



Office de la Propriété  
Intellectuelle  
du Canada

Un organisme  
d'Industrie Canada

Canadian  
Intellectual Property  
Office

An agency of  
Industry Canada

CA 2871132 A1 2013/10/31

(21) **2 871 132**

(12) **DEMANDE DE BREVET CANADIEN**  
**CANADIAN PATENT APPLICATION**

(13) **A1**

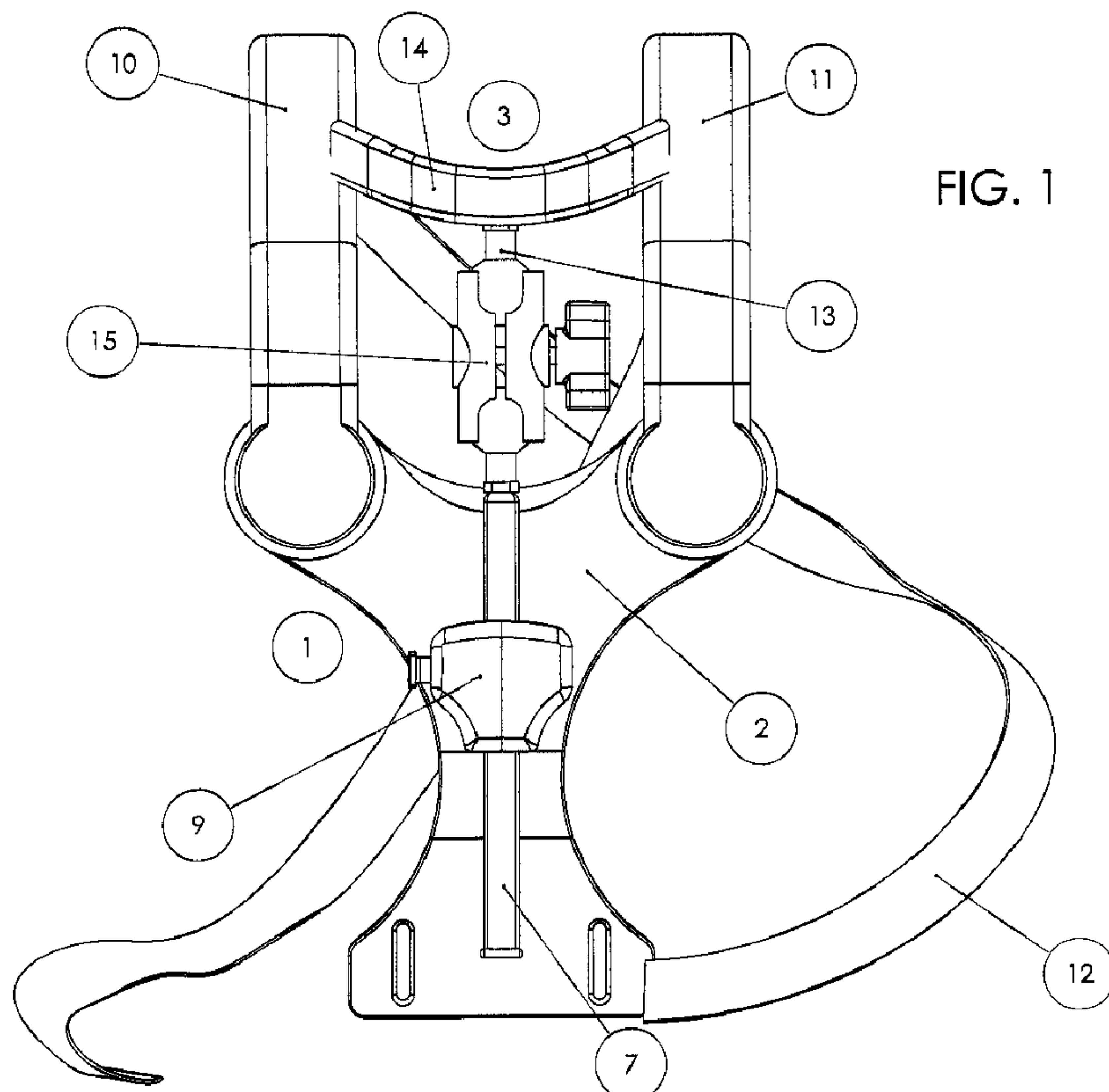
(86) **Date de dépôt PCT/PCT Filing Date:** 2013/04/25  
(87) **Date publication PCT/PCT Publication Date:** 2013/10/31  
(85) **Entrée phase nationale/National Entry:** 2014/10/21  
(86) **N° demande PCT/PCT Application No.:** US 2013/038246  
(87) **N° publication PCT/PCT Publication No.:** 2013/163447  
(30) **Priorité/Priority:** 2012/04/26 (US13/457,376)

(51) **Cl.Int./Int.Cl. A61F 5/02 (2006.01)**

(71) **Demandeurs/Applicants:**  
SCHIFFMAN, ERIC, US;  
SPEIDEL, THOMAS MICHAEL, US  
(72) **Inventeurs/Inventors:**  
SCHIFFMAN, ERIC, US;  
SPEIDEL, THOMAS MICHAEL, US  
(74) **Agent:** PERRY + CURRIER

(54) **Titre : APPAREIL ORTHOPEDIQUE**

(54) **Title: THE BRACE**



(57) **Abrégé/Abstract:**

The brace comprises: a chest plate; a chin support; a rod having a top surface, the rod adjustably attached to the chest plate; and an adjustable linkage connected to the top surface and to the chin support. The brace is used to immobilize a Patient's chin relative to The Patient's spinal column, or The Patient's chest, or both when the Patient's chin is placed upon the chin support.

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



## (10) International Publication Number

WO 2013/163447 A3

(43) International Publication Date  
31 October 2013 (31.10.2013)

(51) International Patent Classification:  
*A61F 5/02* (2006.01)

(21) International Application Number:  
PCT/US2013/038246

(22) International Filing Date:  
25 April 2013 (25.04.2013)

(25) Filing Language:  
English

(26) Publication Language:  
English

(30) Priority Data:  
13/457,376 26 April 2012 (26.04.2012) US

## (72) Inventors; and

(71) Applicants : SCHIFFMAN, Eric [US/US]; 1596 Northrop St., St. Paul, MN 55108 (US). SPEIDEL, Thomas, Michael [US/US]; 3168 Dean Court, Minneapolis, MN 55416 (US).

(74) Agent: BELFAY, Roger; 829 Tuscarora Avenue, St. Paul, MN 55102 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

— with international search report (Art. 21(3))

[Continued on next page]

