



Industria y Comercio
S U P E R I N T E N D E N C I A

Delegatura de propiedad Industrial
División de Nuevas Creaciones

SOLICITUD
PATENTE DE INVENCION

21. EXPEDIENTE No.

07.3780

54. TÍTULO

BOQUILLAS DE PULVERIZACION DE LIQUIDO DE LAVADO PARA COLCHON DE PULPA
Y METODO PARA MONTAR BOQUILLA.

51. CLASIFICACIÓN INTERNACIONAL

71. SOLICITANTE

ANDRITZ INC.

DOMICILIO

GLENS FALLS, NEW YORK 12801-3686, ESTADOS UNIDOS DE AMERICA

74. APODERADO

EMILIO FERRERO

C.C. 438.019 de Usaquén

22. BOGOTÁ, D. C.,



Industria y Comercio
SUPERINTENDENCIA

PETITORIO

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad: 07-003/80-00000-0000
Pec: 2007-07-18 10:22:05 Imp. 2008 NÚMERO ALGUNES
IMP. 2 PATENTES
EVR: 1 MEX-RE-MEX-10
Act 411 PRESENTACION Fotos: 03

ión

FORMULARIO UNICO DE SOLICITUD DE PATENTE

SOLICITUD DE: 1 ☒ Patente de Invención. ☐ Patente de Modelo de Utilidad.			
2 SOLICITANTE (71)	Nombre: ANDRITZ INC. sociedad constituida y existente bajo las leyes del Estado de Delaware, Estados Unidos de América. Dirección: 13 Pruyn's Island Drive, Glens Falls, New York 12801-3686, Estados Unidos de América Domicilio: Glens Falls, New York 12801-3686, Estados Unidos de América		IDENTIFICACIÓN C.C. ☐ NIT ☐ C.E. ☐ Otro ☐ Número Cual
3 REPRESENTANTE O APODERADO	Nombre: EMILIO FERRERO Dirección: Carrera 4ª. No. 72-35 Teléfono: 347 36 11 Fax: 217 92 11 E-mail: clientes@camyp.com. Domicilio: Bogotá, Colombia.		IDENTIFICACIÓN C.C. ☒ NIT ☐ C.E. ☐ Otro ☐ Número 438.019 T.P 31.929
4 INVENTOR (ES) (72)	1. Todd S. GRACE 205 Devon Mill Court, Alpharetta, Georgia 30005, Estados Unidos de América 2. David Hollis GORDY 201 Pecan Bayou Drive, Monroe, Louisiana 71203, Estados Unidos de América 3. David Brin TIDWELL 1506 Stubbs Vinson Road, Monroe, Louisiana 71203, Estados Unidos de América		
5 Título (54) BOQUILLAS DE PULVERIZACIÓN DE LÍQUIDO DE LAVADO PARA COLCHÓN DE PULPA Y MÉTODO PARA MONTAR BOQUILLA			
6 Clasificación Internacional (51) B05B 001/006			
7 Prioridad SI ☒ NO ☐	(33) País de Origen US US	(32) Fecha 18 de enero de 2006 5 de septiembre de 2006	(31) Número de Solicitud 60/743,140 11/469,968

8

Para publicar a partir de la fecha de la presente solicitud a los:

6 meses ☐ 12 meses ☐ 18 meses ☒ Otro ☐ Cual _____

9

Comprobante de pago No.: 06-81,711 Fecha: 23 de octubre de 200607- 2.16011 de enero de 200707- 2.15811 de enero de 200706-67,5814 de septiembre de 200607- 2.15911 de enero de 200707- 1.65410 de enero de 2007

10

Anexos:

☒

Comprobante de pago de la tasa de presentación de la solicitud.

☐

Comprobante de pago de la tasa por concepto de excedente de palabras en la publicación.

☒

Comprobantes de pago por la reivindicación de dos prioridades Estadounidenses.

☐

Documento que acredita la existencia y representación legal cuando el solicitante sea persona jurídica.

☐

Poderes, si fuere el caso.

☒

Certificado de la fecha de presentación de la solicitud prioridad expedida por la autoridad correspondiente y una copia certificada de la primera solicitud si se reivindica prioridad.

☒

Traducción simple de la primera solicitud, si se reivindica prioridad.

☐

Documento de cesión del inventor al solicitante o a su causante.

☒

Resumen

☒

Descripción de la invención.

☒

Una o más reivindicaciones.

☒

Dibujos y/o planos necesarios

☐

De ser el caso, copia del contrato de acceso.

☐

De ser el caso, documento que acredite la licencia o autorización de uso de conocimientos tradicionales de las comunidades indígenas.

☐

De ser el caso, certificado de depósito del material biológico.

☒

Arte final 12x12

☐

De ser el caso, información sobre otras solicitudes de patente o títulos obtenidos en el extranjero por el mismo titular o su causante, relacionadas parcial o totalmente con la invención de esta solicitud.

11

FIGURA CARACTERÍSTICA

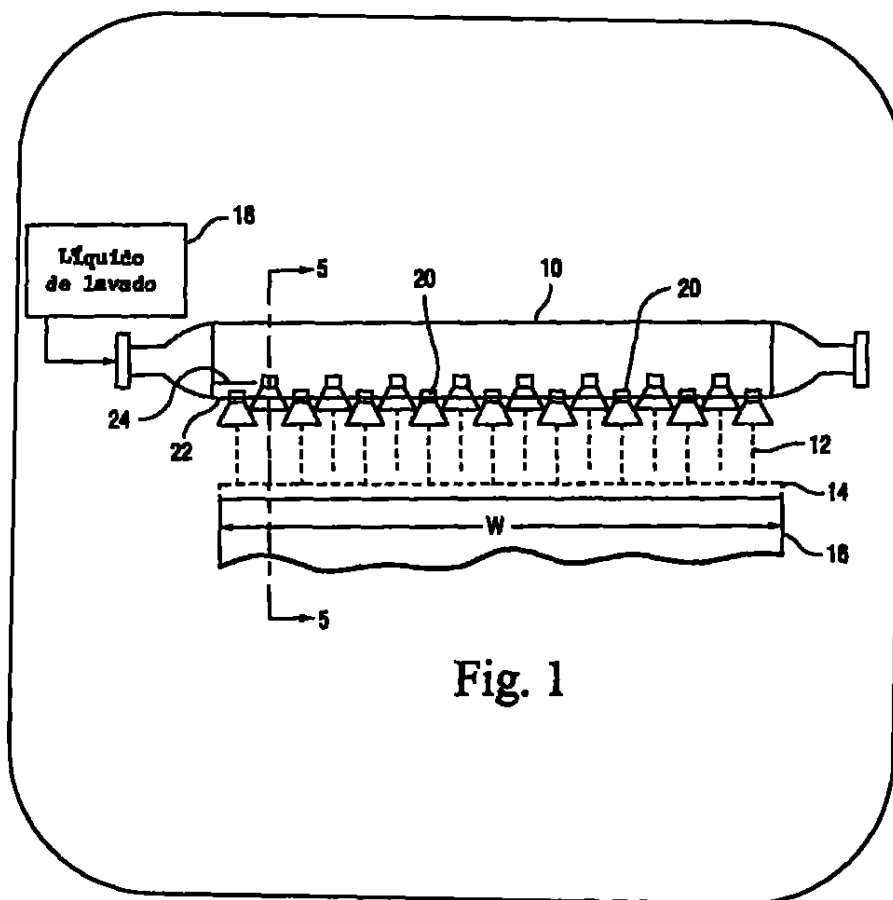


Fig. 1

12

Solicito la concesión de la patente,

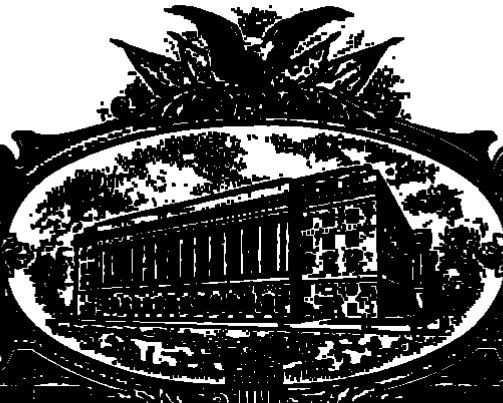
NOMBRE: EMILIO FERREROFIRMA: Emilio Ferrero

C.C. 438.019 de Usaquén T.P. 31.929

NNJ

U 093-A

PA 1523173



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

October 02, 2006

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: 60/743,140

FILING DATE: January 18, 2006

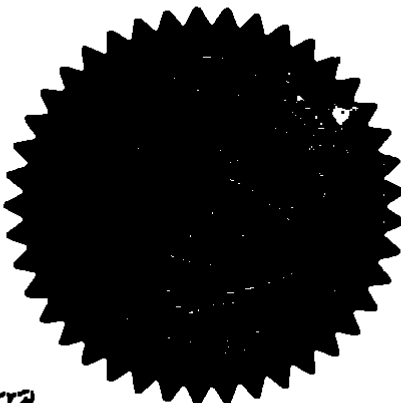
THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US60/743,140

By Authority of the

**Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark Office**


T. WALLACE

Certifying Officer



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

- ☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1					Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
Mr.	Todd	S.	Grace		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Alpharetta	State/Province	GA	Country of Residence	United States
Citizenship under 37 CFR 1.41(b)			United States		
Mailing Address of Applicant:					
Address 1		205 Devon Mill Court			
Address 2					
City	Alpharetta	State/Province	GA		
Postal Code	30005	Country	United States		
Applicant 2					Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	David	Holls	Gordy		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Monroe	State/Province	LA	Country of Residence	United States
Citizenship under 37 CFR 1.41(b)			United States		
Mailing Address of Applicant:					
Address 1		201 Pecan Bayou Drive			
Address 2					
City	Monroe	State/Province	LA		
Postal Code	71203	Country	United States		
Applicant 3					Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name	Family Name	Suffix	
	David	Brin	Tidwell		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Monroe	State/Province	LA	Country of Residence	United States

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515	
		Application Number		
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT			
Citizenship under 37 CFR 1.41(b)		United States		
Mailing Address of Applicant:				
Address 1	1508 Stubbs Vinson Road			
Address 2				
City	Monroe	State/Province	LA	
Postal Code	71203	Country	United States	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence information of this application.			
Customer Number	23117		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
Attorney Docket Number	10-1515	Small Entity Status Claimed ☐	
Application Type	Provisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	
Publication Information:			
☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)			
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not been and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.			

Representative Information:

Representative Information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ US Representative (37 CFR 11.9)

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
Customer Number	23117		

Domestic Priority Information:

This section allows for the applicant to claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c). Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Priority Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).			
			Remove
Application Number	Country	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☒ Yes ☐ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.			
Assignee 1			Remove
If the Assignee is an Organization check here. ☒			
Organization Name	Andritz Inc.		
Mailing Address Information:			
Address 1	13 Pruyn's Island Drive		
Address 2			
City	Glens Falls	State/Province	NY
Country	UNITED STATES OF AMERICA	Postal Code	12801
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.
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8

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
Signature	/Jeffry Nelson/		Date (YYYY-MM-DD) 2008-01-18
First Name	Jeffry	Last Name Nelson	Registration Number 30,481

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2908. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515
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☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Applicant Information:

Applicant 1				
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name	Suffix
Mr.	Todd	S.	Grace	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service				
City	Alpharetta	State/Province	GA	Country of Residence United States
Citizenship under 37 CFR 1.41(b)			United States	
Mailing Address of Applicant:				
Address 1		205 Devon Mill Court		
Address 2				
City	Alpharetta	State/Province	GA	
Postal Code	30005	Country	United States	
Applicant 2				
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name	Suffix
	David	Holla	Gordy	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service				
City	Monroe	State/Province	LA	Country of Residence United States
Citizenship under 37 CFR 1.41(b)			United States	
Mailing Address of Applicant:				
Address 1		201 Pecan Bayou Drive		
Address 2				
City	Monroe	State/Province	LA	
Postal Code	71203	Country	United States	
Applicant 3				
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118
Prefix	Given Name	Middle Name	Family Name	Suffix
	David	Brin	Tidwell	
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1515
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		

Citizenship under 37 CFR 1.41(b)		United States			
Mailing Address of Applicant:					
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Address 2					
City	Monroe	State/Province	LA		
Postal Code	71203	Country	United States		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.			Add		

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Email Address		Add Email	Remove Email

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Title of the Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
Attorney Docket Number	10-1515	Small Entity Status Claimed	☐
Application Type	Provisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	
Publication Information:			
☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)			
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not been and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.		

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Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ US Representative (37 CFR 11.8)

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1615
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT		
Customer Number	23117		

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Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)

Additional Domestic Priority Data may be generated within this form by selecting the Add button.

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			Remove
Application Number	Country	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☒ Yes ☐ No

Additional Foreign Priority Data may be generated within this form by selecting the Add button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

If the Assignee is an Organization check here. ☒

Organization Name	Andritz Inc.		
--------------------------	--------------	--	--

Mailing Address Information:

Address 1	13 Pruyn's Island Drive		
Address 2			
City	Glens Falls	State/Province	NY
Country	United States	Postal Code	12801
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the Add button.

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

13

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number		10-1515			
		Application Number					
Title of Invention		WASH LIQUID SPRAY NOZZLES FOR PULP MAT					
Signature		/Jeffry Nelson/		Date (YYYY-MM-DD)		2008-01-18	
First Name		Jeffry		Last Name		Nelson	
				Registration Number		30,481	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (38 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2908. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 181. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

ABSTRACT

A shower pipe and nozzle assembly for spraying a wash liquid on a pulp including: apertures in the pipe extending a length of the pipe spanning a width of the pulp mat, are laterally aligned along two or more rows such that adjacent apertures are in different rows, and the nozzle assembly includes a nozzle, a mounting block and a lip wherein the nozzle includes a hollow stem that attaches to the aperture and secures the nozzle assembly to the pipe, the block has a face that conforms to the pipe surface surrounding the aperture, an opposite face supporting the lip and an opening for the nozzle stem which is offset from a center of the block, and the lip includes a curved fan for turning wash liquid from the nozzle towards the pulp mat, a mounting surface abutting the opposite face of the block and a corner fitting over an edge of the block. The wash liquid flows through the pipe, the hollow stem of the nozzle and out of the nozzle is a stream that is generally tangential to the lip. The fan of the lip gradually turns the water towards the pulp map and spreads the stream such that the water is sprayed uniformly on the map. The multiple rows of apertures and nozzles project wash liquid towards the mat at different directions.

