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Señora

Alix Carmenza Céspedes de Vergel

Jefe de División de Nuevas Creaciones

SUPERINTENDENCIA DE INDUSTRIA Y CO

E. S.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 06-083315-00002-0000

Fecha: 2006-07-17 16:04:48 Dep: 2020 NUECREACIONE
Tipo: PATENTE (Y) Lve: 378 FASENACIONAL
Act: 329 C/O INFORMACION Fotos: 8

Referencia: Expediente No. 06.083.315

Solicitud de Patente de Invención titulada: "Carcasa para una bomba centrífuga"

Solicitante: Weir Slurry Group, Inc.

MEMORIAL DE ALCANCE

ÁLVARO CORREA ORDÓÑEZ, mayor de edad y vecino de Bogotá D.C., identificado según aparece al pie de mi firma, en mi condición de apoderado de la sociedad en referencia, manifiesto lo siguiente:

El día 23 de agosto de 2006, bajo el número de radicación 06.083.315 presenté la solicitud de patente de invención de la referencia, para la cual adjunto informe preliminar internacional sobre patentabilidad, capítulo II del tratado de cooperación en materia de patentes.

Atentamente,

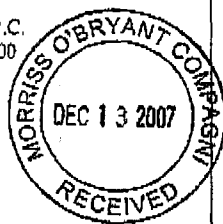

ÁLVARO CORREA ORDÓÑEZ
C.C.No.79.143.366 de Usaquén

T.P.20.281

Anexo: Informe preliminar internacional sobre patentabilidad, capítulo II

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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITYTo:
JULIE K. MORRIS
MORRISS O'BRYANT COMPAGNI, P.C.
136 SOUTH MAIN STREET, SUITE 700
SALT LAKE CITY, UT 84101**PCT**NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year)

05 DEC 2007

Applicant's or agent's file reference

2884.WSG.PC

IMPORTANT NOTIFICATION

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US05/02207

25 January 2005 (25.01.2005)

27 January 2004 (27.01.2004)

Applicant

WEIR SLURRY GROUP

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Edward Look

Telephone No. 571-273-8300

Form PCT/IPEA/416 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2884.WSG.PC	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US05/02207	International filing date (day/month/year) 25 January 2005 (25.01.2005)	Priority date (day/month/year) 27 January 2004 (27.01.2004)	
International Patent Classification (IPC) or national classification and IPC IPC: F01D 25/24(2006.01) USPC: 415/128,196			
Applicant WEIR SLURRY GROUP			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☒ (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows: ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 4. This report contains indications relating to the following items: ☒ Box No. I Basis of the report ☐ 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 Article 35(2) 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			
Date of submission of the demand 11 August 2005 (11.08.2005)		Date of completion of this report 14 September 2007 (14.09.2007)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Edward Look Telephones No. 571-273-8300	

Form PCT/IPEA/409 (cover sheet)(April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US05/02207

Box No. 1 Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

- ☐ the international application as originally filed/furnished
- ☒ the description:
pages 1-11 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the claims:
pages NONE as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* 12-14 received by this Authority on Aug. 11, 2005
pages* NONE received by this Authority on _____
- ☒ the drawings:
pages 16-18 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to the sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (specify): _____
- ☐ any table(s) related to the sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Form PCT/PEA/409 (Box No. 1) (April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/02207

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-20 YES

Claims NONE NO

Inventive Step (IS)

Claims 1-20 YES

Claims NONE NO

Industrial Applicability (IA)

Claims 1-20 YES

Claims NONE NO

2. Citations and Explanations (Rule 70.7)

Claims 1-20 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the invention.

Claims 1-20 meet the criteria set out in PCT Article 33(4), and thus invention has industrial applicability because the subject matter claimed can be made or used in industry.

PCT/US05/02207.11092005

ICEA/US

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CLAIMS

What is claimed is:

1. A pump casing for a centrifugal pump, comprising:
a volute section having a discharge formed therein and having a cutwater
5 positioned adjacent said discharge;
a suction side; and
a drive side;
where at least one of said suction side or said drive side is further configured as
10 a separable side liner having a non-circular perimeter edge structured for
attachment to said volute section about a peripheral edge of said volute
section extending from the neck of said discharge to said cutwater, said
non-circular perimeter edge of said side liner having a portion positioned
near said cutwater having an increased radius.

