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Date

28.04.16

Reference	Application No./Patent No. 14796883.8 - 1706 PCT/IB2014001875
Applicant/Proprietor C.&C. S.R.L.	

Notification of the data mentioned in Rule 19(3) EPC

In the above-identified patent application you are designated as inventor/co-inventor.
Pursuant to Rule 19(3) EPC the following data are notified herewith:

DATE OF FILING : 18.09.14
PRIORITY : IT/19.09.13/ ITA CO20130039
TITLE : PLANT AND METHOD FOR THE RECOVERY OF PLASTIC MATERIALS OF POST-CONSUMPTION MATERIALS, SUCH AS VEHICLE BUMPERS AND TANKS
DESIGNATED STATES : AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Receiving Section



PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No. PCT/B2014/001875	International filing date (day/month/year) 18.09.2014	Priority date (day/month/year) 19.09.2013
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International Patent Classification (IPC) or both national classification and IPC
INV. B29B17/02 B29B17/04

Applicant
C. & C. S.R.L.

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 and 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 usually 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.

<p>Name and mailing address of the ISA:</p> <div style="text-align: center;">  <p>European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465</p> </div>	<p>Date of completion of this opinion</p> <p>see form PCT/ISA/210</p>	<p>Authorized Officer</p> <p>Telephone No. +49 89 2399-0</p> <div style="text-align: right;">  </div>
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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed
 - a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
4. In addition, in the case that more than one version or copy of a sequence listing 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.
5. Additional comments:

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

1. Statement

Novelty (N)	Yes: Claims	<u>1-6</u>
	No: Claims	
Inventive step (IS)	Yes: Claims	<u>1-6</u>
	No: Claims	
Industrial applicability (IA)	Yes: Claims	
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.1 Reference is made to the following documents:

D1 EP 0 575 751 A1 (HIMONT INC [US] MONTELL NORTH AMERICA INC [US]) 29 December 1993 (1993-12-29)

D2 JP H03 175008 A (KASHIWAGI HIDEHIRO) 30 July 1991 (1991-07-30)

D3 "WET GRANULATION CLEANS UP FILM SCRAP IN COMPLETE RECYCLING SYSTEM",
MODERN PLASTICS INTERNATIONAL, MCGRAW-HILL, INC.
LAUSANNE, CH,
vol. 18, no. 7, 1 July 1988 (1988-07-01), page 6, XP000020509,
ISSN: 0026-8283 ; & "PVC BOTTLES: NEXT TARGET FOR REUSE?",
MODERN PLASTICS INTERNATIONAL, MCGRAW-HILL, INC.
LAUSANNE, CH,
vol. 18, no. 7, 1 July 1988 (1988-07-01), page 8/09,
XP000020510,
ISSN: 0026-8283

1.2 The subject-matter of independent apparatus claim 1 is novel and involves an inventive step:

1.2.1 (D1) is regarded as being the prior art closest to the subject-matter of claim 1, and discloses a plant (figure 1) for the recovery of plastic materials of post-consumption products (column 1, lines 19 and 20: "lackierten Stossfängern"), such as demolished vehicle bumpers and tanks, comprising:

- a volumetric reduction grinder (column 11, line 8: "Vorshredder A") for the production of a coarse grain-size of the material of, *for example*, 50-80 cm, (non-limiting feature; D1, column 11, line 11: "handtelligross") with associated iron removal stage (column 11, lines 8 and 9: "Metallteile ... abgezogen werden"; metal removal implicitly leads to iron removal),
- a granulator (column 11, lines 47 and 48: "Prallteller-mühle G") for the reduction of the grain-size to a small size of, *for example*, 5-30 mm, (non-limiting feature)

- a vat (column 11, lines 38 to 40: "Hydrozyklon E", which according to 8, lines 54 to 56 acts as a vat "Schwimmsinkanlage") for washing the material, wherein

