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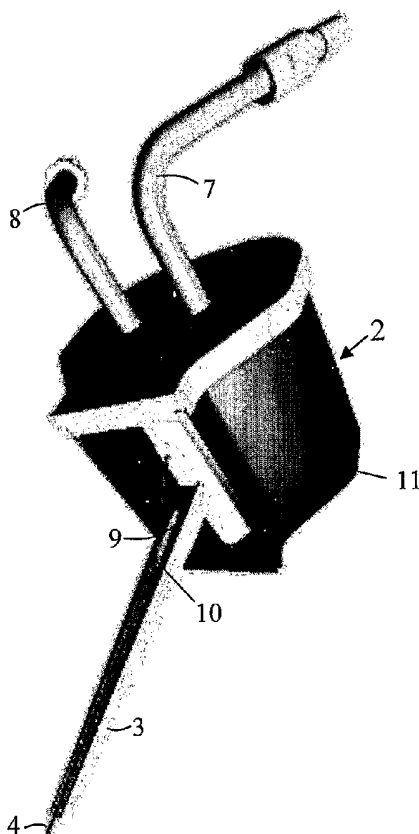
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[Continued on next page]

(54) Title: A WELDING WIRE GUIDE, A WELDING TORCH WITH A WELDING WIRE GUIDE, IN WHICH THE WELDING WIRE GUIDE IS OPEN ON ONE SIDE IN THE REGION OF THE TIP OF THE WELDING WIRE GUIDE



(57) Abstract: The present invention relates to a welding torch that includes an electrode (3) that has a longitudinal groove (9) formed therein which guides a welding wire (4) which is fed from a laterally spaced-apart location. The electrode (3) is open and the wire (4) is supported on one side only. In the region of the welding tip, the electrode (3) is elongate and the cross-sectional area is smaller than the area at a position further from the tip. Regions between an outer housing (11) and a main support body (2) define two shielding gas conduits positioned on opposite sides of the body (2), through which gas flows and then combines to form a unitary stream. The body (2) contains cooled regions which are supplied with cooling fluid by a conduit (7) and removed by conduit (8), parts of which are positioned between the shielding gas conduits close to the welding electrode (3).

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2005/009037

A. CLASSIFICATION OF SUBJECT MATTER
INV. B23K9/26 B23K9/12 B23K9/02 B23K9/028 B23K9/173

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)
B23K

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, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 50 067758 A (X) 6 June 1975 (1975-06-06) the whole document	1,2,4,7, 8,21,22, 25,29
X	PATENT ABSTRACTS OF JAPAN vol. 012, no. 485 (M-777), 19 December 1988 (1988-12-19) -& JP 63 207478 A (YAMAHA SHATAI KOGYO KK), 26 August 1988 (1988-08-26)	1,2,4,8, 21,22, 25,29
A	abstract	23
X	US 2 179 108 A (H. WESTBERG) 7 November 1939 (1939-11-07) page 2, right-hand column, lines 9-28; figures	1-4,8, 21,22, 25,29
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Further documents are listed in the continuation of Box C.

See patent family 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

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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15. 05. 2006

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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 015, no. 045 (M-1077), 4 February 1991 (1991-02-04) - & JP 02 280972 A (MATSUSHITA ELECTRIC IND CO. LTD), 16 November 1990 (1990-11-16) -	29
Y	abstract	1-4,7,8, 21-28
Y	----- US 4 504 729 A (I. ASANO ET AL) 12 March 1985 (1985-03-12) column 2, line 61 - column 3, line 31; figures	1-4,7,8, 21-28
Y	----- GB 1 515 165 A (BOC LTD) 21 June 1978 (1978-06-21) page 4, lines 71-94; figures	28
X	----- EP 0 621 102 A (BABCOCK-HITACHI KABUSHIKI KAISHA) 26 October 1994 (1994-10-26) column 13, line 14 - column 14, line 31; figures 18a,20	29
X	----- EP 1 108 491 A (TRAFIMET S.P.A) 20 June 2001 (2001-06-20) paragraphs [0005], [0029] - [0034]; claims 1-3; figures	29
A	----- US 4 733 052 A (A. NILSSON ET AL) 22 March 1988 (1988-03-22) abstract; claims; figures	1,26,29
A	----- US 4 988 846 A (K.-O- KARLSTEN ET AL) 29 January 1991 (1991-01-29) the whole document	1,26,29

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2005/009037

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.:

1-8,21-29

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: 1-8, 21-29

A welding wire guide, a welding torch with a welding wire guide, in which the welding wire guide is open on one side in the region of the tip of the welding wire guide

2. claims: 9-16, 21-28

An arc welding torch with a plurality of distinct and separate shielding gas conduits for forming a unitary gas stream flowing towards the welding region

3. claims: 17-28

An arc welding torch with a cross-sectional area at the tip of the torch being smaller than the cross-sectional area at a position further from the tip

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2005/009037

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