15 2. The pump casing of claim 1 wherein both said suction side and
said drive side are structured as side liners.

20 3. The pump casing of claim 2 wherein both said suction side liner
and said drive side liner have non-circular perimeter edges for attachment to
said volute section.

4. The pump casing of claim 1 wherein said drive side is structured
as a side liner with a non-circular perimeter edge.

25 5. The pump casing of claim 4 wherein said suction side is
structured as a side liner and has a circular perimeter for attachment to said
volute section.

30 6. The pump casing of claim 1 wherein said volute section has a
peripheral profile extending from said cutwater to said discharge, said volute
section profile having an open cutwater configuration.

AMENDED SHEET

PCT/US05/02207.11082005

IPVUS

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7. The pump casing of claim 1 wherein said side liner is further structured with a radially extending portion oriented toward said cutwater.

5 8. The pump casing of claim 7 wherein said radially extending portion is further structured with a wear resistant insert positioned in proximity to said cutwater.

10 9. A pump casing for a centrifugal pump, comprising:
a volute section of a pump casing having a discharge formed therein and having
a cutwater positioned adjacent said discharge and having at least one
peripheral edge extending from the neck of said discharge to said
cutwater;
a suction side attached to said volute section;
a drive side attached to said volute section; and
15 where at least one of either said suction side or said drive side has a perimeter
edge for attachment to said at least one peripheral edge of said volute
section, said perimeter edge having a radially extending portion oriented
toward said cutwater.

20 10. The pump casing of claim 9 wherein said perimeter edge of said
at least one side is non-circular.

25 11. The pump casing of claim 10 wherein said at least one side is
formed as a side liner.

12. The pump casing of claim 11 wherein said side liner is on said
drive side.

30 13. The pump casing of claim 11 wherein said side liner is on said
suction side.

AWARDED SHEET

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14. The pump casing of claim 9 wherein said at least one side having a radially extending portion is further comprised with a perimeter edge at least a portion of which is circular.

5 15. The pump casing of claim 14 wherein said radially extending portion has an apex and a radial distance D_p which is greater than the radius of said portion of said side which is circular.

10 16. The pump casing of claim 15 wherein said volute section has a peripheral profile extending from said cutwater to said discharge, said volute section profile having an open cutwater configuration.

15 17. The pump casing of claim 9 wherein said radially extending portion is further configured with a wear resistant insert positioned in said radially extending portion in proximity to said cutwater.

20 18. A pump casing for a centrifugal pump, comprising:
a volute section of a pump casing having a curved profile in radial cross section
and having a cutwater positioned adjacent a tangential discharge;
a drive side casing connected to said volute section;
a suction side casing connected to said volute section; and
a radially extending portion oriented toward said cutwater and positioned on a
perimeter edge of at least one of said drive side casing or said suction
side casing to localize wear on said casing to said radially extending
portion.

25 19. The pump casing of claim 18 wherein said radially extending portion is positioned on said drive side.

30 20. The pump casing of claim 18 wherein said radially extending portion is positioned on said suction side.

AMENDED SHEET

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 06-83315

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **576** DE

FECHA **31 DE MAYO DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **31 DE AGOSTO DE 2007**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X

United States Patent

[11] 3,607,600

[72] Inventors **Robert E. Schreter**
Lebanon;
John A. Marino, Palmyra, both of Pa.
 [21] Appl. No. **842,832**
 [22] Filed **July 15, 1969**
 [45] Patented **Sept. 21, 1971**
 [73] Assignee **Hauck Manufacturing Company**
Lebanon, Pa.

2,769,742 11/1956 Helbing 156/246
 3,278,667 10/1966 Knox 264/257 X
 3,318,727 5/1967 Boenig et al. 117/118

Primary Examiner—William A. Howell
Attorney—Finnegan, Henderson & Farabow

[54] **COMPOSITE MOLDING PROCESS AND PRODUCT**
16 Claims, 3 Drawing Figs.

