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Kelly et al.

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(54) **APPARATUS AND METHODS OF OPENING CONTAINERS**

(71) Applicant: **DRAFT TOP, LLC**, Monmouth Beach, NJ (US)

(72) Inventors: **Sean P. Kelly**, Marietta, GA (US);
Armand Joseph Ferranti, Jr., Long Branch, NJ (US)

(73) Assignee: **DRAFT TOP, LLC**, Monmouth Beach, NJ (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 137 days.

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§ 371 (c)(1),

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(51) **Int. Cl.**

B67B 7/46 (2006.01)

B67B 7/16 (2006.01)

B67B 7/44 (2006.01)

(52) **U.S. Cl.**

CPC **B67B 7/34** (2013.01); **B67B 7/16** (2013.01); **B67B 7/44** (2013.01); **B67B 2007/303** (2013.01)

(58) **Field of Classification Search**

CPC .. B67B 7/16; B67B 7/162; B67B 7/30; B67B 7/44; B67B 2007/303; B67B 7/32; B67B 7/34; B67B 7/36

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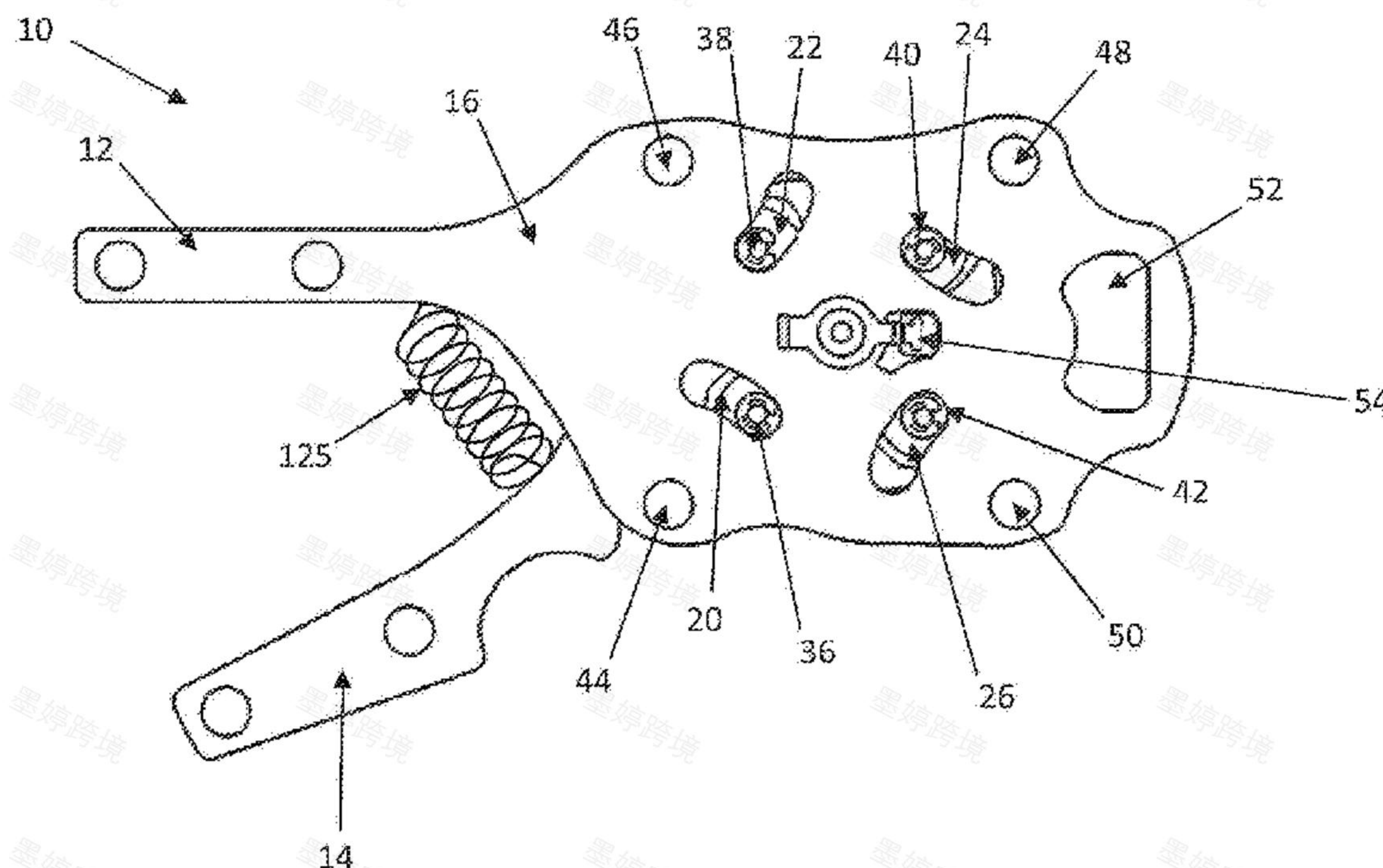
Primary Examiner — Evan H MacFarlane

(74) *Attorney, Agent, or Firm* — Duane Morris LLP

(57) **ABSTRACT**

An apparatus and methods of opening containers which permit the user to remove the entire flat upper planar surface. The apparatus and methods, incorporate a platform with a plurality of arms operatively coupled to respective blade members that engage inner circumferential edge of a container by folding the edges inward. The blade members and arms are operatively coupled to a lever and rotate outward when the lever is compressed. The inventors have determined that apparatus and methods provided herein are able to adhere to the different sizes and contours of a sealed can lid. Additionally, by way of example, the inventors have determined that apparatus and methods provided herein can permit the user to safely remove the top of the can with both ease and efficiency.

18 Claims, 31 Drawing Sheets



(58) **Field of Classification Search**USPC 30/400, 416–418, 108, 103–106; 7/152,
7/153

See application file for complete search history.

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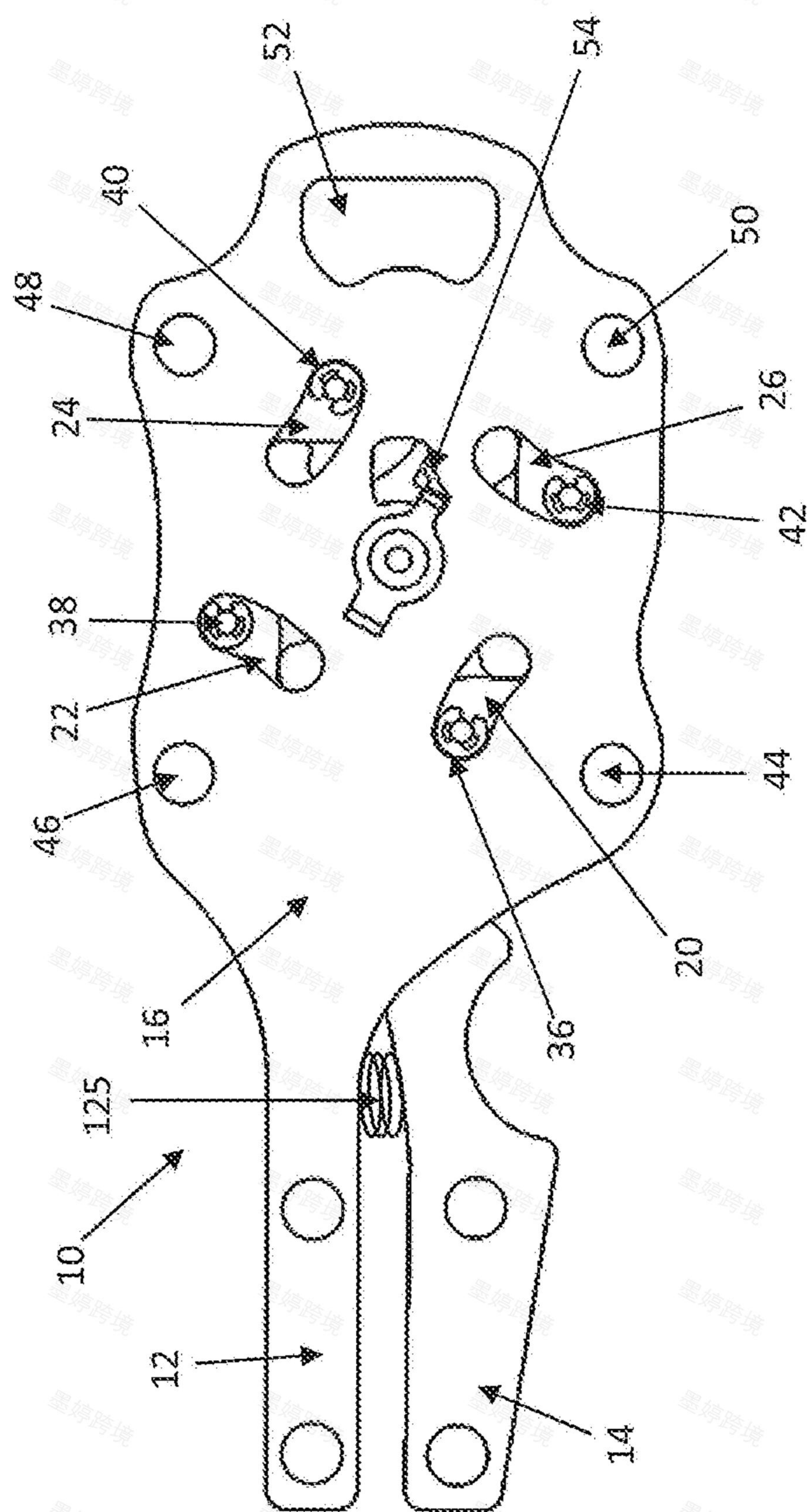


FIG. 1

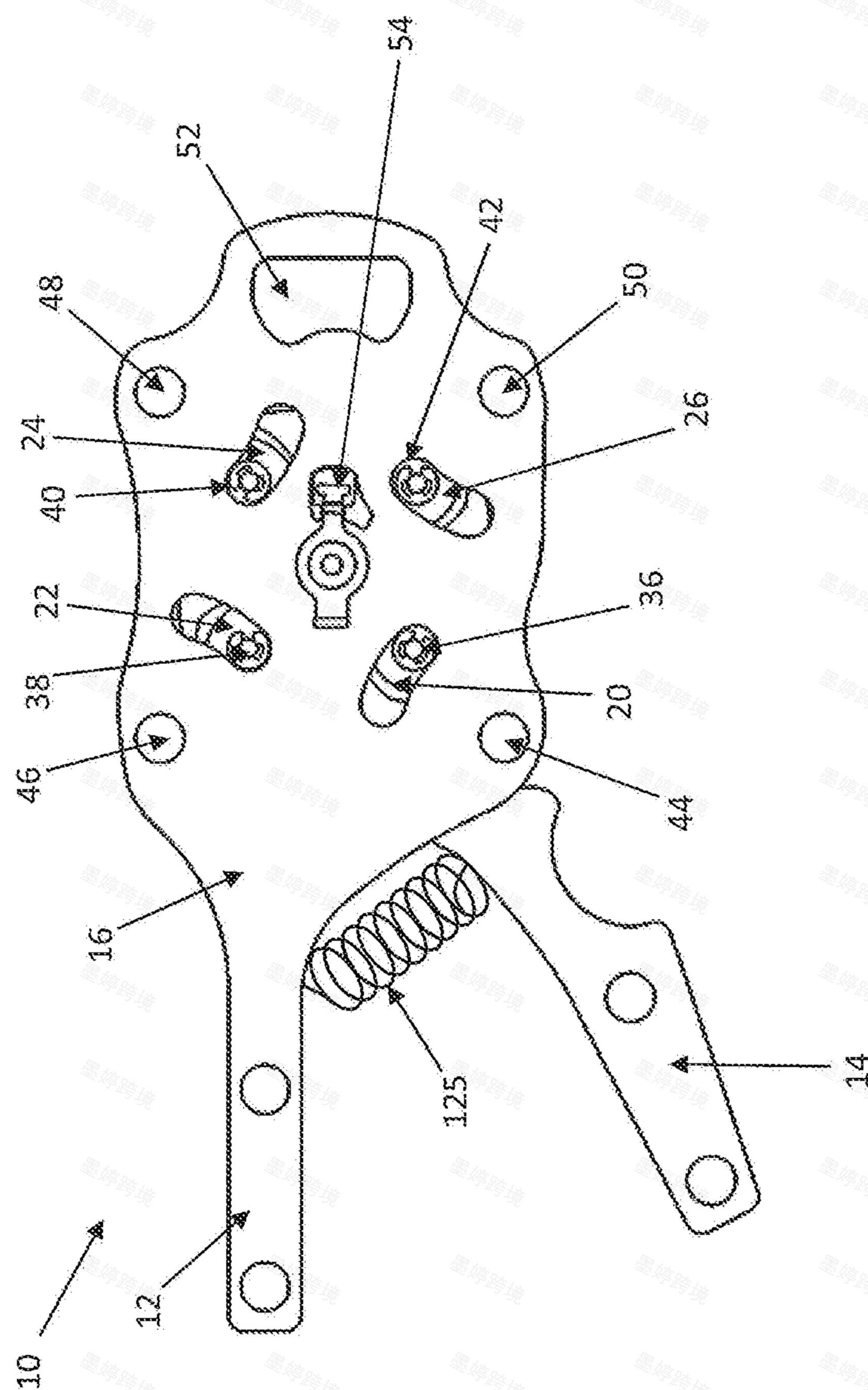
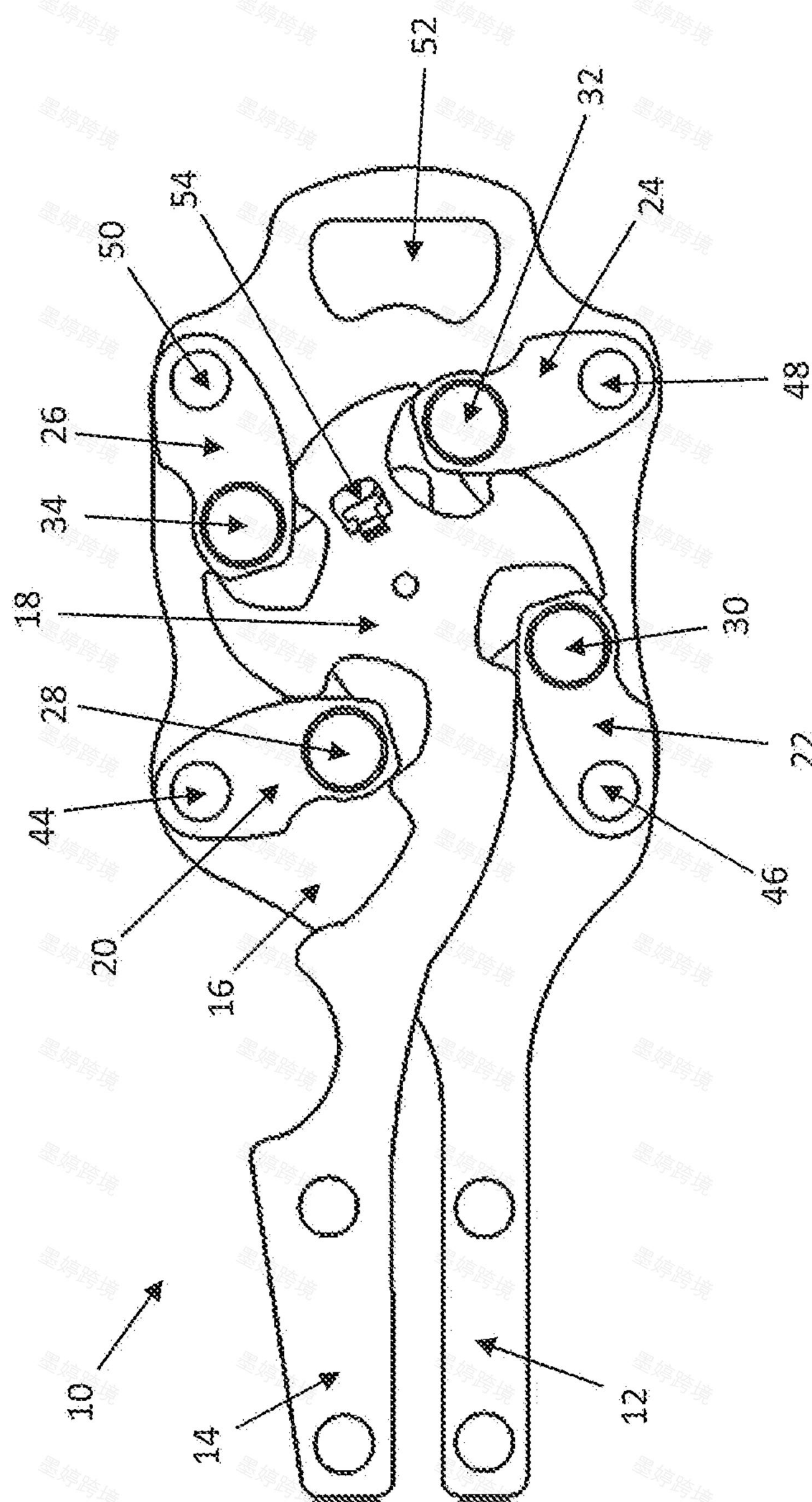


