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(54) SLALOM POLE

(57) Ski pole 1 comprising a tip 2a, having a joint 2b, adapted to be inserted into a snowpack, a tube 3 made of plastics an end zone 4 of which is associated with said joint to delimit a ski trail, a casing 5 associated with said joint to protect at least one metal part 7 and said end zone of said tube and connection means between said joint and said end zone of said tube, said connection means comprising at least one removable connection device 6 between said tube and said joint for the disassembly and assembly of said tube from said joint when said tip is inserted into said snowpack.

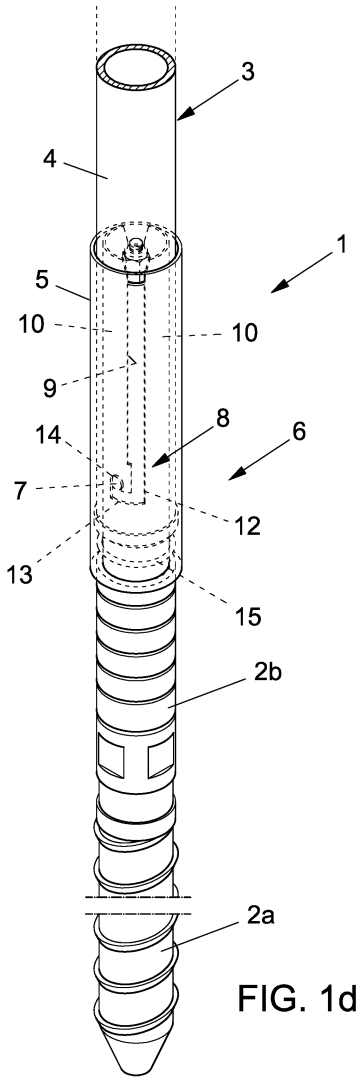


FIG. 1d

EP 3 488 905 A1

Description

[0001] The present invention relates to a ski pole.

[0002] As is known, ski poles currently consist essentially of a tip that is inserted into the snowpack for the entire length thereof.

[0003] On the tip, which may or may not be provided with a joint, there is a tube made of plastics of suitable length and diameter that is used to delimit a ski track such as a traditional slope for skiers or a track for sporting competitions.

[0004] Below, when a tube fixed to the tip is mentioned, it must be understood that in the presence of a joint the tube will be connected to the joint whereas in the absence of a joint the tube will be connected to the tip.

[0005] Normally, the tube is fixed to the tip by two opposite screws that engage with the latter, preventing loosening of the tube from the tip even when it is subjected to violent impacts by the skier.

[0006] Normally, the tube is subjected to two types of impact due to the edges of the skis on the lower end zone of the tube, where the tube is fixed to the tip and/or due to the body of the skier in the upper zone of the tube.

[0007] It is necessary to bear in mind that in addition to the blow that the tube receives from both the edges of the skis and from the skier, the joint present on the tip permits total tilting of the tube, which undergoes a violent impact also against the snowpack, which may be frozen.

[0008] Further, in order to avoid that the edges might get damaged by impacting the screws fixing the tube to the tip, a casing covering is used to cover the fixing screws. The casing, substantially, protects both the edges of the skis and the end zone of the tube that is most subject to impacts.

[0009] In the light of what was mentioned, the tip has to be made so as to remain always inserted into the hole made in the snowpack to prevent that exiting of the tip therefrom or also the possibility of the tip moving causing a significant hazard for the skier.

[0010] In this situation in which the tip has to remain inserted into the hole of the snowpack and the tube is frequently subject to breakages due to the violent impacts to which it is subjected, it is understandable that during a sports competition or during sports trials it is necessary to replace the broken tube with an undamaged tube in the shortest time possible.

[0011] Currently, the person assigned to replacing the broken tube replaces the entire pole, extracting the tip from the snow, reinserting a new pole into the hole.

[0012] The pole with the damaged tube is subsequently taken to an equipped place to replace the damaged tube by unscrewing and subsequent screwing of the screws.

[0013] In consideration of what has been said, currently, these operations are currently subject to numerous and significant drawbacks.

[0014] Firstly, in order to extract a pole from the snow, suitable wrenches are necessary and/or it is necessary to widen the hole made previously by a drill with a suitable bit.

[0015] This entails transporting significant equipment to the slope side and to several points of the slopes, including the poles to be replaced.

[0016] Further, at the end of the competition or the trial, it is necessary to retransport poles and equipment together with the poles in which the tube has been damaged.

[0017] In addition to what has been said, the replacement of the entire pole very often causes an undesired widening of the hole that forces personnel to use special wedges to keep the new pole fixed in the snow.

[0018] Sometimes, this is not sufficient and it is necessary to make a new hole, in the case of frozen snow also using a drill to be able to insert a pole replacing the removed one.

[0019] In the latter case, the movement of the position of the pole can cause drawbacks for the skier when a variation is made to the original ski track.

[0020] The problems are aggravated during trials where personnel are reduced.

[0021] The task proposed by the following invention is to realise a ski pole which does not have the drawbacks of the prior art.

[0022] Within the scope of this task, one aim of the invention is to realise a ski pole that enables the damaged tube to be replaced within an extremely short time without ever having to extract the tip from the snowpack.

[0023] A further aim of the invention is to realise a ski pole that enables the damaged pole to be replaced without the help of specific equipment.

[0024] A further aim of the invention is to realise a ski pole that enables the damaged tube to be replaced without having to take a lot of equipment to the sides of the slope but only spare tubes whose weight is very limited.

[0025] A further aim of the invention is to make a ski pole that enables the damaged tube to be replaced without having to make a new hole in the snow and without having to use possible wedges to narrow the old hole.

[0026] A further aim of the invention is to realise a ski pole that enables the damaged pole to be replaced without having to modify the original track because of the movement of one or more poles.

[0027] This task, as well as these and other objects are achieved by a ski pole comprising a tip adapted to be inserted into a snowpack, a tube made of plastics associated with an end zone thereof to said tip to delimit a ski trail, a casing associated with said tip protecting at least the metal parts and said end zone of said tube and connection means between said tip and said end zone of said tube, characterised in that said connection means comprises at least one removable connection device between said tube and said tip for manual disassembly and assembly of said tube from said tip when said tip is inserted into said snowpack.