[52] U.S. Cl. **161/156,**
156/245, 156/276, 156/289, 161/170, 161/190,
161/253, 161/255, 264/213, 264/214, 264/257,
264/331

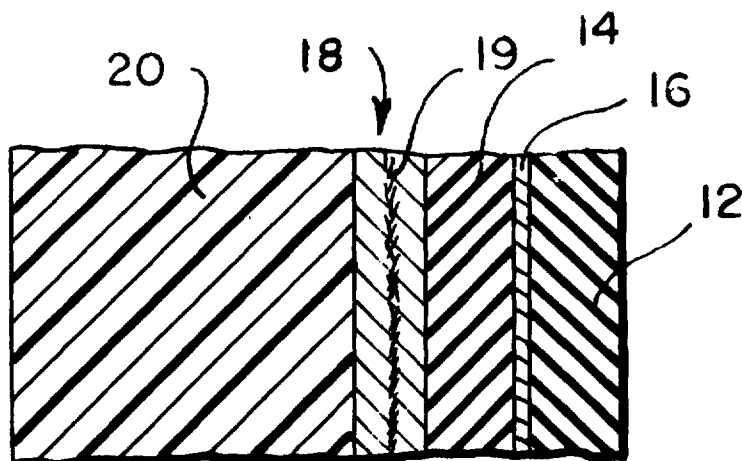
[51] Int. Cl. **B32b 7/04,**
B32b 25/02, B32b 25/04, B32b 25/10

[50] Field of Search **156/245,**
276, 289; 161/53, 125, 156, 170, 184, 190, 227,
231, 257, 253, 255; 264/213, 214, 257, 258, 135,
299, 331; 117/72.77, 138.8

[56] **References Cited**

UNITED STATES PATENTS
 2,715,085 8/1955 Boyer 161/254 X

ABSTRACT: Strong, abrasion-resistant composite molded articles are produced that include a reinforced synthetic resin backing layer and an elastomeric surface layer that is molded to predetermined dimensions. The articles are molded by applying a first coating of an elastomer on a treated mold surface and then curing the elastomer just enough to produce a tack-free surface. A second coating of liquid elastomer is applied to the tack-free surface and fibers are deposited on the liquid coating of elastomer and worked to form a continuous fiber coating. Subsequently, at least one layer of reinforced synthetic resin is applied and rolled into the exposed surface of the fibers before the second elastomer coating solidifies. The fibers which extend from the second elastomer coating into the backing layer provide a strong mechanical bond that prevents separation of the elastomer layers from the synthetic resin. A porous reinforcing mat can be inserted into the first coating of elastomer while it is liquid to dramatically increase the article's tear strength and flexural strength.



