



(11) **EP 1 140 435 B3**

(12) **NEW EUROPEAN PATENT SPECIFICATION**
After limitation procedure (B3-1)

(45) Mention of the grant of the patent:
28.09.2005 Bulletin 2005/39

(45) Date of publication and mention
of the limitation decision:
B3-1 25.11.2015 Bulletin 2015/48

(21) Application number: **99965634.1**

(22) Date of filing: **10.12.1999**

(51) Int Cl.:
B25G 1/10 ^(2006.01) **E04F 21/16** ^(2006.01)
A46B 5/02 ^(2006.01) **A46B 17/02** ^(2006.01)

(86) International application number:
PCT/SE1999/002311

(87) International publication number:
WO 2000/037221 (29.06.2000 Gazette 2000/26)

(54) **TOOL HANDLE**
WERKZEUGGRIFF
POIGNEE D'OUTIL

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

(30) Priority: **22.12.1998 SE 9804480**

(43) Date of publication of application:
10.10.2001 Bulletin 2001/41

(73) Proprietor: **Orkla House Care AB**
564 23 Bankeryd (SE)

(72) Inventors:
• **CARLSSON, Stefan**
S-564 31 Bankeryd (SE)
• **CHALAS, Jacek**
S-216 17 Malmö (SE)

(74) Representative: **KIPA AB**
P O Box 1065
251 10 Helsingborg (SE)

(56) References cited:
EP-A1- 0 855 230 US-A- 1 980 087
US-A- 2 914 785

- **DATABASE WPI Week 199632, Derwent Publications Ltd., London, GB; AN 1996-319781, XP002947803 & JP 8 144 498 A (YAYOI KAGAKU KOGYO KK) 04 June 1996 & PATENT ABSTRACTS OF JAPAN & JP 08 144 498 A (YAYOI KAGAKU KOGYO KK) 04 June 1996**

EP 1 140 435 B3

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a tool handle and more precisely to an improved handle having a gripping hole for the thumb. The handle is suitable for tools like trowels and similar, and allows a better grip of the tool during work.

STATE OF THE ART

[0002] Conventional handles for various tools are known since a long time. The known handles have no holes for the fingers of the hand, but are enclosed by the hand. Sometimes the index finger, and possibly the middle finger, is extended forwards for applying pressure onto the tool further forward, towards the working portion of the tool. The extended fingers are used more for controlling and applying pressure to the tool than for holding it fixed in the hand. This is not ideal for all tools.

[0003] There are also "handles" consisting of only a hole for the thumb, e.g. on a palette. A palette is however not used like a tool in the conventional sense, but should rather be compared to a tray.

[0004] US 1,980,087 is considered the most relevant prior art. The document discloses a tool handle designed to be able to be used together with many different tools. The tool handle has various grooves or sockets in which various tool shafts may be inserted and secured. The tool handle is also provided with a finger hole. However, it is not suitable to try to hold the handle by inserting the thumb in the finger hole, but the tool handle is intended to be held with a pistol grip or like a table tennis racket.

[0005] US 2,914,785 discloses a handle for paint brushes having various holes and cutaways for the hand and fingers. The document fails to disclose any thumb hole for grasping the handle with the thumb inserted in the hole and the fingers outstretched and not grasping the handle.

[0006] EP 855230 discloses a spreader with a handle having a large hole for inserting the whole hand. The hole is not suitable for inserting just the thumb and holding the tool this way.

[0007] The present invention provides an improved handle compared to the previously known art. By providing a gripping hole for the thumb in the handle, the ergonomics is improved and the handle may be held in a more stable manner whilst simultaneously allowing a more comfortable, natural angle of the wrist.

SUMMARY OF THE INVENTION

[0008] The present invention thus provides a tool handle. The tool has a working portion connected to the handle.

[0009] According to the invention, the handle is provided with a gripping hole for the thumb as is defined in claim

1. The handle may also be provided with a removable plug, intended for placing in the gripping hole so as to give the handle a conventional, solid embodiment.

[0010] The invention and preferred embodiments thereof are defined in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The invention will be described in detail below, with reference to the enclosed drawings, wherein:

- Fig. 1 is a perspective view of a trowel according to the present invention, being held by a hand,
- Fig. 2 is a perspective view of a trowel provided with a plug according to the present invention,
- Fig. 3 is a perspective view from one direction of a plug according to one embodiment of the invention,
- Fig. 4 is a perspective view of the plug of Fig. 3, from the other direction,
- Fig. 5 is a perspective view from one direction of a plug according to another embodiment of the invention, and
- Fig. 6 is a perspective view of the plug of Fig. 5, from the other direction.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0012] The invention thus relates to an ergonomically improved tool handle. The tool is illustrated here as a broad spatula or trowel, but the handle can also be used with other tools like grinding tools, brushes and the like.