## (54) Title: THE BRACE

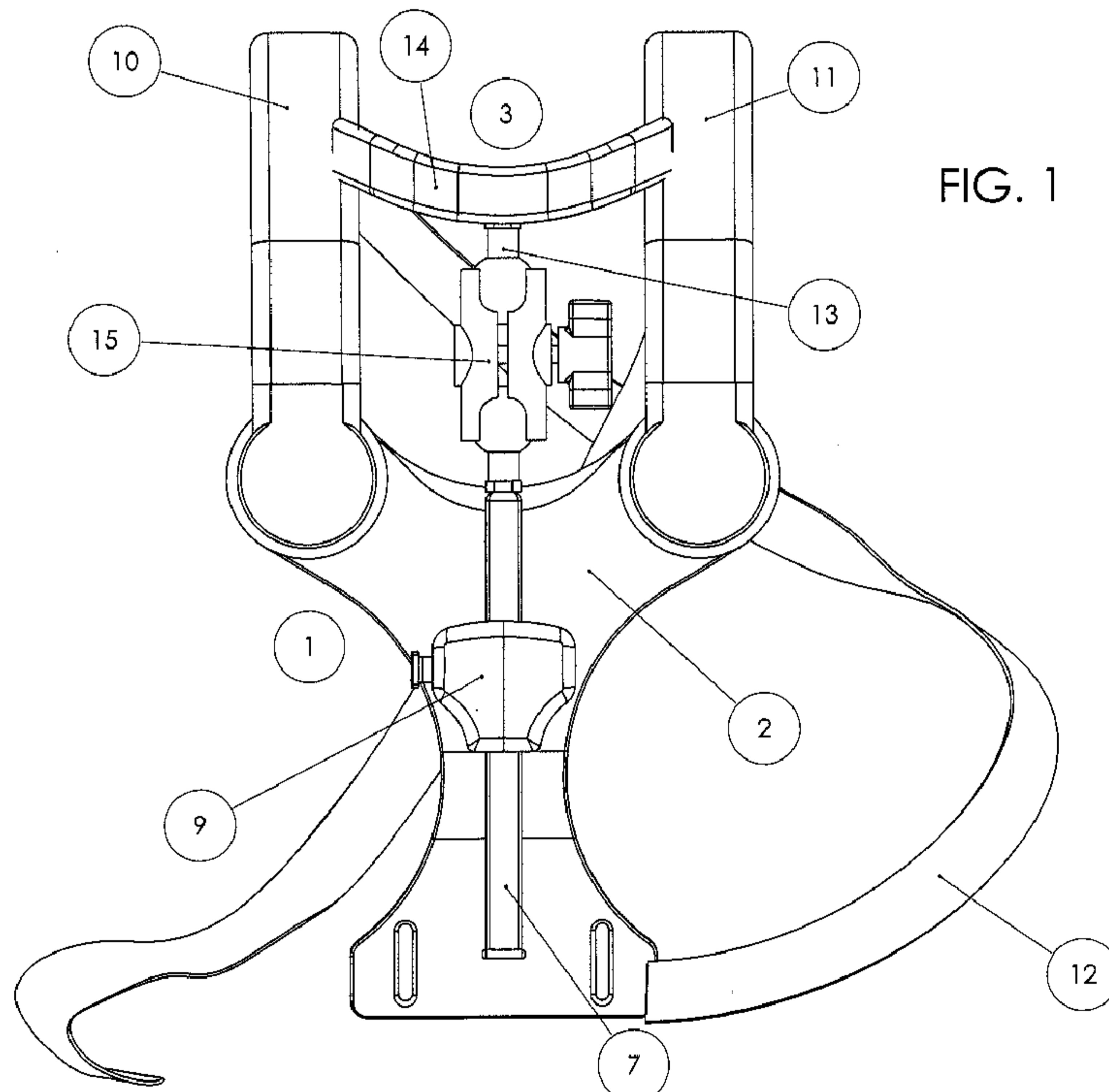


FIG. 1

(57) Abstract: The brace comprises: a chest plate; a chin support; a rod having a top surface, the rod adjustably attached to the chest plate; and an adjustable linkage connected to the top surface and to the chin support. The brace is used to immobilize a Patient's chin relative to The Patient's spinal column, or The Patient's chest, or both when the Patient's chin is placed upon the chin support.

**WO 2013/163447 A3**



---

**(88) Date of publication of the international search report:**

19 December 2013

**Description****The Brace****BRIEF SUMMARY OF THE INVENTION**

The brace comprises: a chest plate; a chin support for supporting a Patient's chin in a fixed position relative to said Patient's chest; a rod having a top surface, said rod adjustably attached to said chest plate; and an adjustable linkage connected to said top surface and to said chin support. The brace is used to immobilize a Patient's chin relative to The Patient's spinal column, or The Patient's chest, or both when said Patient's chin is placed upon the chin support.

**BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS**

Figure 1 is a front view of the brace.

Figure 2 is a side view of the brace.

Figure 3 is a top of the brace.

Figure 4 is an isometric view of the brace.

Figure 5 is an exploded view of the brace.

Figure 6 is an exploded view of the chin support assembly.

Figure 7 is a front view of the chin support assembly.

Figure 8 is a cross-section view of the chin support assembly.

Figure 9 is a front view of the brace.

Figure 10 is a cross-section view of the brace.

Figure 11 is a detail view of the brace.

Figure 12 is a front view of the brace.

Figure 13 is a detail view of the brace.

Figure 14 is a front view of the brace on a patient.

Figure 15 is a side view of the brace on a patient.

**DETAILED DESCRIPTION OF THE INVENTION**

The brace 1 comprises: a chest plate 2; a chin support 3 for supporting a Patient's chin 4 in a fixed position relative to said Patient's chest 6; a rod 7 having a top surface 8, said rod 7 adjustably attached to said chest plate 2; and an adjustable linkage 9 connected to said top surface 8 and to said chin support 3. The brace 1 is used to immobilize a Patient's chin 4 relative to The Patient's spinal column 5, or The

**Description**

Patient's chest 6, or both when said Patient's chin 4 is placed upon the chin support 3.

The chest plate 2 is a base formed to fit comfortably against The Patient's chest 6 and is formed of any plastic, metal, or other material having sufficient strength to support the chin support 3 when used to immobilize said Patient's chin 4. The chest plate 2 is also provided with a left shoulder brace 10 and a right shoulder brace 11. Each shoulder brace is provided with one or more adjustable straps 12 attached to the bottom portion of the chest plate 2. The shoulder braces and straps secure the chest plate 2 to the Patient's chest 6. It is appreciated that additional braces and straps are contemplated as within the present invention.

The chin support 3 is a metal or plastic frame 17 which includes a post 13 attached to an adjustable linkage 9 and a pad 14. In another embodiment the adjustable linkage 9 includes a post 13 attached to the chin support 3. In both embodiments the post 13 may be threaded to match a threaded hole to achieve the desired connection. Alternatively, the post may be attached to the chin support 3 or post 13 by welding or by a suitable adhesive. When in use the pad 14 is placed in contact with the Patient's chin 4.

The rod 7 has a top surface 8 attached to the adjustable linkage 9 and is slideably attached, and may be rotatably attached, to the chest plate 2 to permit adjustment of the position of the chin support 3 relative to the Patient's chest 6. The rod 7 is of any desired cross section but a circular cross section facilitates rotational attachment to the chest plate 2.

The adjustable linkage 9 connects the chin support 3 to the top surface 8 of the rod 7. The adjustable linkage 9 permits adjustment of the chin support 3 relative to the chest plate 2 and the ability to lock the chin support 3 in a selected position relative to the rod 7. The dual ball joint 15 shown in figure XX is one such adjustable linkage 9.