WASH LIQUID SPRAY NOZZLES FOR PULP MAT

BACKGROUND OF THE INVENTION

[0001] The present invention relates to nozzles for a shower pipe to spray wash liquid onto a pulp mat.

[0002] Pulp is typically processed in mills by soaking or mixing wood pieces in tanks with chemicals that convert the wood pieces into pulp, and then bleaching pulp. The processing typically involves repeated stages of mixing the pulp with liquid and drawing the liquid out of the pulp by allowing the pulp to form mats on cylindrical vacuum drums. The pulp mats are washed by spraying wash liquid onto the mats. The wash liquid cleans chemicals out of the pulp mat. The wash liquid is sprayed from nozzles attached to liquid pipes spanning the width of the vacuum drums. There is a long felt need for liquid pipes and nozzle assemblies that uniformly spray wash liquid onto the mat and are inexpensive to manufacture and operate.

SUMMARY OF THE INVENTION

[0003] A shower pipe and nozzle assembly for spraying a wash liquid on a pulp including: apertures in the pipe extending a length of the pipe spanning a width of the pulp mat, are laterally aligned along two or more rows such that adjacent apertures are in different rows, and the nozzle assembly includes a nozzle, a mounting block and a lip wherein the nozzle includes a hollow stem that attaches to the aperture and secures the nozzle assembly to the pipe, the block has a face that conforms to the pipe surface surrounding the aperture, an opposite face supporting the lip and an opening for the nozzle stem which is offset from a center of the block, and the lip includes a curved fan for turning wash liquid from the nozzle towards the pulp mat, a mounting surface abutting the opposite face of the block and a corner fitting over an edge of the block. The wash liquid flows through the pipe, the hollow stem of the nozzle and out of the nozzle is a stream that is generally tangential to the lip. The fan of the lip gradually turns the water towards the pulp map and spreads the stream such that the water is sprayed uniformly on the mat. The multiple rows of apertures and nozzles project wash liquid towards the mat at different directions.

[0004] A nozzle assembly for spraying a wash liquid onto a pulp mat, the assembly comprising: a fastener-nozzle having an internal conduit for the wash liquid, an external fastener structure for attaching to an aperture in a wash liquid pipe and a outlet to the internal conduit for discharging the wash liquid, and a curved lip having a curved surface mounted to the pipe by the fastener-nozzle

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and extending from being substantially parallel to the outlet to the internal conduct to a curved surface having an expanding width to convert a stream of wash liquid from the outlet to a sheet of wash liquid directed to the mat. A mounting block may be included in the assembly between the pipe and lip, wherein the block has an offset opening to receive the fastener-nozzle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIGURE 1 is a side view of a shower pipe and nozzle assembly, and a section of a pulp mat on a cylindrical dryer.

[0006] FIGURE 2 is a cross-sectional view of the shower pipe and nozzle assembly, showing just one nozzle assembly.

[0007] FIGURE 3 is a top view of the lip of the nozzle assembly.

[0008] FIGURE 4 is an enlarged cross-sectional view of the nozzle assembly showing the hollow nozzle stem attached to an aperture in the pipe, a mounting block for the nozzle assembly, and a portion of the lip of the nozzle assembly.

[0009] FIGURE 5 is a cross-sectional view of the shower pipe and nozzle assembly taken along line 3-3 in Figure 1 and showing a side view of a portion of the pulp mat and cylindrical dryer.

[0010] FIGURE 6 is an exploded isometric view of the nozzle assembly and a portion of the pipe.

DETAILED DESCRIPTION

[0011] FIGURE 1 shows a shower pipe 10 that sprays a wash liquid 12 onto a pulp mat 14. The mat forms on a rotating cylindrical vacuum drum 16. The liquid wash is sprayed evenly and uniformly on the mat in one, two or more wash liquid sheets. The shower pipe may be an extended cylinder spanning the width (W) of the vacuum drum. The pipe may be circular in cross-section, but may be rectangular, curvilinear or have some other cross-sectional shape. The pipe is preferably hollow and has an interior closed conduit 26 through which flows the wash liquid. A source 18 of liquid wash is connected to one or both ends of the pipe.

[0012] Wash liquid nozzle assemblies 20 are arranged along the length of the pipe 10. The nozzle assemblies may be aligned in one, two or more rows extending laterally along the pipe. In the embodiment shown in Fig. 1, the nozzle assemblies are arranged along a first row 22 and a second row 24. The rows may be angularly offset by an angle (A in Fig. 3) that may be in a range of 3 degrees to 20 degrees. The nozzle assemblies may be arranged to alternate between the rows along the length of the pipe. The nozzle assemblies may be equally spaced along the pipe and the spacing may be determined to provide a relatively uniform spray of wash liquid on the pulp mat 14. The dotted lines in Figure 1 between the nozzle assemblies and the mat 14 indicate a uniform flow of wash liquid being sprayed onto the mat. Preferably, the sprays from two adjacent nozzle assemblies on the same row (and separated

by at least one other nozzle assembly on another row) do not overlap.

[0013] FIGURE 2 is a cross-sectional view of the pipe 10 and a single nozzle assembly 20. The interior surface of the pipe defines a wash liquid passage 26. Along each row in the pipe are a series of equally spaced apertures 28 that receive a nozzle-fastener 30 of the nozzle assembly. The apertures 28 may be threaded to receive a threaded stem portion of the nozzle fastener. Wash liquid flows through a hollow passage 32 of the nozzle-fastener. This hollow passage has an inlet open to the liquid passage 26 and an outlet 34 for projecting wash liquid relatively tangentially to a lip 36 of the nozzle assembly. The nozzle-fastener also secures the nozzle assembly to the pipe, and extends through openings in the lip 36 and in the mounting block 46 (Fig. 4).

[0014] As show in FIGURE 3, the lip 36 may have a curved surface 38 that has a radially inward section (near the pipe) that is relatively perpendicular to the pipe and the stream of wash liquid flowing from the nozzle, and a radially outward portion that both curves into the wash liquid stream and expands laterally. The lip may be a generally thin metal or plastic plate having a curved surface 38, a mounting section 48 and a corner 50. In top view, the curved surface of the lip is relatively narrow near the nozzle outlet 34 and expands into a fan-like shape. The curved surface 38 of the lip causes the water stream to spread out into a fan shaped liquid spray that flows to the pulp mat.

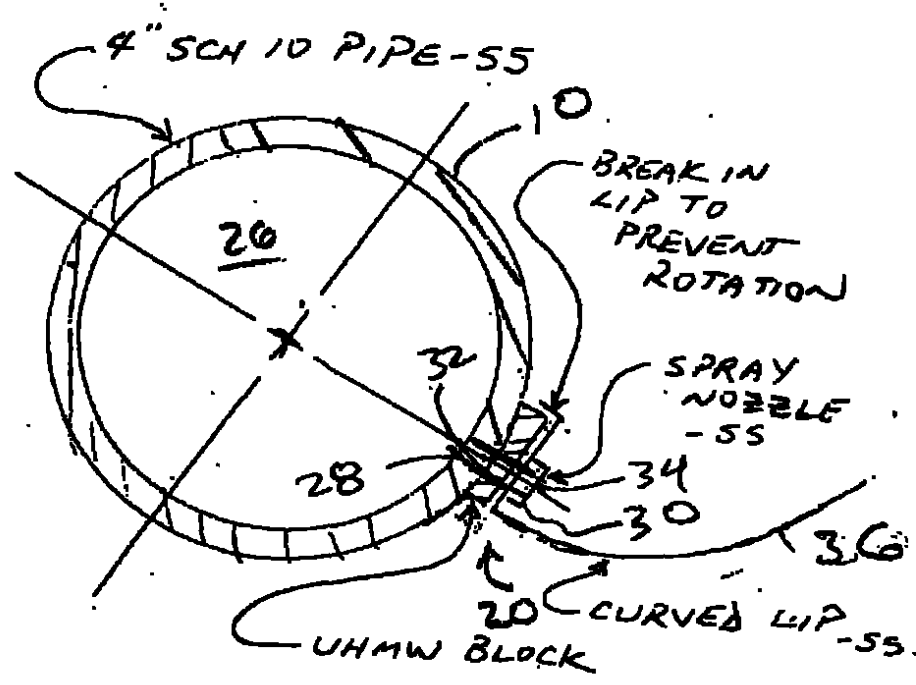
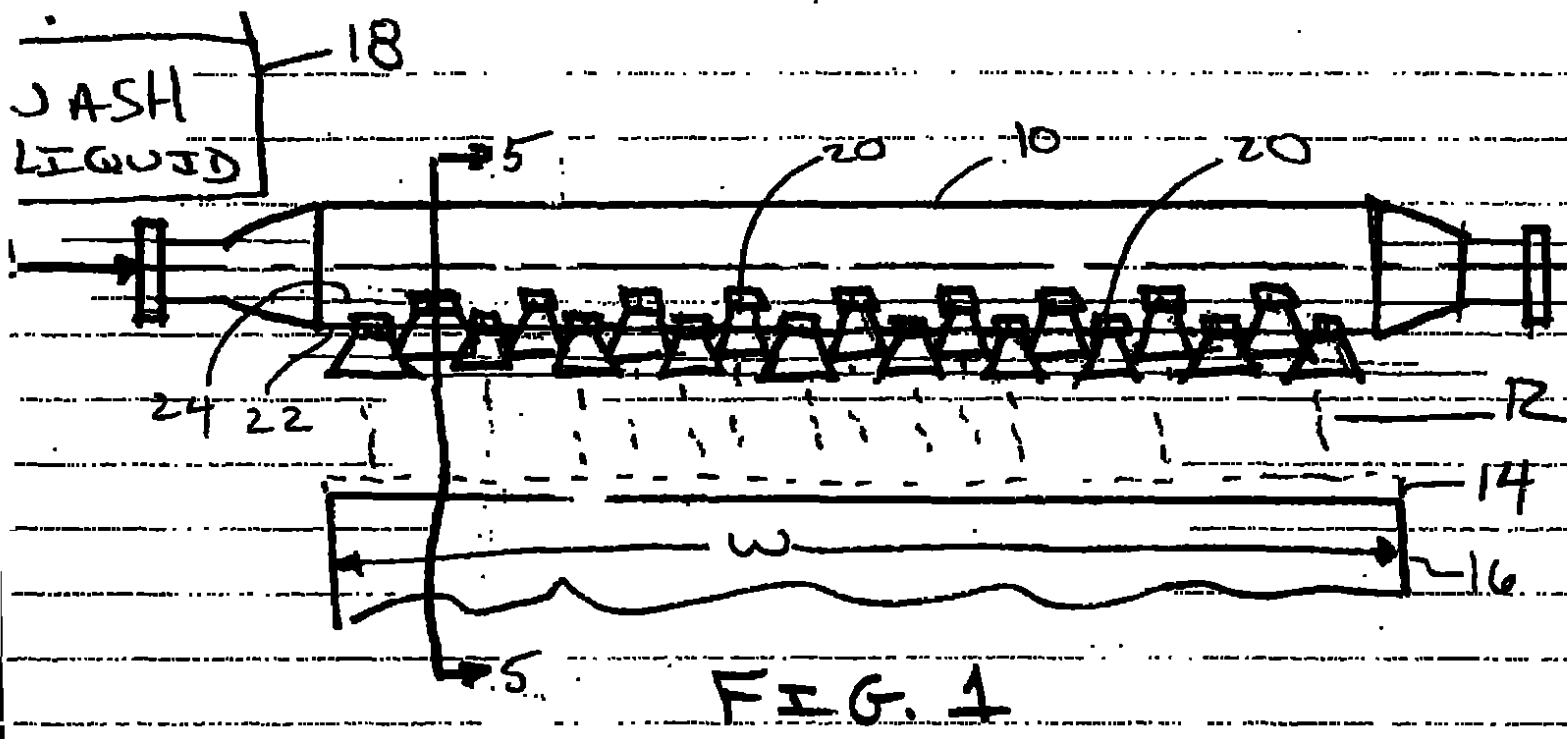
[0015] FIGURE 4 is an enlarged view of a nozzle assembly 30 attached to the pipe 10. The nozzle-fastener 30 includes a threaded stem 42 that screws into a threaded aperture 28 in the pipe. The head 44 of the nozzle-fastener may be a hexed bolt head. In one embodiment, the nozzle-fastener is a bolt having a hollow passage 32 that provides a wash fluid conduit from the liquid passage 26 in the pipe to the nozzle outlet 34. The nozzle-fastener secures the nozzle assembly to the pipe.

[0016] The nozzle assembly may also include a mounting block 46 that is generally rectangular and has a first side that conforms to and abuts an outer surface of the pipe. The mounting block includes a second side, opposite to the first side, that is generally planar and provides a support surface for a planar mounting section 48 of the lip. An opening 54 through the mounting block receives the stem of the nozzle-fastener, but may not be threaded. The opening 54 in the block may be offset (see difference of D and C) from a center of the block. The offset allows the outlet 34 of the fastener-nozzle to be in close proximity to the radially inward portion of the curved surface 38 of the lip 36. The second side of the mounting block abuts against the planar mounting section 48 of the lip 36, when the nozzle-fastener secures the assembly 20 to the pipe. The corner 50 of the lip is a narrow strip that forms a 90-degree corner with respect to the mounting section 48 of the lip. When fitted to the mounting block, the corner 50 folds over an edge 52 of the mounting block and thereby assists preventing the lip from rotating about the mounting block and nozzle-fastener.

[0017] FIGURE 5 shows wash liquid jetting from the outlet 34 of the passage 32 through the nozzle-fastener and flowing onto the curved surface 38 of the lip 36. The lip spreads the water stream and turns the water stream towards a tangent of the pulp mat 14 and cylindrical drum 16. Preferably, the spray of wash liquid from each row 22, 24 of nozzle assemblies is a generally uniform across the width of the mat. The angle (E, F) between the wash spray and mat depends on the row of the nozzle assembly and the amount of curvature in the lip. In the embodiment shown in Figure 5, two sheets of wash liquid 54, 56 flow onto the pulp mat, where each sheet is from one of the two rows of nozzle assemblies.