PATENTED SEP 21 1971

3,607,600

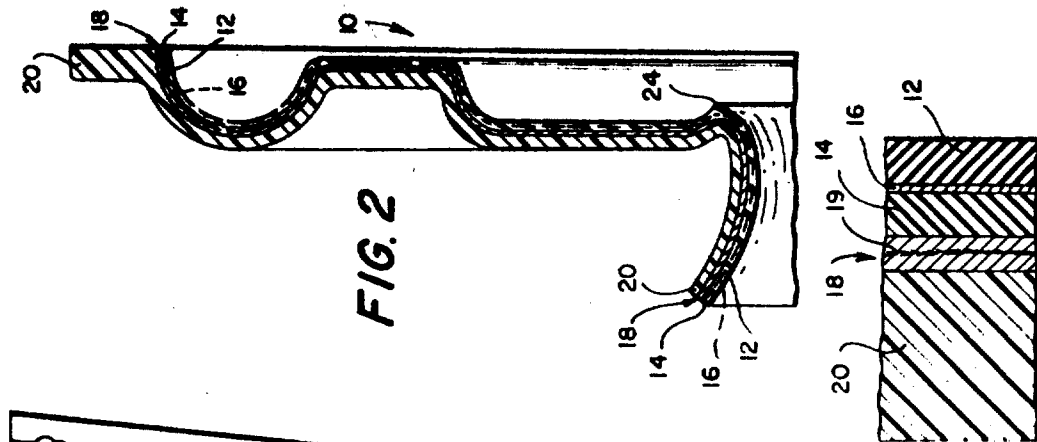


FIG. 2

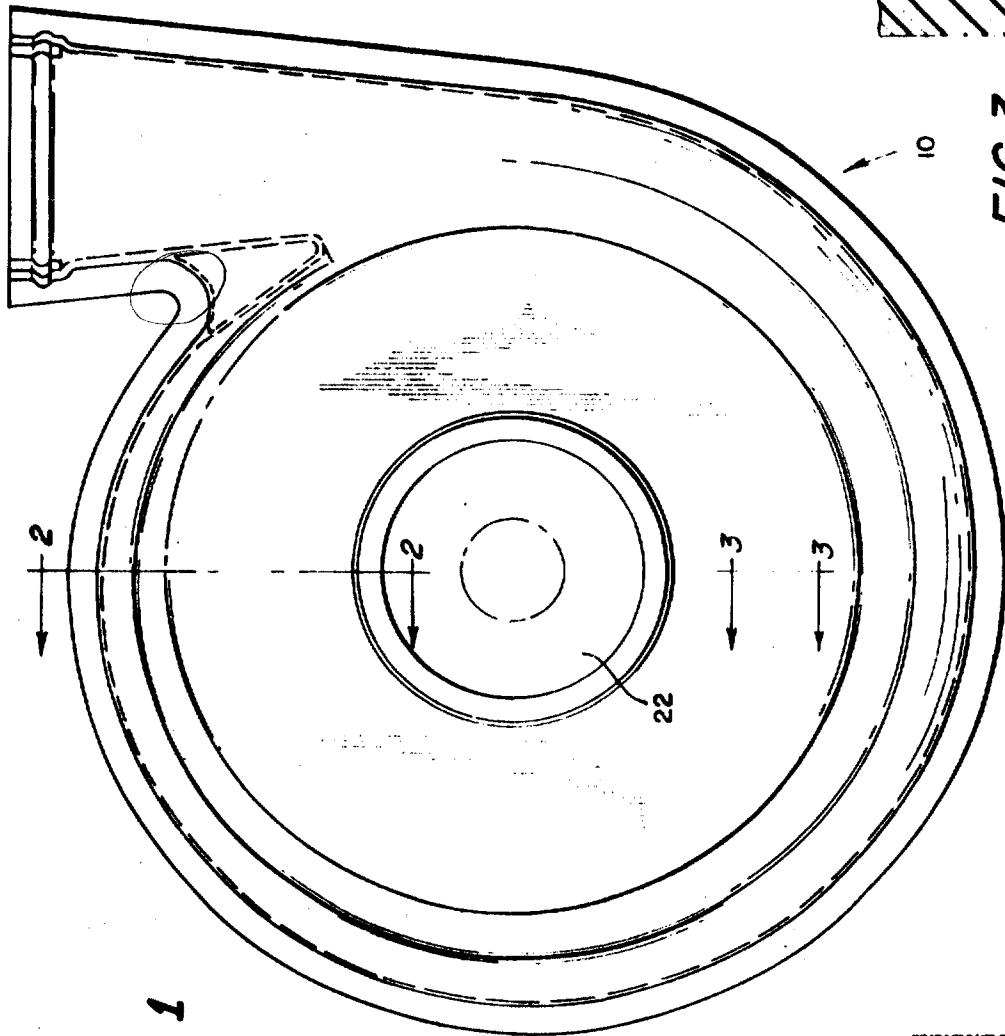


FIG. 1

FIG. 3

INVENTORS
ROBERT E. SCHRETER
JOHN A. MARINO



US005228831A

United States Patent [19]
Becker

[11] **Patent Number:** 5,228,831
[45] **Date of Patent:** Jul. 20, 1993

- [54] **SHEET METAL CENTRIFUGAL PUMP CASING**
- [75] **Inventor:** Karlheinz Becker, Worms, Fed. Rep. of Germany
- [73] **Assignee:** KSB Aktiengesellschaft, Frankenthal, Fed. Rep. of Germany
- [21] **Appl. No.:** 836,299
- [22] **PCT Filed:** Aug. 20, 1990
- [86] **PCT No.:** PCT/EP90/01373
§ 371 Date: Mar. 4, 1992
§ 102(e) Date: Mar. 4, 1992
- [87] **PCT Pub. No.:** WO91/03649
PCT Pub. Date: May 21, 1991

