

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference H 04/009 PCT	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/EP2005/011055	International filing date ( <i>day/month/year</i> ) 14 October 2005 (14.10.2005)	Priority date ( <i>day/month/year</i> ) 23 October 2004 (23.10.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant KHD HUMBOLDT WEDAG GMBH			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 11 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 25%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																						
<input checked="" type="checkbox"/>	Box No. II	Priority																						
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																						
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																						
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																						
<input type="checkbox"/>	Box No. VI	Certain documents cited																						
<input type="checkbox"/>	Box No. VII	Certain defects in the international application																						
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 24 April 2007 (24.04.2007)</p> <p>Authorized officer</p> <p style="text-align: center;"><b>Agnes Wittmann-Regis</b></p> <p>e-mail: pt06.pct@wipo.int</p>
--	---

**PATENT COOPERATION TREATY**

**TRANSLATION**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference <b>H 04/009 PCT</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/EP2005/011055</b>	International filing date (day/month/year) <b>14.10.2005</b>	Priority date (day/month/year) <b>23.10.2004</b>
International Patent Classification (IPC) or both national classification and IPC <b>F27D15/02, F27D19/00, F28F27/02, F28C3/16, F16K7/07</b>		
Applicant <b>KHD HUMBOLDT WEDAG GMBH</b>		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2005/011055

Box No. I	Basis of this opinion
1.	With regard to the <b>language</b> , this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
<input type="checkbox"/>	This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2.	With regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
a.	type of material
<input type="checkbox"/>	a sequence listing
<input type="checkbox"/>	table(s) related to the sequence listing
b.	format of material
<input type="checkbox"/>	in written format
<input type="checkbox"/>	in computer readable form
c.	time of filing/furnishing
<input type="checkbox"/>	contained in the international application as filed.
<input type="checkbox"/>	filed together with the international application in computer readable form.
<input type="checkbox"/>	furnished subsequently to this Authority for the purposes of search.
3.	<input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2005/011055

Box No. II	Priority
<p>1. <input type="checkbox"/> The following document has not yet been furnished:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).</li><li><input type="checkbox"/> translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).</li></ul> <p>Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.</p> <p>2. <input type="checkbox"/> This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.</p> <p>3. Additional observations, if necessary:</p> <p>The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.</p>	

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No. PCT/EP2005/011055
--

<b>Box No. V</b>	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>		
1. Statement			
Novelty (N)	Claims	<u>3, 4, 6</u>	YES
	Claims	<u>1, 2, 5</u>	NO
Inventive step (IS)	Claims	_____	YES
	Claims	<u>1-6</u>	NO
Industrial applicability (IA)	Claims	<u>1-6</u>	YES
	Claims	_____	NO
2. Citations and explanations:			
See supplemental sheet			

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box VIII Certain observations on the international application

**1 Clarity (PCT Article 6)**

**1.1** In claims 1-3, there is a lack of clarity, since it is attempted in said claims to describe some of the features of the claimed device by means of method features. In the device claims, the device should be described only with reference to its essential technical features, otherwise, as in the present case, there is a lack of clarity (PCT Article 6).

Claims 1-3 should therefore be changed to the effect that:

Claim 1:

"... in which an adjusting member moves in such a manner ..." (line 5)

becomes

"... in which an adjusting member is movable in such a manner ...",

and

"c) the pressure difference within and outside ... are set in such a manner ..." (lines 19-21)

becomes

"c) the pressure difference within and outside ... can be set in such a manner ...".

Claim 2:

"... in that the cooling air flows through the interior of the tubular sleeve and ..." (lines 2-3)

Supplemental Box:

**Box VIII**

becomes

"... in that the interior of the tubular sleeve can be flowed through by cooling air and ...".

Claim 3:

"... in that, conversely, the cooling air flows through the annular space between the outside of the tubular sleeve and the inside of the fixed casing and ..."

(lines 10-12)

becomes

"... in that, conversely, the annular space between the outside of the tubular sleeve and the inside of the fixed casing can be flowed through by cooling air and ..."

**1.2** Claim 6 is not sufficiently supported by the description pursuant to PCT Article 6. The material of the tubular sleeve "from hollow cylindrical, thermally stable braided rubber and/or metal wire bodies" (lines 28-29) is not specified in the description.

