UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	163044

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 04/07/2022 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Morgan Coates/
Name:	Morgan Coates
Registration Number:	64970

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Oklahoma on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
5:21-CV-00211-F	3/12/2021	Western District of Oklahoma

PLAINTIFF	DEFENDANT
Big D Industries Inc	Fresh Products Inc

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US10,145,098 B2	12/4/2018	Fresh Products Inc
2	US10, 501, 924 B2	12/10/2019	Fresh Products Inc
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
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5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

Print Save As... Reset

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:19-cv-05994	7/11/2019	Central District of California

PLAINTIFF	DEFENDANT
FRESH PRODUCTS, INC.	IMPACT PRODUCTS, LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,145,098	12/4/2018	FRESH PRODUCTS, INC.
2			
3			
4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:19-cv-05994	7/11/2019	Central District of California

PLAINTIFF	DEFENDANT
FRESH PRODUCTS, INC.	IMPACT PRODUCTS, LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,145,098	12/4/2018	FRESH PRODUCTS, INC.
2			
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4			
5			

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED

INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

Stipulation to Transfer Venue

CLERK	(BY) DEPUTY CLERK	DATE
Kiry K. Gray	/s/ Margo Mead	9/27/2019

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:19-cv-05994	7/11/2019	Central District of California

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FRESH PRODUCTS, INC.	IMPACT PRODUCTS, LLC

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,145,098	12/4/2018	FRESH PRODUCTS, INC.
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Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 10,145,098 B2
APPLICATION NO. : 14/925369
DATED : December 4, 2018
INVENTOR(S) : Douglas S. Brown et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Specification

In Column 3, Line 60, change "view" to --side view--.

In Column 4, Line 62, change "possible" to --possible.--.

In Column 5, Line 62, change "4/5and/or" to --4/5 and/or--.

In the Claims

In Column 9, Line 20, Claim 16, change "the" to --the urinal--.

In Column 9, Line 59, Claim 19, change "extending from" to --extending--.

In Column 9, Line 60, Claim 19, change "frame," to --frame;--.

In Column 10, Line 5, Claim 22, change "the" to --the urinal--.

In Column 10, Line 66, Claim 38, change "face:" to --face;--.

In Column 11, Line 31, Claim 39, change "the" to --the urinal--.

Signed and Sealed this
Fourteenth Day of May, 2019

Andrei Iancu
Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 04/26/2019

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
CRANE, LAUREN ASHLEY	

ART UNIT	PAPER NUMBER
3754	

NOTIFICATION DATE	DELIVERY MODE
04/26/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

efiling@knobbe.com
jayna.cartee@knobbe.com

Response to the Request for Certificate of Correction	Patent No. 10145098	Applicant(s) Brown et al.
	Issue Date 12/04/2018	Docket No. FRESHPR.061A

This is in response to the request for a Certificate of Correction filed 16 April 2019

☑ **Request Approval- In- Part** - Consideration has been given to your request for the issuance of a Certificate of Correction under the provisions of 37 CFR 1.322 and/or 37 CFR 1.323. The Request is improper and approved in part for the reason(s) below:

☐ **Supersede/Vacate** - The Certificate of Correction issued in error, in that error(s) was made in identifying the patent number and/or keying text/corrections. See Other Comments below:

1. ☑ Assignees' names and addresses (assignment data) printed in a patent, are based solely on information supplied in the appropriate space for identifying the assignment data on the Issue Fee Transmittal Form (PTOL-85b). Any request for a patent to be corrected to state the name of the assignee, must state that the assignment was submitted for recordation as set forth in in 37 CFR 3.11 before issuance of the patent. Petition under 3.81 is to be filed for consideration of correction to assignee. The petition fee set forth in 37 CFR 1.17(i)(1) (currently $140, $70, $35 for large, small and micro entities, respectively.

2. ☐ The alleged error in _____, is in fact an Amendment and/or Change made by the examiner and considered to be in accordance with the permissible amendments enumerated in the Manual of Patent Examining Procedure (MPEP) Section 1302.04. Applicant did not file objection or amendment under 37 CFR 1.312 prior to payment of the issue fee.

3. ☐ A petition under CFR 1.182 is required to correct the alleged errors in spelling or order of inventor's names, since inventor's names are printed solely in accordance with the type-written names, and in the order of the type-written names on the Application Data Sheet (ADS). The required fee currently under rule 1.17(f) (small entity $200, large entity $400, micro entity fee $100).

4. ☐ With respect to the alleged error in changing the inventor name on the patent due to clerical error in ADS/OATH of related patents. The inventors name is printed in accordance with the OATH/ADS submitted at the time of filing the application. However, your attention is directed to C.F.R. 1.324, wherein a request is being made to change, add or delete inventor(s), after issuance of the patent.

5. ☐ With respect to the alleged error in _____, comparison of the printed patent with the corresponding location in the application file reveals that there is no discrepancy.

6. ☐ With respect to 37 CFR 1.72, the title should be brief but technically accurate and descriptive and should contain fewer than 500 characters. Inasmuch as the words new, improved, improvement of, and improvement in are not considered as part of the title of an invention, these words should not be included at the beginning of the title of the invention and will be deleted when the Office enters the title into the Offices computer records, and when any patent issues.

7. ☐ The fee for correction under 37 CFR 1.323 is set forth in 37 CFR 1.20(a). ☐Partial fee ☐No fee was received with your request. Full fee payment is required before further action is taken on this request.

8. ☐ With respect to the request for corrected Letters Patent (Grant), corrections to the original Letters Patent are made under the provisions of Rule 1.322(b), not Rule1.323, unless a petition is granted.

9. ☑ Other Comments: See Continuation Sheet

Further correspondence concerning this matter should be filed and directed to the Certificates of Correction Branch.

Legal Instrument Examiner: /ENNIS L YOUNG/ LIE, ODM

Phone: (571)272-3435

Certificates of Correction Branch email:CustomerServiceCoC@uspto.gov

CoC Central Phone Number: (703)756-1814

If applicable, information regarding a petition under 37 CFR 1.183 should be directed to the attention of the Commissioner for Patents using the FAX number (571) 273-8300

Continuation of Other Comments: A petition under 3.81 is to be filed and granted by the Office of Petitions before certificate of correction can be issued correcting the name of assignee on front page of patent.

Please Direct All Correspondence to Customer Number 20995

REQUEST FOR CERTIFICATE OF CORRECTION

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
Patent No.	:	10,145,098
Issue Date	:	December 4, 2018
Title	:	URINAL SCREENS
Conf. No.	:	9748

Commissioner for Patents
Office of Data Management
Attention: Certificates of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Enclosed for filing is a Certificate of Correction in connection with the above-identified patent.

Some of the errors cited in the Certificate of Correction appear to have been incurred through the fault of the PTO (see 35 USC § 254, 37 CFR § 1.322, and MPEP § 1480). However, because this may not apply to each item in the Certificate of Correction, the $150 fee under 37 CFR § 1.20(a) is submitted herewith. Please charge any additional fees to our Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: April 15, 2019

By: /Edward A. Schlatter/
Edward A. Schlatter
Registration No. 54,384
Registered Practitioner
Customer No. 20995
(949) 760-0404

30036734

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 10,145,098

APPLICATION NO. : 14/925369

ISSUE DATE : December 4, 2018

INVENTOR(S) : Douglas S. Brown

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Page 1 (Item 73), Assignee, line 1, change "Toldeo," to --Perrysburg,--

In Column 3, Line 60, change "view" to --side view--.

In Column 4, Line 62, change "possible" to --possible.--.

In Column 5, Line 62, change "4/5and/or" to --4/5 and/or--.

In Column 9, Line 20, Claim 16, change "the" to --the urinal--.

In Column 9, Line 59, Claim 19, change "extending from" to --extending--.

In Column 9, Line 60, Claim 19, change "frame," to --frame;--.

In Column 10, Line 5, Claim 22, change "the" to --the urinal--.

In Column 10, Line 66, Claim 38, change "face:" to --face;--.

In Column 11, Line 31, Claim 39, change "the" to --the urinal--.

30036723

MAILING ADDRESS OF SENDER:

Edward A. Schlatter
KNOBBE, MARTENS, OLSON & BEAR, LLP
2040 Main Street, 14th Floor
Irvine, California 92614

DOCKET NO. FRESHPR.061A

PTO/SB/44 Equivalent

Electronic Patent Application Fee Transmittal

Application Number:	14925369
Filing Date:	28-Oct-2015
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Edward A. Schlatter/Alisa Hocking
Attorney Docket Number:	FRESHPR.061A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
CERTIFICATE OF CORRECTION	2811	1	150	150

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**150**

Electronic Acknowledgement Receipt

EFS ID:	35739082
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Edward A. Schlatter/Sandra Autry
Filer Authorized By:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	16-APR-2019
Filing Date:	28-OCT-2015
Time Stamp:	14:37:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$150
RAM confirmation Number	041719INTEFSW14382600
Deposit Account	111410
Authorized User	Sandra Autry

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Certificate of Correction	Request-COC.pdf	84178 885080c5d5c105cc572622b5a91f594c3aea9319	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30232 1804fce0364d0136a4546e7d70cfe5d46b5a49b3	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	114410		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	12/04/2018	10145098	FRESHPR.061A	9748

20995 7590 11/14/2018

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Douglas S. Brown, Toledo, OH;
Fresh Products, Inc., Toledo, OH;
Jeffrey A. Smith, Perrysburg, OH;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	**Art Unit**
	LAUREN CRANE	3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	19	17	29	33	47	49								
2	2	20	18	30	34	48	50								
3	3	21	19	31	35	49	51								
4	4	16	20	32	36	50	52								
5	5	22	21	33	37	51	53								
6	6	39	22	34	38	52	54								
7	7	17	23	35	39	53	55								
8	8	18	24	36	40	54	56								
9	9	23	25	37	41										
10	10	24	26	38	42										
11	11	40	27	41	43										
12	12	~~055~~	28	42	44										
1	13	25	29	43	45										
13	14	26	30	44	46										
14	15	27	31	45	47										
15	16	28	32	46	48										

Change(s) applied
to document,
/J.E.B./
8/18/2018

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 54	
/LAUREN CRANE/ Primary Examiner.Art Unit 3754 (Primary Examiner)	8/2/201 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 1

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 1 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	D255,744 S	07-08-1980	Dekko	
	2	D258,181 S	02-10-1981	Adam	
	3	D258,472 S	03-10-1981	Adam	
	4	D280,267 S	08-27-1985	Bryant, et al.	
	5	D329,893 S	09-29-1992	Luedtke, et al.	
	6	D341,414 S	11-16-1993	Baker	
	7	D370,938 S	06-18-1996	Roach	
	8	D393,896 S	04-28-1998	Wagner, et al.	
	9	D422,061 S	03-28-2000	Lee	
	10	D427,295 S	06-27-2000	Wagner	
	11	D438,710 S	03-13-2001	Chen	
	12	D442,246 S	05-15-2001	McCabe, et al.	
	13	D456,492 S	04-30-2002	Lourens	
	14	D464,122 S	10-08-2002	Mangan	
	15	D520,610 S	05-09-2006	Wrate	
	16	D528,193 S	09-12-2006	Lee	
	17	D561,327 S	02-05-2008	DeJonge, et al.	
Change(s) applied to document, /J.E./ 8/27/2018	**18**	D598,075 S	08-11-2009	Uhl	
	19	D639,410 S 06/2011	~~06-07-2001~~	Ramirez	
	20	D678,482 S	03-19-2013	Williams	
	21	D678,483 S	03-19-2013	Barker	
	22	D682,398 S	05-14-2013	Lee	
	23	D687,524 S	08-06-2013	Heiser	
	24	D687,525 S	08-06-2013	Heiser	
	25	333,935 A	01-05-1886	Duncan	
	26	555,888 A	03-03-1896	Roberts	
	27	810,973 A	01-30-1906	Pattenden, et al.	
	28	950,574 A	03-01-1910	Morgan	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Examiner Signature	/LAUREN A CRANE/	Date Considered	06/21/2017

*__Examiner:__ Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A

CONFIRMATION NO. 9748

POA ACCEPTANCE LETTER

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

OC00000010336067 1

Date Mailed: 10/26/2018

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 10/23/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mabebe/

Please Direct All Correspondence to Customer Number 20995

RESPONSE TO INFORMATIONAL NOTICE

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Art Unit	:	3754
Conf No.	:	9748

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The above-captioned application was filed without a Declaration and/or Substitute Statement. Enclosed in compliance with 37 CFR 1.53(f) are the following.

(X) Declarations for:

Douglas S. Brown, Jeffrey A. Smith

(X) Power of Attorney by Applicant.

The Commissioner is hereby authorized to charge any additional fees which may be required, now or in the future, or credit any overpayment, to Account No. 11-1410.

/Edward A. Schlatter/
Edward A. Schlatter
Registration No. 32,297
Attorney of Record
Customer No. 20995
(949) 760-0404

28897701

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Title: URINAL SCREEN

Inventors: Douglas S. Brown; Jeffrey A. Smith

Declaration

This Declaration is directed to the application identified above that:

Was filed **on October 28, 2015** as U.S. or International Application No. **14/925,369** and incorporating any amendments made thereto prior to the signature date of this Declaration.

As a named inventor, I declare that:

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.

I have reviewed and understand the contents of the above-identified application, including the claims, as amended by any amendment.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

Assignment from Inventors

WHEREAS, **above-identified inventors** (individual(s) hereinafter "ASSIGNOR") invented certain new and useful improvements, technology, inventions, developments, ideas, ornamental designs, or discoveries, and hereby assign or are under an obligation to assign to the below identified Assignee the above-titled application (collectively hereinafter referred to as the "Work") for which an application for Letters Patent in the United States (identified above) has been prepared for filing with the United States Patent and Trademark Office (hereinafter the "Application").

AND WHEREAS, **Fresh Products, Inc.**, with its principal place of business at 4010 South Avenue, Toledo, Ohio 43615 (hereinafter the "ASSIGNEE"), desires to acquire the entire right, title, and interest in and to the Application and the Work.

NOW, THEREFORE, for good and valuable consideration of which receipt is hereby acknowledged, ASSIGNOR hereby acknowledges that ASSIGNOR has sold, assigned, transferred and set over, and by these presents does hereby sell, assign, transfer and set over, unto said ASSIGNEE, its successors, legal representatives and assigns, the entire right, title, and interest throughout the world in the Application and the Work, including all Patent Properties filed or issued upon the Application and the Work; where "Patent Properties" include, but are not limited to:

all provisional applications relating thereto (including but not limited to U.S. Provisional Application No. **62/075,827**, filed **November 5, 2014**);

all nonprovisional applications claiming priority to aforementioned provisional(s) and/or the present Application, including, all divisions, continuations, continuations-in-part, and reissues, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof; and

all rights of priority under International Conventions and any related Letters Patent which may hereafter be granted or filed in any country or countries foreign to the United States, all extensions, renewals and reissues thereof.

ASSIGNOR hereby acknowledges the ASSIGNEE as the Applicant for all aforementioned Patent Properties, and authorizes and requests the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all related Letters Patent to the ASSIGNEE, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND ASSIGNOR DOES HEREBY sell, assign, transfer, and convey to ASSIGNEE, its successors, legal representatives, and assigns all claims for damages and all remedies arising out of any violation of the rights assigned hereby that may have accrued prior to the date of assignment to ASSIGNEE, or may accrue hereafter, including, but not limited to, the right to sue for, collect, and retain damages for past infringements of said Letters Patent before or after issuance.

AND ASSIGNOR DOES HEREBY covenant and agree that ASSIGNOR will communicate to said ASSIGNEE, its successors, legal representatives and assigns, any facts known to ASSIGNOR respecting the Work, and testify in any legal proceeding, assist in the preparation of any other Patent Property relating to the Application and the Work or any improvements made thereto, sign/execute all lawful papers, authorize the filing of and execute and make all rightful oaths and/or declarations in connection with the Application and the Work including any improvements made thereto, any patent applications filed therefrom, and any continuing application filed from any of the aforementioned applications, and generally do everything possible to aid the ASSIGNEE, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for the Work in all countries.

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))
Application Data Sheet filed previously or concurrently

Title: URINAL SCREEN

Inventors: Douglas S. Brown; Jeffrey A. Smith

Legal Name of Inventor: Douglas S. Brown

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 23 day of April, 2016.

Signature: [signature]

Signature before a Notary is desirable but not required. *When signed in presence of a Notary, please attach the appropriate notarial documentation.*

COMBINED DECLARATION & ASSIGNMENT (37 CFR 1.63(e))

Application Data Sheet filed previously or concurrently

Docket No.: FRESHPR.061A

Title: URINAL SCREEN

Inventors: Douglas S. Brown; Jeffrey A. Smith

Legal Name of Inventor: Jeffrey A. Smith

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 28th day of April, 2016.

