



(86) Date de dépôt PCT/PCT Filing Date: 2016/03/14
(87) Date publication PCT/PCT Publication Date: 2016/09/22
(85) Entrée phase nationale/National Entry: 2017/09/15
(86) N° demande PCT/PCT Application No.: ES 2016/070159
(87) N° publication PCT/PCT Publication No.: 2016/146871
(30) Priorité/Priority: 2015/03/17 (ES P 201530341)

(51) Cl.Int./Int.Cl. *E04G 7/30* (2006.01),
E04G 7/22 (2006.01)
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(54) Titre : ECHAUDAGE MODULAIRE DEMONTABLE ARTICULE
(54) Title: ARTICULATED DISMOUNTABLE MODULAR SCAFFOLDING

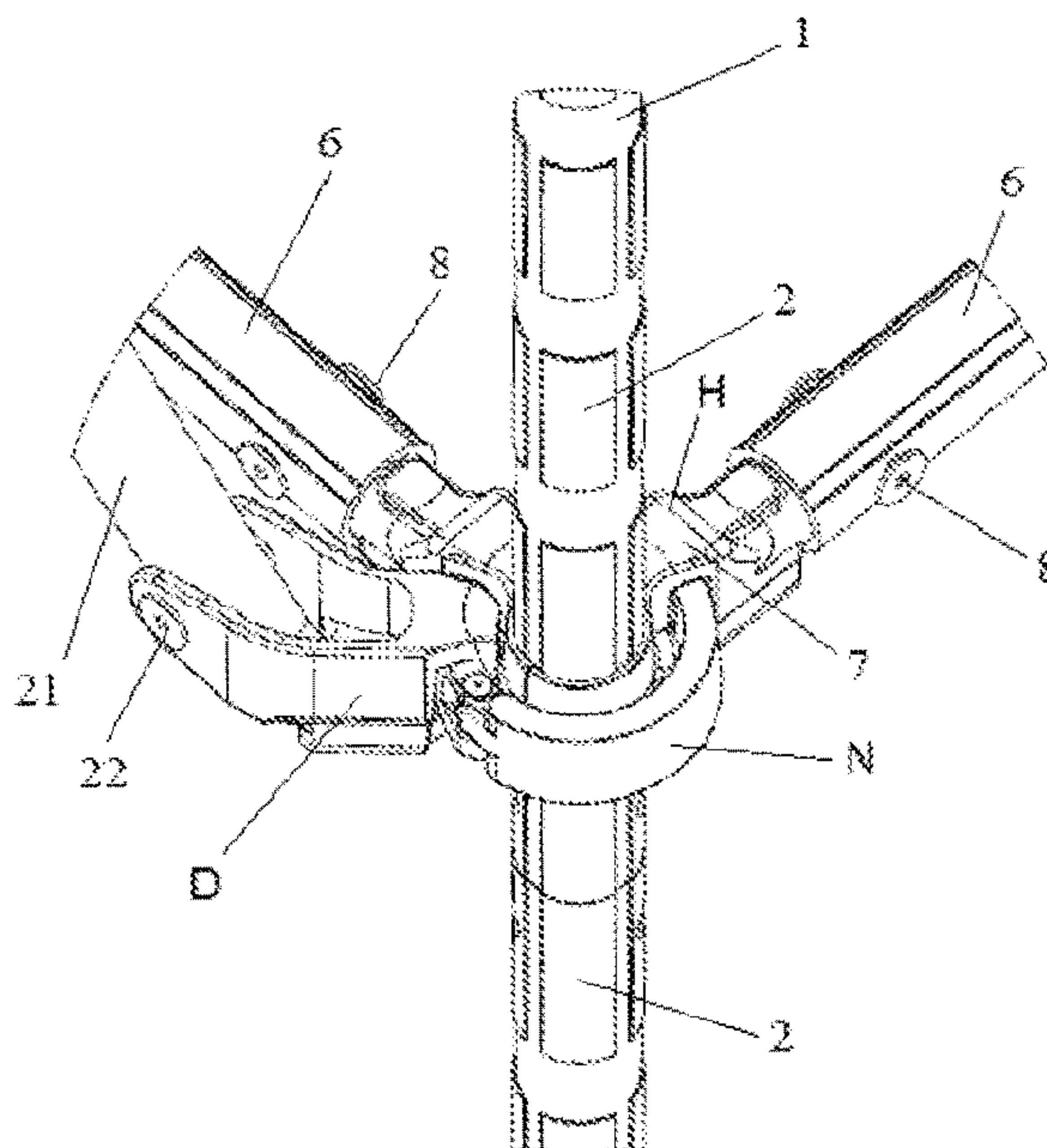


FIG. 1

(57) **Abrégé/Abstract:**

The invention relates to an articulated, dismantlable modular scaffold of the type that is assembled by parts on the place of work, being a structure that can be assembled and disassembled. The scaffold is characterised in that it consists of the following parts, articulated together: vertical tubes (1); knots (N), which are the point at which the vertical tubes meet with horizontal or diagonal tubes, formed by two symmetrical, semicircular half-knots; horizontal tubes (6); horizontal fastening means (H) having a bolt-like latch (9) on the lower part; diagonal tubes (21); and diagonal fastening means (D) situated on each end of the diagonal tube (21).

(12) SOLICITUD INTERNACIONAL PUBLICADA EN VIRTUD DEL TRATADO DE COOPERACIÓN EN MATERIA DE PATENTES (PCT)

(19) Organización Mundial de la
Propiedad Intelectual
Oficina internacional

(43) Fecha de publicación internacional
22 de septiembre de 2016
(22.09.2016)



(10) Número de Publicación Internacional
WO 2016/146871 A1

(51) Clasificación Internacional de Patentes:
E04G 7/30 (2006.01) *E04G 7/22* (2006.01)

(21) Número de la solicitud internacional:
PCT/ES2016/070159

(22) Fecha de presentación internacional:
14 de marzo de 2016 (14.03.2016)

(25) Idioma de presentación: español

(26) Idioma de publicación: español

(30) Datos relativos a la prioridad:
P 201530341 17 de marzo de 2015 (17.03.2015) ES

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(81) Estados designados (*a menos que se indique otra cosa, para toda clase de protección nacional admisible*): 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, 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, SA, 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) Estados designados (*a menos que se indique otra cosa, para toda clase de protección regional admisible*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), euroasiática (AM, AZ, BY, KG, KZ, RU, TJ, TM), europea (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, KM, ML, MR, NE, SN, TD, TG).

[Continúa en la página siguiente]

(54) Title: ARTICULATED, DISMANTLABLE MODULAR SCAFFOLD

(54) Título : ANDAMIO MODULAR DESMONTABLE ARTICULADO

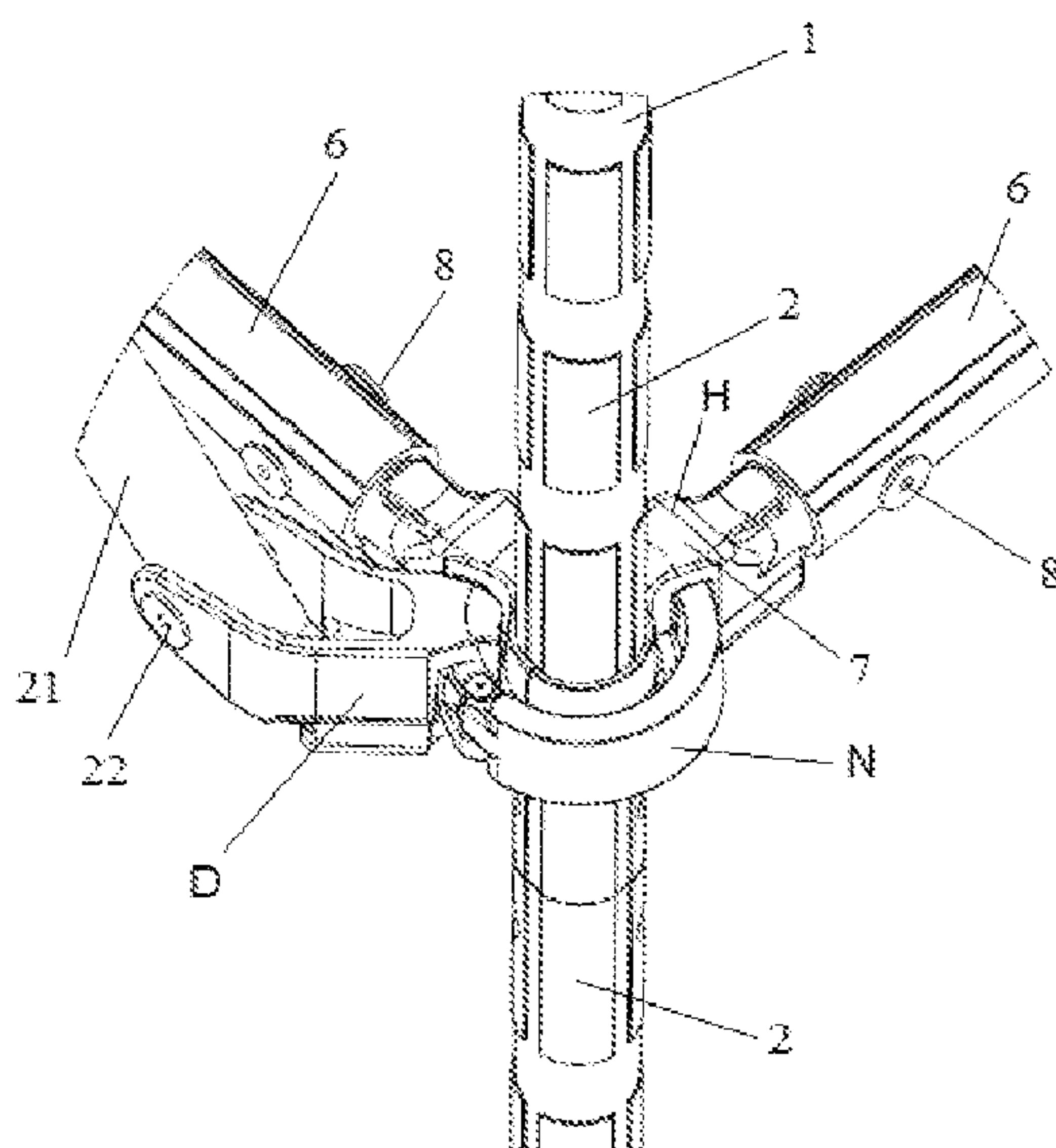


FIG. 1

(57) Abstract: The invention relates to an articulated, dismantlable modular scaffold of the type that is assembled by parts on the place of work, being a structure that can be assembled and disassembled. The scaffold is characterised in that it consists of the following parts, articulated together: vertical tubes (1); knots (N), which are the point at which the vertical tubes meet with horizontal or diagonal tubes, formed by two symmetrical, semicircular half-knots; horizontal tubes (6); horizontal fastening means (H) having a bolt-like latch (9) on the lower part; diagonal tubes (21); and diagonal fastening means (D) situated on each end of the diagonal tube (21).

