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(54) **Hydraulic jack with area to hold wrench sockets or impact-wrench sockets**

(57) Hydraulic jack, with a main body (1) and a lifting arm (2) articulated in relation to the main body to enable a vehicle to be lifted, which includes at least one wrench-socket-carrying area (4, 4') whose cross section is of a shape and size that essentially coincides with the shape and size of at least part of a cross section of the wrench-socket type tool (5) or impact-wrench socket. Thus, the hydraulic jack of the invention enables the operator to safely deposit or support one or more wrench-socket type tools (5) on the jack itself, the tools being easily accessible and close to the place where they are to be used, making the operator's work easier and faster.

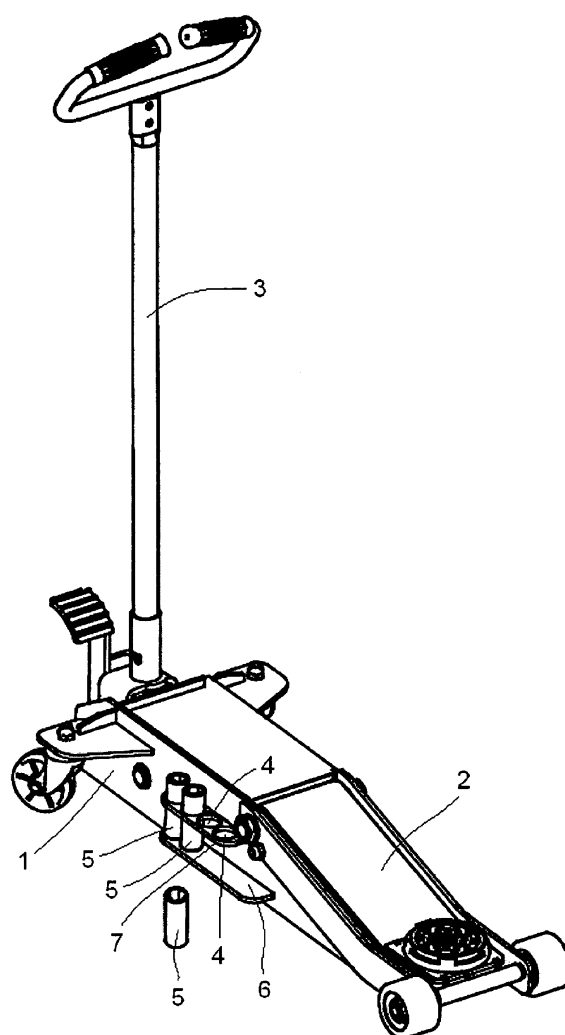


FIG.1

Description

Technical field

[0001] The invention relates to a hydraulic jack of the type used in garages and workshops to lift vehicles and thereby enable suitable access to vehicles for servicing or repair.

Prior art

[0002] Hydraulic jacks are known in prior art, them being devices generally used in workshops and garages, enabling a vehicle to be safely raised in order to provide suitable access to certain parts of the vehicle and in order to be able to carry out servicing or repair. For example, hydraulic jacks are very generally used to raise a vehicle and be able to replace its wheels or tyres.

[0003] During servicing or repair work on a vehicle, it is common to require the use of different tools. For example, in the case of replacing wheels or tyres, the use of tools known as wrench sockets, which are a kind of wrench used to loosen wheel bolts, is required. These wrench sockets, technically known as impact-wrench sockets, are essentially cylindrical or cartridge-like in shape, usually with a diameter of 30 mm and a length of approximately 85 mm. Their approximate unit weight is normally about 400 grams. Therefore, it is obvious that carrying a set of these tools in a pocket might prove uncomfortable and heavy for the operator.

[0004] The objective of the invention is to make the work of hydraulic jack operators easier, particularly when their work requires the use of wrench sockets or impact-wrench sockets, for instance to carry out a change of wheel or tyre on a vehicle.

