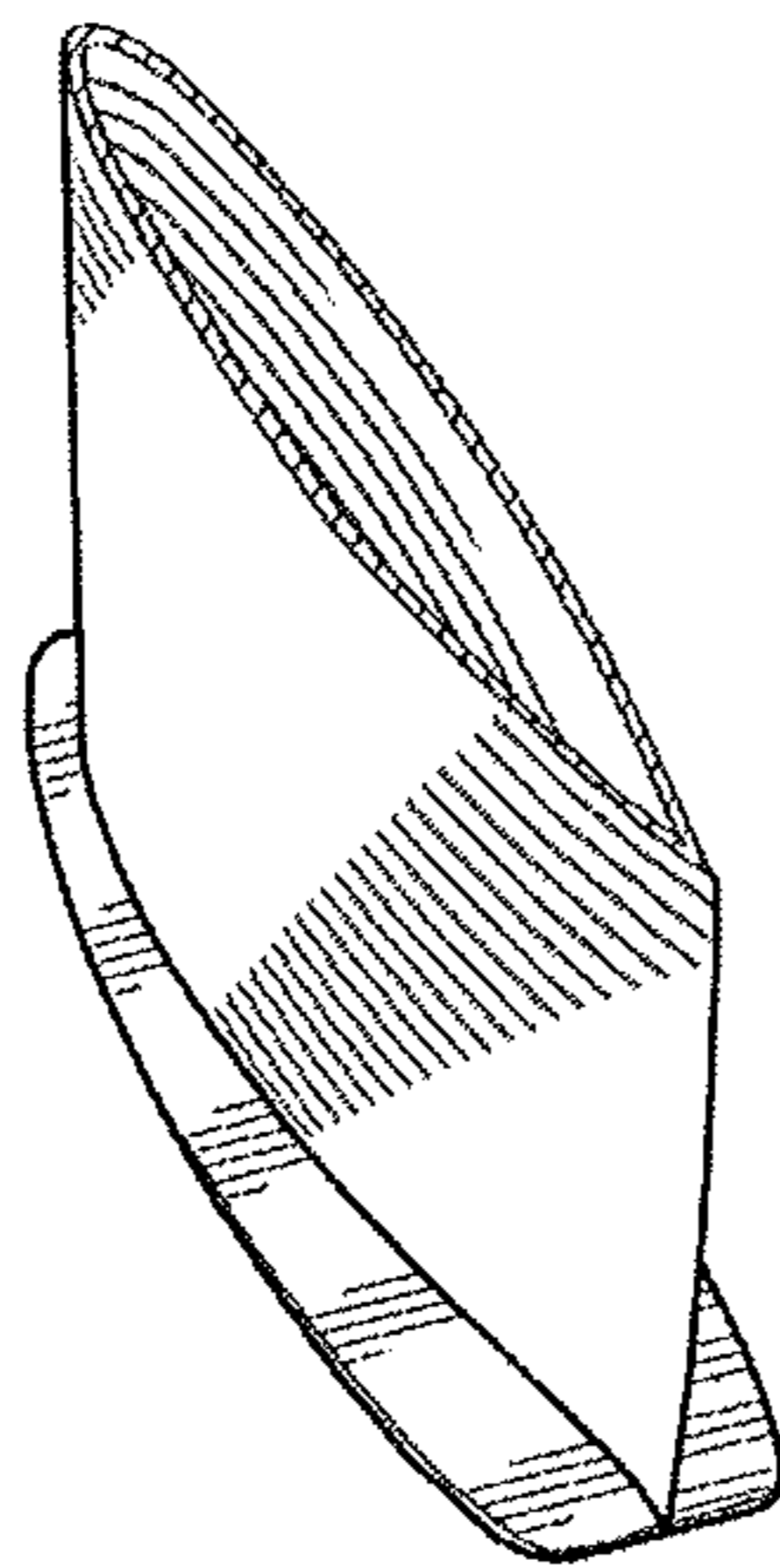


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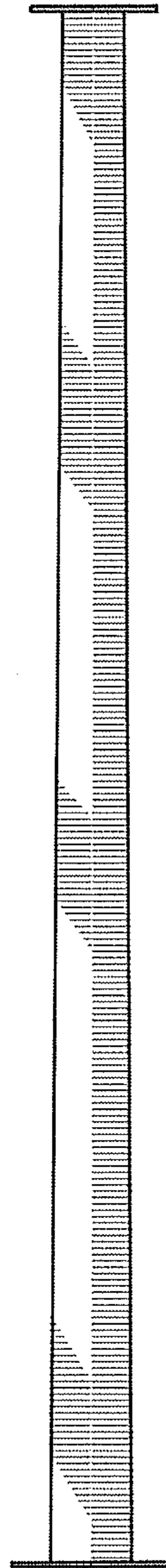


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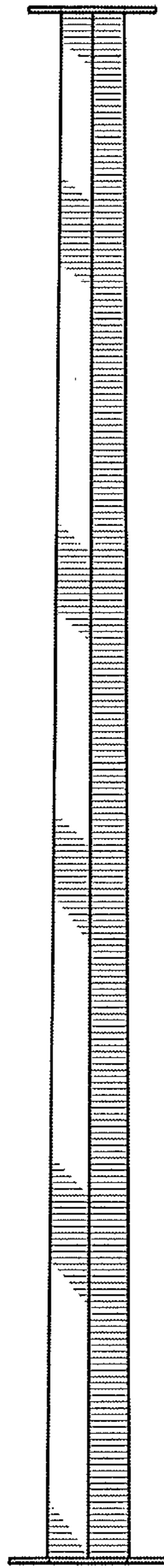


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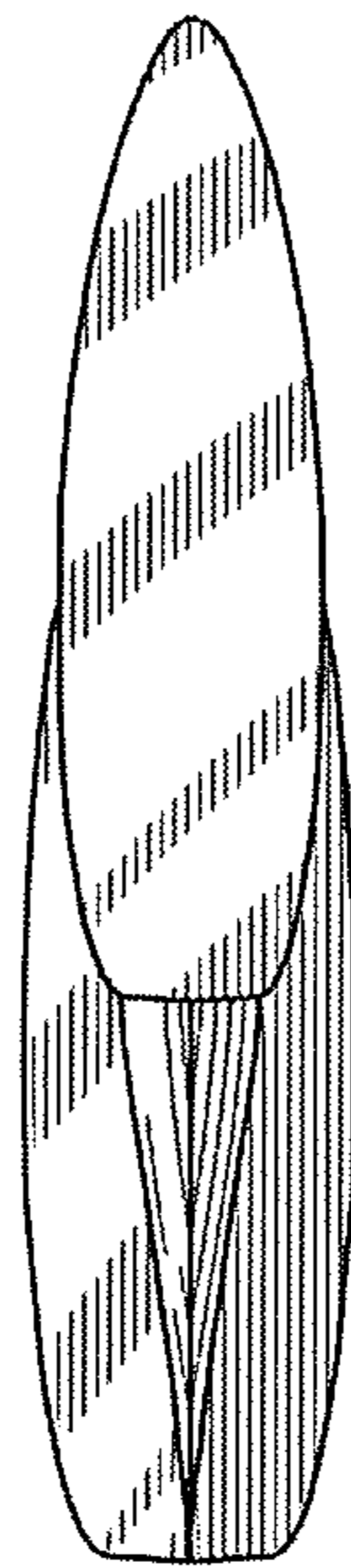