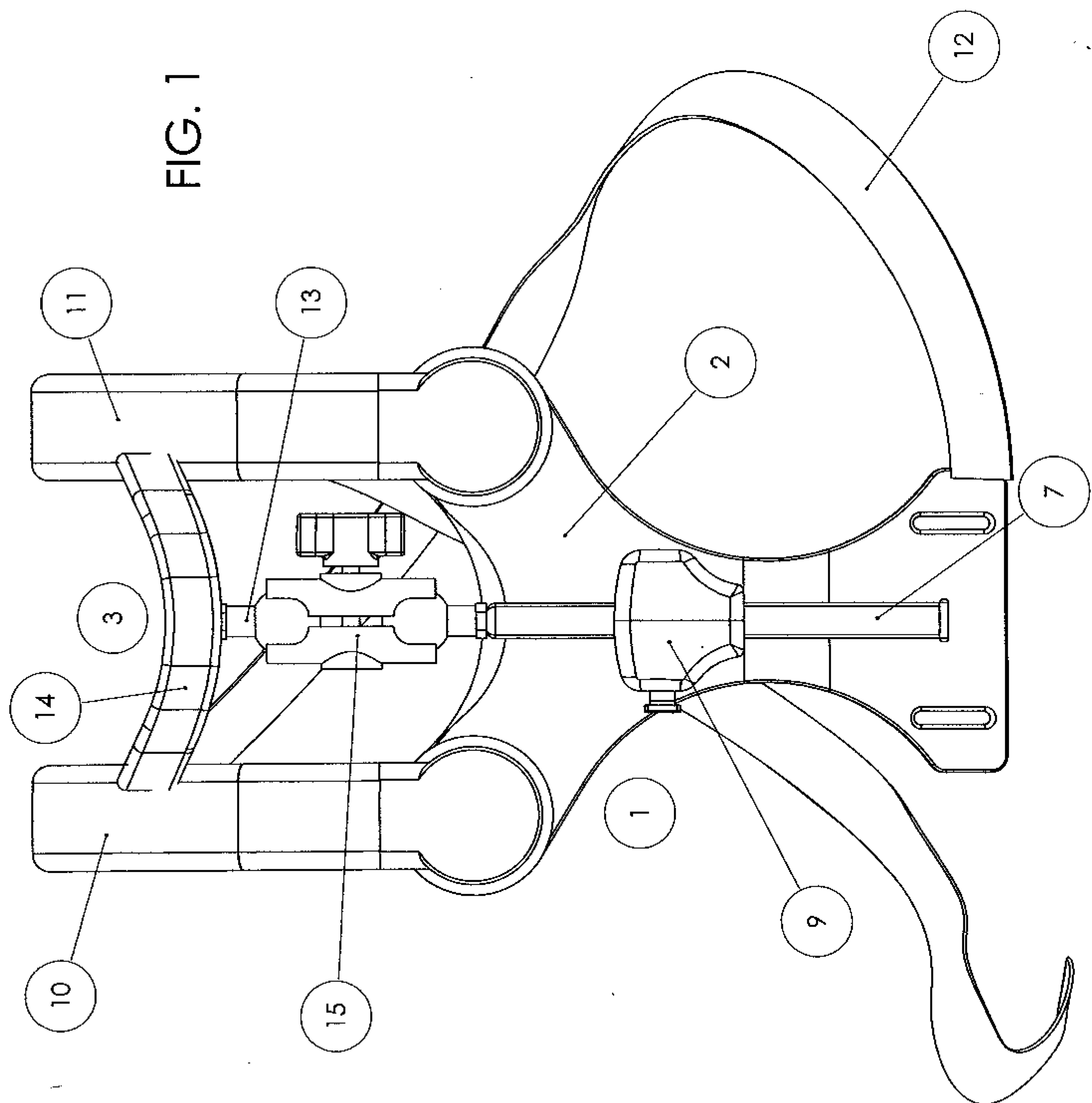
In use the chest plate 2 is fastened by means of the left shoulder brace 10, right shoulder brace 11, and adjustable straps 12 to The Patient's chest and the rod 7 is adjusted to place the chin support 3 at a selected height relative to the Patient's chest 6. Then the technician 16 places the chin support 3 at a desired location and the Patient's chin 4 is placed in contact with the chin support 3. The adjustable linkage 9 is then locked and the Patient's chin 4 is thereby immobilized.

**Claims**

I claim:

- 1) A brace comprising:
  - a) a chest plate;
  - b) a chin support for supporting a patient's chin in a fixed position relative to said patient's chest;
  - c) a rod having a top surface, said rod adjustably attached to said chest plate; and
  - d) an adjustable linkage adjustably connected said top surface to said chin support.
- 2) The brace of claim 1 wherein said linkage further comprises a dual ball joint and a lock to immobilize said dual ball joint.
- 3) The brace of claim 1 further comprising a left shoulder brace connected to said chest plate, and a right shoulder brace connected to said chest plate.
- 4) The brace of claim 3 wherein said linkage further comprises a dual ball joint and a lock to immobilize said dual ball joint.

