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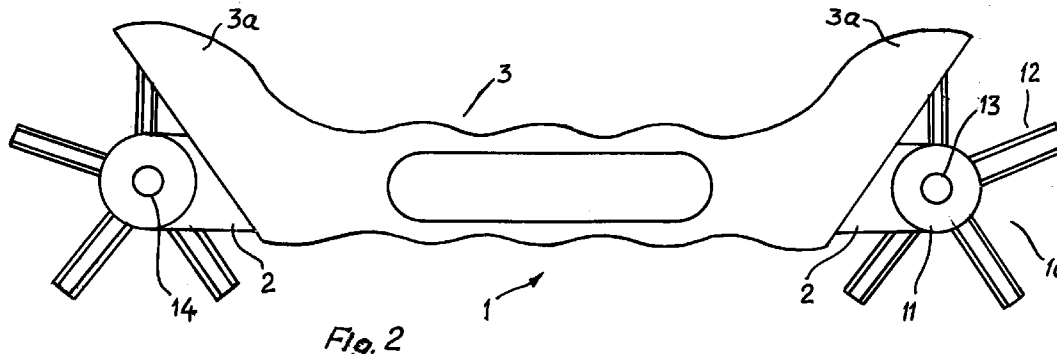
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(54) **A tool holder**

(57) A tool holder (1) for holding a plurality of tools (12) which may be the same tool (12) of different sizes or different tools (12). The tool holder (1) comprises an insert (2) with a jaw member (2,5) at least at one end of

said insert (2). The jaw member (2,5) comprises a pair of spaced walls (5a,5b) to rotatably hold a support (10) having said tools (12) extending therefrom.



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Description

This invention relates to a tool holder. In particular, this invention relates to a tool holder for holding a plurality of similar or different tools.

A tool holder having a plurality of similar or different tools of the same or different sizes is not hitherto known. Thus, if the tool is a hex wrench consisting of a lever provided at a right angle to the tool element, it was hitherto known to provide individual hex wrenches depending upon the flat width or head size. Thus, it is necessary for an operator to carry a plurality of individual hex wrenches having different across flat widths or head sizes, which often got misplaced. Still further as the lever is provided at right angle to the tool element, the hex wrench could not be conveniently operated at any angle. Furthermore, as each hex wrench was individually provided, an extended handle which acted as a lever was provided with each hex wrench.

An object of this invention is to provide a novel construction of a tool holder for holding a plurality of similar or different tools of the same or different sizes.

Another object of this invention is to provide a tool holder which has a common lever for each tool.

Still another object of this invention is to provide a tool holder which allows operation of the tool at any angle.

According to this invention there is provided a tool holder for holding a plurality of tools comprising:

- a) an insert,
- b) a jaw member at least at one end of said insert and comprising a pair of walls extending from said insert,
- c) said walls being disposed in a spaced relationship to each other,
- d) a support rotatably held to said spaced walls and such as to allow an angular displacement of the insert with respect to said support;
- e) said support comprising a hub with a plurality of tools disposed in a spaced relationship to each other and extending outwardly from said hub.

DESCRIPTION OF INVENTION WITH REFERENCE TO DRAWING

- Fig. 1 shows a side sectional view of a tool holder in accordance with one embodiment of the invention;
- Fig. 2 shows a view of the tool holder along arrow X of Fig. 1;
- Fig. 3 show the insert provided in the tool holder of Fig. 1;
- Fig. 4 shows the tool holder in accordance with another embodiment of the invention; and
- Fig. 5 illustrates the tool support.

Reference is made in particular to Figs. 1 and 2, which illustrates a tool holder 1 of the present invention.

The tool holder 1 comprises an insert 2 and a cover member 3 attached to said insert.