Signature: _____

Signature before a Notary is desirable but not required. *When signed in presence of a Notary, please attach the appropriate notarial documentation.*

21881299

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 11/30/2014 OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	14/925,369
Filing Date	October 28, 2015
First Named Inventor	Douglas S. Brown
Title	URINAL SCREENS
Art Unit	3754
Examiner Name	Lauren Ashley Crane
Attorney Docket Number	FRESHPR.061A

SIGNATURE of Applicant or Patent Practitioner

Signature	/Edward A. Schlatter/	Date (Optional)	October 23, 2018
Name	Edward A. Schlatter	Registration Number	32,297
Title (if Applicant is a juristic entity)	Attorney of Record		
Applicant Name (if Applicant is a juristic entity)	FRESH PRODUCTS, INC.		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

D oc Code: PA.
D ocument Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 11/30/2014. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

20995

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

FRESH PRODUCTS, INC.

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	/Douglas S. Brown/	Date (Optional)	
Name	Douglas S. Brown		
Title	Chief Executive Officer		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	14925369
Filing Date:	28-Oct-2015
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
UTILITY APPL ISSUE FEE	2501	1	500	500
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**500**

Electronic Acknowledgement Receipt

EFS ID:	34092711
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Edward A. Schlatter/Kealani Aguon
Filer Authorized By:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	23-OCT-2018
Filing Date:	28-OCT-2015
Time Stamp:	18:08:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$500
RAM confirmation Number	102418INTEFSW18090200
Deposit Account	111410
Authorized User	Kealani Aguon

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue-Transmittal.pdf	982392 f5b7ce98892fc25da8de144b3d2038d9206beb24	no	1
Warnings:					
Information:					
2	Applicant Response to Pre-Exam Formalities Notice	Response-Info-Notice.pdf	74430 2fbb322b329a6f56671d064841f1d11600079562	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	Declarations.pdf	4617115 f1af51f38b53f8fb7c7e6425df3c54f5297c88c9	no	4
Warnings:					
Information:					
4	Power of Attorney	Power-of-Attorney.pdf	4564587 cab725b7e02f0afa1eb0338af8f59b57a13a715e	no	2
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	31932 471a9e2b5e6a63f40b710e894f4e122084c0a923	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	10270456		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20995 7590 08/15/2018
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

TITLE OF INVENTION: URINAL SCREENS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	11/15/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-256100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 Knobbe Martens
2 Olson & Bear LLP
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: FRESH PRODUCTS, INC.
(B) RESIDENCE: (CITY and STATE OR COUNTRY): Toldeo, OH

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☒ Payment by credit card. ~~Form PTO-2038 is attached.~~
☒ The director is hereby authorized to charge ~~the required fee(s)~~, any deficiency, or credits any overpayment, to Deposit Account Number 11-1410 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
☐ Applicant certifying micro entity status. See 37 CFR 1.29
NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
☐ Applicant asserting small entity status. See 37 CFR 1.27
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
☐ Applicant changing to regular undiscounted fee status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date October 23, 2018
Typed or printed name Edward A. Schlatter Registration No. 32,297

VECTAIR EX.1002, PG.32

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 10/23/2018

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

EXAMINER
CRANE, LAUREN ASHLEY

ART UNIT	PAPER NUMBER
3754	

NOTIFICATION DATE	DELIVERY MODE
10/23/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jayna.cartee@knobbe.com
efiling@knobbe.com

Response to Rule 312 Communication	Application No.	Applicant(s)
	14/925,369	BROWN ET AL.
	Examiner	Art Unit
	LAUREN CRANE	3754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

1. ☒ The amendment filed on *02 October 2018* under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.

The changes were previously agreed upon in an examiners amendment and inadvertently left out of the examiner amendments.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

AMENDMENTS TO THE CLAIMS

1. (Canceled)

2. (Previously Presented) The urinal screen of Claim 13, wherein each of the plurality of openings is defined by a polygonal perimeter structure.

3. (Previously Presented) The urinal screen of Claim 13, wherein each of the plurality of openings is defined by a perimeter structure having a plurality of braces and corners.

4. (Previously Presented) The urinal screen of claim 3, wherein each of the plurality of first posts extends from a corner of a perimeter structure defining one or more of the plurality of openings.

5. (Previously Presented) The urinal screen of claim 3, wherein each of the plurality of second posts extends from a midpoint of a brace of a perimeter structure defining one or more of the plurality of openings.

6. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. (Previously Presented) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

10. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. (Previously Presented) The urinal screen of Claim 13, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. (Previously Presented) The urinal screen of Claim 13, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 3/8 of the thickness of the urinal screen.

13. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame;

wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and

wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.

14. (Original) The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. (Original) The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

VECTAIR EX.1002, PG.36

16. (Previously Presented) The urinal screen of claim 13, wherein perimeter structures that define the plurality of openings occupy less than one fifth of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

17. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;

wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;

wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and wherein:

the first end of the first brace intersects at a corner with the two other braces;

the first end of the second brace intersects at a corner with the two other braces; and

the first end of the third brace intersects at a corner with ~~no more than~~ the two other braces;

a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame; and

a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.

18. (Original) The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

VECTAIR EX.1002, PG.37

19. (Original) The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

20. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 13; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

21. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 17; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

22. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 42; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

23. (Previously Presented) The urinal screen of Claim 13, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

24. (Previously Presented) The urinal screen of claim 23, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

25. (Previously Presented) The urinal screen of Claim 17, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

26. (Previously Presented) The urinal screen of claim 25, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

27. (Previously Presented) The urinal screen of Claim 42, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

VECTAIR EX.1002, PG.38

28. (Previously Presented) The urinal screen of claim 27, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

29. (Previously Presented) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a polygonal shape.

30. (Previously Presented) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a hexagonal shape.

31. (Previously Presented) The urinal screen of Claim 17, wherein at least some of the plurality of interconnected cells comprise a polygonal shape.

32. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of interconnected cells comprises a polygonal shape.

33. (Previously Presented) The urinal screen of Claim 17, wherein each of the first brace, the second brace, and the third brace has at least one of the plurality of first posts connected thereto and at least one of the plurality of second posts connected thereto.

34. (Previously Presented) The urinal screen of Claim 17, further comprising one or more additional posts connected to the frame at an area other than a brace or corner.

35. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a brace of the frame, and each of the plurality of second posts is connected to a brace of the frame.

36. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a corner of the frame, and each of the plurality of second posts is connected to a corner of the frame.

37. (Previously Presented) The urinal screen of Claim 17, wherein at least some of the plurality of first posts and plurality of second posts are connected to braces of the frame, and at least some of the plurality of first posts and plurality of second posts are connected to corners of the frame.

38. (Previously Presented) The urinal screen of Claim 17, wherein a majority of the plurality of interconnected cells have identical shapes.

39. (Previously Presented) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/3 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

40. (Previously Presented) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/8 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

41. (Previously Presented) The urinal screen of Claim 17, wherein the second end of the first brace intersects at a corner with no more than two other braces, the second end of the second brace intersects at a corner with no more than two other braces, and the second end of the third brace intersects at a corner with no more than two other braces.

42. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and

wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.

VECTAIR EX.1002, PG.40

43. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/3 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

44. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 3/8 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

45. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 4/9 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

46. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/3 of the thickness of the urinal screen.

47. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/4 of the thickness of the urinal screen.

48. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/8 of the thickness of the urinal screen.

49. (Previously Presented) The urinal screen of Claim 42, wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

50. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

VECTAIR EX.1002, PG.41

51. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy more than 2/3 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

52. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy at least 3/4 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

53. (Previously Presented) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the corners.

54. (Previously Presented) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the braces.

55. (Previously Presented) The urinal screen of Claim 42, wherein six of said plurality of first posts and six of said plurality of second posts are positioned along the perimeter of the at least some of the plurality of openings, so as to surround the at least some of the plurality of openings.

56. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings comprise a contoured side surface to further reduce splashing on the user of the urinal by deflecting a flow of urine.

VECTAIR EX.1002, PG.42

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

AMENDMENT AFTER NOTICE OF ALLOWANCE UNDER 37 CFR §1.312

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

This document is being filed after the mailing of the Notice of Allowance dated August 15, 2018, in the above-identified application. Pursuant to 37 C.F.R. § 1.312, this document is being filed before or with payment of the issue fee. Please amend the application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Summary of Interview begins on page 10 of this paper.

Remarks/Arguments begin on page 11 of this paper.

VECTAIR EX.1002, PG.43

AMENDMENTS TO THE CLAIMS

1. (Canceled)

2. (Previously Presented) The urinal screen of Claim 13, wherein each of the plurality of openings is defined by a polygonal perimeter structure.

3. (Previously Presented) The urinal screen of Claim 13, wherein each of the plurality of openings is defined by a perimeter structure having a plurality of braces and corners.

4. (Previously Presented) The urinal screen of claim 3, wherein each of the plurality of first posts extends from a corner of a perimeter structure defining one or more of the plurality of openings.

5. (Previously Presented) The urinal screen of claim 3, wherein each of the plurality of second posts extends from a midpoint of a brace of a perimeter structure defining one or more of the plurality of openings.

6. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. (Previously Presented) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

10. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. (Previously Presented) The urinal screen of Claim 13, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. (Previously Presented) The urinal screen of Claim 13, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 3/8 of the thickness of the urinal screen.

VECTAIR EX.1002, PG.44

13. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame;

wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and

wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.

14. (Original) The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. (Original) The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

VECTAIR EX.1002, PG.45

16. (Previously Presented) The urinal screen of claim 13, wherein perimeter structures that define the plurality of openings occupy less than one fifth of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

17. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;

wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;

wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and wherein:

the first end of the first brace intersects at a corner with the two other braces;

the first end of the second brace intersects at a corner with the two other braces; and

the first end of the third brace intersects at a corner with ~~no more than~~ the two other braces;

a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame; and

a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.

18. (Original) The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

VECTAIR EX.1002, PG.46

19. (Original) The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

20. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 13; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

21. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 17; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

22. (Previously Presented) A urinal system comprising:

the urinal screen of Claim 42; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

23. (Previously Presented) The urinal screen of Claim 13, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

24. (Previously Presented) The urinal screen of claim 23, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

25. (Previously Presented) The urinal screen of Claim 17, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

26. (Previously Presented) The urinal screen of claim 25, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

27. (Previously Presented) The urinal screen of Claim 42, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

VECTAIR EX.1002, PG.47

28. (Previously Presented) The urinal screen of claim 27, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

29. (Previously Presented) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a polygonal shape.

30. (Previously Presented) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a hexagonal shape.

31. (Previously Presented) The urinal screen of Claim 17, wherein at least some of the plurality of interconnected cells comprise a polygonal shape.

32. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of interconnected cells comprises a polygonal shape.

33. (Previously Presented) The urinal screen of Claim 17, wherein each of the first brace, the second brace, and the third brace has at least one of the plurality of first posts connected thereto and at least one of the plurality of second posts connected thereto.

34. (Previously Presented) The urinal screen of Claim 17, further comprising one or more additional posts connected to the frame at an area other than a brace or corner.

35. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a brace of the frame, and each of the plurality of second posts is connected to a brace of the frame.

36. (Previously Presented) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a corner of the frame, and each of the plurality of second posts is connected to a corner of the frame.

37. (Previously Presented) The urinal screen of Claim 17, wherein at least some of the plurality of first posts and plurality of second posts are connected to braces of the frame, and at least some of the plurality of first posts and plurality of second posts are connected to corners of the frame.

38. (Previously Presented) The urinal screen of Claim 17, wherein a majority of the plurality of interconnected cells have identical shapes.

39. (Previously Presented) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/3 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

VECTAIR EX.1002, PG.48

40. (Previously Presented) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/8 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

41. (Previously Presented) The urinal screen of Claim 17, wherein the second end of the first brace intersects at a corner with no more than two other braces, the second end of the second brace intersects at a corner with no more than two other braces, and the second end of the third brace intersects at a corner with no more than two other braces.

42. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and

wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.

VECTAIR EX.1002, PG.49

43. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/3 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

44. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 3/8 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

45. (Previously Presented) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 4/9 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

46. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/3 of the thickness of the urinal screen.

47. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/4 of the thickness of the urinal screen.

48. (Previously Presented) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/8 of the thickness of the urinal screen.

49. (Previously Presented) The urinal screen of Claim 42, wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

50. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

VECTAIR EX.1002, PG.50

51. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy more than 2/3 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

52. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings occupy at least 3/4 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

53. (Previously Presented) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the corners.

54. (Previously Presented) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the braces.

55. (Previously Presented) The urinal screen of Claim 42, wherein six of said plurality of first posts and six of said plurality of second posts are positioned along the perimeter of the at least some of the plurality of openings, so as to surround the at least some of the plurality of openings.

56. (Previously Presented) The urinal screen of Claim 42, wherein the plurality of openings comprise a contoured side surface to further reduce splashing on the user of the urinal by deflecting a flow of urine.

VECTAIR EX.1002, PG.51

SUMMARY OF INTERVIEW

Attendees, Date and Type of Interview

The interview was conducted via telephone on August 2, 2018 and attended by Examiner Crane and Applicant's representative, Edward Schlatter.

Exhibits and/or Demonstrations

None

Identification of Claims Discussed

Claims 13, 17, and 42 were discussed.

Identification of Cited/Disclosed Art Discussed

None

Proposed Amendments, Principal Argument, Other Matters, and Results of Interview

Examiner Crane proposed the following clarifying amendments to the independent claims:

Claim 13 – Add the words "in a urinal" to line 18 of Claim 13, to clarify that the surface referred to in line 18 is a surface in a urinal.

Claim 17 – In three places, change the words "brace intersects at a corner with no more than two other braces" to read "brace intersects at a corner with the two other braces," to clarify that the first end of each of the referenced braces intersects at a corner with, and only with, the two other braces.

Claim 42 – Add the words "in a urinal" to line 18 of Claim 42, to clarify that the surface referred to in line 18 is a surface in a urinal.

To expedite allowance of the present application, Applicant agreed to the proposed amendments. Examiner Crane agreed to make the amendments in an Examiner's Amendment issued along with a Notice of Allowance.

VECTAIR EX.1002, PG.52

REMARKS

Pursuant to the requirements of 37 CFR § 1.312, Applicant respectfully requests that the claims be amended as shown above. The amendments contain no new matter.

Applicant respectfully submits that the amendments contained herewith concern merely formal matters addressing informalities resulting from editing and/or computer errors, and requests the Examiner to enter the amendments without withdrawing the application from issue. See MPEP § 714.16.

Amendments to the Claims

As discussed in the Summary of Interview given above, Applicant agreed to an Examiner's Amendment to make clarifying amendments to Claims 13, 17, and 42. The amendments included herewith are merely to amend the claims to be consistent with the agreed-upon amendments, in view of errors that were introduced into the claims in the Examiner's Amendment included with the Notice of Allowance dated August 15, 2018.

Specifically, with respect to Claim 13, the words "a frame having:" at line 2 of the claim appear to have been inadvertently omitted in the Examiner's amendment. The amendments above add these words back into Claim 13.

With respect to Claim 17, the words "no more than" in the phrase "the first end of the third brace intersects at a corner with no more than the two other braces" appear to have been inadvertently shown in underline instead of strikethrough. Further, the period at the end of Claim 17 appears to have been inadvertently shown in strikethrough. The amendments above place the words "no more than" in strikethrough and add the period back into Claim 17.

With respect to Claim 42, the words "a frame having:" at line 2 of the claim appear to have been inadvertently omitted in the Examiner's amendment. The amendments above add these words back into Claim 42. Further, the words "in a urinal" at line 18 of the claim appear to have been inadvertently left out of the Examiner's amendment. The amendments above add these words at line 18 of Claim 42, as agreed upon during the Examiner interview.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: October 2, 2018

By: /Edward A. Schlatter/
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29152036

VECTAIR EX.1002, PG.54

Electronic Acknowledgement Receipt

EFS ID:	33893203
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Edward A. Schlatter/Leonardo Quintana
Filer Authorized By:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	02-OCT-2018
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Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		312-Amendment.pdf	168193 31091860d0b4bef6fd461d5069b49a9df2ca2fe3	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment after Notice of Allowance (Rule 312)	1	1
	Claims	2	9
	Applicant summary of interview with examiner	10	10
	Applicant Arguments/Remarks Made in an Amendment	11	12
Warnings:			
Information:			
	Total Files Size (in bytes):	168193	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

20995 7590 08/15/2018

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

EXAMINER
CRANE, LAUREN ASHLEY

ART UNIT	PAPER NUMBER
3754	

DATE MAILED: 08/15/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

TITLE OF INVENTION: URINAL SCREENS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	11/15/2018

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

VECTAIR EX.1002, PG.57

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

20995 7590 08/15/2018
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

TITLE OF INVENTION: URINAL SCREENS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0	$0	$500	11/15/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
CRANE, LAUREN ASHLEY	3754	004-256100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ Applicant certifying micro entity status. See 37 CFR 1.29 — NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
- ❑ Applicant asserting small entity status. See 37 CFR 1.27 — NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ❑ Applicant changing to regular undiscounted fee status. — NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 08/15/2018

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES OF AMERICA

EXAMINER	
CRANE, LAUREN ASHLEY	
ART UNIT	**PAPER NUMBER**
3754	

DATE MAILED: 08/15/2018

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

VECTAIR EX.1002, PG.59

Notice Requiring Inventor's Oath or Declaration	Application No. 14/925,369	Applicant(s) Douglas S. Brown	
	Examiner CRANE, LAUREN ASHLEY	Art Unit 3754	

This notice is an attachment to the Notice of Allowability (PTOL-37), or the Notice of Allowability For A Design Application (PTOL-37D).