Brief description of the invention

[0005] It is an object of the invention to provide a hydraulic jack which, like conventional hydraulic jacks, includes a main body and a lifting arm articulated in relation to the main body, in order to enable a vehicle to be raised, with said articulation taking place by means of a hydraulic system operated by a lever. The hydraulic jack according to the invention includes at least one wrench socket- (or impact-wrench socket-, although the term "wrench socket-" will be used hereinafter) carrying area, adapted to receive, hold or house a wrench-socket type tool. The wrench-socket-carrying area might completely encircle the wrench-socket type tool or partially encircle it, in which case it acts as a seating or support area for the tool. For this, the seating area has a cross section with a shape and size that essentially coincides with the shape and size of at least part of a cross section of a wrench-socket type tool. The wrench-socket-carrying area has a slight clearance in relation to the wrench-socket type tool so that the latter may be housed or seated in said area.

[0006] Thus, the hydraulic jack according to the inven-

tion enables the operator to safely deposit or support one or more wrench-socket type tools on the jack itself, the tools being easily accessible and close to the place where they are to be used, thus making the operator's work easier and faster. In consequence, the invention prevents the operator from having to be constantly keeping the heavy tools in a drawer or cabinet for this purpose, or from having to carry them in his pocket, thereby saving effort and avoiding unnecessary wastage of time.

Brief description of the drawings

[0007] Details of the invention can be seen in the accompanying non-limiting figures:

- Figure 1 shows a perspective view of a first embodiment of the invention.
- Figure 2 shows a perspective view of a second embodiment of the invention.
- Figure 3 shows a perspective view of the tray for the second embodiment of the invention.

Detailed disclosure of the invention

[0008] Figure 1 shows a perspective view of an initial embodiment of the invention. The hydraulic jack, like conventional hydraulic jacks, includes a main body (1) and a lifting arm (2) capable of being articulated and raised in relation to the main body (1). The turning of the lifting arm (2) is caused by operating a lever (3), which operates a hydraulic system that raises the lifting arm (2). The lifting arm (2) engages with the lower part of a vehicle so that when the lifting arm (2) turns and is raised in relation to the main body (1), it manages to lift the vehicle.

[0009] In the embodiment shown, according to the invention, the hydraulic jack shown includes four wrench-socket-carrying areas, in this case in the shape of a hole (4), i.e. four holes (4) to house four respective wrench-socket type tools (5). The cross section of each hole (4) has a shape and size that essentially coincides with the shape and size of a cross section of the wrench-socket type tool (5), with the hole (4) having a slight clearance in relation to the wrench-socket type tool (5) so that the wrench-socket type tool (5) may be housed in the hole (5).

[0010] As can be seen in the figure, the hole (4) is preferably a through hole, in which case the hydraulic jack also includes a base (6) essentially parallel to the hole (4) and some distance from it, to allow the wrench-socket type tool (5) to be supported.

[0011] The hole (4) is also preferably made in a protuberance (7) as shown in the figure.

[0012] The embodiment in Figure 1 is advantageous because it provides a very effective and reliable way of holding the wrench-socket type tools (5) while the jack is being moved inside the workshop. Also, it leaves free space on top of the main body (1) to be able to support other items (bolts, etc.).

[0013] Figure 2 shows a perspective view of a second

embodiment of the invention. In this case, the hydraulic jack includes three wrench-socket-carrying areas in the form of a seating area (4'), i.e. three areas on which the respective wrench-socket type tools (5) are deposited and supported. The cross section of each hole (4') has a shape and size that essentially coincides with the shape and size of part of a cross section of the wrench-socket type tool (5), with the seating area (4') having a slight clearance in relation to the wrench-socket type tool (5) so that the wrench-socket type tool (5) may be seated in the said seating area (4').

[0014] The seating area (4') is preferably comprised in a tray (8), which is attached to the main body (1) of the hydraulic jack and detachable from it. This tray (8) might include a receptacle (9) to allow other small items or tools to be placed there temporarily. This embodiment has a very reasonable cost, and allowing the wrench-socket type tools (5) to be properly held. The fact that the tray (8) is detachable is also interesting because it becomes a versatile tool, which can be used to transport the wrench-socket type tools (5) to/from other places and for other tasks inside the workshop.

[0015] Figure 3 shows a perspective view of the tray (8) in Figure 2, detached from the main body (1).

is made in a protuberance (7).

