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(71) Applicant: **Hilti Aktiengesellschaft**
9494 Schaan (LI)

(72) Inventor: **Sanchez Ruelas, Jafet**
9000 St. Gallen (CH)

(74) Representative: **Hilti Aktiengesellschaft**
Corporate Intellectual Property
Feldkircherstrasse 100
Postfach 333
9494 Schaan (LI)

(54) **MARKING TOOL OPERABLE IN TWO OR MORE MARKING MODES**

(57) Marking tool (30) comprising an elongated rod (34) having a first end (38), a second end (39), and a center axis (40), a holding device including a holder configured to hold a marking dispenser filled with a marking material, and an actuating device (36), the marking tool configured to be operated in a single mode, in which a marking dispenser (32) held in the holder can be actuated to dispense the marking material, wherein the holding device further includes one or more additional holders configured to hold a marking dispenser and the marking tool being further configured to be operated in at least one additional single mode, in which a marking dispenser held in one of the additional holders can be actuated to dispense the marking material, and/or in at least one common mode, in which at least two marking dispensers held in the holding device can be actuated to dispense the marking material.

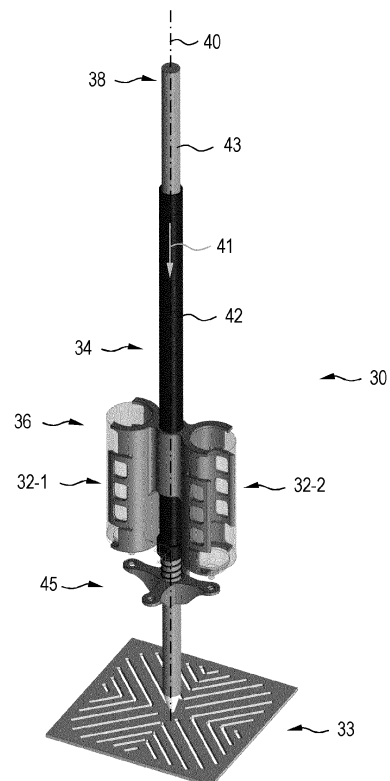


FIG. 2A

Description

Technical field

[0001] The present invention relates to a marking tool operable in two or more marking modes according to the definition of claim 1 and to a marking system including that marking tool and at least one marking dispenser filled with a marking material and held in the marking tool according to the definition of claim 7.

Background of the invention

[0002] FIG. 1 shows a marking system 10 known from prior art including a marking tool 11 and a marking dispenser 12 that is loaded into the marking tool 11. The marking dispenser 12 is an aerosol paint canister that contains paint dispensed by a nozzle. The aerosol paint canister is placed into the marking tool 11 upside down, such that the nozzle is proximate to the marking tool 11 and close to the surface of interest on which the paint is to be dispensed.

[0003] The marking tool 11 comprises an elongated rod 13, a holding device 14 connected to the rod 13, and an actuating device 15 configured to actuate the loaded marking dispenser 12 to dispense the marking material. Furthermore, the marking tool 11 is connected to an extension device 16 including an extension arm 17 and an optical reflector 18 having a center axis 19. For a vertical set-up of the marking tool 11, a bubble 20 is connected to the extension arm 17. The extension arm 17 is adapted to the holding device 14 such that, in a vertical set-up of the marking tool 11, the center axis 19 of the optical reflector 18 is aligned coincidentally with an axis 21 of the loaded marking dispenser 12.

[0004] The elongated rod 13 includes a first end, a second end opposite of the first end, and a center axis 22 extending along a length direction 23 between the first and second ends. Incorporated at the first end of the rod 13 is a handle 24. The holding device 14 includes a holder 25 configured to be loaded with the marking dispenser 12, the holder 25 being attached to the rod 13.

[0005] The actuating device 15 includes an actuator 26 configured to actuate the marking dispenser 12 to dispense the marking material, a mechanical trigger 27 that is proximate to the first end of the rod 13 and provided on the handle 24, and a mechanical connection disposed inside of the rod 13 and connecting the trigger 27 and actuator 26. When a user actuates the trigger 27, the actuator 26 is activated to actuate the nozzle of the paint canister, thus dispensing paint out of the paint canister.