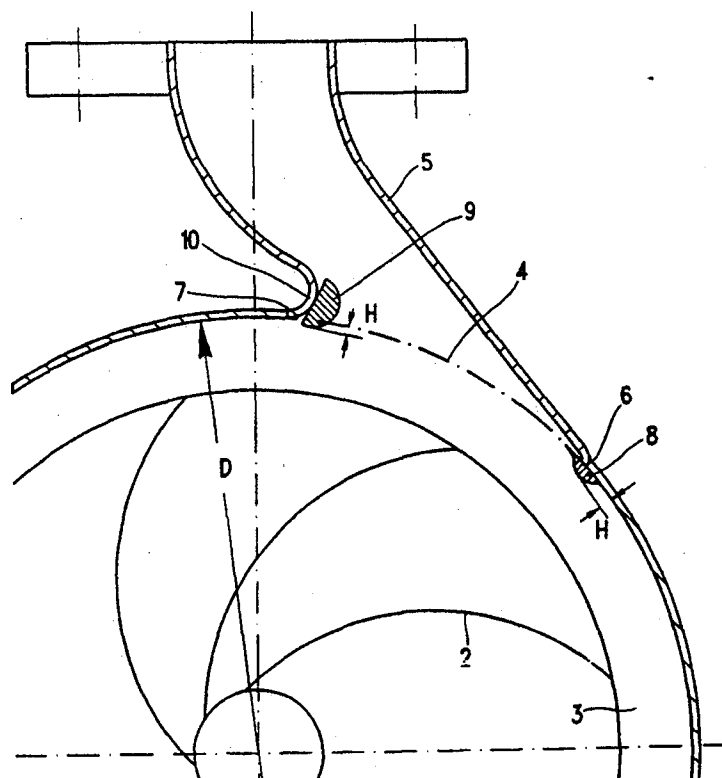
- [30] **Foreign Application Priority Data**
Sep. 7, 1989 [DE] Fed. Rep. of Germany 3929758
- [51] **Int. Cl.⁵** F04D 1/00
- [52] **U.S. Cl.** 415/206; 415/914
- [58] **Field of Search** 415/203, 206, 196, 197, 415/914

- [56] **References Cited**
U.S. PATENT DOCUMENTS
- | | | | |
|-----------|---------|----------------|---------|
| 893,113 | 7/1908 | Traylor | 415/206 |
| 1,914,919 | 6/1933 | Heermans | 415/206 |
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| 4,789,301 | 12/1988 | Osborne et al. | 415/206 |
| 4,844,693 | 7/1989 | Grzina | 415/206 |
- FOREIGN PATENT DOCUMENTS**
- | | | | |
|---------|---------|----------------------|---------|
| 569707 | 12/1943 | Fed. Rep. of Germany | 415/206 |
| 3517498 | 11/1986 | Fed. Rep. of Germany | |
| 2017277 | 5/1970 | France | |
| 1016563 | 5/1983 | U.S.S.R. | |
| 1213448 | 11/1970 | United Kingdom | 415/206 |

Primary Examiner—John T. Kwon
Attorney, Agent, or Firm—Peter K. Kontler

[57] **ABSTRACT**
A centrifugal pump has a casing which accommodates an impeller for conveying abrasive fluid in a predetermined flow direction. The casing has a peripheral wall which is provided with an outlet opening for the fluid. The upstream side and downstream side of the opening are flanked by wear elements which extend transversely of the flow direction and project into the interior of the casing.

10 Claims, 3 Drawing Sheets



SHEET METAL CENTRIFUGAL PUMP CASING

The invention relates to a centrifugal pump.

Sheet metal centrifugal pump casings have very good strength and, depending upon the material used, high resistance to the most diverse pumped media. A drawback of these casings produced from sheet metal is their low resistance to abrasive constituents in the pumped medium. In contrast to a substantially thicker cast casing, the thin-walled sheet metal casing is more readily damaged under the influence of abrasive constituents.