An inventor's oath or declaration in compliance with 37 CFR 1.63 or 1.64 executed by or with respect to each inventor has not yet been submitted.

An oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each inventor (for any inventor for which a compliant oath, declaration, or substitute statement has not yet been submitted) MUST be filed no later than the date on which the issue fee is paid. See 35 U.S.C. 115(f). Failure to timely comply will result in ABANDONMENT of this application.

A properly executed inventor's oath to declaration has not been received for the following inventor(s):

If applicant previously filed one or more oaths, declarations, or substitute statements, applicant may have received an informational notice regarding deficiencies therein.

The following deficiencies are noted:

INFORMAL ACTION PROBLEMS

- A properly executed inventor's oath or declaration has not been received for the following inventor(s): **Douglas S. Brown** and **Jeffrey A. Smith**.
  Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Questions relating to this Notice should be directed to the Application Assistance Unit at 571-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application 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, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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 disclosure of these records is required by the Freedom of Information Act.
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 2906. 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 inspection 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.

Notice of Allowability	Application No. 14/925,369	Applicant(s) BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the RCE filed on 5/23/2018*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *2-56*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/23/2018 has been entered.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Edward Schlatter on 8/2/2018.

The application has been amended as follows:

13. (Currently Amended) A urinal screen comprising:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein, when the urinal screen is set upon a surface in a urinal such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame;

wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and

wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.

17. (Currently Amended) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells;

wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;

wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and wherein:

the first end of the first brace intersects at a corner with ~~no more than~~ the two other braces;

the first end of the second brace intersects at a corner with ~~no more than~~ the two other braces; and

the first end of the third brace intersects at a corner with no more than the two other braces;

a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame, and

a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame.

42. (Currently Amended) A urinal screen comprising:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and

wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts

positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on 9:30 am - 5:00 pm Monday - Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Angwin can be reached on (571) 270-3735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

Receipt date: 05/23/2018

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 1 OF 1	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	1,292,856	01-28-1919	Niblo	
	2	9,243,394	01-26-2016	Brown et al.	
	3	D778,411	02-07-2017	Brown et al.	
	4	D778,412	02-07-2017	Brown et al.	
	5	2016/0102451	04-14-2016	Brown et al.	
	6	2018/0023278	01-25-2018	Brown et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]
	7	GB 2431101 A	04-18-2007	Waldron		
	8	WO 2016/060998 A1	04-21-2016	Fresh Products, Inc.		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]

28340458

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Examiner Signature/LAUREN A CRANE/	Date Considered 08/02/2018

*__Examiner:__ Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	Art Unit
	LAUREN CRANE	3754

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
E03D13/005	12/13/2016	LC

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
4	256.1	12/13/2016	LC
4	256.1, 300.3	12/29/2017	LC

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
Consulted with Primary Examiner Janie Loeppke	12/29/2017	LC

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	Keyword Search	8/2/2018	LC

EAST Search History

EAST Search History (Prior Art)

< This search history is empty>

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	0	(frame plurailty of ends posts urinal screen first face second face perimeter).clms.	US-PGPUB; USPAT	AND	ON	2018/08/02 18:25

8/ 2/ 2018 6:25:45 PM
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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	**Art Unit**
	LAUREN CRANE	3754

CPC							
Symbol						**Type**	**Version**
E03D		13	/	005		F	2013-01-01
E03D		9	/	00		I	2013-01-01
E03D		9	/	007		I	2013-01-01
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CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
			/					
			/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	54	
/LAUREN CRANE/ Primary Examiner.Art Unit 3754	8/2/201	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	13	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	**Art Unit**
	LAUREN CRANE	3754

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
4	256.1	E	0	3	D	9 / 00 (2006.0)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	54	
/LAUREN CRANE/ Primary Examiner.Art Unit 3754	8/2/201	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	13	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	**Art Unit**
	LAUREN CRANE	3754

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	19	17	29	33	47	49								
2	2	20	18	30	34	48	50								
3	3	21	19	31	35	49	51								
4	4	16	20	32	36	50	52								
5	5	22	21	33	37	51	53								
6	6	39	22	34	38	52	54								
7	7	17	23	35	39	53	55								
8	8	18	24	36	40	54	56								
9	9	23	25	37	41										
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11	11	40	27	41	43										
12	12	40	28	42	44										
1	13	25	29	43	45										
13	14	26	30	44	46										
14	15	27	31	45	47										
15	16	28	32	46	48										

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 54	
/LAUREN CRANE/ Primary Examiner.Art Unit 3754 (Primary Examiner)	8/2/201 (Date)	O.G. Print Claim(s) 13	O.G. Print Figure 1

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/925,369	Filing Date 10/28/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **05/23/2018**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 55	Minus	** 20	= 35	X $50 =	1750
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**1750**

AMENDMENT **05/23/2018**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 55	Minus	** 20	= 35	X $50 =	1750
Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	**1750**

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
GLORIA NORRIS

This collection of information is required by 37 CFR 1.16. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application 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.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

DocCode – SCORE

SCORE Placeholder Sheet for IFW Content

Application Number: 14925369 Document Date: 05/23/2018

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

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PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14925369	Filing Date	2015-10-28	Docket Number (if applicable)	FRESHPR.061A	Art Unit	3754
First Named Inventor	Douglas S. Brown			Examiner Name	CRANE, LAUREN ASHLEY		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 111410

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

Signature of Registered U.S. Patent Practitioner			
Signature	/Edward A. Schlatter/	Date (YYYY-MM-DD)	2018-05-23
Name	Edward A. Schlatter	Registration Number	32297

This collection of information is required by 37 CFR 1.114. 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 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application 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.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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 2906. 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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 1 OF 1	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	1,292,856	01-28-1919	Niblo	
	2	9,243,394	01-26-2016	Brown et al.	
	3	D778,411	02-07-2017	Brown et al.	
	4	D778,412	02-07-2017	Brown et al.	
	5	2016/0102451	04-14-2016	Brown et al.	
	6	2018/0023278	01-25-2018	Brown et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T^1
	7	GB 2431101 A	04-18-2007	Waldron		
	8	WO 2016/060998 A1	04-21-2016	Fresh Products, Inc.		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^1

28340458

Examiner Signature	Date Considered

*__Examiner:__ Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T^1 - Place a check mark in this area when an English language Translation is attached.

INFORMATION DISCLOSURE STATEMENT

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

References and Listing

Pursuant to 37 CFR 1.56, an Information Disclosure Statement listing references is provided herewith. Copies of any listed foreign and non-patent literature references are being submitted.

No Disclaimers

To the extent that anything in the Information Disclosure Statement or the listed references could be construed as a disclaimer of any subject matter supported by the present application, Applicant hereby rescinds and retracts such disclaimer.

Timing of Disclosure

This Information Disclosure Statement is being filed with an RCE, and no fee is believed to be required. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: May 23, 2018

By: /Edward A. Schlatter/
Edward A. Schlatter
Registration No. 32,297
Registered Practitioner
Customer No. 20995
(949) 760-0404

28340552

(12) UK Patent Application (19) GB (11) 2 431 101 (13) A

(43) Date of A Publication 18.04.2007

(21) Application No: 0519438.6

(22) Date of Filing: 23.09.2005

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(51) INT CL:
E03C 1/22 (2006.01) ***A47K 11/12*** (2006.01)
E03D 13/00 (2006.01)

(52) UK CL (Edition X):
A4N N28 N3FX

(56) Documents Cited:
GB 2374283 A **GB 2319540 A**
EP 1657370 A **US 6920648 B**

(58) Field of Search:
UK CL (Edition X) **A4N**
INT CL **A47K, E03C, E03D**
Other:

(54) Abstract Title: **Urinal drain insert**

(57) A drain insert for a urinal drain, the insert including a drain cover (33) presented upwardly in use and the drain cover including an information display (34) integrally associated with the drain cover. An over-cover (32) may suitably extend over the drain cover (33).

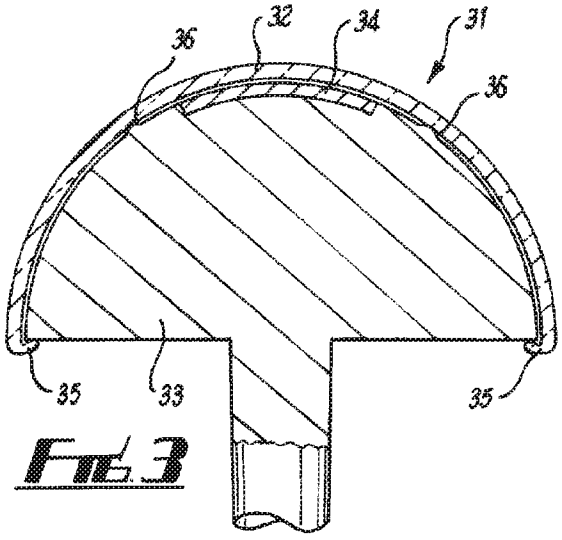


Fig.3

GB 2431 101 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

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1/1

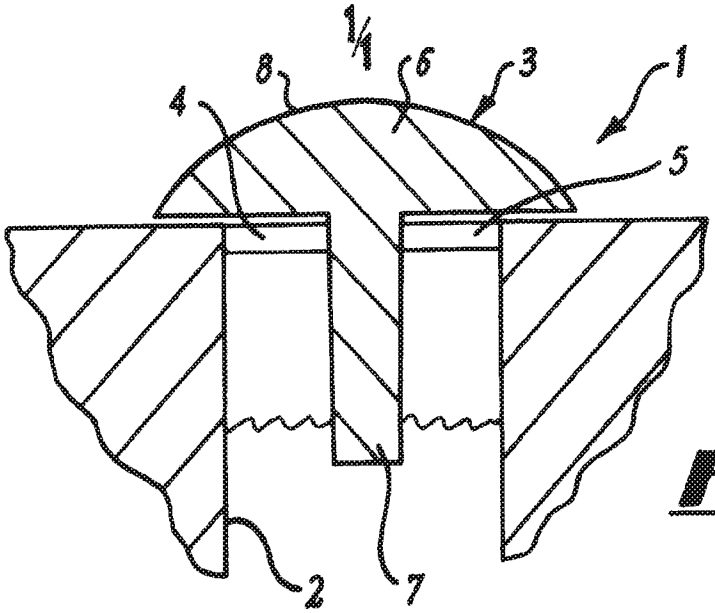


FIG. 1

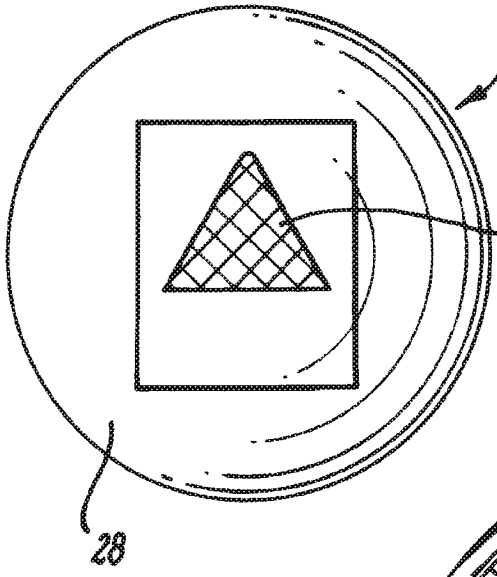


FIG. 2

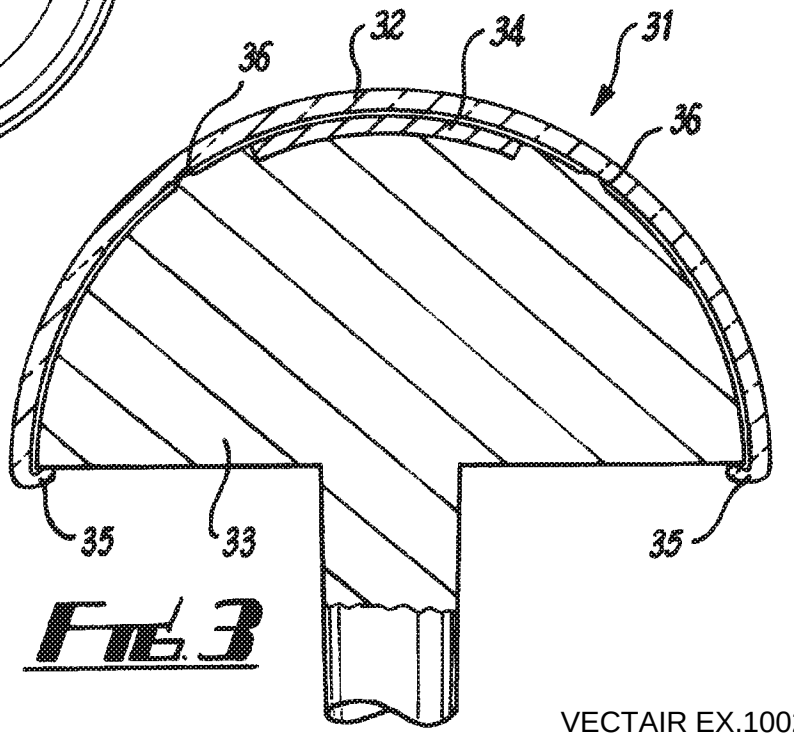


FIG. 3

Drain Insert

The present invention relates to drain insert and, more particularly, to sanitary drain insert used for urinals.

There is a desire to disseminate information and promotional advertising etc. Traditionally, such promotion has been performed through bill-boards and posters placed in appropriately prominent positions. These locations have included corridors and public meeting places. Unfortunately, some of these locations can easily be passed without intended viewers noticing the information. The problem with corridors and public places is that people tend to pass through them while concentrating on other matters. In such circumstances, generally such information will only be incidentally noticed by a target audience.

Trough and wall mounted urinals are clearly used by a large number of male people. It is inherent with using such urinals that the person is static for a period of time and generally physically as well as mentally inactive. In such circumstances these time periods are ideal for disseminating information or providing advertising. Recently, flat or mushroom-headed urinal drain sieves and gratings as well as sanitary traps have been used. Essentially, these comprise a flat-headed element with arched apertures through which waste urine passes into the drain. At a basic level the sieve or grating prevents solid debris entering the drain with the potential for blockage. More sophisticated sieves and gratings provide protection against scale build-up by arranging for the urine to pass through a central stem which ejects the urine below the water trap level within the drain, so reducing emission of odours.

These urinal sieves and gratings are relatively cheap to produce and normally disposable. Thus, there is a regular cycle with regard to replacement of these sieves and gratings.

In accordance with the present invention, there is provided a drain insert for a urinal drain, the insert including a drain cover presented upwardly put in use and the drain cover including an information display integrally associated with the drain cover.

Typically, the drain cover is curved. Alternatively, the drain cover is flat.

Possibly, the information display is embedded or embossed into the drain cover. Alternatively, the information display is integrally associated as a part-moulding with the drain cover. Further, or alternatively, the information display is printed upon the drain cover.

Possibly, the information display is over-laminated or lacquered to provide further integral association with the drain cover.

Alternatively, the information display comprises an over-shell secured to the drain cover.

Additionally, the drain insert includes an over-cover secured over the drain cover with the information display held between the over-cover and the drain cover. Possibly, the over-cover comprises a patch solely located over the information display. Alternatively, the over-cover extends completely over the drain cover. Advantageously, the over-cover provides chemical and environmental resistance for the drain cover in use.

Possibly, the information display facilitates correct orientation of the insert within a urinal drain in use.

Typically, the information display comprises a logo or pictograph. Possibly, the information display provides an identifier for ownership, location or maintenance.

Embodiments of the present invention will now be described by way of an example only with reference to the accompanying drawings in which

Fig. 1 is a schematic cross-section of a drain insert in a urinal drain in accordance with the present invention;

Fig. 2 is a schematic plan view of a drain insert in accordance with the present invention; and

Fig. 3 is a schematic side cross-section of an alternative drain insert in accordance with the present invention.

As indicated above, generally urinal drains are protected from solid debris entering the drain by a grating or sieve-like member which sits as a cover over an opening to the drain. Furthermore, potentially through use of a dip-stem urine can be arranged to flow below the water trap level in a drain in order to inhibit odour release and scale build-up. In such circumstances the drain insert is generally a T or mushroom shape with a substantially flat or curved upper surface which can be seen by users of the urinal. Urinals can take the form of a so-called slab urinal in which a trough is created below a wall such that the urine flows along the trough into the drain under gravity or comprise specific urinals secured to a wall with individual drains. In either event, a drain insert is provided as indicated above in an upward perspective.