[0028] The dependent claims more fully specify the further characteristics of the ski pole according to the inven-

tion.

[0029] In particular, the connection device comprises contrasting elastic means and by the action of which the tube engages with the tip.

[0030] The connection device comprises at least one peg protruding inside the end of the tube and engages with at least one hollow that has at least one first tract parallel to the axis of the pole and at least one second tract perpendicular to the latter.

[0031] The hollow has at least one third tract perpendicular to the second tract.

[0032] In this manner, the elastic member that is housed inside a seating of said casing has an elastic force that is sufficient to keep the peg inside the third tract when the pole is subjected to an impact by the skis and/or the skier.

[0033] In particular, the peg is inserted into the first tract, compressing the elastic member until the second tract is reached with which it engages by a partial rotation of the tube around the axis thereof.

[0034] The thus compressed elastic member takes the peg to said third tract when it returns to the non-compressed position.

[0035] In this manner, when said at least one peg is inserted into said third tract said tube has the possibility of moving only to said tip.

[0036] In a different technical solution, the removable connection device comprises on said tip at least two elastic tabs each having at an end said peg to be inserted into respective holes present in said tube.

[0037] In a further version the removable connection device comprises a thread made on the joint and a counter-thread made in a annular element.

[0038] The tube has axial retaining means of the annular element.

[0039] Between said tube and said annular element, constraining means of said rotation is present when said elastic member is compressed by said tube.

[0040] These characteristics and advantages of the invention shall appear more clearly from the following indicative and non-limiting description of preferred but not exclusive embodiments of a ski pole illustrated in the following figures in which:

figs. 1a and 1b are a perspective view of the tip inserted into the snow from or into which the tube according to the invention can be removed or inserted

figs. 1c and 1d are a perspective view of the tube and of the casing in an exploded view and in an assembled view according to the invention

figs. 1e and 1f and 1g are a sectioned side raised view of the connection sequence of the tube to the tip according to the invention

figs. 2 a and 2b are a perspective view of the tube and an exploded view of the annular element and which are connected together by a thread according to the invention, in which for reasons of drawing simplicity, the casing is not shown although it is provided

figs. 2c, 2d and 2e are a sectioned side raised view of the connection sequence of the tube to the tip by a thread according to the invention

figs. 3a and 3b are a perspective view of the tube and of the exploded tip and which are connected together by elastic tabs according to the invention, in which for reasons of drawing simplicity, the casing is not shown although it is provided

figs. 3c, 3d and 3e are a sectioned side raised view of the connection sequence of the tube to the tip by elastic tabs according to the invention.

[0041] With particular reference to the figures disclosed above, the ski pole according to the invention is indicated overall by the reference number 1.

[0042] The ski pole comprises a tip 2a and a joint 2b adapted to be inserted into a snowpack, shown schematically, a tube 3 made of plastics associated with an end zone 4 thereof with the joint 2b to delimit a ski trail.

[0043] Above the end zone 4 of the tube 3 a casing 5 is present that also covers the zone of the tip where the tube is associated.

[0044] The casing 5 is adapted to simultaneous protection of the connection means between the end zone 4 and the joint 2b that have metal parts that if they came into direct contact with the edges of the skis, the sharp edge thereof would get damaged.

[0045] The casing is further adapted to protect the end zone of the tube that, as known, is the most stressed part thereof and thus the part that is most subject to breakage.

[0046] Advantageously, the connection means comprises at least one removable connection device 6 between the tube 3 and the joint 2b that enables disassembly and assembly of the tube 3 from and on the joint 2b that can have any structure, even when the latter is inserted firmly inside the hole that houses the joint 2b and has been made in the snowpack, for example, with a suitable drill.

[0047] In particular, the connection device 6 comprises elastic means, which comprises a general elastic member 15 of a different type such as springs or elastic buffers or other means that contrast and through the action of which the tube engages and is kept engaged with the joint 2b also in the presence of violent impacts.

[0048] In a first technical solution, the connection device comprises at least one peg and in particular two pegs 7 that are diametrically opposite one another that protrude inside the end 4 of the tube 3 and are constrained to the tube 3.

[0049] Each peg 7 engages with at least one hollow, and in particular in two hollows 8 present on the joint 2b, which hollows 8 are also opposite one another, the two hollows 8 are aligned to the openings 9 formed by the wings 10 containing the spring and the tie rod of the joint that is present in the joint 2b.

[0050] Obviously, the removable connection device 6 is also usable on the tips without joints.

[0051] Each hollow 8 has at least one first tract 12 par-

allel to the axis of the pole and at least one second tract 13 perpendicular to the first tract and if necessary at least one third tract 14 perpendicular to the second tract 13.

[0052] The elastic member 15 is housed inside a seating 24 of the casing delimited by an annular inner thickening 16 that can be at the end of the casing (fig. 1c) or inside the casing (fig. 1e, 1f and 1g).

[0053] The elastic member has an elastic force that is sufficient to hold at least the peg 7 inside the third tract 14 when the pole is subjected to an impact determined by the skis or by the skier that tends to remove it from the tip in an upward direction.

[0054] In particular, the tube is connected to the tip by inserting the two pegs 7 into the openings 9 of the tip and subsequently into the first tract 12, progressively compressing the elastic member until the second tract 13 is reached.

[0055] The pegs engage with the second tract 13 by rotation of the tube around the axis thereof as shown in fig. 1f.

[0056] Subsequently, the compressed elastic member, returning to the initial non-compressed shape, because it is no longer subjected to a compression force, takes the pegs 7 inside the third tract 14 as far as the end of the stroke.

[0057] In this manner, it is impossible for the tube to be removed from the tip because the tube is able to move only towards the joint.

[0058] In a variant embodiment, the removable connection device comprises preferably on the wings 10, which *are per se* already elastic, at least two elastic tabs 20, each having at one end the peg 7 to enable the peg 7 to be inserted into the respective holes 21 present on the tube 3.

[0059] In this case, when the tube is fitted to the tip, it is moved in such a manner as to mate the two pegs 7 with the holes 21 so that the two pegs, moved by the elastic tabs 20 and by the wings 10, automatically engage inside the holes 21.