A sheet metal casing is known from the German Offenlegungsschrift 35 17 498. The outer periphery of the casing has an opening and a discharge branch is fitted in the opening. The so-called spine formed by the discharge branch, which facilitates discharge of the pumped medium from the annular chamber into the discharge branch, can be flush with the annular chamber or can project into the annular chamber. The spine is very susceptible to wear during the pumping of media with abrasive constituents.

For a pump casing of the above type, it is accordingly an object of the invention to develop a solution which guarantees a life equivalent to that of a cast casing during the pumping of media containing abrasive constituents.

This object is achieved by the provision of a pump which comprises a casing having a peripheral wall which surrounds a chamber for a rotor serving a convey a fluid circumferentially of the wall in a predetermined direction. The wall has an outlet opening for the fluid, and the upstream and downstream sides of the opening extend transversely of the direction of fluid flow in the casing. The opening is flanked by at least two projections or shielding elements which extend into the chamber transversely of the direction of fluid flow and are disposed at the upstream and downstream sides of the opening.

The outlet from the annular chamber, where a deflection of the flow into the discharge branch takes place, has been found to be especially susceptible to wear. By means of the solution according to the invention, with which the efficiency remains essentially the same, the flow is deflected to a degree, in the region of the outlet opening, towards the center of the casing to subsequently advance into the discharge branch without damage to the outlet opening. The projection mounted at the trailing edge of the outlet opening acts to a certain extent to conduct the flow into the discharge branch but, at the same time, also acts as a wear part and protects the thin casing wall from damage.

An embodiment of the invention provides for the length of the projections to equal the width of the annular chamber. Depending upon the shape of the outlet opening employed and the width relationships of the annular chamber and the outlet opening, the projections can extend over the entire length or a plurality of parts can be distributed in a staggered arrangement. The abrasive constituents are removed from the marginal zones of the outlet opening by the projections and thereafter freely enter the discharge branch.

The ratio between the height of the projections and the diameter of the annular chamber preferably between 0.01 and 0.04. Such ratio ensures that a good protective effect is achieved with hardly any, or with only a tolerable, loss in efficiency.

The projection mounted at the trailing edge of the outlet opening can extend into the discharge branch. At this location, which is also referred to as a spine, the projection acts as a wear shield against directly impinging abrasive particles.

According to another embodiment, a plurality of projections are distributed over the periphery of the annular chamber. Although this measure guarantees very good protection for the annular chamber, distinct losses in efficiency occur here.

FIG. 1 shows a first embodiment of the invention.

FIG. 2 shows a second embodiment of the invention.

FIG. 3 shows a third embodiment of the invention.

An exemplary embodiment of the invention is illustrated in the drawing.

An impeller 2 is located inside a pump casing 1 made of sheet metal. An annular chamber 3 is formed between the impeller and the periphery of the pump casing. The pumped medium issuing from the impeller circulates in this annular chamber and leaves the annular chamber 3 through an outlet opening 4 situated at the periphery of the pump casing to subsequently enter a discharge branch 5. By means of the latter, the pump casing is connected with a pipe system.

Shielding elements in the form of projections 8,9 running transverse to the flow direction are arranged at the leading edge 6 and trailing edge 7, as considered in the flow direction, of the outlet opening 4. These prevent abrasive particles in the pumped medium from destroying the outlet opening 4 and the following discharge branch 5 upon exiting the annular chamber. The order of magnitude of the solids content here corresponds to those values which pump manufacturers normally permit for clean water pumps.

In the illustrated example, the projection 9 has a design such that it extends into the outlet opening 4 and the discharge branch 5 attached thereto. Thus, the so-called casing spine 10 is protected from a direct attack by the abrasive constituents. The height H of the projections is measured from the inner diameter D of the casing 1. The smaller the height of the projections 8,9, the less significant is their influence on the pump efficiency.

I claim:

1. A pump comprising a casing having a peripheral wall and defining a chamber; and a rotor in said chamber for conveying fluid circumferentially along said wall in a rotational direction of an impeller, said wall being provided with an outlet opening for the fluid, and said opening having an upstream side and a downstream side, said sides extending transversely of said direction, and said opening being flanked by at least two shielding elements which extend into said chamber transversely of said direction in the region of said sides.