FIG. 1



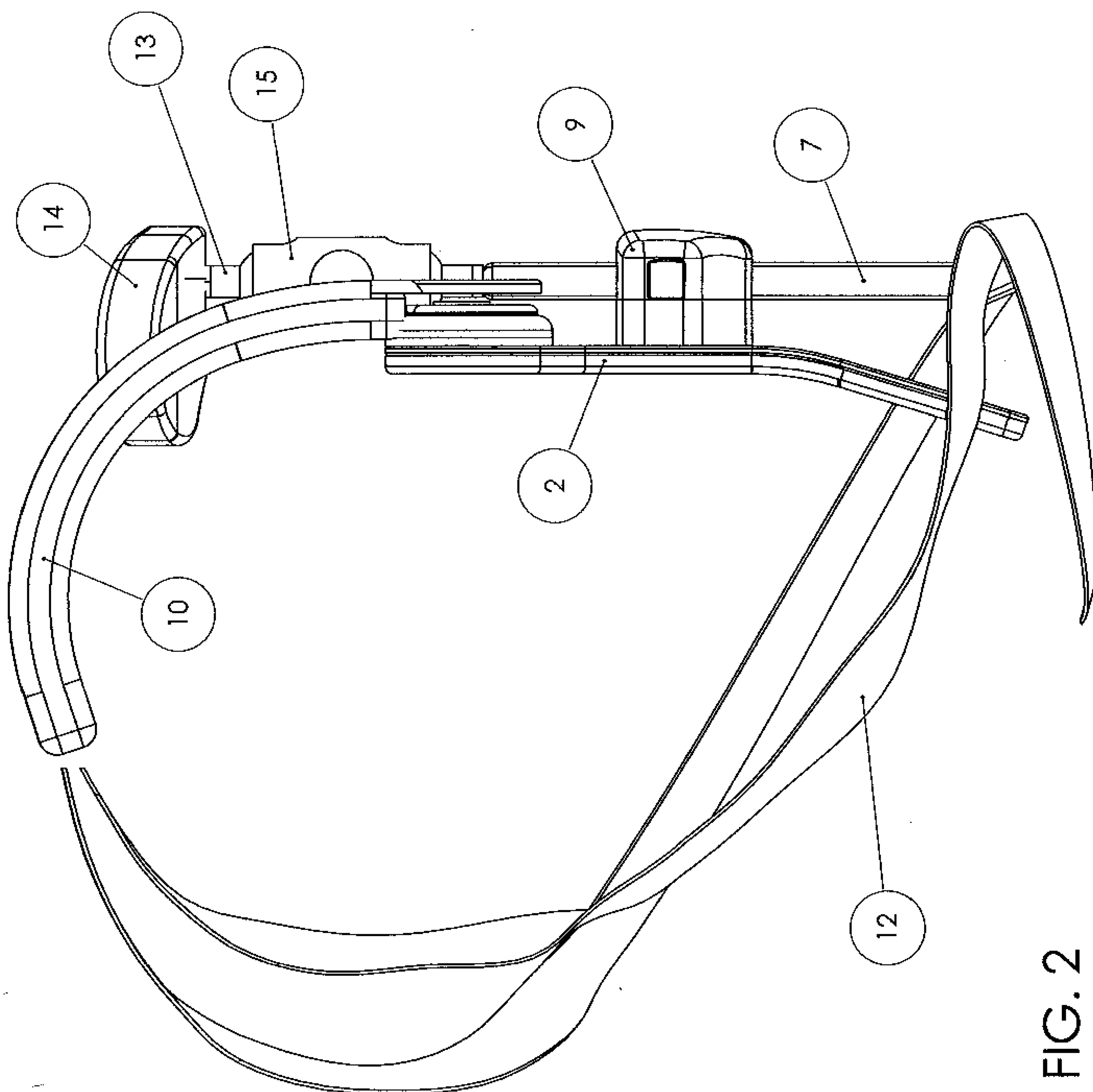


FIG. 2

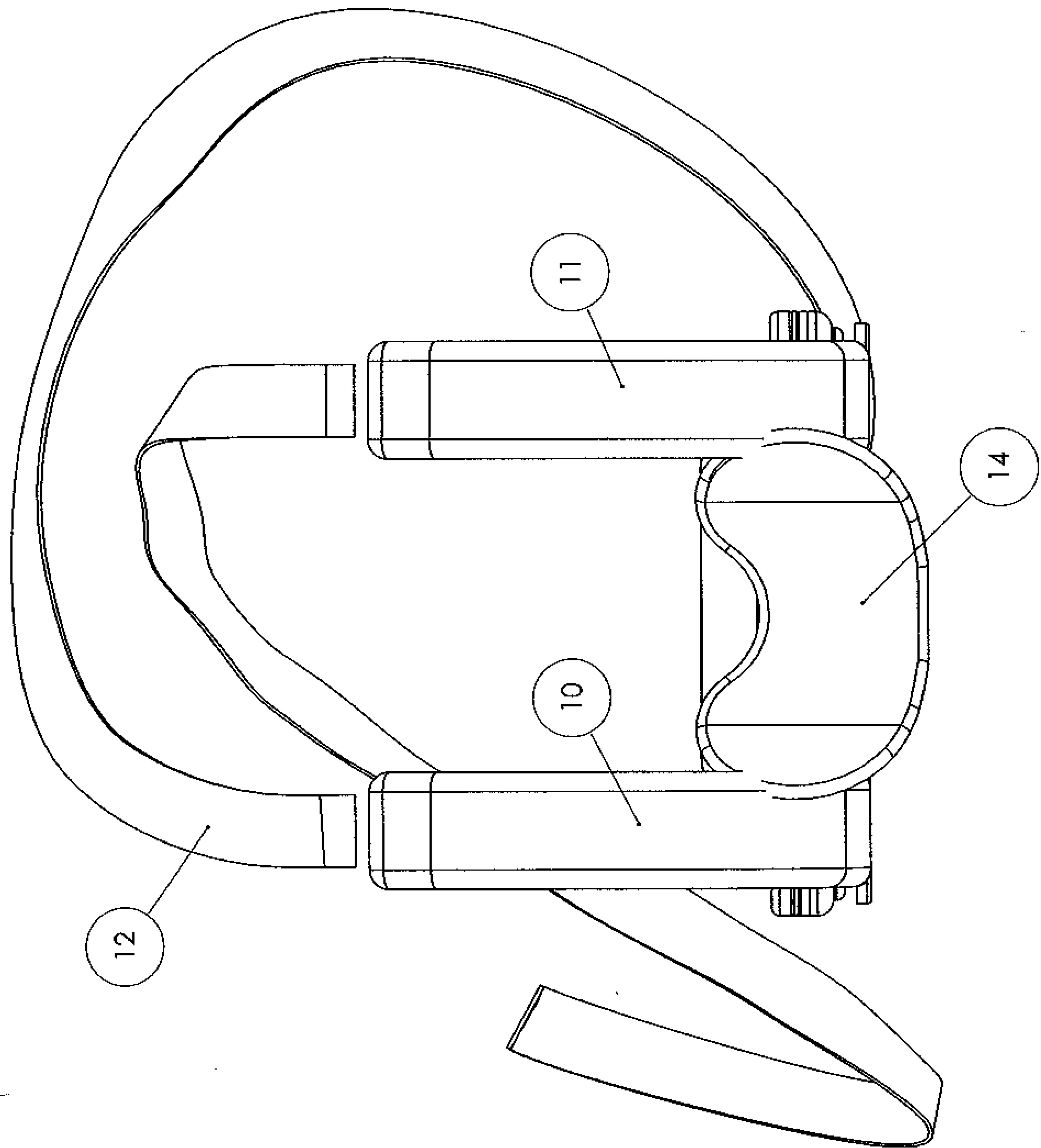




FIG. 3

FIG. 4