- downstream of the volumetric reduction grinder (see figure), there is provided an intermediate grinder (column 11, lines 22 and 23: "Grobnassmühle C") for an intermediate reduction of the grain-size from about 50-80 cm to an intermediate grain-size of, *for example, about 30-100 mm* (non-limiting feature; D1, column 11, line 25: "6-8 mm"),

wherein said volumetric reduction grinders (Vorshredder A) and intermediate grinder (Grobnassmühle C) are connected by a means (see the arrows in figure 1) *or belt for conveying the material* (non-limiting optional feature; obvious in view of the conveyor belts disclosed in D2 or D3),

- that the washing vat (Hydrozyklon E; or Schwimmsinkanlage) and a centrifuge (column 11, line 44: "mechanischer Trockner F" implies a centrifuge) are arranged upstream of the windmill/granulator (see figure 1).

1.2.2 The subject-matter of claim 1 therefore differs from this known apparatus in that

- the washing vat and the centrifuge are fluidically associated with a purification plant for the purification of the treatment water (feature 1), in that

- the intermediate grinder has a configuration analogous to that of the volumetric reduction grinder, it has an associated iron removal stage, and it is connected, through a conveyor means or belt, with the inlet of the washing vat (feature 2), in that

- which is carried out for the simultaneous elimination of the various components, such as ferrous and non-ferrous metal, rubber, nylon, ABS, glass, sand parts and so on and so forth, due to the different specific weight, wherein said washing and separation vat has - at the lower part - a pipe with an auger for the discharge of the separated foreign components, and wherein said centrifuge is a centrifuge of mixed type, i.e. with preliminary washing in a lower water chamber and subsequent drying in an upper air chamber (feature 3), and in that

- the centrifuge is adapted to receive material with an intermediate grain-size between about 20 mm and about 250 mm, wherein the outlet of the centrifuge is connected through a connection means or screw feeder, with the inlet of the windmill/granulator provided for the grinding/granulation of the washed and

dried material and substantially without abrasive metal and adherent sand parts, of intermediate grain-size of about 30-100 mm, to the desired small grain-size of about 5 - 30 mm (feature 4),

and is therefore new.

1.2.3 The problem to be solved by the feature 2 of the present invention may be regarded as specifying the intermediate grinder.

1.2.4 The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

Documents D1 to D3 only disclose an intermediate grinder (D1: Vorschredder A; D2: figure 2, reference numeral 2 ; D3: "to load a feed bin with broken bales") having a different configuration than the volumetric reduction grinder (D1: Grobnassmühle C; D2: figure 2, reference numeral 11; D3: "a shredder").

Therefore, none of these documents renders obvious that the intermediate grinder has a configuration analogous to that of the volumetric reduction grinder, and that it has an associated iron removal stage.

1.2.5 Claims 2 to 4 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

1.3 Independent method claim 5 is directed to a method of using the apparatus according to claims 1 to 4 ("Method for the recovery ... in a grinding/ granulation plant according to claims 1 to 4,...").

The subject-matter of claim 5 therefore also involves an inventive step. See paragraph 1.2.4 for details.

1.3.1 Claim 6 is dependent on claim 5 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

2 Re Item VII

Certain defects in the application

2.1 Although claim 1 is drafted in the two-part form, the features

- downstream of the volumetric reduction grinder, there is provided an intermediate grinder for an intermediate reduction of the grain-size from about 50-80 cm to an intermediate grain-size of, for example, about 30-100 mm, wherein said volumetric reduction grinders and intermediate grinder are connected by a means or belt for conveying the material,

- the washing vat and the centrifuge are arranged upstream of the windmill/
granulator and they are fluidically associated with a purification plant for the
purification of the treatment water,

are incorrectly placed in the characterising portion, as they are disclosed in D1
in combination with the features placed in the preamble (Rule 6.3(b) PCT).

- 2.2 A corresponding objection applies to the two-part form of independent method
claim 5.