The insert 2 illustrated in Fig. 3 comprises a shank 4 extending into a jaw 5 at either end of said shank. Jaw 5 comprises a pair of walls 5a and 5b spaced from each other so as to define a space 6 therebetween which allows rotatable movement of the tools in a manner to be described subsequently herein. Fig. 3 shows an embodiment of the insert 2 comprising a first insert member 2a attached to a second insert member 2b through a weld joint 7. However, instead of a weld joint, first insert member 2a may be held to second insert member 2b by any other suitable means. The manner of joining insert members 2a and 2b do not form a concept of the present invention. As illustrated in Fig. 3, a C section 8 is provided on shank 4 of insert 2 and which extends into jaw member 5, but terminates away from the ends of jaw member 5. A pair of cooperating holes 9 are provided in walls 5a and 5b for rotatably holding the tools through a tool hub 11.

The tool support 10 illustrated in Fig. 5 comprises a hub 11 having tools 12 integrally formed thereto. Tools 12 are disposed in a spaced relationship to each other. Though, the preferred embodiment resides in integrally provided tools 12 to hub 11, another embodiment resides in holding tools 12 to hub 11 by any other suitable manner. One of the concepts of the present invention resides in providing a rotatable support 10 having a plurality of tools 12 projecting outwardly from hub 11 and disposed in a spaced relationship to each other. Hub 11 is held to walls 5a and 5b through a rivet 13 disposed within cooperating holes 9. Preferably, a washer (not shown) is provided between hub 11 and the inner surface of walls 5a and 5b so as to provide a resistance, though only minimal in nature, to the rotatable movement of hub 11.

Figs. 1, 2 and 5 illustrates that the tools 12 comprise a plurality of keys of different sizes. However, various combinations of tools 12 may be provided with hub 11. One such combination consists in providing keys at one end of insert 2 and screwdrivers, for example flat bladed or cross-headed screwdrivers at the opposite end of insert 2. Yet another combination could be of keys of different sizes at one end and sockets of different sizes at the opposite ends. Still further the tools at the one end could also be different to each other.

Figs. 1 and 2 illustrates tool holder 1 to consist of an insert 2 and a cover 3. Cover 3 may be made of any plastics material and extends upwardly into a head 3a at either end so as to allow the rotation of hub 11 having tools 12. Still further, and as apparent from Figs. 1 and 2, the ends of insert 2 extends outwardly of cover 3.

Though Figs. 1 and 2 illustrates tool holder 1 to comprise an insert 2 and a cover 3, it would be apparent that the tool holder 1 could consist only of insert 2. The purpose of providing cover 3 is only to provide a protection to the hand of an operator holding holder 1. Thus, in the instance where tool holder 1 has tools 12 provided only at one end, tool holder 1 could consist only of insert