Fig. 1 provides a schematic cross-section illustrating a urinal drain arrangement 1 in which a drain 2 includes an insert 3 to extend across an opening 4 of the drain 2. This opening 2 may include an integral grating 5 or, more normally, the opening will be open to provide less restriction for urine flow into the drain 2. As can be seen, the insert 3 includes a drain cover 6 and stem 7. This stem 7 may simply provide a ballast anchor for the insert 3 within the drain 2 or possibly, if the urine is designed to flow through the stem 7, then that urine may be presented below a water trap level 8 to reduce odour release and scale build-up upon only periodically wetted sections of the drain 2.

The present invention is directed to the drain cover 6 and, in particular, an outer surface 8 of that cover 6. It will be understood that the outer surface 8 is generally upstanding and seen by users of a urinal incorporating the arrangement 1. Furthermore, the surface 8 is of a sufficient size that information displayed upon the surface 8 is recognisable to that user. In such circumstances, the present insert 3 provides an information display on the surface 8 which is integrally associated with that cover 6 so that the harsh environment within a urinal and regular wetting and submerging in urine does not cause degradation.

The surface 8 as indicated in figure 1 may be curved or, as described later with regard to figure 2, flat. In either event the surface 8 will be generally upwardly facing as indicated. A curved surface 8 is advantageous in that it allows apertures 9 to be presented in the sides of the cover 6, which are more perpendicular to a urinal surface 10 to allow urine to flow through. Furthermore, a curved surface 8 provides a greater surface on which a greater-sized information display can be presented. The surface may be elongated and so oval to extend the surface along the trough to the drain in order to further increase the upwardly facing viewed area.

The information display can be formed integrally with the drain cover in a number of ways. Most simply, the information display may be printed with an indelible ink upon the surface 8 but in such circumstances the acidic nature of urine may rapidly degrade the information display. In such circumstances a lacquer or other coating may be provided over the printed information display to provide some protection against degradation of the printing ink.

Simple printing of the information display upon the surface 8 is generally unacceptable. In such circumstances the information display may comprise a separate element or transfer embedded or embossed or integrally moulded with the insert 6 during manufacture. In such circumstances the transfer or embossed material can be chosen such that it is resistant to the

acidic nature of urine. Furthermore, as described above with regard to printing ink, it will be appreciated that a laminate or lacquer may be provided over the information display for longer operational life.

A further alternative to integrally associating the information display with the drain cover 6 is the use of a separate over-shell which is secured over the drain cover 6. This shell will be of substantially the same size and shape as the cover 6 and will be arranged to become adhered and normally hooked about the edges of the cover 6 to remain integrally associated with the drain cover 3. The shell may be such that it can be shrunk by thermal of chemical action upon the drain cover 6 in order to further enforce the integral association between the information display and the drain cover.

As indicated above, a drain cover in accordance with the present invention may be curved or flat. Fig. 2 provides a schematic plan view of a flat drain cover 26 having an upper surface 28 incorporating an information display 20. This information display 20 can be secured in a similar manner to any of those described above with regard to Fig. 1 and a curved drain cover 6. It will be understood that generally drain covers will be round and have a dimension in the order of 10-20 centimetres. Thus, although the surface 28 is relatively large, it will be understood that users of the urinal will generally be standing and, therefore, viewing the surface 28 from a distance. In such circumstances, written information upon the surface 28 in the form of display 20 may not be perceivable. However, the present drain insert is generally utilised in order to provide a pictograph or logo information with regard to product or other promotions. In such circumstances, the display is relatively vivid in terms of colour and discernable simple shapes will preferably be used.

In Fig. 2 a triangle is depicted as the information display. This triangle may be presented in a dark colour on a white background or bright colour, such as orange or red, or maybe fluorescent, to indicate in a dimly-lit toilet the location of the drain. Alternatively, it will be appreciated that the information

display may represent a corporate logo of the organisation maintaining the urinal or the owner of the urinal, let us say a chain of restaurants or bars or public houses. The information display 20 may also provide public information, such as a hygiene reminder with two crossed hands indicating that users of the urinal should wash their hands after use or a universal picturegram indicative of a reminder to perform safe sex. It will also be understood that the information display may simply provide a maintenance and service reminder for the owner or operator of the urinal such that the colour or symbol in the information display may indicate the month of installation and so a due date for replacement. Furthermore, by combining segments or strips of colours it may be possible to provide information with respect to any chemicals utilised for odour-masking and prevention in the drain insert.

As indicated above it is important that the information display in accordance with the present invention is integrally associated with the drain cover. Degradation of the information display or detachment may result in debris within the urinal and possibly that debris entering the drain causing a blockage. In any event, degradation in the information display will reduce its effectiveness. In such circumstances, as depicted in Fig. 3, a drain insert 31 in accordance with the present invention may include an over-cover 32 in addition to other means for integral association of an information display 34 with the drain cover. This over-cover 32 will comprise a separate component secured over a drain cover 33 to provide additional protection for the information display 34 and integrity of association with the drain cover 33. The over-cover will normally be reciprocally shaped to the drain cover for close association. Possibly, edges 75 of the over-cover 32 may be hooked to hook over the edges of a drain cover 33.

The over-cover 33 will normally be transparent and formed from a relatively flexible material for snap fitting over the drain cover 33 into an interference fit. The hooks or other associations about the edge 35 of the

drain cover 32 may provide a liquid seal preventing urine entering the gap between the over-cover 32 and the drain cover 33. Alternatively, by differential shaping of the over-cover 32 and the drain cover 33, a void or cavity can be created about the edge in which any seepage of urine into that void or cavity will gradually build up so there is no capillary lifting of the urine to a viewed area of the information display.

As indicated above, the over-cover 32 provides protection for the normally already integrally associated information display 34 in the drain cover 33. In such circumstances the information display 34 is sandwiched between the drain cover 33 and the over-cover 32 and normally held under compression. In such circumstances, again, urine incident upon the information display 34 may be inhibited by such compression. Finally, the over-cover 32 or parts of the drain cover 33 may include raised portions 36 for enhanced compressive and sealing engagement to further inhibit urine movement towards the information display.

As illustrated, the over-cover 32 may extend over the whole of the drain cover 33. Alternatively, an over-cover 32 may be provided which is adhesively applied and so only extend over part of the drain cover as a patch. This patch may extend simply over the information display or more normally over the whole drain cover.

It will be understood as indicated that robust integration of the information display with the drain cover will normally be provided. However, by use of an over-cover 32 in accordance with the present invention, integral association between the drain cover 33 and the information display 34 may be achieved through an adhesive label or patch secured on the outer surface of the drain cover. Such adhesion of the label may be attacked by the acidic nature of urine but through use of an over-cover 32 as described above incidence or ingress of such urine upon the adhesive of the label can be

reduced such that the label is effectively integrally associated with the drain insert.

It will be appreciated that the over-cover 32 may incorporate the information display itself so that when associated with the drain cover 33 portion of a drain insert 31 there is integral association through an interference or clip fit as described above or adhesion or other mechanism in order to provide a drain insert in accordance with the present invention.

Typically, the drain insert will be formed from a relatively rigid plastic material. The insert will be moulded to an appropriate shape in order to extend across a drain in use. The over-cover may be formed from a relatively flaccid material to be held over the drain cover and act as a protective layer for the drain cover as well as the information display.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

Claims

1 A drain insert for a urinal drain, the insert including a drain cover presented upwardly in use and the drain cover including an information display integrally associated with the drain cover.

2 An insert as claimed in claim 1 wherein the drain cover is curved.

3 An insert as claimed in claim 1 wherein the drain cover is flat.

4. An insert as claimed in any of claims 1, 2 or 3 wherein the information display is embedded or embossed into the drain cover.

5 An insert as claimed in any of claims 1, 2 or 3 wherein the information display is integrally associated as a part-moulding with the drain cover.

6 An insert as claimed in any of claims 1, 2 or 3 wherein the information display is printed upon the drain cover.

7 An insert as claimed in any preceding claim wherein the information display is over-laminated or lacquered to provide further integral association with the drain cover.

8 An insert as claimed in any preceding claim wherein the information display comprises an over-shell secured to the drain cover

9 An insert as claimed in any preceding claim wherein the drain insert includes an over-cover secured over the drain cover with the information display held between the over-cover and the drain cover.

10 An insert as claimed in claim 9 wherein the over-cover comprises a patch solely located over the information display.

11 An insert as claimed in claim 9 wherein the over-cover extends completely over the drain cover.

12 An insert as claimed in any of claims 9 to 11 wherein the over-cover provides chemical and environmental resistance for the drain cover in use.

13. An insert as claimed in any preceding claim wherein the information display facilitates correct orientation of the insert within a urinal drain in use.

14 An insert as claimed in any preceding claim wherein the information display comprises a logo or pictograph.

15 An insert as claimed in any preceding claim wherein the information display provides an identifier for ownership, location or maintenance.

16. A drain insert for a urinal drain substantially as hereinbefore described with reference to the accompanying drawings.

17. Any novel subject matter or combination including novel subject matter disclosed herein, whether or not within the scope of or relating to the same invention as any of the preceding claims.

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Application No: GB0519438.6 **Examiner:** D. Haworth

Claims searched: 1-15 **Date of search:** 9 February 2007

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1,2,9,11& 12 at least	GB 2374283 A (Hall)
X	1&2 at least	GB 2319540 A (Solvtech)
X	1 and 3 at least	US 6920648 B (Suski)
X	1 and 2 at least	EP 1657370 A (Caroma)

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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Worldwide search of patent documents classified in the following areas of the IPC

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(54) Title: URINAL SCREEN

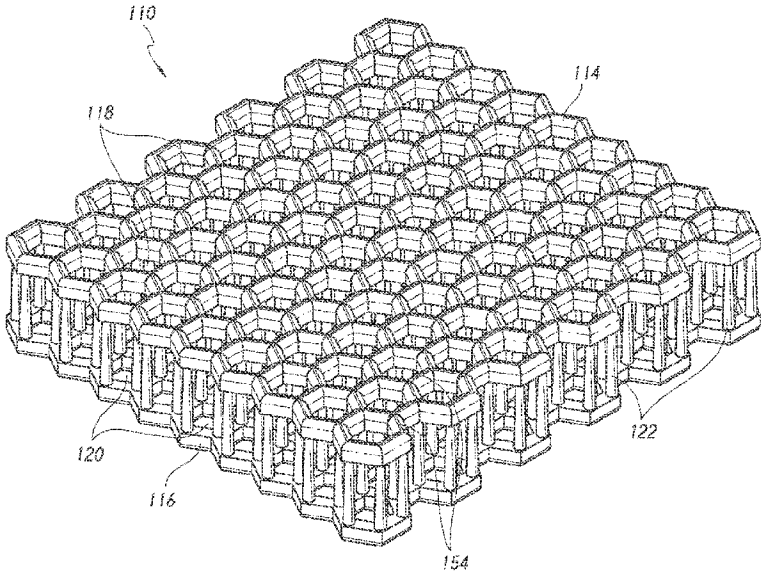


FIG. 1

[Continued on next page]

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Declarations under Rule 4.17:

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(57) Abstract: A urinal screen (110) has a first frame portion (114) and a second frame portion (116), the frame portions being connected by a plurality of posts (122) extending from the frames. The frames each include a plurality of openings (118, 120) which can be aligned when observed from a perspective perpendicular to the screen. The openings can be defined by a plurality of sides and corners, whereby the posts can extend from the corners and/or from the sides of the openings.

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URINAL SCREEN

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] Any and all applications for which a foreign or domestic priority claim is identified in the Application Data Sheet as filed with the present application are hereby incorporated by reference under 37 CFR 1.57.

TECHNICAL FIELD

[0002] Certain embodiments discussed herein relate to restroom screens and mats, and, more particularly, the present inventions relate to restroom urinal screens and mats.

DISCUSSION OF THE RELATED ART

[0003] Urinal screens are widely used to prevent debris from being flushed down a urinal drain. In some cases, a fragrance is provided with the screens to help sanitize and freshen the air in and around the urinal.

SUMMARY OF THE INVENTIONS

[0004] A urinal screen can comprise a first frame portion and a second frame portion connected to one another by a plurality of posts. The first frame portion and the second frame portion can each desirably define an outer face and an inner face opposite the outer face, so that the inner face of the first frame portion faces the inner face of the second frame portion. Desirably, the outer face of at least one of the first frame and the second frame and, more desirably, both of the outer face of at least one of the first frame and the second frame define one or more contoured areas configured to deflect a stream of urine. Desirably, at least one of the first frame and the second frame defines a plurality of closed cells. Desirably, said outer face of said plurality of cells defines contoured surfaces which are configured to deflect a stream of urine. In some embodiments, the contoured surfaces are outwardly concave. In some embodiments, the first frame portion defines a desirably closed outer perimeter. The first frame portion can define a plurality of openings. In some embodiments, at least portion of said plurality of cells define an opening. Desirably, at least a portion of said plurality of cells of said first frame is connected to a plurality of cells of said second frame by at least one, at least two, at least three, at least four, at least five or at least six posts per cell. In some embodiments, the

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plurality of openings occupy at least one half, at least two thirds or at least three fourths of a surface area of the frame portions as measured parallel to the first face of the first frame portion, when the urinal screen is sitting on a flat surface.

[0005] The outer perimeter of the first frame portion can be substantially identical to the outer perimeter of the second frame portion. In some embodiments, the outer perimeter of the first frame portion is aligned with the outer perimeter of the second frame portion when observed from a perspective perpendicular to the first face of the second frame portion when the urinal screen is sitting on a flat surface. In some embodiments, the plurality of openings of the first frame portion are aligned with the plurality of openings of the second fame portion when observed from a perspective perpendicular to the first face of the second frame portion. In some embodiments, the plurality of posts are aligned perpendicular to the first face of the first frame portion and perpendicular to the second face of the second frame portion. In some cases, each of the posts has a same height. In some embodiments, a thickness of the first frame as measured perpendicular to the first face of the first frame is less than one fourth of a height of the posts. Desirably, the outer face of the first frame and the second frame each define contoured areas to deflect urine and/or are substantially similar. The outer face of the first frame and the second frame can similarly be different in appearance and/or color.

[0006] According to some variants, a urinal screen comprises a first frame portion. The first frame portion can have: a first face; a second face opposite the first face; an outer perimeter; and/or a plurality of openings. The screen can include a second frame portion. The second frame portion can have: a first face; a second face opposite the first face; an outer perimeter; and/or a plurality of openings. The plurality of openings of the second frame portion can be aligned with the plurality of openings of the first frame portion when observed from a perspective perpendicular to the first face of the first frame portion when the urinal screen is set on flat surface. In some embodiments, the screen includes a plurality of posts extending from the first face of the first frame portion and connected to the second face of the second frame portion.

[0007] In some embodiments, the plurality of openings occupy at least three fourths of a surface area of the first frame portion as measured parallel to the first face of the first frame portion when the first or second frame portions are resting on a flat surface.

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[0008] In some embodiments, the plurality of openings occupy at least one half of a surface area of the first frame portion as measured parallel to the first face of the first frame portion when the first or second frame portions are resting on a flat surface.

[0009] In some embodiments, a size and shape of the outer perimeter of the first frame portion is substantially identical to a size and shape of the outer perimeter of the second frame portion.

[0010] In some embodiments, the outer perimeter of the first frame portion is aligned with the outer perimeter of the second frame portion when observed from a perspective perpendicular to the first face of the second frame portion.

[0011] In some embodiments, the plurality of posts are aligned perpendicular to the first face of the first frame portion and perpendicular to the second face of the second frame portion.

[0012] In some embodiments, each of the posts has a same height, and wherein a thickness of the first frame as measured perpendicular to the first face of the first frame is less than one fourth of a height of the posts.

[0013] According to some variants, a urinal screen comprises a first frame portion. The first frame can include a plurality of connected cells. In some embodiments, each of the cells has a plurality of sides and a plurality of corners. In some embodiments, each of the plurality of sides is connected at two corners to at least two other sides. The urinal screen can include a second frame portion. The second frame portion can comprise a plurality of connected cells. In some embodiments, each of the cells of the second frame portion has a plurality of sides and a plurality of corners. In some embodiments, each of the plurality of sides of the cells of the second frame portion are connected at two corners to at least two other sides. In some embodiments, the urinal screen includes a plurality of posts extending between and connected to each of the first and second frame portions. In some embodiments, at least one of the sides of each of the cells of the first frame and second frame is shared with another cell. In some embodiments, the connected cells form at least a majority of an area of the first frame and of the second frame.

[0014] In some embodiments, each of the sides of each of the cells of the first frame is either shared with another cell or forms a portion of an outer perimeter of the first frame portion.

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[0015] In some embodiments, each of the cells has a hexagonal shape.

[0016] In some embodiments, each of the sides of the cells of the first frame has a same, uniform thickness as measured in a plane parallel to the first frame.