FIG. 2



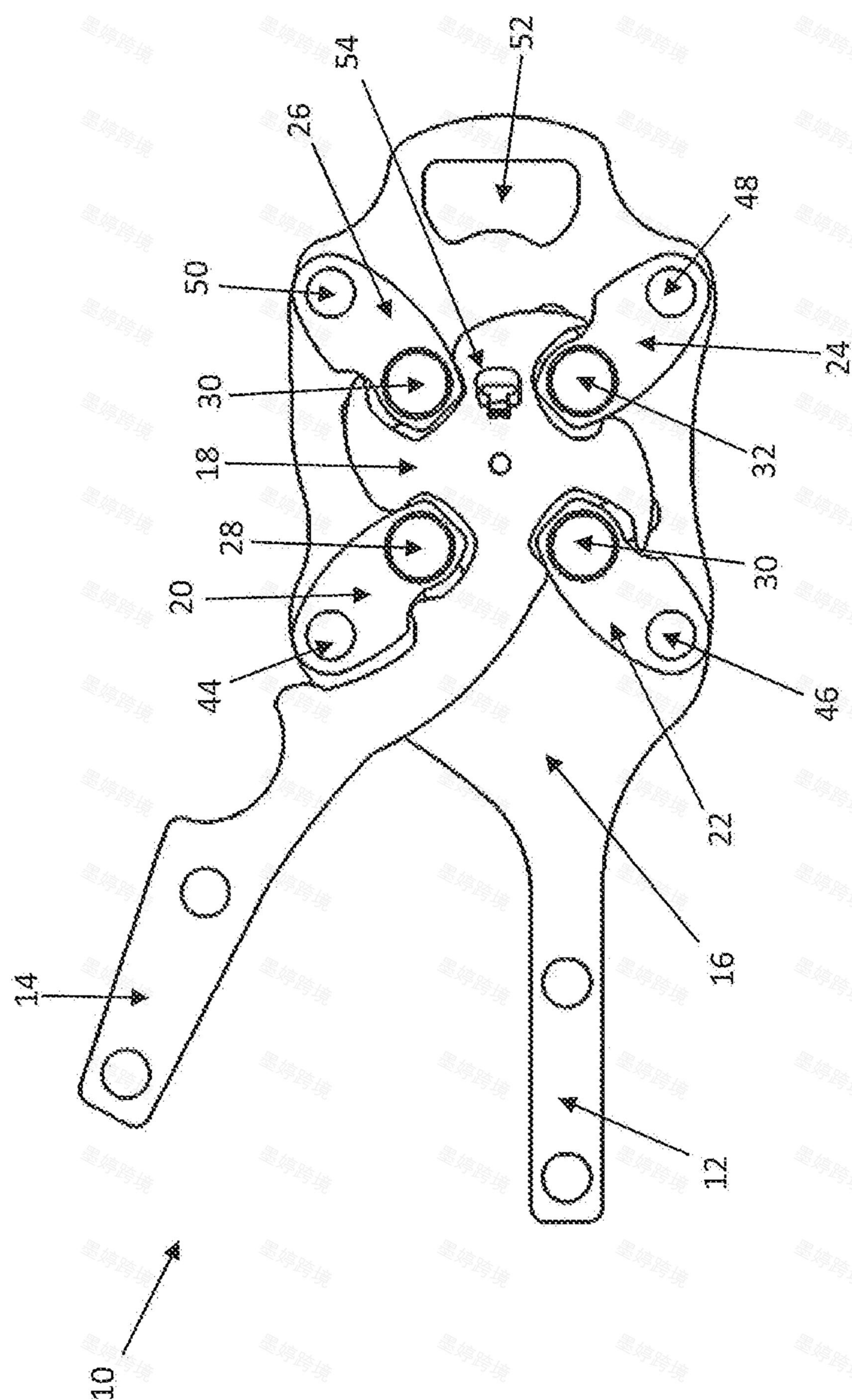


FIG. 4

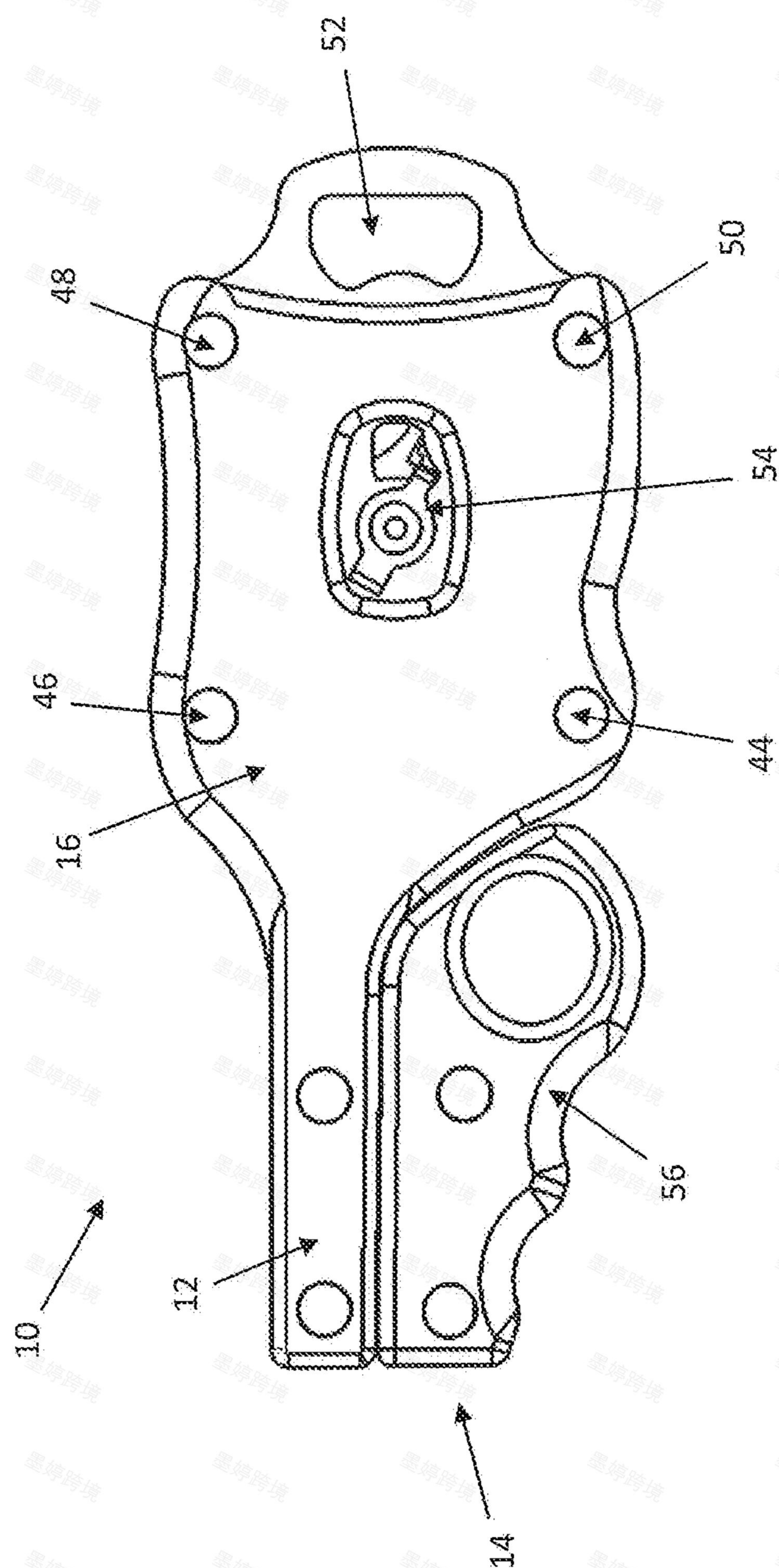


FIG. 5

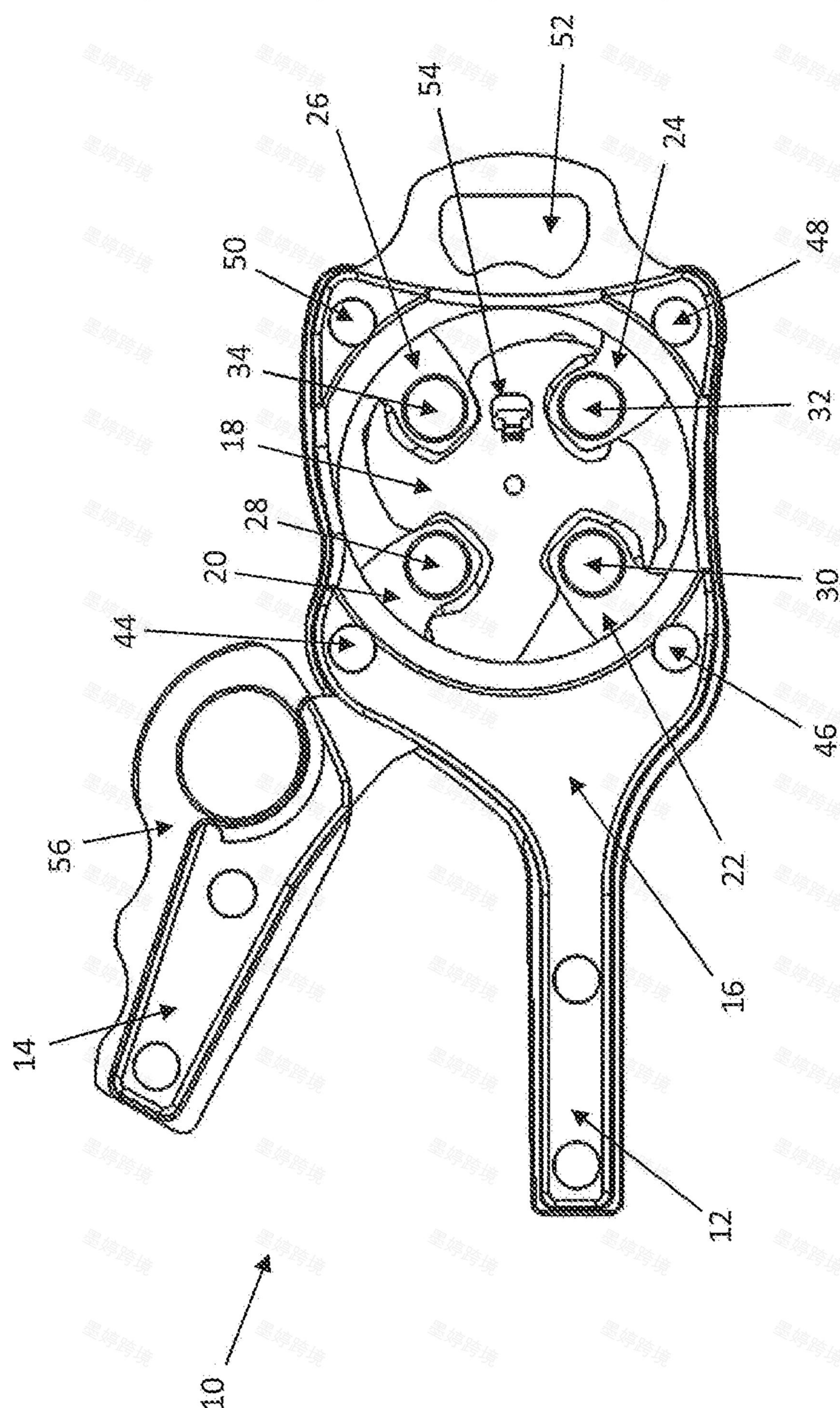


FIG. 6

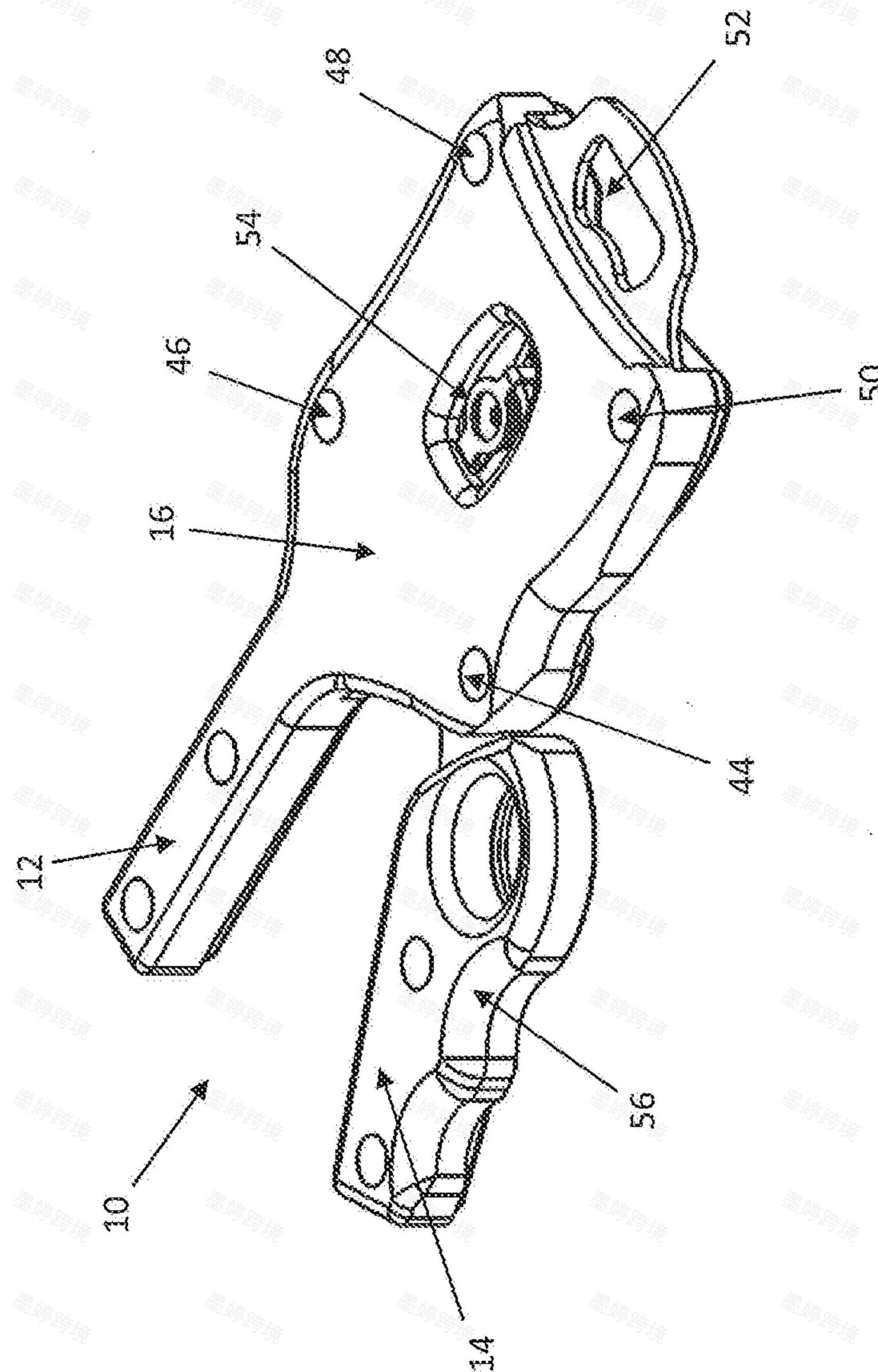