[0018] FIGURE 6 is an exploded view of the pipe 10 and a nozzle assembly 20. A nozzle-fastener 30 is inserted through an opening in the mounting section 48 of the lip 36 and an opening 54 in the mounting block 46. The stem 42 of the nozzle-fastener screws into a threaded aperture 28 of the pipe to secure the mounting block to the pipe and the lip to the mounting block. The corner 52 of the lip fits around an edge of the mounting block to prevent rotation of the lip.

[0019] While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.



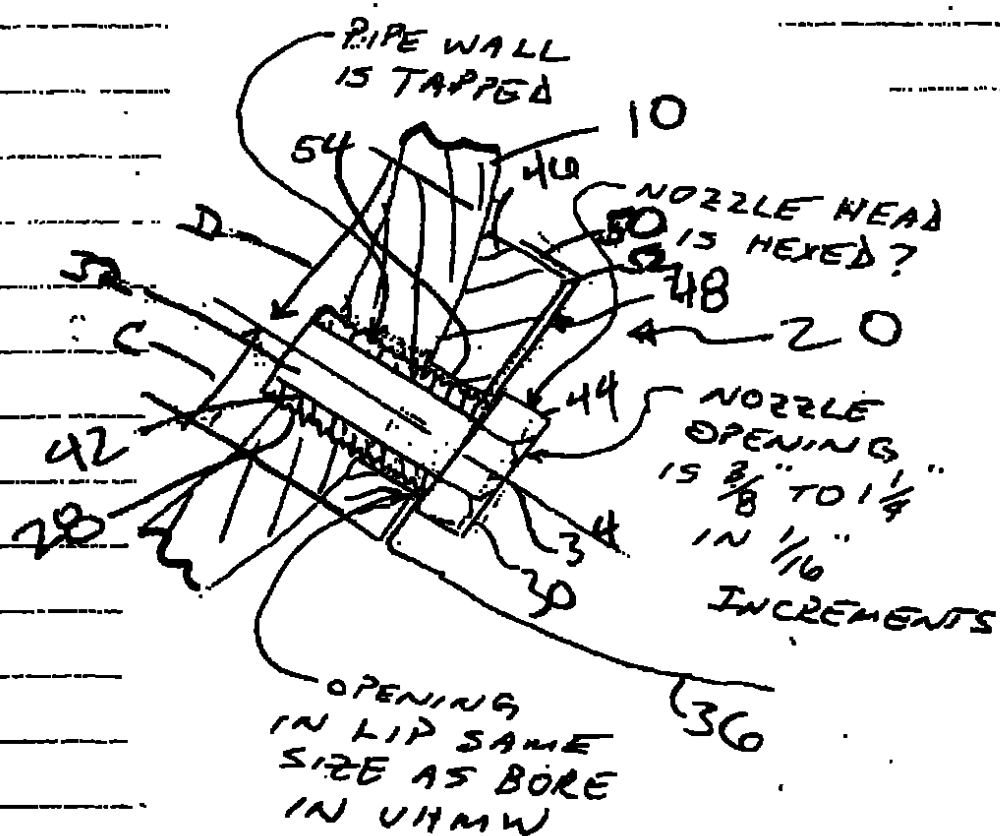


FIG. 4

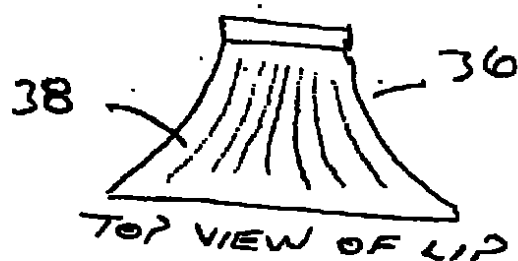
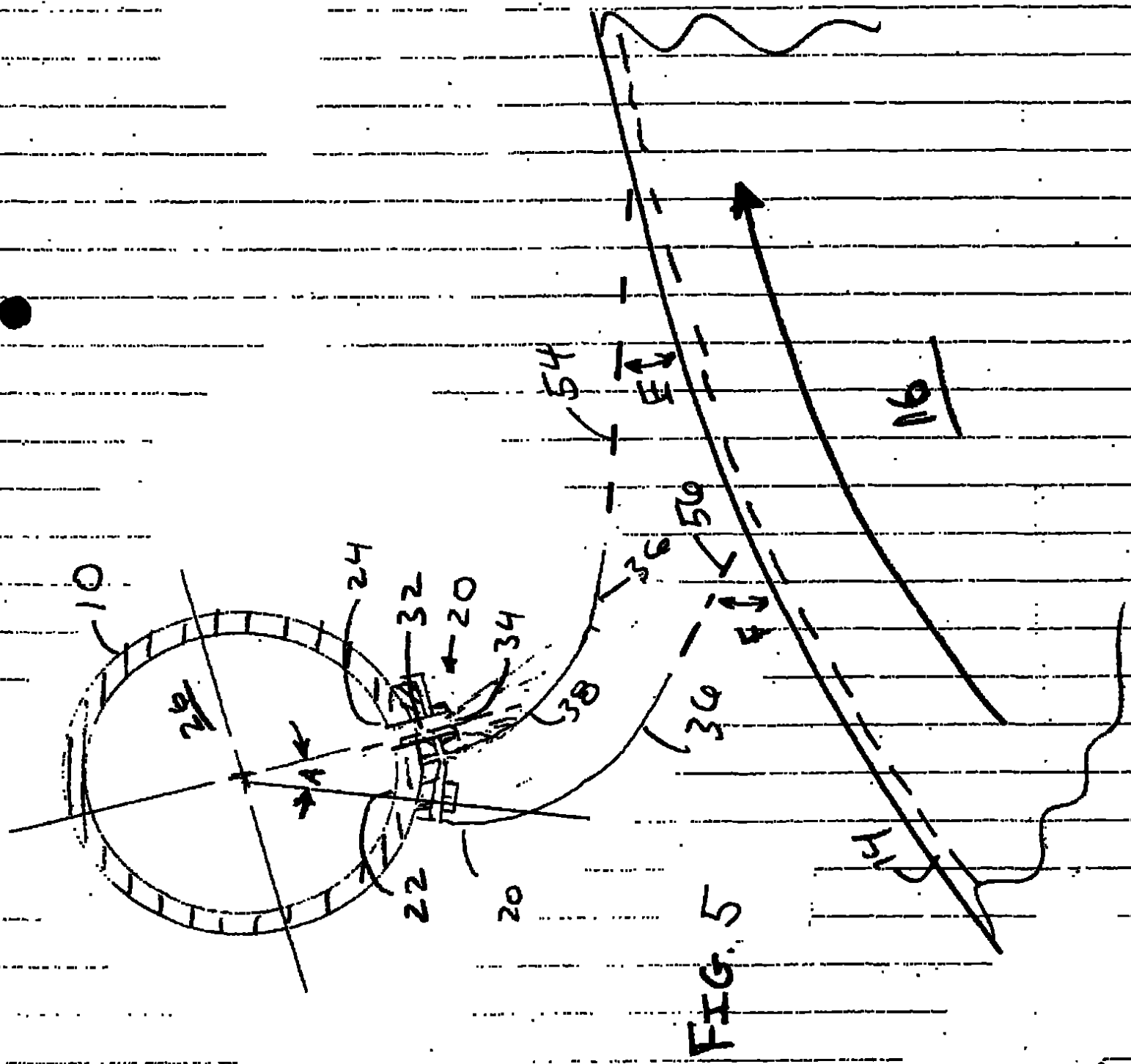
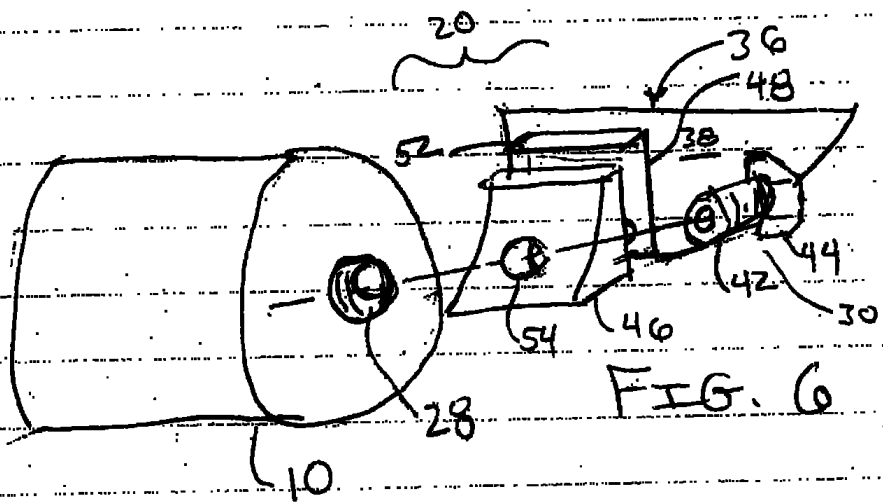


FIG. 3





28 24

TRADUCCIÓN No. 04/01.07 preparada por María Elvira Martelo, Traductora Oficial debidamente aprobada por el Ministerio de Justicia mediante Resolución 2879 de 1995 y reconocida por el Ministerio de Relaciones Exteriores.

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NÚMERO DE SOLICITUD: 60/743,140

FECHA DE PRESENTACIÓN: 18 de enero de 2006

EL CÓDIGO DE PAÍS Y EL NÚMERO DE SU SOLICITUD PRIORITARIA A USAR PARA PRESENTACIONES EN EL EXTERIOR BAJO LA CONVENCION DE PARÍS ES US60/743,140.

Por autorización de:

Subsecretario de Comercio para Propiedad Intelectual
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T. WALLACE

Funcionario de Autenticaciones.

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Es traducción fiel y completa de la cual se deja copia en esta oficina para su confrontación.

COLO 15640-001-001-5

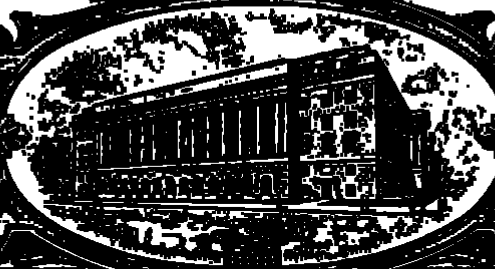
WPC 15640 – ID 3

ENE 15/07

María E. Martelo
TRADUCCIÓN No. 04/01.07
MARIA ELVIRA MARTELO
Traductora e Interprete Oficial
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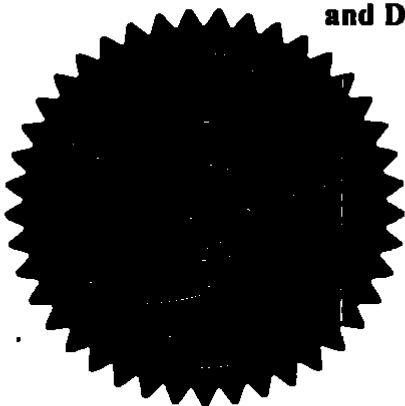
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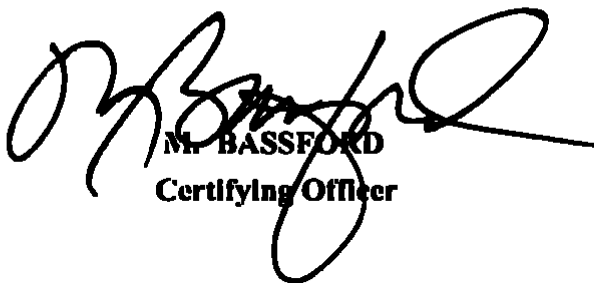
APPLICATION NUMBER: 11/469,968

FILING DATE: September 05, 2006

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US11/469,968

**By Authority of the
Under Secretary of Commerce for Intellectual Property
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**M. BASSFORD
Certifying Officer**

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1534
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO ASSEMBLE NOZZLE		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1						Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118		
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Todd	S.	Grace			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Alpharetta	State/Province	GA	Country of Residence	US	
Citizenship under 37 CFR 1.41(b) i		US				
Mailing Address of Applicant:						
Address 1	205 Devon Mill Court					
Address 2						
City	Alpharetta	State/Province	GA			
Postal Code	30005	Country	US			
Applicant 2						Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118		
Prefix	Given Name	Middle Name	Family Name	Suffix		
	David	Hollis	Gordy			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Monroe	State/Province	LA	Country of Residence	US	
Citizenship under 37 CFR 1.41(b) i		US				
Mailing Address of Applicant:						
Address 1	201 Pecan Bayou Drive					
Address 2						
City	Monroe	State/Province	LA			
Postal Code	71203	Country	US			
Applicant 3						Remove
Applicant Authority ☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118		
Prefix	Given Name	Middle Name	Family Name	Suffix		
	David	Brin	Tidwell			
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1534
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO ASSEMBLE NOZZLE		

Citizenship under 37 CFR 1.41(b) i		US	
Mailing Address of Applicant:			
Address 1	1506 Stubbs Vinson Road		
Address 2			
City	Monroe	State/Province	LA
Postal Code	71203	Country	US
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.			
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Correspondence Information:

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☒ An Address is being provided for the correspondence information of this application.			
Customer Number	23117		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO ASSEMBLE NOZZLE		
Attorney Docket Number	10-1534	Small Entity Status Claimed ☐	
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	1

Publication Information:	
☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)	
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not been and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing.	

Representative Information:

Representative Information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1534
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO ASSEMBLE NOZZLE		
Customer Number	23117		

Domestic Priority Information:

This section allows for the applicant to claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c). Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	60743140	2008-01-18
Additional Domestic Priority Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove			
Application Number	Country ¹	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☐ Yes ☒ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1				Remove
If the Assignee is an Organization check here. ☒				
Organization Name	Andritz Inc			
Mailing Address Information:				
Address 1	13 Pruyn's Island Drive			
Address 2				
City	Glens Falls	State/Province	NY	
Country ¹	US	Postal Code	12801-3836	
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.16. Please see 37 CFR 1.4(d) for the form of the signature.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	10-1534
		Application Number	
Title of Invention	WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO ASSEMBLE NOZZLE		

Signature	/Jeffry Nelson/		Date (YYYY-MM-DD)	2008-09-05	
First Name	Nelson	Last Name	Jeffry	Registration Number	30481

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2908. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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WASH LIQUID SPRAY NOZZLES FOR PULP MAT AND METHOD TO
ASSEMBLE NOZZLE

BACKGROUND

[0001] This application claims the benefit of and claims priority to Application Serial No. 60/743,140 filed on January 18, 2006 and is incorporated herein by reference.