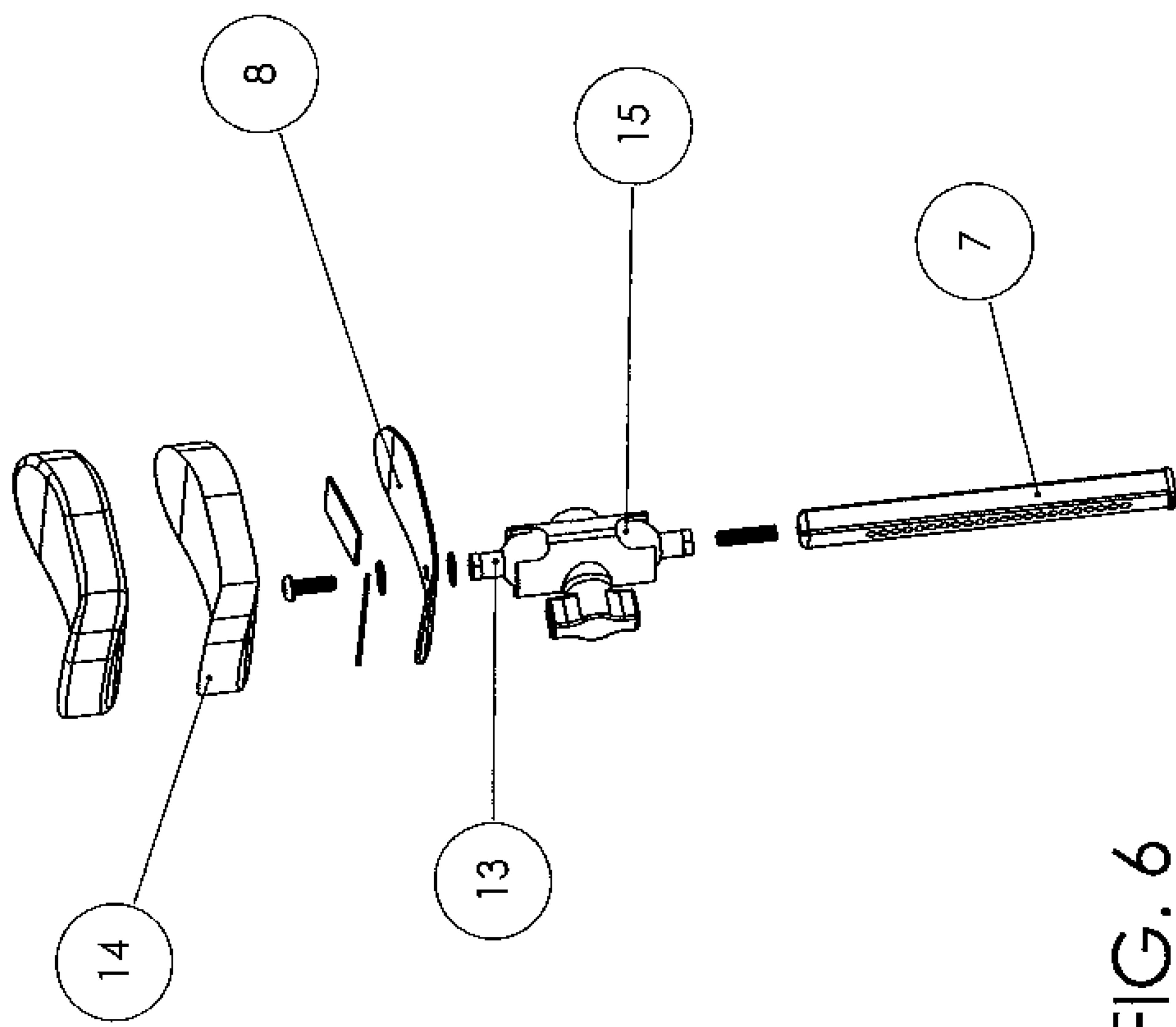


FIG. 6

FIG. 8

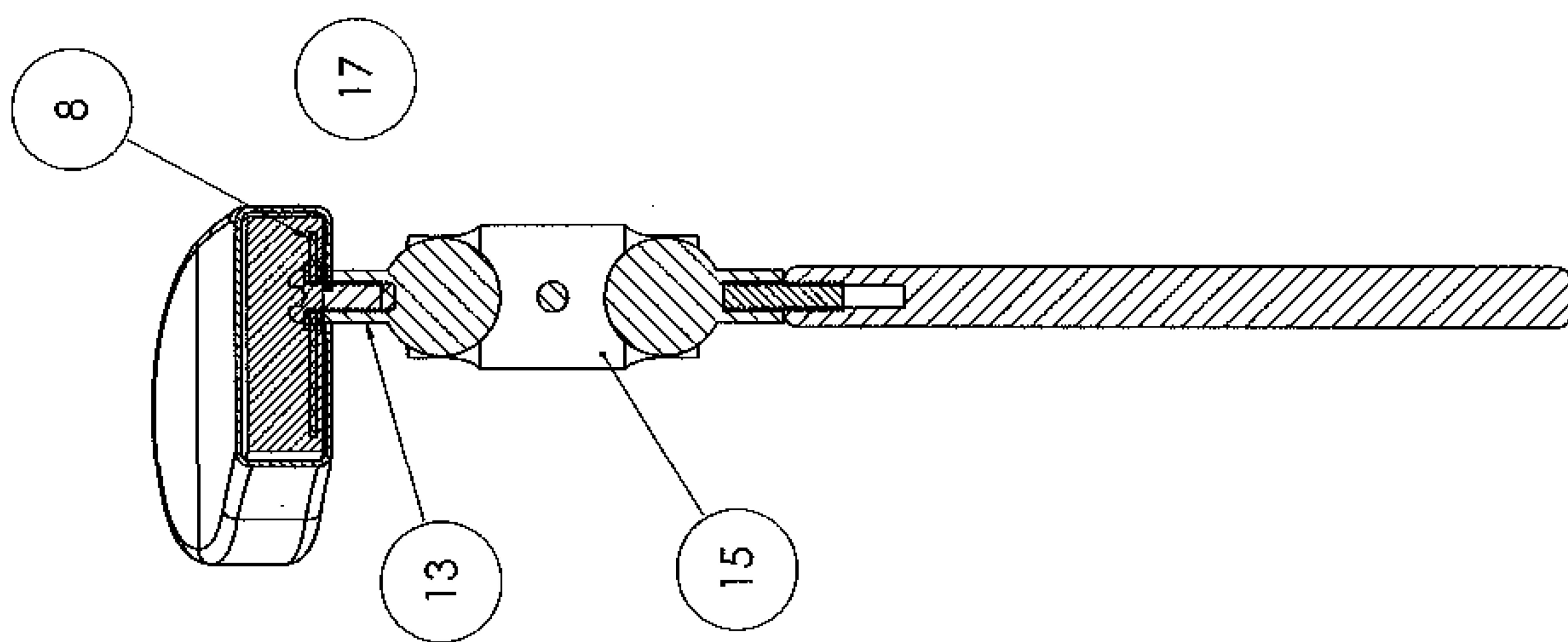
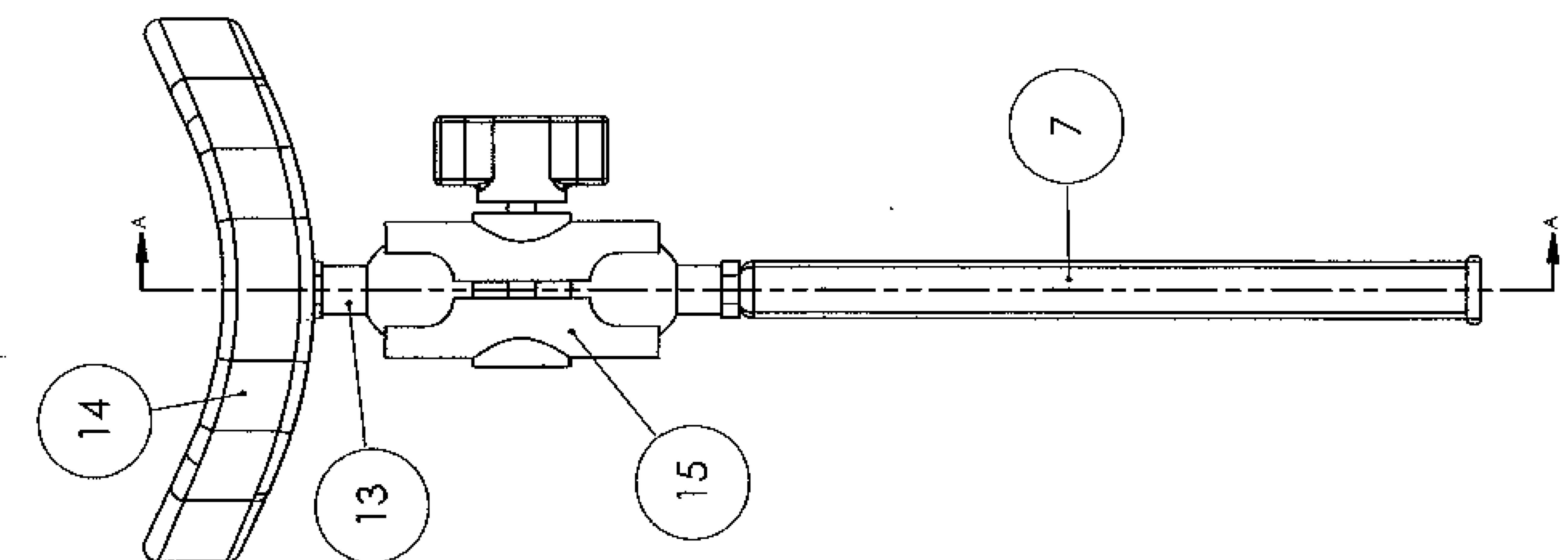