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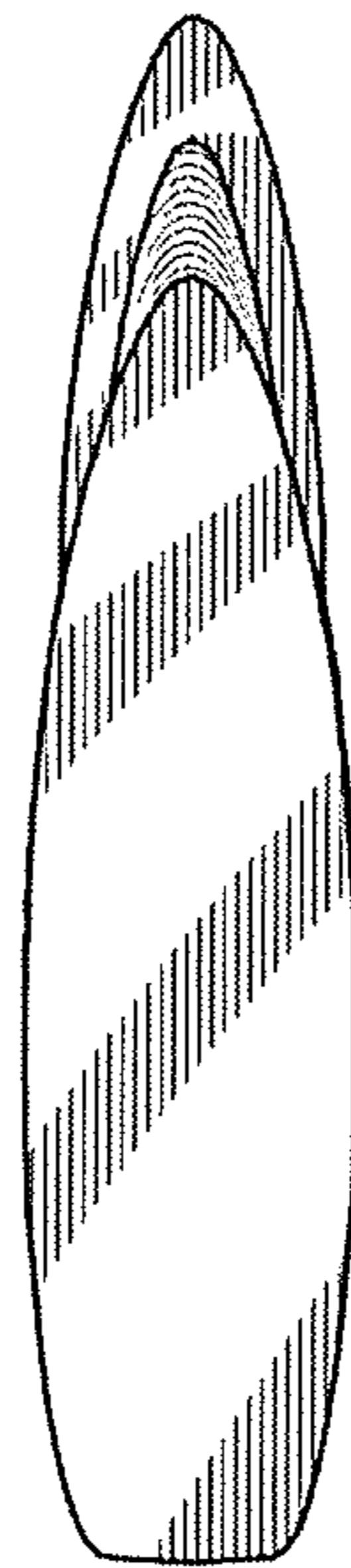


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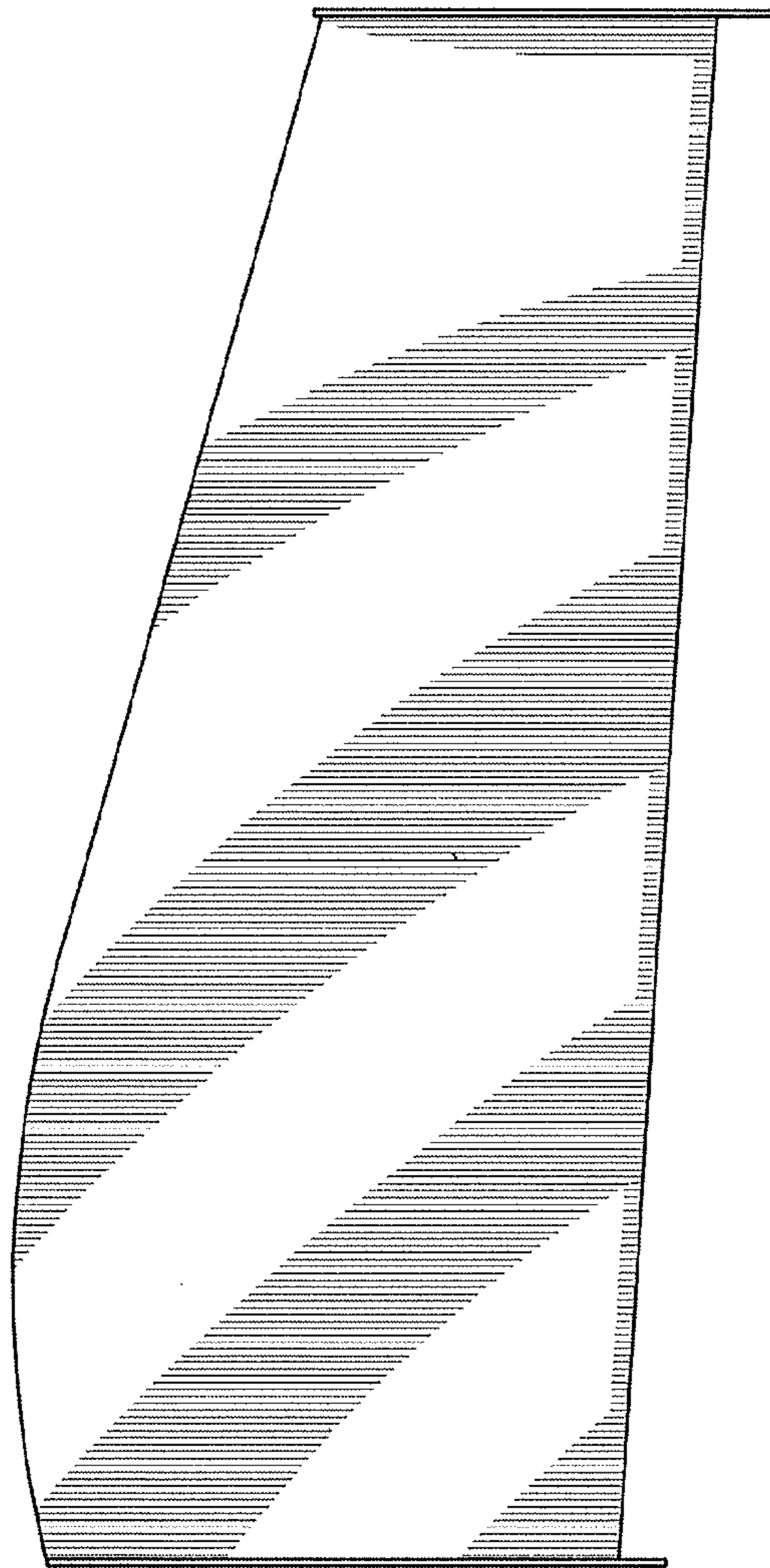


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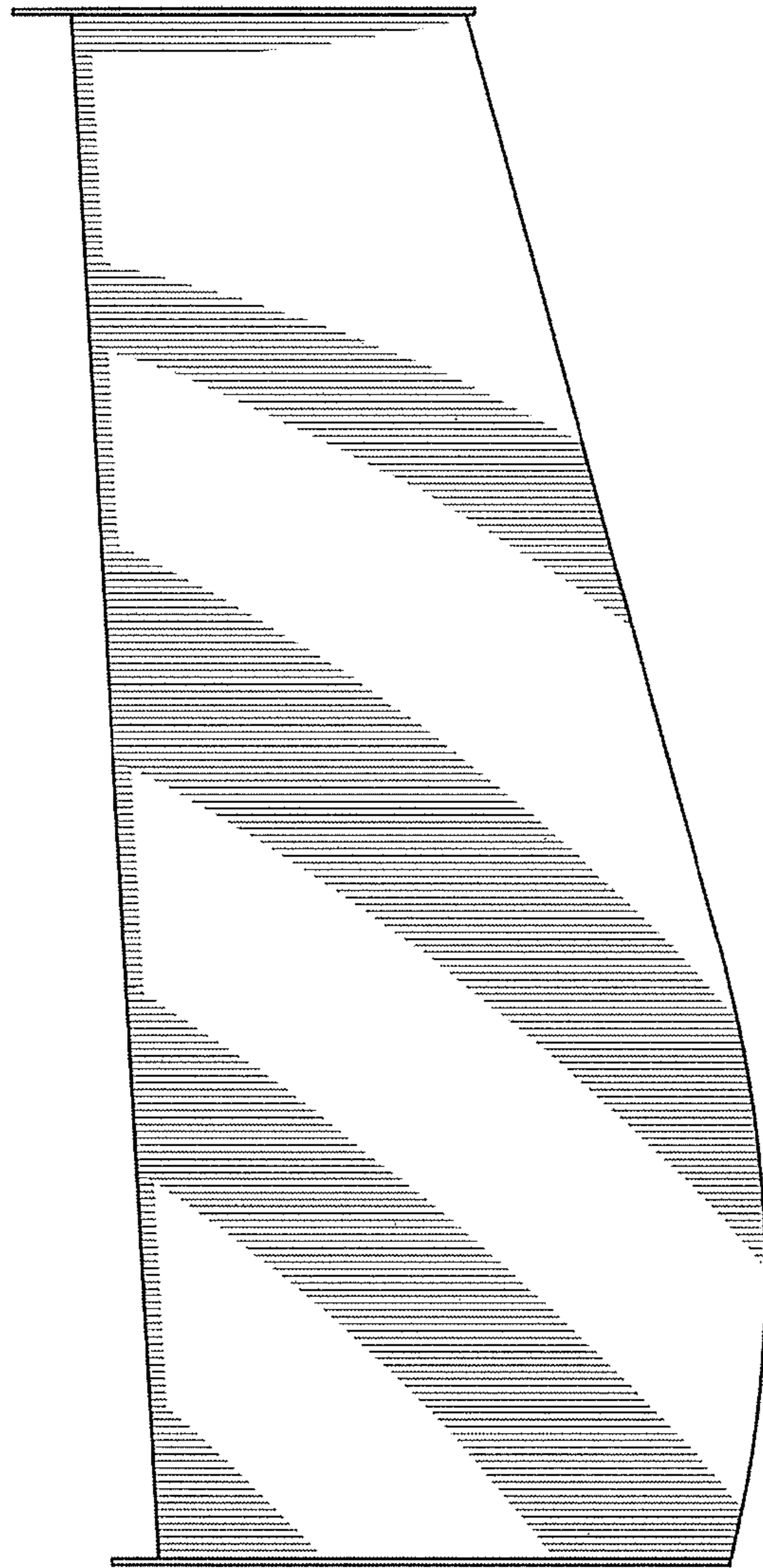