FIG. 7

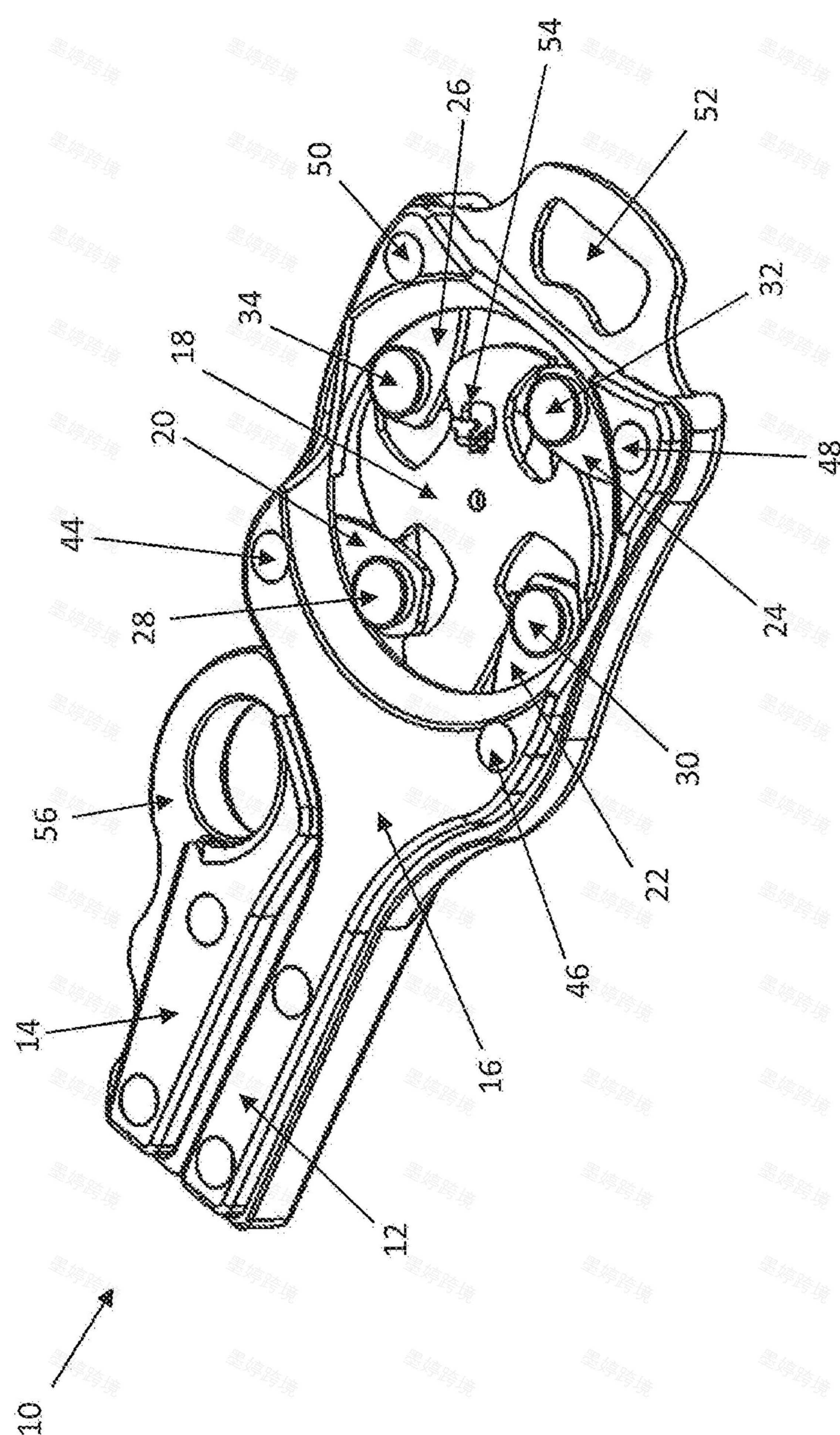


FIG. 8

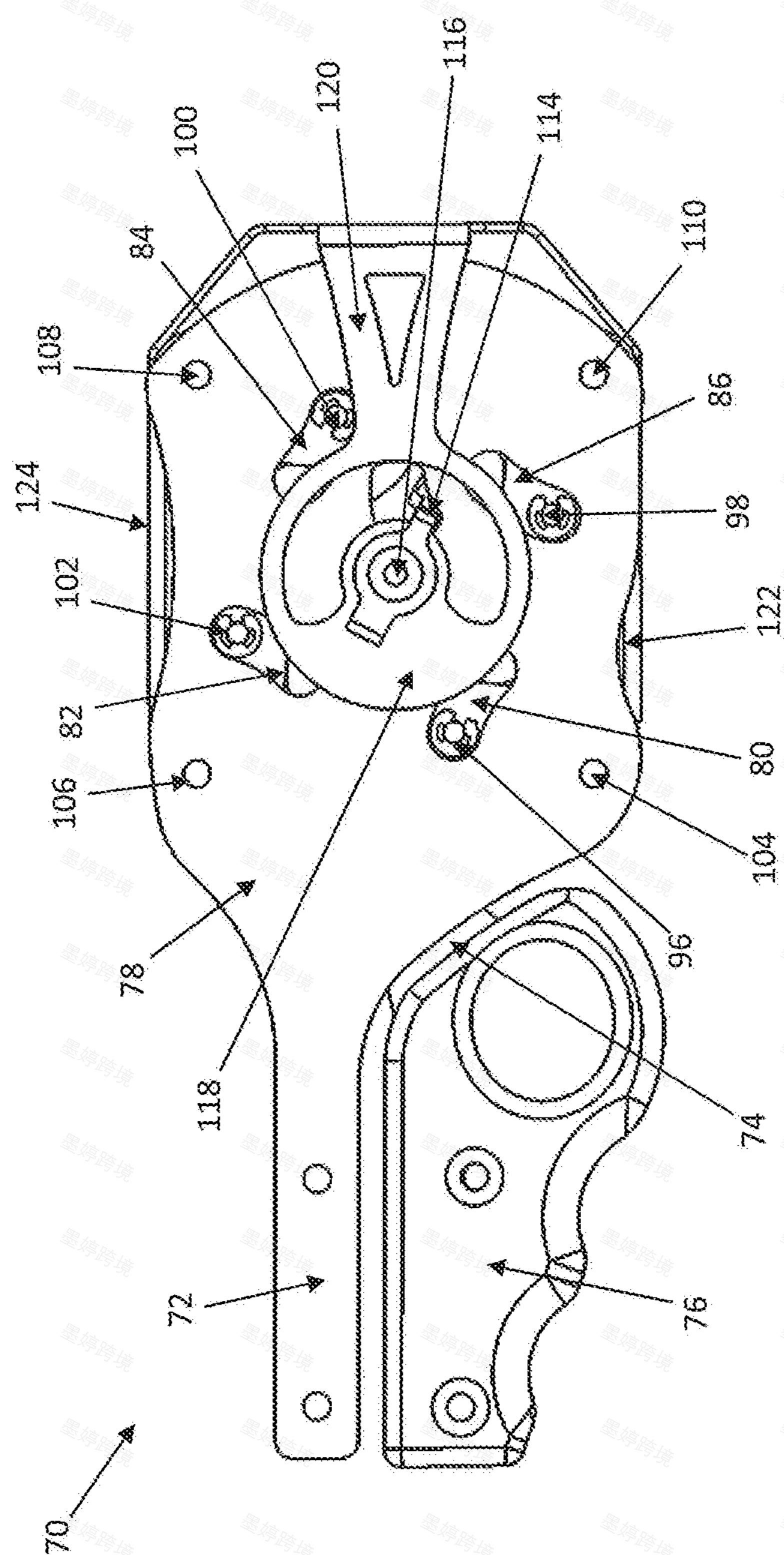


FIG. 9

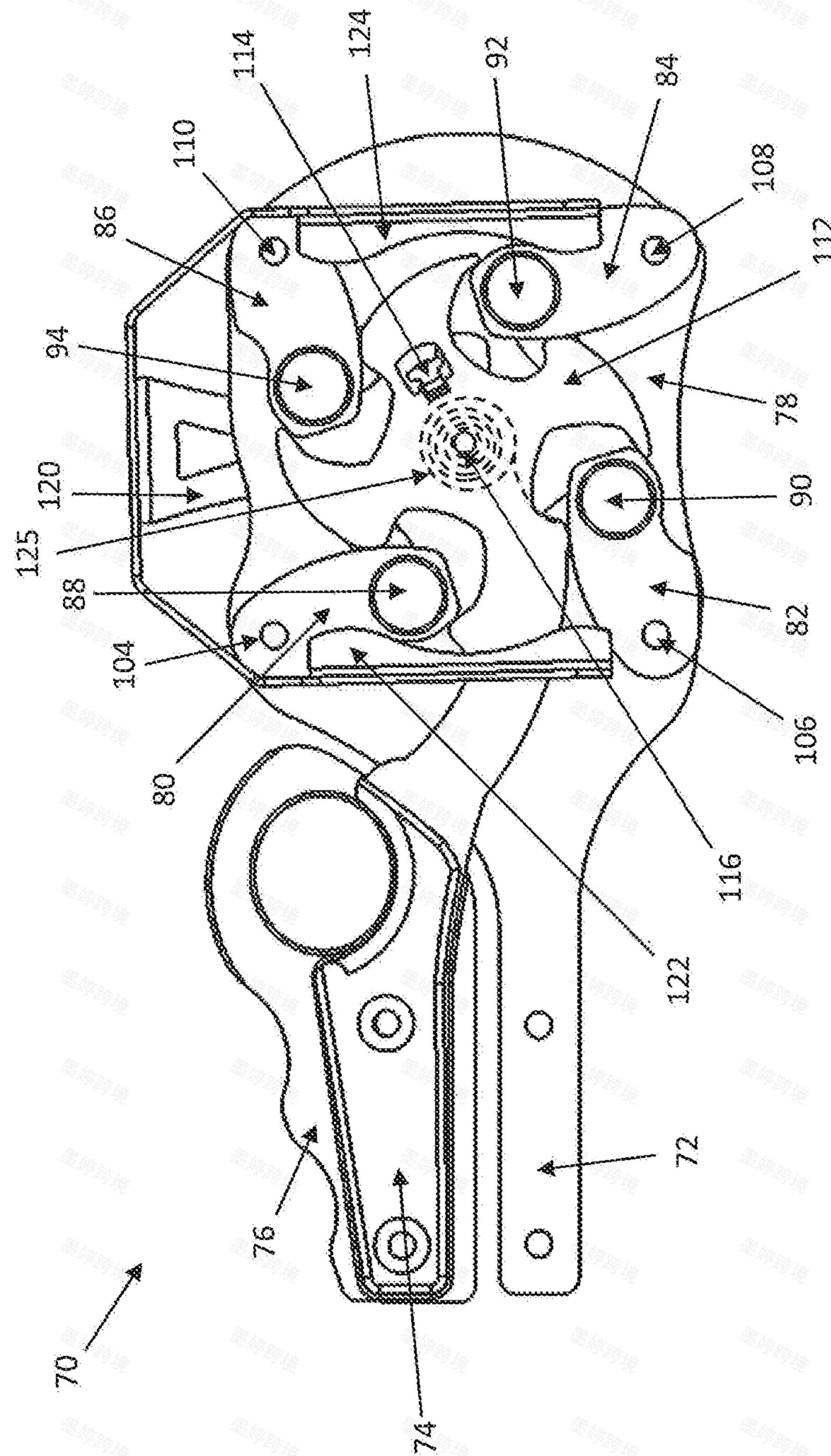
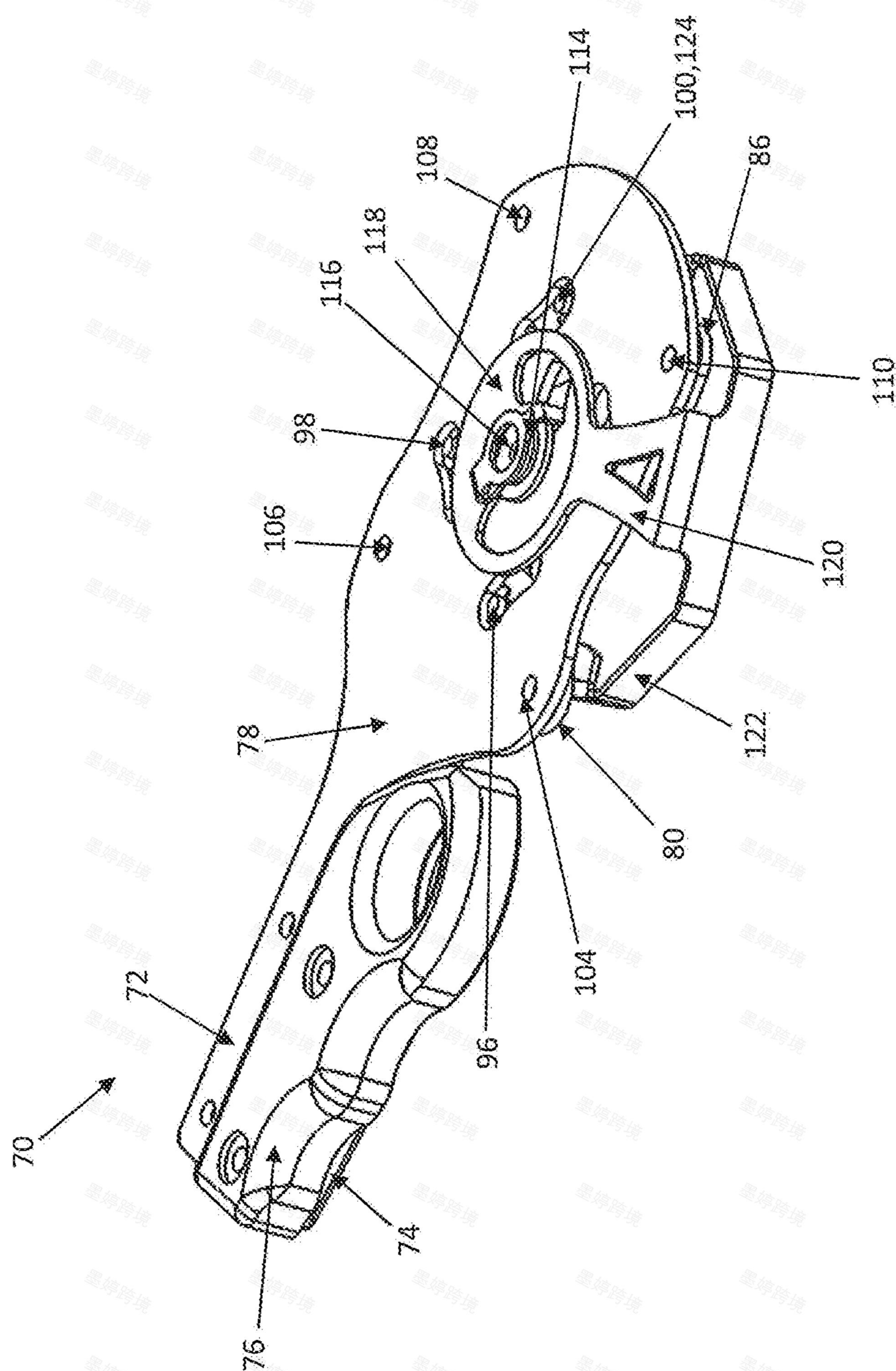