2. The pump of claim 1, wherein said rotor and said peripheral wall define an angular gap in said chamber, said gap having an outer periphery, and said opening being located at said outer periphery, said shielding

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES**

2020
Bogotá, D.C.

Doctor(a)
/ **ALVARO CORREA ORDOÑEZ**
Apoderado.

ASUNTO	Radicación	06-083315
	Trámite	011
	Evento	379
	Actuación	430
	Oficio	
	Folios	091 0182

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☐
		Cap. II	☒
No. Sol. Internacional		PCT/US2005/002207	
Fecha de Presentación Internal.		2005-01-25	

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción: Folios: 26 - 43

Reivindicaciones: Folios: 49 - 54

Dibujos: Folios: 23 - 25

Prioridad: Se aceptó la prioridad de Estados Unidos con registro US10/765.683 de fecha 2004-01-27 según el folio 14.

El petitionerario presentó una solicitud de examen de patentabilidad de acuerdo con lo estipulado por el artículo 44 de la Decisión 486. (Folios 72-73)

2. Objeto de la invención

La presente solicitud fue titulada originalmente: "Carcasa para una bomba centrífuga" folio 1.

De acuerdo con el texto de la descripción, los dibujos y las reivindicaciones, el objeto

Por lo anterior para solucionar este problema la presente solicitud trata de proporcionar: reivindicaciones 1- 20, folio 49-54.

IPC: F01D01/02.

3. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de solicitud es el 2004-01-27, se encontró el siguiente documento relevante:

Nº	Documento	Contenido	Fecha de Publicación
D1	US3607600 Inventor y solicitante: Robert E. Schreter	Composit molding process and product	1971-09-21
D2	US5228831 Inventor: Karlheinz Becker Solicitante: KSB Aktiengesellschaft	Sheet metal centrifugal pump casing	1993-07-20

Documento(s) anexo(s) en los folios 75-79.

4. Análisis de patentabilidad (artículo 81 D486)

4.1. Novedad y Nivel Inventivo (artículo 16 y 18D486)

Respecto a la solicitud en estudio se estudiará la reivindicación independiente 1 que se encuentra en el folio 28, y con lo cual se soporta por medio de la siguiente figura:

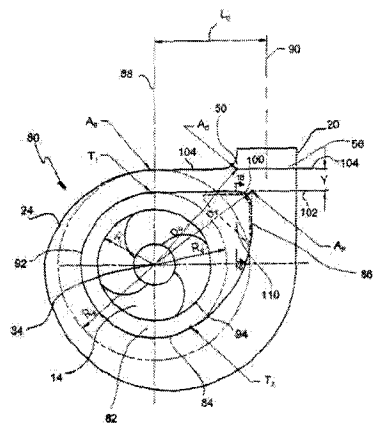


FIGURA 1

Respecto al estado de la técnica D1 divulga un compuesto moldeado el cual es resistente a la abrasión y que incluye una resina sintética reforzada para colocarla como una capa posterior y una capa elastomérica para colocarla sobre la anterior dentro de la periferia de la carcasa de una bomba centrífuga que trabaja con fluidos altamente abrasivos.

D2 divulga una bomba centrífuga en la cual la carcasa pose en su periferia elementos que restringen el desgaste localizado. Dichos elementos son protuberancias definidas puestas tanto en el espolón como cerca de la descarga de la bomba.

Teniendo en cuenta tal y como se plantea la reivindicación 1, además, de acuerdo al

REIVINDICACION 1	D1
1) Una carcasa de bomba para una bomba centrífuga que comprende: Una sección de cuerpo en espiral que tiene una descarga formada en ella y tiene un espolón posicionado adyacente a dicha descarga; 2) Un lateral de succión; y 3) Un lateral de accionamiento; 4) En donde por lo menos uno de dicho lateral de succión o dicho lateral de accionamiento está configurado como un revestimiento lateral separable que tiene un borde de perímetro no circular estructurado para sujetarse a dicha sección de cuerpo espiral alrededor de un borde periférico de dicha sección de cuerpo espiral que se extiende desde el cuello de dicha descarga hacia dicho espolón, dicho borde de perímetro no circular de dicho revestimiento lateral tiene una porción posicionada cerca de dicho espolón que tiene un radio incrementado.	SI Posee un espolón entre la descarga y la carcasa circular de la bomba, un lateral de succión y de accionamiento, adicionalmente posee un recubrimiento o revestimiento en el perímetro de la carcasa para prevenir el desgaste por las sustancias abrasivas. Ver abstract folio 75.