Summary of the invention

[0006] There is a need for a marking tool that allows to use different colored marking materials without the requirement of changing the marking dispenser or a marking tool that allows to use large marking templates.

[0007] These objectives are achieved by realizing the features of the independent claim. Features which further develop the invention in an advantageous manner are described in the dependent claims.

5 [0008] The present invention relates to a marking tool characterized in that the holding device further includes one or more additional holders configured to hold a marking dispenser, wherein the marking tool is further
10 configured to be operated in at least one additional single mode, in which a marking dispenser held in one of the additional holders can be actuated to dispense the marking material, and/or in at least one common mode, in which at least two marking dispensers held in the holding device can be actuated to dispense the marking material.

15 [0009] The term "single mode" is used for marking modes, in which only one marking dispenser can be actuated, and the term "common mode" is used for marking modes, in which two or more marking dispensers can be actuated. The common mode is preferred for
20 marking tool operating with large marking templates.

[0010] Preferably, the actuator and/or the holding device is movable about an axis of rotation being parallel to the center axis of the rod.

25 [0011] Preferably, the actuator is movable about the axis of rotation and configured to be latched in a first single position, in which the actuator is configured to actuate a marking dispenser held in the holder, or in a
30 second single position, in which the actuator is configured to actuate a marking dispenser held in the additional holder, or in a common position, in which the actuator is configured to actuate a marking dispenser held in the holder and a marking dispenser held in the additional holder.

35 [0012] Preferably, the additional holders include a first additional holder and a second additional holder, and the at least one additional single mode includes a first additional single mode, in which a marking dispenser held in the first additional holder can be actuated to dispense the marking material, and a second additional single mode,
40 in which a marking dispenser held in the second additional holder can be actuated to dispense the marking material.

[0013] Preferably, the actuator is configured to be latched in a passive position, in which the first and second actuators being configured to not actuate the first and second dispensers loaded to the first and second holder.

45 [0014] In a preferred embodiment, the marking tool is configured to be connected to a marking template device, the marking template device including a marking template having a template surface with at least one opening in the template surface, the opening being formed as
50 number, letter, and/or symbol.

[0015] In a further aspect, the present invention is related to a marking system comprising the marking tool and a marking dispenser filled with a marking material, the marking dispenser configured to be held in the holding device of the marking tool. The marking system is composed of the marking tool and a marking dispenser

filled with a marking material.

[0016] In a preferred version, the marking material includes at least one of paint, chalk, dye, and marking powder. The marking material that is filled into the marking dispenser can adapted to the surface to be marked.

[0017] In a preferred version, the marking dispenser is a replaceable dispenser or a refillable dispenser or a replaceable and refillable dispenser. The properties of the marking dispenser that is held in the marking tool depend on the application of the marking tool. In case that a lot of different colors of marking material should be used, a replaceable dispenser is preferred.

Brief Description of the drawings

[0018] The aspects of the invention are described or explained in more detail below, purely by way of example, with reference to working examples shown schematically in the drawing. Identical elements are labelled with the same reference numerals in the figures. The described embodiments are generally not shown true in scale, and they are also not to be interpreted as limiting the invention. Specifically,

FIG. 1 shows in a perspective view a marking system known from prior art including a marking tool and a marking dispenser held in the marking tool,

FIGS. 2A, B show a first exemplary version of a marking system according to the present invention including a marking tool, a first and second marking dispenser held in the marking tool, and a marking template device connected to the marking tool, wherein the marking system is arranged in a common mode, and

FIGS. 3A, B show the marking system of FIG. 2 arranged in a single mode.

Detailed Description

[0019] Reference will now be made in detail to the present preferred embodiment, an example of which is illustrated in the accompanying drawings. It is to be understood that the technology disclosed herein is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the drawings. The technology disclosed herein is capable of other embodiments and of being practiced or of being carried out in various ways.

[0020] Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. All definitions, as defined and used herein, should be understood to control over dictionary definitions, definitions in documents incorporated by reference, and/or ordinary

meanings of the defined terms. The indefinite articles "a" and "an", as used herein in the specification and in the claims, unless clearly indicated to the contrary, should be understood to mean "at least one". The phrase "and/or", as used herein in the specification and in the claims, should be understood to mean "either or both" of the elements so conjoined, i.e., elements that are conjunctively present in some cases and disjunctively present in other cases. Multiple elements listed with "and/or" should be construed in the same fashion, i.e., "one or more" of the elements so conjoined. Other elements may optionally be present other than the elements specifically identified by the "and/or" clause, whether related or unrelated to those elements specifically identified.