(57) Resumen: Andamio modular desmontable articulado de aquellos que se montan sobre el lugar de trabajo por piezas siendo una estructura montable y desmontable, caracterizado por estar constituido por las siguientes piezas, articuladas entre sí: - Tubos verticales (1), - Nudos (N), Los nudos (N) son los puntos donde confluyen las verticales con las horizontales o diagonales estando formado por dos semi-nudos, simétricos, semicirculares, - Tubos horizontales (6), La fijación horizontal (H) lleva en su parte inferior a modo de pestillo, un resbalón (9), - Tubos diagonales (21), - Fijación diagonal (D), situadas una en cada extremo del tubo diagonal (21).

WO 2016/146871 A1

Publicada:
— *con informe de búsqueda internacional (Art. 21(3))*
— *antes de la expiración del plazo para modificar las reivindicaciones y para ser republicada si se reciben modificaciones (Regla 48.2(h))*

ARTICULATED DISMOUNTABLE MODULAR SCAFFOLDING

DESCRIPTION

5 OBJECT OF THE INVENTION

This descriptive report refers to an Articulated Dismountable Modular Scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be
10 assembled and disassembled, perfectly adaptable to each type of work.

FIELD OF THE INVENTION

The field of the invention is that of auxiliary building element manufacturers,
15 specifically scaffolding.

BACKGROUND TO THE INVENTION

There is a wide background relating to different scaffolding shapes, even some
20 dismountable scaffoldings formed by similar pieces, bars and joints,

The following may be mentioned among these:

Document WO0050708 describes a scaffolding formed by beams and horizontal bars.
25 The posts have a series of protuberances along their length, spaced out at constant distances to avoid unions 16 from sliding throughout them, in this way maintaining the horizontal bars in position. These protrusions perform the same function as the notches in the posts.

30 This is also a restraining element for vertical elements, although not fastening as in the invention put forward, just preventing sliding and with its shape being totally different.

Spanish patent ES2321484T. The present invention refers to a device for personal protection on scaffolding. It is formed by at least two posts and at least one runner extending
35 between both these. The ends of the runner are equipped with connectors to the posts. In turn, these have a coupling device for a releasable connection with the scaffolding posts.

These are old, single-movement and totally rigid systems, while the diagonal elements of the invention put forward can be fully used at any angle and in any position.

5 Patent FR2977608 describes a hook-shaped device to adjust the scaffolding platforms to the horizontal bars. The invention refers to a hook device designed for its assembly at the end of a tube component, for example a horizontal base plate or the like at the lower part of the scaffolding, this hook device being made up by a curved hooking part and the assembled part.

10 In order to avoid accidental detachment, assembled part 5 may include at least one guide 10 over which a long piece 10 (latch) slides to achieve blocking between a retracted position in which it releases opening 4 of fastening part 4 and a spread out position in which such opening is blocked.

15 This is a system which has a similar function to that in the patent put forward, but with a totally different execution since the coupling between the pieces only requires a vertical sliding movement of the hook inside the joint and then a click, as the spring of the catch comes into action. Unlike other systems, no second action by the assembler is needed, nor any movement or activation by the assembler of triggers, levers or wedges, or banging any
20 moving part of the system.

USA Patent US8206052 describes a connector for modular scaffolding. The system has horizontal and vertical bars designed for coupling clamps at a joint along the scaffolding. At the end of the bars there is a steel casing with a lock activated by a spring pivoting around
25 a point that activates a rotary catch. The end is coupled embracing the cup-shaped joining element.

This is a complex system of keyed locks, very different from the system the invention puts forward and whose use is impossible in works involving concrete, cement, paint, etc.

30

Furthermore, none of these devices have the characteristics regarding ease and speed of assembly, use versatility, safety and inventive novelty, with a joint, the basis of the whole assembly, of great inventive prowess not only due to its ease of use but also due to the safety of the system within the simplicity of the mechanism.

35

The inventor is not aware of any previous case including the layout presented by the current invention, or the advantages such layout implies.

DESCRIPTION OF THE INVENTION

5

The invention put forward refers to an articulated dismountable modular scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be assembled and disassembled, perfectly adaptable to each type of work.

10

The system presented intends to provide flexibility regarding the position of the joints, improving the rigidity of traditional scaffolding while also achieving greater ease when fixing and releasing the parts at the joint, avoiding wedge and hammer systems.

15

Similarly, it intends to provide greater safety to the assembly personnel by means of easier fixing and releasing movements.

The articulated dismountable modular scaffolding is a structure that can be assembled and disassembled made up by:

20

- .- vertical tubes,
- .- joints,
- .- horizontal and diagonal bars,
- .- horizontal and diagonal fastenings,
- .- diverse adjustment material such as spigots, pins and sleeves, and pull handles.

25

The joints are the points where vertical [bars] converge with horizontal or diagonal ones.

The basic parts making up the system structure are the following:

30

.- Vertical Tubes, with notches perpendicular to the axis of the tube reducing the external diameter of the tube, positioned at constant distances throughout the entire length of the tube, each notch having a set length allowing for fixing the joint piece embracing the tube at any notch.

Similarly, the vertical tube has vertical grooves along the entire tube, where the internal ribs of the joint will be firm, to prevent the joint from rotating over the notch of the aforementioned tube.

- 5 A joint without internal ribs is envisaged in the case of requiring the free rotation of the joint.

This layout allows for total flexibility at the position of the joint.

- 10 At the end of the tube, another tube with a smaller diameter called spigot is inserted, serving as a guide to connect with another vertical tube, providing continuity to the vertical tubes making up the structure of the scaffolding in order to reach the height desired.

- 15 The spigot located inside the tubes is fastened to these by means of pins perpendicular to the tube

.- The joints are the points where vertical [bars] converge with horizontal or diagonal ones.

- 20 The joint is formed by two symmetrical, semi-circular semi-joints, that are articulated and join each other by means of their respective sleeves, provided with a double conical-head screw, forming a circle embracing the vertical tube, in the position of the vertical tube notch, in such a way the diameters of the internal cylinder of the joint and the external diameter of the tube in the position of the notch are equal and with the internal area of the
25 joint having several internal projections coinciding both in location and size with the grooves of the vertical tube, in such a way there is no chance of rotation of the joint once is installed in its working position.

- 30 The joint has an internal concentric toroidal shape, creating an upper circular gap, serving to fit in this circular gap the hooks of the horizontal and diagonal fastenings described further on.

The walls of the circular gap are not parallel, as they have a wider angle towards the upper part to enable the assembly and disassembly of the horizontal and diagonal parts,

while the area is slightly narrower in its lower part and coincides with the size of the adjustment parts of both parts, the hook and the body for a perfect adjustment.

5 The notch of the tube prevents the vertical movement of the joint in such a way once the joint is fastened to the tube, it is held firmly and this cannot slide.

The joint is the part of the scaffolding structure allowing for the vertical tubes to be joined with the horizontal and diagonal tubes, making up the structural joint.

10 .- Horizontal Tubes. These are horizontal tubes at whose ends a series of through-holes can be seen which will serve, by means of the adequate sleeves, to join to the headers, the headers being formed by horizontal fastening parts allowing to be fixed to the joint, via the appropriate means.

15 Each of these horizontal fastenings is inserted to the limit at each end of the horizontal tube *itself and is fastened* by means of two sleeves preventing any movement between the fastenings and the horizontal tube.

20 .- Horizontal Fastening. The horizontal fastening is made up by a symmetrical prismatic piece, on its front part having a hook which will serve to fit in the upper circular gap of the joint and fitting perfectly in its body the horizontal tube fastened to it by means of two sleeves with a through screw.

25 The horizontal fastening has a catch in its lower part, as a latch that moves due to the effect of the movement of a pull handle under the action of a spring.

This catch acts as a latch on the lower part of the joint, preventing the horizontal fastening from unhooking the joint due to the pressure of the spring and only allowing to be unhooked when the catch is removed from its position by means of moving the pull handle.

30 The pull handle is made up by a chamfered point cylindrical element and showing on its upper part two hexagonal projections separated by a short distance.

35 The spring serves to force the catch to have the latch effect, standing out from the horizontal fastening and resting on the lower part of the joint piece.

To remove the horizontal fastening, the pull handle, in its movement in the opposite direction to the force of the spring, removes the catch introducing it in the horizontal fastening, in this way leaving the possibility of the movement to remove the horizontal fastening being fixed to the joint by means of a vertical movement of same perpendicular to the joint.

.- Diagonal Tubes: these are tubes with a slanted position in the scaffolding structure diagonally connecting the joints of opposing vertical [bars] achieving the effect of bracing the structure formed by the parts of the scaffolding.

.- Diagonal Fastening. The headers of these diagonal tubes are formed by diagonal fastening parts made up by a non-symmetrical prismatic piece, that is to say, whose front part for union with the joint is deviated some 45° with regard to the axis of the diagonal tube and having a hook on its front part serving to fit in the upper circular gap of the joint and to attach the diagonal tube at the end of its body by means of a conventional horizontal pin allowing perfectly for the angular clearance of the diagonal tube.

The diagonal fastening has on its lower part a system for fastening to the joint similar to that of the horizontal fastening, that is to say, made up by a catch moving due to the effect of the movement of a pull handle under the action of a spring.

These diagonal fastenings, one on each side of the diagonal tube, are fixed to this tube by being held on the final part of the diagonal fastening by means of a set of two sleeves allowing a rotation between the fastening and the diagonal tube having the set of sleeves as its axis.

The coupling and fastening of the joint to the horizontal fastening and the diagonal fastening is performed by sliding, with the hook entering the head in the internal gap of the joint in such a way that the curved surfaces inside the hook and the surface of the internal gap of the joint are in contact along throughout the surface and, given the curved shape of the surfaces, these allow the horizontal rotation movement around the central vertical axis of the joint, sliding as it rotates over the surface of the joint without losing any contact between the surfaces.

However, this system prevents any rolling or pitching, as both surfaces of the hook are in contact with the surfaces of the internal gap (3).

The vertical movement is prevented by the action of the pin.

5

Therefore, this union between the head and the joint only allows horizontal rotation with the head sliding along the upper surface of the joint, preventing any other type of movement.

10

The heads of the horizontal and diagonal [bars], are detachable, interchangeable, whenever the tube diameters are the same, designed to allow for the head to be changed for longer or shorter tubes according to the needs, or to substitute damaged parts making use of those that are in a good state, without having to discard the whole piece.