[0013] As can be seen in Fig. 1, the exterior contour of the trowel resembles that of a conventional trowel having a handle 1 and a working portion 2 consisting of a metal sheet and the handle mounting. As is also previously known, the handle is not located at right angles to the working portion, but is here somewhat angled.

[0014] The novelty of the invention is, that the handle is arranged on the one hand for allowing it to be held enclosed by the hand, and on the other for allowing it to be held with the thumb only, by being provided with a gripping hole 3, intended for the thumb. The thumb of the hand is inserted through the hole in such a manner that the first joint of the thumb is pressing towards the handle, and the inside of the thumb is pressing against the forward, inner portion of the gripping hole 3. The rearward, inner portion of the gripping hole 3 simultaneously contacts the outside of the hand and the thumb. The other fingers are pressing with their tips onto the other side of the tool (the rear side in the figure). The pressure areas of the other fingers are marked by dashed ovals 4. As can be seen, the gripping hole 3 is oblong, allowing space for the thumb to be directed substantially forward along the handle, at a relatively small angle thereto. The entire hand is held rather extended, with all the fingers, including the thumb, only slightly bent. Also the wrist has a

straight basic position, but will of course bend back and forth as necessary during work.

[0015] It may be seen that the tool, thanks to the gripping hole 3, will be very comfortable to hold. The pressure points will be distributed over the tool in an advantageous manner. It is easy to spread out and pull together the pressure areas 4 by spreading and drawing together the fingers, respectively, somewhat. The pressure areas 4 will always be distributed over a large portion of the width of the working portion 2 and all the fingers are utilised, making it easy to apply a strong pressure e.g. during filling and other types of work where sweeping motions are used. Thanks to the gripping hole 3, no fingers are needed for gripping around the handle, as was the case with the known art. The new handle makes better use of the construction of the human hand, with the thumb directed towards the other fingers.

[0016] Preferably, the gripping hole 3 has rounded inner edges against the thumb in order to feel comfortable. A suitable size of the hole might be about 3 x 4 cm, the hole thus being larger in the longitudinal direction of the handle. The gripping hole 3 should be located at an adapted distance from the working portion, such that the other fingers will apply pressure rather close to the working portion. Thereby, an optimum pressure and control of the tool is obtained.

[0017] For certain types of work, holding the tool like a conventional handle may however be more comfortable. In a preferred embodiment of the invention, the gripping hole 3 can thus be filled out by a plug 5. Fig. 2 shows a trowel having a plug 5 inserted. The plug 5 fills out the handle, making the pressure area inside the hand larger.

[0018] Figs. 3 and 4 show a first embodiment of the plug. As shown, the plug may be split. The plug consists of two halves 11 being connected to each other by means of a coupling. The coupling comprises a pin 9, affixed to or being part of one half, and extending into a through hole 10 in the other half. The plug is fitted by placing the halves, one from each direction, into the gripping hole 3, and inserting the pin 9 into the hole 10. The plug is held together by the friction between the pin and the hole. The plug has a cup-shaped peripheral edge 8 in order to smoothly follow the inner edge of the gripping hole 3. To remove the plug, one pushes on the pin 9 with a pointed object through the hole 10, making the halves 11 begin to part. Then the halves are easily pulled away from each other. Other types of couplings, e.g. Velcro straps, are conceivable. The above plug does not have to be elastic, but may be manufactured from a harder material, such as plastic.

[0019] Figs. 5 and 6 illustrate a second embodiment of the plug. The plug 5 is made in one piece and preferably made of rubber or some other elastic material. The plug also has a cup-shaped peripheral edge 6 in order to smoothly follow the inner edge of the gripping hole 3. The plug 5 is easy to fit by hand and can be removed with some pointed object, e.g. a screwdriver.

[0020] As is shown in the figures, the handle also has

a suspension hole 7, as is conventional. The suspension hole 7 constitutes no part of the present invention and can also be omitted.

[0021] It will be understood that the handle according to the invention can also be used with other tools, such as brushes, paintbrushes, grinding tools etc. The angle of the handle relative to the working portion may of course also be varied depending on the use of the tool. The protective scope of the invention is solely limited by the following claims.