FIG. 10



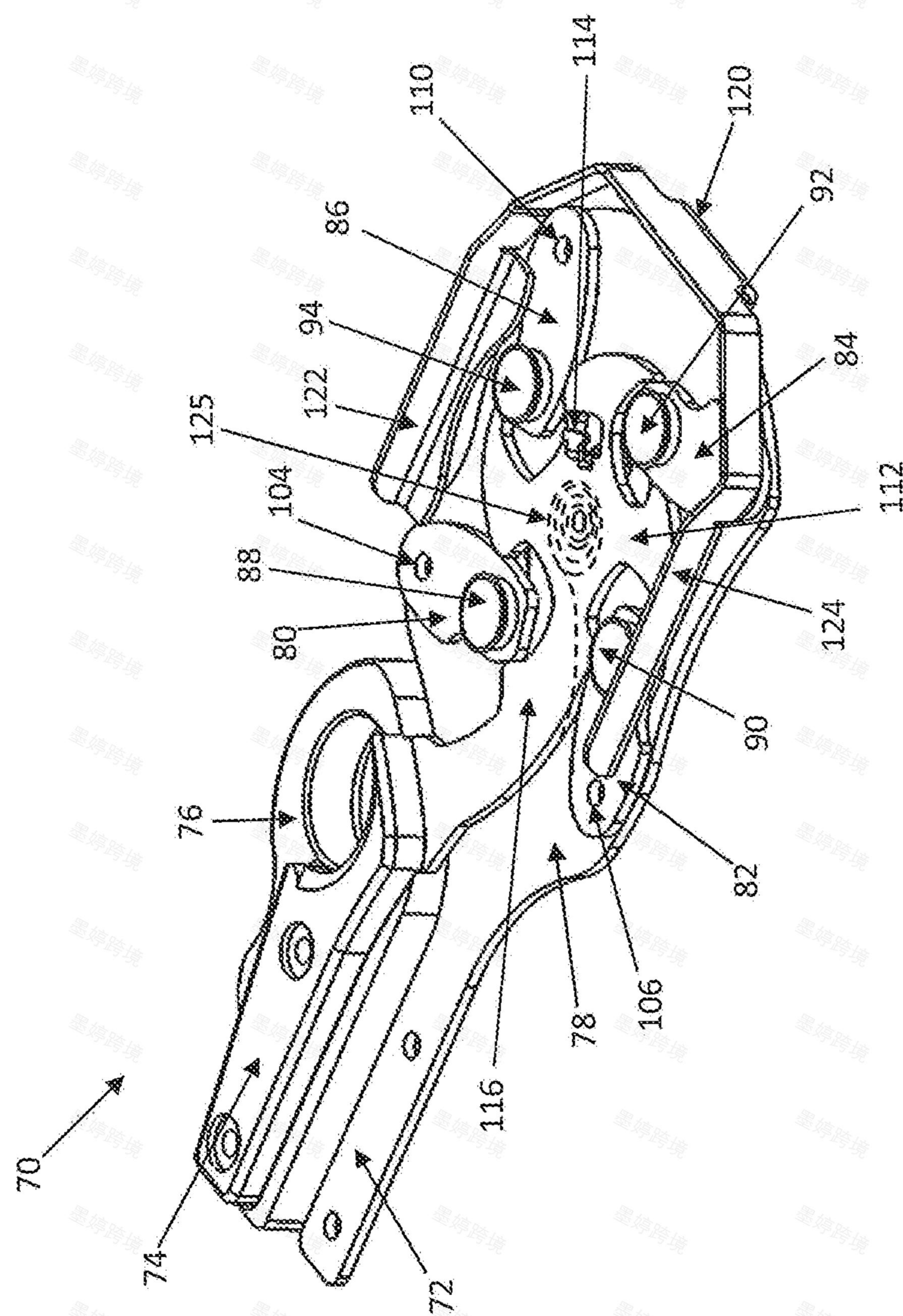


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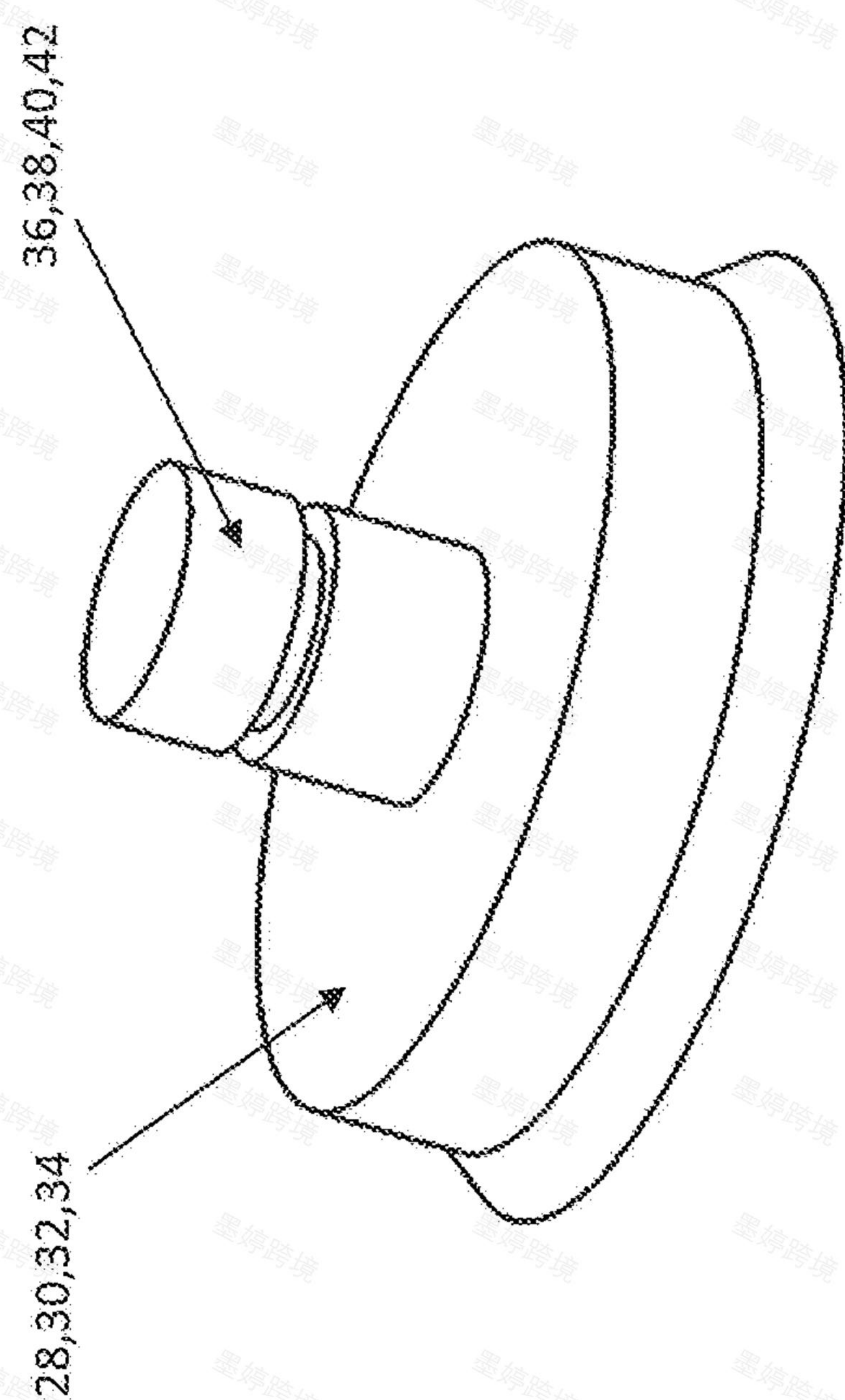


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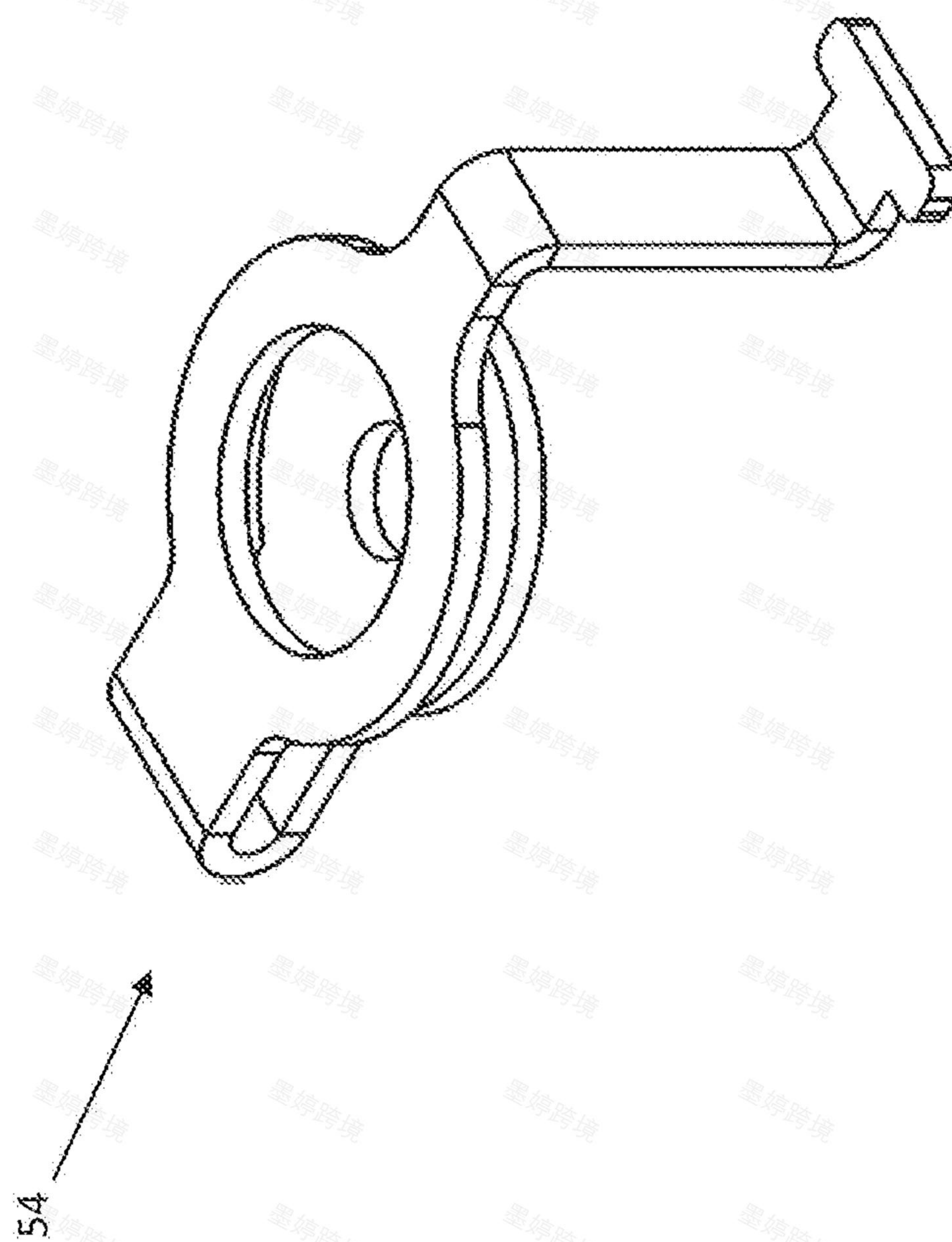


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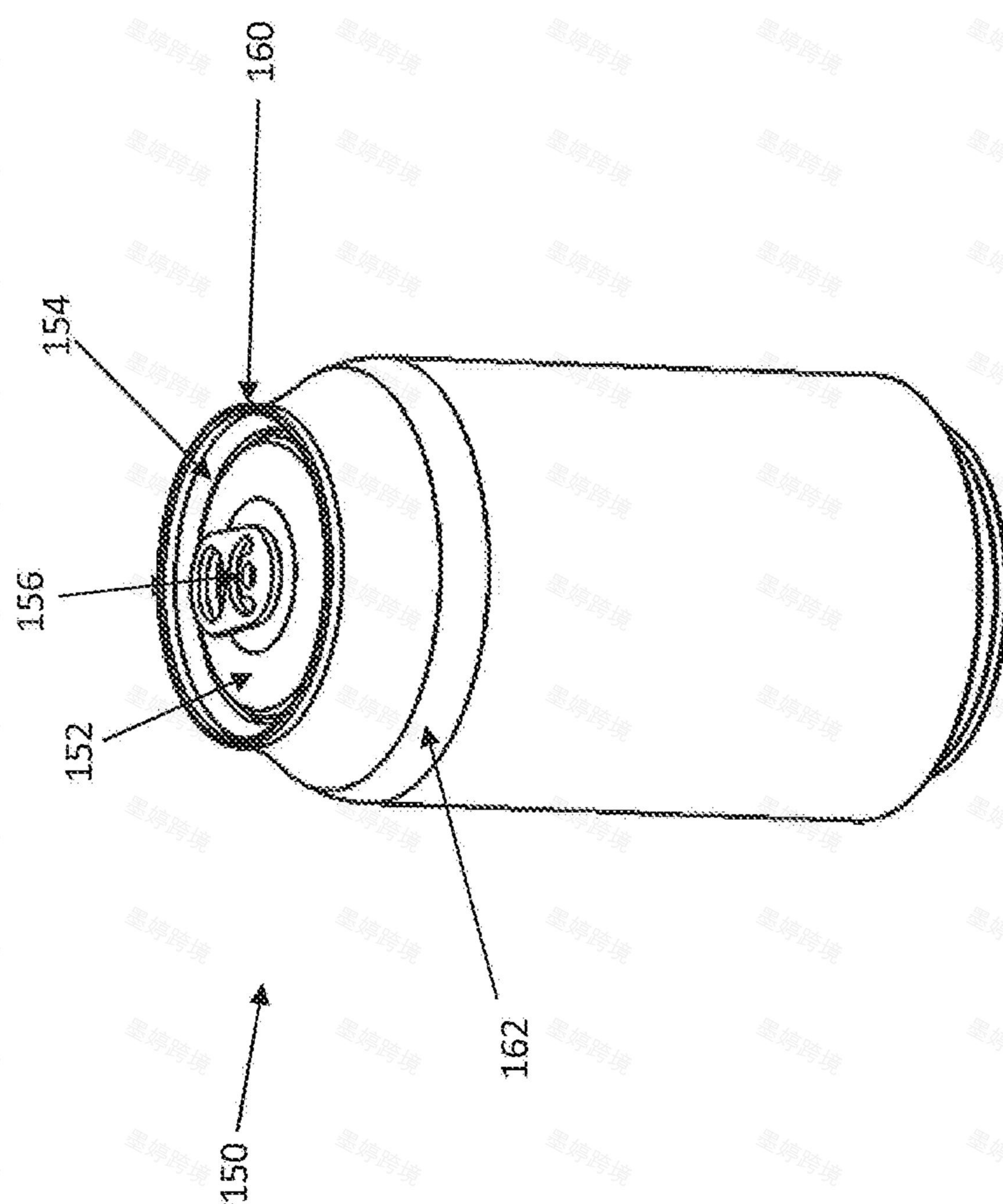