[0002] The present invention relates to nozzles for a shower pipe to spray wash liquid onto a pulp mat.

[0003] Pulp is typically processed in mills by soaking or mixing wood pieces in tanks with chemicals that convert the wood pieces into pulp, and then bleaching pulp. The processing typically involves repeated stages of mixing the pulp with liquid and drawing the liquid out of the pulp by allowing the pulp to form mats on cylindrical vacuum drums. The pulp mats are washed by spraying wash liquid onto the mats. The wash liquid cleans chemicals out of the pulp mat. The wash liquid is sprayed from nozzles attached to liquid pipes spanning the width of the vacuum drums. There is a long felt need for liquid pipes and nozzle assemblies that uniformly spray wash liquid onto the mat and are inexpensive to manufacture and operate.

SUMMARY

[0004] A shower pipe and nozzle assembly for spraying a wash liquid on a pulp including: apertures in the pipe extending a length of the pipe spanning a width of the pulp mat, are laterally aligned along two or more rows such that

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adjacent apertures are in different rows, and the nozzle assembly includes a nozzle, a mounting block and a lip wherein the nozzle includes a hollow stem that attaches to the aperture and secures the nozzle assembly to the pipe, the block has a face that conforms to the pipe surface surrounding the aperture, an opposite face supporting the lip and an opening for the nozzle stem which is offset from a center of the block, and the lip includes a curved fan for turning wash liquid from the nozzle towards the pulp mat, a mounting surface abutting the opposite face of the block and a corner fitting over an edge of the block. The wash liquid flows through the pipe, the hollow stem of the nozzle and out of the nozzle as a stream that is generally tangential to the lip. The fan of the lip gradually turns the water towards the pulp mat and spreads the stream such that the water is sprayed uniformly on the mat. The multiple rows of apertures and nozzles project wash liquid towards the mat at different directions.

[0005] A nozzle assembly for spraying a wash liquid onto a pulp mat, the assembly comprising: a fastener-nozzle having an internal conduit for the wash liquid, an external fastener structure for attaching to an aperture in a wash liquid pipe and an outlet to the internal conduit for discharging the wash liquid, and a curved lip having a curved surface mounted to the pipe by the fastener-nozzle extending from the outlet to the internal conduit, the curved surface having an expanding width to convert a stream of wash liquid from the outlet to a sheet of wash liquid directed to the mat. A mounting block may be included in the assembly between the pipe and lip, wherein

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the block has an offset opening to receive the fastener-nozzle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIGURE 1 is a side view of a shower pipe and nozzle assembly, and a section of a pulp mat on a cylindrical dryer.

[0007] FIGURE 2 is a cross-sectional view of the shower pipe and nozzle assembly, showing just one nozzle assembly.

[0008] FIGURE 3 is a top view of the lip of the nozzle assembly.

[0009] FIGURE 4 is an enlarged cross-sectional view of the nozzle assembly showing the hollow nozzle stem attached to an aperture in the pipe, a mounting block for the nozzle assembly, and a portion of the lip of the nozzle assembly.

[0010] FIGURE 5 is a cross-sectional view of the shower pipe and nozzle assembly taken along line 5-5 in Figure 1 and showing a side view of a portion of the pulp mat and cylindrical dryer.

[0011] FIGURE 6 is an exploded isometric view of the nozzle assembly and a portion of the pipe.

DETAILED DESCRIPTION

[0012] FIGURE 1 shows a shower pipe 10 that sprays a wash liquid 12 onto a pulp mat 14. The mat (shown by dotted

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lines) forms on a rotating cylindrical vacuum drum 16. The liquid wash is sprayed evenly and uniformly on the mat in one, two or more wash liquid sheets. The shower pipe 10 is positioned near the surface of the mat 14 and drum 16. The shower pipe may be an extended cylinder spanning the width (W) of the vacuum drum. The pipe may be circular in cross-section, but may be rectangular, curvilinear or have some other cross-sectional shape. The pipe is preferably hollow and has an interior closed conduit 26 through which flows the wash liquid. A source 18 of liquid wash is connected to one or both ends of the pipe.

[0013] Wash liquid nozzle assemblies 20 are arranged along the length of the pipe 10. The nozzle assemblies may be aligned in one, two or more rows extending laterally along the pipe. In the embodiment shown in Fig. 1, the nozzle assemblies are arranged along a first row 22 and a second row 24. The rows may be angularly offset by an angle (A in Fig. 5) that may be in a range of 3 degrees to 20 degrees. The nozzle assemblies 20 may be arranged to alternate between the rows along the length of the pipe. The nozzle assemblies may be equally spaced along the pipe and the spacing may be determined to provide a relatively uniform spray of wash liquid on the pulp mat 14. The dotted lines in Figure 1 between the nozzle assemblies and the mat 14 indicate a uniform flow of two sheets of wash liquid being sprayed onto the mat. Preferably, the sprays from two adjacent nozzle assemblies on the same row (and separated by at least one other nozzle assembly on another row) do not overlap.

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[0014] FIGURE 2 is a cross-sectional view of the pipe 10 and a single nozzle assembly 20. The interior surface of the pipe defines a wash liquid passage 26. Along each row in the pipe are a series of equally spaced apertures 28 that receive a nozzle-fastener 30 of the nozzle assembly. The apertures 28 may be threaded to receive a threaded stem portion of the nozzle fastener. The apertures 28 may be tapered to ease insertion of the fastener. Wash liquid flows through a hollow passage 32 of the stem of the nozzle-fastener. This hollow passage has an inlet open to the liquid passage 26 and an outlet 34 for projecting wash liquid relatively tangentially to a lip 36 of the nozzle assembly. The nozzle-fastener also secures the nozzle assembly to the pipe, and extends through openings in the lip 36 and in the mounting block 46 (Fig. 4).

[0015] As show in FIGURE 3, the lip 36 may have a curved surface 38 that has a radially inward section (near the pipe) that is relatively tangent to the circumference of the pipe and perpendicular to the stream of wash liquid flowing from the nozzle. The lip includes a radially outward portion that both curves into the wash liquid stream and expands laterally. The lip may be a generally thin metal or plastic plate having a curved surface 38, a mounting section 48 and a corner 50. The mounting section 48 is a flat planar section that abuts an outside face 51 of the mounting block 46. The corner 50 is a right angled lip that fits over an outside edge 52 of the mounting block. In top view (Fig. 3), the curved surface of the lip is relatively narrow near the nozzle outlet 34 and expands into a fan-like shape. The curved surface 38 of the lip

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causes the water stream to spread out into a fan shaped liquid spray that flows to the pulp mat.

[0016] FIGURE 4 is an enlarged view of a nozzle assembly 20 attached to the pipe 10. The nozzle-fastener 30 includes a threaded stem 42 that screws into a threaded aperture 28 in the pipe. The head 44 of the nozzle-fastener may be a hexed bolt head. In one embodiment, the nozzle-fastener is a bolt having a hollow passage 32 that provides a wash fluid conduit from the liquid passage 26 in the pipe to the nozzle outlet 34. The nozzle-fastener secures the nozzle assembly to the pipe.

[0017] The nozzle assembly may also include a mounting block 46 that is generally rectangular and has a first side that conforms to and abuts an outer surface of the pipe. The mounting block includes a second side, opposite to the first side, that is generally planar and provides a support surface for a planar mounting section 48 of the lip. An opening 54 through the mounting block receives the stem of the nozzle-fastener, but may not be threaded. The opening 54 in the block may be offset (see difference of lines D and C) from a center of the block. The offset allows the outlet 34 of the fastener-nozzle to be in close proximity to the radially inward portion of the curved surface 38 of the lip 36. The second side of the mounting block abuts against the planar mounting section 48 of the lip 36, when the nozzle-fastener secures the assembly 20 to the pipe. The corner 50 of the lip is a narrow strip that forms a 90-degree corner with respect to the mounting section 48 of the lip. When fitted to the mounting block, the corner 50 folds over an edge 52 of the mounting block and thereby

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assists preventing the lip from rotating about the mounting block and nozzle-fastener.

[0018] FIGURE 5 shows wash liquid jetting from the outlet 34 of the passage 32 through the nozzle-fastener and flowing onto the curved surface 38 of the lip 36. The lip spreads the water stream and turns the water stream towards a tangent of the pulp mat 14 and cylindrical drum 16. Preferably, the spray of wash liquid from each row 22, 24 of nozzle assemblies is a generally uniform across the width of the mat. The angle (E, F) between the wash spray and mat depends on the row of the nozzle assembly and the amount of curvature in the lip. In the embodiment shown in Figure 5, two sheets of wash liquid 55, 56 flow onto the pulp mat, where each sheet is from one of the two rows of nozzle assemblies.

[0019] FIGURE 6 is an exploded view of the pipe 10 and a nozzle assembly 20. A nozzle-fastener 30 is inserted through an opening in the mounting section 48 of the lip 36 and an opening 54 in the mounting block 46. The stem 42 of the nozzle-fastener screws into a threaded aperture 28 of the pipe to secure the mounting block to the pipe and the lip to the mounting block. The corner 50 of the lip fits around an edge of the mounting block to prevent rotation of the lip.

[0020] While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the contrary, is intended to cover

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various modifications and equivalent arrangements included
within the spirit and scope of the appended claims.

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WHAT IS CLAIMED IS:

1. A nozzle assembly for spraying a wash liquid towards a pulp mat, the assembly comprising:

an integral fastener-nozzle having a conduit for the wash liquid, an outlet to the conduit for discharging the wash liquid and an attachment to secure the fastener-nozzle to an aperture in a wash liquid pipe, and

a wash liquid direction device extending outwardly from the pipe and adapted to direct the wash liquid from the outlet towards the pulp mat.

2. A nozzle assembly as in claim 1 wherein the fastener-nozzle includes a threaded outer surface adapted to engage a threaded inner surface of the aperture in the wash liquid pipe.

3. A nozzle assembly as in claim 1 wherein in the fastener-nozzle the attachment and conduit are coaxial.

4. A nozzle assembly as in claim 1 wherein the conduit is in fluid communication with the wash liquid in the pipe.

5. A nozzle assembly as in claim 1 wherein the outlet of the conduit comprises a nozzle for the wash liquid.

6. A nozzle assembly as in claim 1 wherein the fastener-nozzle comprises a hollow stem and the conduit is an internal conduit through the hollow stem.

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AA

7. A nozzle assembly as in claim 1 wherein the fastener-nozzle comprises a head on a hollow stem, wherein the head secures the wash liquid direction device to the fastener-nozzle and the conduit is an interior conduit of the hollow stem.

8. A nozzle assembly as in claim 1 further comprising a block between the pipe and wash liquid direction device, wherein the block includes an offset aperture to receive the fastener-nozzle.

9. A nozzle assembly as in claim 1 wherein the wash liquid direction device comprises a lip including a curved fan-shaped surface extending from the outlet of the fastener-nozzle towards the mat.

10. An assembly for spraying a wash liquid onto a pulp mat comprising:

a wash liquid pipe extending substantially parallel to the pulp mat and separated by a distance from the pulp mat, wherein the pipe includes a plurality of apertures for discharging wash liquid flowing through the pipe;

a plurality of fasteners nozzle arranged along the wash liquid pipe and adapted to direct wash liquid towards the pulp mat;

wherein the fasteners nozzle each comprise a hollow stem adapted to be inserted into one of said apertures in the pipe, and

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a wash liquid direction device extending outwardly from the pipe and adapted to direct the wash liquid from the outlet towards the pulp mat, wherein each wash liquid direction device is secured to the pipe by at least one fasteners nozzle.

11. An assembly as in claim 10 wherein the fasteners nozzle are arranged along at least one row parallel to an axis of the pipe.

12. An assembly as in claim 10 wherein the fasteners nozzle are arranged along the pipe in at least a first row and a second row, and the fasteners nozzle in the first row are staggered with respect to the fasteners nozzle in the second row.

13. An assembly as in claim 10 wherein the stem of each fasteners nozzle is threaded and engages a threaded surface of the corresponding aperture of the pipe.

14. An assembly as in claim 10 wherein the fastener-nozzles each comprise a head on a hollow stem, wherein the head secures the wash liquid direction device to the fastener-nozzle and the conduit is an interior conduit of the hollow stem.

15. An assembly as in claim 10 further comprising a block between the pipe and wash liquid direction device, wherein the block includes an offset aperture to receive the stem of the fastener-nozzle.

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16. An assembly as in claim 10 wherein the wash liquid direction device comprises a lip including a curved fan-shaped surface extending from the outlet of one of the fastener-nozzles towards the mat.

17. A method to assemble a nozzle comprising:

inserting a hollow stem of a fastener-nozzle through an aperture in a wash liquid direction device;

attaching the fastener-nozzle to an aperture in a wash liquid pipe such that the hollow stem is in fluid communication with a wash liquid passage in the pipe and the wash liquid direction device is between the pipe and a head of the stem, and

securing the fastener-nozzle to the pipe such that the wash liquid direction device is fixed with respect to the pipe by securing the fastener-nozzle.

18. A method as in claim 17 further comprising inserting the stem through a block after inserting the stem through the wash liquid direction device, and wherein securing the fastener-nozzle further comprises abutting an inside surface of the block against the pipe and an outside surface of the block against the wash liquid direction device.

19. A method as in claim 17 wherein securing the fastener-nozzle includes tightening threads on an outer surface of the stem into threads on an inner surface of the aperture in the pipe.

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20. A method as in claim 17 wherein the wash liquid direction device is a lip including a flat surface with an aperture to receive the stem and a fan shaped surface to direct wash liquid, wherein securing the fastener-nozzle comprises fixing the flat surface to the pipe.

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ABSTRACT

A nozzle assembly for spraying a wash liquid towards a pulp mat, the assembly including an integral fastener-nozzle having a conduit for the wash liquid, an outlet to the conduit for discharging the wash liquid and an attachment to secure the fastener-nozzle to an aperture in a wash liquid pipe, and a wash liquid direction device extending outwardly from the pipe and adapted to direct the wash liquid from the outlet towards the pulp mat.