[0060] In a different variant embodiment, the removable connection device comprises a thread 25 made on the joint.

[0061] The thread 25 screws onto a counter-thread 23 made on an annular element 26 that has axial retaining means 30 on the tube 3.

[0062] To summarise, the annular element 26 is housed in the end zone 4 of the tube 3 delimited by the axial retaining means 30 and by the edge of the tube 3.

[0063] The annular element can thus rotate freely and translate axially inside the tube 3.

[0064] On the annular element 26, rotation constraining means is provided defined by several teeth 27 that engage with respective seatings 28 that are present on said axial retaining means 30.

[0065] When a pressure is exerted on the tube, the tube moves towards the tip to contrast the elastic member.

[0066] The teeth 27 engage with the seatings 28, making the annular element 26 solidly connected to the tube 3, enabling the tube to be screwed onto the tip.

[0067] After the pressure has ceased, the elastic member 15 returns the tube upwards, disengaging the teeth 27 from the respective seatings 28 in such a manner that the annular element 26 is free to rotate in the tube so as to prevent the tube from unscrewing from the annular element 26.

[0068] In order to proceed to unscrewing, an operation that is opposite to what has been disclosed above is conducted.

[0069] It has in fact been established that the ski pole according to the invention is particularly advantageous to permit facilitated replacement of the tube from the tip without extracting the tip from the snowpack.

[0070] In practice, the materials used, as well as the dimensions, can be any according to the needs and the state of the art.

Claims

1. A ski pole (1) comprising a tip (2a), having a joint (2b), adapted to be inserted in a snowpack, a tube (3) in plastic material associated with one of its end zones (4) to said joint to delimit a ski trail, a casing (5) associated with said joint for the protection of at least one metal portion (7) and said end zone of said tube and connection means between said joint and said end zone of said tube, **characterised in that** said connection means comprises at least one removable connection device (6) between said tube and said joint for the manual disassembly and assembly of said tube from said joint when said tip is inserted in said snowpack, said removable connection device (6) comprising elastic means (15) in opposition and through the action of the elastic means said tube engages with said joint.

2. The ski pole according to claim 1, **characterised in that** said removable connection device (6) comprises at least one peg (7), projecting inside said end of said tube and engaging in at least one hollow (8) present on said joint, said hollow having at least one first tract (12) parallel to the axis of said pole and at least one second tract (13) perpendicular to said first tract.

3. The ski pole according to claim 2, **characterised in that** said hollow (8) exhibits at least one third tract (14) perpendicular to said second tract (13).

4. The ski pole according to claim 3, **characterised in that** said elastic means comprises an elastic member (15), housed inside a seat (24) of said casing, having sufficient elastic force to keep at least said peg (7) inside said third tract (14) when said pole is subjected to an impact.

5. The ski pole according to any one of claims 2 to 4, **characterised in that** said at least one peg (7) is inserted into said first tract (12) compressing said elastic member (15) until said second tract (13) is reached.

6. The ski pole according to any one of claims 3 to 5, **characterised in that** said elastic organ inserts said peg into said third tract (14) when it returns to the non-compressed position.

7. The ski pole according to claim 6, **characterised in that** when said at least one peg (7) is inserted into said third tract (14) said tube has the possibility of movement only towards said tip.

8. The ski pole according to claim 1, **characterised in that** said removable connection device (6) comprises at least two elastic tabs (20), each having at the end said peg (7) for insertion thereof into respective holes (21) present on said tube (3).

9. The ski pole according to claim 1, **characterised in that** said removable connection device (6) comprises a thread (25) realised on said tip and a counter-thread (23) realised in an annular element (26), said tube having axial retaining means (30) of said annular element (26).

10. The ski pole according to claim 9, **characterised in that** it comprises constraining means of said rotation (27, 28) between said tube and said annular element when said elastic member is compressed by said tube.

