



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
06.02.2008 Bulletin 2008/06

(51) Int Cl.:
B25F 5/02 (2006.01) B25F 5/00 (2006.01)

(21) Application number: **07000966.7**

(22) Date of filing: **18.01.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(72) Inventor: **Wang, Wen-Yuan**
Noan Noan 205
Keelung (TW)

(74) Representative: **Haft, von Puttkamer, Berngruber**
Patentanwälte
Franziskanerstrasse 38
81669 München (DE)

(30) Priority: **31.07.2006 CN 200695213385 U**

(71) Applicant: **Double Dynasty Co., Ltd.**
Noan Noan 205
Keelung (TW)

(54) **An intake and exhaust guide device for pneumatic tool**

(57) An intake and exhaust guide device for a pneumatic tool (11) comprises mainly a handle (12) furnished with an intake passage (29) and an exhaust passage (30), of which each outer end is furnished with a screw hole (27,28) for directly or indirectly connecting it with a connector (23,24) of an intake tube (20) or an exhaust tube (21); the two connectors (23,24) of the pneumatic tool (11) are connected respectively with two pressure tubes (20,21) fastened together in parallel; one of the two pressure tubes is connected with an output end of the compressed air, while the other pressure tube is connected with a muffler; during the pneumatic tool (11) being operated, the compressed air can be exhausted simultaneously without having any exhaust noise as a result of the two pressure tubes (20,21) being fastened together in parallel.

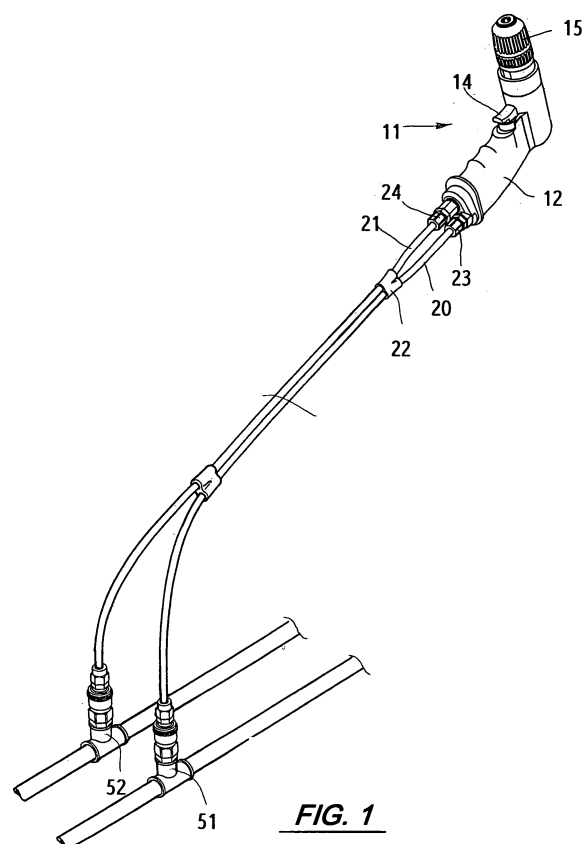


FIG. 1

Description

Background of the Invention:

1. Field of the Invention:

[0001] This invention relates to a pneumatic tool, and particularly to an intake and exhaust guide device for pneumatic tool.

2. Description of the Prior Art:

[0002] In a conventional pneumatic tool, the tool assembly thereof is actuated with a motor which is operated with a compressed air upon being exhausted simultaneously.

[0003] In a conventional pneumatic tool, a compressed air enables a tool assembly to work through a pneumatic motor; at the same time, a perfect exhaust passage must be furnished for exhausting the compressed air so as to convert such compressed air into a power, i.e., a perfect energy exchange can be fulfilled; relatively, the noise would be at the highest point during working.

[0004] How to muffle the noise of a pneumatic tool during the compressed air exhausting and during the energy exchange being done has become a serious and interesting question.