Claims

1. A tool comprising a tool handle (1) with a working portion (2) connected to the handle, wherein the handle has an overall conventional, elongated contour and is arranged to be held enclosed by the hand, **characterised in that** the tool is a broad spatula or trowel, the handle is as well arranged to be held with the thumb only, by being provided with a gripping hole (3), being oblong along the length of the handle for accommodating the thumb, when inserted through the gripping hole (3) and directed substantially forward along the handle, the gripping hole (3) providing a pressure area for the inside of the thumb, the handle provides one pressure area in one direction for the first joint of the thumb, and the tool has other pressure areas in the opposite direction for the other fingers (4).
2. The tool according to claim 1, **characterised in that** the gripping hole (3) is located such that the pressure areas for the other fingers (4) of the hand are located relatively close to the working portion (2).
3. A tool according to claim 1 or 2, **characterised in that** the gripping hole (3) has rounded internal edges.
4. A tool according to claim 3, **characterised in that** the gripping hole (3) is about 3 x 4 cm.
5. A tool according to any one of the preceding claims, **characterised by** a removable plug (5; 11) intended for fitting into the gripping hole (3).
6. A tool according to claims 5 and 3, **characterised in that** said plug (5; 11) has an inwardly cup-shaped edge (6; 8) that smoothly follows the gripping hole (3).
7. A tool according to claims 5 or 6, **characterised in that** said plug (5) is made of rubber.
8. A tool according to claims 5 or 6, **characterised in that** said plug comprises two parts (11) being inserted one from each side of the gripping hole (3) and

held together by a releasable coupling (9, 10).

9. A tool according to claim 8, **characterised in that** said plug (5) is substantially made of plastic.

Patentansprüche

1. Werkzeug umfassend einen Werkzeuggriff (1) mit einem Funktionsabschnitt (2), welcher mit dem Griff verbunden ist, wobei der Griff eine herkömmliche längliche Gesamtkontur aufweist und dafür vorgesehen ist, um von der Hand umschlossen gehalten zu werden, **dadurch gekennzeichnet, dass** das Werkzeug ein breiter Spachtel oder eine Maurerkelle ist, der Griff auch dafür vorgesehen ist, nur mit dem Daumen gehalten zu werden, indem er mit einem Greifloch (3) ausgebildet ist, welches einen in Griff-Längsrichtung länglichen Zustand zur Aufnahme des Daumens aufweist, wenn dieser durch das Greifloch (3) eingeführt ist und im Wesentlichen entlang des Griffs nach vorne gerichtet ist, wobei das Greifloch (3) eine Druckfläche für die Innenfläche des Daumens bereitstellt, der Griff eine Druckfläche in einer Richtung für das erste Gelenk des Daumens bereitstellt, und dass das Werkzeug andere Druckflächen in der entgegengesetzten Richtung für die anderen Finger (4) aufweist.
2. Werkzeug nach Anspruch 1, **dadurch gekennzeichnet, dass** das Greifloch (3) so eingerichtet ist, dass die Druckflächen für die anderen Finger (4) der Hand verhältnismäßig nahe des Funktionsabschnitts (2) eingerichtet sind.
3. Werkzeug nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Greifloch (3) abgerundete Innenkanten aufweist.
4. Werkzeug nach Anspruch 3, **dadurch gekennzeichnet, dass** das Greifloch (3) die Größe von etwa 3 x 4 cm aufweist.
5. Werkzeug nach einem der vorhergehenden Ansprüche, **gekennzeichnet durch** einen herausnehmbaren Stopfen (5; 11), welcher dafür bestimmt ist, in das Greifloch (3) zu passen.
6. Werkzeug nach den Ansprüchen 5 und 3, **dadurch gekennzeichnet, dass** der Stopfen (5; 11) eine kelchförmig nach innen gebogene Kante (6; 8) aufweist, welche sich dem Greifloch (3) glatt anschließt.
7. Werkzeug nach den Ansprüchen 5 oder 6, **dadurch gekennzeichnet, dass** der Stopfen (5) aus Gummi gefertigt ist.
8. Werkzeug nach den Ansprüchen 5 oder 6, **dadurch**

gekennzeichnet, dass der Stopfen zwei Teile (11) umfasst, wobei von jeder Seite des Greifloches (3) jeweils einer von ihnen eingeführt wird und beide von einer lösbaren Kopplung (9, 10) zusammengehalten werden.

9. Werkzeug nach Anspruch 8, **dadurch gekennzeichnet, dass** der Stopfen (5) im Wesentlichen aus Kunststoff gefertigt ist.