[0017] In some embodiments, each of the cells has a same shape as each other cell.

[0018] In some embodiments, at least one of the plurality of posts is shorter than at least another one of the plurality of posts.

[0019] In some embodiments, each of the cells of the first frame portion has an opening defined by an interior of the plurality of sides and corners.

[0020] According to some variants, a urinal screen can comprise a first frame portion. First frame portion can include: a plurality of interconnected sides and/or a plurality of corners at junctions between two or more sides. The sides and corners of the first frame portion can form open cells. The urinal screen can include a second frame portion. The second frame portion can include a plurality of interconnected sides and/or a plurality of corners at junctions between two or more sides. In some embodiments, the sides and corners of the second frame portion form open cells. The urinal screen can include a plurality of posts connecting the first frame portion to the second frame portion. In some embodiments, the plurality of interconnected sides of the first frame portion have convex surfaces facing away from the second frame portion.

[0021] In some embodiments, the plurality of interconnected sides of the second frame portion have convex surfaces facing away from the first frame portion.

[0022] In some embodiments, each of the plurality of interconnected sides has a first end, a second end, and a length measured from the first end to the second end. In some embodiments, a thickness of each of the one or more interconnected sides as measured parallel to the first frame portion and perpendicular to the length of the side is substantially constant between the first end and the second end of the side.

[0023] In some embodiments, one or more of the plurality of posts extends at a non-perpendicular angle with respect to the first frame portion.

[0024] In some embodiments, a radius of curvature of the convex surfaces is non-constant.

[0025] In some embodiments, one or more of the posts is tapered between the second frame portion and the first frame portion.

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[0026] In some embodiments, one or more of the first frame portion and the second frame portion is loaded with a fragrance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] The present inventions are described with reference to the accompanying drawings, in which like reference characters reference like elements, and wherein:

[0028] Figure 1 is a perspective view of another embodiment of a urinal screen;

[0029] Figure 2 is a top view of the urinal screen of Figure 1;

[0030] Figure 3 is a front view of the urinal screen of Figure 1;

[0031] Figure 4 is an enlarged front view of the urinal screen of Figure 1;

[0032] Figure 5 is a cross-section view of the urinal screen of Figure 1 along the cut plane 5-5 of Figure 3;

[0033] Figure 6 is a cross-section view of the urinal screen of Figure 1 along the cut plane 6-6 of Figure 2.

DETAILED DESCRIPTION OF THE INVENTIONS

[0034] An embodiment of a urinal screen 10 is illustrated in Figure 1. The urinal screen 110 can be sized and shaped to fit into a urinal, toilet, or other bathroom appliance. As illustrated, the urinal screen 110 can include a first frame 114. In some embodiments, the screen 110 includes a second frame 116. The frames 114, 116 can be sized and shaped to fit over all or a portion of a drain of a toilet or urinal. The frame 114 can include a plurality of openings 118 through a thickness of the frame 114. As illustrated, the second frame 116 can include a plurality of openings 120 through the thickness of the second frame 116. In some embodiments, the urinal screen 110 includes a plurality of posts 122 extending between the frames 114, 116.

[0035] The screen 110 can have a polygonal, elliptical, circular, or other overall shape. For example, as illustrated in Figure 2, the screen 110 can have a generally rectangular shape, though many other shapes are contemplated (e.g., hexagons, pentagons, triangles, ellipses, or some combination thereof). In some embodiments, the screen 110 is shaped to fit a particular urinal or toilet.

[0036] The frames 114, 116 and/or posts 122 can be constructed from a polymer, ceramic, or some other material. For example, one method of manufacturing an embodiment of

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the urinal screen 110 includes providing plastic or EVA material, which may have a melting point of not greater than 250°F, loading the plastic or EVA with at least 15% to about 75% by weight of fragrance material to produce a fragranced plastic or EVA, loading the fragrance at a stage conducted at temperatures such that the fragranced plastic or EVA is from at least 15% by weight fragrance upon completion of the loading stage, and molding the fragranced plastic or EVA into a urinal screen, sized and shaped to be disposed in a urinal, forming openings 118, 120 in the frames 114, 116, and forming posts 122. In some embodiments, the screen 110 is constructed from a material including one or more additives such as anti-bacterial compounds, odor-neutralizers, silver ions, or other additives. In some embodiments, the screen 110 is at least partially manufactured using a 3-D printer.

[0037] The openings 118, 120 can have various shapes, including, but not limited to, polygons (e.g., triangles, rectangles, pentagons, hexagons, etc.), ellipses, circles and/or some combination thereof. In some embodiments, each of the openings 118, 120 has a substantially identical shape. In some embodiments, one or more of the openings 118, 120 have a different shape from one or more of the other openings.

[0038] In some embodiments, one or more of the openings 118 is defined by a perimeter having a plurality of sides 142a and corners 146a. For example, in the illustrated embodiment of Figure 2, each of the openings 118 is defined by six sides 142a and six corners 146a. In some cases, one or more of the sides 142a is shared by two or more openings 118. In some embodiments, all of the sides 142a are either shared by a plurality of opening 118 or form a portion of the outer perimeter of the frame 114. The sides 142a can each have substantially the same length. In some embodiments, some or all of the sides 142a has a substantially constant thickness along the length of the sides 142a in a direction parallel to the frame 114 and perpendicular to the lengths of the respective sides 142a. In some embodiments, one or more of the sides 142a has a different length from one or more of the other sides 142a. In some configurations, each of the sides 142a is connected to at least two other sides 142a at two corners 146a. The openings 120 of the second frame 116 can have the same or similar characteristics (e.g., the characteristics of the sides 142b and corners 146b of the openings 120) as the openings 118 of the first frame 114. In some embodiments, the perimeters of the respective openings 118, 120 form an array of closed and/or connected cells having sides 142a, 142b and corners 146a, 146b. The closed/connected cells can form at least a majority (i.e., more than 50%), at least 2/3

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or at least 3/4 of the surface area of the first frame 114. In some embodiments, the cells form the entirety of the area of the first frame 114.

[0039] The urinal screen 110 can be constructed such that the openings 118 and overall structure of the first frame 114 align with the openings 120 and overall structure of the second frame 116 when viewed from above the urinal screen 110 (e.g., the view of Figure 2) when the screen 110 is set on a flat horizontal surface. In some embodiments, one or more of the openings 118 of the first frame 114 do not align with any openings 120 of the second frame 116 and/or one of the openings 120 of the second frame 116 do not align with any of the openings 118 of the first frame 114. For example, one or more of the posts 122 can extend at a non-perpendicular angle with respect to and between the frames 114, 116.

[0040] As illustrated in Figure 2, the openings 118 can occupy a large percentage of the overall surface area of the frame 114 as viewed in Figure 2 (e.g., viewed from above the frame 114). For example, the openings 118 can occupy more than 1/8, more than 2/9, more than 1/3, more than 1/4, more than 3/8, more than 1/2, more than 5/8, more than 2/3, and/or more than 3/4 of the overall surface area of the frame 114 as viewed in Figure 2. The openings 120 of the second frame 116 can have similar or identical size and shapes to the openings 118 of the frame 114. Utilizing a large number of openings 118, 120 can reduce the overall weight of the urinal screen 110.

[0041] In some embodiments, as illustrated in Figure 3, the frames 114, 116 have a generally planar or flat shape. In some embodiments, the frame 114 has an outer perimeter that matches an outer perimeter of the second frame 116. In some embodiments, the frames 114, 116 have differing perimeters. The outer perimeters of the first and second frames 114, 116 can be aligned when observed from a perspective perpendicular to the first face 116a of the second frame 116. In some embodiments, the frames 114, 116 are curved or otherwise shaped in non-planar fashion. For example, the frames 114, 116 can be molded in a non-planar shape to match the contours of a urinal or toilet. Either or both of the frames 114, 116 can be constructed from a flexible material configured to flex to match or substantially match the contours of the surface onto which the urinal screen 110 is installed. The first frame 114 can have a first frame thickness 115. The second frame 116 can have a second frame thickness 117. The second frame thickness 117 can be greater than, equal to, or less than the first frame thickness 115.

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[0042] In some embodiments, the first frame thickness 115 is less than or equal to approximately 1/2 of the overall screen thickness 111 as measured perpendicularly to a first surface 114a (e.g., outer surface) of the frame 114 when the frame 114 or second frame 116 rests on a flat surface. In some embodiments, the first frame thickness 115 is less than or equal to 2/3, less than or equal to 5/8, less than or equal to 3/8, less than or equal to 1/3, less than or equal to 1/4, less than or equal to 2/9, less than or equal to 1/8, less than or equal to 1/10, less than or equal to 1/12, less than or equal to 1/16, and/or less than or equal to 1/32 of the overall screen thickness 111. In some cases, wherein the frame thicknesses 115, 117 are relatively thin compared to the overall thickness 111 of the urinal screen 110, the overall weight of the urinal screen 110 can be reduced.

[0043] As illustrated in Figure 3, the urinal screen 110 can include a plurality of posts 122. The posts 122 can extend between a second surface 114b (e.g., inner surface) of the first frame 114 and a first surface 116a (e.g., inner surface) of the second frame 116. In some cases, the posts 122 extend perpendicularly from one or both of the second surface 114b of the first frame 114 and the first surface 116a of the second frame 116. In some embodiments, the posts 122 extend at a non-perpendicular angle from one or both of the second surface 114b of the first frame 114 and the first surface 116a of the second frame 116.

[0044] One or more of the posts 122 can have a substantially constant cross-section along the length of the post 122 as measured parallel to the first surface 116a of the second frame 116. In some embodiments, as illustrated in Figure 4, one or more of the posts 122 can have a tapered shape. For example, one or more posts 122 can taper down from a maximum cross-section at or near the first surface 116a of the second frame 116 to a minimum cross-section at or near the second surface 114b of the first frame 114. In some embodiments, the cross-section of the posts 122 tapers down at a constant taper angle α. In some embodiments, the taper angle of the posts 122 is not constant. In some embodiments, the cross-section of one or more of the posts 122 has a maximum or minimum at a point along the length of the post 122 between the first surface 116a of the second frame and the second surface 114b of the first frame 114 (e.g., the mid-point of the post 122 between the first frame 114 and the second frame 116).

[0045] As illustrated in Figure 5, the posts 122 can extend from the second frame 116 (e.g., from the first surface 116a). In some embodiments, each of the posts 122 extends from a corner 146b of an opening 120 of the second frame 116. In some embodiments, each of the posts

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122 extends from a side 142b of an opening 120. In some embodiments, one or more posts 122 extend from a side 142b of an opening 120 and one or more posts extend from a corner 146b of an opening 120. The posts 122 can connect similarly to the sides 142a and/or corners 142b of the first frame 114 (e.g., from the second surface 114b of the first frame 114).

[0046] One or more of the posts 122 can have a height different from one or more of the other posts. For example, one or more posts 122 can be shorter than one or more other posts 122. In some embodiments, one or more of the shorter posts 122 connects to both the first frame 114 (e.g., to the second surface 114b) and the second frame 116 (e.g., to the first surface 116b). In some such embodiments, the overall height of the screen 110 can vary across the first surface 114a of the first frame 114 and/or across the second surface 116b of the second frame 116. Varying the overall height of the screen 110 can reduce surface contact between surface of the installation site (e.g., urinal or toilet) and the frame 114, 116 in contact with the surface. Reducing such surface contact can reduce the likelihood that the screen 110 would move on the installation surface. In some embodiments, varying the overall height of the screen 110 can reduce splashing from the screen 110 when in use. The first surface 114a of the first frame 114 and/or the second surface 116b of the second frame 116 can include one or more surface features (e.g., bumps, protrusions, ribs, nubs, knobs) configured to reduce the likelihood that the screen 110 would move on the installation surface when in use. In some embodiments, the use of variable-height posts 122 and/or use of one or more surface features on the frames 114, 116 can provide one or more gaps between the installation surface and the frame 114, 116 in contact with the installation surface. The one or more gaps can be small enough to inhibit passage of debris between the urinal screen 110 and the installation surface while allowing passage of liquid between the urinal screen 110 and the installation surface.

[0047] In some embodiments, one or more of the posts 112 extend between the first and second frames 114, 116 and are connected to only one of the first and second frames 114, 116. In some such embodiments, flexibility of the screen 110 can be increased and/or splash from the screen 110 can be reduced when in use.

[0048] In some embodiments, the urinal screen 110 may function (e.g., alleviate splash, reduce odor, etc.) within a urinal or toilet independent from the orientation of the first frame 114 with respect to the second frame 116. For example, the first frame 114 and second frame 116 may have similar or identical sizes and shapes which permit the urinal screen 110 to

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function in a substantially similar or identical manner whether the first frame 114 contacts the urinal/toilet or the second frame 116 contacts the urinal/toilet. Such orientation-independent functionality and reduce the likelihood of installation error of the urinal screens 110.

[0049] As illustrated in Figure 6, the first surface 114a (e.g., outer surface) of the first frame 114 and/or the second surface 116b (e.g., outer surface) of the second frame 116 can have a curved or contoured profile (e.g., convex). For example, one or more of the cells on the first frame 114 can have a perimeter (e.g., sides 142a and corners 146a) having curved surfaces 154. The curved surfaces 154 can deflect urine or other fluids which impact the urinal screen 110. In some embodiments, the curved surfaces 154 reduce splashing in the urinal or other appliance in which the urinal screen 110 is installed.

[0050] The curved surfaces 154 can have constant or varying radii of curvature. For example, as illustrated in Figure 6, the sides 142a can have a maximum cross-sectional width D. The curved surfaces 154 can have a vertical radius of curvature R1. The vertical radius of curvature R1 can be greater than D/8, greater than D/6, greater than D/4, greater than D/2, greater than D, and/or greater than 2D. A second radius of curvature R2 can be oriented 45 degrees away from the vertical radius of curvature in a first direction. The second radius of curvature R2 can be greater than 1/8, greater than 1/4, greater than 1/2, greater than 3/4, greater than 1 times, and/or greater than 2 times the vertical radius of curvature R1. A third radius of curvature R3can be oriented 45 degrees away from the vertical radius of curvature in a second direction opposite the first direction. The third radius of curvature R3 can be greater than 1/8, greater than 1/4, greater than 1/2, greater than 3/4, greater than 1 times, and/or greater than 2 times the vertical radius of curvature R1. Many variations are possible.

[0051] Similarly, one or more of the cells of the second frame 116 can have a perimeter (e.g., sides 142b and corners 146b) having curved surfaces 156 which function in the same or in a similar manner to the curved surfaces 154 of the first frame 114 if the screen is installed with the second frame 116 positioned away from the installation surface.

[0052] While the preferred embodiments of the present inventions have been described above, it should be understood that they have been presented by way of example only, and not of limitation. It will be apparent to persons skilled in the relevant art that various changes in form and detail can be made therein without departing from the spirit and scope of the inventions. Thus the present inventions should not be limited by the above-described exemplary

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embodiments, but should be defined only in accordance with the following claims and their equivalents. Furthermore, while certain advantages of the inventions have been described herein, it is to be understood that not necessarily all such advantages may be achieved in accordance with any particular embodiment of the inventions. Thus, for example, those skilled in the art will recognize that the inventions may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other advantages as may be taught or suggested herein.

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WHAT IS CLAIMED IS:

1. A urinal screen comprising:

a first frame portion having:

a first face;

a second face opposite the first face;

an outer perimeter; and

a plurality of openings;

a second frame portion having:

a first face;

a second face opposite the first face;

an outer perimeter; and

a plurality of openings aligned with the plurality of openings of the first frame portion when observed from a perspective perpendicular to the first face of the first frame portion when the urinal screen is set on flat surface; and

a plurality of posts extending from the first face of the first frame portion and connected to the second face of the second frame portion.

2. The urinal screen of claim 1, wherein the plurality of openings occupy at least three fourths of a surface area of the first frame portion as measured parallel to the first face of the first frame portion when the first or second frame portions are resting on a flat surface.

3. The urinal screen of claim 1, wherein the plurality of openings occupy at least one half of a surface area of the first frame portion as measured parallel to the first face of the first frame portion when the first or second frame portions are resting on a flat surface.

4. The urinal screen of claim 1, wherein a size and shape of the outer perimeter of the first frame portion is substantially identical to a size and shape of the outer perimeter of the second frame portion.

5. The urinal screen of claim 1, wherein the outer perimeter of the first frame portion is aligned with the outer perimeter of the second frame portion when observed from a perspective perpendicular to the first face of the second frame portion.

6. The urinal screen of claim 1, wherein the plurality of posts are aligned perpendicular to the first face of the first frame portion and perpendicular to the second face of the second frame portion.

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7. The urinal screen of claim 1, wherein each of the posts has a same height, and wherein a thickness of the first frame as measured perpendicular to the first face of the first frame is less than one fourth of a height of the posts.