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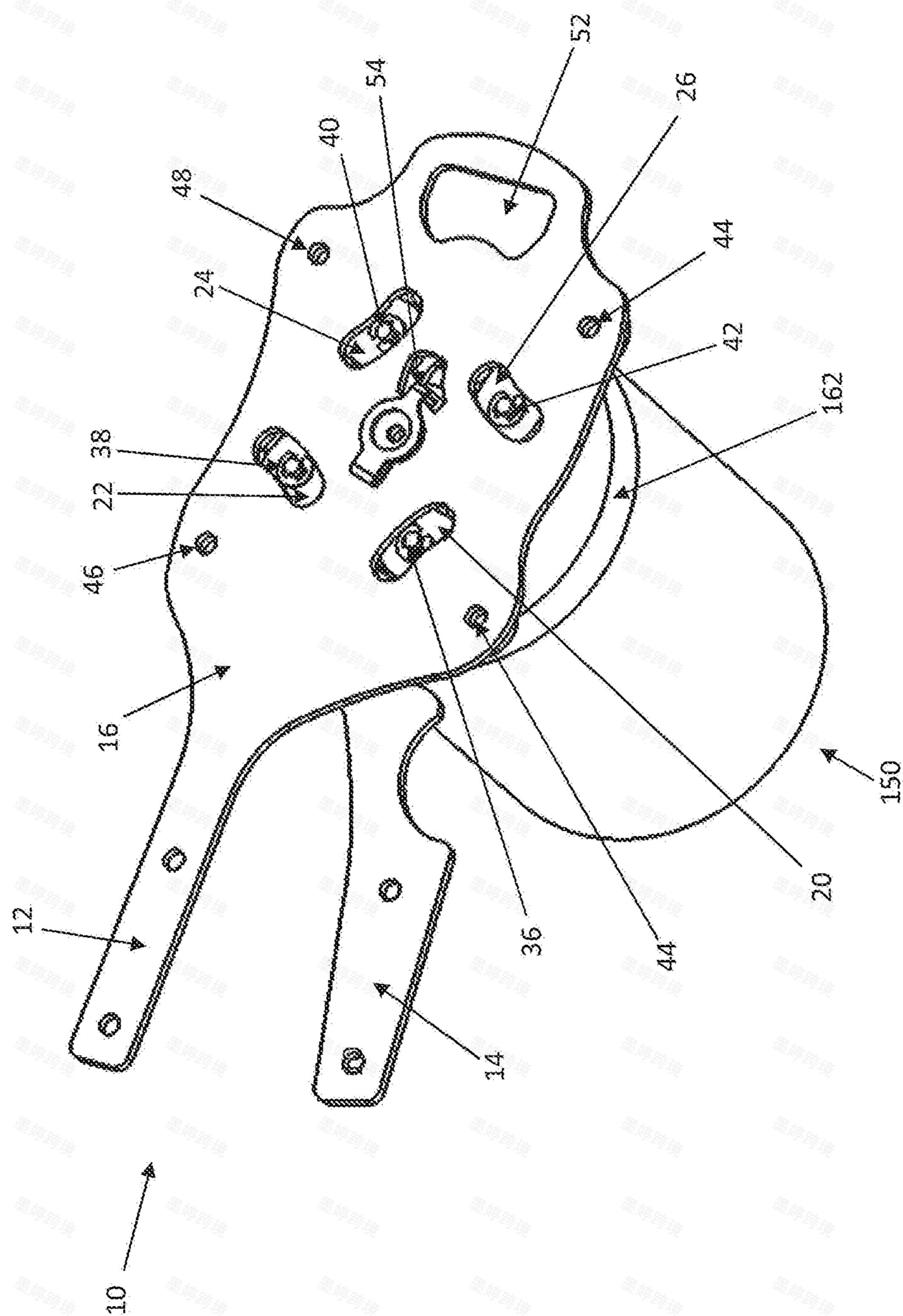


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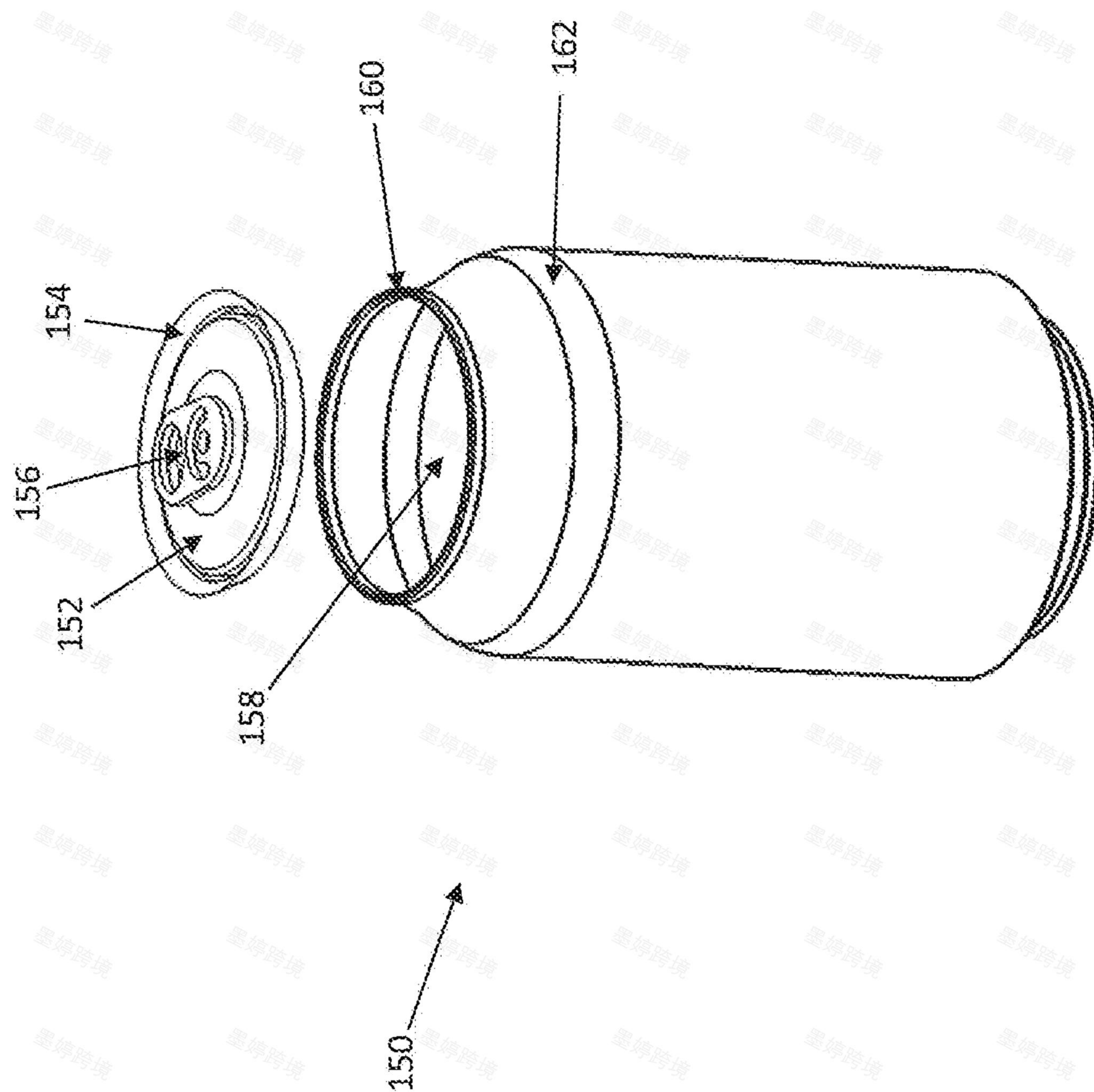


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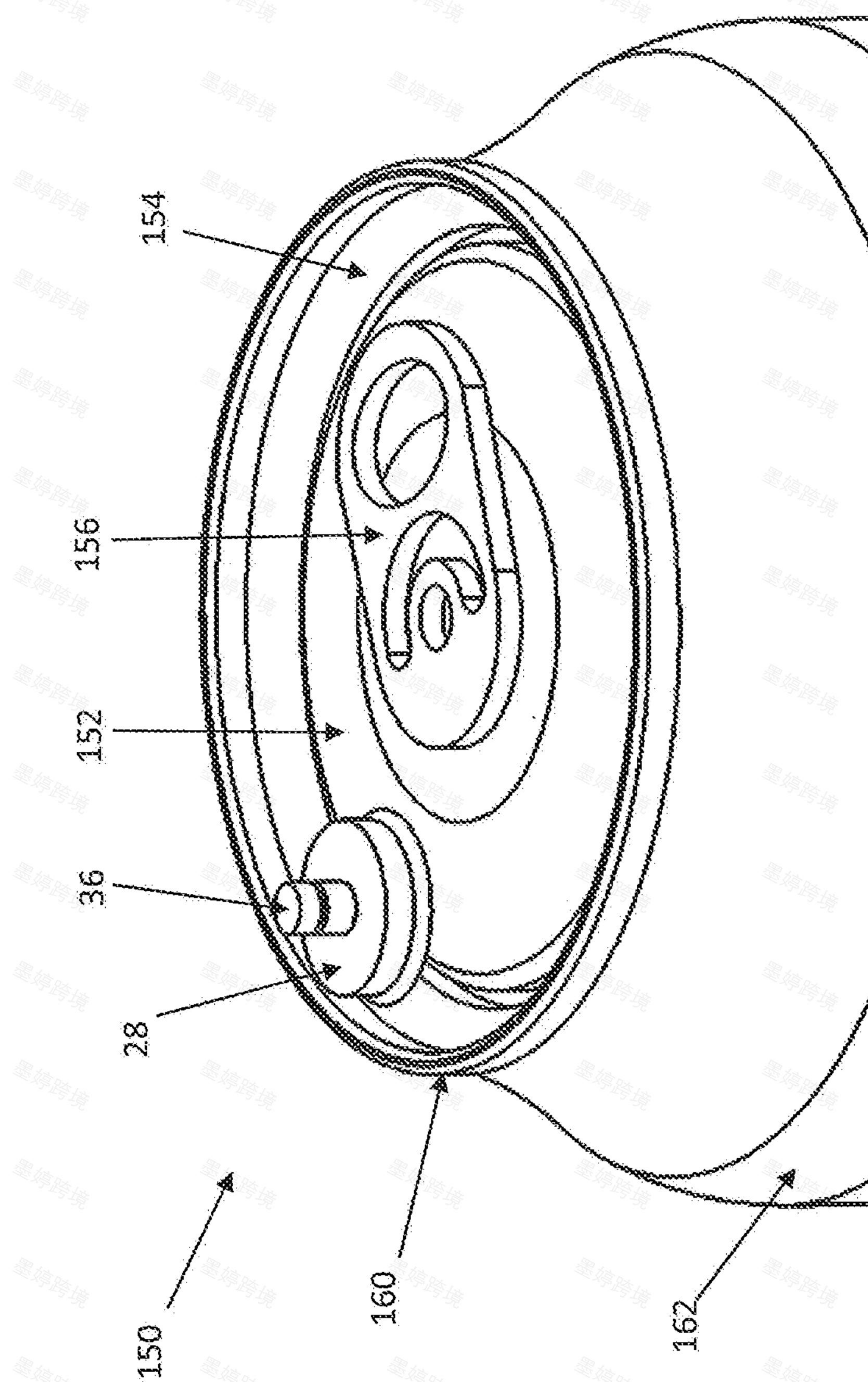


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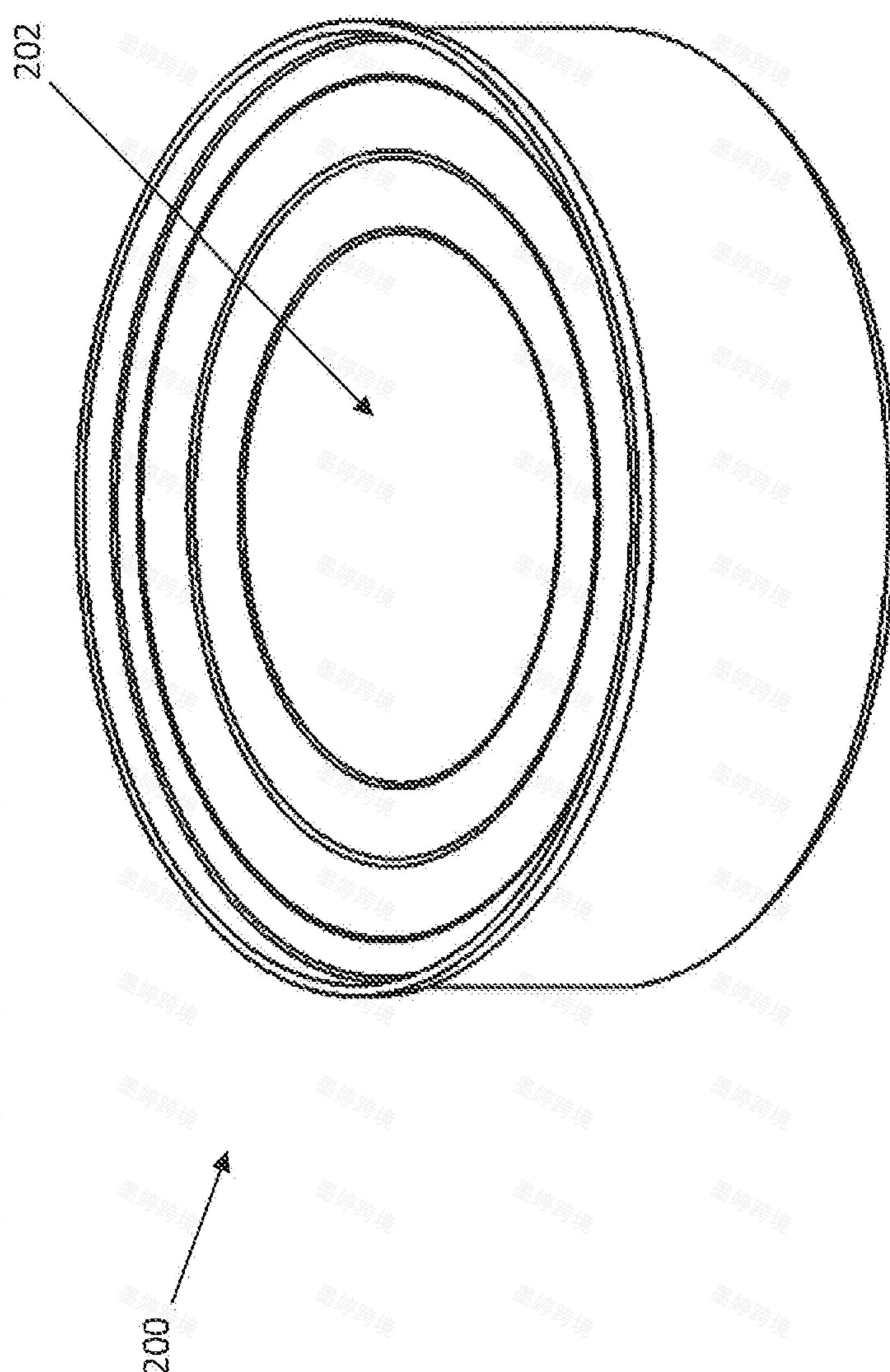