Revendications

1. Outil comprenant un poignée d'outil (1) comprenant une partie de travail (2) reliée au manche, dans lequel la poignée a un contour général allongé usuel et est prévue pour être tenue entourée par la main, **caractérisée en ce que** l'outil est une spatule large ou une truelle, la poignée (1) est ainsi prévue que pour être tenue avec le pouce seulement, du fait qu'elle comporte un trou de prise (3) de forme oblongue dans le sens de la longueur de la poignée pour recevoir le pouce, lorsqu'il est inséré à travers le trou de prise (3) et dirigé sensiblement vers l'avant le long de la poignée, le trou de prise (3) présentant une surface de pression pour l'intérieur du pouce, la poignée présente une surface de pression dans une première direction pour la première articulation du pouce, et l'outil comprenant d'autres surfaces de pression dans la direction opposée pour les autres doigts (4).
2. Outil selon la revendication 1, **caractérisée en ce que** le trou de prise (3) est placé de sorte que les surfaces de pression pour les autres doigts (4) de la main se trouvent relativement près de la partie de travail (2).
3. Outil selon la revendication 1 ou 2, **caractérisée en ce que** le trou de prise (3) a des bords intérieurs arrondis.
4. Outil selon la revendication 3, **caractérisée en ce que** le trou de prise (3) est de 3 x 4 cm environ.
5. Outil selon une quelconque des revendications précédentes, **caractérisée par** un bouchon amovible (5 ; 11) prévu pour s'ajuster dans le trou de prise (3).
6. Outil selon les revendications 5 et 3, **caractérisée en ce que** le dit bouchon (5 ; 11) présente un bord en forme de coupelle vers l'intérieur (6 ; 8) qui suit régulièrement le trou de prise (3).
7. Outil selon la revendication 5 ou 6, **caractérisée en ce que** le dit bouchon (5) est fabriquée en caoutchouc.

8. Outil selon la revendication 5 ou 6, **caractérisée en ce que** le dit bouchon comprend deux parties (11) à insérer une de chaque côté du trou de prise (3) et maintenues ensemble par un accouplement libérable (9, 10).

5

9. Outil selon la revendication 8, **caractérisée en ce que** le dit bouchon (5) est essentiellement fabriqué en matière plastique.

10

15

20

25

30

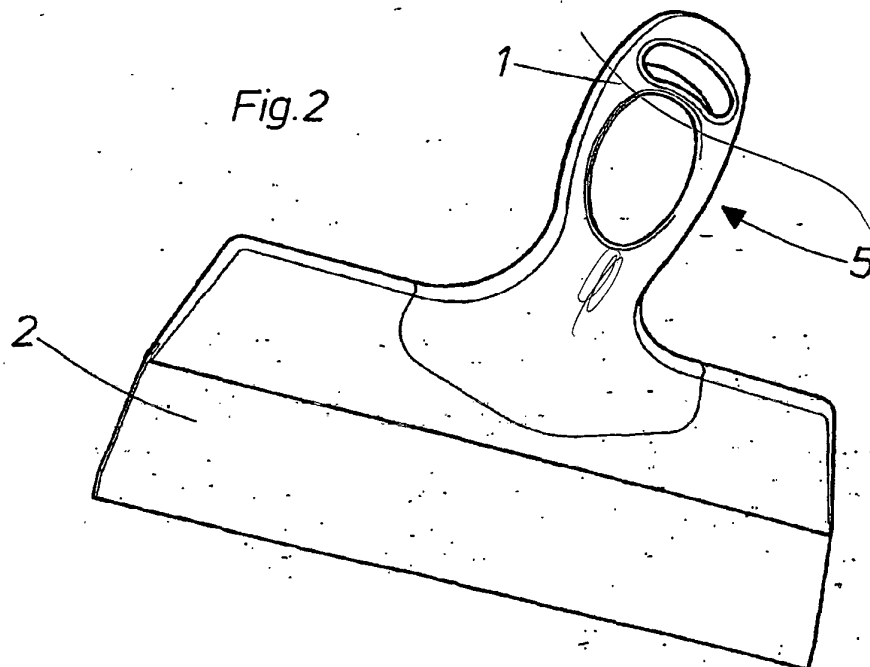
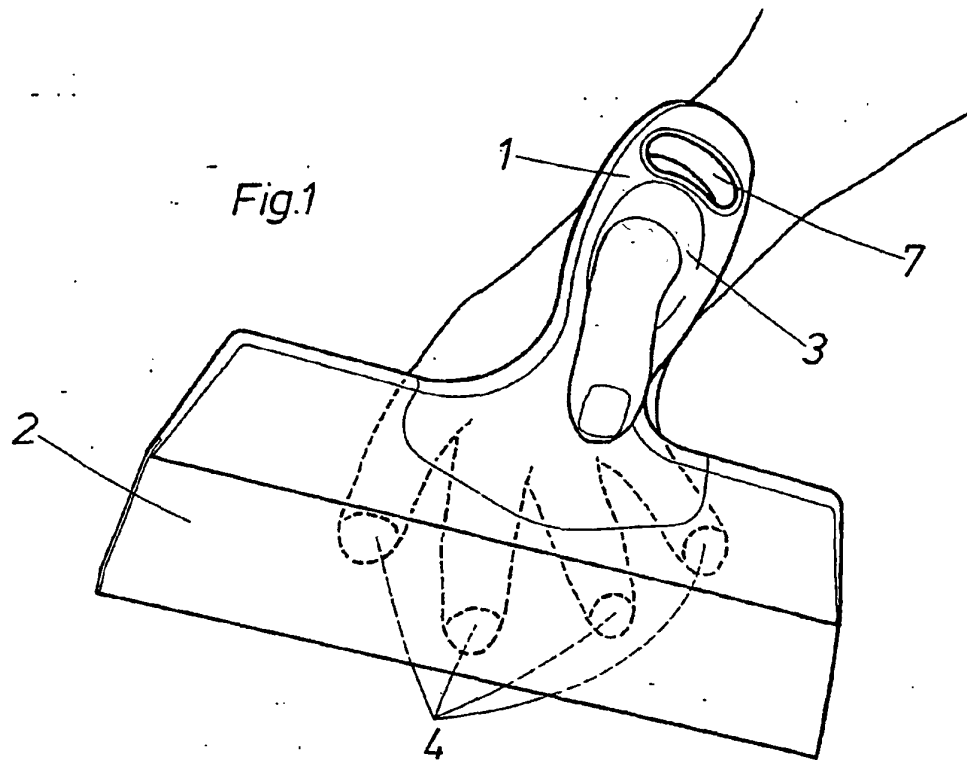
35