3 **Re Item VIII**

Certain observations on the international application

The application does not meet the requirements of Article 6 PCT, because
independent claims 1 and 5 are not clear.

- 3.1 Concerning claim 1, there is a contradiction between the number of volumetric
reduction grinder(s), since the preamble contains the feature "a volumetric
reduction grinder" (line 3 of the preamble), while the characterizing portion
contains the feature "said volumetric reduction grinders" (line 4 of the
characterizing portion).

In addition to that, the feature "the washing vat which is carried out ... to the
different specific weight " does not make sense, since a washing vat cannot be
carried out.

- 3.2 The feature "said metal detector" in independent claim 5 has not been defined
in any of claims 1 to 5. Even if said feature is construed as "a metal detector",
claims 1 to 5 only contain the features "iron removal stage", "iron removal" or
"ferrous materials". It is therefore not clear to which of these features said
feature shall refer.

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

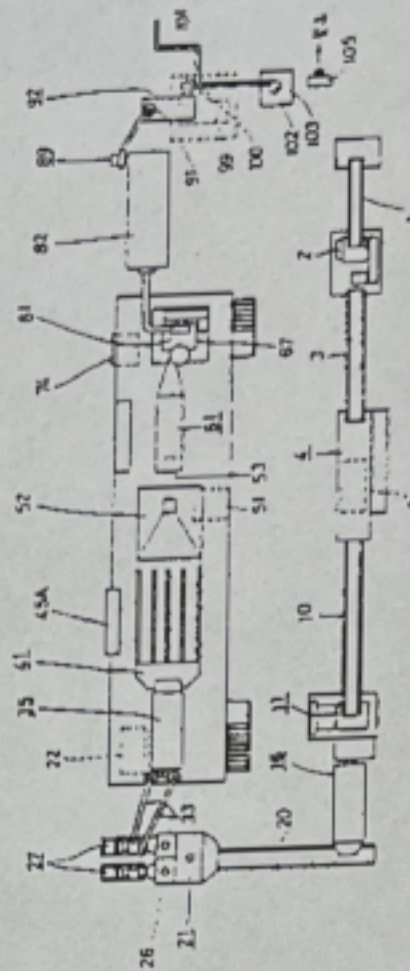
PUBLICATION NUMBER : 03175008
PUBLICATION DATE : 30-07-91
APPLICATION DATE : 04-12-89
APPLICATION NUMBER : 01315019

APPLICANT : KASHIWAGI HIDEHIRO;

INVENTOR : KASHIWAGI HIDEHIRO;

INT.CL. : B29B 17/00 B03B 9/06 // B29K105:26

TITLE : METHOD AND DEVICE FOR
REGENERATING WASTE PLASTIC
FILM



ABSTRACT : PURPOSE: To surely perform separation and removal of mixed foreign matters and dirty matters by providing a pretreating crushing equipment comprising a means for roughly cutting blocks of waste plastic film, roughly washing means, crushing means and constant feed means, and a preliminarily washing and crushing equipment comprising a preliminarily washing means with agitator and means for feeding fluffy matters at a constant rate.

CONSTITUTION: A pretreating crushing equipment comprises a roughly cutting machine 2, roughly washing means 4, crusher 11 and water washing type constant feed means 16. Blocks of waste film are sent to the cutting machine 2 to be cut to pieces having a size of 30 cm-1 m. The pieces of roughly cut film are put into the means 4, where large dirty matters and large foreign matters are removed. The pieces of film are fed to the crusher 11 to be subjected to crushing and washing simultaneously and turned into fluffy matters and transferred to the means 16, where sludge in the matters is separated to be sent to a preliminarily washing means 21, where the fluffy matters are agitated and washed and further crushed and washed with water at a crusher 27 and are sent to a drain feed means 35 and an ultrasonic washing means 41 at a constant rate, while the sludge is discharged therefrom.

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