15

DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention, 8 sheets of diagrams are attached showing the following views:

20

FIGURE 1.- Isometric view of the main elements making up the scaffolding, in working position.

FIGURE 2.- Perpendicular cut view of the main elements in figure 1.

25

FIGURE 3.- Section view of the bar (1).

FIGURE 4.- Isometric view of a joint (N).

FIGURE 5.- Plan view of a joint (N).

30

FIGURE 6.- Plan view of a bar.

FIGURE 7.- Plan view of the fixing of a bar to the joint.

35

FIGURE 8.- Section view of the fixing of a bar to the joint.

FIGURE 9.- Isometric view of the fixing of a bar to the joint.

FIGURE 10.- Section view of the fixing of a bar diagonal to the joint.

5

FIGURE 11.- Isometric view of the pull handle.

FIGURE 12.- View of a bar in diagonal assembly.

10

FIGURE 13.- Section view of the upper part of a sleeve with the screw.

With identical elements named under the same reference in these figures, highlighting the following:

15

(1).- vertical tube,

(2).- notches,

(3).- circular gap

(4).- union spigot,

(5).- perpendicular pins,

20

(6).- horizontal tubes,

(H).- vertical fastening parts,

(7).- hook,

(8).- sleeves,

(9).- catch,

25

(10).- pull handle,

(11).- spring,

(12).- drill hole,

(13).- longitudinal grooving of the vertical tube,

(14).- internal projections of the joint (N),

30

(15).- sleeve body (8),

(16).- double-end threaded screw,

(17).- round head of the sleeve,

(18).- hexagonal reduction of sleeve head (8),

(19).- sleeve thread,

35

(D).- diagonal fastening parts,

(21).- diagonal tube,

(22).- rotation axis.

PREFERRED EMBODIMENT OF THE INVENTION

5

The invention put forward refers to an articulated dismountable modular scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be assembled and disassembled, perfectly adaptable to each type of work.

10

The system presented intends to provide flexibility regarding the position of the joints, improving the rigidity of traditional scaffolding while also achieving greater ease when fixing and releasing the parts at the joint, avoiding wedge and hammer systems.

15

Similarly, it intends to provide greater safety to the assembly personnel by means of easier fixing and releasing movements.

The articulated dismountable modular scaffolding is a structure that can be assembled and disassembled made up by:

20

.- vertical tubes (1),

.- joints (N),

.- horizontal bars (6) and diagonal assembly bars (21),

.- vertical (H) and diagonal (D) fastenings,

.- diverse adjustment material such as spigots (4), perpendicular pins (5) and sleeves (8) and pull handles (10)

25

Los joints (N) are the points where vertical [bars] converge with horizontal or diagonal ones.

The basic parts making up the system structure are the following:

30

.- Vertical Tubes (1), with notches (2) perpendicular to the rotation axis (22) of the tube reducing the external diameter of the tube, positioned throughout the entire length of the tube (1) at constant distances, each notch having a set length allowing for fixing the joint part (N) embracing the tube at any notch.

Similarly, the vertical tube (1) has vertical grooves (13) along the entire tube, where the internal ribs (14) of the joint (N) will be firm, to prevent the joint (N) over the (2) of the aforementioned tube (1).

5 A joint (N) without internal ribs is envisaged in the case of requiring the free rotation of the joint (N).

This layout allows for total flexibility at the position of the joint (N).

10 At the end of the tube (1), another tube with a smaller diameter called spigot (4) is inserted, serving as a guide to connect with another vertical tube (1), providing continuity to the vertical tubes making up the structure of the scaffolding in order to reach the height desired.

15 The spigot (4) located inside the tubes (1) is fastened to these by means of pins (5) perpendicular to the tube (1)

.- Joints (N). The joints (N) are the points where vertical [bars] converge with horizontal or diagonal ones.

20

The joint is formed by two symmetrical, semi-circular semi-joints (N1) and (N2), that are articulated and join each other by means of their respective sleeves (8), provided with a double conical-head screw (16), forming a circle embracing the vertical tube (1), in the position of the vertical tube (1) notch (2), in such a way the diameters of the internal cylinder
25 of the joint (N) and the external diameter of the tube in the position of the notch are equal and with the internal area of the joint (N) having several internal projections (14) coinciding both in location and size with the grooves (13) of the vertical tube (1), in such a way there is no chance of rotation of the joint (N) once is installed in its working position.

30 The joint (N) has an internal concentric toroidal shape, creating an upper circular gap (3), serving to fit in this circular gap (3) the hooks (7) of the horizontal (H) and diagonal (D) fastenings described further on.

35 The walls of the circular gap (3) are not parallel, as they have a wider angle towards the upper part to enable the assembly and disassembly of the horizontal (H) and diagonal

(D) parts, while the area is slightly narrower in its lower part and coincides with the size of the adjustment parts of both parts, the hook (7) and the body for a perfect adjustment.

5 The notch (2) of the tube (1) prevents the vertical movement of the joint (N) in such a way once the joint (N) is fastened to the tube, it is held firmly and this cannot slide.

The joint (N) is the part of the scaffolding structure allowing for the vertical tubes to be joined with the horizontal and diagonal tubes, making up the structural joint.

10 .- Horizontal Tubes. These are horizontal tubes (6) at whose ends a series of through-holes (12) can be seen which will serve, by means of the adequate sleeves (8), to join to the headers, the headers being formed by horizontal fastening (H) parts allowing to be fixed to the joint (N), via the appropriate means.

15 Each of these horizontal fastenings (H) is inserted to the limit at each end of the horizontal tube (6) *itself and is fastened* by means of two sleeves (8) preventing any movement between the fastenings and the horizontal tube (6).

20 .- Horizontal Fastening (H). The horizontal fastening (H) is made up by a symmetrical prismatic piece, on its front part having a hook (7) which will serve to fit in the upper circular gap (3) of the joint (N) and fitting perfectly in its body the horizontal tube (6) fastened to it by means of two sleeves (8) with a through screw (16) screwed in the internal threads (19) of both heads by means of a series of notches (18) located in the upper part of the head (17) of the body of the sleeve (8).

25 The horizontal fastening (H) has a catch (9) in its lower part, as a latch that moves due to the effect of the movement of a pull handle (10) under the action of a spring (11).

30 This catch (9) acts as a latch on the lower part of the joint (N), preventing the horizontal fastening from unhooking the joint due to the pressure of the spring (11) and only allowing to be unhooked when the catch is removed from its position by means of moving the pull handle (10).

35 The pull handle (10) is made up by a chamfered point cylindrical element and showing on its upper part two hexagonal projections separated by a short distance.

The spring (11) serves to force the catch (9) to have the latch effect, standing out from the horizontal fastening (H) and resting on the lower part of the joint (N) piece.

To remove the horizontal fastening (H), the pull handle (10), in its movement in the opposite direction to the force of the spring (11), removes the catch introducing it in the horizontal fastening (H), in this way leaving the possibility of the movement to remove the horizontal fastening (H) being fixed to the joint by means of a vertical movement of same perpendicular to the joint (N).

.- Diagonal Tubes (21): these are tubes with a slanted position in the scaffolding structure diagonally connecting the joints (N) of opposing vertical [bars] achieving the effect of bracing the structure formed by the parts of the scaffolding.

.- Diagonal Fastening (D). The headers of these diagonal tubes (21) are formed by diagonal fastening (D) parts made up by a non-symmetrical prismatic piece, that is to say, whose front part for union with the joint (N) is deviated some 45° with regard to the axis of the diagonal tube (21) and having a hook (7) on its front part serving to fit in the upper circular gap (3) of the joint (N) and to attach the diagonal tube (21) at the end of its body by means of the rotation axis (22) allowing perfectly for the angular clearance of the diagonal tube (21).

The diagonal fastening (D) has on its lower part a system for fastening to the joint (N) similar to that of the horizontal fastening, that is to say, made up by a catch (9), moving due to the effect of the movement of a pull handle (10) under the action of a spring (11).

These diagonal fastenings (D), one on each side of the diagonal tube (21), are fixed to this tube by being held on the final part of the diagonal fastening by means of a set of two sleeves allowing a rotation between the fastening (D) and the diagonal tube (21) having the set of sleeves as its axis.

The coupling and fastening of the joint (N) to the horizontal fastening (H) and the diagonal fastening (D) is performed by sliding, with the hook (7) entering the head in the internal gap (3) of the joint (N) in such a way that the curved surfaces inside the hook (7) and the surface of the internal gap of the joint (N) are in contact along throughout the surface and, given the curved shape of the surfaces, these allow the horizontal rotation movement

around the central vertical axis of the joint, sliding as it rotates over the surface of the joint (N) without losing any contact between the surfaces.

5 However, this system prevents any rolling or pitching, as both surfaces of the hook (7) are in contact with the surfaces of the internal gap (3).

The vertical movement is prevented by the action of the pin.

10 Therefore, this union between the head and the joint (N) only allows horizontal rotation with the head sliding along the upper surface of the joint (N), preventing any other type of movement.

15 This rotating movement enables the Fastening position regarding the tube to be obtained, in such a way that when fixed to the joint (N) of the vertical tube, it has sufficient play to easily allow the movement necessary to perform the fixing or release between the joint (N) and the diagonal fastening.

20 The heads of the horizontal and diagonal [bars], are detachable, interchangeable, whenever the tube diameters are the same, designed to allow for the head to be changed for longer or shorter tubes according to the needs, or to substitute damaged parts making use of those that are in a good state, without having to discard the whole piece.

25 Having sufficiently described the nature of the invention, together with the way to carry this out, it should be stated that the layout previously indicated and represented in the attached drawings are susceptible to detailed changes inasmuch its fundamental principles, established in the previous paragraphs and summarised in the claims below, will not be altered.

30

35

CLAIMS

1.- Articulated dismountable modular scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be assembled and
5 disassembled, characterised by the fact it is made up by the following interconnected parts:

.- Vertical Tubes (1), with the vertical tubes (1) presenting notches (2) perpendicular to the axis of the tube which reduce the external of the tube, positioned at constant distances throughout the entire length of the tube (1), each notch having a set length allowing for fixing
10 the joint (N) piece embracing the tube at any notch.

At the end of the tube (1), another tube with a smaller diameter called spigot (4) is inserted, serving as a guide to connect with another vertical tube (1), providing continuity to the vertical tubes making up the structure of the scaffolding in order to reach the height
15 desired in such a way the spigot (4) located inside the tubes (1) is fastened to these by means of pins (5) perpendicular to the tube (1).