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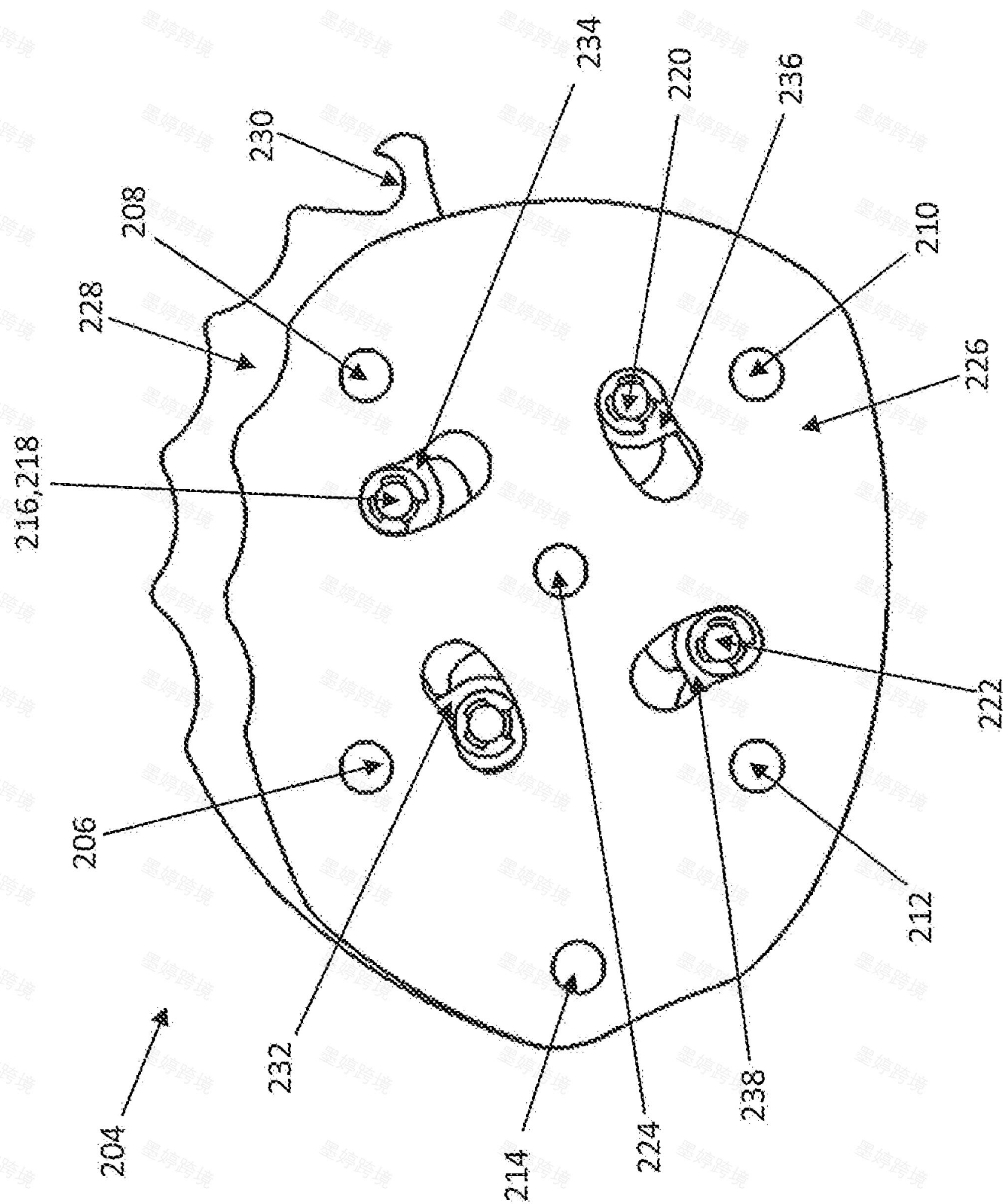


FIG. 20

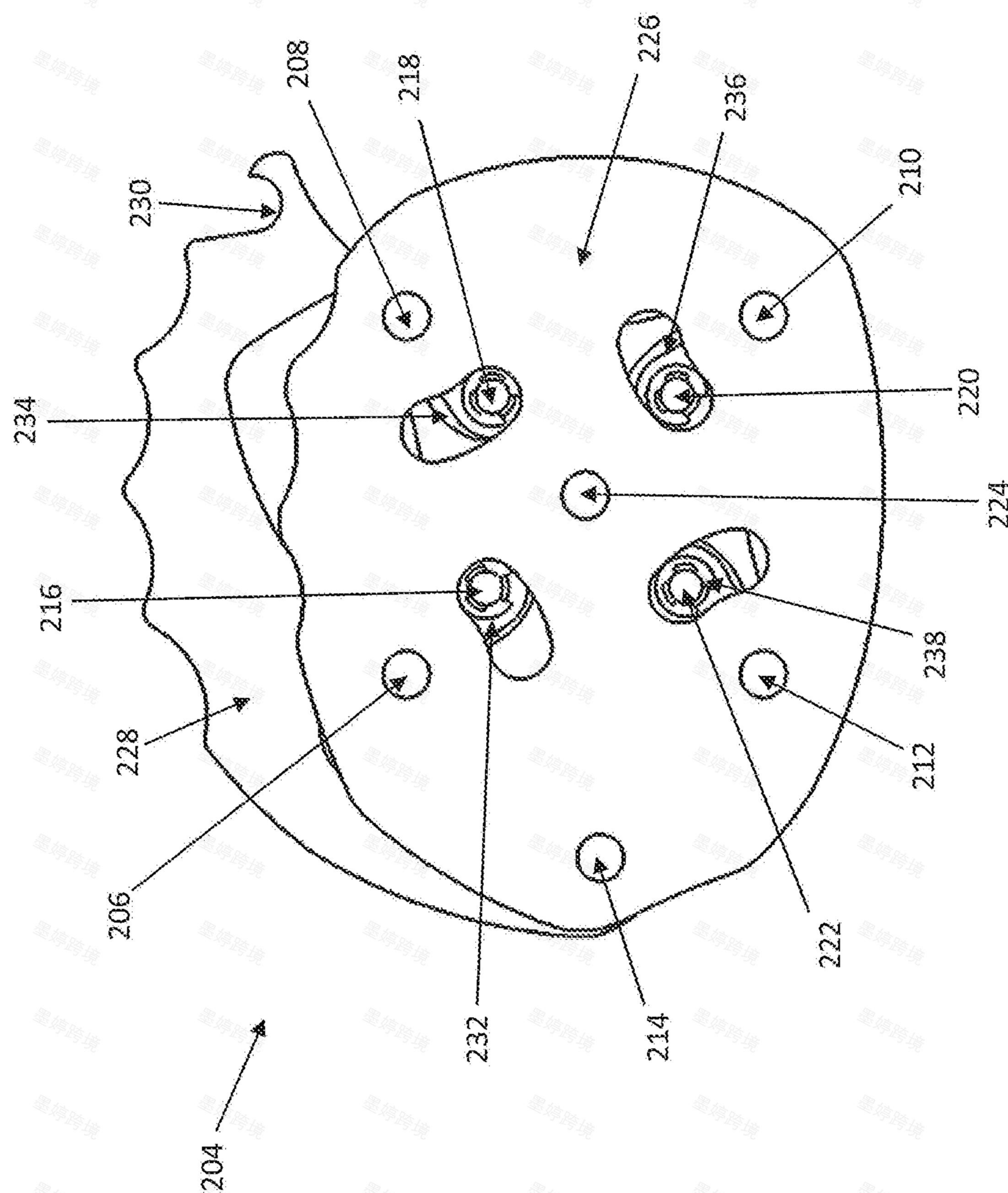


FIG. 21

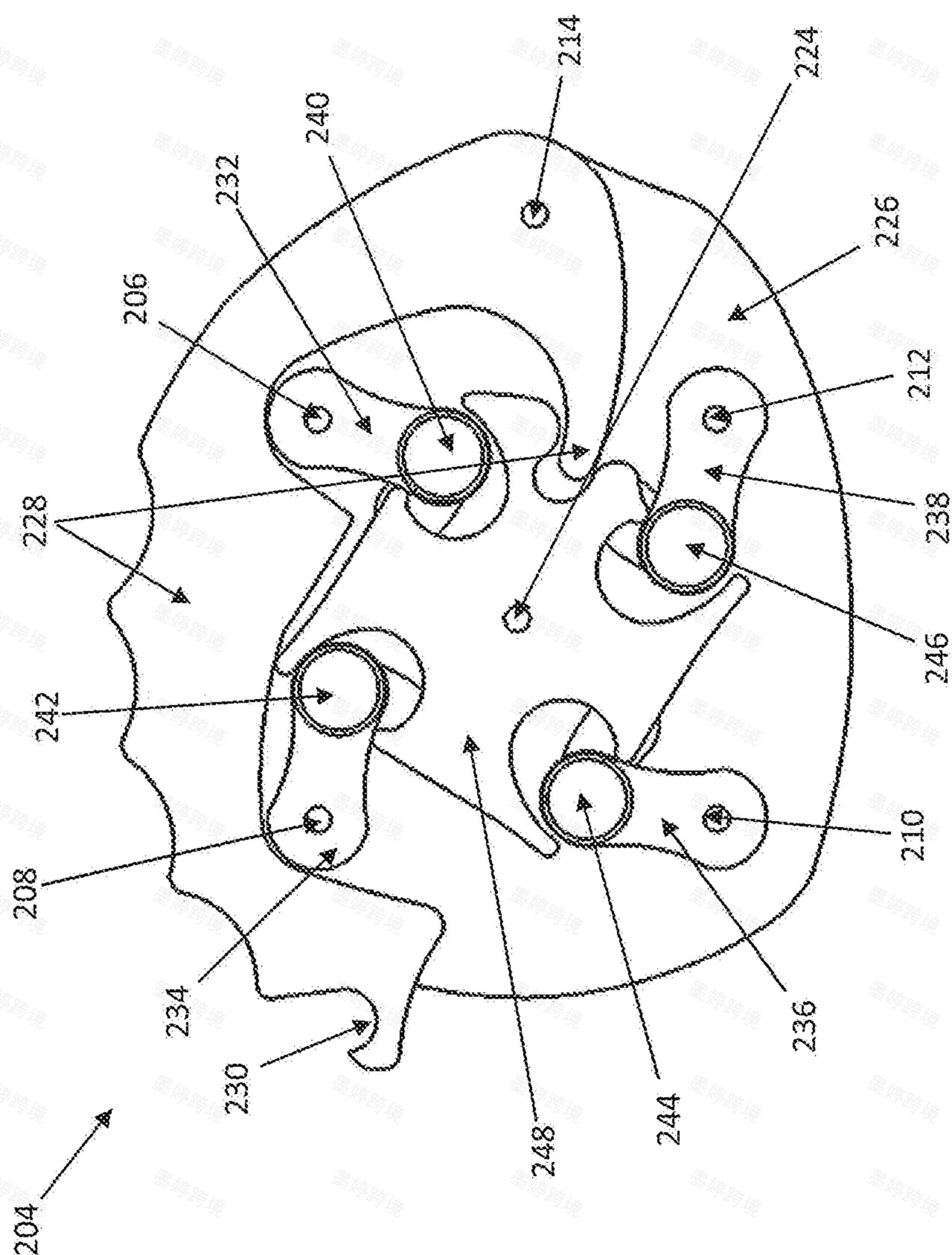


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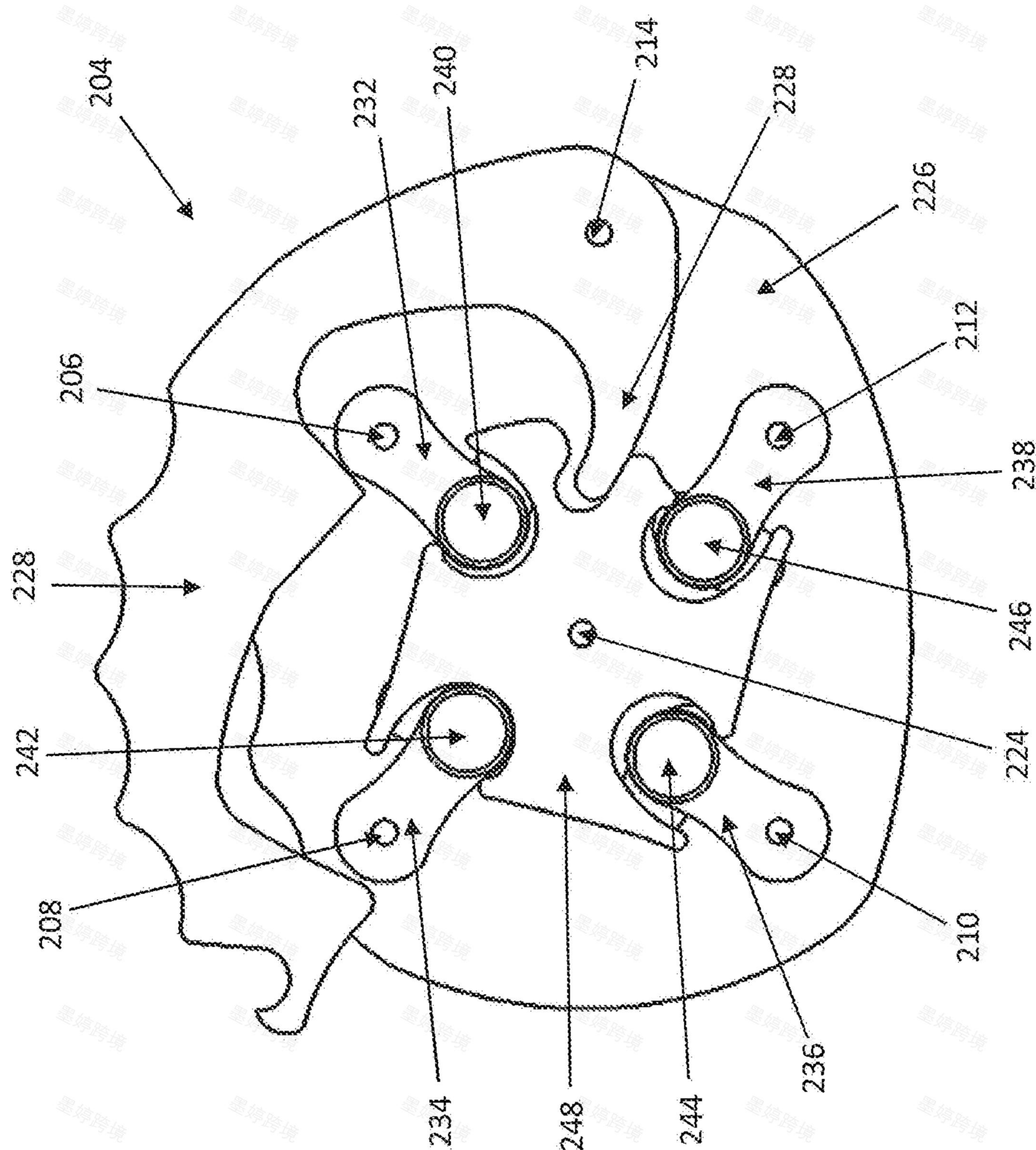