Figure 10

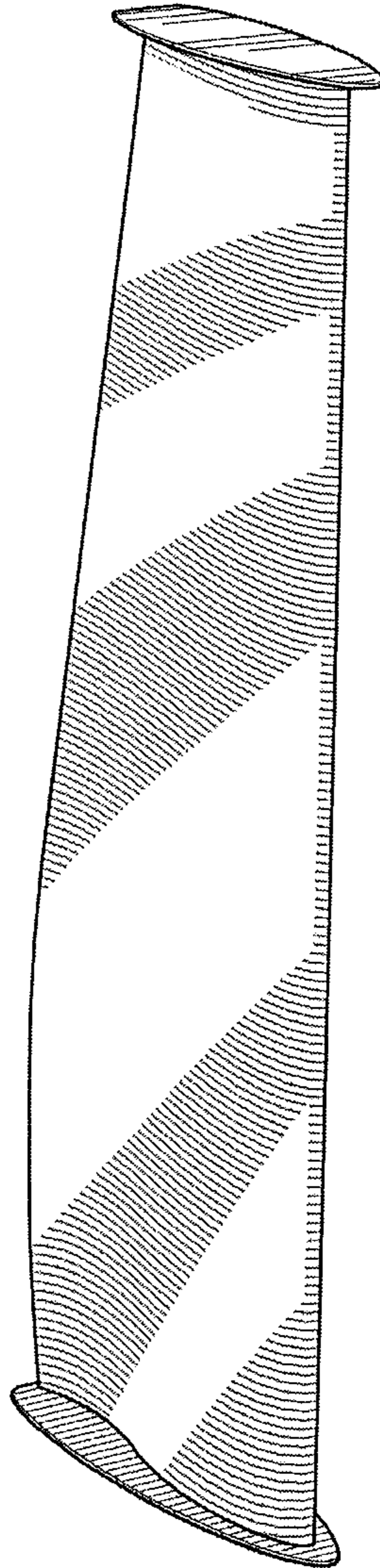


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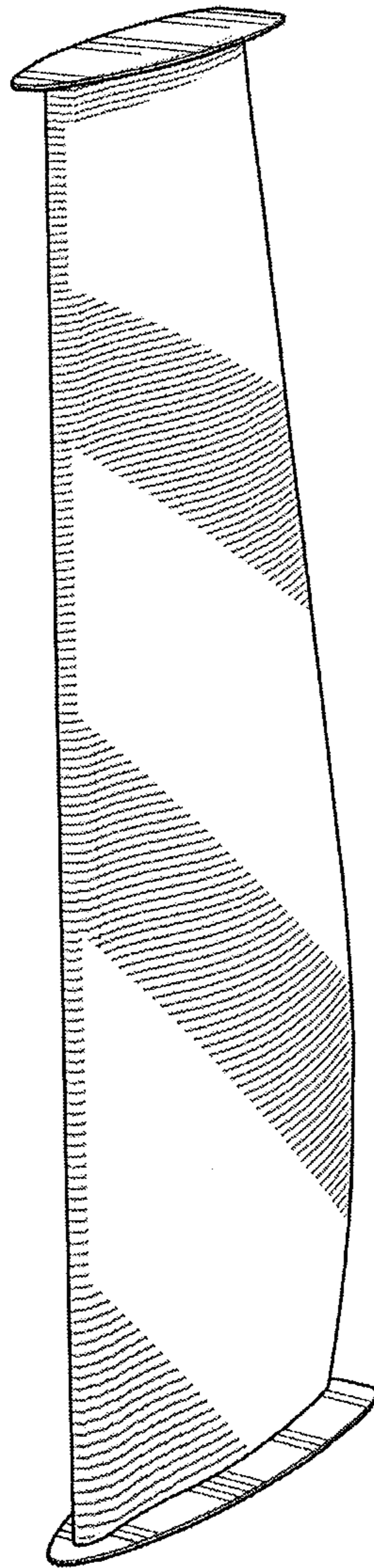


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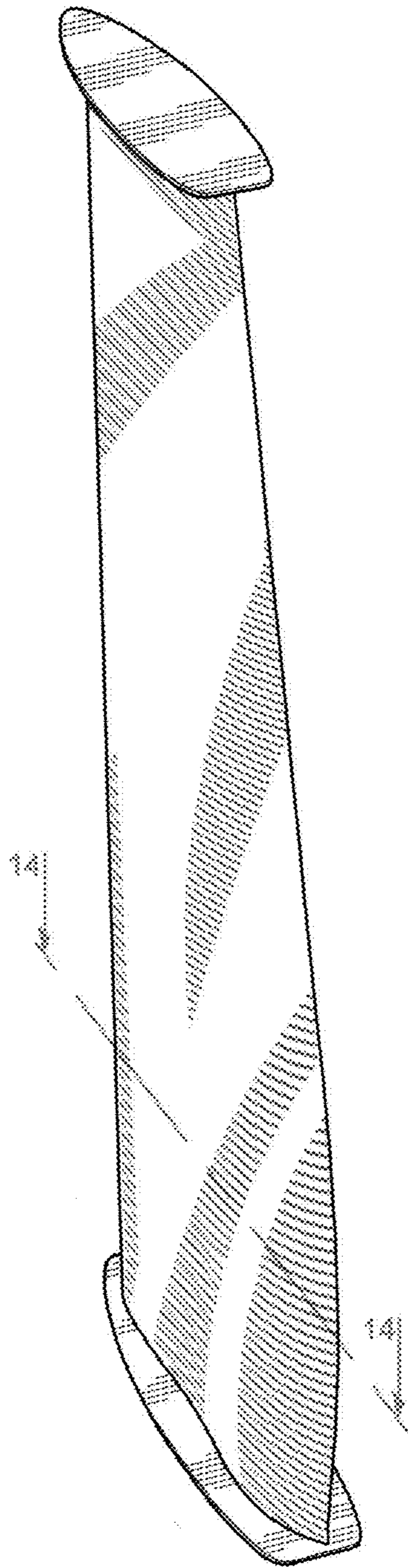