8. A urinal screen comprising:

a first frame portion comprising a plurality of connected cells, each of the cells having a plurality of sides and a plurality of corners, each of the plurality of sides connected at two corners to at least two other sides;

a second frame portion comprising a plurality of connected cells, each of the cells of the second frame portion having a plurality of sides and a plurality of corners, each of the plurality of sides of the cells of the second frame portion connected at two corners to at least two other sides; and

a plurality of posts extending between and connected to each of the first and second frame portions;

wherein at least one of the sides of each of the cells of the first frame and second frame is shared with another cell, and wherein the connected cells form at least a majority of an area of the first frame and of the second frame.

9. The urinal screen of claim 8, wherein each of the sides of each of the cells of the first frame is either shared with another cell or forms a portion of an outer perimeter of the first frame portion.

10. The urinal screen of claim 8, wherein each of the cells has a hexagonal shape.

11. The urinal screen of claim 8, wherein each of the sides of the cells of the first frame has a same, uniform thickness as measured in a plane parallel to the first frame.

12. The urinal screen of claim 8, wherein each of the cells has a same shape as each other cell.

13. The urinal screen of claim 8, wherein at least one of the plurality of posts is shorter than at least another one of the plurality of posts.

14. The urinal screen of claim 8, wherein each of the cells of the first frame portion has an opening defined by an interior of the plurality of sides and corners.

15. A urinal screen comprising:

a first frame portion comprising:

a plurality of interconnected sides; and

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a plurality of corners at junctions between two or more sides, the sides and corners of the first frame portion forming open cells;

a second frame portion comprising:

a plurality of interconnected sides; and

a plurality of corners at junctions between two or more sides, the sides and corners of the second frame portion forming open cells; and

a plurality of posts connecting the first frame portion to the second frame portion;

wherein the plurality of interconnected sides of the first frame portion have convex surfaces facing away from the second frame portion.

16. The urinal screen of claim 15, wherein the plurality of interconnected sides of the second frame portion have convex surfaces facing away from the first frame portion.

17. The urinal screen of claim 15, wherein each of the plurality of interconnected sides has a first end, a second end, and a length measured from the first end to the second end, and wherein a thickness of each of the one or more interconnected sides as measured parallel to the first frame portion and perpendicular to the length of the side is substantially constant between the first end and the second end of the side.

18. The urinal screen of claim 15, wherein one or more of the plurality of posts extends at a non-perpendicular angle with respect to the first frame portion.

19. The urinal screen of claim 15, wherein a radius of curvature of the convex surfaces is non-constant.

20. The urinal screen of claim 15, wherein one or more of the posts is tapered between the second frame portion and the first frame portion.

21. The urinal screen of claim 15, wherein one or more of the first frame portion and the second frame portion is loaded with a fragrance.

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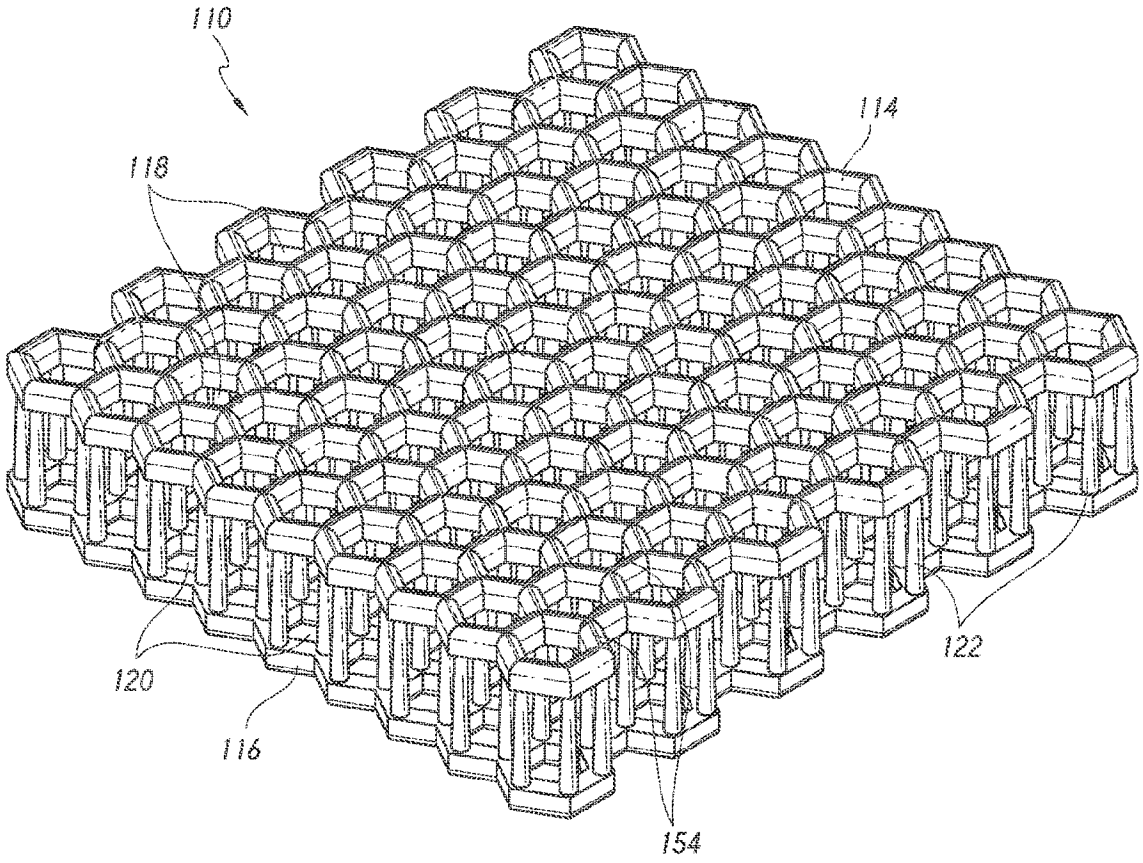