Summary of the Invention:

[0005] The prime object of the present invention is to provide an intake and exhaust guide device for pneumatic tool, in which the outer end of the handle is connected with a pressure shunt connector; the two screw holes of the connector are connected respectively with two connectors of two pressure tubes fastened together in parallel. When the pneumatic tool is operating, the cock is used for controlling the compressed air to take in and as to muffle the noise effectively.

[0006] Another object of the present invention is to provide an intake and exhaust guide device having two parallel pressure tubes for pneumatic tool, in which the intake and exhaust ends each is furnished with a separate passage to the outer connector so as to simplify the structure of the intake and exhaust ends.

[0007] Still another object of the present invention is to provide an intake and exhaust guide device for pneumatic tool, in which one pressure tube is directly connected with an output end of a compressed air tank of a compressor, or with a three-way connector for supplying compressed air.

[0008] A further object of the present invention is to provide an intake and exhaust guide device having two parallel pressure tubes for pneumatic tool, in which one of the two pressure tubes has a suitable diameter; one end of the pressure tube is connected with the pneumatic tool via an exhaust connector; the pressure tube in the parallel section is connected with a muffler connector so

as to separate the noise of the pneumatic tool from the work site.

[0009] Still a further object of the present invention is to provide an intake and exhaust guide device having two parallel tubes for pneumatic tool, in which the working site of the pneumatic tool is separated from a muffler via an exhaust tube so as to isolate the noise from the working site completely.

[0010] Yet, another object of the present invention is to provide an intake and exhaust guide device having two parallel tubes for pneumatic tool, in which the exhaust noise of the compressed air would not be heard any more during the pneumatic tool working on site. and exhaust guide device having two parallel tubes for pneumatic tool, in which the working site of the pneumatic tool is separated from a muffler via an exhaust tube so as to isolate the noise from the working site completely.

[0011] Yet, another object of the present invention is to provide an intake and exhaust guide device having two parallel tubes for pneumatic tool, in which the exhaust noise of the compressed air would not be heard any more during the pneumatic tool working on site.

Brief Description of the Drawings:

[0012]

Fig. 1 is a perspective view of the intake and exhaust guide device for pneumatic according tool according to the present invention.

Fig. 2 is a plan view of the present invention, showing the assembled structure of the intake and exhaust guide device for pneumatic tool.

Fig. 3 is a disassembled view of the present invention, showing the relation among the parts of the intake and exhaust guide device for pneumatic tool.

Fig. 4 is a sectional view of the present invention, showing the intake and exhaust structure of the pneumatic tool thereof.

Detailed Description of the Preferred Embodiment:

[0013] This invention relates to an intake and exhaust guide device for pneumatic tool; as shown in Figs. 1 and 2, the pneumatic tool 11 comprises a handle 12, which has a cock 14 is used for controlling the flow of compressed air; as soon as the compressed air enters a pneumatic motor in the handle 12, the pneumatic motor will actuate the tool assembly 13. The cock 14 controls the valve assembly 15; after the compressed air flows in, it will flow through an exhaust passage, and a pressure shunt connector 16 to 28 respectively to facilitate two replaceable parts 25 and 26 to connect together respectively; the two replaceable parts 25 and 26 are to be connected with an intake connector 23 and an exhaust connector 24 of the intake tube 20 and exhaust tube 21 respectively. Another kind of handle is to connect directly with the intake and exhaust connectors 23 and 24 of the

intake and exhaust tubes 20 and 21 respectively; in that case, the intake and exhaust passages 29 and 30 in the handle 12 can be connected directly with the intake and exhaust tubes 20 and 21 so as to have compressed air flowed into the passage in front of the valve of the cock 14 in the handle 12; the cock 14 can control the valve to open or close so as to have a suitable volume of compressed air entered; as soon as the compressed air flows into the body 13, the pneumatic motor will be actuated to cause the tool assembly 15 to move; simultaneously, the compressed air will be guided into the exhaust passage 30 of the handle 12 and into the exhaust tube 21, and then into a muffler.