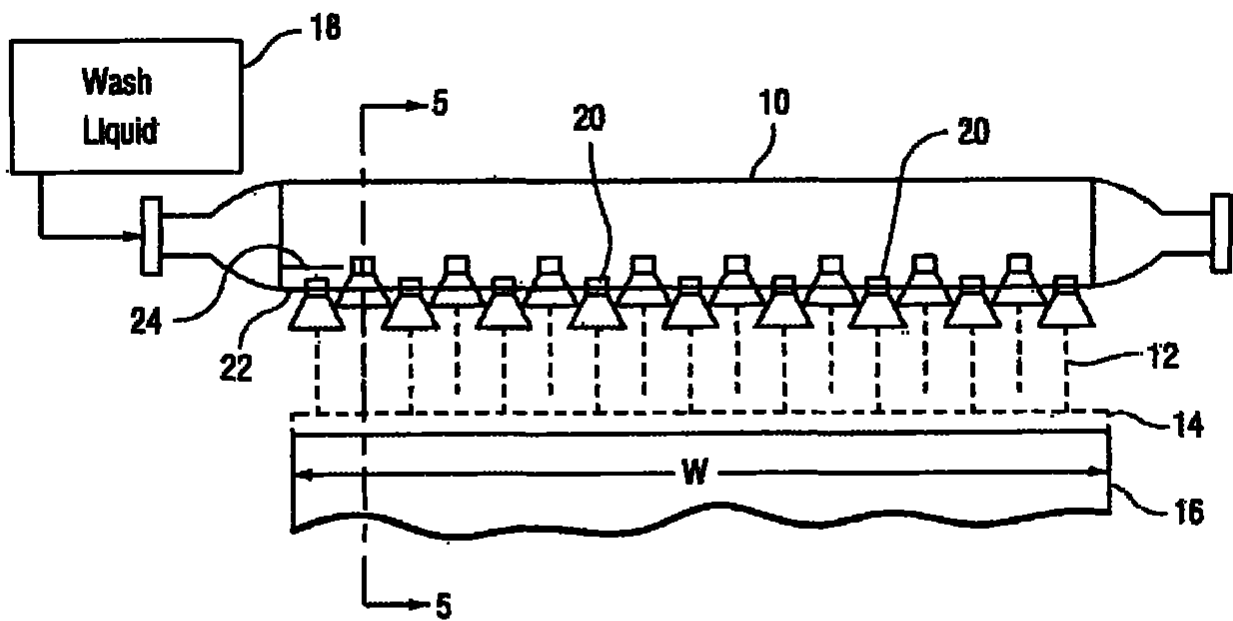


Fig. 1

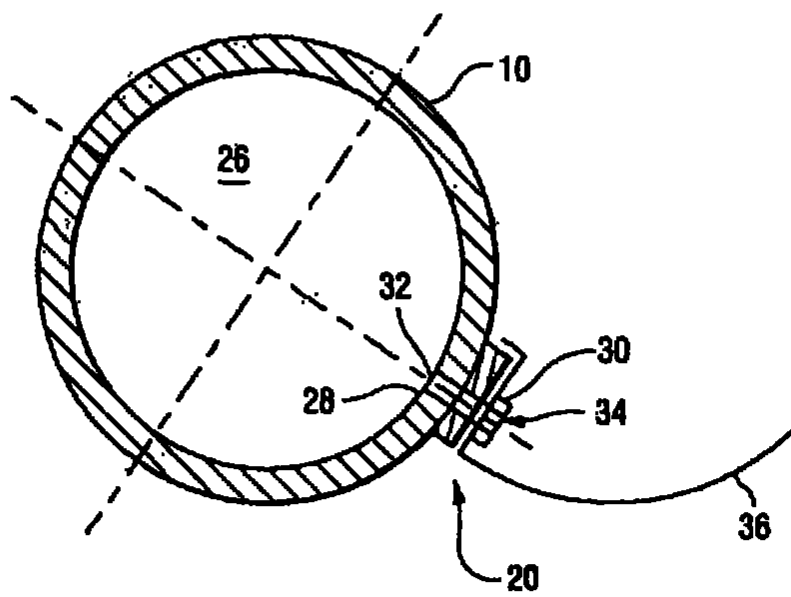


Fig. 2

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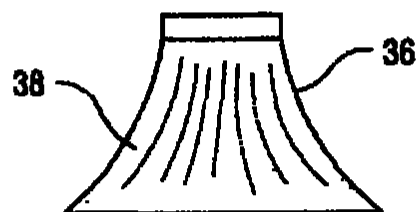


Fig. 3

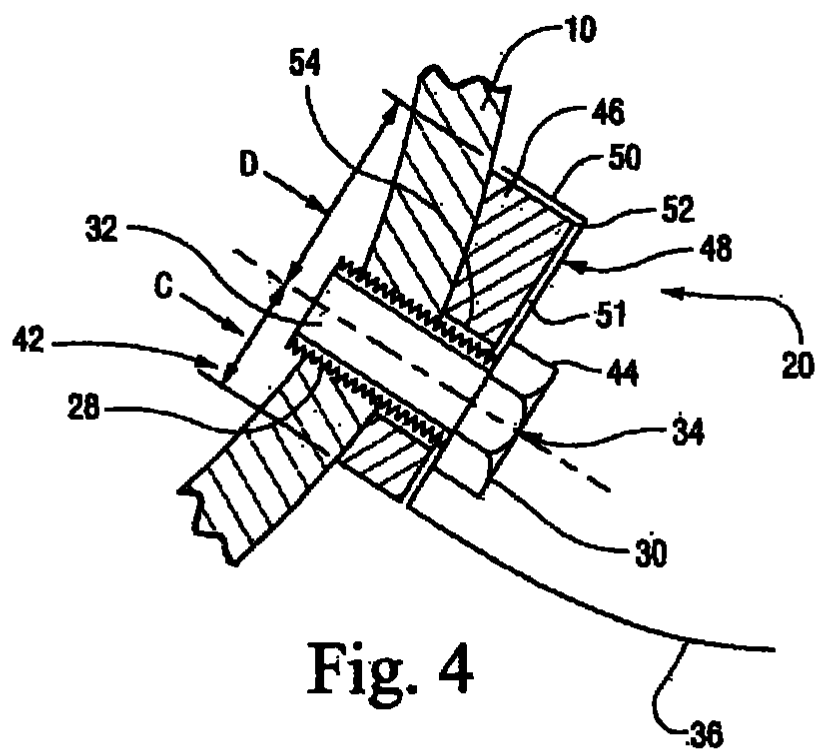


Fig. 4

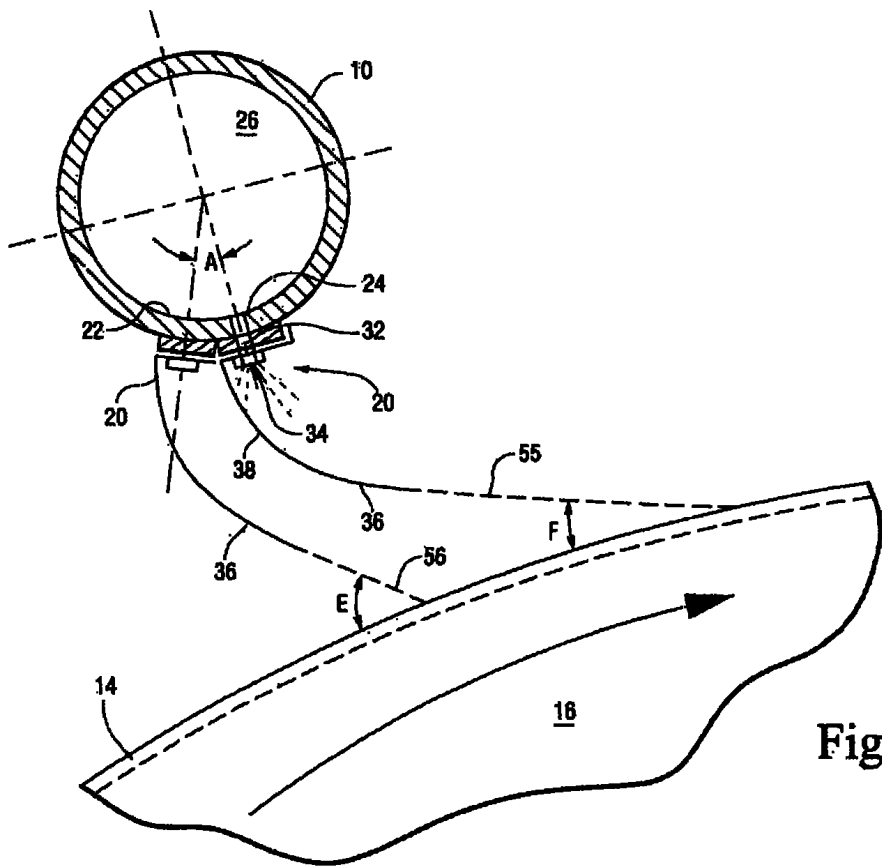


Fig. 5

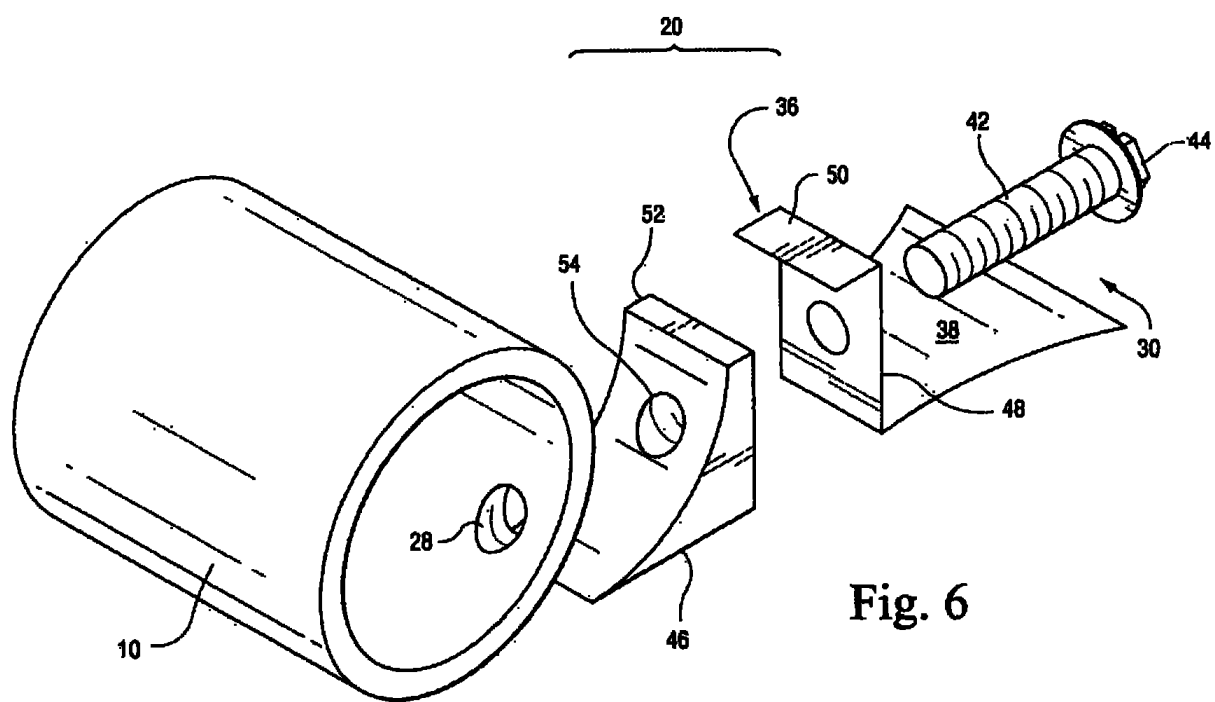


Fig. 6

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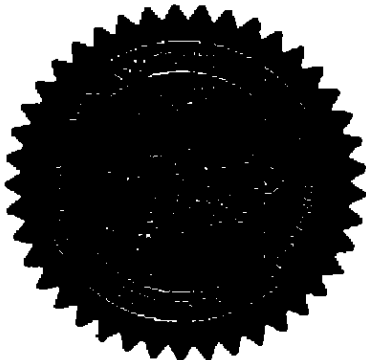
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Funcionario Certificador

LO QUE SE REIVINDICA ES:

1. Un montaje de boquilla para pulverizar un líquido de lavado hacia una esterilla de pulpa, el montaje comprende:

Una boquilla con asegurador integral que tiene un conducto para el líquido de lavado, una salida al conducto para descargar el líquido de lavado y un anexo para asegurar la boquilla aseguradora a una abertura en un tubo líquido de lavado, y

Un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y adaptado para dirigir el líquido de lavado desde la salida hacia la esterilla de pulpa.

2. Un montaje de boquilla como en la reivindicación 1 en donde la boquilla aseguradora incluye una superficie exterior roscada adaptada para acoplar una superficie interior roscada de la abertura en el tubo de líquido de lavado.
3. Un montaje de boquilla como en la reivindicación 1 en donde en la boquilla aseguradora el anexo y el conducto son coaxiales.
4. Un montaje de boquilla como en la reivindicación 1 en donde el conducto está en comunicación fluida con el líquido de lavado en el tubo.

5. Un montaje de boquilla como en la reivindicación 1 en donde la salida del conducto comprende una boquilla para el líquido de lavado.
6. Un montaje de boquilla como en la reivindicación 1 en donde la boquilla aseguradora comprende un vástago hueco y el conducto es un conducto interno a través del vástago hueco.
7. Un montaje de boquilla como en la reivindicación en donde la boquilla aseguradora comprende una cabeza sobre un vástago hueco, en donde la cabeza asegura el dispositivo de dirección de líquido de lavado a la boquilla aseguradora y el conducto es un conducto interior del vástago hueco.
8. Un montaje de boquilla como en la reivindicación 1 que comprende además un bloque entre el tubo y el dispositivo de dirección de líquido de lavado, en donde el bloque incluye una abertura descentrada para recibir la boquilla aseguradora.
9. Un montaje de boquilla como en la reivindicación 1 en donde el dispositivo de dirección de líquido de lavado comprende un labio que incluye una superficie en forma de ventilador curvado que se extiende desde la salida de la boquilla aseguradora hacia la esterilla.
10. Un montaje para pulverizar un líquido de lavado sobre una esterilla de pulpa que comprende:

Un tubo de líquido de lavado que se extiende sustancialmente paralelo a la esterilla de pulpa y se separa por una distancia desde la esterilla la pulpa, en donde el tubo incluye una pluralidad de aberturas para descargar el líquido de lavado que fluye a través del tubo;

Una pluralidad de boquillas aseguradoras dispuestas a lo largo del tubo de líquido de lavado y adaptadas para dirigir el líquido de lavado hacia la esterilla de pulpa;

en donde las boquillas aseguradoras comprenden cada una un vástago hueco adaptado para ser insertado en una de dichas aberturas en el tubo, y

un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y se adapta para dirigir el líquido de lavado desde la salida hacia la esterilla de pulpa, en donde cada uno de los dispositivos de dirección de líquido de lavado se asegura al tubo por al menos una de las boquillas aseguradoras.