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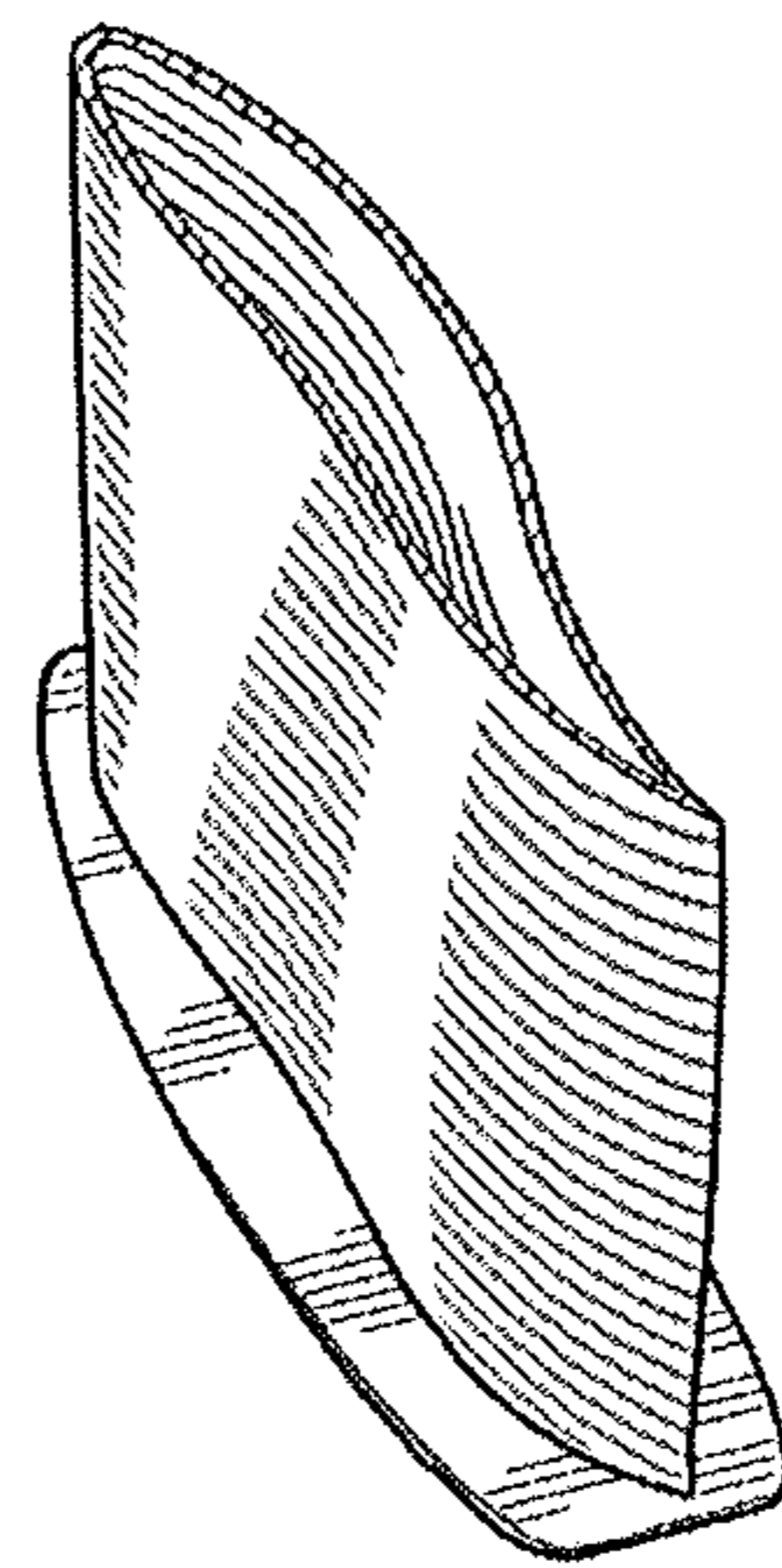


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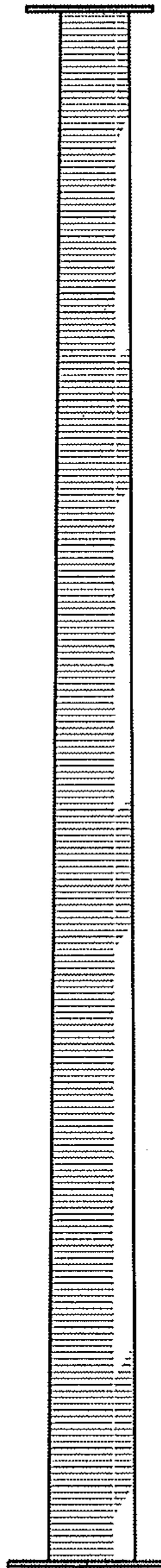


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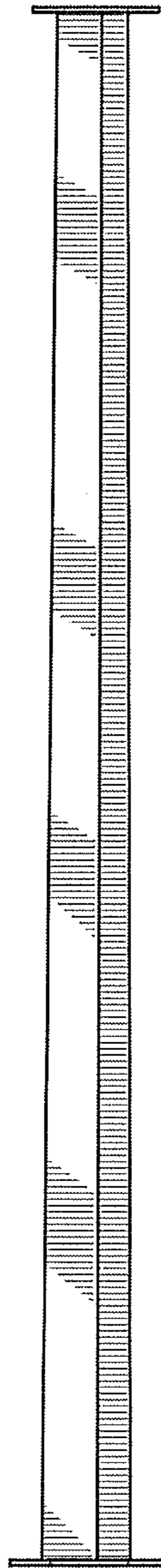


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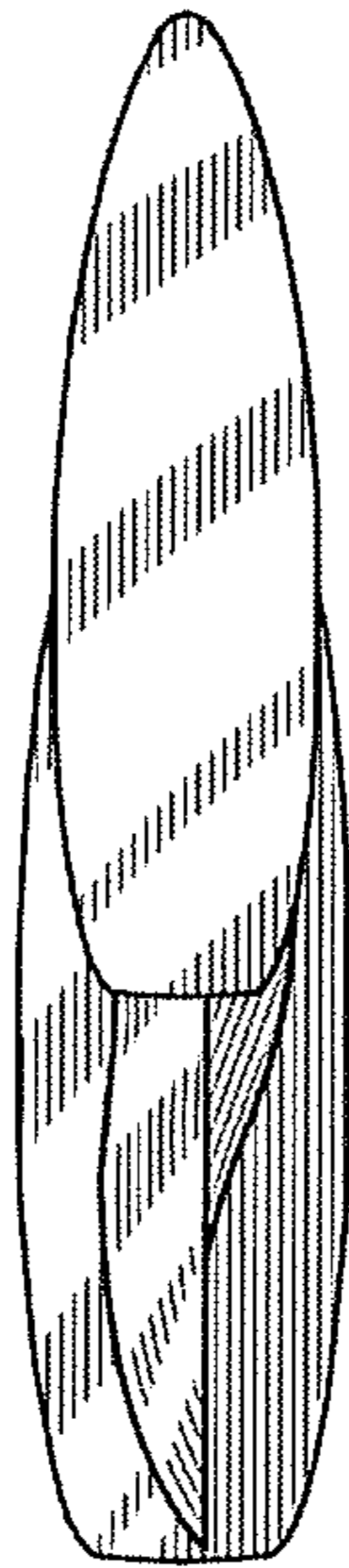


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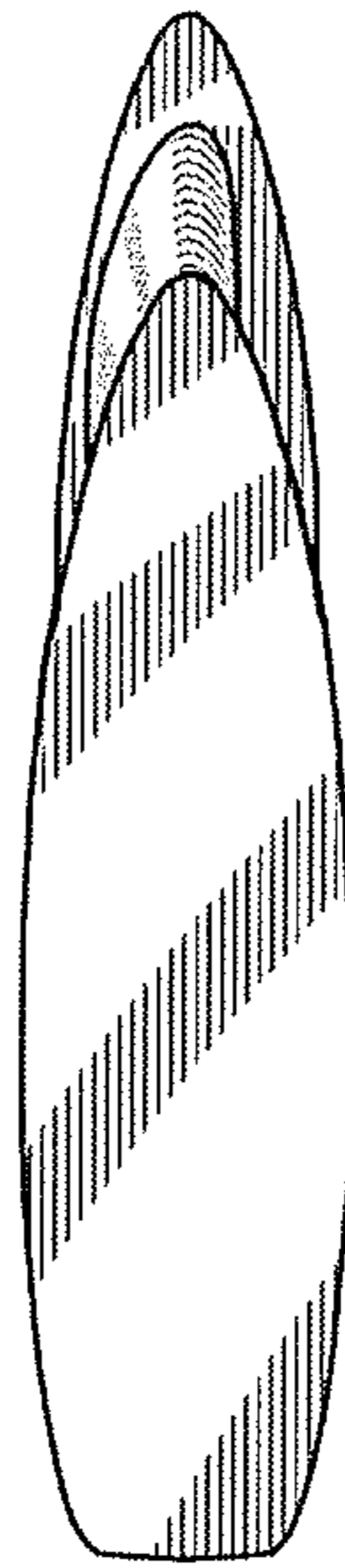