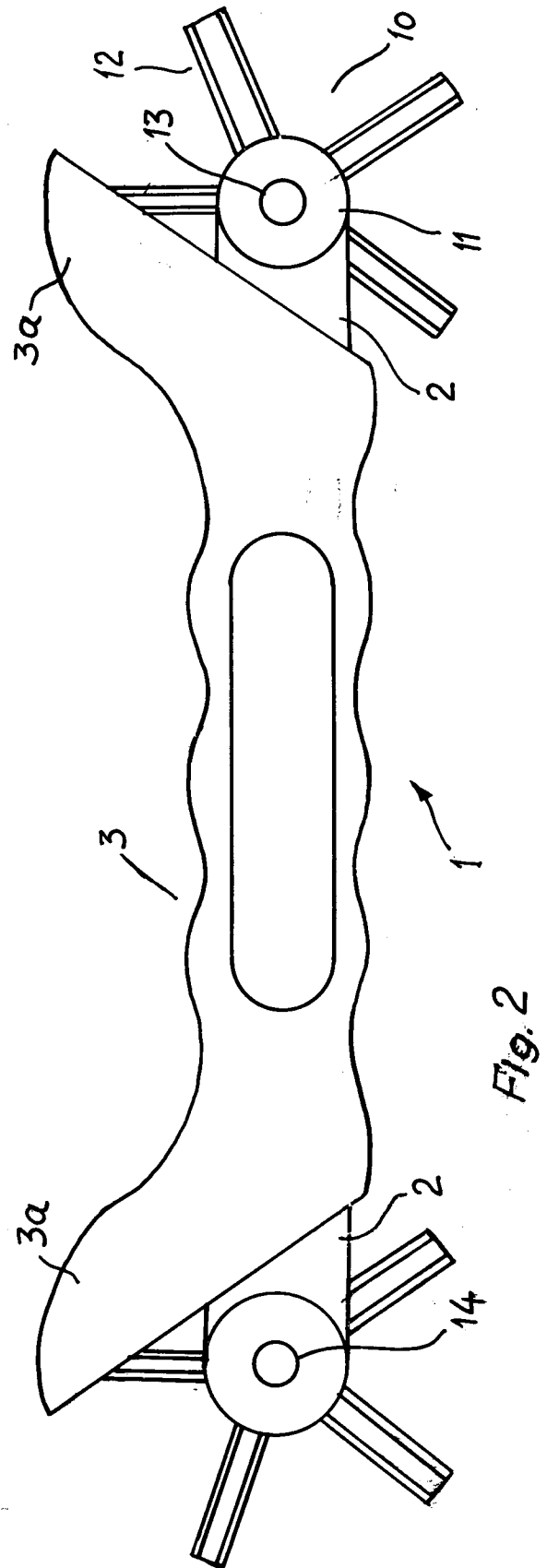
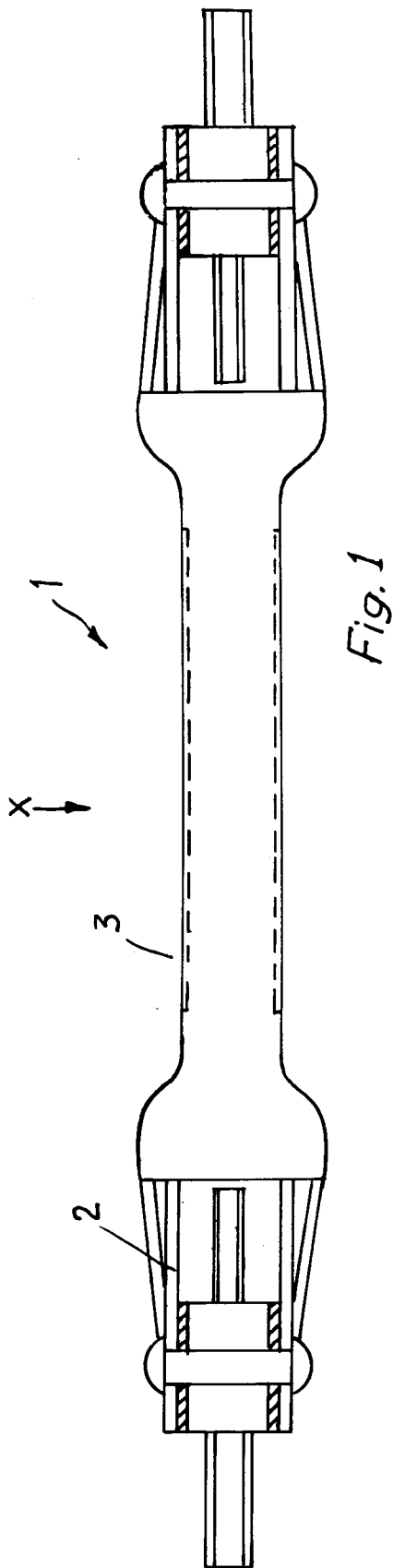
2 having a shank portion 4 and jaw 5 at one end thereof, said holder 10 being provided at the end having jaw 5.