FIG. 7



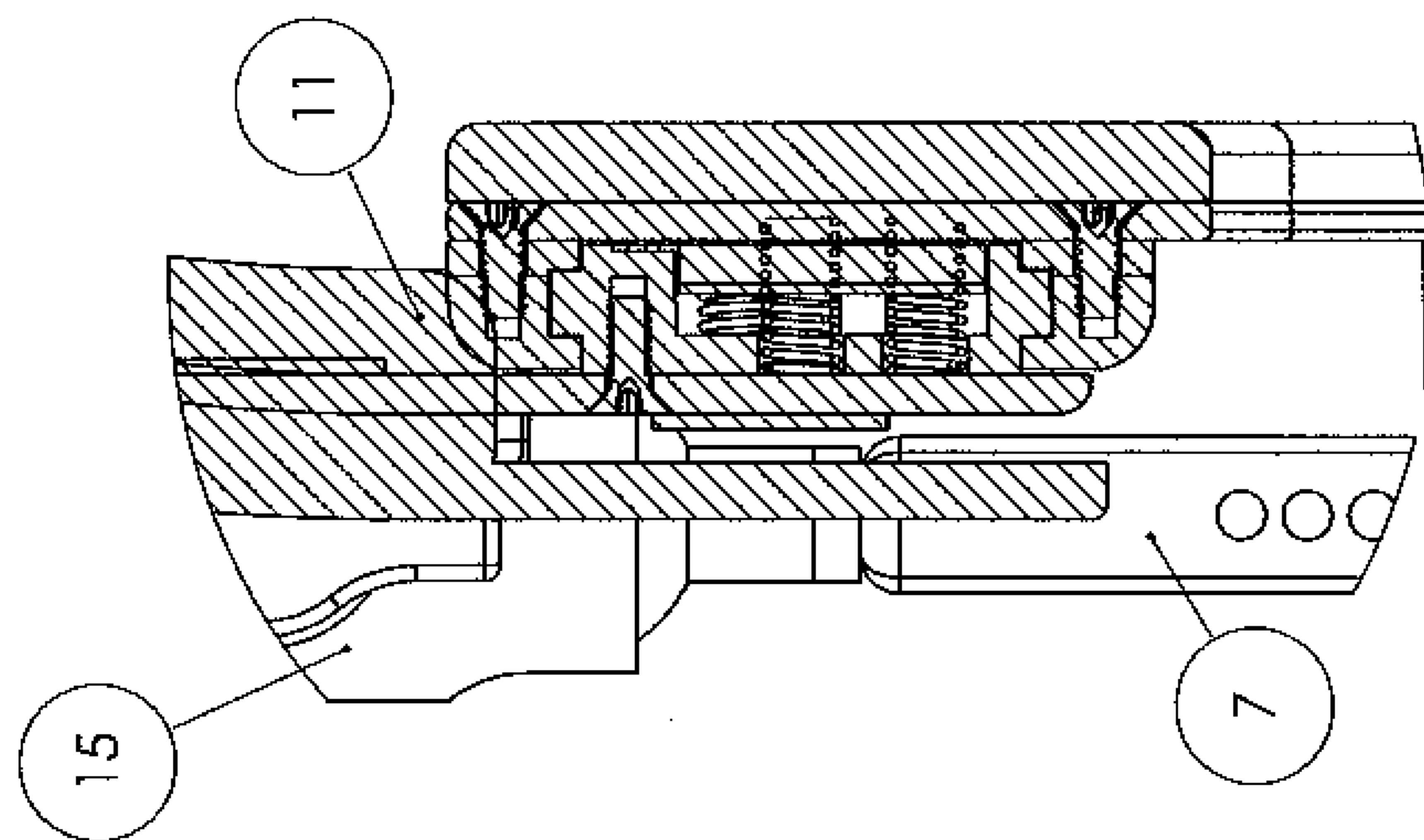


FIG. 11

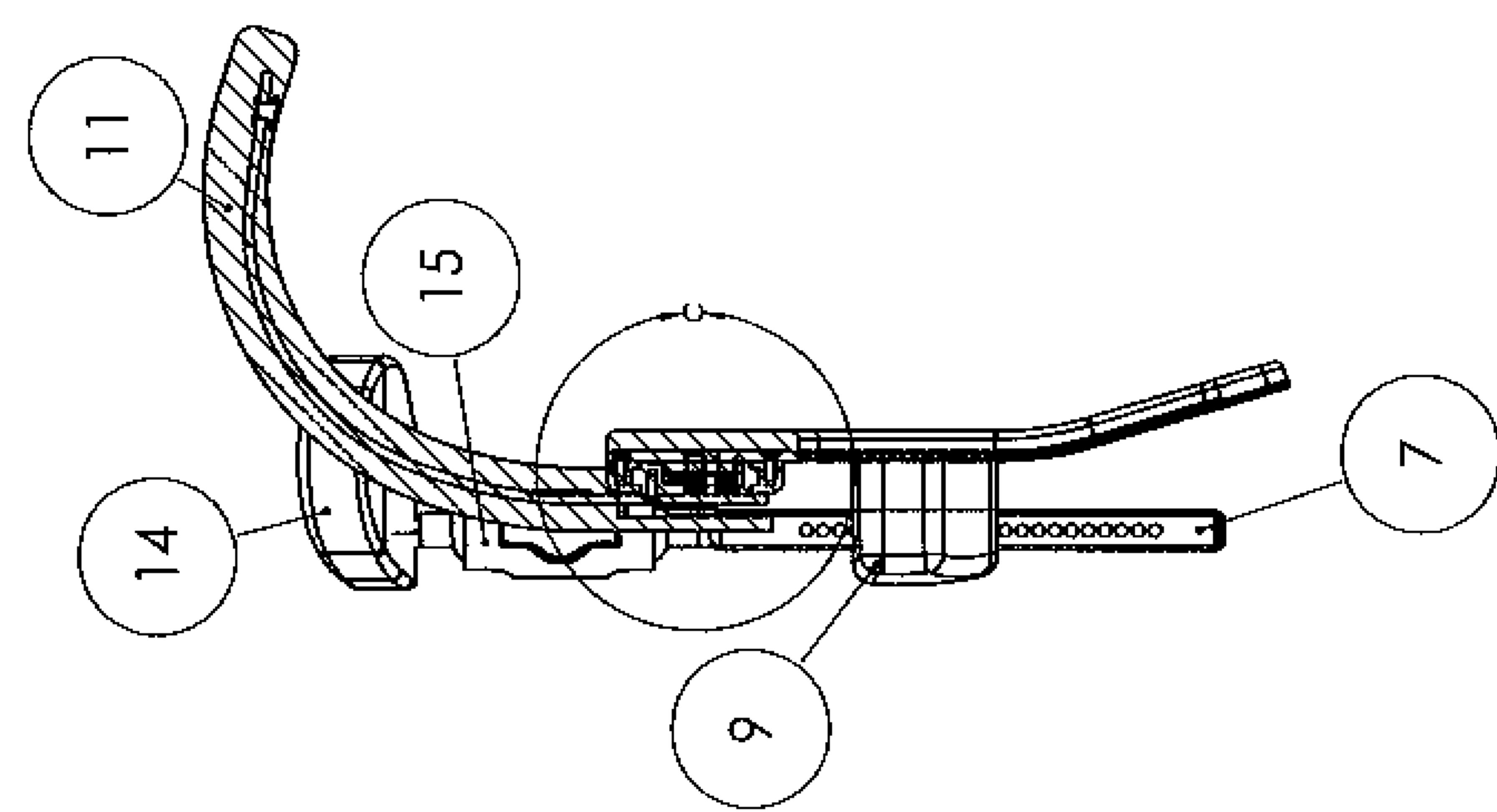


FIG. 10