FIG. 1

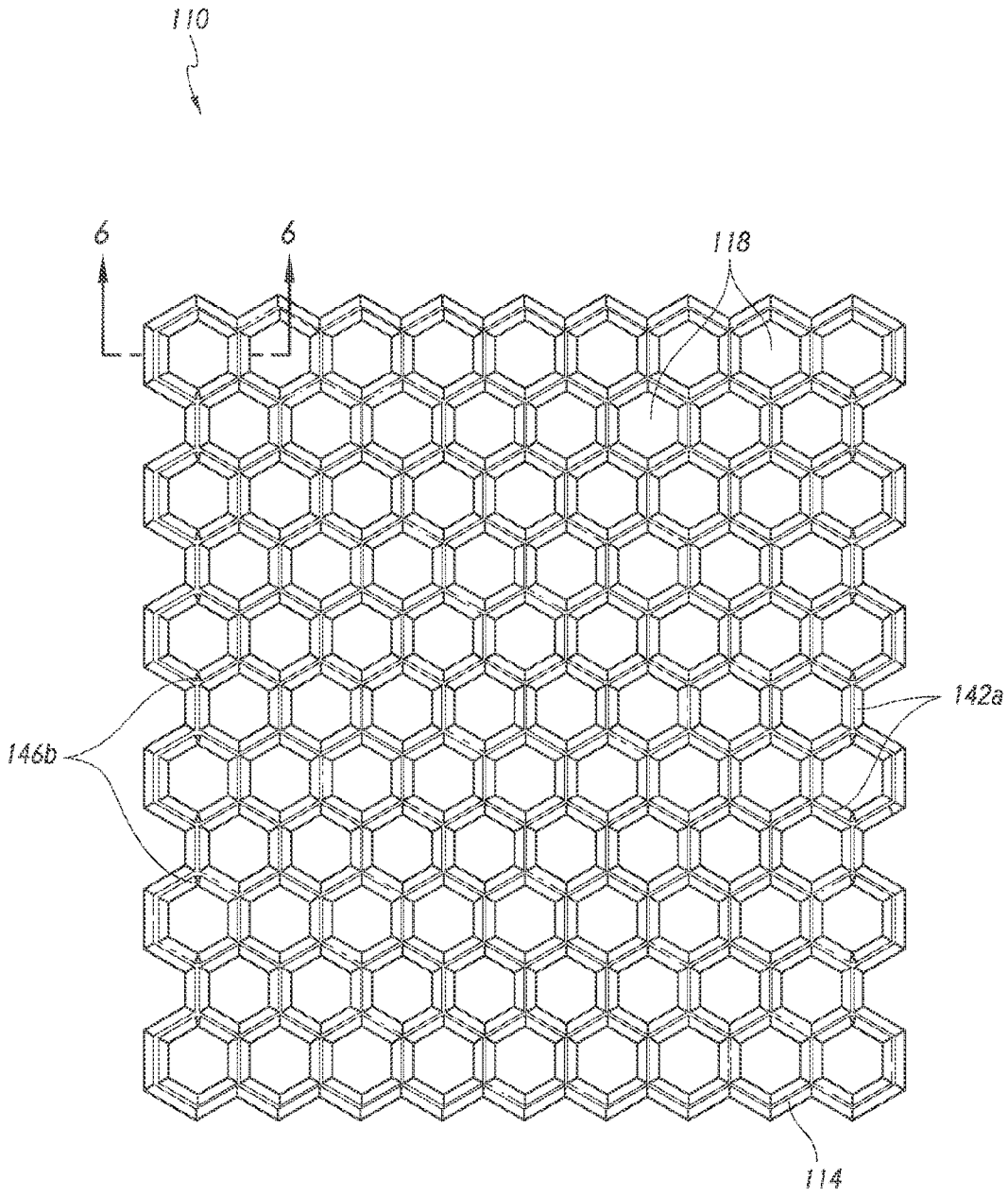


FIG. 2

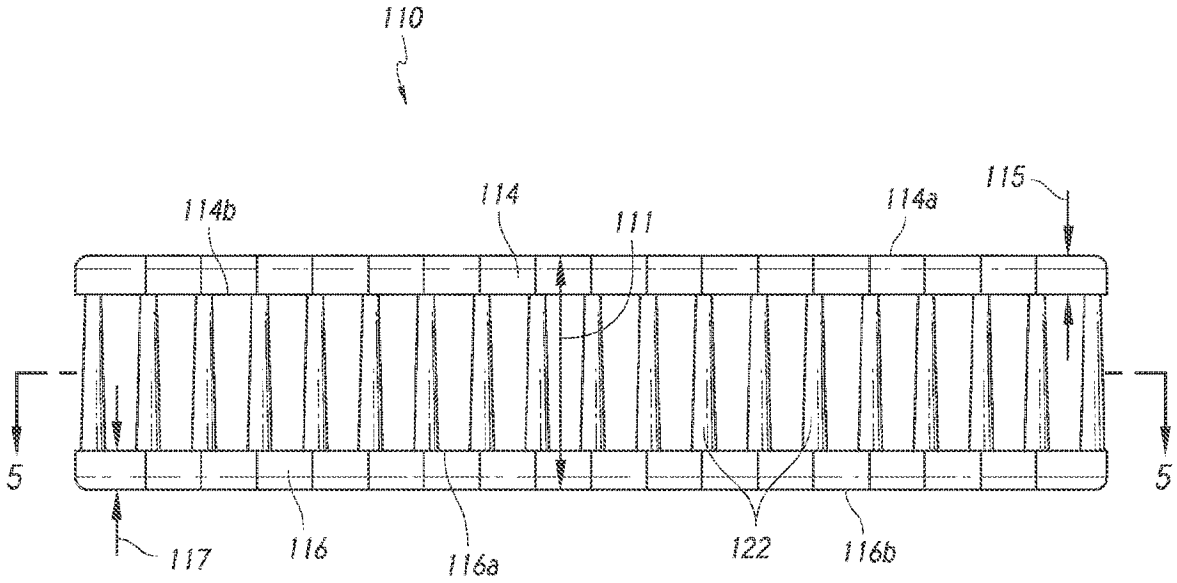

110
114b
114
111
114a
115
5
5
117
116
116a
122
116b

FIG. 3

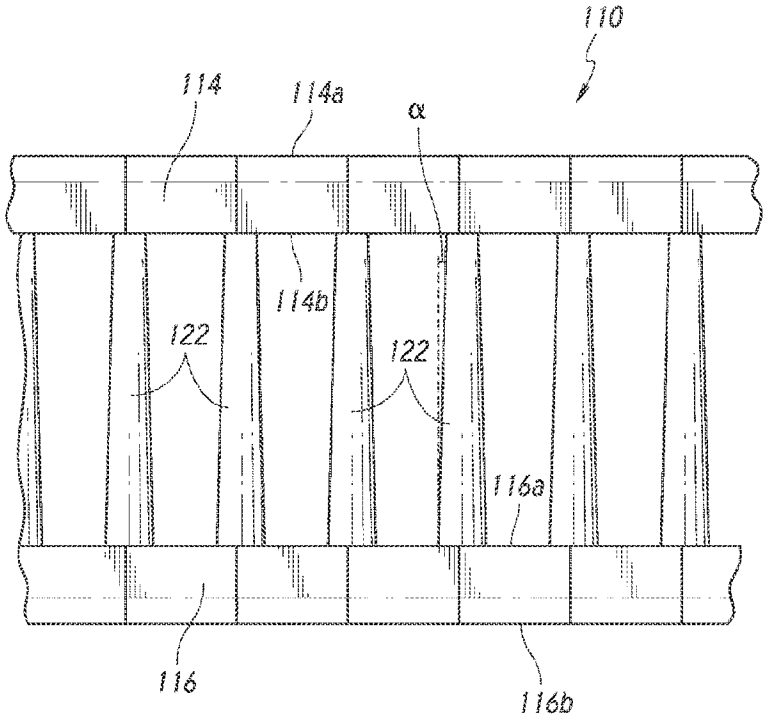

110
114
114a
α
114b
122
122
116a
116
116b

FIG. 4

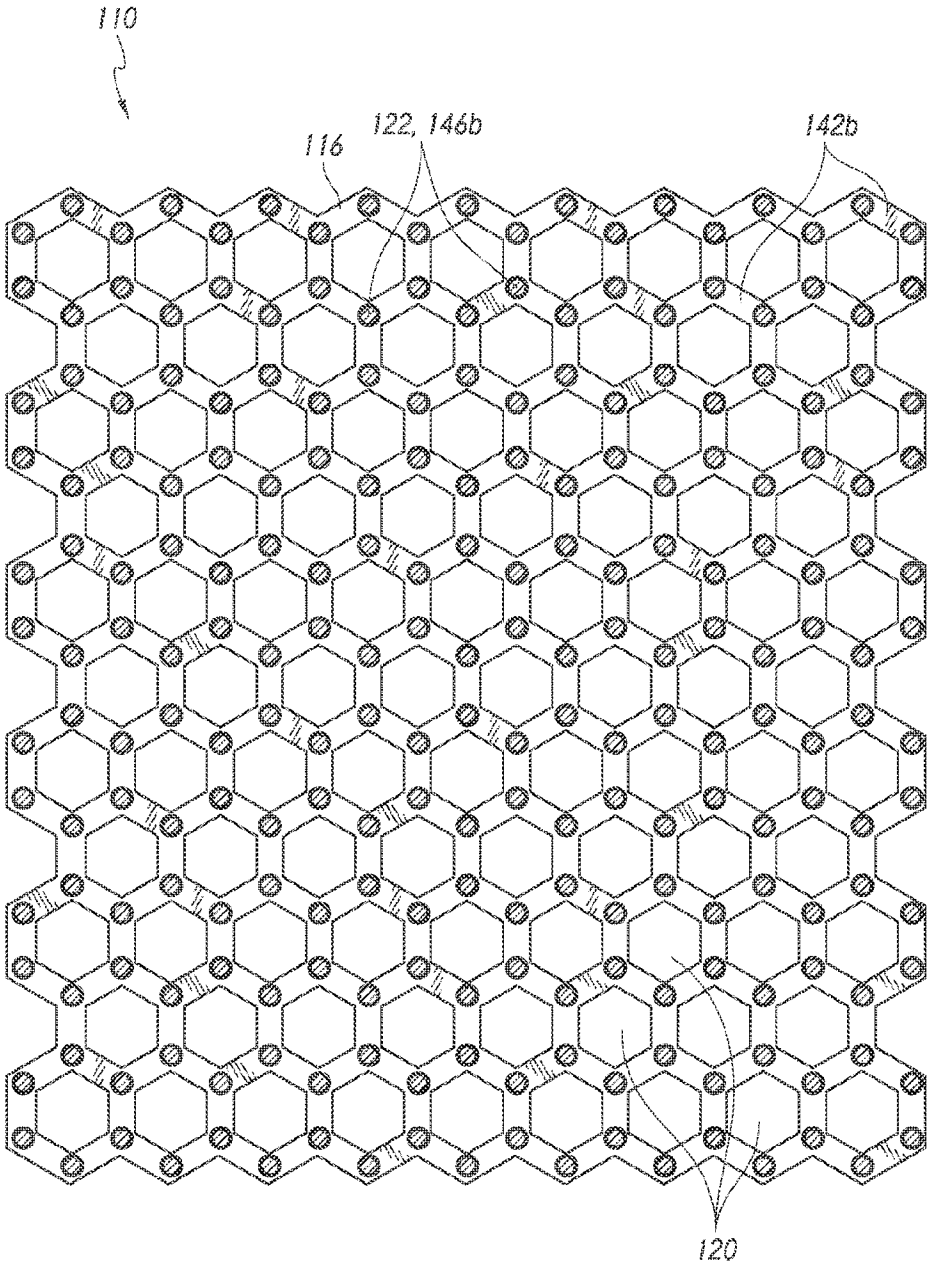


FIG. 5

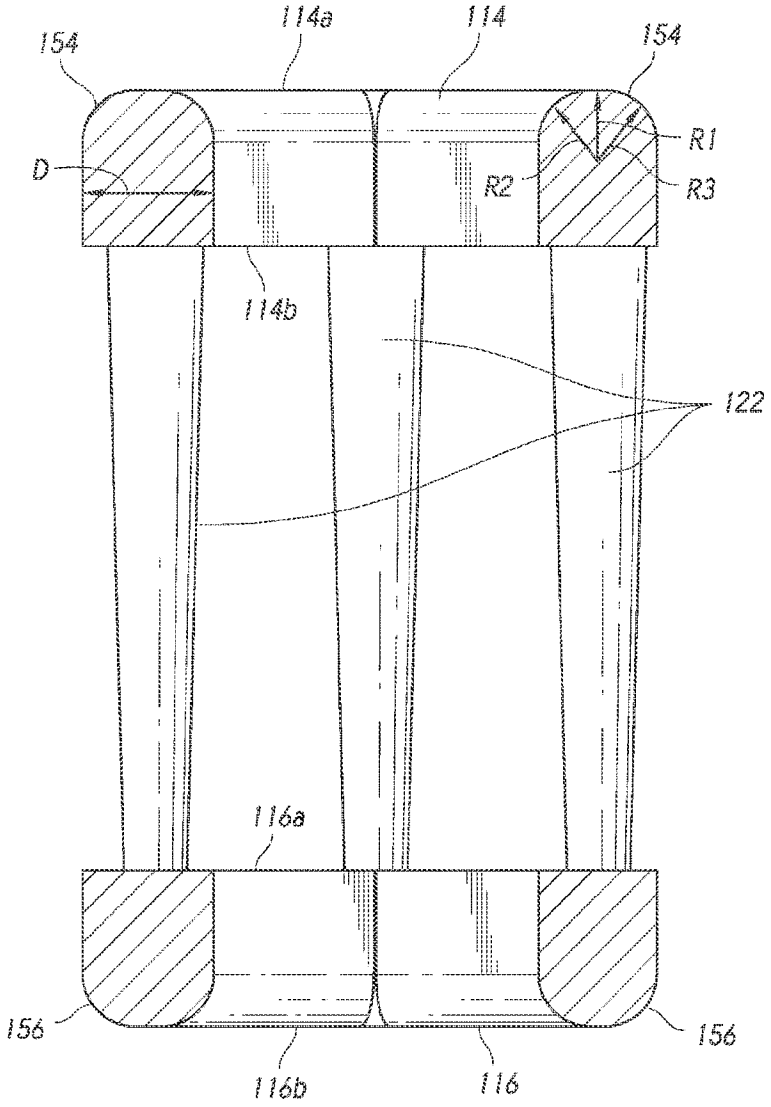


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/055166

A. CLASSIFICATION OF SUBJECT MATTER
INV. E03D13/00
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E03D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 813 058 A (QUIGLEY JOHN R [US] ET AL) 29 September 1998 (1998-09-29) figures 1,2	1-21
A	US 2010/183694 A1 (BURKE ROBERT B [US] ET AL) 22 July 2010 (2010-07-22) the whole document	1-21

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
14 December 2015	04/01/2016

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Geisenhofer, Michael

1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2015/055166

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5813058 A	29-09-1998	NONE	
US 2010183694 A1	22-07-2010	US 2010183694 A1	22-07-2010
		WO 2010090833 A2	12-08-2010

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Electronic Patent Application Fee Transmittal

Application Number:	14925369
Filing Date:	28-Oct-2015
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Edward A. Schlatter/Taylor Livingston
Attorney Docket Number:	FRESHPR.061A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	27	50	1350
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Extension - 2 months with $0 paid	2252	1	300	300
Miscellaneous:				
RCE- 1ST REQUEST	2801	1	650	650
		Total in USD ($)		**2300**

Electronic Acknowledgement Receipt

EFS ID:	32705266
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Edward A. Schlatter/Imran Ahmed
Filer Authorized By:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	23-MAY-2018
Filing Date:	28-OCT-2015
Time Stamp:	16:05:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$2300
RAM confirmation Number	052418INTEFSW16063700
Deposit Account	111410
Authorized User	Imran Ahmed

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amendment.pdf	83029 1e2dd03d43c33f46079264ace1a82fd4cfd7f438	yes	18

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Applicant Arguments/Remarks Made in an Amendment	15	18
Applicant summary of interview with examiner	14	14
Drawings-other than black and white line drawings	13	13
Claims	4	12
Specification	2	3
Amendment Submitted/Entered with Filing of CPA/RCE	1	1

Warnings:

Information:

2	Drawings-other than black and white line drawings	repl_drawing.pdf	21913 dbe274a16e3f74ad9eca84246727ce567708f2b8	no	1

Warnings:

Information:

3	Request for Continued Examination (RCE)	RCE.pdf	73138 a6dc01e4932cbbb54a3c2cfc236ae5624c99b9ec	no	3

Warnings:

This is not a USPTO supplied RCE SB30 form.

Information:

4		IDS.pdf	41158 80c342d13097146e2f959435134355809a083dd9	yes	2
	Multipart Description/PDF files in .zip description				
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	Information Disclosure Statement (IDS) Form (SB08)		2	2	
	Transmittal Letter		1	1	
Warnings:					
Information:					
5	Foreign Reference	GB2431101.pdf	1496921 c721b9efd473b261de6fda3eae5ebccecef9d76b	no	13
Warnings:					
Information:					
6	Foreign Reference	WO2016060998.pdf	3085925 5a079a98c086e1cf8b4c8b76c31a09ed5d5cd625	no	23
Warnings:					
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7	Fee Worksheet (SB06)	fee-info.pdf	34044 67d02491c7af10f5ab028677086971bdddc209b0	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	4836128	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

In response to the Final Office Action mailed January 5, 2018, Applicant has amended Claims 2-5, 8, 11-13, 16, 17, 20-23, 25, and 27, canceled Claim 1, and added new Claims 29-56. No new matter is believed to be added by way of these amendments and new claims. As such, Claims 2-56 remain pending for examination.

Objection to the Drawings

The drawings have been objected to as not showing every feature of the invention specified in the claims. Applicant has amended the drawings and specification such that features of the claims are depicted in the drawings. No new matter is added. In view of the foregoing, Applicant respectfully requests withdrawal of the objection.

Claim Rejections under 35 U.S.C. 103

The Office Action rejected Claims 1 and 11-23 under 35 U.S.C. 103 as being unpatentable over U.S. Patent Pub. No. 2014/0259344 of Muderlak et al. in view of U.S. Patent No. 927,026 to Clayton. Claims 2-10 were rejected as being unpatentable over Muderlak in view of Clayton, further in view of U.S. Patent No. 4,671,976 to Vidal. Finally, Claims 23-28 were rejected as being unpatentable over Muderlak in view of Clayton and Vidal. Applicant respectfully traverses these rejections. However, in order to expedite prosecution of the present application, Applicant has amended the claims as shown above, without prejudice or disclaimer to previous versions thereof.

With respect to Claim 13, the art of record does not disclose or suggest, among other things, "a frame having: a first face; a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame; wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface; wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set; wherein a plurality of ends of the plurality of second posts form a

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base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set; wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame; wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings," as recited in currently amended Claim 13. Therefore, for at least these reasons, Muderlak, Clayton, and any other art of record, either alone or in combination, do not render obvious Claim 13. Further, Claims 2-12, 14-16, 20, 23, and 24, which depend directly or indirectly from Claim 13, are allowable for at least the reasons stated above for Claim 13, and for the unique combination of features disclosed therein.

With respect to Claim 42, the art of record does not disclose or suggest, among other things, "a frame having: a first face; a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame; wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set; wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set; wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings," as recited in new Claim 42. Therefore, for at least these reasons, Muderlak, Clayton, and any other art of record,

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either alone or in combination, do not render obvious Claim 42. Further, Claims 22, 27, 28, and 43-56, which depend directly or indirectly from Claim 42, are allowable for at least the reasons stated above for Claim 42, and for the unique combination of features disclosed therein.

With respect to Claim 17, the art of record does not disclose or suggest, among other things, "a frame having: a first face; a second face opposite the first face; and a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells; wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell; wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and wherein: the first end of the first brace intersects at a corner with no more than two other braces; the first end of the second brace intersects at a corner with no more than two other braces; and the first end of the third brace intersects at a corner with no more than two other braces; a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame; and a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame," as recited in currently amended Claim 17. Therefore, for at least these reasons, Muderlak, Clayton, and any other art of record, either alone or in combination, do not render obvious Claim 17. Further, Claims 18, 19, 21, 25, 26, and 29-41, which depend directly or indirectly from Claim 17, are allowable for at least the reasons stated above for Claim 17, and for the unique combination of features disclosed therein.

For the foregoing reasons, it is respectfully submitted that the claims are in condition for allowance. If any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly

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No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

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Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: May 23, 2018

By: /Edward A. Schlatter/
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28278846

VECTAIR EX.1002, PG.127

SUMMARY OF INTERVIEW

Attendees, Date and Type of Interview

The interview was conducted in person on May 10, 2018 and attended by Examiner Ashley Crane and Applicant's representative, Edward Schlatter.

Exhibits and/or Demonstrations

None

Identification of Claims Discussed

The pending independent claims were discussed.

Identification of Cited/Disclosed Art Discussed

U.S. Patent Application Publication No. 2014/0259344 to Muderlak et al., U.S. Patent No. 927,026 to Clayton, and U.S. Patent No. 4,671,976 to Vidal.

Proposed Amendments, Principal Arguments, Other Matters, and Results of Interview

Initially, it was agreed that the submission of new Figure 6 and the related amendment of the specification would overcome the objection based on the figures not showing every aspect of the claims.

Applicant and Examiner then discussed the cited references and differences between the claimed urinal screens and the cited references. With respect to the cited references, it was agreed that Clayton discloses a floor, not a urinal screen. With respect to the claims, it was agreed that Claim 13, as amended above, appears to define over the art of record. In addition, the Examiner suggested that a urinal screen as claimed in Claim 42, including that (1) a number of posts surround the opening and (2) the posts reduce splashing, would appear to define over the art of record. Finally, it was agreed that a urinal screen as claimed in amended Claim 17, including that the first ends of the braces intersect at a corner with no more than two other braces, would appear to define over the art of record.

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AMENDMENTS TO THE DRAWINGS

Please amend the drawings to include new FIG. 6. A new sheet for the added drawing is submitted herewith. No new matter is added.

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AMENDMENTS TO THE CLAIMS

1. (***Canceled***)

2. (***Currently Amended***) The urinal screen of Claim 13~~claim 1~~, wherein each of the plurality of openings is defined by a polygonal perimeter structure.

3. (***Currently Amended***) The urinal screen of Claim 13~~claim 1~~, wherein each of the plurality of openings ~~opening~~ is defined by a perimeter structure having a plurality of braces and corners.

4. (***Currently Amended***) The urinal screen of claim 3, wherein each of the plurality of first posts extends from a corner of a perimeter structure defining [[of]]one or more of the plurality of openings.

5. (***Currently Amended***) The urinal screen of claim 3, wherein each of the plurality of second posts extends from a midpoint of a brace of a perimeter structure defining [[of]]one or more of the plurality of openings.

6. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. (***Currently Amended***) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

10. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. (***Currently Amended***) The urinal screen of Claim 13~~claim 1~~, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. (***Currently Amended***) The urinal screen of Claim 13~~claim 1~~, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented

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toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 3/8 ~~one third~~ of the [[a]]thickness of the urinal screen ~~as measured perpendicular to the first face of the frame~~.

13. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface;

wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface upon which the urinal screen is set by at least 1/3 of a thickness of the urinal screen as measured perpendicular to the first face of the frame;

wherein at least one of the plurality of first posts extends from a perimeter around each of said plurality of openings; and

wherein at least one of the plurality of second posts extends from a perimeter around each of said plurality of openings.

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14. (Original) The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. (Original) The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

16. (***Currently Amended***) The urinal screen of claim 13, wherein [[the]]perimeter structures that define [[of]]the plurality of openings occupy less than one fifth of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface ~~measured parallel to a first plane face of the frame, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface~~.

17. (***Currently Amended***) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells at least partially defined by a plurality of braces that intersect at corners, the plurality of interconnected cells comprising at least a plurality of perimeter cells and a plurality of interior cells~~, each cell having a polygonal shape with a plurality of sides and corners~~;

wherein the plurality of interior cells comprises a first cell, a second cell, and a third cell, said first cell and said second cell each partially defined by a first brace positioned between said first cell and said second cell, said second cell and said third cell each partially defined by a second brace positioned between said second cell and said third cell, and said first cell and said third cell each partially defined by a third brace positioned between said first cell and said third cell;

wherein each of the first brace, the second brace, and the third brace comprises a first end and a second end, and wherein:

the first end of the first brace intersects at a corner with no more than two other braces;

the first end of the second brace intersects at a corner with no more than two other braces; and

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the first end of the third brace intersects at a corner with no more than two other braces;

a plurality of first posts each connected to a brace or corner of the frame and extending from away from the first face of the frame~~, each of the plurality of first posts connected to a side or corner of the plurality of interconnected cells~~; and

a plurality of second posts each connected to a brace or corner of the frame and extending away from the second face of the frame~~, each of the plurality of second posts connected to a side or corner of the plurality of interconnected cells;~~

~~wherein each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, and wherein a majority of the cells have identical shapes~~.

18. (Original) The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

19. (Original) The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

20. (***Currently Amended***) A urinal system comprising:

the urinal screen of Claim 13~~claim 1~~; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

21. (***Currently Amended***) A urinal system comprising:

the urinal screen of Claim 17~~claim 13~~; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

22. (***Currently Amended***) A urinal system comprising:

the urinal screen of Claim 42~~claim 17~~; and

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a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

23. (***Currently Amended***) The urinal screen of Claim 13~~claim 1~~, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

24. (Previously Presented) The urinal screen of claim 23, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

25. (***Currently Amended***) The urinal screen of Claim 17~~claim 13~~, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

26. (Previously Presented) The urinal screen of claim 25, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

27. (***Currently Amended***) The urinal screen of Claim 42~~claim 17~~, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

28. (Previously Presented) The urinal screen of claim 27, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

29. (***New***) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a polygonal shape.

30. (***New***) The urinal screen of Claim 17, wherein the first cell, second cell, and third cell each comprise a hexagonal shape.

31. (***New***) The urinal screen of Claim 17, wherein at least some of the plurality of interconnected cells comprise a polygonal shape.

32. (***New***) The urinal screen of Claim 17, wherein each of the plurality of interconnected cells comprises a polygonal shape.

33. (***New***) The urinal screen of Claim 17, wherein each of the first brace, the second brace, and the third brace has at least one of the plurality of first posts connected thereto and at least one of the plurality of second posts connected thereto.

34. (***New***) The urinal screen of Claim 17, further comprising one or more additional posts connected to the frame at an area other than a brace or corner.

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35. (*New*) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a brace of the frame, and each of the plurality of second posts is connected to a brace of the frame.

36. (*New*) The urinal screen of Claim 17, wherein each of the plurality of first posts is connected to a corner of the frame, and each of the plurality of second posts is connected to a corner of the frame.

37. (*New*) The urinal screen of Claim 17, wherein at least some of the plurality of first posts and plurality of second posts are connected to braces of the frame, and at least some of the plurality of first posts and plurality of second posts are connected to corners of the frame.

38. (*New*) The urinal screen of Claim 17, wherein a majority of the plurality of interconnected cells have identical shapes.

39. (*New*) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/3 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

40. (*New*) The urinal screen of Claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than 1/8 of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

41. (*New*) The urinal screen of Claim 17, wherein the second end of the first brace intersects at a corner with no more than two other braces, the second end of the second brace intersects at a corner with no more than two other braces, and the second end of the third brace intersects at a corner with no more than two other braces.

42. (*New*) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

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wherein a plurality of ends of the plurality of first posts form a base upon which the urinal screen rests when the plurality of second posts point away from a surface upon which the urinal screen is set;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set;

wherein a number of said plurality of first posts and a number of said plurality of second posts are positioned along a perimeter of at least some of the plurality of openings, so as to surround the at least some of the plurality of openings; and

wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/4 of a thickness of the urinal screen as measured perpendicular to the first face of the frame, such that posts positioned between the frame and the surface upon which the urinal screen is set can reduce splashing on a user of the urinal by deflecting a flow of urine which passes through said plurality of openings.