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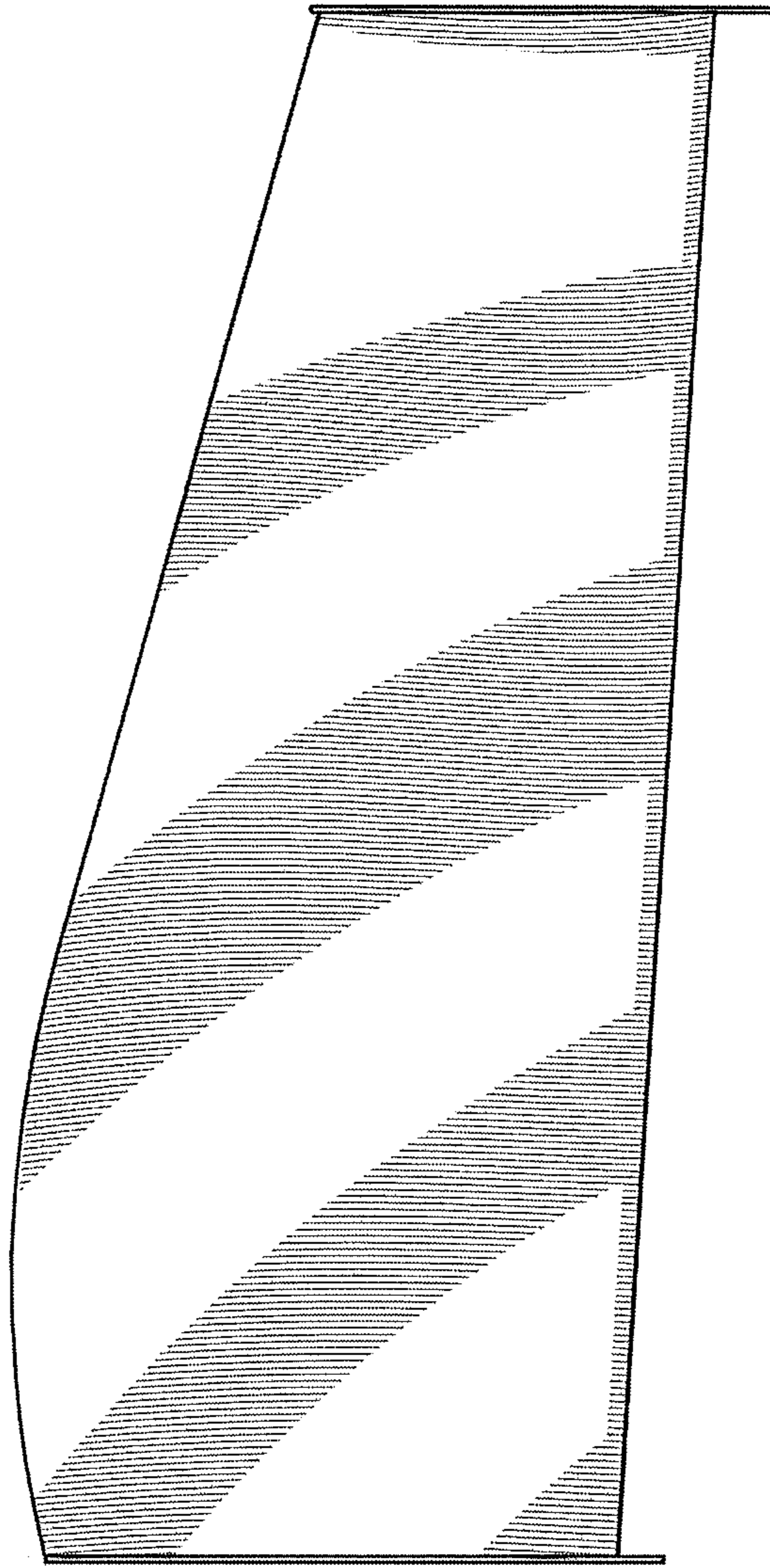


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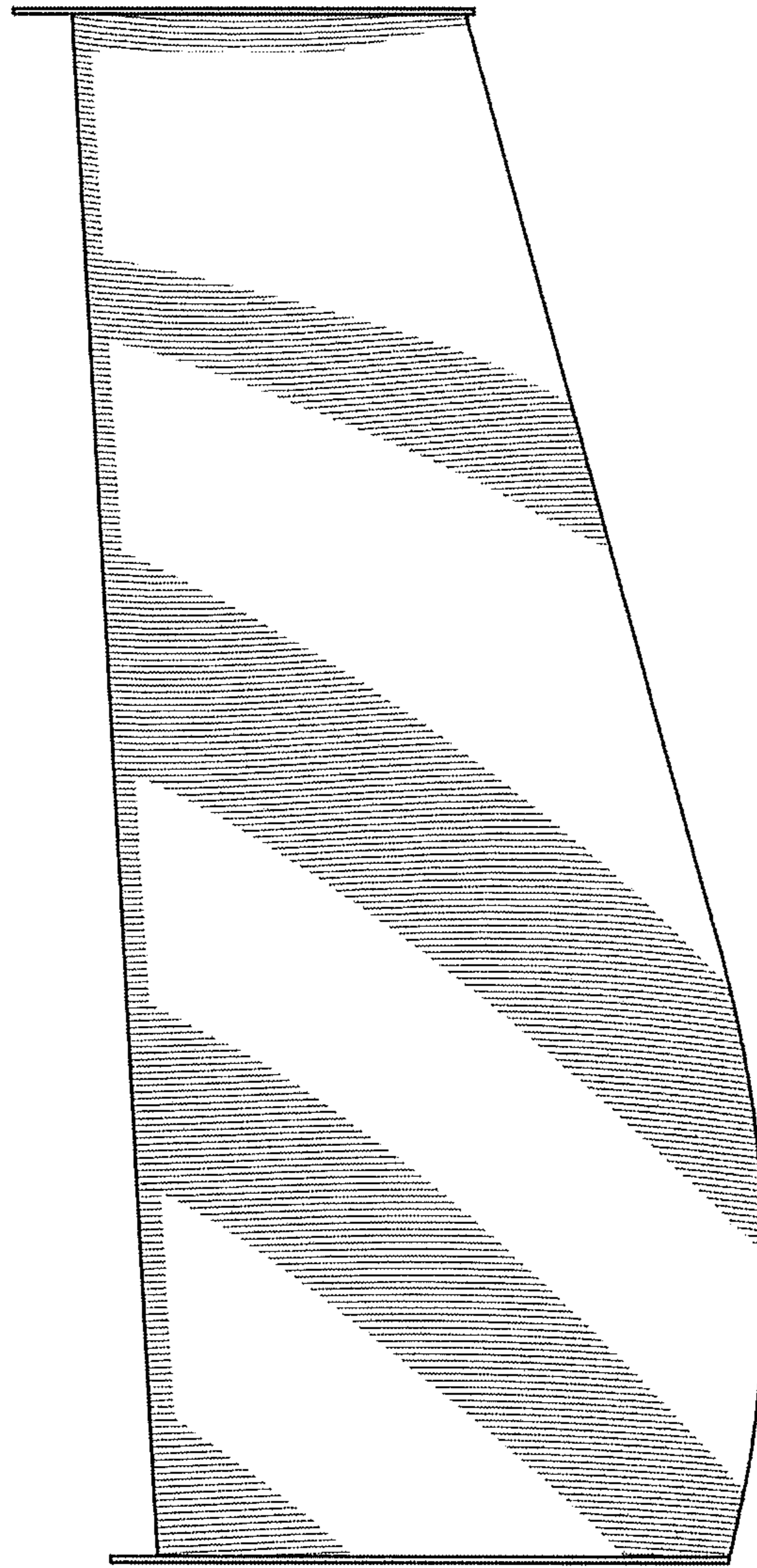