FIG. 23

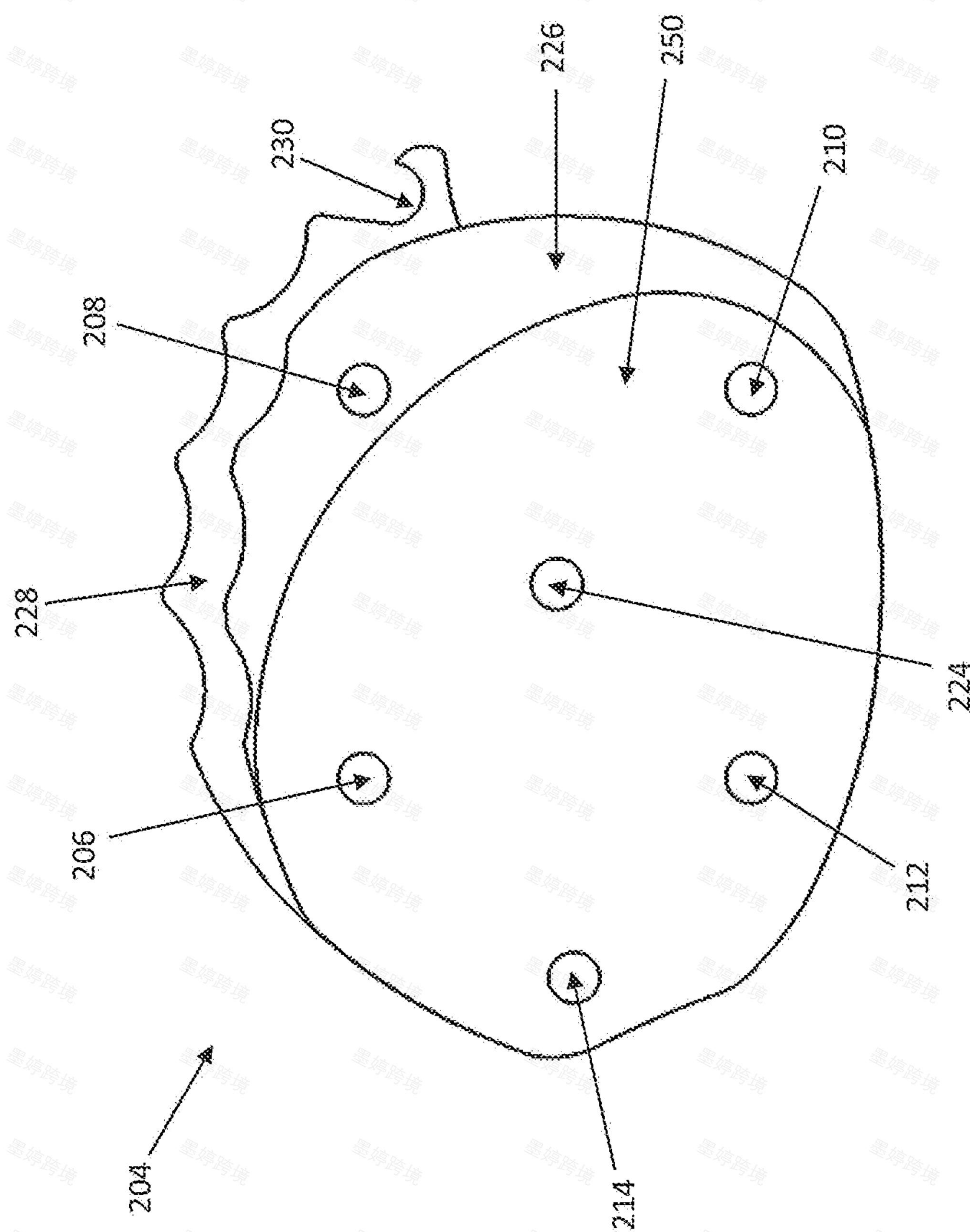


FIG. 24

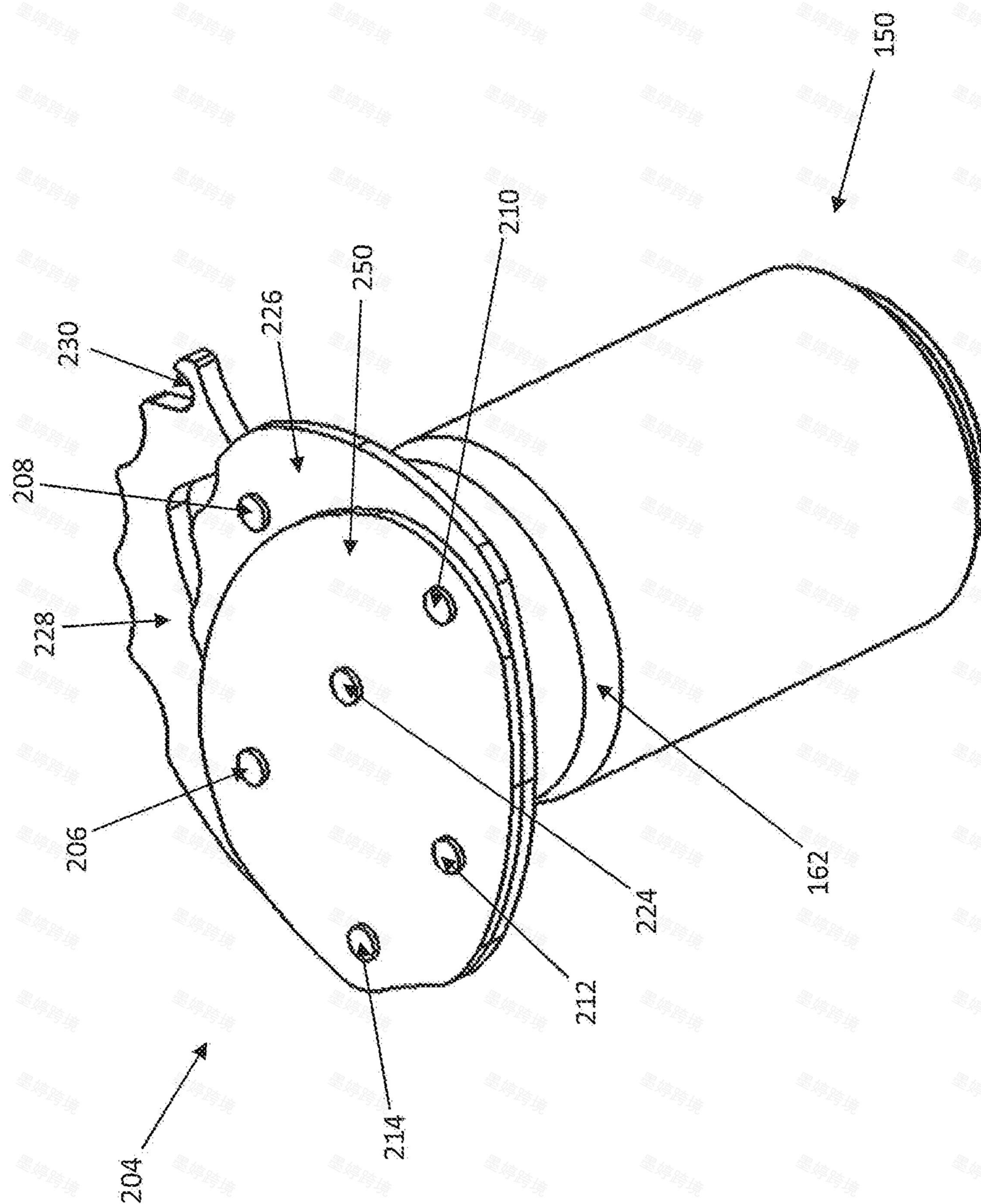


FIG. 25

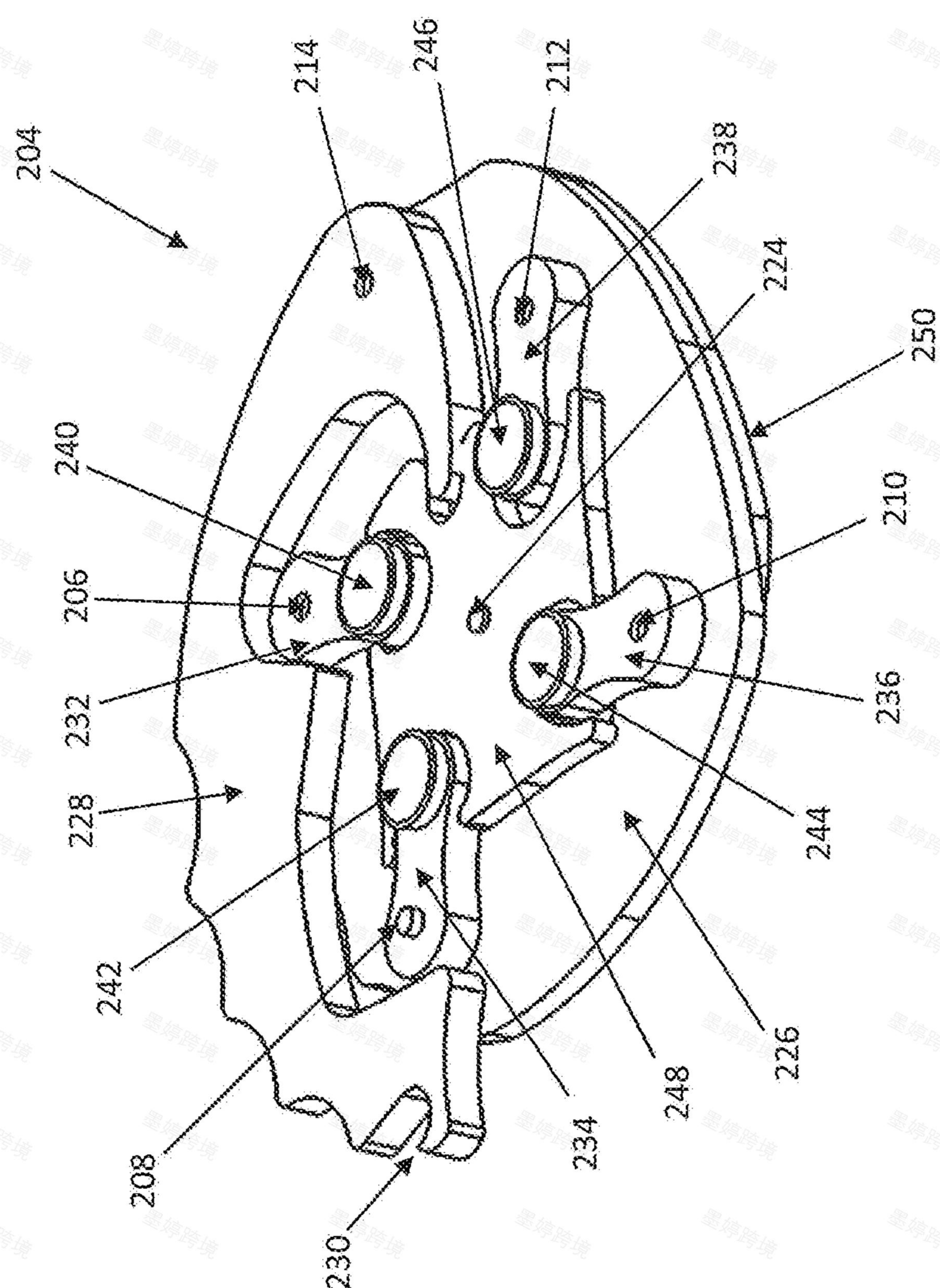


FIG. 26

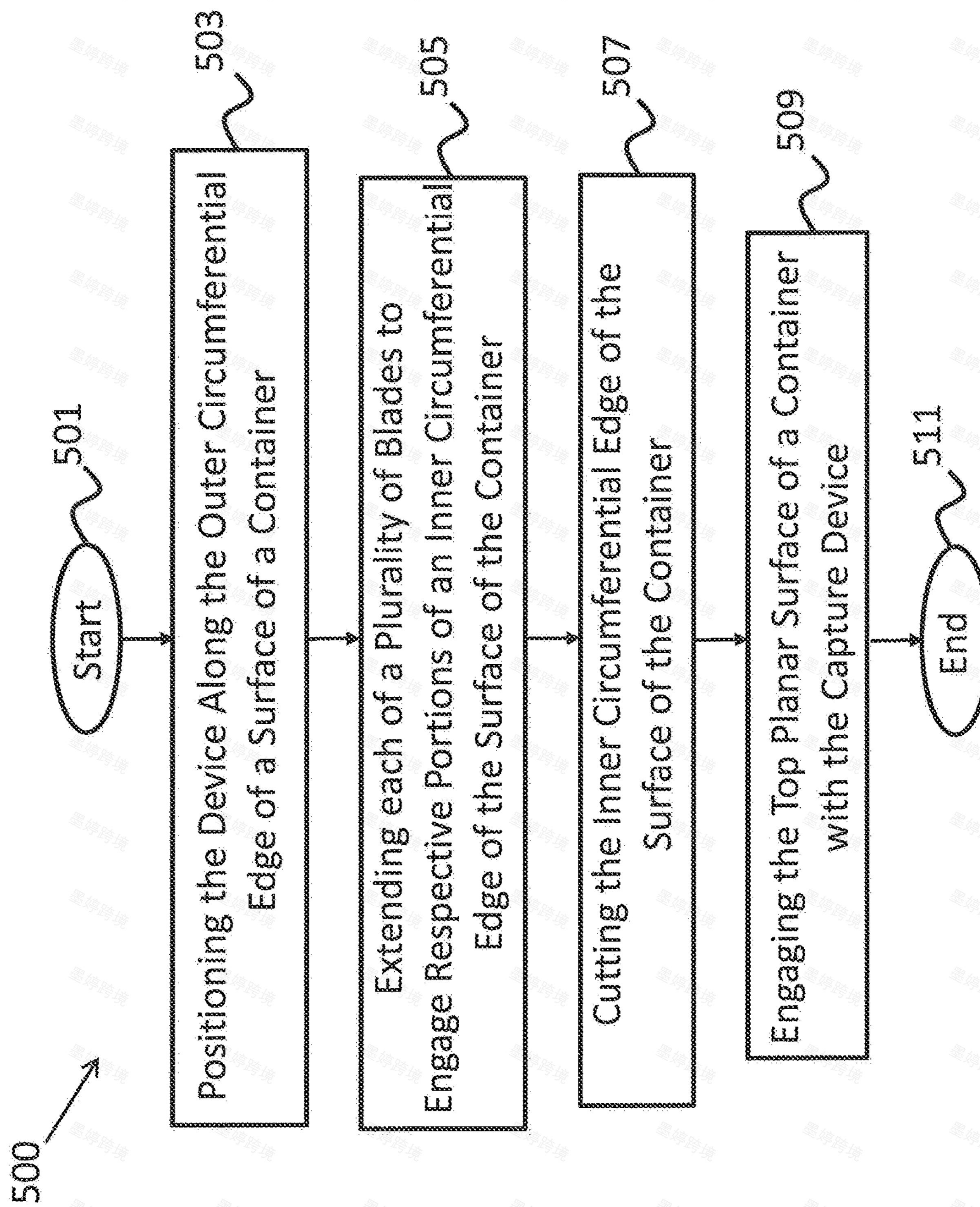