[0014] The intake and exhaust tubes 20 and 21 mounted to the handle 12 are pressure tubes fastened together in parallel, which can withstand a high pressure; one end of the two tubes is separated into two single tube each having a suitable length; the tail end of each single tube is furnished with a tube connector to be screwed into the screw hole 27 or 28, or into a replaceable part 25 or 26, which is to be screwed into a screw hole 27 or 28. One ends of the intake and exhaust tubes 20 and 21 are separated into two single tubes which are fastened together with a fastener 22 at a suitable point to prevent both of them from further separation.

[0015] Two ends of the two tubes 20 and 21 are mounted with two connectors 23 and 24 respectively, while other ends thereof may be furnished with screw-type connector or snap connector so as to connect with the intake end and the exhaust end respectively; then, the exhaust end is connected with a muffler.

[0016] An air compressor is used for supplying compressed air via a pressure tube to a three-way connector 51. The handle 12 of the pneumatic tool 11 is connected with two connectors of two pressure tubes respectively; one of the two pressure tubes has a suitable length, and one end thereof is furnished with a snap connector to connect with a three-way connector 51; another tube on one end of the handle 12 is connected with a connector in the exhaust hole; the outer end of the connector is connected with a pressure tube, which is fastened together in parallel with another pressure tube. The two pressure tubes fastened together have a suitable length, and then the tail end of the exhaust pressure tube is connected with a screw-type connector or a snap connector which is connected with a muffler, or connected with a three-way connector of the exhaust system through a snap connector so as to have the air exhausted guided into a muffler.

[0017] The pneumatic tool 11 can be actuated to work by means of a compressed air to flow through an intake connector 23, and into the cock 14. When a pneumatic tool is working, the cock 14 is used for controlling the intake compressed air to flow in, and simultaneously for controlling the compressed air used to exhaust via the exhaust connector 24 and the exhaust tube 21, and finally to guide into a muffler; in other words, when the pneumatic tool 11 is operated, only the operating noise of the

tool assembly 15 is existing, and the exhaust noise is guided and muffled, i.e., the operating noise thereof has been improved completely.

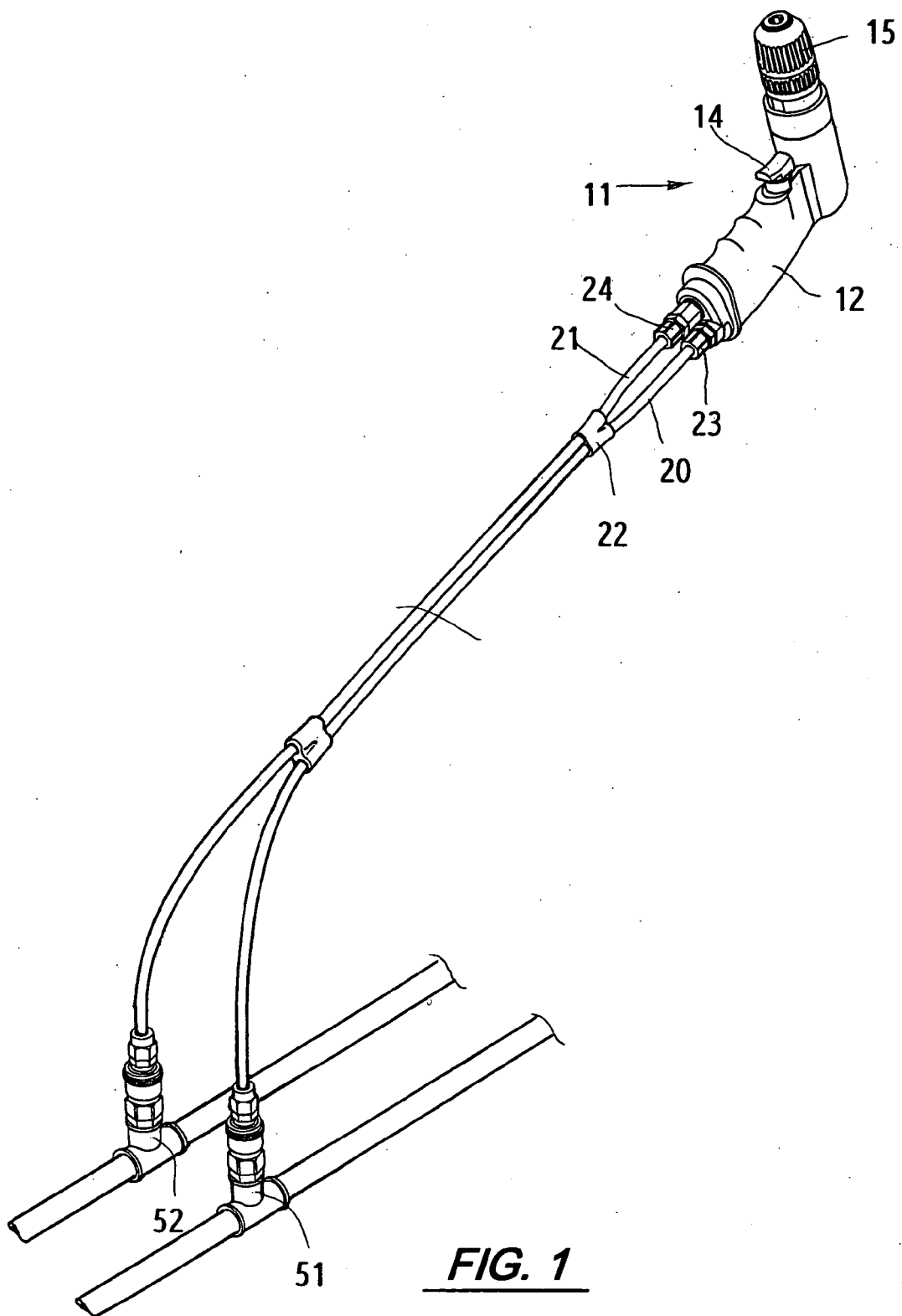
[0018] While the invention has been described with reference to specific embodiments it must be understood that those embodiments are susceptible to many changes, substitutions, and modifications that will be readily apparent to those having ordinary skill in the art without departing from the scope and spirit of the invention.