.- Joints (N). The joints (N) are the points where vertical [bars] converge with horizontal or diagonal ones, being formed by two symmetrical, semi-circular semi-joints (N1) and (N2), that are articulated and join each other by means of their respective sleeves (8),
20 provided with a double conical-head screw (16), forming a circle embracing the vertical tube (1), in the position of the vertical tube (1) notch (2), in such a way the diameters of the internal circle of the joint (N) and the external diameter of the tube in the position of the notch are equal and with the internal area of the joint (N) having several internal projections (14)
25 coinciding both in location and size with the grooves (13) of the vertical tube (1),

The joint (N) has an internal concentric toroidal shape, creating an upper circular gap (3), serving to fit in this circular gap (3) the hooks (7) of the horizontal (H) and diagonal (D) fastenings described further on.
30

The notch (2) of the tube (1) prevents the vertical movement of the joint (N) in such a way once the joint (N) is fastened to the tube, it is held firmly and this cannot slide.

The joint (N) is the part of the scaffolding structure allowing for the vertical tubes to be
35 joined with the horizontal and diagonal tubes, making up the structural joint.

5 .- Horizontal Tubes (6). These are horizontal tubes (6) at whose ends a series of through-holes (12) can be seen which will serve, by means of the adequate sleeves (8), to join to the headers, the headers being formed by horizontal fastening (H) parts allowing to be fixed to the joint (N), via the appropriate means.

10 Each of these horizontal fastenings (H) is inserted to the limit at each end of the horizontal tube (6) *itself and is fastened* by means of two sleeves (8) preventing any movement between the fastenings and the horizontal tube (6).

15 .- Horizontal Fastenings. The horizontal fastening (H) is made up by a symmetrical prismatic piece, on its front part having a hook (7) which will serve to fit in the upper circular gap (3) of the joint (N) and fitting perfectly in its body the horizontal tube (6) fastened to it by means of two sleeves (8) with a through screw (16) screwed in the internal threads (19) of both heads by means of a series of notches (18) located in the upper part of the head (17) of the body of the sleeve (8).

20 The horizontal fastening (H) has a catch (9) in its lower part, as a latch that moves due to the effect of the movement of a pull handle (10) under the action of a spring (11).

25 This catch (9) acts as a latch on the lower part of the joint (N), preventing the horizontal fastening from unhooking the joint due to the pressure of the spring (11) and only allowing to be unhooked when the catch is removed from its position by means of moving the pull handle (10).

30 The pull handle (10) is made up by a chamfered point cylindrical element and showing on its upper part two hexagonal projections separated by a short distance.

35 The spring (11) serves to force the catch (9) to have the latch effect, standing out from the horizontal fastening (H) and resting on the lower part of the joint (N) piece.

 .- Diagonal Tubes (21). These are hollow tubes (21) at whose ends a series of through-holes (12) can be seen which will serve, by means of the adequate pins (5), to join to the headers, the headers being formed by horizontal fastening (H) parts allowing to be fixed to the joint (N), via the appropriate means.

These horizontal fastenings (H) are each joined to the end of the diagonal tube (21), in the back circular part of the diagonal fastening (D) are fixed by means of two through sleeves (8) not preventing the movement between the fastenings and the diagonal tube (21).

5 .- Diagonal Fastenings (D), located at each end of the diagonal tube (21), made up by a non-symmetrical prismatic piece, that is to say, whose front part for union with the joint (N) is deviated some 45° with regard to the axis of the diagonal tube (21) and having a hook (7) on its front part serving to fit in the upper circular gap (3) of the joint (N) and to attach the diagonal tube (21) at the end of its body by means of a conventional horizontal pin allowing
10 perfectly for the angular clearance of the diagonal tube (21).

The diagonal fastening (D) has on its lower part a system for fastening to the joint (N) similar to that of the horizontal fastening, that is to say, made up by a catch (9), moving due to the effect of the movement of a pull handle (10) under the action of a spring (11).

15

These diagonal fastenings (D), one on each side of the diagonal tube (21), are fixed to this tube by being held on the final part of the diagonal fastening by means of a set of two sleeves allowing a rotation between the fastening (D) and the diagonal tube (21) having the set of sleeves as its axis.

20

2.- Articulated dismountable modular scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be assembled and disassembled in accordance with claim 1 and characterised by the fact a joint (N) without internal ribs(14) is envisaged in the case of requiring the free rotation of the joint (N) over the
25 vertical tube (1).

3.- Articulated dismountable modular scaffolding of the type assembled at the workplace by means of parts comprising a structure that can be assembled and disassembled in accordance with claim 1 and characterised by the fact the walls of the
30 circular gap (3) are not parallel, as they have a wider angle towards the upper part to enable the assembly and disassembly of the horizontal (H) and diagonal (D) parts, while the area is slightly narrower in its lower part and coincides with the size of the adjustment parts of both parts, the hook (7) and the body for a perfect adjustment.

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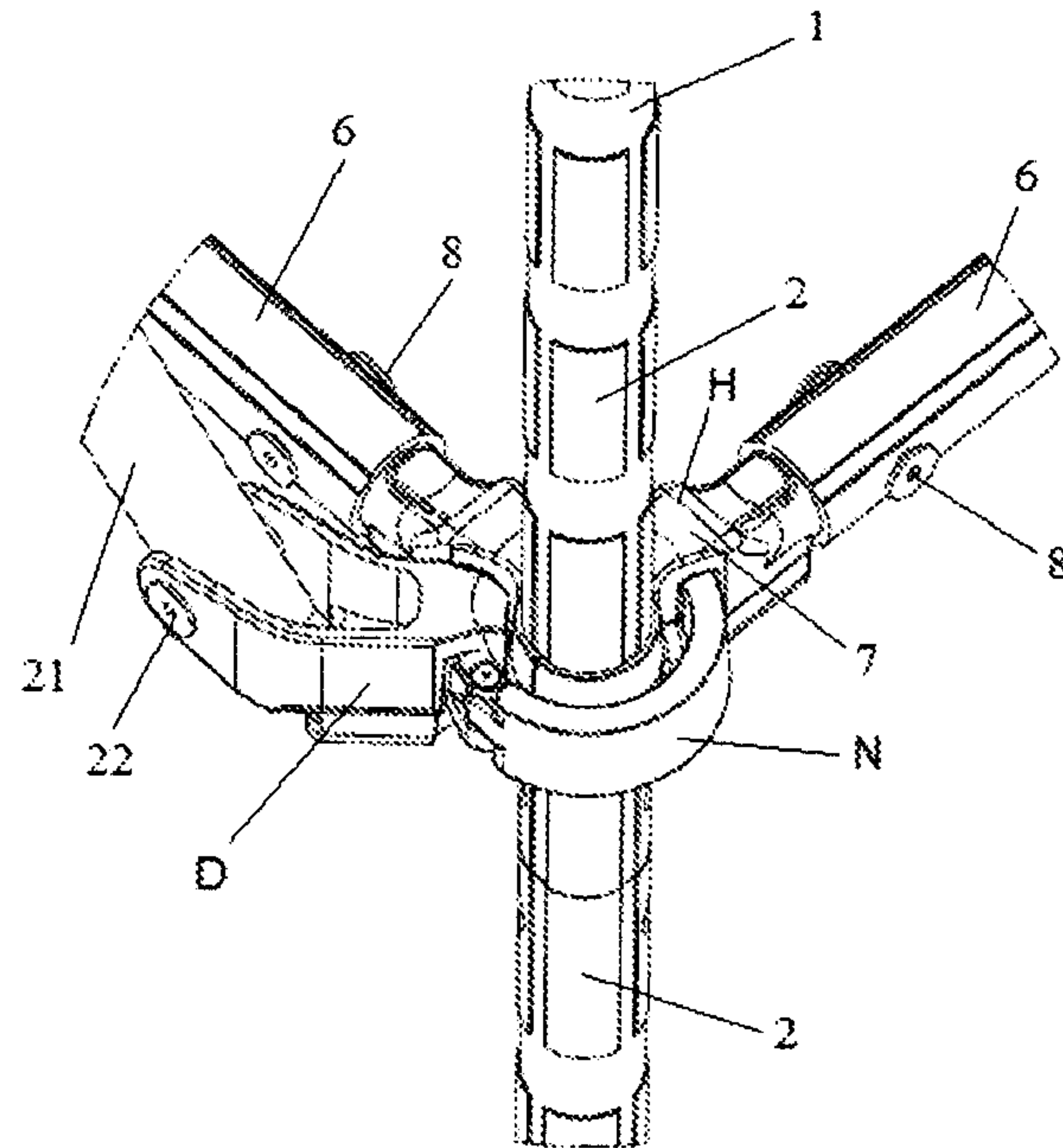