5. Hydraulic jack, according to claim 1, wherein the wrench-socket-carrying area (4, 4') is a seating area (4'), wherein the shape and size of the cross section of said seating area (4') coincide essentially with a part of a cross section of the wrench-socket type tool (5), so that the wrench-socket type tool (5) becomes seated in the said seating area (4').
6. Hydraulic jack, according to claim 5, wherein the seating area (4') is comprised in a tray (8) attached to the main body (1) of the hydraulic jack and detachable from it.
7. Hydraulic jack, according to claim 5, wherein the tray (8) includes a receptacle (9) to allow other small items or tools to be placed there temporarily.

Claims

1. Hydraulic jack, which includes a main body (1) and a lifting arm (2) articulated in relation to the main body (1) to enable a vehicle to be lifted, said articulation taking place by means of a hydraulic system operated by a lever (3), which is **characterised in that** it includes at least one wrench-socket-carrying area (4, 4') whose cross section is of a shape and size that essentially coincides with the shape and size of at least part of a cross section of a wrench-socket type tool (5), with the wrench-socket-carrying area (4, 4') having a slight clearance in relation to the wrench-socket type tool (5) so that the wrench-socket type tool (5) may be housed or seated in the said area (4, 4').
2. Hydraulic jack, according to claim 1, wherein the wrench-socket-carrying area (4, 4') is a hole (4), wherein the shape and size of the cross section of said hole (4) coincide essentially with the shape and size of a complete cross section of the wrench-socket type tool (5), so that the wrench-socket type tool (5) becomes housed in said hole (4).
3. Hydraulic jack, according to claim 2, wherein the hole (4) is a through hole, and the hydraulic jack also includes a base (6) essentially parallel to the hole (4) and some distance from it, to allow the wrench-socket type tool (5) to be supported.
4. Hydraulic jack, according to claim 2, wherein the hole