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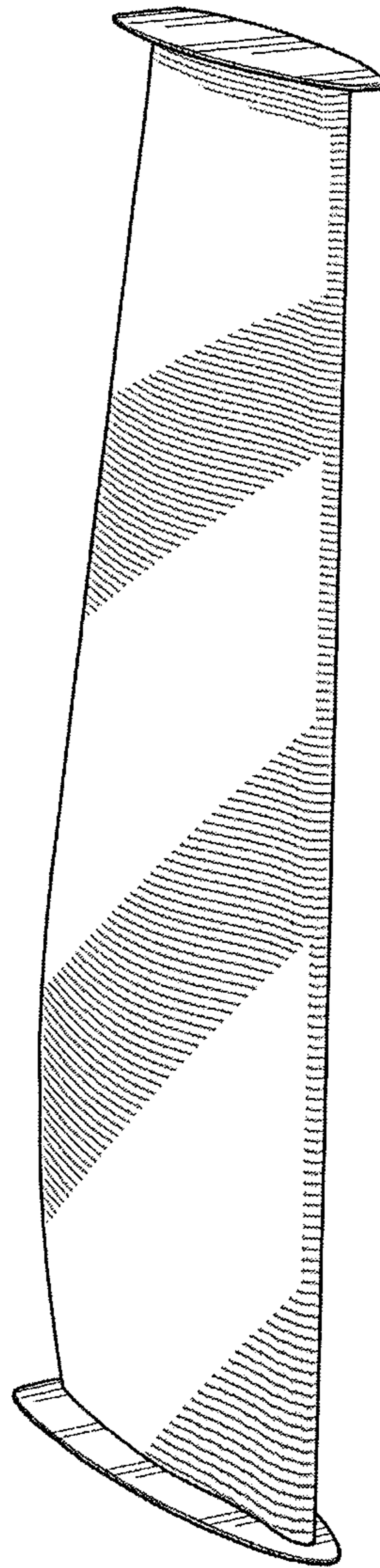


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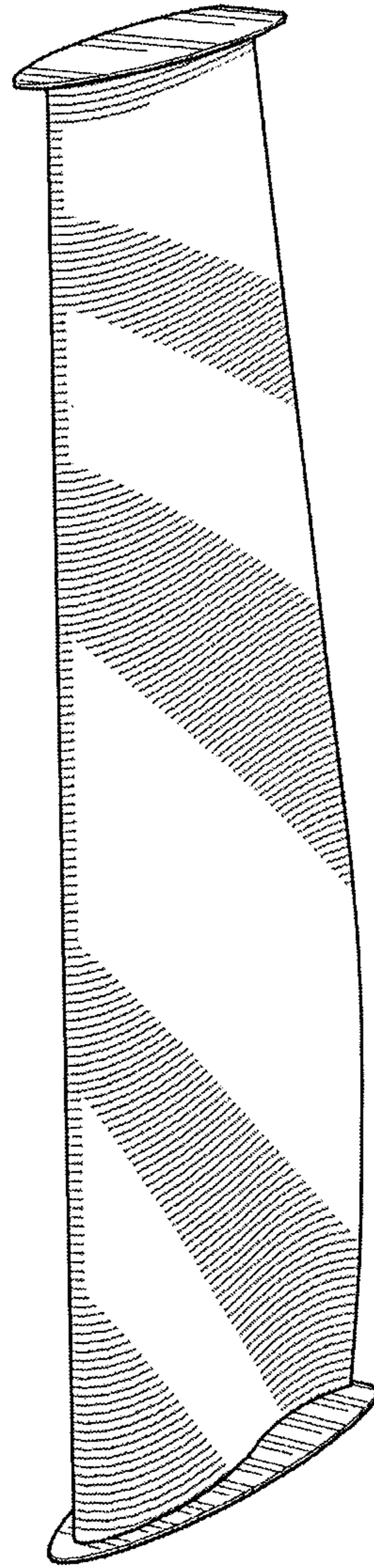


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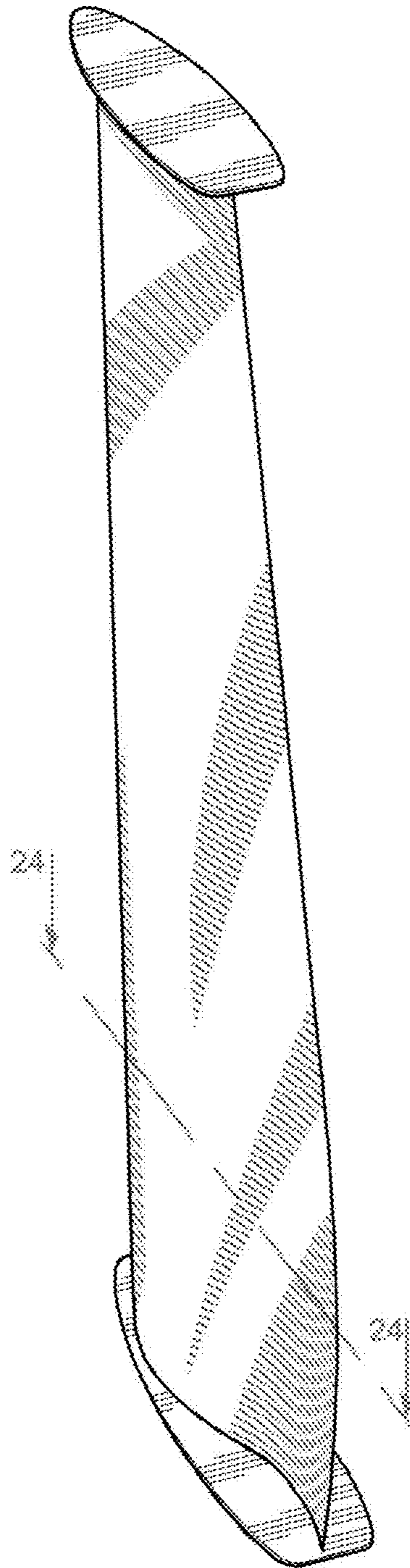