FIG. 1

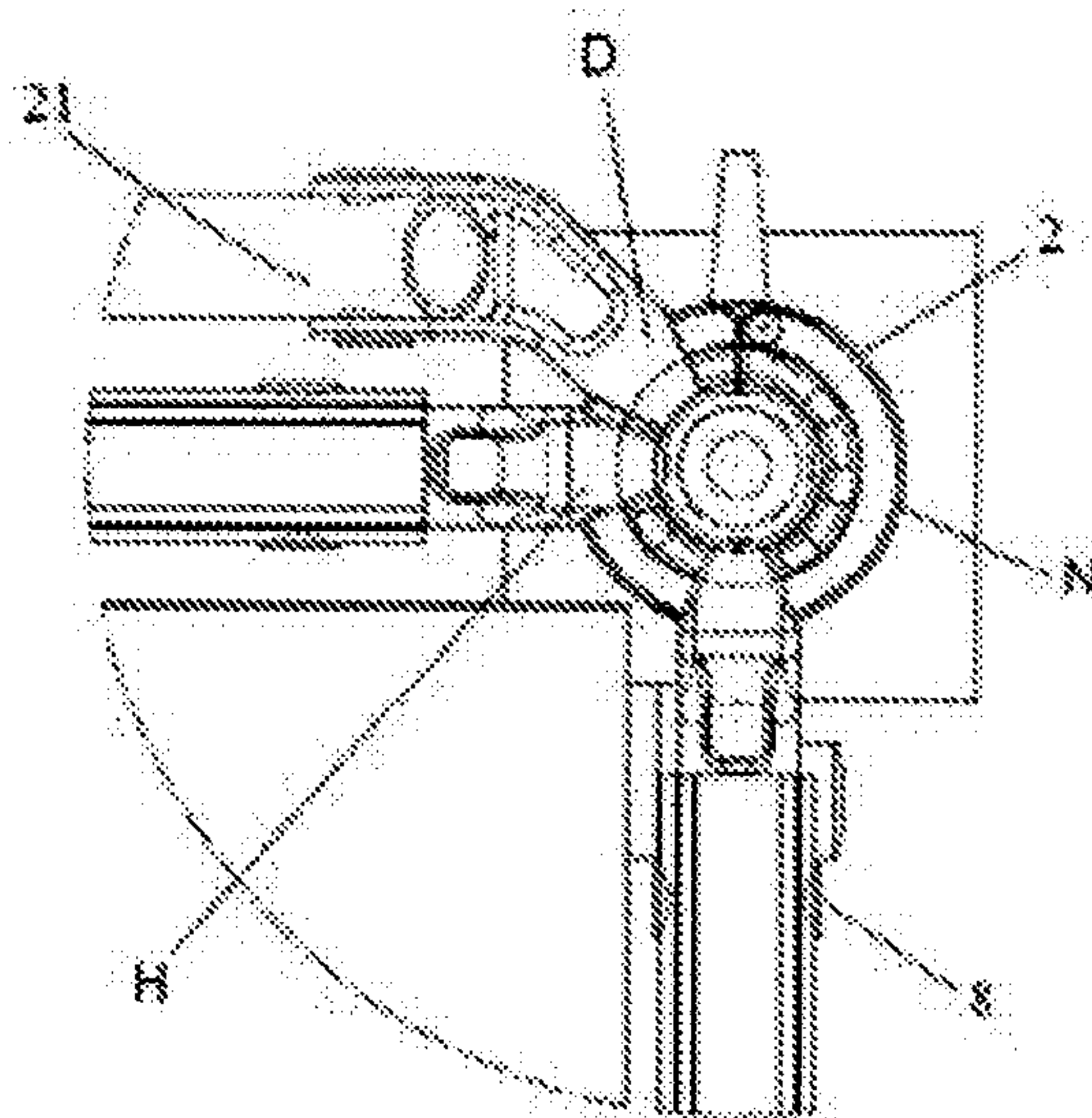


FIG. 2

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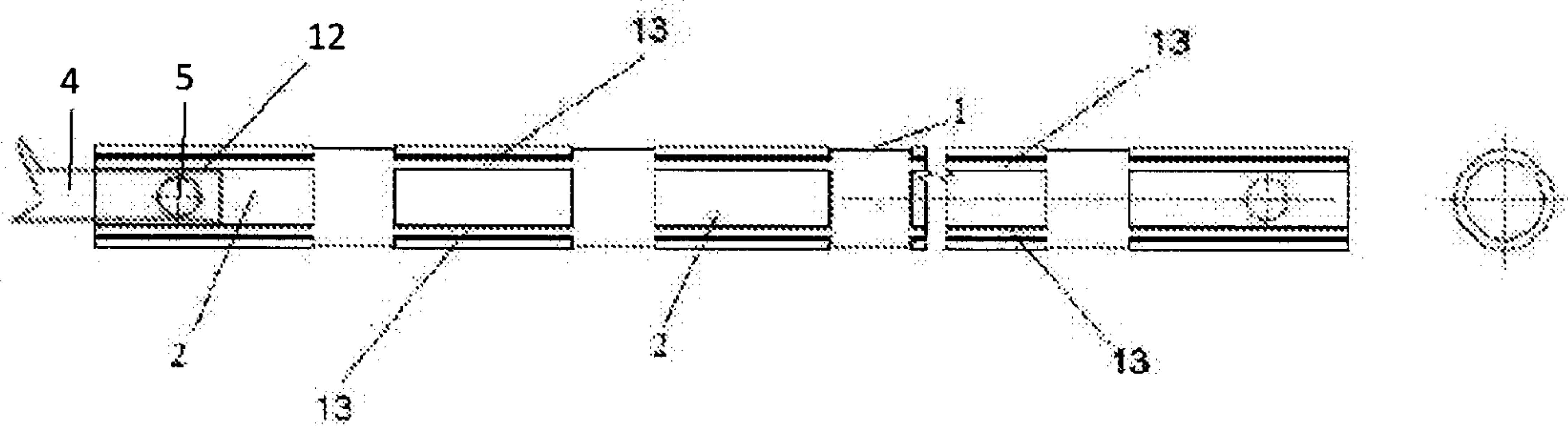