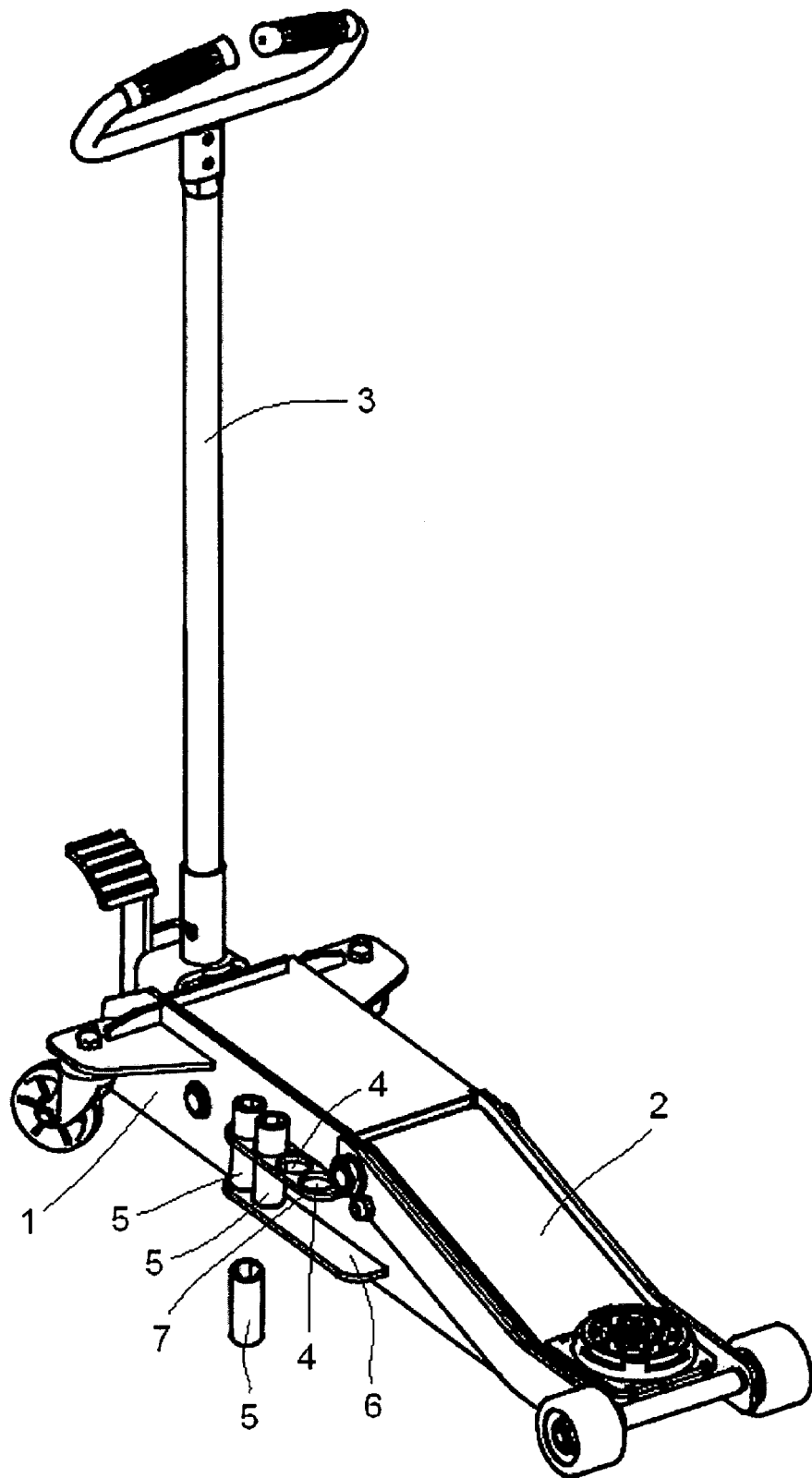


FIG.1

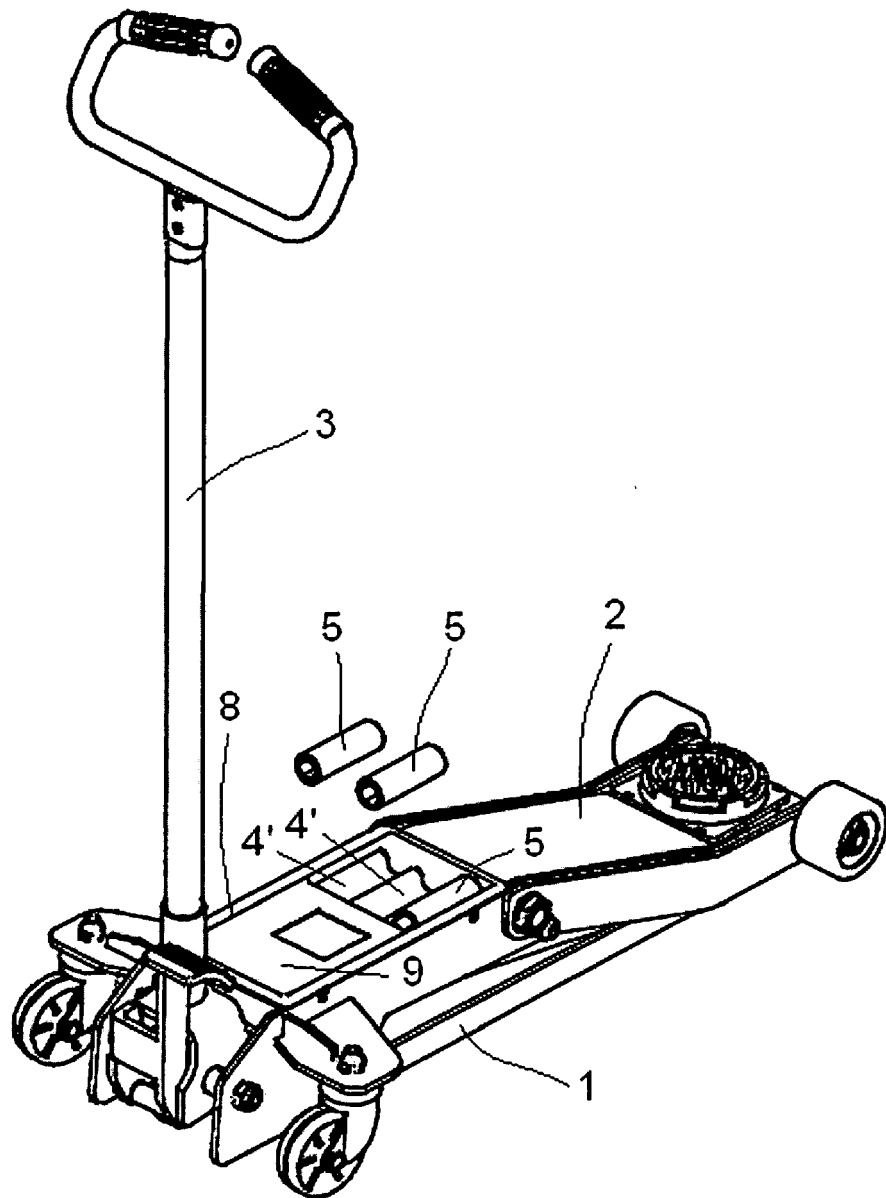


FIG.2

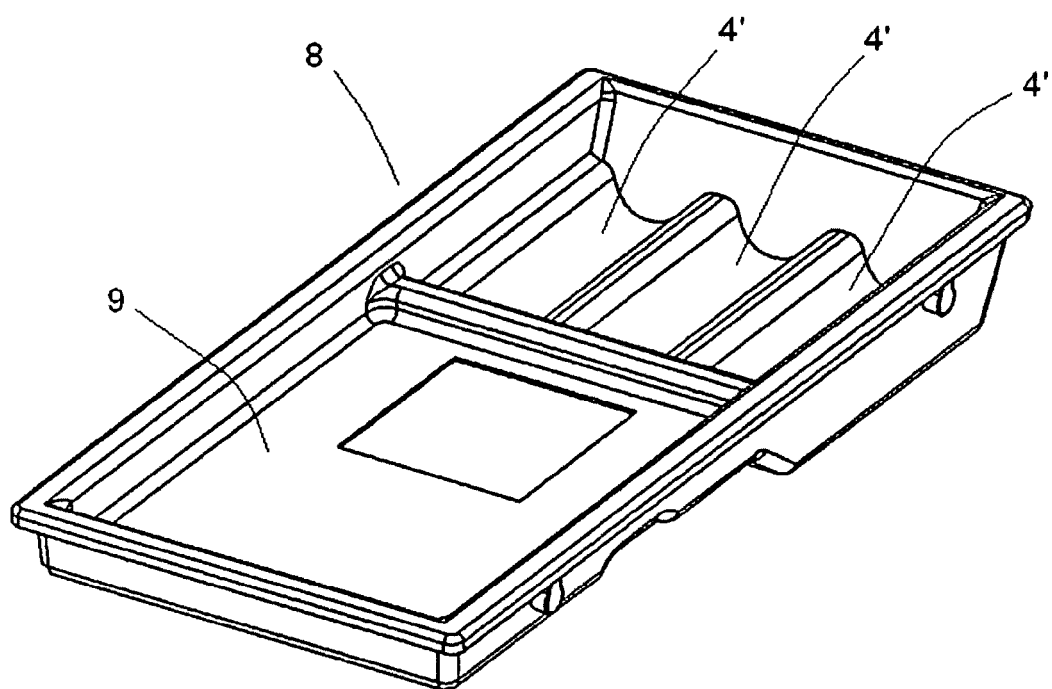


FIG.3



EUROPEAN SEARCH REPORT

Application Number
EP 10 38 0145

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	CN 2 396 021 Y (XINFU INDUSTRY CO LTD [CN]) 13 September 2000 (2000-09-13) * abstract * * figures 1-8 *	1-7	INV. B66F5/04
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A	* figures 9,10 *	4	
A	US 4 645 181 A (SCHAPANSKY LLOYD D [US]) 24 February 1987 (1987-02-24) * column 3, line 38 - line 45 * * figure 1 *	4	
A	US 2006/231343 A1 (VESA AARNO [CA]) 19 October 2006 (2006-10-19) * paragraph [0072] * * figure 1 *	3,4	
			TECHNICAL FIELDS SEARCHED (IPC)
			B66F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 7 March 2011	Examiner Serôdio, Renato
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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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
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07-03-2011

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