[0021] FIGS. 2A, B show a first exemplary version of a marking system 30 according to the present invention including a marking tool 31, two marking dispensers 32-1, 32-2 held in the marking tool 31, and a marking template device 33 connected to the marking tool 31. FIG. 2A shows the marking system 30 in a perspective view, and FIG. 2B in a top view.

[0022] The marking tool 31 comprises an elongated rod 34, a holding device 35 connected to the rod 34, and an actuating device 36 configured to actuate a loaded marking dispenser to dispense the marking material. Furthermore, the marking tool 31 may be connected to an extension device that is configured to hold an optical reflector. For a vertical set-up of the marking tool 31, a bubble, preferably an adjustable bubble, may be connected to the rod 34 or to an extension device that may be connected to the marking tool 31.

[0023] The rod 34 includes a first end 38, a second end 39 opposite of the first end 38, and a center axis 40 extending along a length direction 41 between the first end 38 and second end 39, the length direction 41 being parallel to the center axis 40 of the rod 34. The rod 34 is composed of a first rod section 42 and a second rod section 43. In the exemplary version shown in FIG. 2, the second rod section 43 is provided partially in the first rod section 42, which is shiftable along the length direction 41 of the rod 34 relative to the second rod section 43. The first rod section 42 and second rod section 43 may be formed of an at least rigid material (rigid or strong), and may be formed of a lightweight material, such as, but not limited to, molded plastic, carbon fiber, and aluminum. The first and second rod sections 42, 43 may be circular, rectangular, square, or formed in any other appropriate design in cross-section.

[0024] To ensure that the marking material of the marking dispenser 32 is only dispensed when desired, a biasing spring 45 may be arranged between the first rod section 42 and second rod section 43, as shown in the exemplary version of FIG. 2A. In a relaxed mode of the biasing spring 45, the marking dispenser 32 cannot be actuated to dispense the marking material, and in a stressed mode of the biasing spring 45, the marking dispenser 32 is actuated to dispense the marking material.

[0025] At the second end 43 of the rod 34, a tip element 46 may be connected in a releasable manner, via a thread or any other suitable connection, to the rod 34; for different types of surfaces adapted tip elements may be used. To be able to mark a point of interest that is located at the center axis 40 of the rod 34, the tip element 46 may be replaced by a dot marking device, such as a dot marking device including a permanent marker or a punch element. The dot marking device may be connected to the rod 34 via a thread or any other suitable connection.

[0026] The holding device 35 includes a holder 47 and an additional holder 48, the holder and the additional holder being configured to hold a marking dispenser. To differ between the marking dispensers, a marking dispenser loaded to the holder 47 is called first marking dispenser, and a marking dispenser loaded to the additional holder 48 is called second marking dispenser.

[0027] The marking system 30 is configured to be operated in a single mode, also called first single mode, an additional single mode, also called second single mode, and a common mode. In the first single mode, only the first marking dispenser 32-1 can be actuated, in the second single mode, only the second marking dispenser 32-2 can be actuated, and in the common mode, the first and second marking dispensers 32-1, 32-2 can be actuated.

[0028] The actuating device 36 includes an actuator 49 configured to actuate the first marking dispenser 32-1 to dispense the marking material and/or to actuate the second marking dispenser 32-2 to dispense the marking material. The actuator 49 includes a two-sided arm 50 configured to actuate the common mode, and a one-sided arm 51 configured to actuate the first and second single mode.

[0029] To switch the marking system 30 mechanically between the different single modes and the common mode, either the holding device 35 or the actuator 49 is moveable about an axis of rotation that is coaxial to the center axis 40 of the rod 34. In the exemplary version shown in FIG. 2, the actuator 49 is movable about the axis of rotation with respect to the holding device 35 and the marking dispensers 32-1, 32-2 loaded to the holding device 35.