11. Un montaje como en la reivindicación 10 en donde las boquillas aseguradoras están dispuestas a lo largo de al menos una hilera paralela a un eje del tubo.
12. Un montaje como en la reivindicación 10 en donde las boquillas aseguradoras están dispuestas a lo largo del tubo en al menos una primer hilera y una segunda hilera, y las boquillas aseguradoras en la

primer hilera están escalonadas con respecto a las boquillas aseguradoras en la segunda hilera.

13. El montaje como en la reivindicación 10 en donde el vástago de cada una de las boquillas aseguradoras es roscado y acopla una superficie roscada de la abertura correspondiente del tubo.
14. Un montaje como en la reivindicación 10 en donde las boquillas aseguradoras comprenden cada una, una cabeza sobre un vástago hueco, en donde la cabeza asegura el dispositivo de dirección de líquido de lavado a la boquilla aseguradora y el conducto es un conducto interior del vástago hueco.
15. Un montaje como en la reivindicación 10 que comprende además un bloque entre el tubo y el dispositivo de dirección de líquido de lavado, en donde el bloque incluye una abertura descentrada para recibir el vástago de la boquilla aseguradora.
16. Un montaje como en la reivindicación 10 en donde el dispositivo de dirección de líquido de lavado comprende un labio que incluye una superficie en forma de ventilador curvada que se extiende desde la salida de una de las boquillas aseguradoras hacia la esterilla.
17. Un método para ensamblar una boquilla que comprende:

Insertar un vástago hueco de una boquilla aseguradora a través de una abertura en el dispositivo de dirección de líquido de lavado;

Unir la boquilla aseguradora a una abertura en el tubo de líquido de lavado de tal forma que el vástago hueco esté en comunicación fluida con el paso del líquido de lavado en el tubo y el dispositivo de dirección de líquido de lavado esté entre el tubo y la cabeza del vástago, y

Asegurar la boquilla aseguradora al tubo de tal forma que el dispositivo de dirección de líquido de lavado esté fijo con respecto al tubo al asegurar la boquilla aseguradora.

18. Un método como en la reivindicación 17 que comprende además insertar el vástago a través de un bloque después de insertar el vástago a través del dispositivo de dirección de líquido de lavado, y en donde asegurar la boquilla aseguradora comprende además apoyar una superficie interior del bloque contra el tubo y una superficie exterior del bloque contra el dispositivo de dirección de líquido de lavado.
19. Un método como en la reivindicación 17 en donde asegurar la boquilla aseguradora incluye apretar las roscas sobre una superficie exterior del vástago en las roscas sobre una superficie interior de la abertura en el tubo.
20. Un método como en la reivindicación 17 en donde el dispositivo de dirección de líquido de lavado es un labio que incluye una superficie plana con una abertura para recibir el vástago y una superficie en forma de ventilador para dirigir el líquido de lavado, en donde asegurar la boquilla aseguradora comprende fijar la superficie plana al tubo.

BOQUILLAS DE PULVERIZACIÓN DE LÍQUIDO DE LAVADO PARA COLCHÓN DE PULPA Y MÉTODO PARA MONTAR BOQUILLA

ANTECEDENTES

La presente invención está relacionada con boquillas para un tubo de pulverización para pulverizar líquido de lavado sobre un colchón de pulpa.

La pulpa es generalmente procesada en molinos por medio el sumergido o la mezcla de trozos de madera en tanques con productos químicos que transforman los trozos de madera en pulpa y luego el blanqueado de la pulpa. El procesamiento incluye por lo general pasos repetidos de mezclado de la pulpa con líquido y la extracción del líquido de la pulpa permitiendo que la pulpa forme colchones sobre tambores de vacío cilíndricos. Los colchones de pulpa se lavan por medio del pulverizado del líquido de lavado sobre los colchones. El líquido de lavado quita los químicos del colchón de pulpa. El líquido de lavado es pulverizado desde las boquillas vinculadas a los tubos para líquido que abarcan el ancho de los tambores de vacío. Existe una necesidad desde hace mucho tiempo de montajes de tubos para líquido y boquilla que pulvericen de manera uniforme líquido de lavado sobre el colchón y que sean poco costosos de fabricar y operar.

SÍNTESIS

Un montaje de tubo de pulverización y boquilla para pulverizar un líquido de lavado sobre una pulpa que incluye: aberturas en el tubo que se extienden a lo largo del tubo abarcando un ancho del colchón de pulpa, que se encuentran alineadas lateralmente a lo largo de dos o más filas de manera tal que las aberturas adyacentes se encuentran en distintas filas, y el montaje de boquilla incluye una boquilla, un bloque de montaje y un labio donde la boquilla incluye un vástago hueco que se vincula a la abertura y asegura el montaje de boquilla al tubo, el bloque tiene una cara que se adapta a la superficie del tubo que rodea la abertura, una cara opuesta que sostiene el labio y un orificio para el vástago de la boquilla que se encuentra descentrado con respecto al centro del bloque, y el labio incluye un abanico curvo para llevar líquido de lavado desde la boquilla hacia el colchón de pulpa, una superficie de montaje a tope con la cara opuesta del bloque y un ángulo

que calza sobre un borde del bloque. El líquido de lavado fluye a través del tubo, el vástago hueco de la boquilla y hacia fuera de la boquilla como un chorro que es por lo general tangencial al labio. El abanico del labio lleva gradualmente el agua hacia el colchón de pulpa y esparce el chorro de forma tal que el agua es pulverizada de manera uniforme sobre el colchón. Las múltiples filas de aberturas y boquillas dirigen el líquido de lavado hacia el colchón en distintas direcciones.

Un montaje de boquilla para pulverizar un líquido de lavado sobre un colchón de pulpa, montaje que comprende: un fijador-boquilla que tiene un conducto interno para el líquido de lavado, una estructura de fijación externa para vincularse a una abertura en un tubo para líquido de lavado y un orificio de salida hacia el conducto interno para descargar el líquido de lavado, y un labio curvo que tiene una superficie curva montada al tubo por medio del fijador-boquilla que se extiende desde el orificio de salida hacia el conducto interno, teniendo la superficie curva un ancho expansible para convertir un chorro de líquido de lavado desde el orificio de salida en una lámina de líquido de lavado dirigida hacia el colchón. Un bloque de montaje puede estar incluido en el montaje entre el tubo y el labio, donde el bloque tiene un orificio descentrado para recibir el fijador-boquilla.

BREVE DESCRIPCIÓN DE LOS DIBUJOS

La Figura 1 es una vista lateral de un montaje de tubo de pulverización y boquilla y un corte transversal de un colchón de pulpa sobre un secador cilíndrico.

La Figura 2 es una vista transversal del montaje de tubo de pulverización y boquilla, que muestra solamente un montaje de boquilla.

La Figura 3 es una vista superior del labio del montaje de boquilla.

La Figura 4 es una vista transversal agrandada del montaje de boquilla que muestra el vástago de boquilla hueco vinculado a una abertura en el tubo, un bloque de montaje para el montaje de boquilla y una porción del labio del montaje de boquilla.

La Figura 5 es una vista transversal del montaje de tubo de pulverización y boquilla tomada a lo largo de la línea 5-5 de la Figura 1 y que muestra una vista lateral de una porción del colchón de pulpa y el secador cilíndrico.

La Figura 6 es una vista isométrica detallada del montaje de boquilla y una porción del tubo.

DESCRIPCIÓN DETALLADA

La Figura 1 muestra un tubo de pulverización 10 que pulveriza un líquido de lavado 12 sobre un colchón de pulpa 14. El colchón (mostrado en línea de puntos) se forma sobre un tambor de vacío cilíndrico giratorio 16. El líquido de lavado se pulveriza de manera uniforme sobre el colchón en una, dos o más láminas de líquido. El tubo de pulverización 10 se coloca cerca de la superficie del colchón 14 y el tambor 16. El tubo de pulverización puede ser un cilindro extendido que abarque el ancho (W) del tambor de vacío. El tubo puede ser circular en su sección transversal, pero puede ser rectangular, curvilíneo o tener alguna otra forma transversal. El tubo es preferentemente hueco y tiene un conducto interno cerrado 26 a través del cual fluye el líquido de lavado. Una fuente 18 de líquido de lavado se encuentra conectada a uno o ambos extremos del tubo.

Los montajes de boquilla de líquido de lavado 20 se encuentran dispuestos a lo largo del tubo 10. Los montajes de boquilla pueden estar alineados en una, dos o más filas que se extienden lateralmente a lo largo del tubo. En la realización mostrada en la Figura 1, los montajes de boquilla se encuentran dispuestos a lo largo de una primera fila 22 y una segunda fila 24. Las filas pueden estar angularmente descentradas en un ángulo (A en la Figura 5) que puede estar en el rango de los 3 grados a los 20 grados. Los montajes de boquilla 20 pueden estar dispuestos para alternarse entre las filas a lo largo del tubo. Los montajes de boquilla pueden estar igualmente separados a lo largo del tubo y la separación puede estar determinada para proporcionar una pulverización relativamente uniforme de líquido de lavado sobre el colchón de pulpa 14. Las líneas de puntos de la Figura 1 entre los montajes de boquilla y el colchón 14 indican un flujo uniforme de dos láminas de líquido de lavado siendo pulverizadas sobre el colchón. Preferentemente, las pulverizaciones desde dos montajes de boquilla adyacentes en la misma fila (y separados por al menos otro montaje de boquilla en otra fila) no se superponen.

La Figura 2 es una vista transversal del tubo 10 y un montaje de boquilla individual 20. La superficie interna del tubo define un conducto para líquido de lavado

26. A lo largo de cada fila en el tubo se encuentra una serie de aberturas 28 separadas a intervalos regulares que reciben un fijador de boquilla 30 del montaje de boquilla. Las aberturas 28 pueden ser roscadas para recibir una porción de vástago roscado del fijador de boquilla. Las aberturas 28 pueden ser achaflanadas para facilitar la inserción del fijador. El líquido de lavado fluye a través de un conducto hueco 32 del vástago del fijador de boquilla. Este conducto hueco tiene un orificio de entrada abierto al conducto para líquido 26 y un orificio de salida 34 para proyectar el líquido de lavado en forma relativamente tangencial a un labio 36 del montaje de boquilla. El fijador de boquilla también asegura el montaje de boquilla al tubo y se extiende a través de orificios en el labio 36 y en el bloque de montaje 46 (Figura 4).

Según se muestra en la Figura 3, el labio 36 puede tener una superficie curva 38 que tiene una sección radialmente hacia dentro (cerca del tubo) que es relativamente tangente a la circunferencia del tubo y perpendicular al chorro de líquido de lavado que fluye desde la boquilla. El labio incluye una porción radialmente hacia fuera que se curva hacia dentro del chorro de líquido de lavado y se expande de manera lateral. El labio puede ser una placa generalmente delgada de metal o plástico que tiene una superficie curva 38, una sección de montaje 48 y un ángulo 50. La sección de montaje 48 es una sección plana que se encuentra a tope con una cara exterior 51 del bloque de montaje 46. El ángulo 50 es un labio en ángulo recto que calza sobre un borde exterior 52 del bloque de montaje. En la vista superior (Figura 3), la superficie curva del labio es relativamente angosta en la cercanía del orificio de salida de la boquilla 34 y se expande en forma de abanico. La superficie curva 38 del labio hace que el chorro de agua se esparza hacia fuera en una pulverización de líquido en forma de abanico que fluye hasta el colchón de pulpa.

La Figura 4 es una vista agrandada de un montaje de boquilla 20 vinculado al tubo 10. El fijador de boquilla 30 incluye un vástago roscado 42 que rosca dentro de una abertura roscada 28 en el tubo. La cabeza 44 del fijador de boquilla puede ser una cabeza de perno hexagonal. En una realización, el fijador de boquilla es un perno que tiene un conducto hueco 32 que proporciona un conducto para fluido de lavado desde el conducto para líquido 26 en el tubo hasta el orificio de salida de la boquilla 34. El fijador de boquilla asegura el montaje de boquilla al tubo.

El montaje de boquilla puede incluir además un bloque de montaje 46 que es generalmente rectangular y tiene un primer lado que se adapta a, y se encuentra a tope con, una superficie externa del tubo. El bloque de montaje incluye un segundo lado, opuesto al primer lado, que es generalmente plano y proporciona una superficie de apoyo para una sección de montaje plana 48 del labio. Un orificio 54 que atraviesa el bloque de montaje recibe al vástago del fijador de boquilla, pero puede no ser roscado. El orificio 54 en el bloque puede estar descentrado (ver la diferencia de las líneas D y C) de un centro del bloque. El desvío permite que el orificio de salida 34 del fijador-boquilla se encuentre muy cerca de la porción radialmente hacia dentro de la superficie curva 38 del labio 36. El segundo lado del bloque de montaje se encuentra a tope con la sección de montaje plana 48 del labio 36, cuando el fijador de boquilla asegura el montaje 20 al tubo. El ángulo 50 del labio es una franja angosta que forma una esquina de 90 grados con respecto a la sección de montaje 48 del labio. Cuando calza con el bloque de montaje, el ángulo 50 se incorpora sobre un borde 52 del bloque de montaje y, de este modo, ayuda a evitar que el labio gire alrededor del bloque de montaje y el fijador de boquilla.

La Figura 5 muestra líquido de lavado saliendo del orificio de salida 34 del conducto 32 a través del fijador de boquilla y fluyendo sobre la superficie curva 38 del labio 36. El labio esparce el chorro de agua y lleva el chorro de agua hacia una tangente del colchón de pulpa 14 y el tambor cilíndrico 16. Preferentemente, la pulverización de líquido de lavado desde cada fila 22, 24 de los montajes de boquilla es generalmente uniforme a través del ancho del colchón. El ángulo (E, F) entre la pulverización de lavado y el colchón depende de la fila del montaje de boquilla y el grado de curvatura en el labio. En la realización mostrada en la Figura 5, dos láminas de líquido de lavado 55, 56 fluyen sobre el colchón de pulpa, donde cada lámina proviene de una de las dos filas de montajes de boquilla.