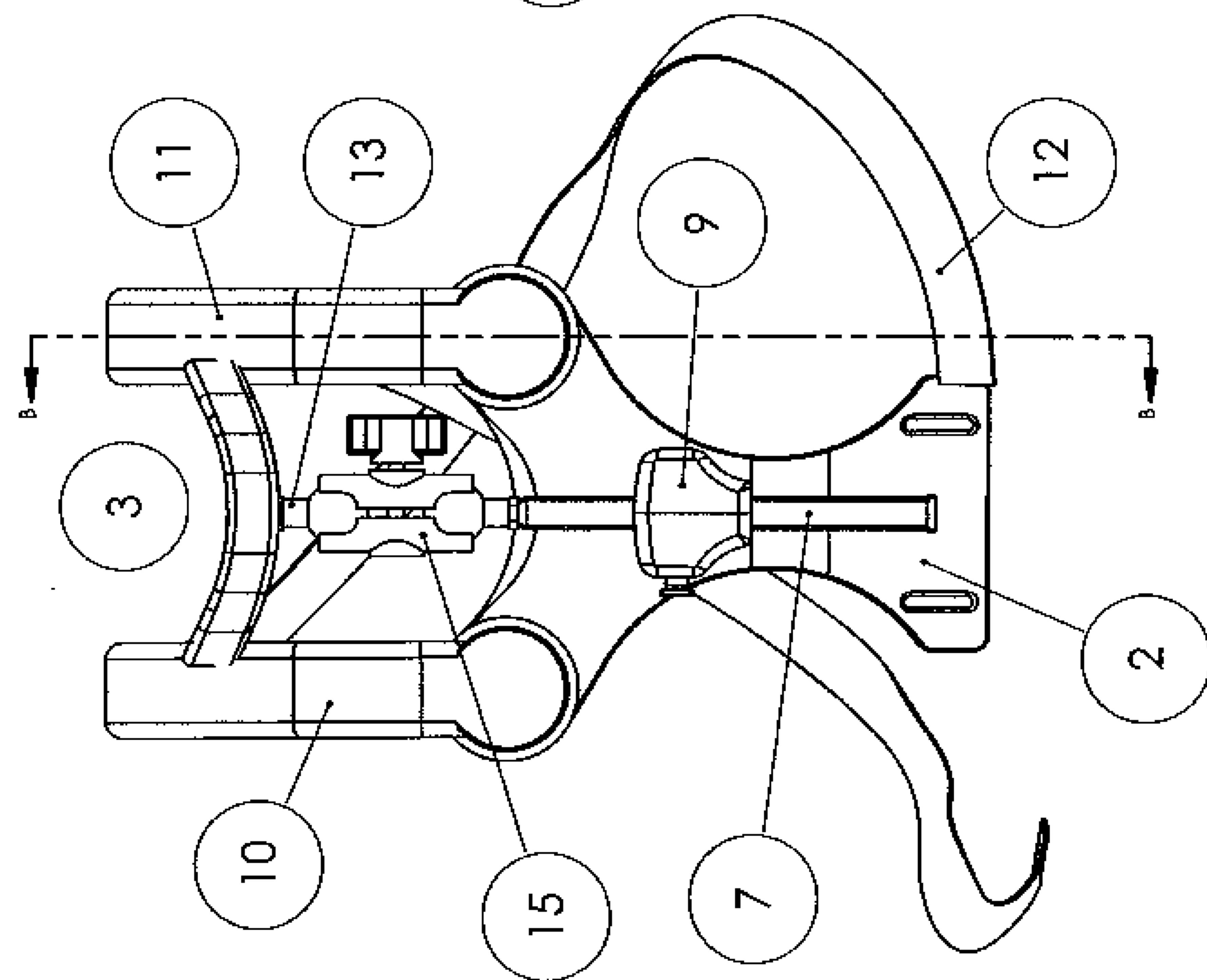


FIG. 9

FIG. 12

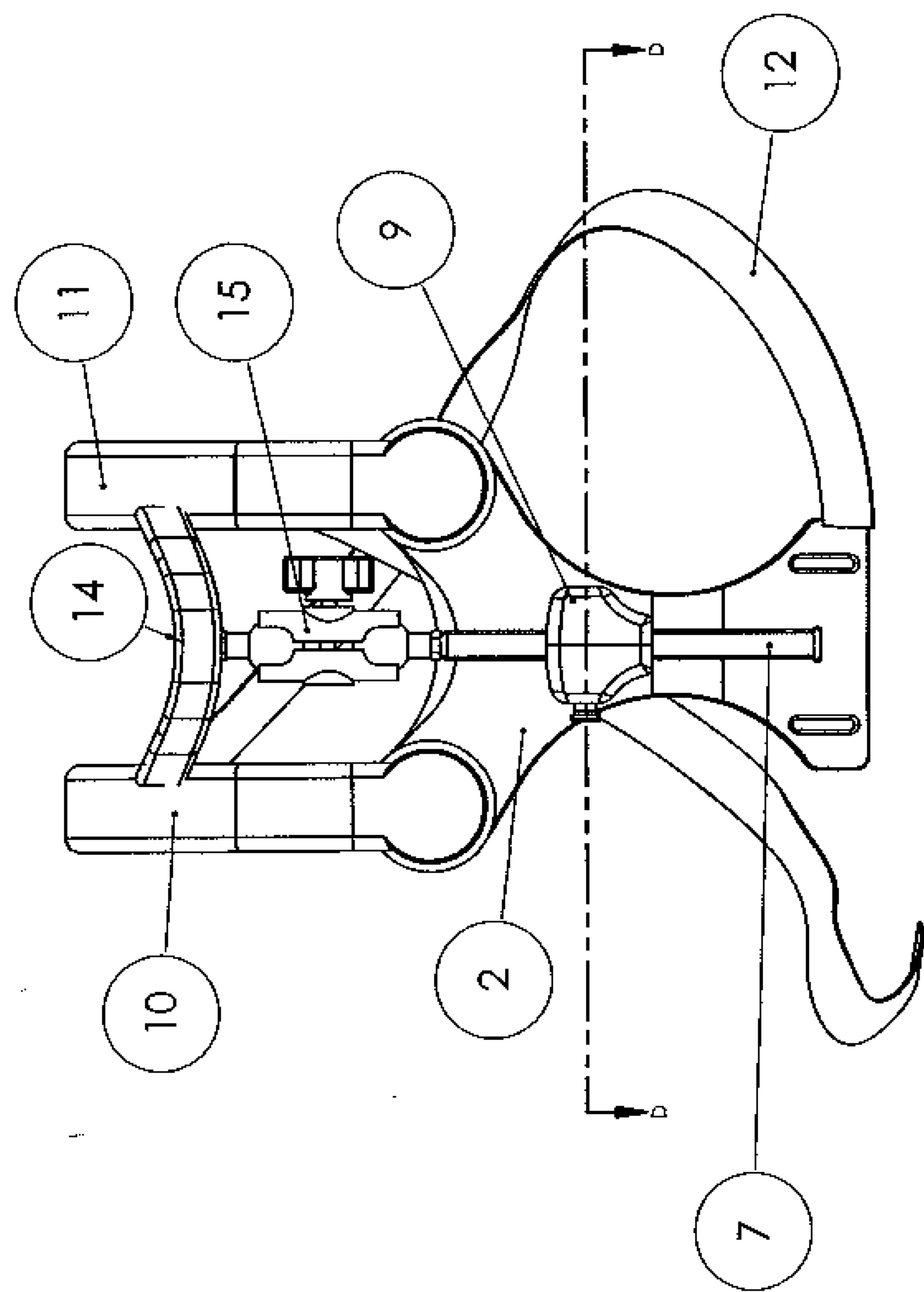
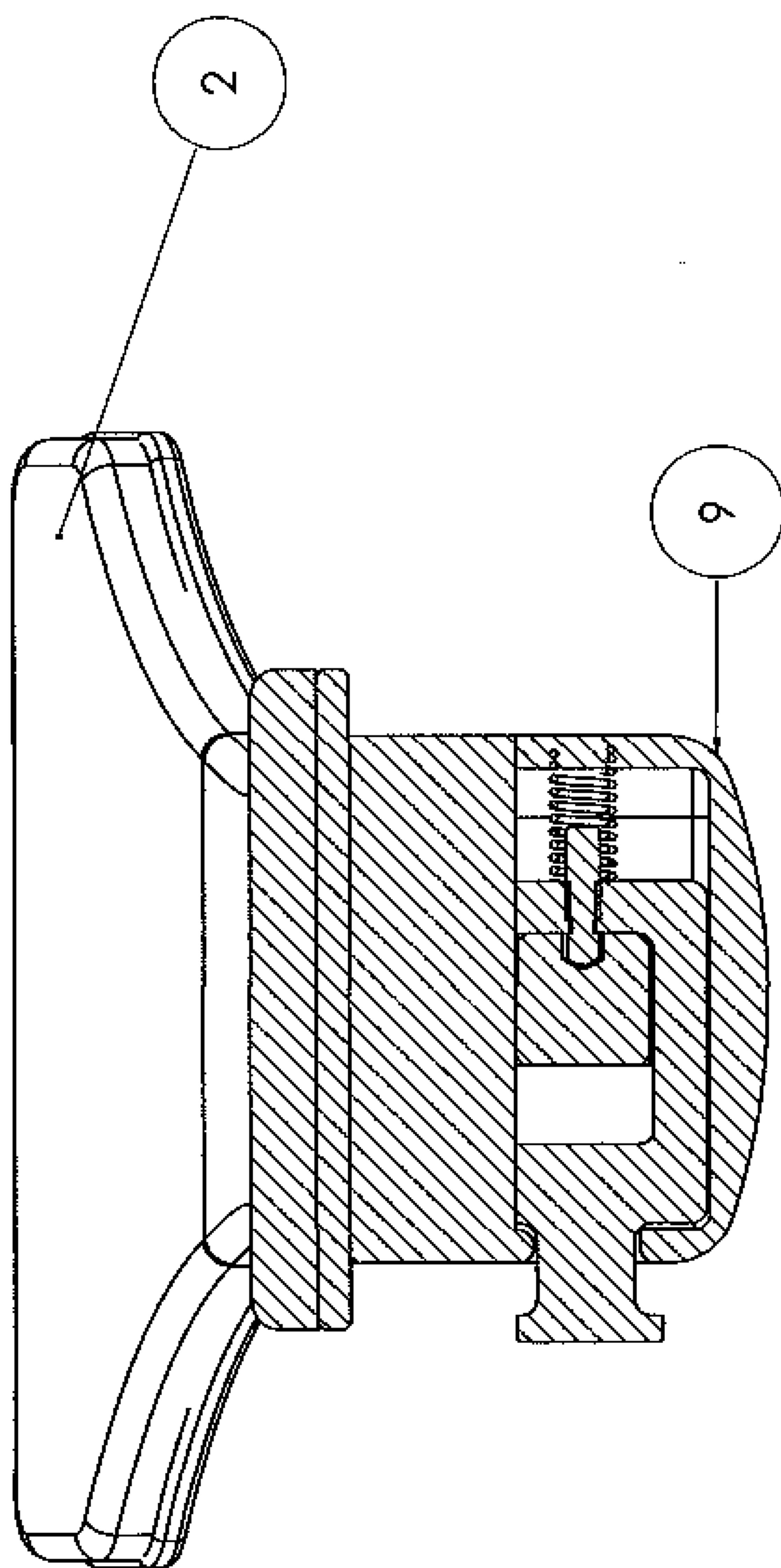