FIG. 3

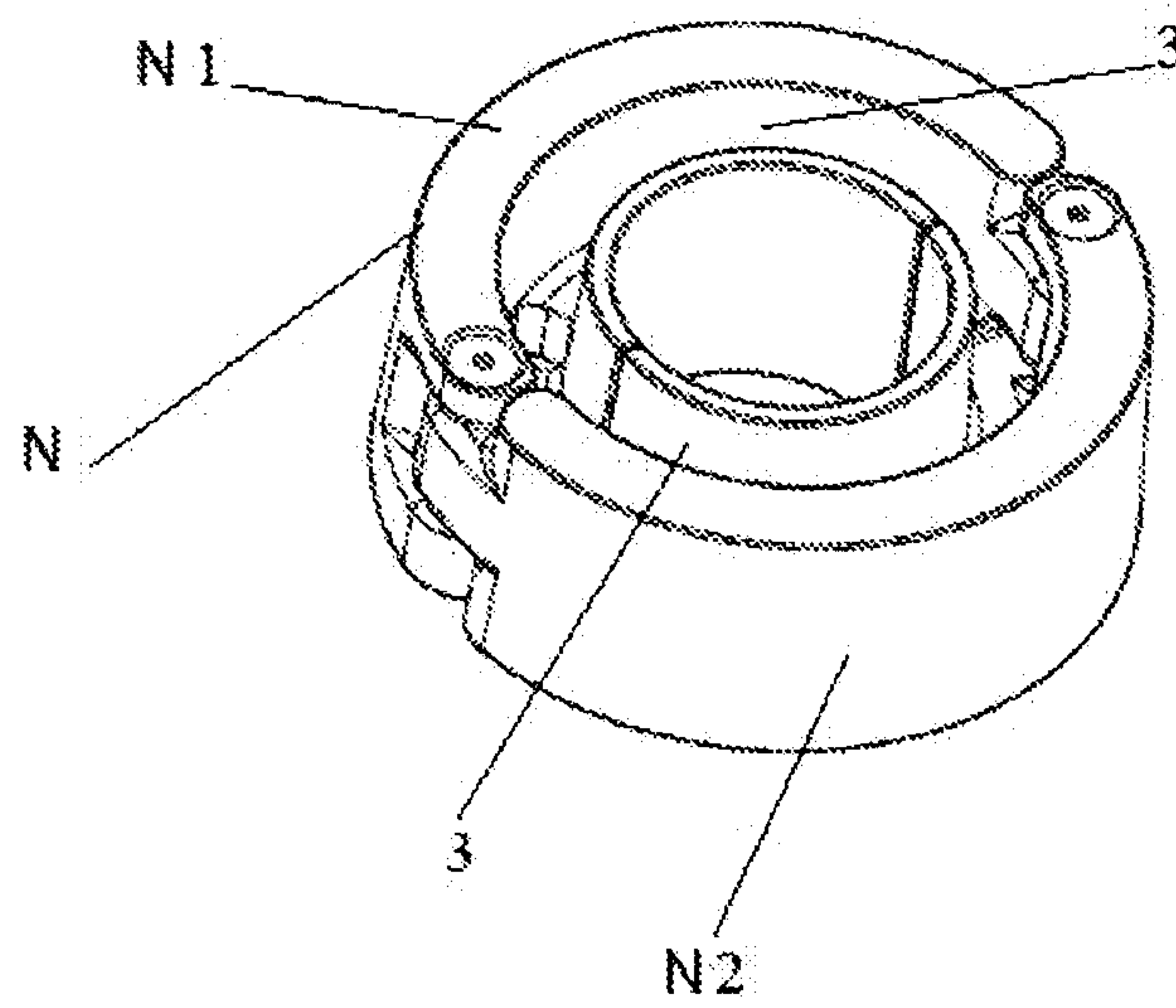
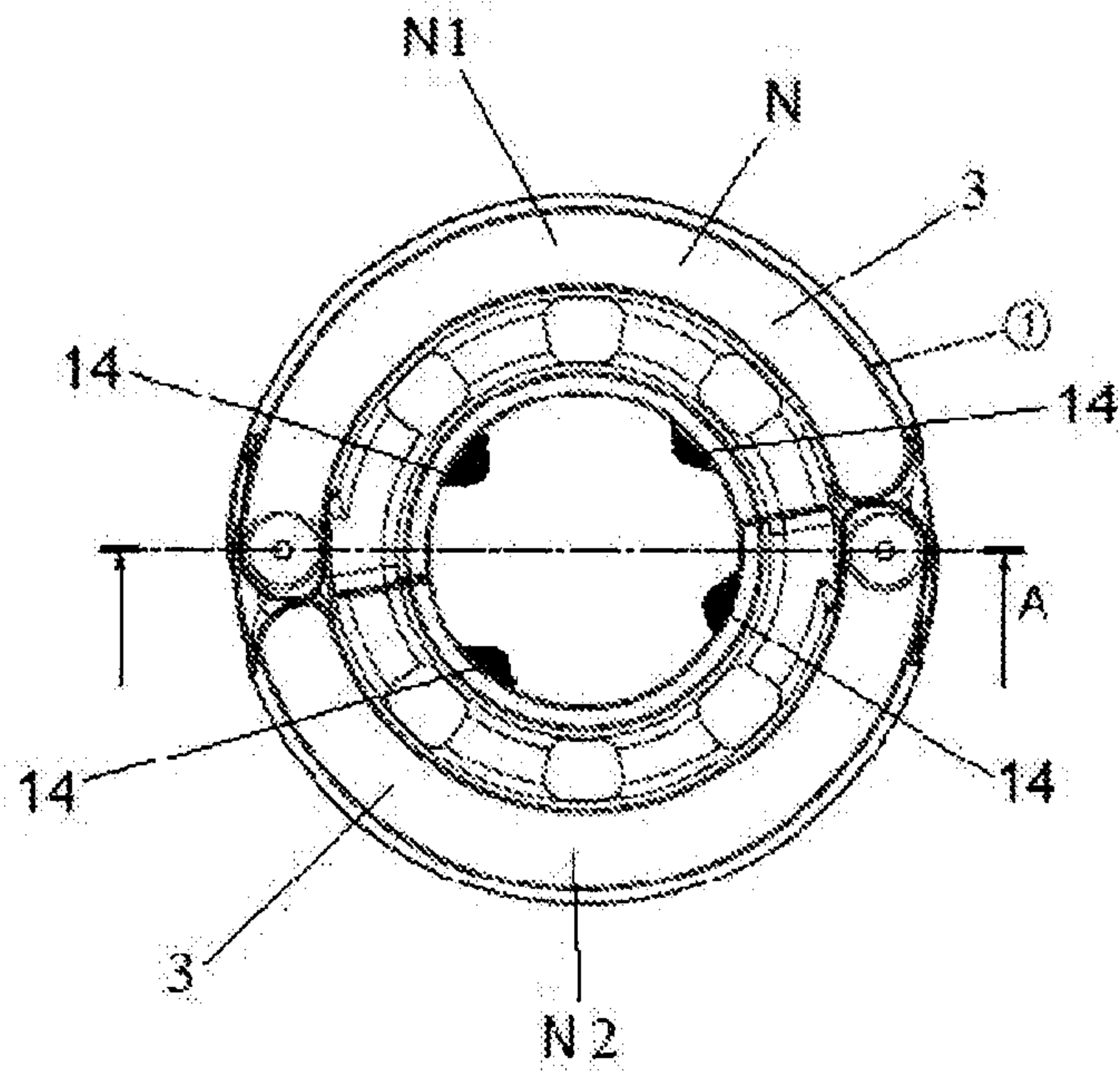
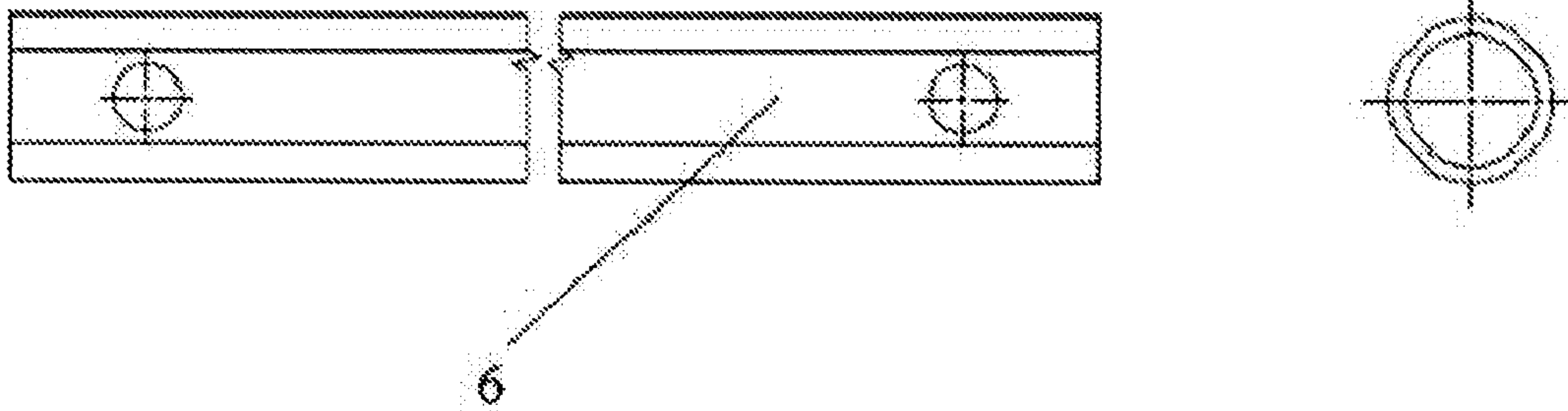
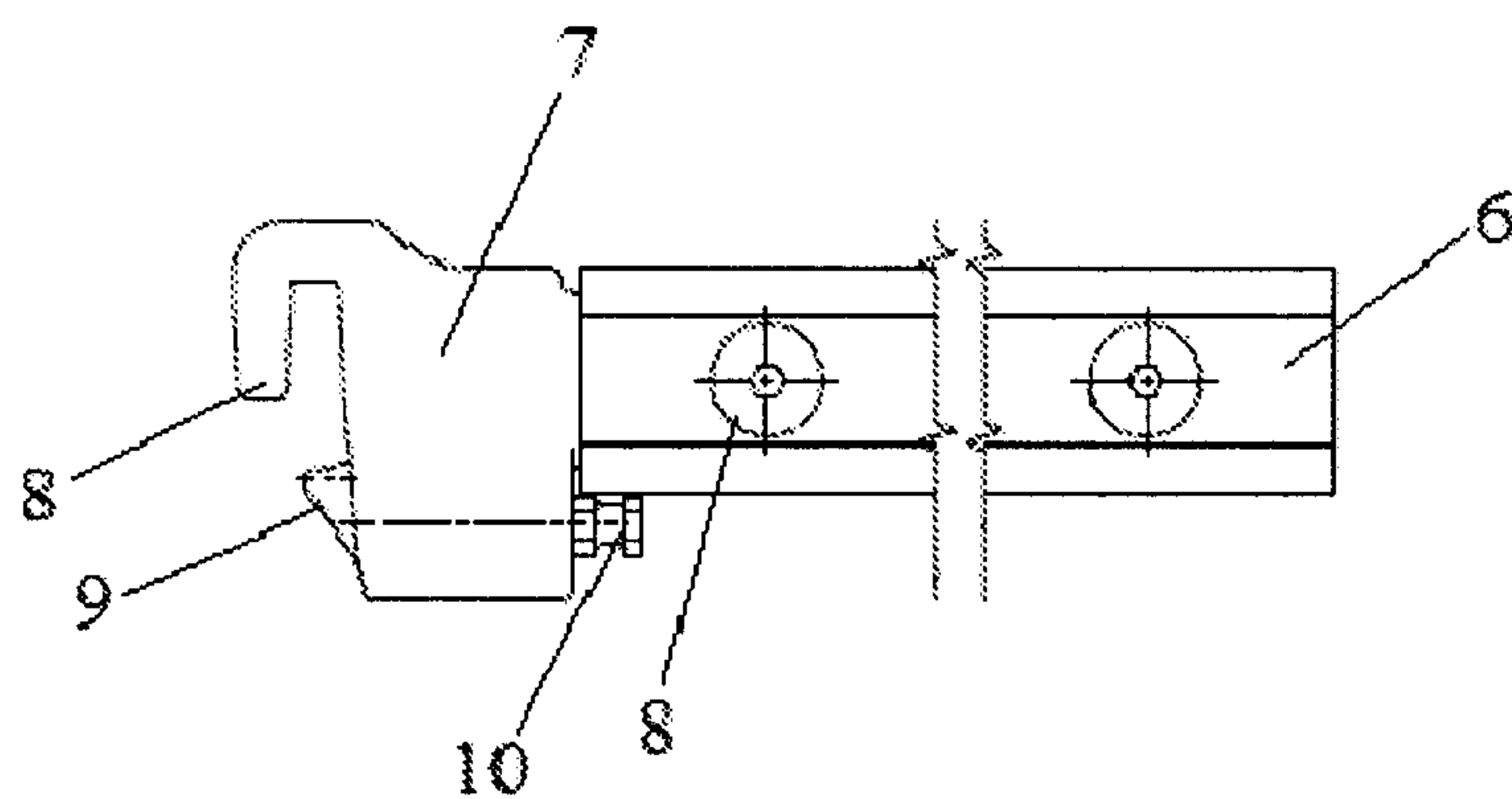
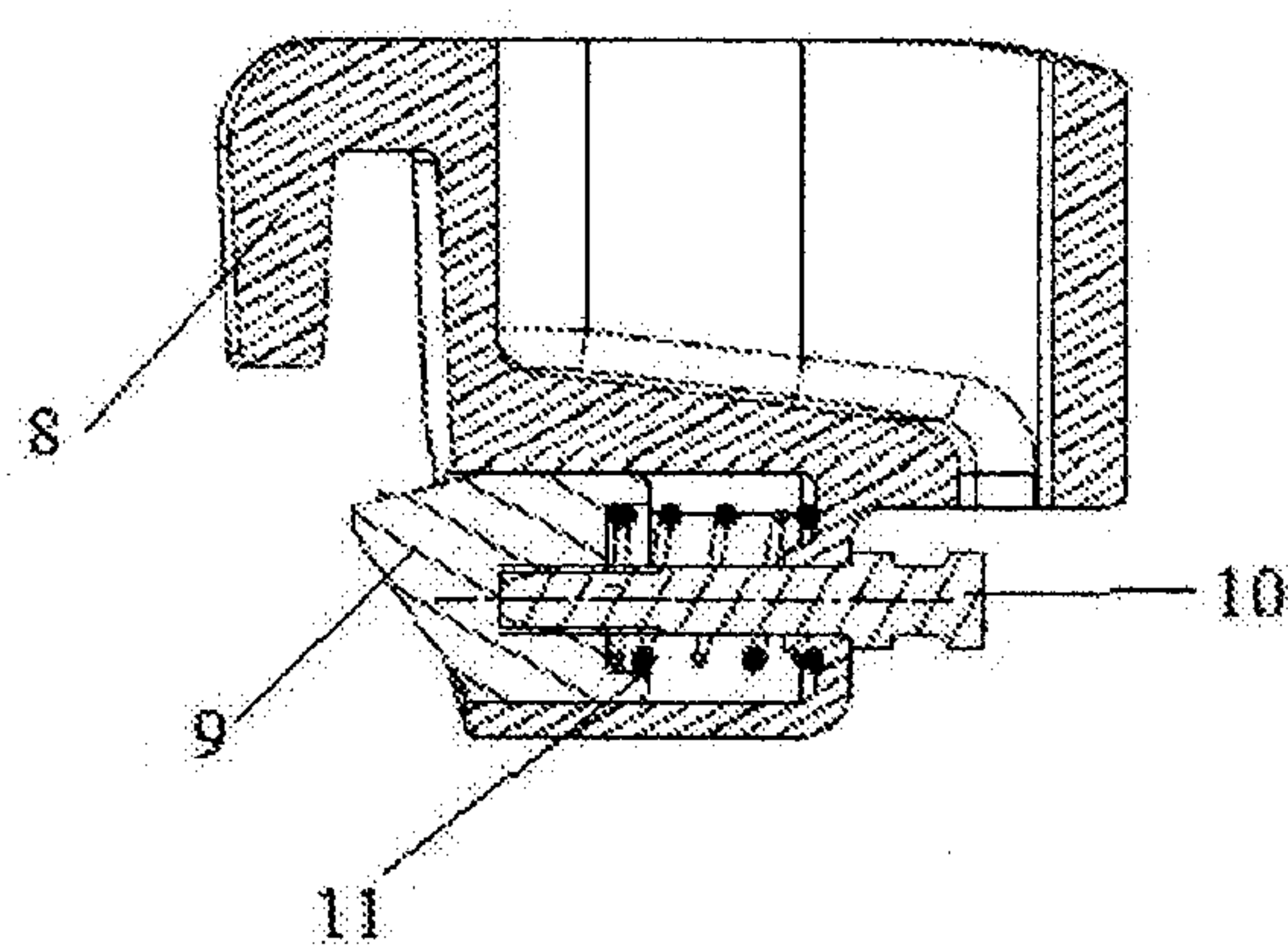