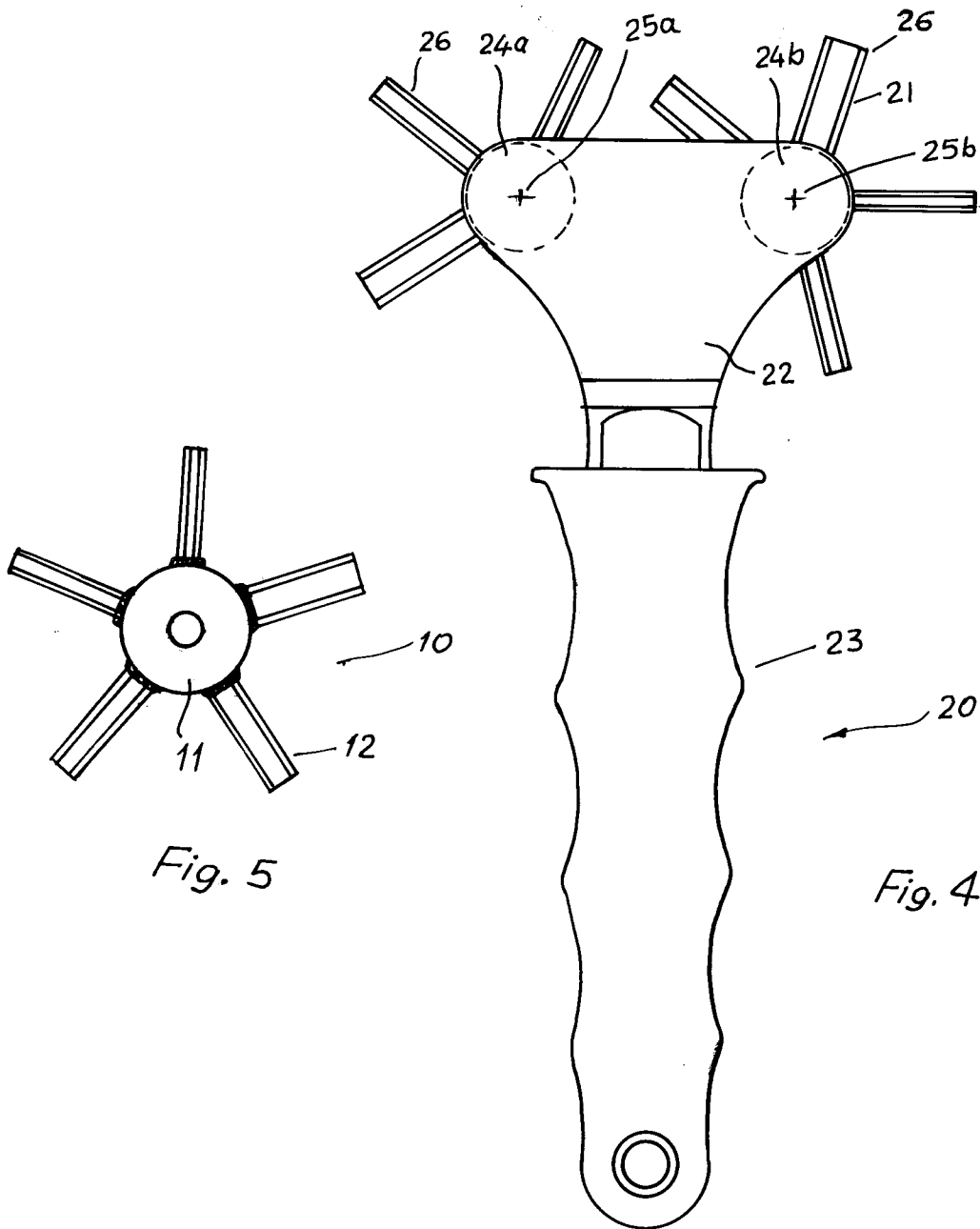
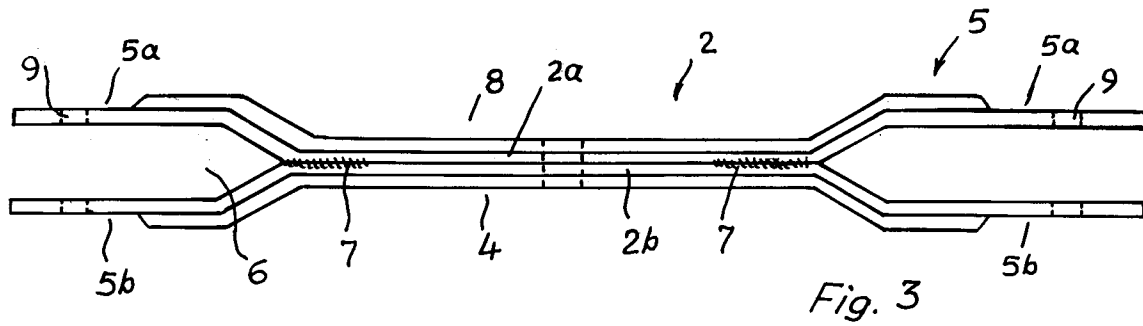
Fig. 4 illustrates another embodiment of tool holder 20 having tools 21 at only one end of said tool holder. The tool holder 20 comprises an insert 22 and a cover member 23. Insert 22 extends outwardly of only one end of cover member 23 and has a first support 24a and a second support 24b rotatably held to insert 22 through rivets 25a and 25b. Each of supports 24a and 24b have a construction identical to support 10 of Fig. 5. In a like-wise manner, tools 26 of support 24a are disposed in a spaced relationship to each other. Further, tools 26 may consist of the same tools of different sizes. Alternatively, tools 26 may be of different tools. Fig. 4 illustrates that tools 26 on hubs 24a and 24b are provided on one side of insert 22. However, and in accordance with another embodiment of this invention, insert 22 may extend also in the opposite direction of housing 23 and tools 26 provided in a similar manner.