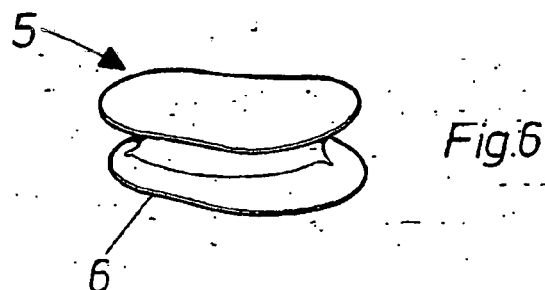
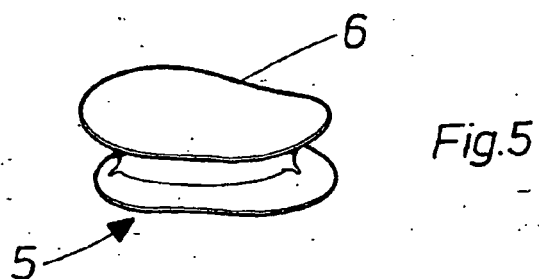
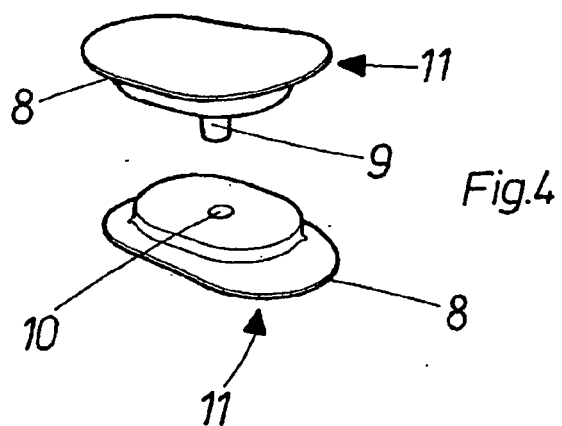
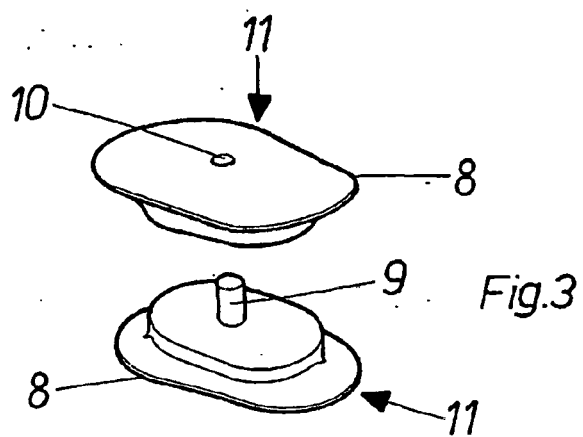
40

45

50

55





REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 1980087 A [0004]
- US 2914785 A [0005]
- EP 855230 A [0006]