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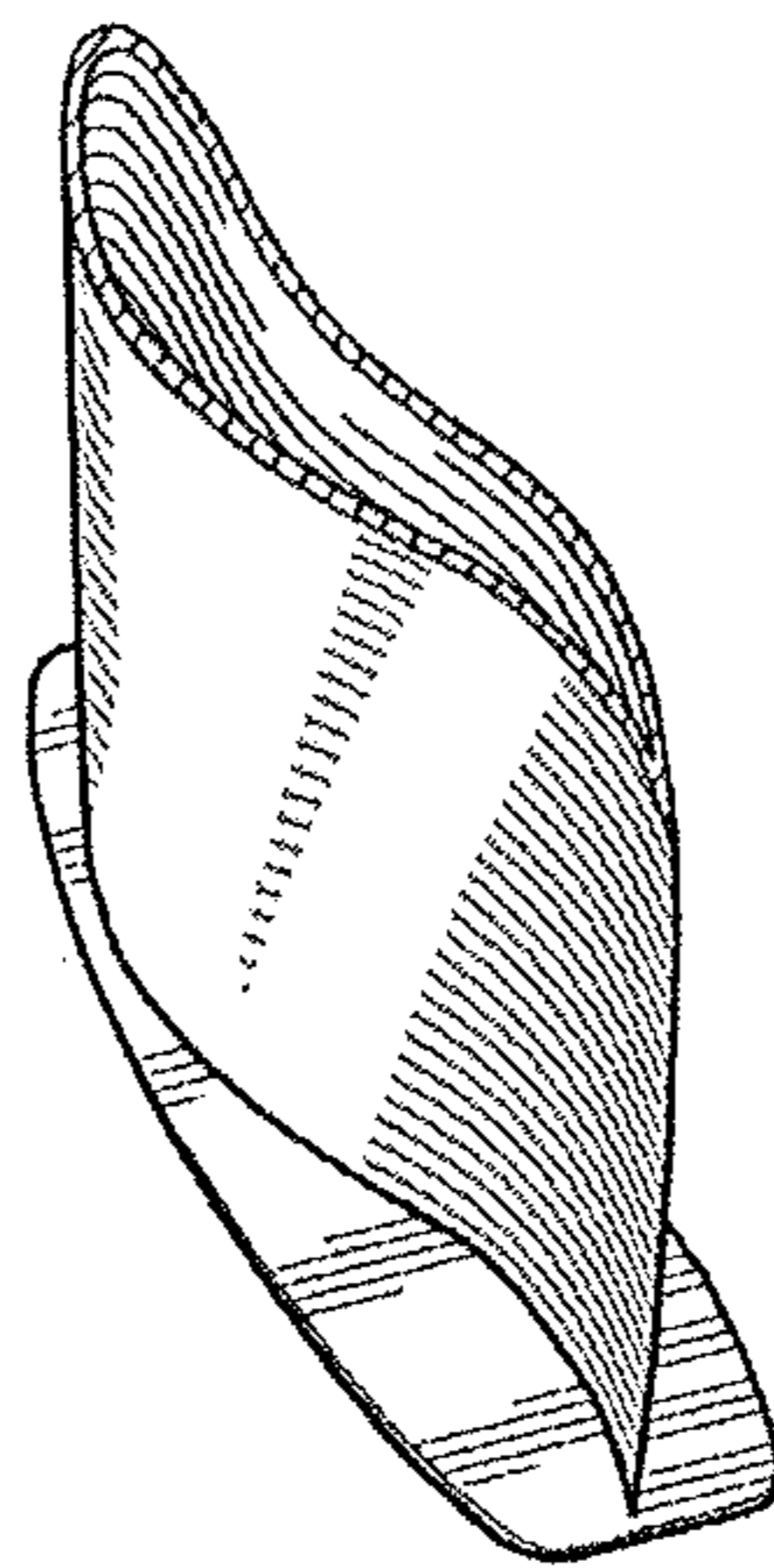


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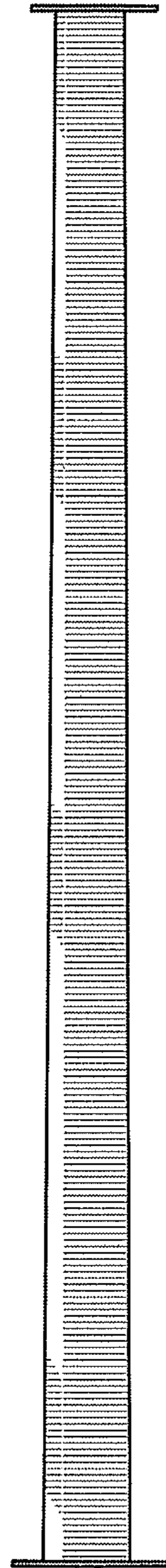


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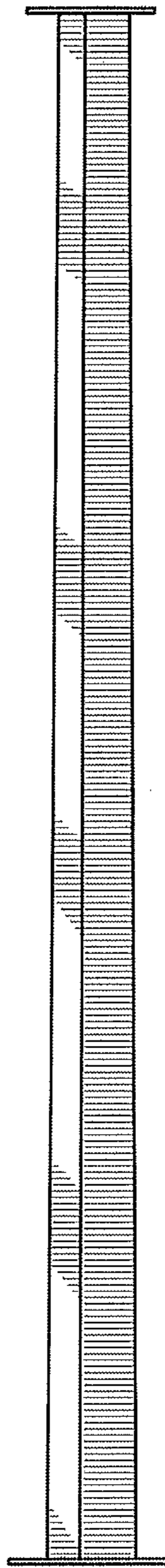


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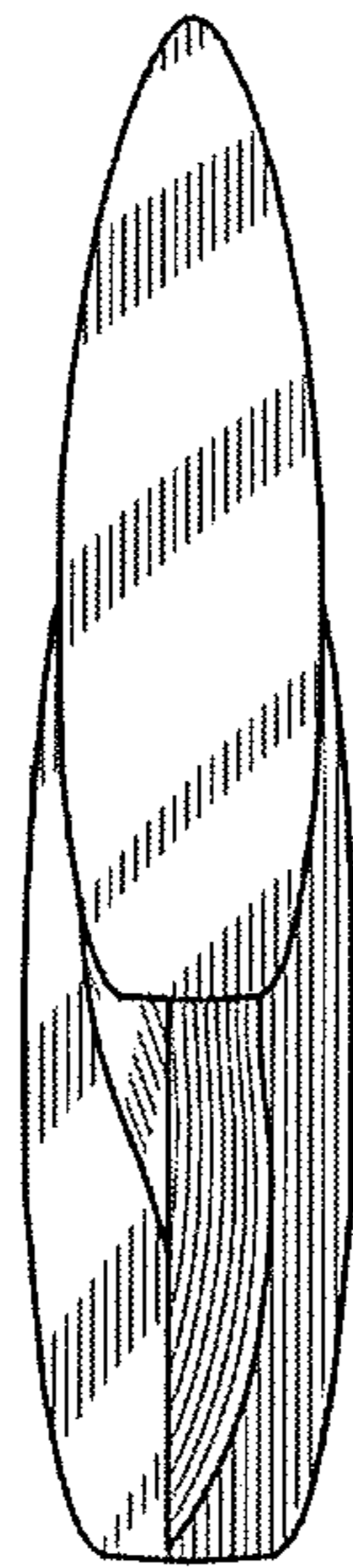


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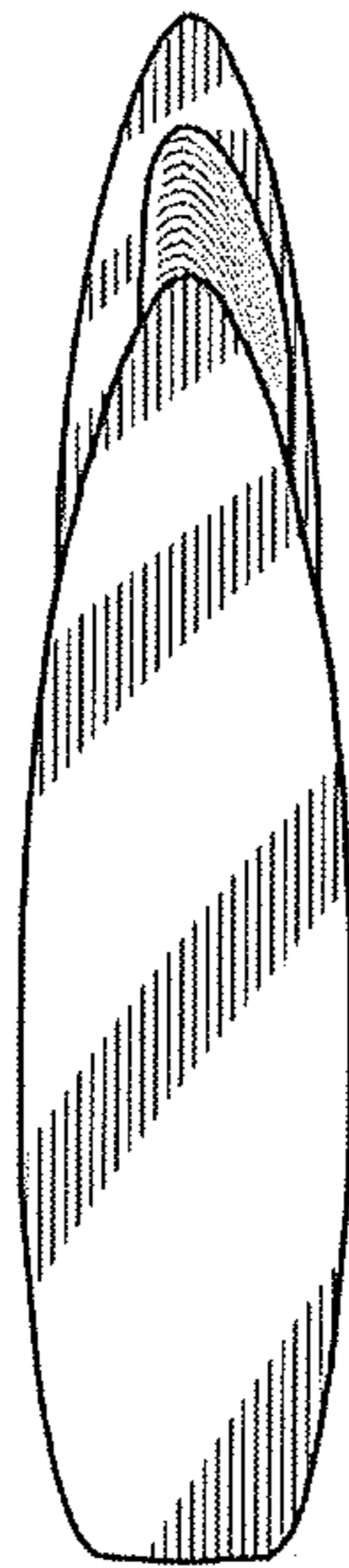