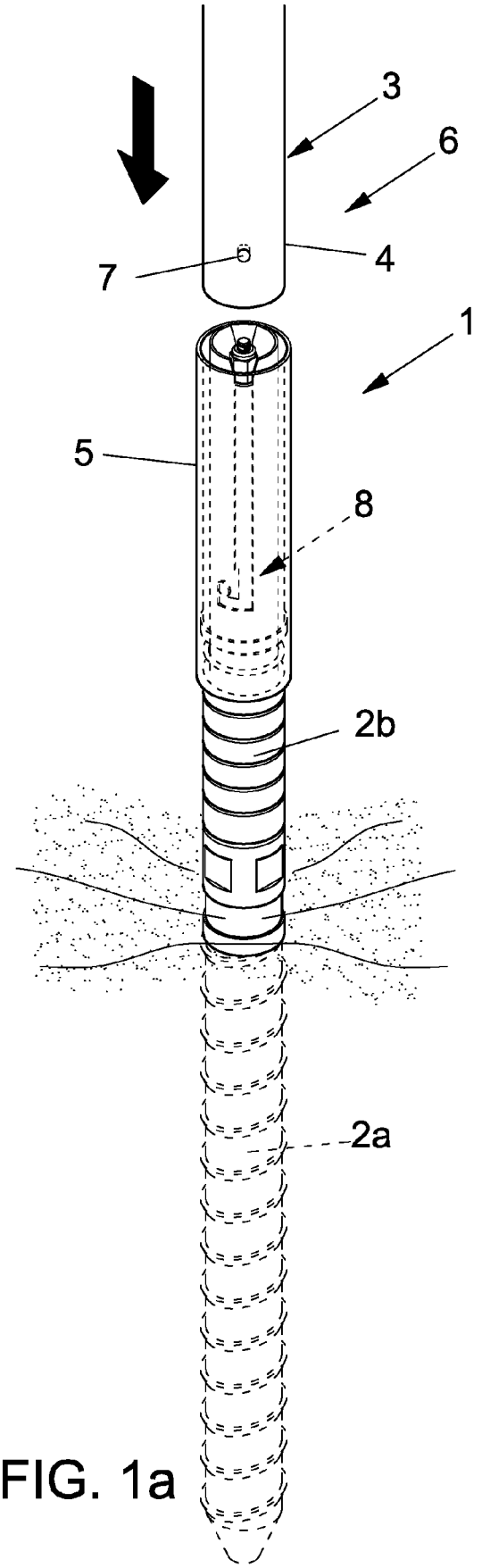


FIG. 1a

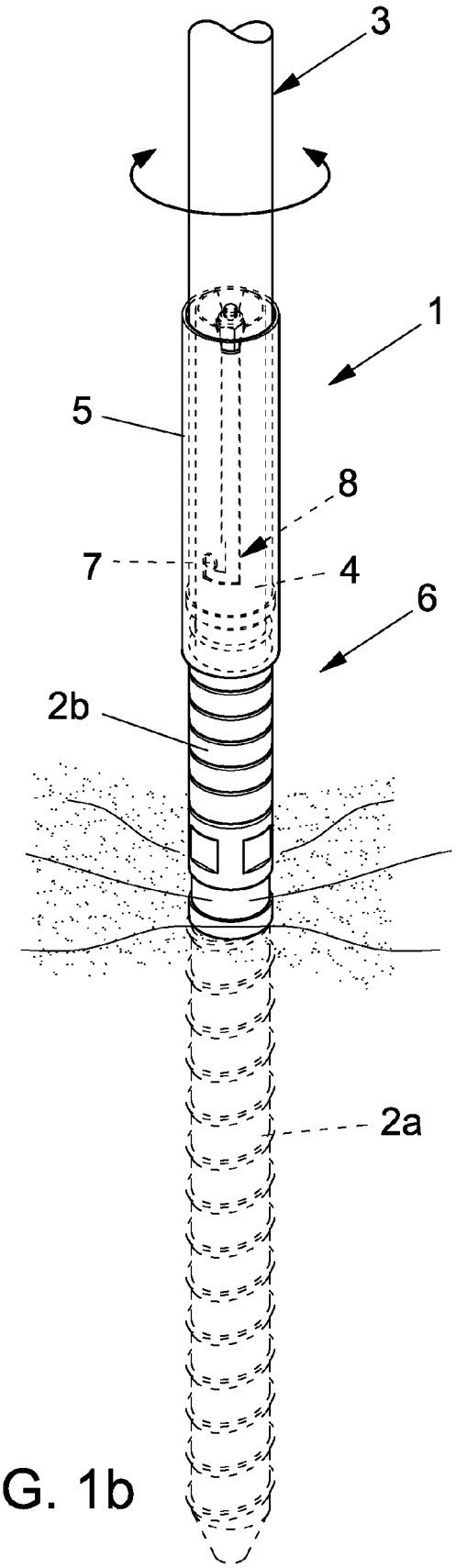
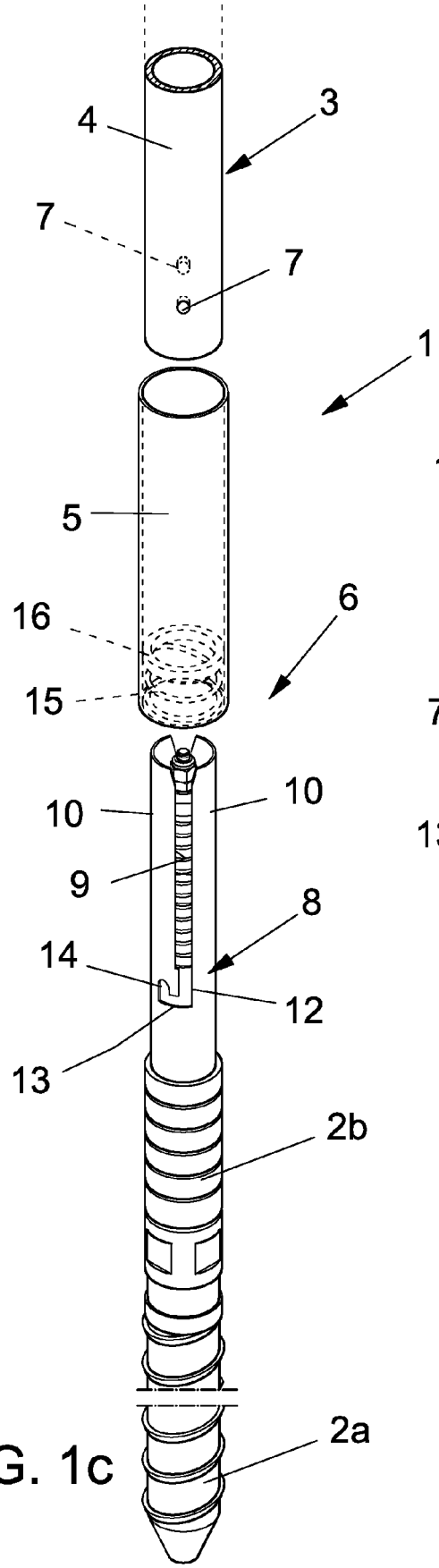