FIG. 4

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**FIG. 5****FIG. 6**

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H**FIG. 7****H****FIG. 8**

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H

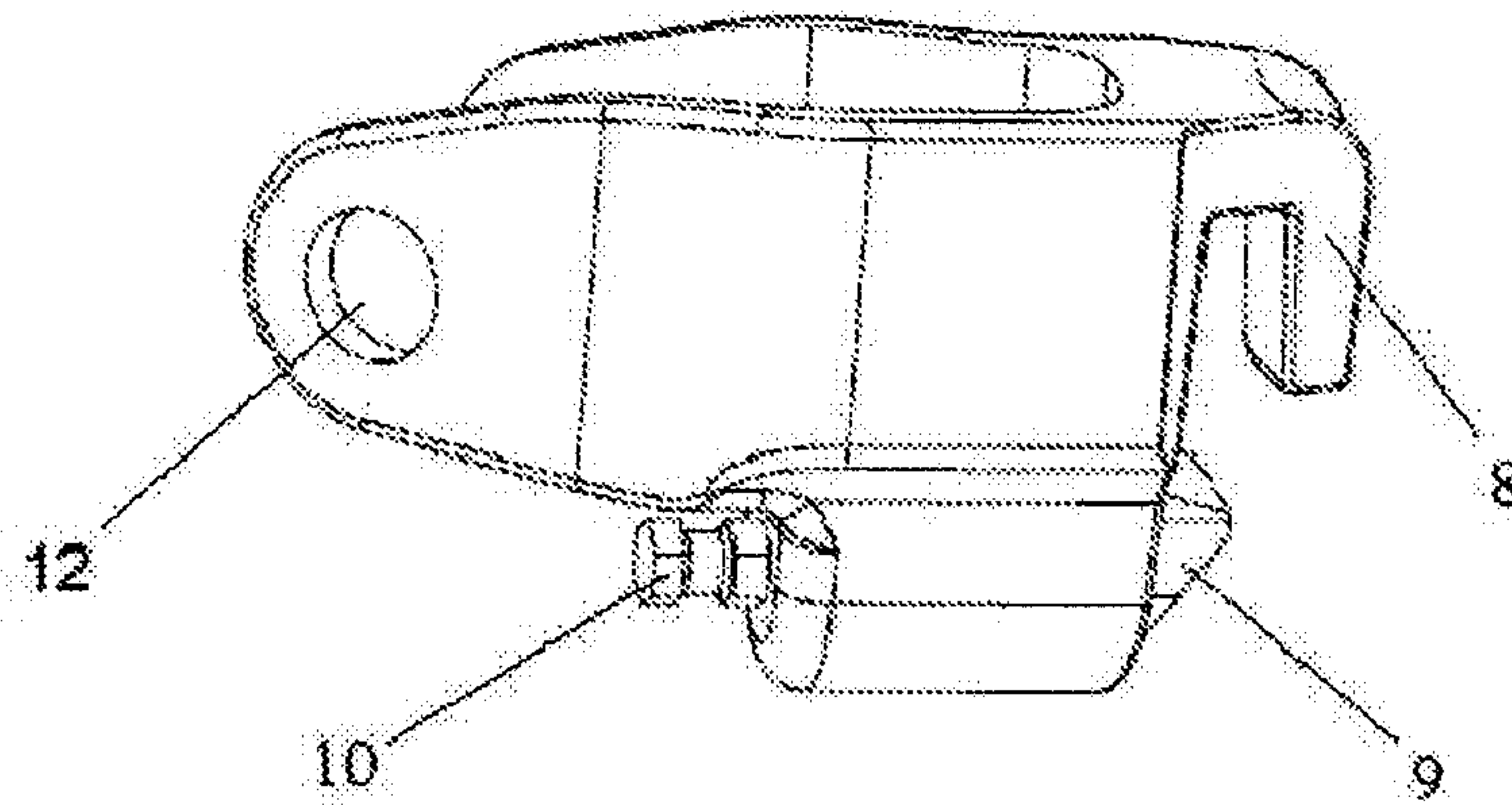


FIG. 9

D

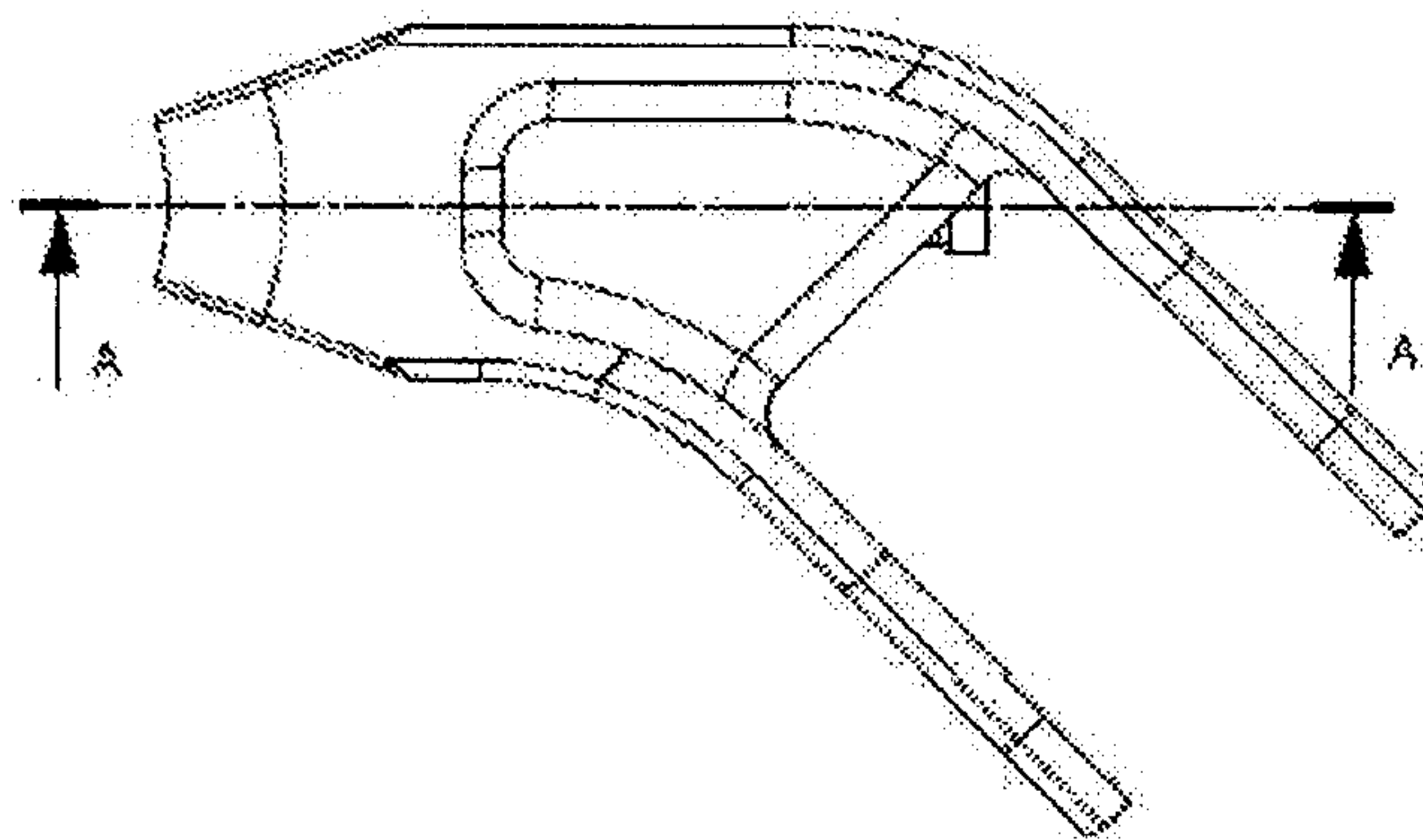


FIG. 10

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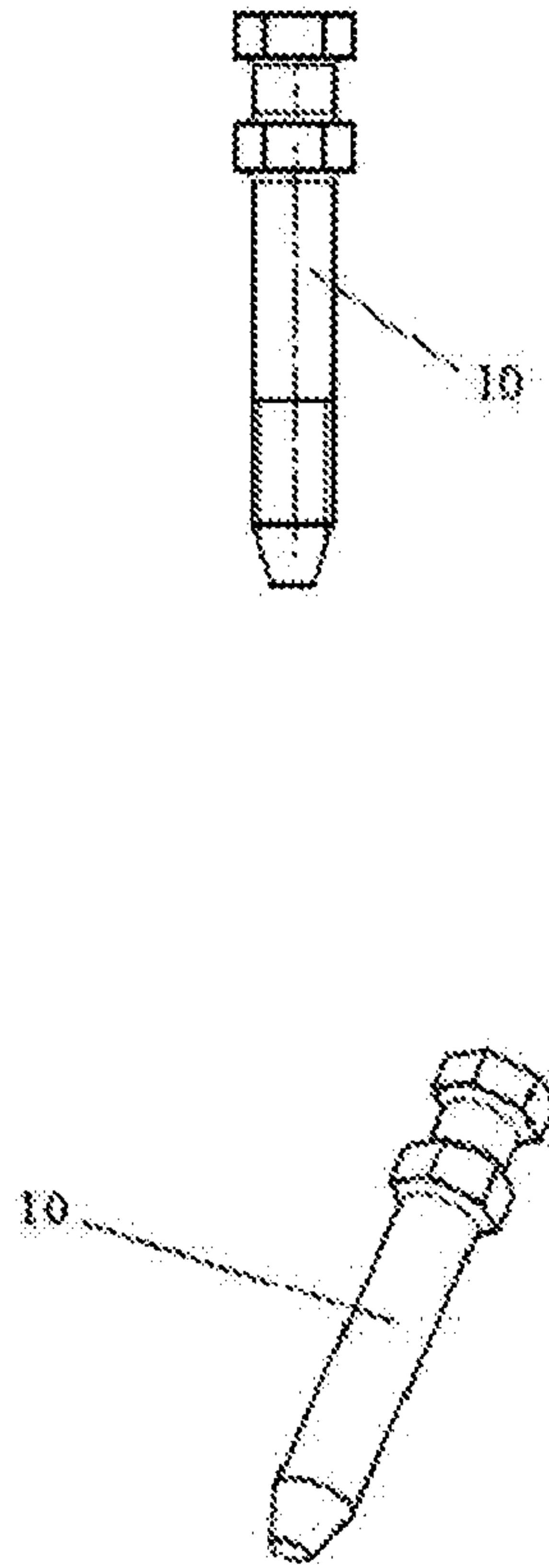