[0030] The first and second marking dispensers 32-1, 32-2 may be filled with paint as marking material. In a preferred application of the marking system 30, the first marking dispenser 32-1 may have a first color and the second marking dispenser 32-2 a second color, the first color being different from the second color. The first and second single modes of the marking system 30 allow to use different colored marking materials without the requirement of changing the marking dispenser and cleaning the marking tool before changing.

[0031] To be able to change the color of the marking material, the first and second marking dispensers 32-1, 32-2 may be replaceable marking dispensers. By using replaceable marking dispensers, the color of the marking material can be changed easily.

[0032] FIGS. 3A, B show the marking system 30 of FIG. 2 in the first single mode. The marking system 30 is configured to be operated in the first single mode, an additional single mode, also called second single mode, and a common mode.

[0033] In the first single mode, only the first marking dispenser 32-1 can be actuated, in the second single mode, only the second marking dispenser 32-2 can be actuated, and in the common mode, the first and second marking dispensers 32-1, 32-2 can be actuated. The first single mode and the second single mode of the marking system 30 allow to use different colored marking materials without the requirement of changing the marking dispenser and cleaning the marking tool before changing.

Claims

1. A marking tool (30) comprising:

- an elongated rod (34) having a first end (38), a second end (39) opposite of the first end, and a center axis (40),
- a holding device (35) that is connected to the rod, the holding device including a holder configured to hold a marking dispenser filled with a marking material, and
- an actuating device (36) including an actuator configured to actuate a marking dispenser (32) to dispense the marking material,

wherein the marking tool is configured to be operated in a single mode, in which a marking dispenser held in the holder can be actuated to dispense the marking material,

characterized in that the holding device further includes one or more additional holders configured to hold a marking dispenser, wherein the marking tool is further configured to be operated in at least one additional single mode, in which a marking dispenser held in one of the additional holders can be actuated to dispense the marking material, and/or in at least one common mode, in which at least two marking dispensers held in the holding device can be actuated to dispense the marking material.

2. The marking tool according to claim 1, wherein the actuator and/or the holding device is movable about an axis of rotation being parallel to the center axis of the rod.

3. The marking tool according to claim 2, wherein the actuator is movable about the axis of rotation and configured to be latched in a first single position, in which the actuator is configured to actuate a marking dispenser held in the holder, or in a second single position, in which the actuator is configured to ac-

uate a marking dispenser held in the additional holder, or in a common position, in which the actuator is configured to actuate a marking dispenser held in the holder and a marking dispenser held in the additional holder.

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4. The marking tool according to any of claims 1 to 3, wherein the additional holders include a first additional holder and a second additional holder, and the at least one additional single mode includes a first additional single mode, in which a marking dispenser held in the first additional holder can be actuated to dispense the marking material, and a second additional single mode, in which a marking dispenser held in the second additional holder can be actuated to dispense the marking material. 10 15
5. The marking tool according to claim 4, wherein the actuator is configured to be latched in a passive position, in which the first and second actuators being configured to not actuate the first and second dispensers loaded to the first and second holder. 20
6. The marking tool according to any one of claims 1 to 5, wherein the marking tool is configured to be connected to a marking template device, the marking template device including a marking template having a template surface with at least one opening in the template surface, the opening being formed as number, letter, and/or symbol. 25 30
7. A marking system configured to mark a point of interest on a surface and to mark information related to the point of interest onto the surface, the marking system comprising: 35
 - the marking tool (30) according to any one of claims 1 to 6, and
 - a marking dispenser filled with a marking material and configured to be held in the holding device. 40
8. The marking system according to claim 7, wherein the marking material includes at least one of paint, chalk, dye, and marking powder. 45
9. The marking system according to any of claims 7 to 8, wherein the marking dispenser is a replaceable dispenser or a refillable dispenser or a replaceable and refillable dispenser. 50

