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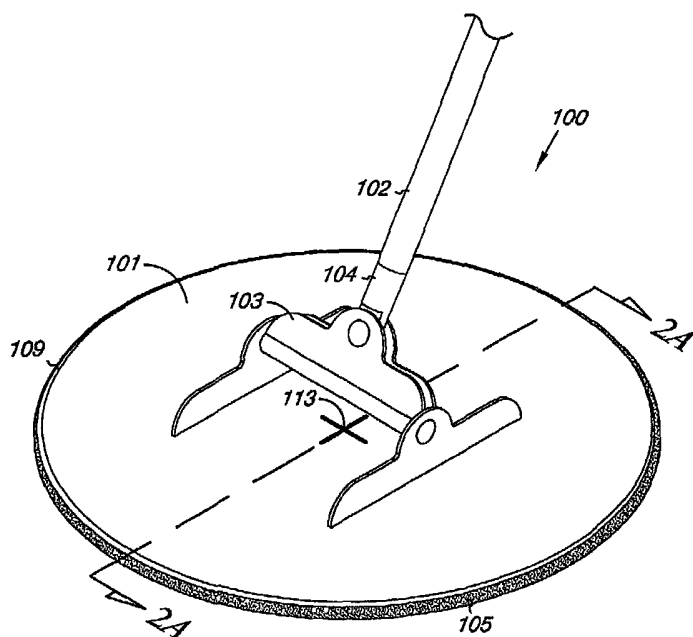
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(54) Title: HAND MANIPULATED TOOL



(57) Abstract: Embodiments of a hand manipulated tool includes an elongate handle and a tool support. The tool support has a center, rotationally fixed to the elongate handle. The tool support has a periphery with at least five points equidistant from the center or a periphery that is an equilateral polygon or a periphery that has a triangular shape and forms an interior angle that is at least a right angle. Another embodiment of a tool head includes a body separable into at least two parts, including a first tool support having a center and a lower engagement surface and a second tool support releasably attached to the lower engagement surface of the first tool support.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/015176

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B24D15/00 B25G3/38 B05C17/00 A47L13/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B24D B25G B05C A47L A46B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 105 329 A (SGORBATI SR RICHARD) 1 October 1963 (1963-10-01) the whole document -----	1,2,6-8, 26,27
X	US 6 109 811 A (SONG YOUNG SO) 29 August 2000 (2000-08-29) column 3, lines 53-61; figures 5-7 -----	1-9,11, 13,14, 26,27
X	GB 846 413 A (WILLIAM ARTHUR EVANS) 31 August 1960 (1960-08-31) the whole document -----	9,10,13, 14
X	GB 2 298 379 A (MILLER CORP LTD) 4 September 1996 (1996-09-04) figures ----- -/--	9,11,13, 14

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

6 October 2004

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/015176

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 238 006 A (BISSELL, INC.) 7 July 1971 (1971-07-07) figure 1 -----	24,25
X	DE 31 05 426 A (REILING KARL; REILING REINHOLD) 19 August 1982 (1982-08-19) figure 1 -----	24,25
A	GB 2 299 038 A (MINNESOTA MINING & MFG) 25 September 1996 (1996-09-25) the whole document -----	1,5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2004/015176

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-14, 24-27

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14,24-27

Hand manipulated tool comprising an elongate handle and a tool support rotationally fixed to the handle, the tool support having a circular or polygonal periphery, and methods of manufacturing and using such a tool.

2. claims: 15-23

Tool head comprising a body including a first tool support ~ having a center and a lower engagement surface and a second tool support releasably attached to the lower engagement surface of the first tool support

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/015176

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