Supplemental Box:

**Box V**

**1** Reference is made to the following documents:

D1: PATENT ABSTRACTS OF JAPAN vol. 1996, no. 01,  
31 January 1996 (1996-01-31) & JP 07 248151 A  
(NIPPON PLAST CO LTD), 26 September 1995  
(1995-09-26)

D2: US 4 108 418 A

D3: DE 72 08 359 U

**2 Novelty (PCT Article 54(1) and (2))**

**2.1** The present application does not meet the requirements of PCT Article 33(1) because the subject matter of independent claim 1 is not novel within the meaning of PCT Article 33(2).

**2.1.1** Irrespective of the abovementioned lack of clarity (see **Box VIII, 1.1**), D1 discloses a pinch valve for regulating an air flow. An outer pipe as regulator housing is composed of a solid material (figure 1, reference sign 2), in which an elastic tube as adjusting member (tubular sleeve) is fastened and clamped to both ends of the pipe (regulator housing) (figure 1, reference signs 3, 6 and 7). Via the supply of compressed air, the pressure difference within and outside the tubular sleeve and the deformation resistance of the sleeve can be set in such a manner that the tubular sleeve can be deformed from its maximum flow cross section to its minimum flow cross section (figures 3-7). The device for regulating the flow cross section from D1 can be used for employment in bulk-material grate coolers.



Supplemental Box:

**Box V**

D1 therefore has all of the essential technical features of independent claim 1. Accordingly, said claim is not novel pursuant to PCT Article 33(1) and (2).

**2.1.2** Irrespective of the above explanations and the abovementioned lack of clarity (see **Box VIII, 1.1**), D2 discloses

a pinch valve for regulating the flow of a suspension (column 1, lines 9-24).

An outer pipe as regulator housing is composed of a solid material (figure 1, reference sign 10), in which an elastic tube as adjusting member (tubular sleeve) is fastened and clamped to both ends of the pipe (regulator housing) (figure 1, reference sign 20).

Via the supply of compressed air, the pressure difference within and outside the tubular sleeve and the deformation resistance of the sleeve can be set in such a manner that the tubular sleeve can be deformed from its maximum flow cross section to its minimum flow cross section (column 2, lines 26-46; figures 3, 4). The device for regulating the flow cross section from D2 can be used for employment in bulk-material grate coolers.

D2 therefore has all of the essential technical features of independent claim 1. Accordingly, said claim is not novel pursuant to PCT Article 33(1) and (2).

**2.1.3** Irrespective of the above explanations and the

Supplemental Box:

**Box V**

abovementioned lack of clarity (see **Box VIII, 1.1**), D3 discloses

a tube valve (pinch valve) for regulating a liquid flow (page 2, lines 1-14). A tubular housing as regulator housing is composed of a solid material, for example metal (page 5, lines 6-10; figure 4, reference sign 27), in which an elastic tube of rubber as adjusting member (tubular sleeve) is clamped to both ends of the pipe (regulator housing) (figure 4).

Via the supply of a pressure medium, the pressure difference within and outside the tubular sleeve and the deformation resistance of the sleeve can be set in such a manner that the tubular sleeve can be deformed from its maximum flow cross section to its minimum flow cross section (figures 4, 5). The device for regulating the flow cross section from D3 can be used for employment in bulk-material grate coolers.

D3 therefore has all of the essential technical features of independent claim 1. Accordingly, said claim is not novel pursuant to PCT Article 33(1) and (2).

**2.2** Dependent claims 2 and 5 do not contain any features which, in combination with the features of any claim to which they refer, meet the PCT requirements for novelty and inventive step. The reasons are as follows:

Supplemental Box:

**Box V**

Claim 2:

D2 discloses an annular intermediate space with connecting openings (figure 1, reference signs 28 and 30), which intermediate space can be acted upon by a gaseous pressure medium. The interior of the tubular sleeve can be flowed through by cooling air.

Claim 5:

D3 discloses a valve in which complete closure is made possible only by increasing the pressure of the gaseous pressure medium (figures 1-6).

**2.3** Dependent claims 3-4 and 6 are novel.

**3 Inventive step (PCT Article 33(1) and (3))**

**3.1** Independent claim 1 is not novel as per **points 2.1.1-2.1.3** and therefore is not inventive either (PCT Article 33(1) and (3)).

**3.2** Dependent claims 3, 4 and 6 concern a minor structural modification of the kind that a person skilled in the art routinely makes on the basis of familiar considerations, especially since the resulting advantages are readily foreseeable. Consequently, the subject matter of said claims is not based on an inventive step either.