FIG. 13



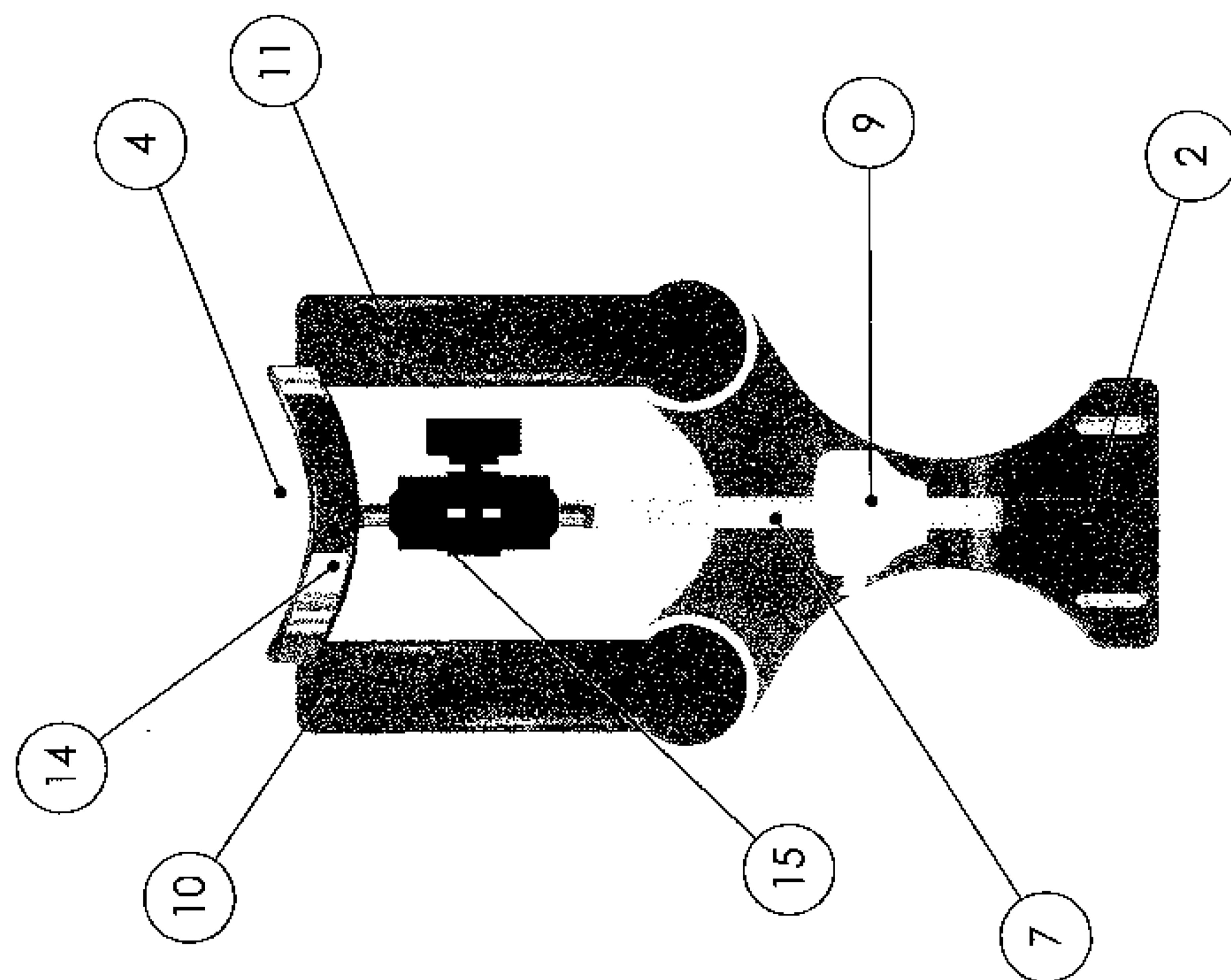
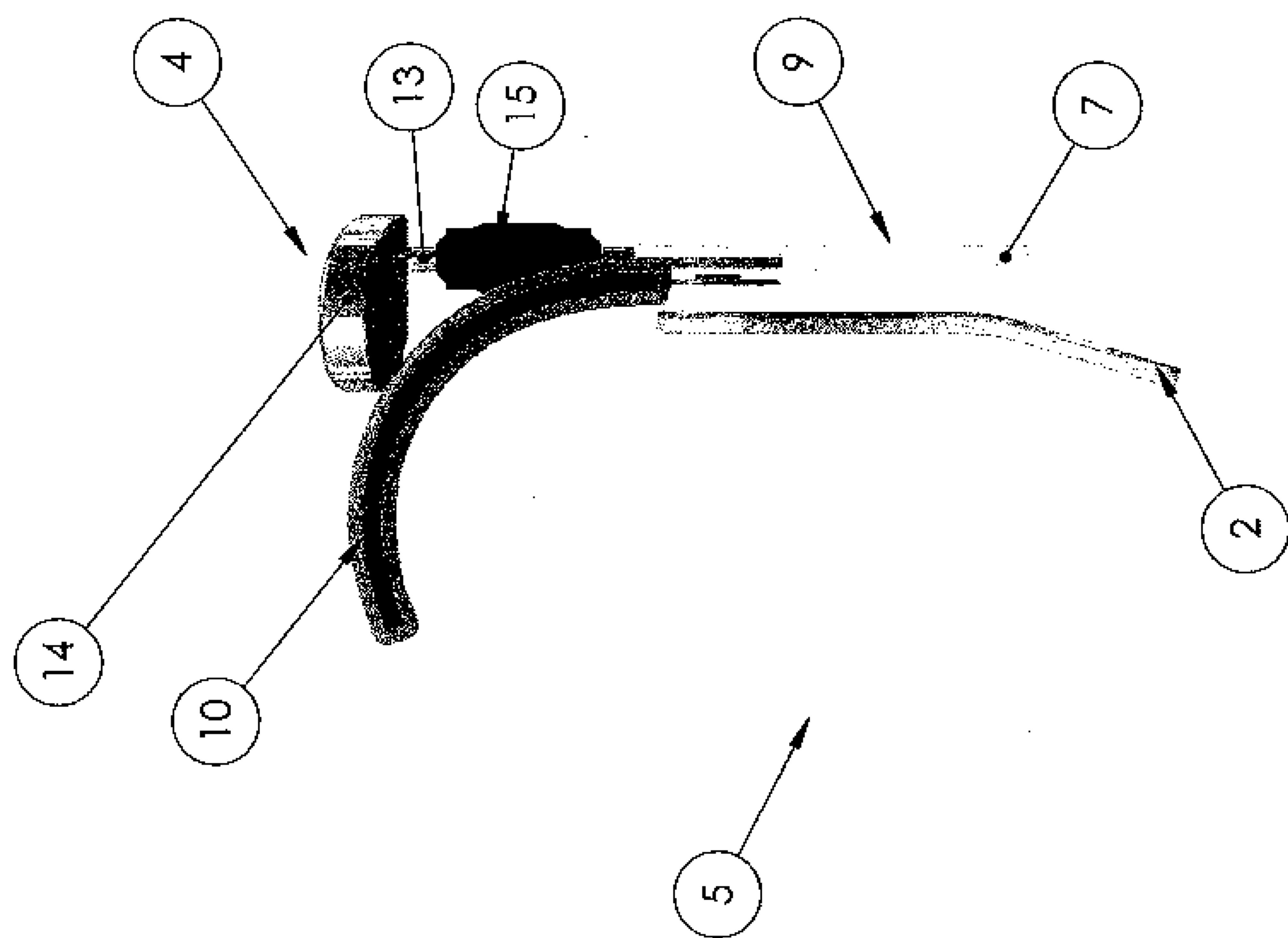


FIG. 1