Se puede concluir de la anterior tabla, que en la solicitud presentada las características 1-4, se sugieren en el documento D1 ya que se describe la implementación de revestimientos que previenen la abrasión en las carcasas que conforman la bomba impulsora, por lo que permitiría afirmar que la reivindicación 1 de la presente solicitud, tal como está redactada NO es novedosa. Por lo tanto no cumpliría con lo expuesto en el artículo 16 de la Decisión 486 de la Comunidad Andina de Naciones. Lo anterior limita el estudio del siguiente requisito de nivel inventivo correspondiente al nivel inventivo. Se recomienda anexar el nuevo capítulo reivindicatorio totalmente a parte a la respuesta del solicitante, haciendo mayor énfasis en lo que podría ser novedoso.

Ahora teniendo en cuenta tal y como se plantea la reivindicación 18, además, de acuerdo al estado de la técnica establecido en el numeral 3, el documento más cercano es: el documento D1, con el cual se plantea la siguiente tabla comparativa de características reivindicadas dando a entender que las contiene (SI) o que no las contiene (NO).

REIVINDICACION 18	D1	D2
1) Una carcasa de bomba para una bomba centrífuga que comprende: Una sección de cuerpo espiral de una carcasa de bomba que tiene un perfil curvado en una sección transversal radial y que tiene un espolón posicionado adyacente a una descarga tangencial	SI Posee un espolón entre la descarga y la carcasa circular de la bomba que posee una descarga tangencial	NO
Un lateral de accionamiento de la carcasa conectado a dicha sección de cuerpo espiral;	SI un lateral de succión	SI
Un lateral de succión de carcasa conectado a dicha sección de cuerpo espiral; y	SI un lateral de accionamiento	SI
Una porción que se extiende radialmente orientada hacia dicho espolón y posicionada sobre un borde de perímetro de por lo menos uno de dicho lateral de accionamiento de carcasa o lateral de succión de carcasa para localizar el desgaste sobre dicha carcasa en la	NO	SI Se ubica una porción (8) posicionada sobre el perímetro de la carcasa de forma radial para prevenir la abrasión de

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El estado de la técnica más cercano es D1 pero tiene las diferencias de no tener una porción que se extiende radialmente orientada hacia el espolón y posicionada sobre un borde de perímetro de por lo menos uno de dicho lateral de accionamiento de carcasa o lateral de succión de carcasa para localizar el desgaste sobre dicha carcasa en la porción que se extiende radialmente. Lo anterior hace que SI cumpla el requisito de novedad contemplado en el artículo 16 de la decisión 486 de la comunidad Andina de Naciones.

El documento D2 sugiere una porción (8) posicionada sobre el perímetro de la carcasa de forma radial para prevenir la abrasión de los fluidos que impulsa. Figura 3 y descripción columna 2 renglones 30-49.

Así pues, con el empleo de los dos documentos: D1 y D2, que hacen parte del estado de la técnica, proporcionan herramientas de conocimiento a una persona del oficio normalmente conocedora de la materia técnica correspondiente, para emplearlos y derivar de ellos el resultado obtenido, por tal razón la presente solicitud, en la reivindicación 18 y sus dependientes 19-20, no tiene nivel inventivo.

El estudio anterior permitiría afirmar que la solicitud, en la reivindicación 18, NO cumpliría con lo estipulado en el artículo 18 de la Decisión 486 de la Comunidad Andina de Naciones.

5. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

Nº	Documento	Reivindicaciones Afectadas	Requisito que Afecta
D1	US3607600	1-8	NOVEDAD
D2	US5228831	18-20	NIVEL INVENTIVO

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la circular única N° 10 de 2001.


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de División de Nuevas Creaciones.

El anterior requerimiento fue notificado por fijación en lista, de fecha

04 SET. 2009