FIG. 27

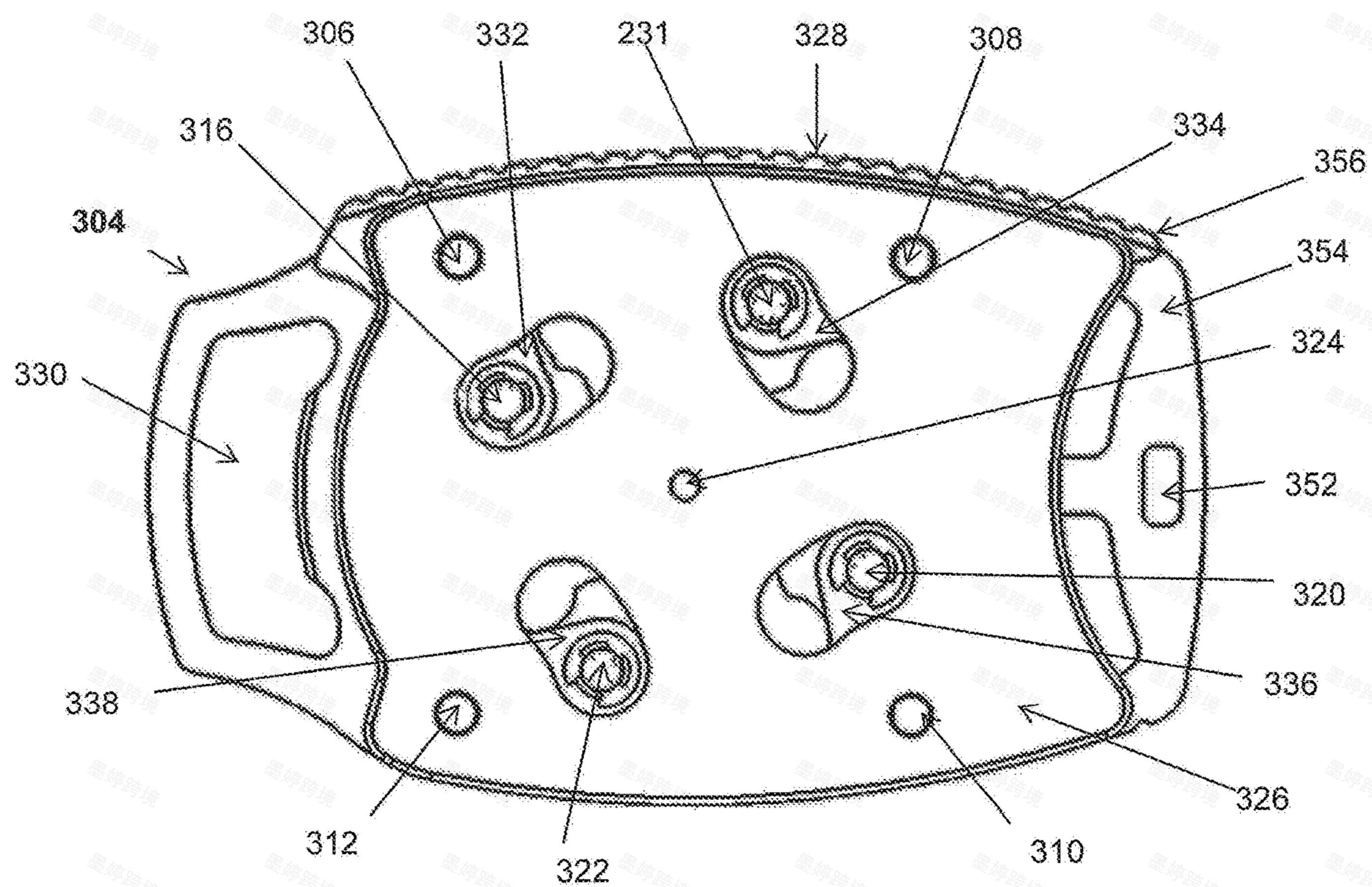


FIG. 28

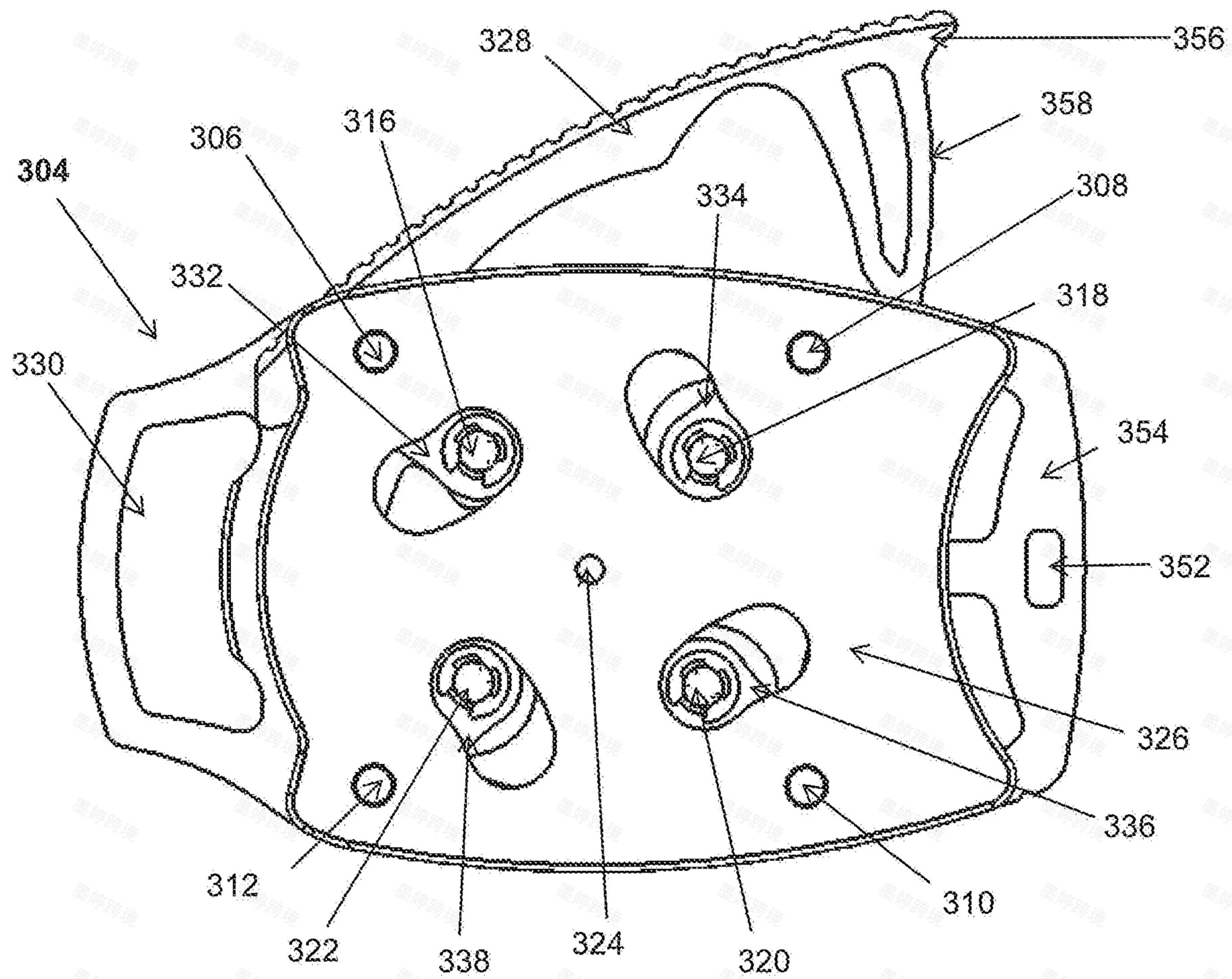


FIG. 29

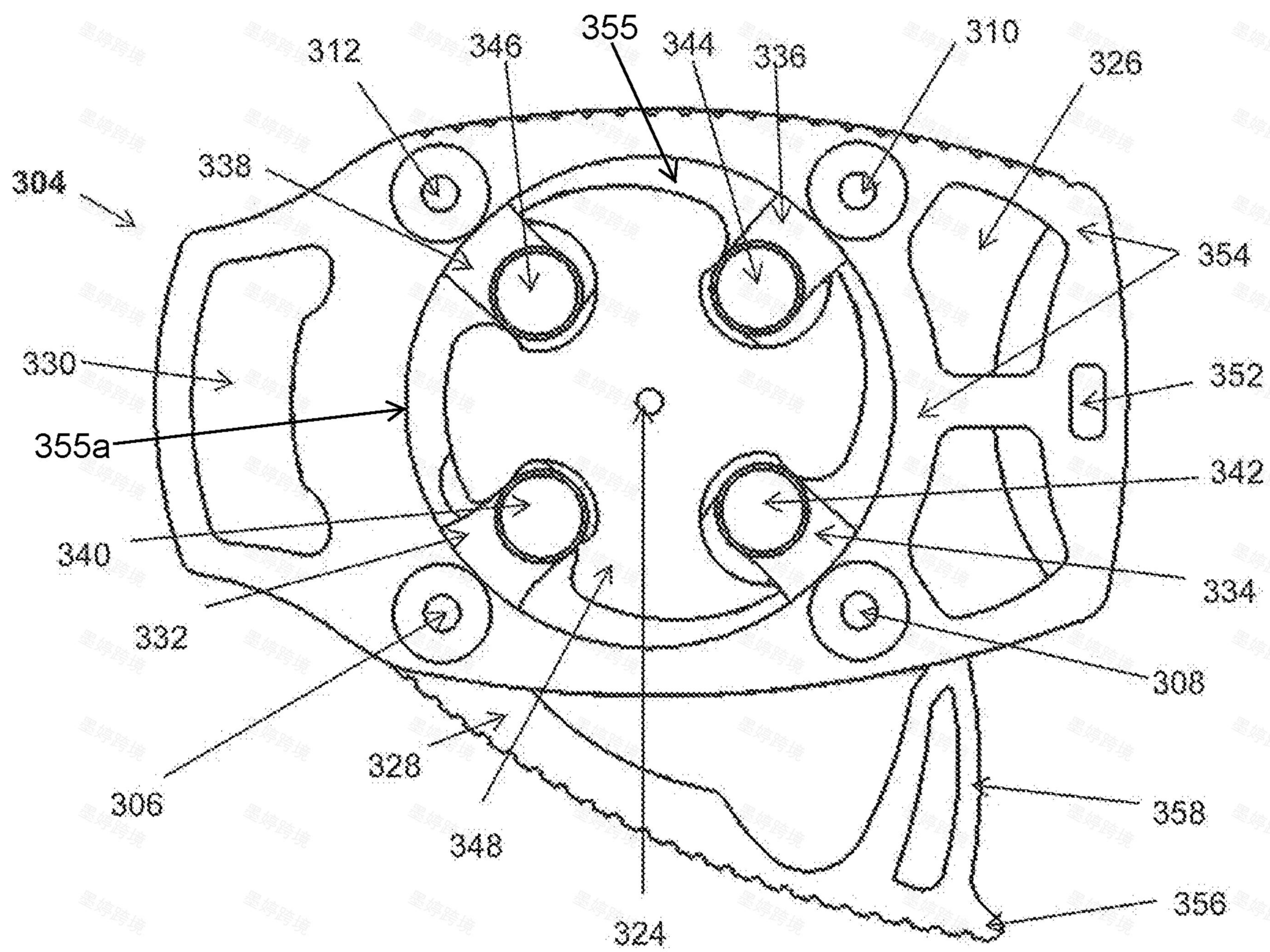


FIG. 30

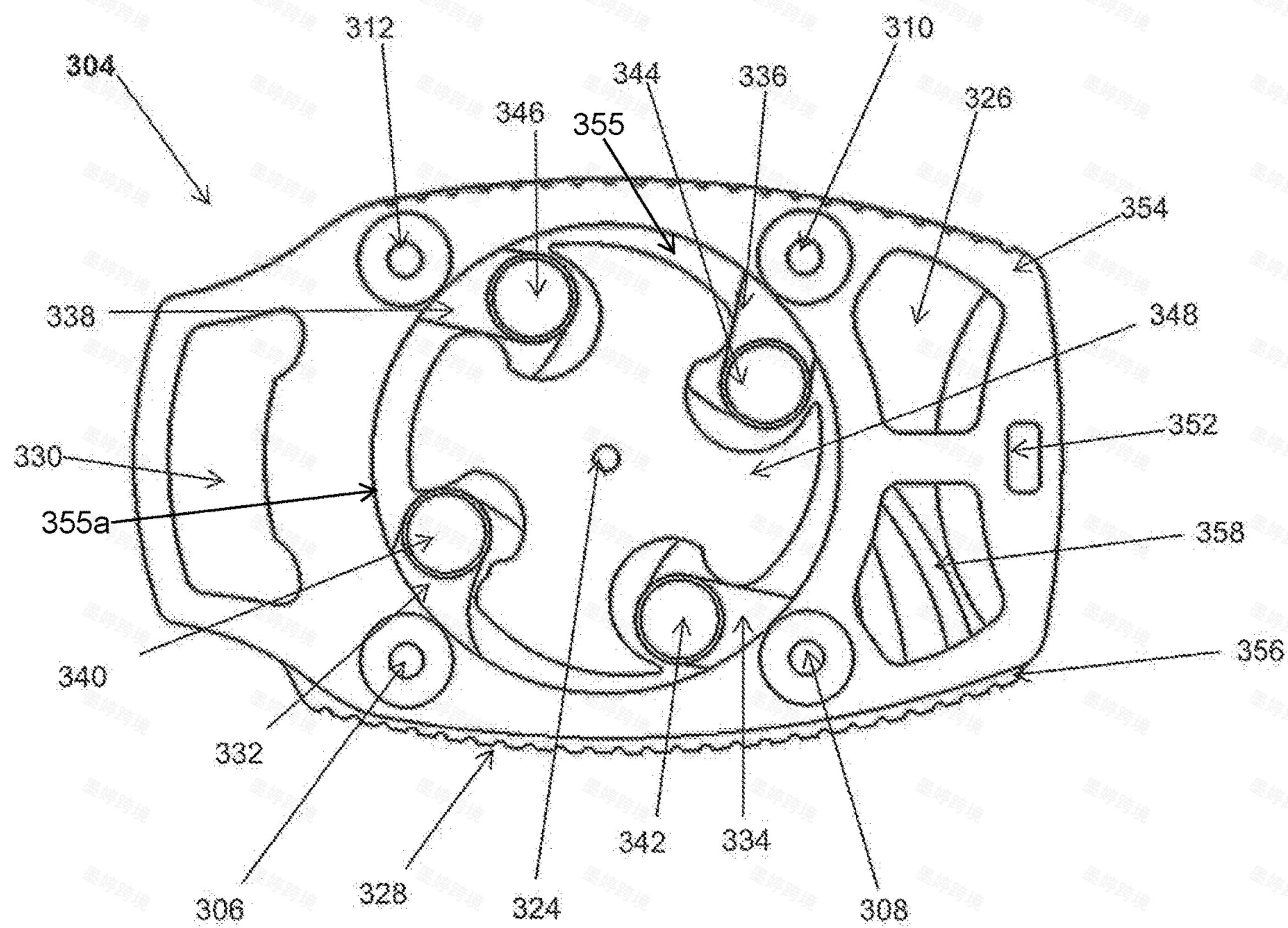


FIG. 31