FIG. 1b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2b
2a

FIG. 1c

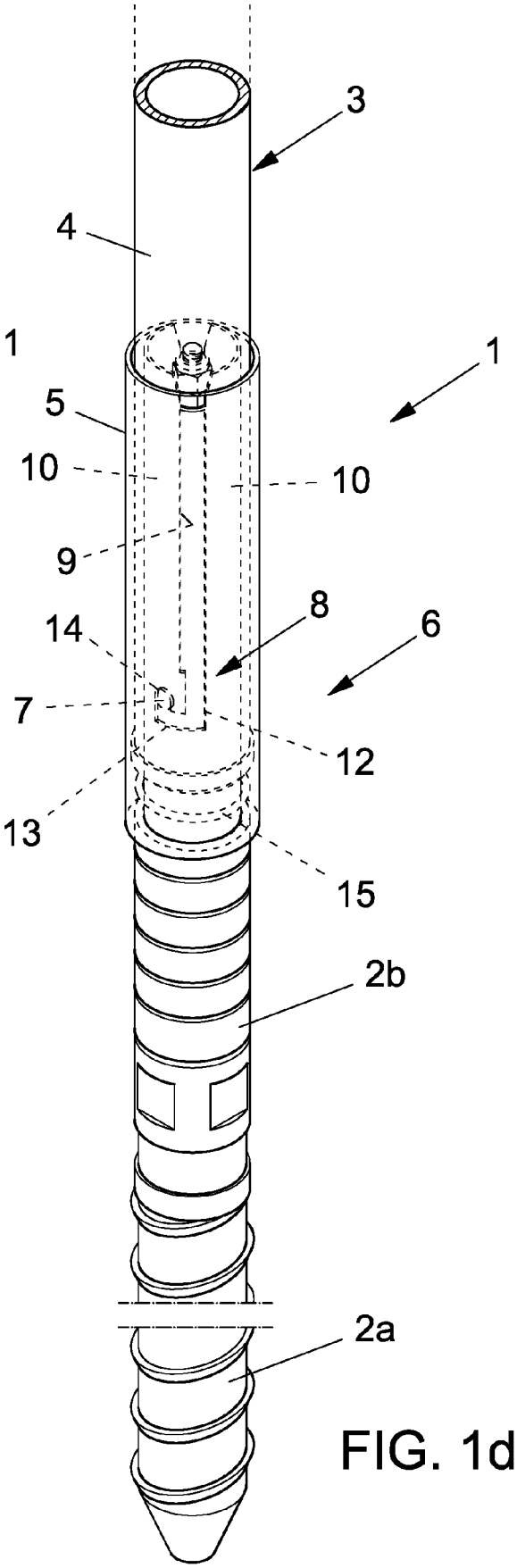
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FIG. 1d