La Figura 6 es una vista detallada del tubo 10 y un montaje de boquilla 20. Un fijador de boquilla 30 se inserta a través de un orificio en la sección de montaje 48 del labio 36 y un orificio 54 en el bloque de montaje 46. El vástago 42 del fijador de boquilla rosca dentro de un orificio roscado 28 del tubo para asegurar el bloque de

montaje al tubo y el labio al bloque de montaje. El ángulo 50 del labio calza alrededor de un borde del bloque de montaje para evitar la rotación del labio.

Si bien se ha descrito la invención en relación a la que actualmente se considera como la realización más práctica y preferida, debe entenderse que la invención no se limita a la realización revelada sino que, por el contrario, trata de cubrir varias modificaciones y arreglos equivalentes incluidos en el espíritu y alcance de las reivindicaciones adjuntas.

REIVINDICACIONES

Habiendo así especialmente descripto y determinado la naturaleza de la presente invención y la forma como la misma ha de ser llevada a la práctica, se declara reivindicar como de propiedad y derecho exclusivo:

1. Un montaje de boquilla para pulverizar un líquido de lavado sobre un colchón de pulpa, montaje que comprende:

un fijador-boquilla integral que tiene un conducto para el líquido de lavado, un orificio de salida hacia el conducto para descargar el líquido de lavado y un accesorio para asegurar el fijador-boquilla a una abertura en un tubo para líquido de lavado, y

un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y que se encuentra adaptado para dirigir el líquido de lavado desde el orificio de salida hacia el colchón de pulpa.

2. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla incluye una superficie externa roscada adaptada para calzar con una superficie interna roscada de la abertura en el tubo para líquido de lavado.

3. Un montaje de boquilla como el de la reivindicación 1, en el cual en el fijador-boquilla el accesorio y el conducto son coaxiales.

4. Un montaje de boquilla como el de la reivindicación 1, en el cual el conducto se encuentra en comunicación fluida con el líquido de lavado del tubo.

5. Un montaje de boquilla como el de la reivindicación 1, en el cual el orificio de salida del conducto comprende una boquilla para el líquido de lavado.

6. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla comprende un vástago hueco y el conducto es un conducto interno a través del vástago hueco.

7. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla comprende una cabeza sobre un vástago hueco, donde la cabeza asegura el dispositivo de dirección de líquido de lavado al fijador-boquilla y el conducto es un conducto interno del vástago hueco.

8. Un montaje de boquilla como el de la reivindicación 1, que comprende además un bloque entre el tubo y el dispositivo de dirección de líquido de lavado, donde el bloque incluye una abertura descentrada para recibir al fijador-boquilla.

9. Un montaje de boquilla como el de la reivindicación 1, en el cual el dispositivo de dirección de líquido de lavado comprende un labio que incluye una superficie curva en forma de abanico que se extiende desde el orificio de salida del fijador-boquilla hacia el colchón.

10. Un montaje para pulverizar un líquido de lavado sobre un colchón de pulpa que comprende:

un tubo para líquido de lavado que se extiende sustancialmente paralelo al colchón de pulpa y se encuentra separado por una distancia del colchón de pulpa, donde el tubo incluye una pluralidad de aberturas para descargar líquido de lavado que fluye a través del tubo;

una pluralidad de fijadores-boquilla dispuestos a lo largo del tubo para líquido de lavado y adaptados para dirigir líquido de lavado hacia el colchón de pulpa;

donde cada uno de los fijadores-boquilla comprende un vástago hueco adaptado para insertarse en una de dichas aberturas en el tubo, y

un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y que se encuentra adaptado para dirigir el líquido de lavado desde el orificio de salida hacia el colchón de pulpa, donde cada dispositivo de dirección de líquido de lavado se encuentra asegurado al tubo por al menos un fijador-boquilla.

11. Un montaje como el de la reivindicación 10, en el cual los fijadores-boquilla están dispuestos a lo largo de por lo menos una fila paralela a un eje del tubo.

12. Un montaje como el de la reivindicación 10, en el cual los fijadores-boquilla están dispuestos a lo largo del tubo en por lo menos una primera fila y una segunda fila, y los fijadores-boquilla en la primera fila se encuentran alternados con respecto a los fijadores-boquilla en la segunda fila.

13. Un montaje como el de la reivindicación 10, en el cual el vástago de cada uno de los fijadores-boquilla es roscado y calza con una superficie roscada de la correspondiente abertura del tubo.

14. Un montaje como el de la reivindicación 10, en el cual cada uno de los fijadores-boquilla comprende una cabeza sobre un vástago hueco, donde la cabeza asegura el dispositivo de dirección de líquido de lavado al fijador-boquilla y el conducto es un conducto interno del vástago hueco.

15. Un montaje como el de la reivindicación 10, que comprende además un bloque entre el tubo y el dispositivo de dirección de líquido de lavado, donde el bloque incluye una abertura descentrada para recibir al vástago del fijador-boquilla.

16. Un montaje como el de la reivindicación 10, en el cual el dispositivo de dirección de líquido de lavado comprende un labio que incluye una superficie curva en forma de abanico que se extiende desde el orificio de salida de uno de los fijadores-boquillas hacia el colchón.

17. Un método para montar una boquilla que comprende:

insertar un vástago hueco de un fijador-boquilla a través de una abertura en un dispositivo de dirección de líquido de lavado;

vincular el fijador-boquilla a una abertura en un tubo para líquido de lavado de manera tal que el vástago hueco esté en comunicación fluida con un conducto para líquido de lavado en el tubo y el dispositivo de dirección de líquido de lavado esté entre el tubo y una cabeza del vástago, y

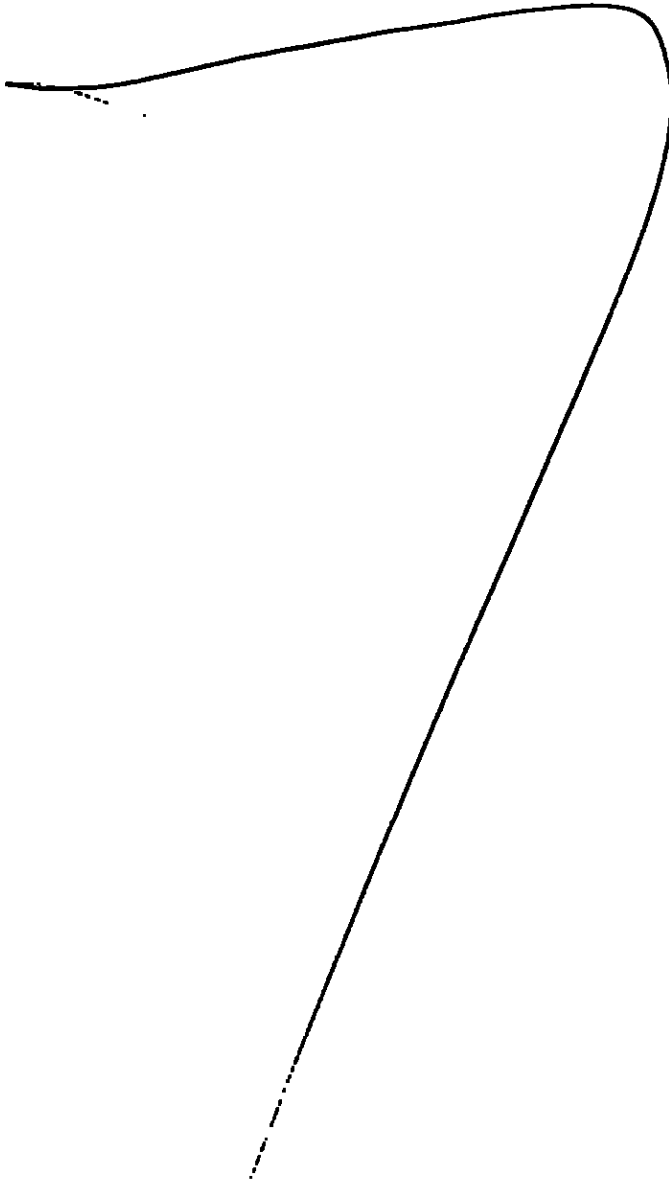
asegurar el fijador-boquilla al tubo de manera tal que el dispositivo de dirección de líquido de lavado quede fijo con respecto al tubo por medio de asegurar el fijador-boquilla.

18. Un método como el de la reivindicación 17, que comprende además insertar el vástago a través de un bloque luego de insertar el vástago a través del dispositivo de dirección de líquido de lavado, y donde asegurar el fijador-boquilla comprende además colocar a tope una superficie interna del bloque contra el tubo y una superficie externa del bloque contra el dispositivo de dirección de líquido de lavado.

19. Un método como el de la reivindicación 17, en el cual asegurar el fijador-boquilla incluye apretar los filetes que se encuentran sobre una superficie externa del vástago dentro de los filetes que se encuentran sobre una superficie interna de la abertura en el tubo.

20. Un método como el de la reivindicación 17, en el cual el dispositivo de dirección de líquido de lavado es un labio que incluye una superficie plana con una abertura para recibir el vástago y una superficie en forma de abanico para dirigir el

líquido de lavado, donde asegurar el fijador-boquilla comprende fijar la superficie plana al tubo.



RESUMEN

Un montaje de boquilla para pulverizar un líquido de lavado sobre un colchón de pulpa, montaje que incluye un fijador-boquilla integral que tiene un conducto para el líquido de lavado, un orificio de salida hacia el conducto para descargar el líquido de lavado y un accesorio para asegurar el fijador-boquilla a una abertura en un tubo para líquido de lavado, y un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y que se encuentra adaptado para dirigir el líquido de lavado desde el orificio de salida hacia el colchón de pulpa.

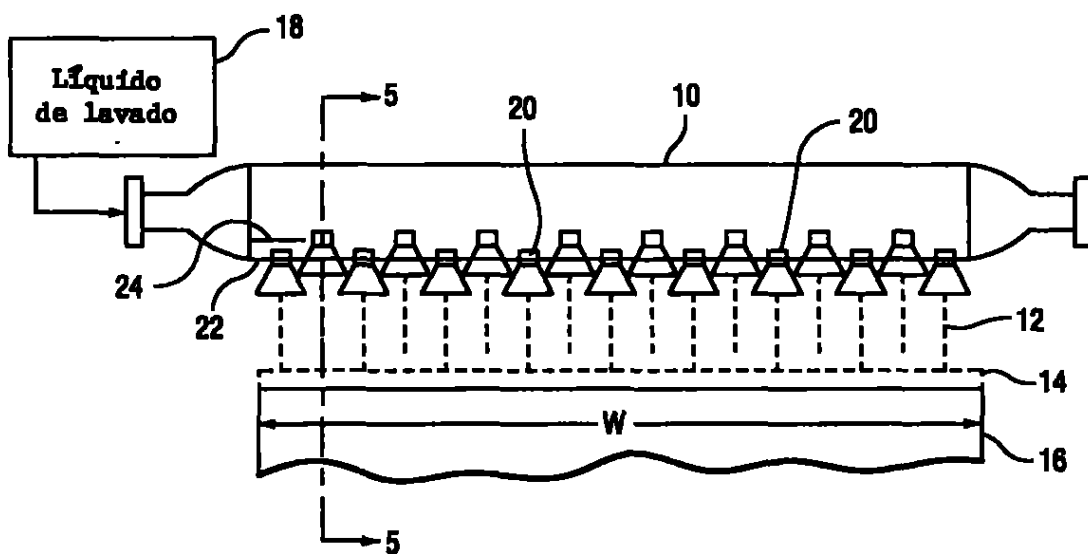


Fig. 1

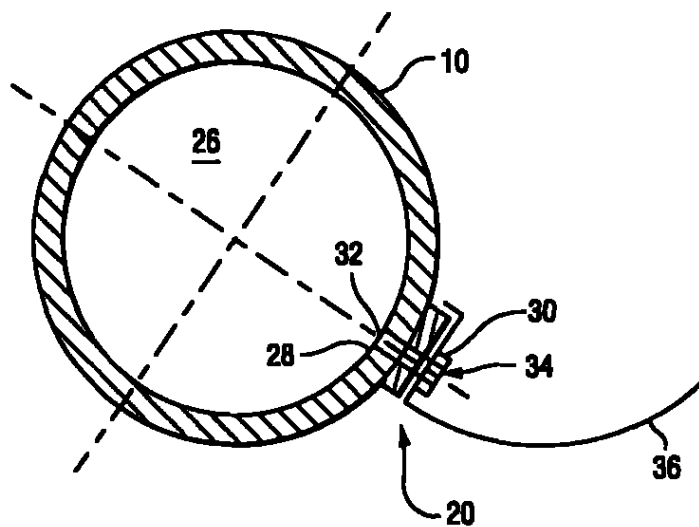


Fig. 2

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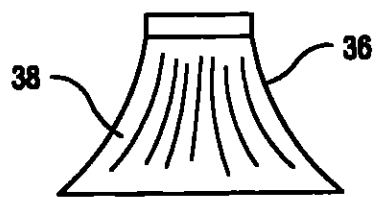