Claims

1. An intake and exhaust guide device for pneumatic tool comprising:

a pneumatic tool including a handle with a cock and a body; one end of said body furnished with a tool assembly; said handle having an intake passage and an exhaust passage therein; said intake passage extended from inner passage to a screw hole on outer end thereof;
a first screw hole furnished in one end of said handle; said first screw hole being connected with an intake connector via a replaceable part, or connected directly with said intake connector; said screw hole having a suitable diameter extended to one end of a valve in said handle;
a second screw hole furnished in one end of said handle; said second screw hole being connected with an exhaust connector via a replaceable part, or connected directly with said exhaust connector; said screw hole having a suitable length extended to said exhaust passage;
two pressure tubes fastened together in parallel mounted with a fastener at one end thereof, and said two pressure tubes being separated from said fastener, and each of them connected with a connector; other end of said two pressure tubes also being separated, in which one intake end of said pressure tube connected with a three-way connector, and one exhaust end of said pressure tube connected with a muffler via a connector.

2. An intake and exhaust guide device for pneumatic tool as claimed in claim 1, wherein said two pressure tubes are separated at one end thereof, and one separated pressure tube in an exhaust system is connected with a three-way connector.



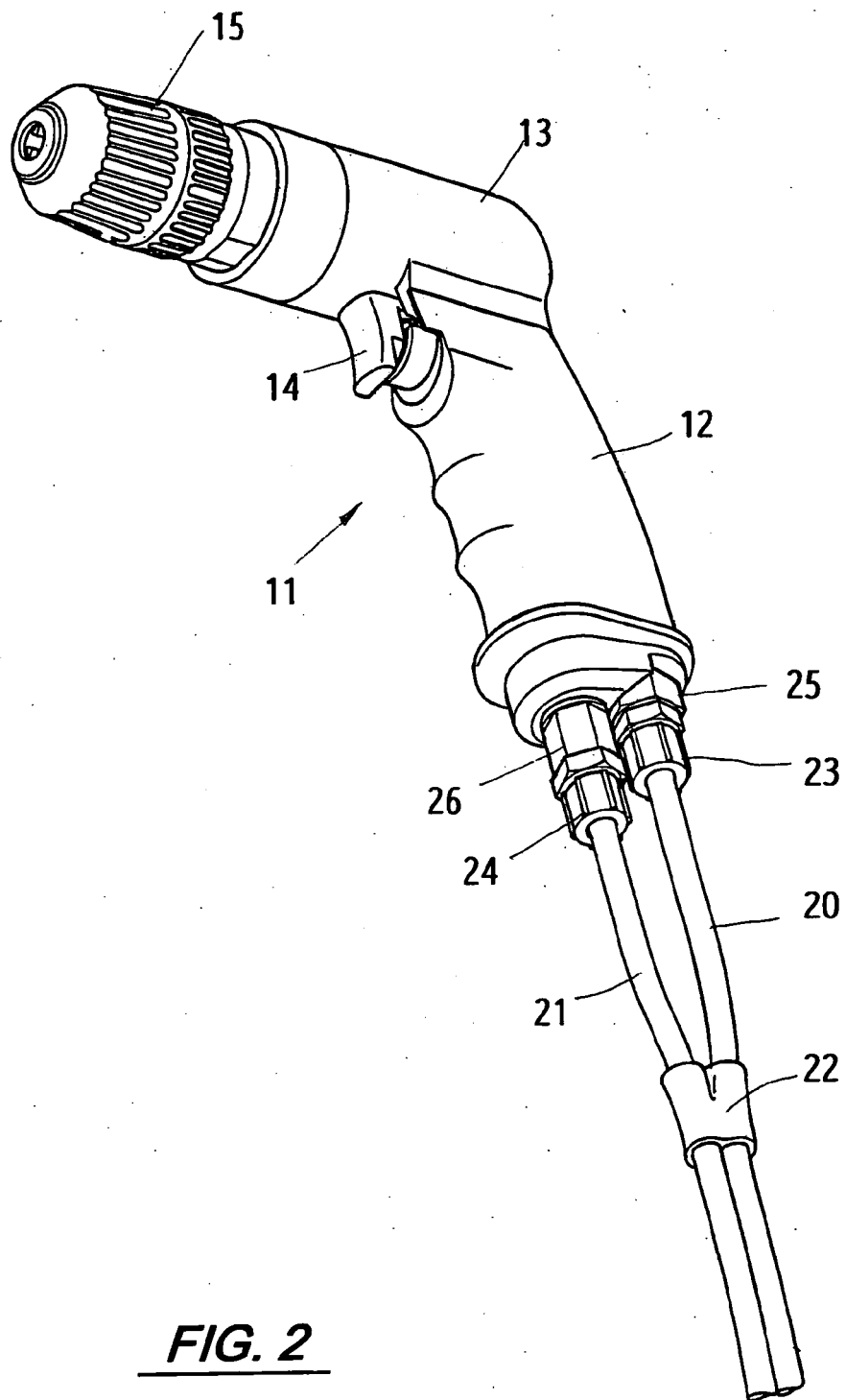


FIG. 2

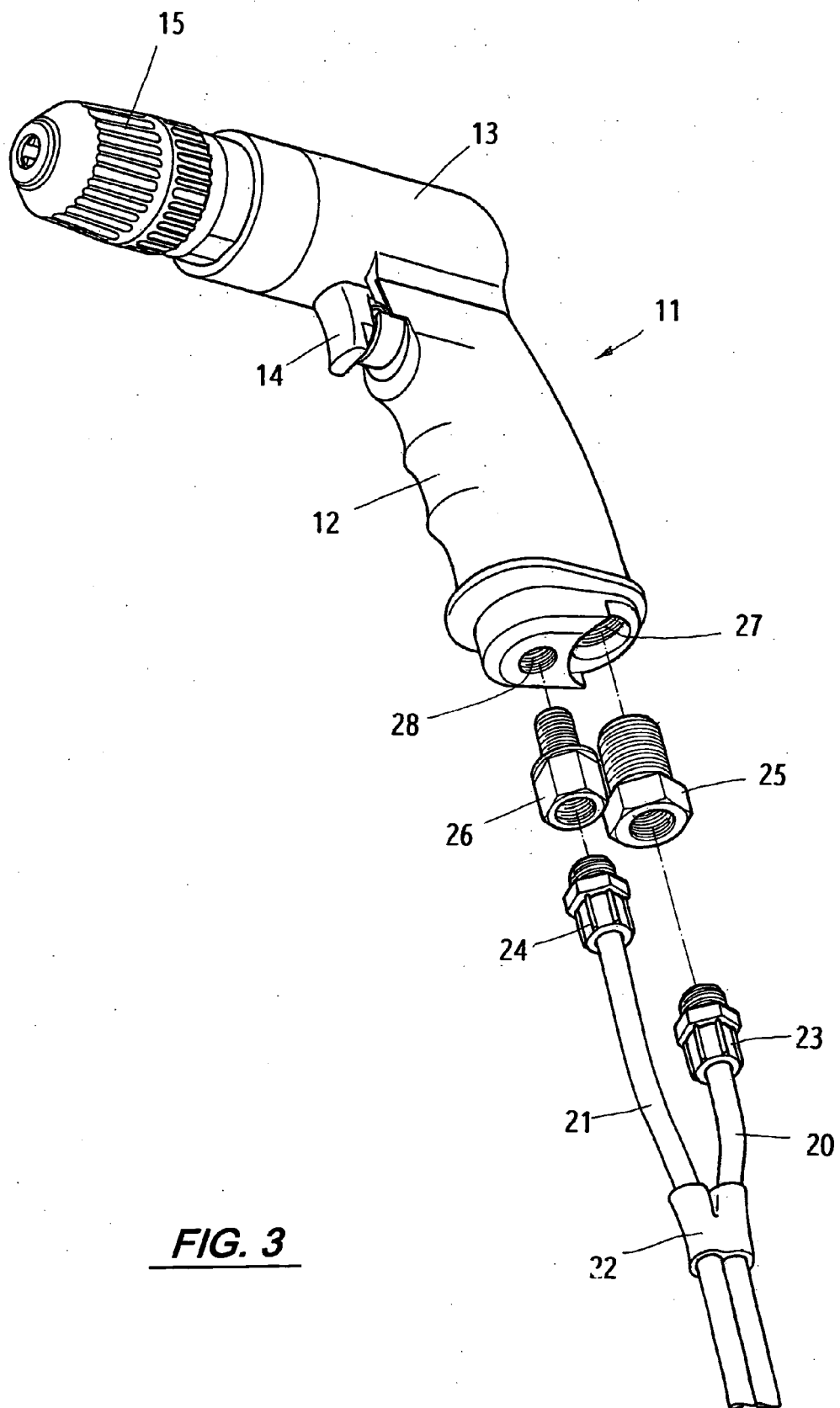
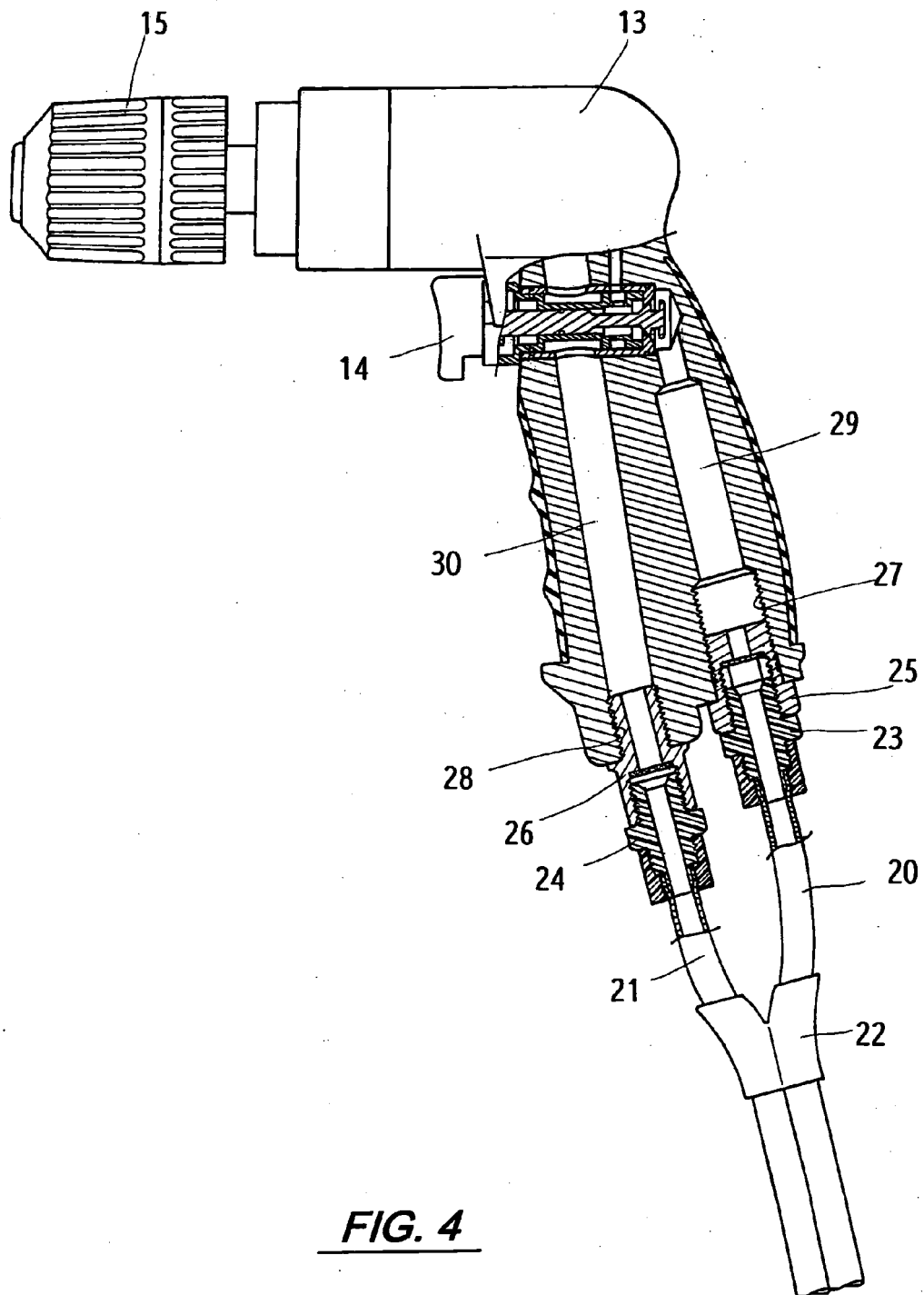