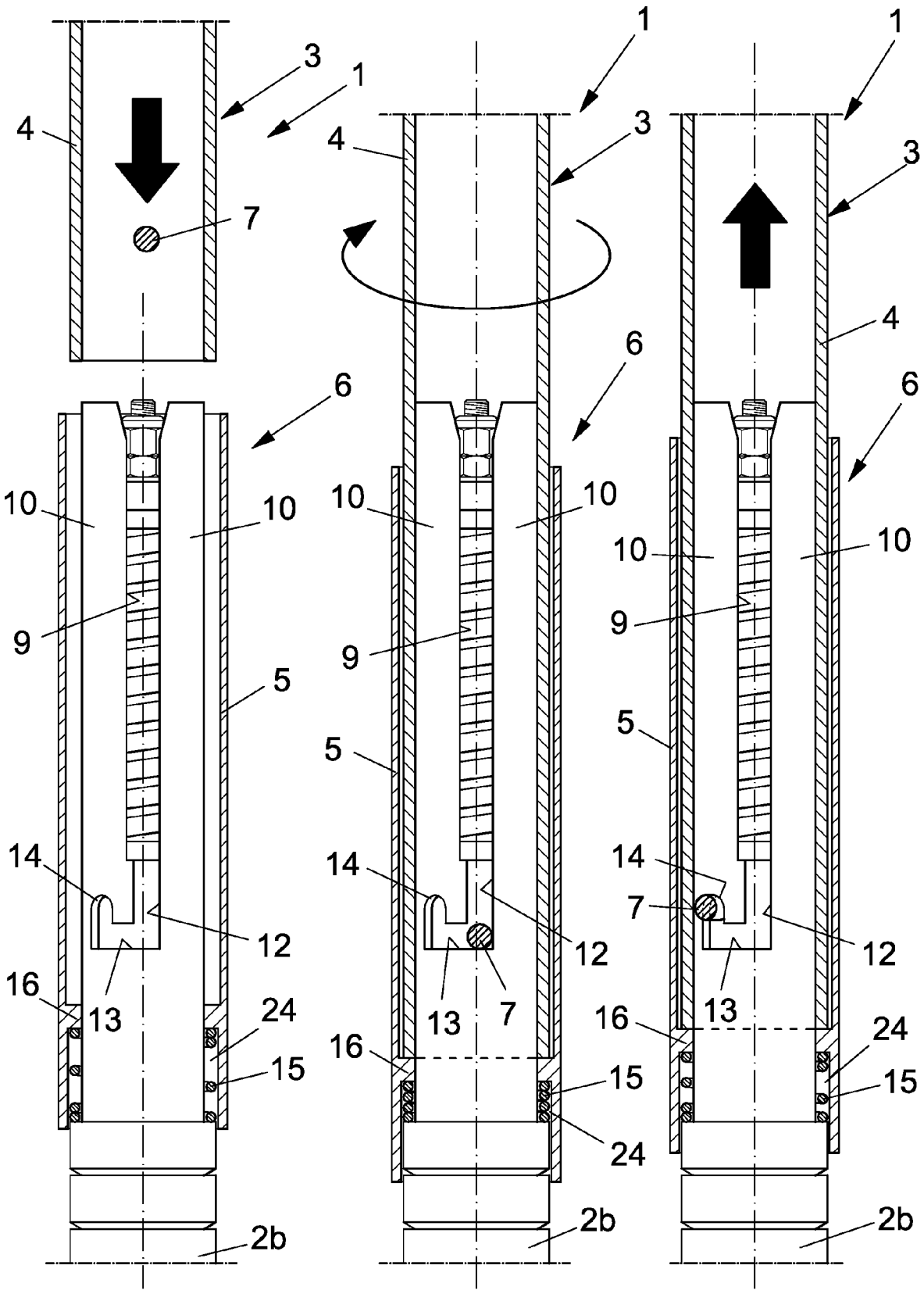

FIG. 1e FIG. 1f FIG. 1g

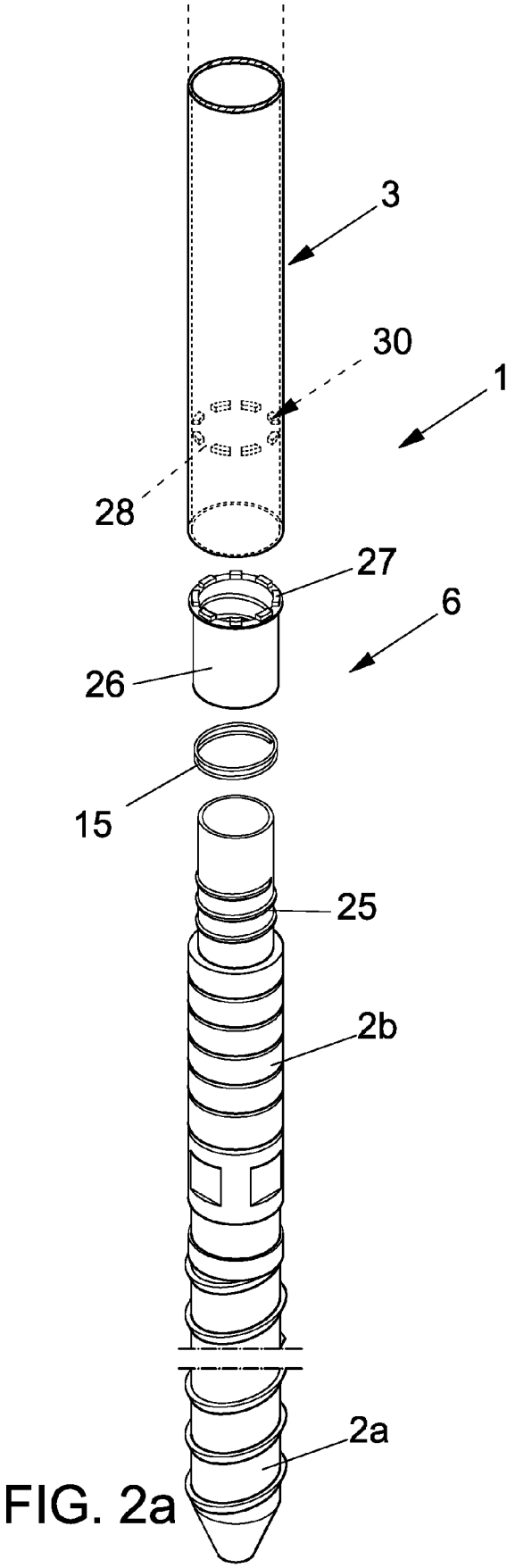

FIG. 2a

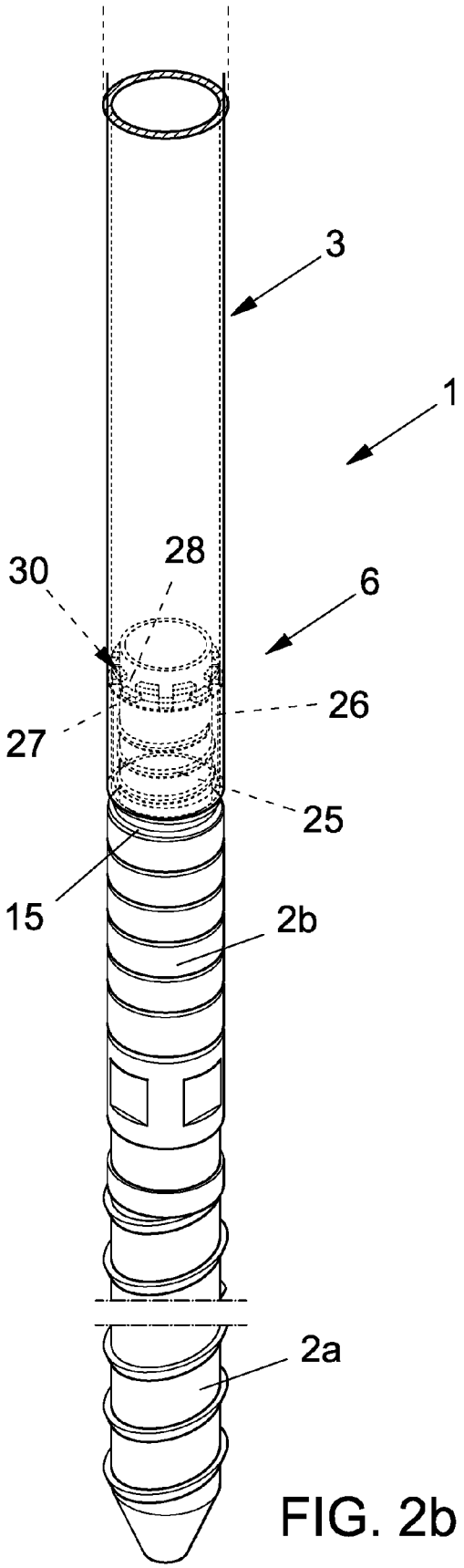

FIG. 2b

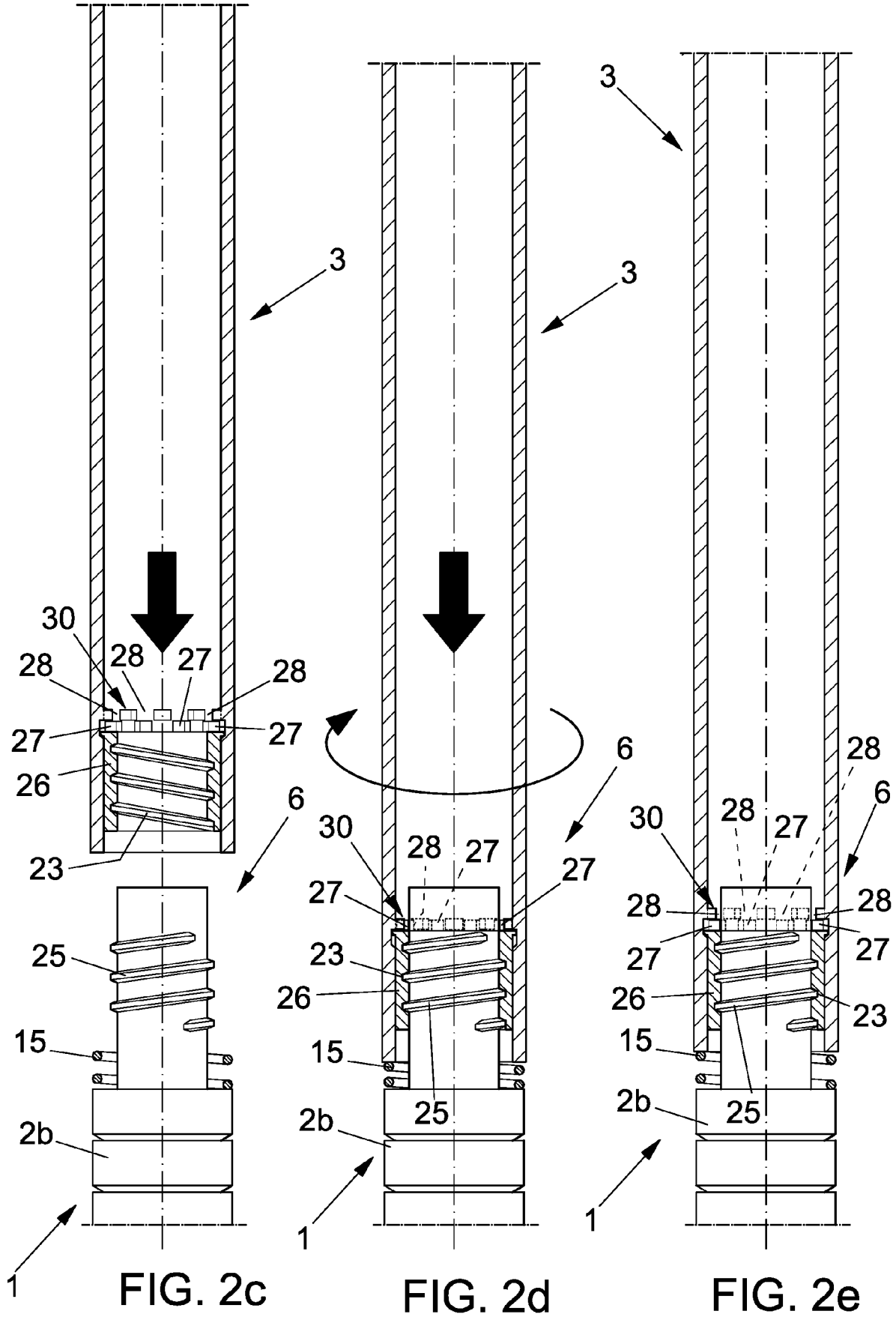

FIG. 2c FIG. 2d FIG. 2e

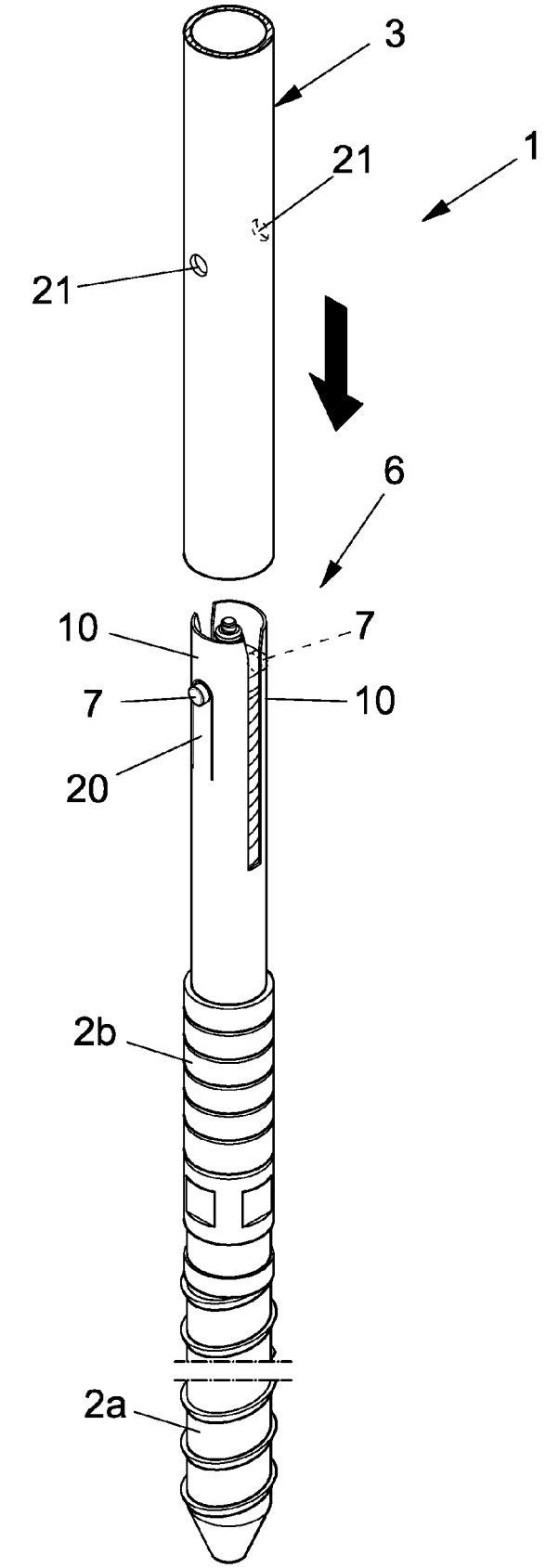

FIG. 3a

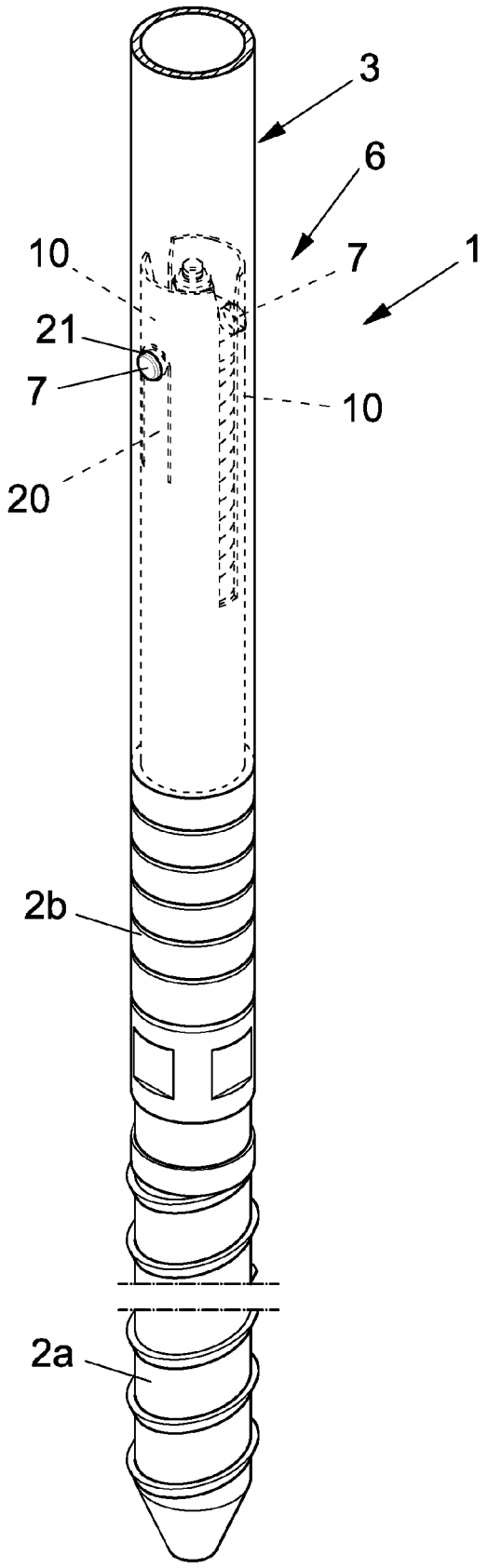

FIG. 3b

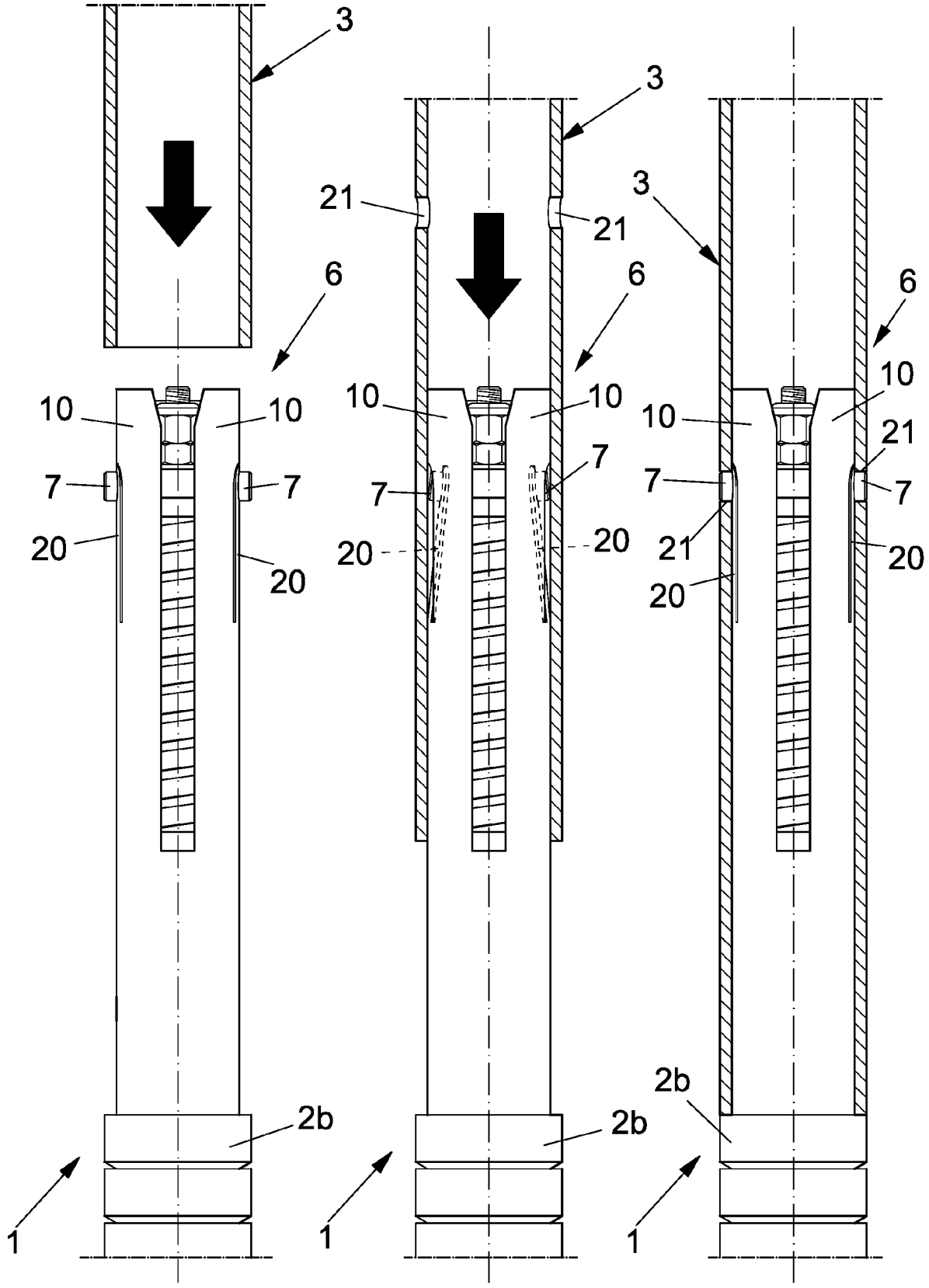

FIG. 3c FIG. 3d FIG. 3e

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EUROPEAN SEARCH REPORT

Application Number
EP 18 20 8012

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 0 200 659 A (AGUERA C) 5 November 1986 (1986-11-05) * column 1, line 4 - column 1, line 32; figures 7-9 *	1-10	INV. A63C19/06
A	DE 31 06 712 A1 (STEINHAUER FRITZ [DE]) 16 September 1982 (1982-09-16) * page 10, line 12 - page 15, line 22; figures 7,8 *	1-10	
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A	FR 2 388 575 A1 (VITTORI GIANFRANCO DE [CH]) 24 November 1978 (1978-11-24) * page 4, line 8 - page 5, line 9; figures 3,4,5 *	1-10	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	29 March 2019	Murer, Michael

CATEGORY OF CITED DOCUMENTS

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29-03-2019

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