Fig. 3

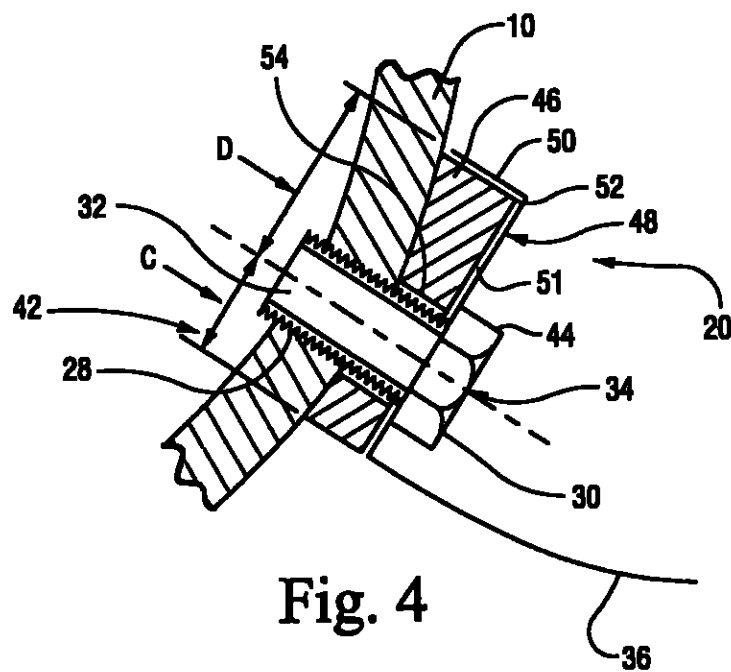
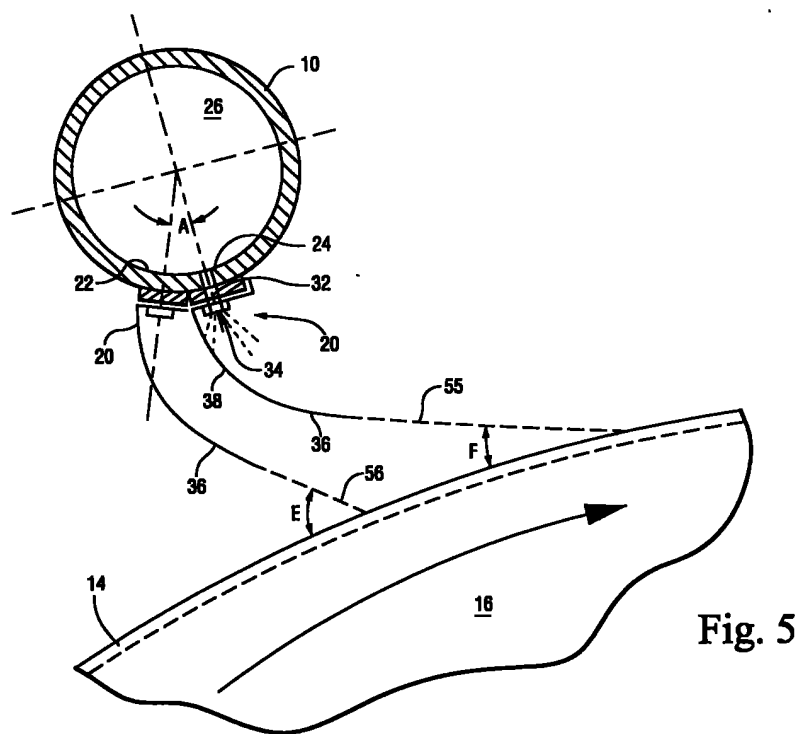


Fig. 4



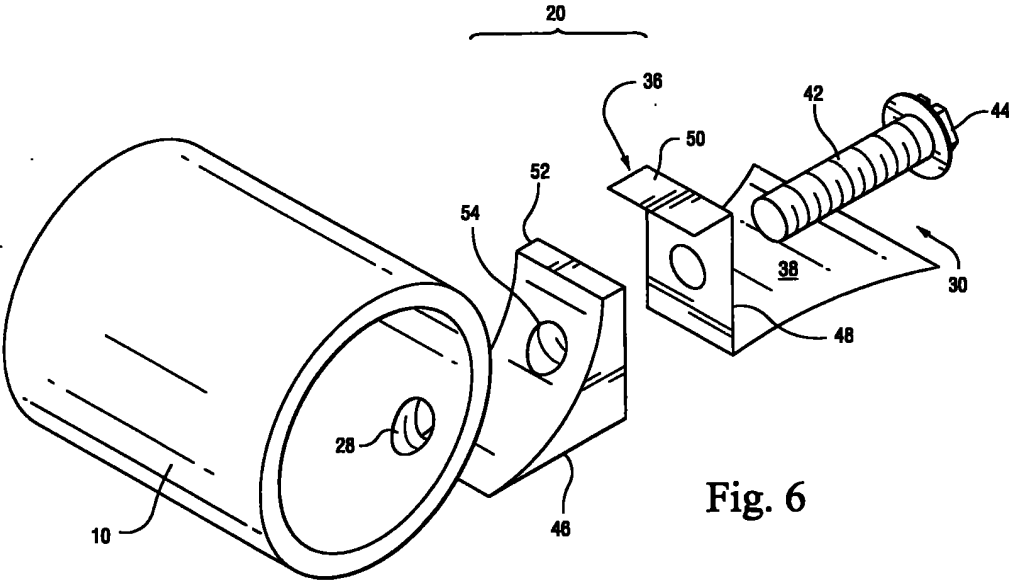


Fig. 6

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 Industria y Comercio SUPERINTENDENCIA		SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO DIVISION DE NUEVAS CREACIONES EXTRACTO PARA PUBLICACIÓN SOLICITUD DE PATENTE DE INVENCION	
(21) N° de solicitud:		(51) Int Cl: B05B 001/008	
22) Fecha de solicitud:		(71) Solicitante(s) ANDRITZ INC.	
(30) Prioridad	(31) No. Prioridad	(32) Fecha	(33) País
	60/743,140	18/01/2008	US
	11/489,968	05/09/2008	US
		(72) Inventor(es) TODD S. GRACE Y OTROS	
		(74) Apoderado: EMILIO FERRERO	
(54) Título: BOQUILLAS DE PULVERIZACIÓN DE LÍQUIDO DE LAVADO PARA COLCHÓN DE PULPA Y MÉTODO PARA MONTAR BOQUILLA			

Reivindicación(es):

1. Un montaje de boquilla para pulverizar un líquido de lavado sobre un colchón de pulpa, montaje que comprende:

un fijador-boquilla integral que tiene un conducto para el líquido de lavado, un orificio de salida hacia el conducto para descargar el líquido de lavado y un accesorio para asegurar el fijador-boquilla a una abertura en un tubo para líquido de lavado, y

un dispositivo de dirección de líquido de lavado que se extiende hacia fuera desde el tubo y que se encuentra adaptado para dirigir el líquido de lavado desde el orificio de salida hacia el colchón de pulpa.

2. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla incluye una superficie externa roscada adaptada para calzar con una superficie interna roscada de la abertura en el tubo para líquido de lavado.

3. Un montaje de boquilla como el de la reivindicación 1, en el cual en el fijador-boquilla el accesorio y el conducto son coaxiales.

4. Un montaje de boquilla como el de la reivindicación 1, en el cual el conducto se encuentra

en comunicación fluida con el líquido de lavado del tubo.

5. Un montaje de boquilla como el de la reivindicación 1, en el cual el orificio de salida del conducto comprende una boquilla para el líquido de lavado.

6. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla comprende un vástago hueco y el conducto es un conducto interno a través del vástago hueco.

7. Un montaje de boquilla como el de la reivindicación 1, en el cual el fijador-boquilla comprende una cabeza sobre un vástago hueco, donde la cabeza asegura el dispositivo de dirección de líquido de lavado al fijador-boquilla y el conducto es un conducto interno del vástago hueco.

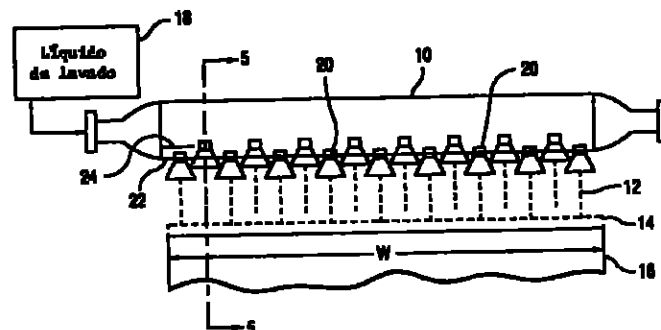


Fig. 1



FORMATO DE DIGITALIZACION
RELACION DE ANEXOS



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Technologies S.A.
Sede: Calle 100 No. 100-100

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Item	No de Unidades	
1	CD	
2	DVD	
3	REVISTA	
4	LIBRO	
5	PERIODICO	
6	DISQUETES	
7	SOBRE DE MANILA	
8	SOBRE BLANCO TAMAÑO CARTA	
9	SOBRE BLANCO TAMAÑO OFICIO	
10	OTROS:	

Observaciones: Arte final.

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
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Fec: 2004-07-16 16:22:08 Dep: 2000 NUEVE CIENTOS
M. 2 PATENTES
EVR: 1 RESQUEPUSIU
A01411 PRESENTACION Folio: 63

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 04 - 81,711
FECHA : OCTUBRE 23 DE 2006

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	54739448	23/10/2006	40,813.500.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	1 TRAMITES DE SOL. DE PATENTE DE IN	463,000.00
		TOTAL :	\$ 463,000.00

CUATROCIENTOS SESENTA Y TRES MIL PESOS

RESPONSABLE : 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

COLO ~~1514~~
15640 801 001 5

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 860176089-2

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Hacienda: 07-003/80-00000-0000
P.O. BOX 01-10 00000 L.P. ZARAGOZA
TEL. 2 4111111
EVO: 1 4111111
AEL 411 4111111

RECIBO OFICIAL DE CAJA : 07 - 2,160
FECHA : ENERO 11 DE 2007

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CANELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	55272331	11/01/2007	440,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-09	OTROS SERVICIOS DE PROPIEDAD I	21 CERTIFICACIONES
			11,000.00
		TOTAL :	\$ 11,000.

SON: ONCE MIL PESOS

RESPONSABLE : _____



RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

COLO 15640 801 001 5

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Rad: 07-003780-00000-0000
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TIB. 2 PATENTES
EVE: 1 REGISTRO
ACL 411 PRESENTACION FOLIO: 83

RECIBO OFICIAL DE CAJA : 07 - 2,158
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***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	Nº. PAGO	FECHA PGO	Vr. PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	55272331	11/01/2007	440,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-09	OTROS SERVICIOS DE PROPIEDAD 1	21 CERTIFICACIONES
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SOM: ONCE MIL PESOS

RESPONSABLE : 
RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

COLO 15640 801 001 5

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

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FOLIO: 83

RECIBO OFICIAL DE CAJA : 06 - 67,581
FECHA : SEPTIEMBRE 4 DE 2006

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CABELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	48872307	04/09/2006	44,412,500.00

***** C O N C E P T O *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
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82		INDICACION DE UNA PRIORIDAD EN NU	130,000.00
		TOTAL :	\$ 130,000.00

SOM: CIENTO TREINTA MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

COLO 15640 801 001 5

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
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***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	55272331	11/01/2007	440,000.00

***** CONCEPTO *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-09 OTROS SERVICIOS DE PROPIEDAD 1	21 CERTIFICACIONES	11,000.00
TOTAL :		11,000.00

SOM: ONCE MIL PESOS

RESPONSABLE : 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

6060 15640 801 005

83
81

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 07 - 1,654
FECHA : ENERO 10 DE 2007

MAQUINARIA DE IMPRIMERIA Y GRAFICA
RUC: 07-003/80-00000-0000
P.O. 2007-01-10 10:22:00 L.M. 2007 INCLUIDO
MR. 2 PATENTES
EVO: 1 MUEBLES
Acl 411 PRESENTACION Form: 83

***** CONSIGNACION *****

DEPOSITANTE	TIPO PASO	BANCO	CUENTA	No. PASO	FECHA PASO	Vr. PASO
CAVELIER ABOGADOS	CONSIGNACION	BANCO POPULAR	050-00110-6	49368288	10/01/2007	57,744,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	02 INVOCACION DE UNA PRIORIDAD EN MI	135,000.00
		TOTAL :	\$ 135,000.00

SON: CIENTO TREINTA Y CINCO MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

COLO 15640 801 001 5

Industria y Comercio
SUPERINTENDENCIA

REQUISITOS MINIMOS PARA ADMISION A TRAMITE
PCT

PATENTE DE INVENCION

☒

MODELO DE UTILIDAD []

- ◆ Indicación de que se solicita la concesión de una patente [☒]
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud [☒]
- ◆ Descripción de la invención [☒]
- ◆ Dibujos de ser estos pertinentes [☒]
- ◆ Comprobante de pago de las tasas establecidas [☒]

COMPLETA [☒]

INCOMPLETA []

DISEÑO INDUSTRIAL []

- ◆ Indicación de que se solicita el registro de Diseño Industrial []
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud []
- ◆ Representación gráfica y fotográfica del Diseño Industrial o muestra del material que incorpora el diseño []
- ◆ Comprobante de pago de las tasas establecidas []

COMPLETA []

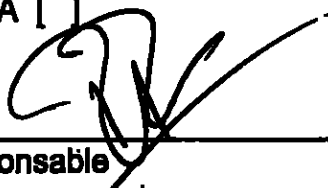
INCOMPLETA []

ESQUEMA DE TRAZADO []

- ◆ Indicación de que se solicita el registro de un Esquema de Trazado []
- ◆ Datos de identificación del solicitante o de la persona que presenta la solicitud []
- ◆ Representación gráfica del esquema trazado []
- ◆ Comprobante de pago de las tasas establecidas []

COMPLETA []

INCOMPLETA []


Firma Responsable

Fecha _____

Carrera 13 No. 27-00 Piso 5, 7 y 10
Conmutador: 3 82 08 40
Fax: 350 52 20
E-mail: info@slc.gov.co
www.slc.gov.co
Bogotá, D.C., Colombia

8543

REPUBLICA DE COLOMBIA
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

Bogotá,
2020

Doctor(a)
FERRERO EMILIO

REFERENCIA	Radicación No. 7 3780
	Trámite 2
	Evento 1
	Actuación 430
	Oficio No. 1205

Como resultado del examen de forma, realizado con fundamento en el artículo 38 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica que:

1. Debe allegar el poder otorgado al abogado que aparece en la solicitud como apoderado, con el lleno de los requisitos exigidos en el Código de Procedimiento Civil. Adicionalmente, deberá presentar el documento que acredita la existencia y representación legal de la sociedad solicitante.

2. Debe allegar copia del documento en que consta la cesión del derecho a la patente otorgado por el(los) inventor(s) al(los) solicitante(s) o a su(s) causante(s) (art. 26-k, Dec 486/2000).

En cumplimiento del artículo 39 de la Decisión 486, se le requiere para que dentro del término de dos (2) meses siguientes a la fecha de notificación del presente oficio, complete los requisitos anteriormente enunciados. En caso de no dar cumplimiento al presente requerimiento, la solicitud se considerará abandonada y perderá su prelación.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Unica No.10 de 2001.

ALIX CARMENZA CESPEDES DE VERGEL
Jefe de la división de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista de
fecha 01 FEB. 2007
adpal