One of the advantages of the present invention is that the tools can be operated at an angle. Thus, if the tool comprises a key to consist of a lever provided at right angles to the key, it was hitherto necessary that the key had to be operated at the same angle of 90°. However, in accordance with the present invention the tool can be operated at an angle greater or less than 90°. Thus, an operator could now be in a standing position to operate the tool. Yet another advantage is that each of the tools provided with a hub consists only of the tools and not a tool having a lever.

Claims

1. A tool holder for holding a plurality of tools comprising:
 - a) an insert;
 - b) a jaw member at least at one end of said insert and comprising a pair of walls extending from said insert;
 - c) said walls being disposed in a spaced relationship to each other;
 - d) a support rotatably held to said spaced walls and such as to allow an angular displacement of the insert with respect to said support;
 - e) said support comprising a hub with a plurality of tools disposed in a spaced relationship to each other and extending outwardly from said hub.
2. A tool holder as claimed in claim 1 comprising a first jaw with a first rotatable support comprising a hub having a plurality of tools at one end of said insert, a second jaw member at the opposite end of said insert and having a second rotatable support comprising a hub having a plurality of tools.
3. A tool holder as claimed in claim 1 wherein said tools are the same or different tools.
4. A tool holder as claimed in claim 2 wherein the tools at said first jaw comprise a first set of tools of different sizes, the tools at said second jaw comprise a second set of tools of different sizes.
5. A tool holder as claimed in claim 2 wherein the tools at said first and second jaw comprise a first set of tools of different sizes.
6. A tool holder as claimed in claims 1 and 2 wherein said tools are integrally formed with said hub.
7. A tool holder as claimed in claim 1 comprising a cover member over said shank, a said cover member extending upwardly into a head member over said jaw member.
8. A tool holder as claimed in claims 1 and 2 wherein said shank has a C section along the longitudinal axis and extending into the jaw member.
9. A tool holder as claimed in claim 1 comprising a first and second rotatable support at said first end of the insert, each of said supports having its respective tools.







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EUROPEAN SEARCH REPORT

Application Number
EP 95 30 0976

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US-A-5 018 411 (LA PADURA) * figures 1-8 *	1,3	B25F1/04
Y	---	2,5,6,8	
X	US-A-3 014 388 (BLASDELL) * column 1, line 44 - line 49; figures 1-3 *	1,3	
Y	---	2,5,6,8	
A	FR-A-787 512 (SAVARIN ET FOINANT) * figures 1-3 *	4	
A	US-A-2 834 237 (RENOUX) * figures 1-4 *	9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B25F B25G B25B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		22 June 1995	Matzdorf, U
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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