FIG. 11

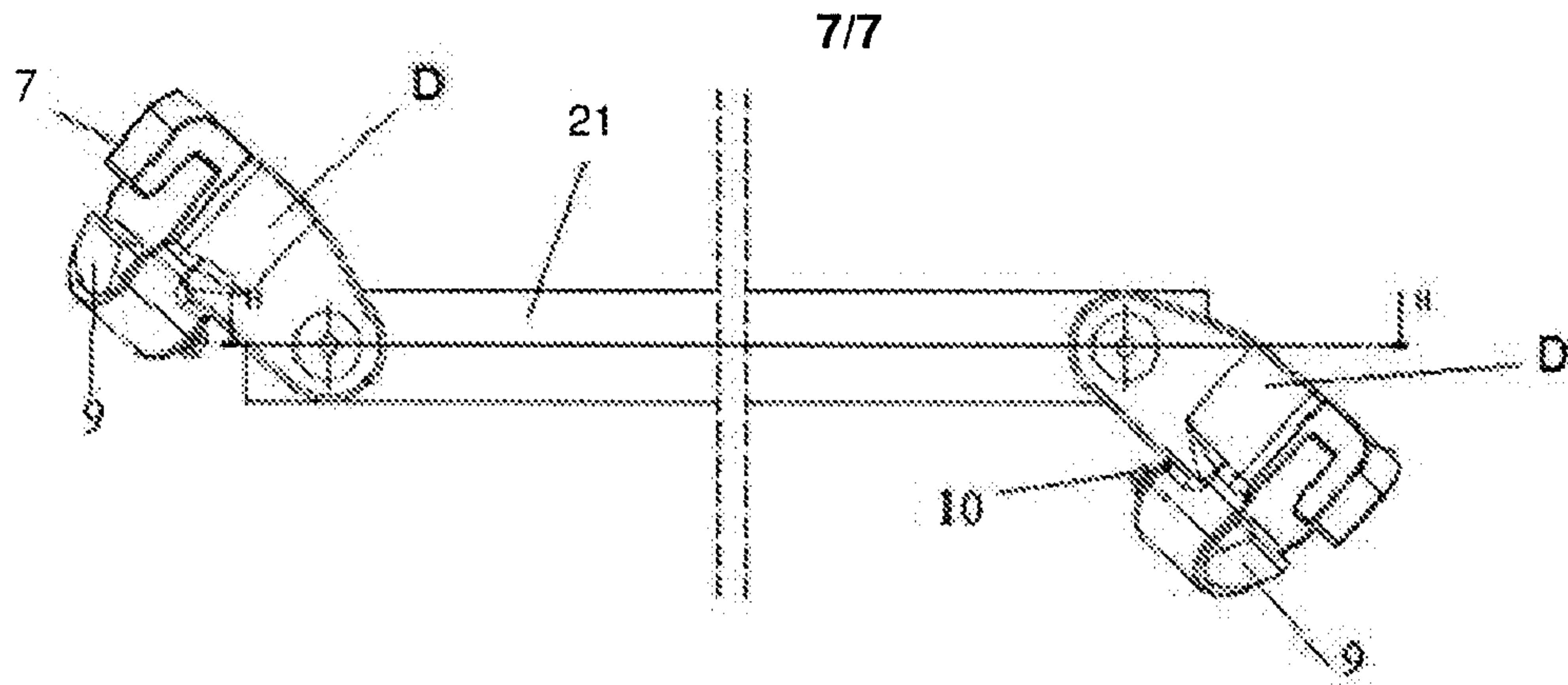


FIG. 12

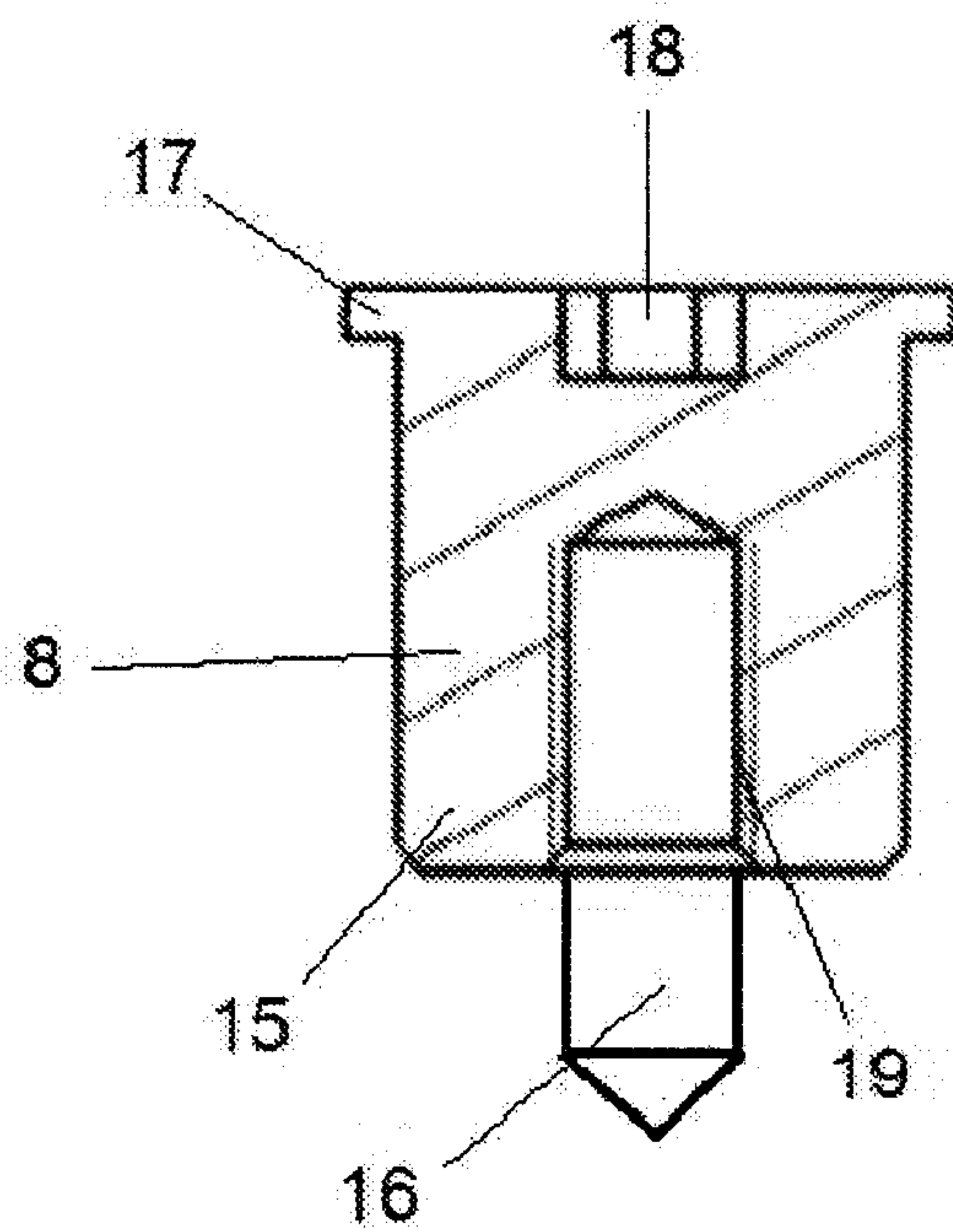


FIG. 13

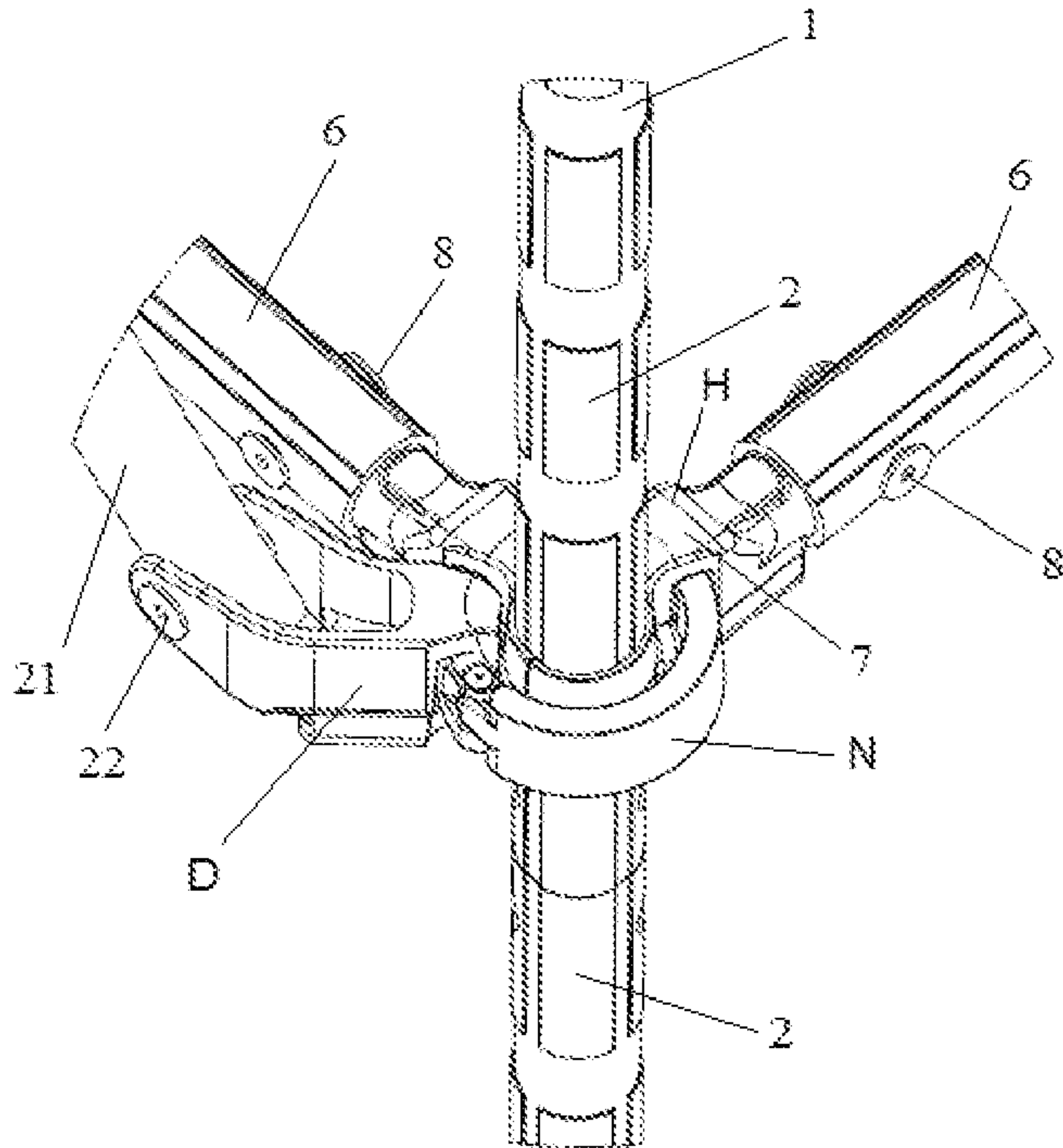


FIG. 1