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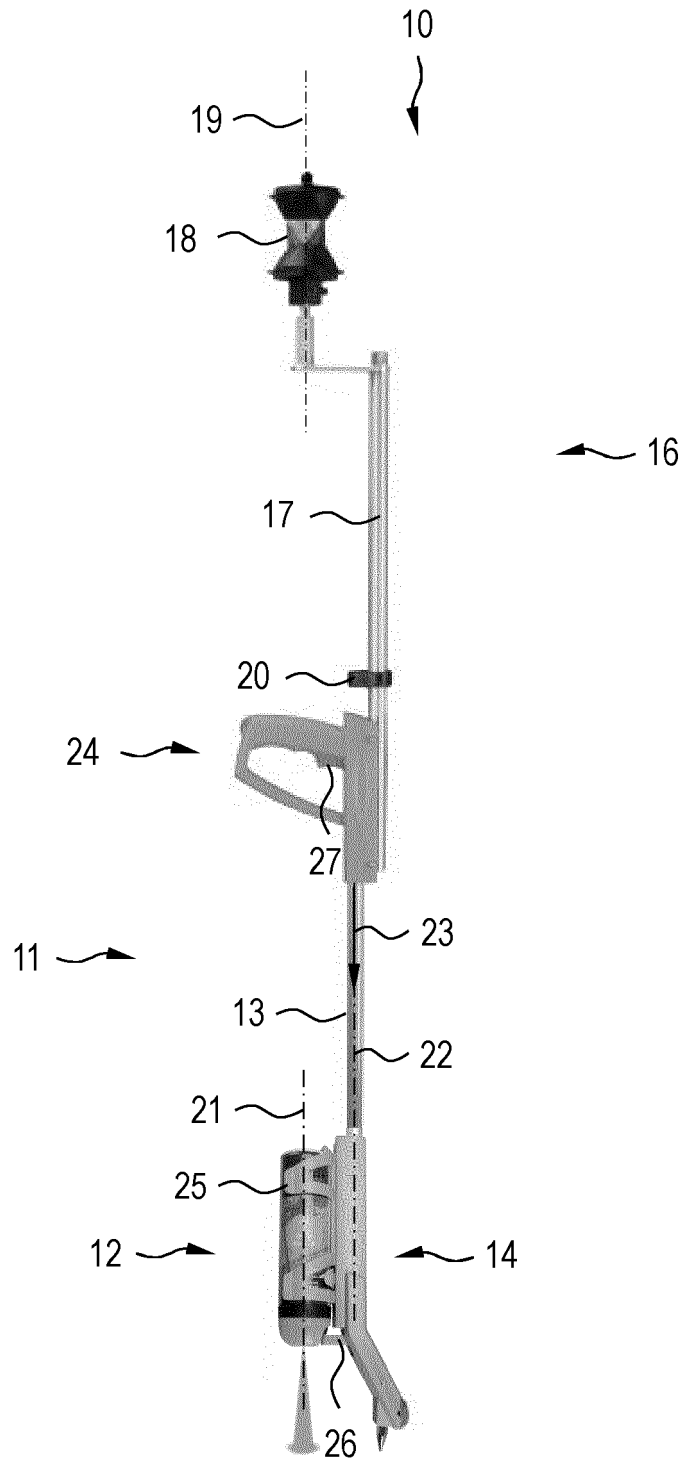


FIG. 1
(Prior Art)