FIG. 3





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 00 0966

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 2004/055815 A1 (STERLING ROBERT EARL [US] STERLING ROBERT E [US]) 25 March 2004 (2004-03-25) * abstract; figures 1,3 *	1,2	INV. B25F5/02 B25F5/00
X	US 6 149 356 A (CHU GEORGE [TW] ET AL) 21 November 2000 (2000-11-21) * abstract; figure 9 *	1,2	
A	EP 1 308 247 A (INGERSOLL RAND CO [US]) 7 May 2003 (2003-05-07) * abstract; figures *	1,2	
A	US 2006/026812 A1 (VILLANUEVA RAMON C [US] VILLANUEVA RAMON CRUZ [US]) 9 February 2006 (2006-02-09) * abstract; figures *	1,2	
A	GB 2 149 465 A (DESOUTTER LTD) 12 June 1985 (1985-06-12) * abstract; figures *	1,2	
			TECHNICAL FIELDS SEARCHED (IPC)
			B25F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		30 November 2007	Popma, Ronald
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			

1
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 00 0966

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-11-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004055815 A1	25-03-2004	NONE	
US 6149356 A	21-11-2000	NONE	
EP 1308247 A	07-05-2003	DE 60208513 T2	21-09-2006
		US 2003083005 A1	01-05-2003
US 2006026812 A1	09-02-2006	NONE	
GB 2149465 A	12-06-1985	DE 3441468 A1	23-05-1985
		FR 2554753 A1	17-05-1985
		IT 1179490 B	16-09-1987