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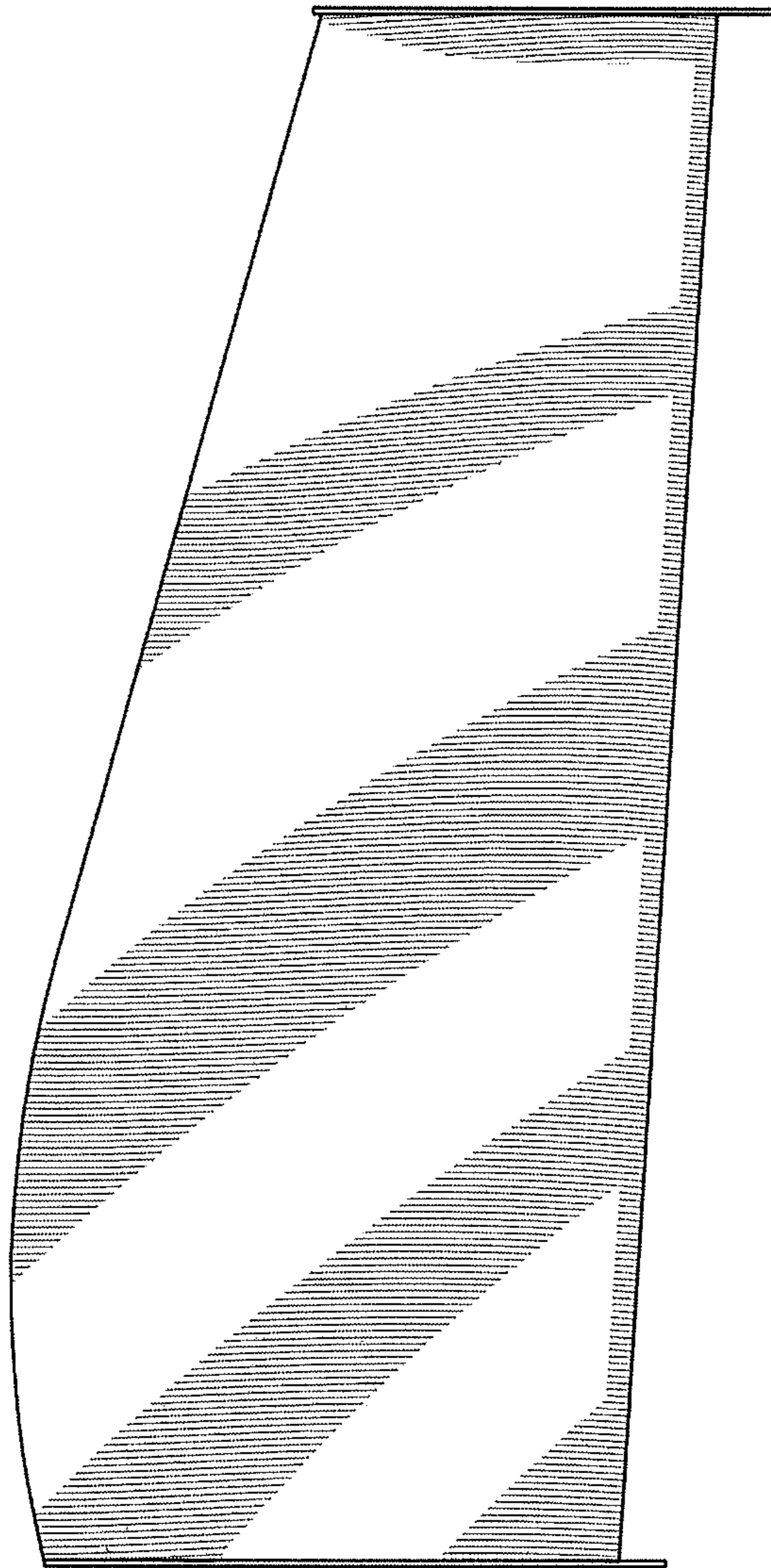


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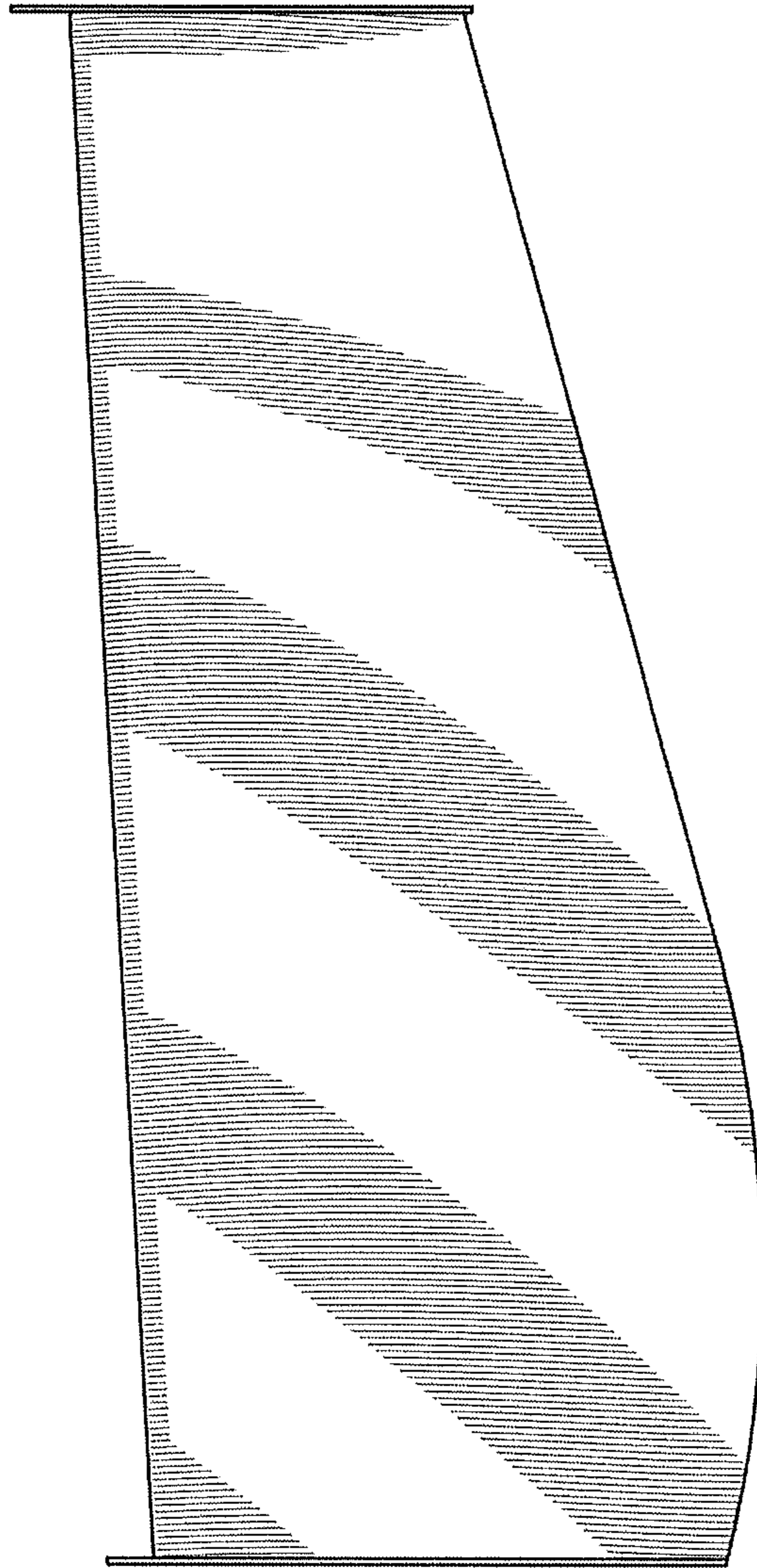


Figure 30