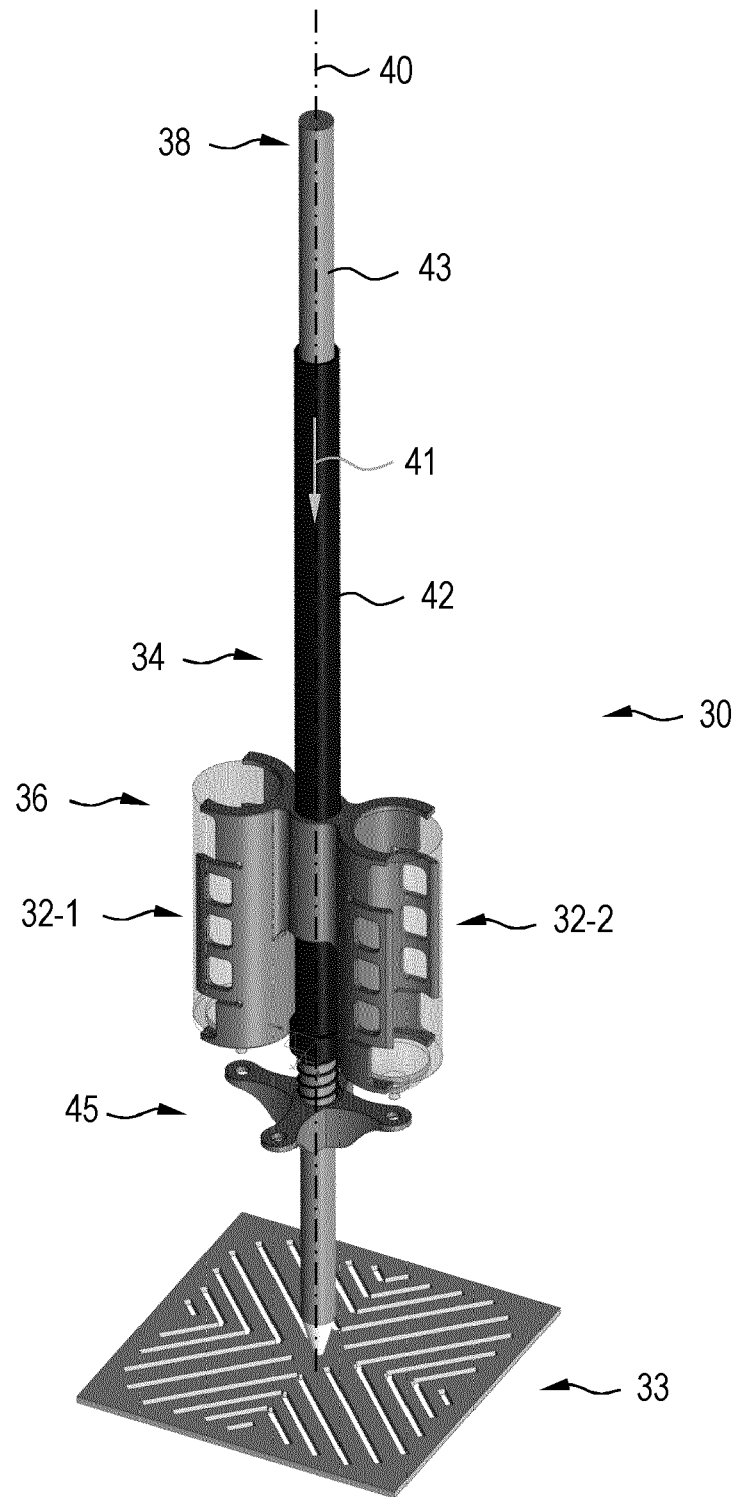


FIG. 2A

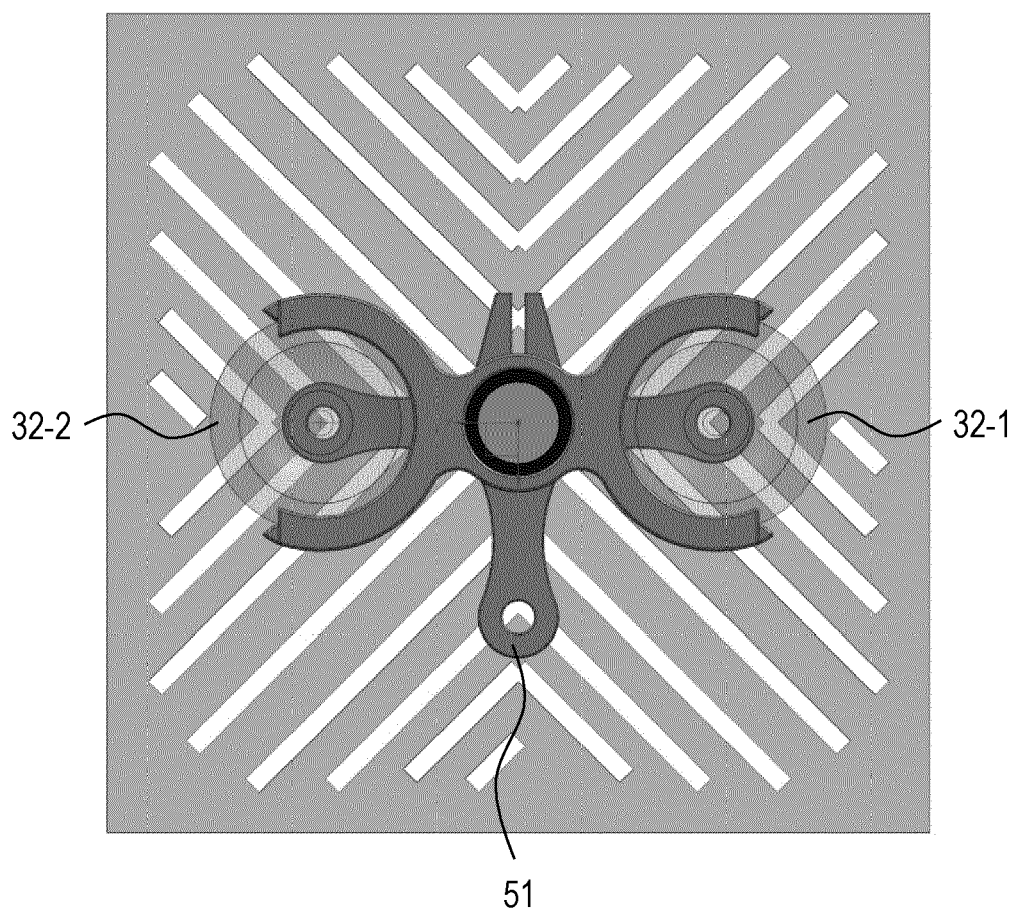


FIG. 2B

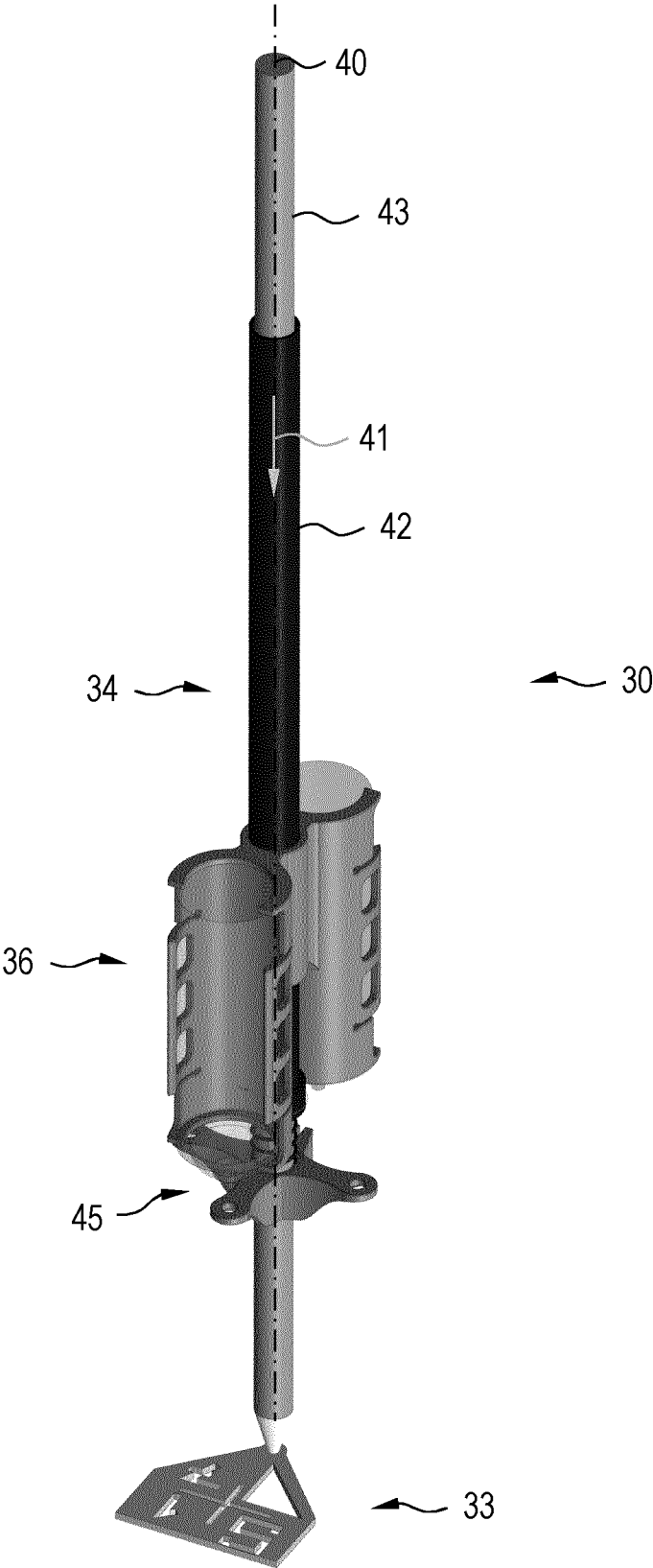


FIG. 3A

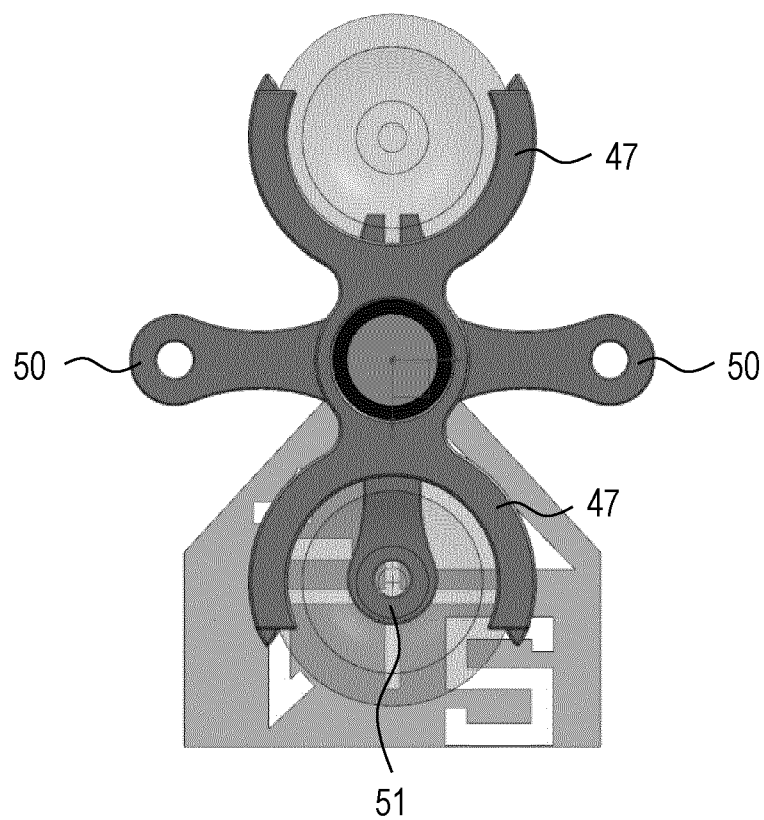


FIG. 3B



EUROPEAN SEARCH REPORT

Application Number

EP 23 21 0620

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 9 731 308 B1 (CONRAD JR MICHAEL L [US]) 15 August 2017 (2017-08-15) * figures 1-6 * * column 1, lines 17-47 * * column 3, lines 35-56 * * column 5, lines 47-58 * * column 6, line 8- - column 8, line 2 * * the whole document *	1-5, 7-9	INV. B05B12/14 B65D83/20 B65D83/68 E01C23/22 A63C19/06
X	US 2007/131714 A1 (JUTRAS LUC [CA] ET AL) 14 June 2007 (2007-06-14) * figures 1-5 * * the whole document *	1, 4-9	
X	US 6 294 022 B1 (ESLAMBOLCHI HOSSEIN [US] ET AL) 25 September 2001 (2001-09-25) * figures 1-3 * * the whole document *	1, 4-9	
X	US 2017/259988 A1 (CARRETTE PAUL M [US] ET AL) 14 September 2017 (2017-09-14) * figures 1-8 * * paragraphs [0014], [0015] * * the whole document *	1-5, 7-9	TECHNICAL FIELDS SEARCHED (IPC) B05B B65D A63C E01C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 April 2024	Examiner Klein, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EP 23 21 0620

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 9731308	B1	15-08-2017	NONE
US 2007131714	A1	14-06-2007	CA 2561929 A1
		US 2007131714 A1	03-04-2007
			14-06-2007
US 6294022	B1	25-09-2001	NONE
US 2017259988	A1	14-09-2017	NONE

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