43. (***New***) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 1/3 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

44. (***New***) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 3/8 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

45. (***New***) The urinal screen of Claim 42, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface upon which the urinal screen is set, the frame is positioned away from the surface by at least 4/9 of the thickness of the urinal screen as measured perpendicular to the first face of the frame.

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46. (***New***) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/3 of the thickness of the urinal screen.

47. (***New***) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/4 of the thickness of the urinal screen.

48. (***New***) The urinal screen of Claim 42, wherein a thickness of the frame as measured perpendicular to the first face of the frame is less than or equal to 1/8 of the thickness of the urinal screen.

49. (***New***) The urinal screen of Claim 42, wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

50. (***New***) The urinal screen of Claim 42, wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

51. (***New***) The urinal screen of Claim 42, wherein the plurality of openings occupy more than 2/3 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

52. (***New***) The urinal screen of Claim 42, wherein the plurality of openings occupy at least 3/4 of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

53. (***New***) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the corners.

54. (***New***) The urinal screen of Claim 42, wherein the perimeter of the at least some of the plurality of openings comprises a polygonal shape defined by a plurality of braces and corners, and at least some of the number of said plurality of first posts and at least some of the number of said plurality of seconds posts extend from the braces.

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55. (***New***) The urinal screen of Claim 42, wherein six of said plurality of first posts and six of said plurality of second posts are positioned along the perimeter of the at least some of the plurality of openings, so as to surround the at least some of the plurality of openings.

56. (***New***) The urinal screen of Claim 42, wherein the plurality of openings comprise a contoured side surface to further reduce splashing on the user of the urinal by deflecting a flow of urine.

AMENDMENTS TO THE SPECIFICATION

Please insert the following paragraph after paragraph [0030] of the specification as filed:

Figure 6 is a schematic side view of a post extending from a frame of a urinal screen at a non-perpendicular angle.

Please amend paragraph [0042] as filed as below, with additions indicated by underline and deletions indicated by strikethrough:

[0042] In some embodiments, at least half, at least 3/4, at least 1/5, at least 2/3, at least 1/3, at least 9/10, at least 4/5 and/or at least 1/10 of the first plurality of posts 22a have a same size and shape as at least half, at least 3/4, at least 1/5, at least 2/3, at least 1/3, at least 9/10, at least 4/5 and/or at least 1/10 of the second plurality of posts 22b. In some embodiments, one or more of the posts in the first plurality of posts 22a has a different shape and/or height than one or more of the posts in the second plurality of posts 22b. In some embodiments, the first plurality of posts 22a and/or the second plurality of posts 22b have a plurality of heights. For example, a percentage (e.g., 25%, 50%, 75% or some other percentage) of the posts 22 can be shorter than the remaining posts as measured from the first or second surfaces 26, 30 of the frame 14. In some embodiments, at least 4/5, at least 3/5, at least 1/2, and/or at least 1/4 of the posts 22 have a height differing from the remaining posts 22. In some embodiments, one or more of the posts 22 is at least 1/5, at least 1/10, at least 1/8, at least 1/4, and/or at least 1/3 shorter than one or more of the other posts 22. In some cases, each post is at least 1/5 shorter, at least 1/10 shorter, at least 1/8 shorter, at least 1/4 shorter, at least 1/3 shorter, at least 1/2 taller, at least 1/4 taller, at least 1/8 taller, at least 1/10 taller, and/or at least 1/16 taller than at least one of the 3 closest posts 22, at least one of the 5 closest posts 22, at least one of the 7 closest posts 22, at least one of the 9 closest posts 22, at least one of the 10 closest posts 22, at least one of the 12 closest posts 22, and/or at least one of the 15 closest posts 22. In some embodiments, shortening a percentage of the posts 22 can reduce the likelihood that debris is caught in the urinal screen

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10. The posts 22 can extend perpendicularly from the frame 14 (e.g., from the first or second surfaces 26, 30 of the frame 14). In some embodiments, one or more of the posts 22 extends from the frame 14 at a non-perpendicular angle (for example, non-perpendicular angle A of Figure 6).

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Douglas S. Brown
App. No.	:	14/925,369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION DATED JANUARY 5, 2018

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Final Office Action dated January 5, 2018, Applicant respectfully submits the following. This response is filed with a Request for Continued Examination.

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims which begins on page 4 of this paper.

Amendments to the Drawings begin on page 13 of this paper. A "New Sheet" for each sheet of drawings being added can be found in the Appendix.

Summary of Interview begins on page 14 of this paper.

Remarks/Arguments begin on page 15 of this paper.

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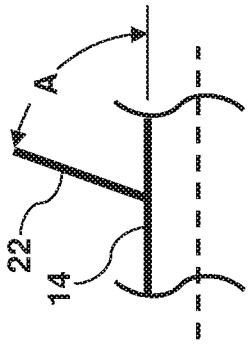


FIG. 6

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 01/05/2018

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ART UNIT	PAPER NUMBER
3754	

NOTIFICATION DATE	DELIVERY MODE
01/05/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 14/925,369	Applicant(s) BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/27/2017*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-28* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-28* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the one or more of the first and second posts extend from the first face of the frame at a non-perpendicular angle as recited claims 23-28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim(s) 1, 11-23 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026).

4. Regarding Claim 1, Muderlak shows a urinal screen as shown in Fig.3, comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame; wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set. Muderlak fails to show at least half of the plurality of first posts are a

same size and shape as at least half of the plurality of second posts. Clayton shows a floor covering. The covering includes a first face including a plurality of posts (11) and a second face include a second plurality of post (12). at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts., Fig.3. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts in order to allow the device to be reversed (column 2 lines 60-65).

5. Regarding Claims 11 and 12, Muderlak shows the urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

6. Regarding Claims 20, Murderlak shows a urinal system comprising: the urinal screen of claim 1; and a urinal (36) having a bottom surface and a drain extending through a portion of the bottom surface; wherein the urinal screen is configured to be positioned on the bottom surface of the urinal, Fig.5.

7. Regarding Claim 13, Muderlak shows a urinal screen comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a

plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame, Fig.3; Muderlak fails to show the opening occupying at least half of the frame. Clayton teaches a screen. The screen includes opens that occupy at least half of the frame, Fig.5. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

8. Regarding Claim 14, Muderlak shows the urinal screen of claim 13, but fails to show the opening occupying 75% of the frame. Clayton teaches a screen. The screen has opens that occupy 75% of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

9. Regarding Claim 15, Muderlak shows the urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

10. Regarding Claim 16 Muderlak shows the urinal screen of claim 13, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface. Murderlak fails to show the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to

include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

1. Regarding Claims 21, Murderlak shows a urinal system comprising: the urinal screen of claim 13; and a urinal (36) having a bottom surface and a drain extending through a portion of the bottom surface; wherein the urinal screen is configured to be positioned on the bottom surface of the urinal, Fig.5.

2. Regarding Claims 17-19, Murderlak shows a urinal screen comprising: a frame (18') having: a first face; a second face opposite the first face; a plurality of first posts (24') extending from away from the first face, each of the plurality of first posts connected to a front side of the device; and a plurality of second posts extending away from the second face of the frame, Fig.3, each of the plurality of second posts connected to a side of the device. A thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Muderlak fails to show interconnect cells. Clayton teaches a screen. The screen includes a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners. Each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, wherein a majority of the cells have identical shapes, Fig. 5. The plurality of interconnected cells form a tessellation. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an interconnected cells in order to ensure the water or urine is allowed to flow through the screen.

3. Regarding Claims 22, Murderlak shows a urinal system comprising: the urinal screen of claim 17; and a urinal (36) having a bottom surface and a drain extending through a portion of the bottom surface; wherein the urinal screen is configured to be positioned on the bottom surface of the urinal, Fig.5.

4. Claims 2-10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026), as applied to claim 1 above and further in view of Vidal (U.S. Patent 4,671,976). Muderlak shows the urinal screen of claim 1, but fails to show openings having a polygonal perimeter. Vidal teaches a urinal screen, Fig.8. The urinal screen includes a plurality of openings is defined by a polygonal perimeter structure. The urinal screen includes a plurality of openings. Each opening is defined by a perimeter structure having plurality of braces (3) and corners (3'). Each of plurality of first posts (12) extends from a corner of a perimeter structure of one or more of the plurality of openings. The plurality of posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings. Wherein at least one of the plurality of posts extends from each of the braces of the perimeter structure defining the openings. At least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. Wherein at least one of the plurality of posts extends from each of the braces of the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. The at least one of the plurality of posts extends from a brace or corner of the perimeter structure defining each opening. At least one of the plurality of

first posts extends from a brace or corner of the perimeter structure defining each opening. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include polygon shaped openings in order to ensure the water or urine is allowed to flow through the screen. The combination yields first and second post located near the corners and brace of the urinal cover.

5. Claims 23-28 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026) as applied to claims 1 and 13 above and further in view of Vidal (U.S. Patent 4,671,976). Muderlak shows the urinal screen of claims 1, 13, and 17, but fails to show the first posts extending at a non-perpendicular angle. Vidal teaches a drain cover. The device includes one or more of the first posts extend from the first face of the frame at a non-perpendicular angle, Fig.7.It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to first and second posts extending at a non-perpendicular angle in order to catch debris. The combination yields one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

Response to Arguments

4. Applicant's arguments filed 9/27/2017 have been fully considered but they are not persuasive.

5. Applicant argues that Clayton is not analogous art to Muderalk. The examiner disagrees. In response to applicant's argument that Clayton is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant’s endeavor or,

if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Clayton teaches a screen that is used that is used with a urinal that includes posts on both faces of the frame in order to allow the device to be reversed.

6. Applicant argues that there is no motivation to combine Muderalk and Clayton. The examiner disagrees. Muderalk shows a plurality of posts located on the first and second faces of the frame. Clayton also teaches a screen that is used with a urinal. The screen of Clayton includes posts located on the first and second faces of the frame in order to allow the device to be reversible. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

7. Applicant argues that the increase of side of openings relies on hindsight. The examiner disagrees. Muderalk teaches openings located between the frames. Clayton also teaches openings. Changing the openings allows for more fluid to pass through the frame. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

8. Applicant argues that modifying Muderalk to comprise interconnected cell relies on improper hindsight. The examiner disagrees. The examiner disagrees. Muderalk teaches openings located between the frames. Clayton also teaches interconnected cells. Changing the openings or cells allows for more fluid to pass through the frame. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on 9:30 am - 5:00 pm Monday - Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allana L. Bidder can be reached on (571) 272-5560. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

Notice of References Cited	Application/Control No. 14/925,369	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-4,671,976 A	06-1987	Vidal; Stella M.	A47K1/14	4/286
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	Art Unit
	LAUREN CRANE	3754

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
E03D13/005	12/13/2016	LC

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
4	256.1	12/13/2016	LC
4	256.1, 300.3	12/29/2017	LC

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
Consulted with Primary Examiner Janie Loeppke	12/29/2017	LC

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

RESPONSE TO OFFICE ACTION DATED JUNE 27, 2017

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Office Action dated June 27, 2017, Applicant respectfully submits the following.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

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AMENDMENTS TO THE CLAIMS

1. (Original) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set; and

wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

2. (Original) The urinal screen of claim 1, wherein each of the openings is defined by a polygonal perimeter structure.

3. (Original) The urinal screen of claim 1, wherein each opening is defined by a perimeter structure having plurality of braces and corners.

4. (Original) The urinal screen of claim 3, wherein each of plurality of first posts extends from a corner of a perimeter structure of one or more of the plurality of openings.

5. (Original) The urinal screen of claim 3, wherein each of plurality of second posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings.

6. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the openings and wherein at least one of the

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plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

10. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. (Original) The urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. (Original) The urinal screen of claim 1, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

13. (Original) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

14. (Original) The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. (Original) The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

16. (Original) The urinal screen of claim 13, wherein the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface.

17. (Previously Presented) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners;

a plurality of first posts extending from away from the first face, each of the plurality of first posts connected to a side or corner of the plurality of interconnected cells; and

a plurality of second posts extending away from the second face of the frame, each of the plurality of second posts connected to a side or corner of the plurality of interconnected cells;

wherein each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, and wherein a majority of the cells have identical shapes.

18. (Original) The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

19. (Original) The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

20. (New) A urinal system comprising:

the urinal screen of claim 1; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

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21. (New) A urinal system comprising:

the urinal screen of claim 13; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

22. (New) A urinal system comprising:

the urinal screen of claim 17; and

a urinal having a bottom surface and a drain extending through a portion of the bottom surface;

wherein the urinal screen is configured to be positioned on the bottom surface of the urinal.

23. (New) The urinal screen of claim 1, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

24. (New) The urinal screen of claim 23, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

25. (New) The urinal screen of claim 13, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

26. (New) The urinal screen of claim 25, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

27. (New) The urinal screen of claim 17, wherein one or more of the first posts extend from the first face of the frame at a non-perpendicular angle.

28. (New) The urinal screen of claim 27, wherein one or more of the second posts extend from the second face of the frame at a non-perpendicular angle.

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REMARKS

In response to the Office Action mailed June 27, 2017, Applicant has added new claims 20-28. No new matter is believed to be added by way of these new claims. As such, claims 1-28 remain pending for examination.

Claim Rejections under 35 U.S.C. 103

The Office Action rejected claims 1 and 11-16 under 35 U.S.C. 103 as being unpatentable over U.S. Patent Pub. No. 2014/0259344 of Muderlak et al. in view of U.S. Patent No. 927,026 to Clayton. Claims 2-10 were rejected as being unpatentable over Muderlak in view of Clayton, further in view of U.S. Patent No. 4,671,976 to Vidal. Finally, claims 17-19 were rejected as being unpatentable over Muderlak in view of Clayton. Applicant respectfully traverses these rejections.

The Combination of Muderlak and Clayton is Improper

Claim 1 recites, among other features:

> a plurality of first posts extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame…wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

As admitted in the Office Action, "Muderlak fails to show at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts." Office Action, page 3. The Office Action argues that:

> It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts in order to allow the device to be reversed (column 2 lines 60-65).

Id.

Applicant respectfully asserts that the combination of Muderlak and Clayton, which forms the basis of rejection for each pending claim, including claim 1, is improper for at least two reasons. First, Applicant submits that Clayton is not analogous art to Muderlak. Second,

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Applicant submits that there would be no motivation, other than hindsight bias, to combine Muderlak with Clayton.

Clayton Is Not Analogous Art to Muderlak or to the Present Application

Muderlak

Muderlak discusses a urinal screen system 10. As illustrated in Figure 1 of Muderlak, the urinal screen system 10 includes a flexible screen 12 used in combination with a module 26 for containing a fragrance or enzyme 28. Muderlak, par. [0037].

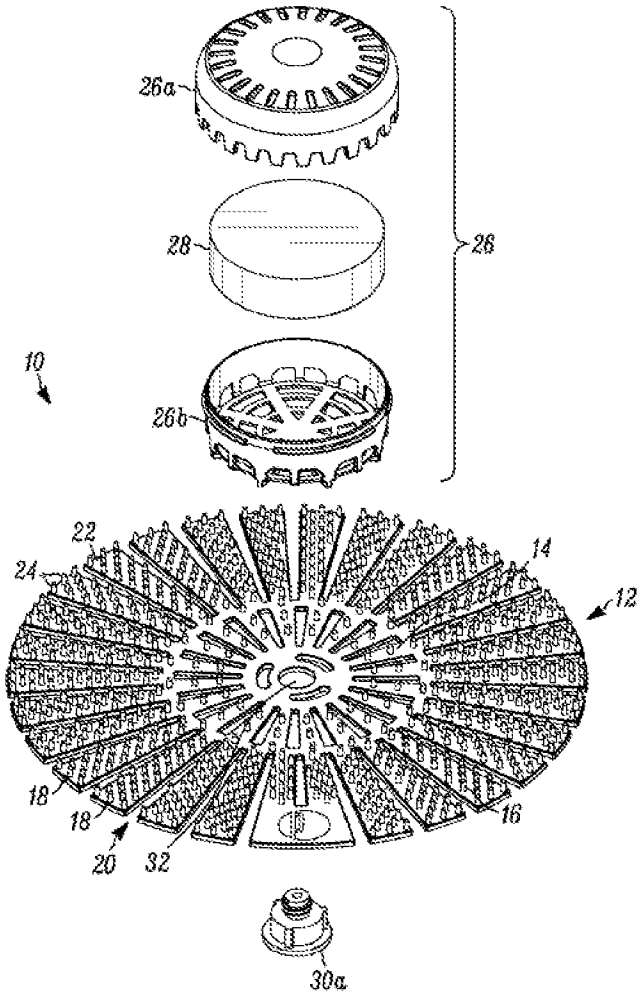


FIG. 1

The module 26 includes a cover portion 26a and a base portion 26b. *Id.* A fastening element 30a is used to connect the module 26 to the flexible screen 12 via a center hold 32 of the

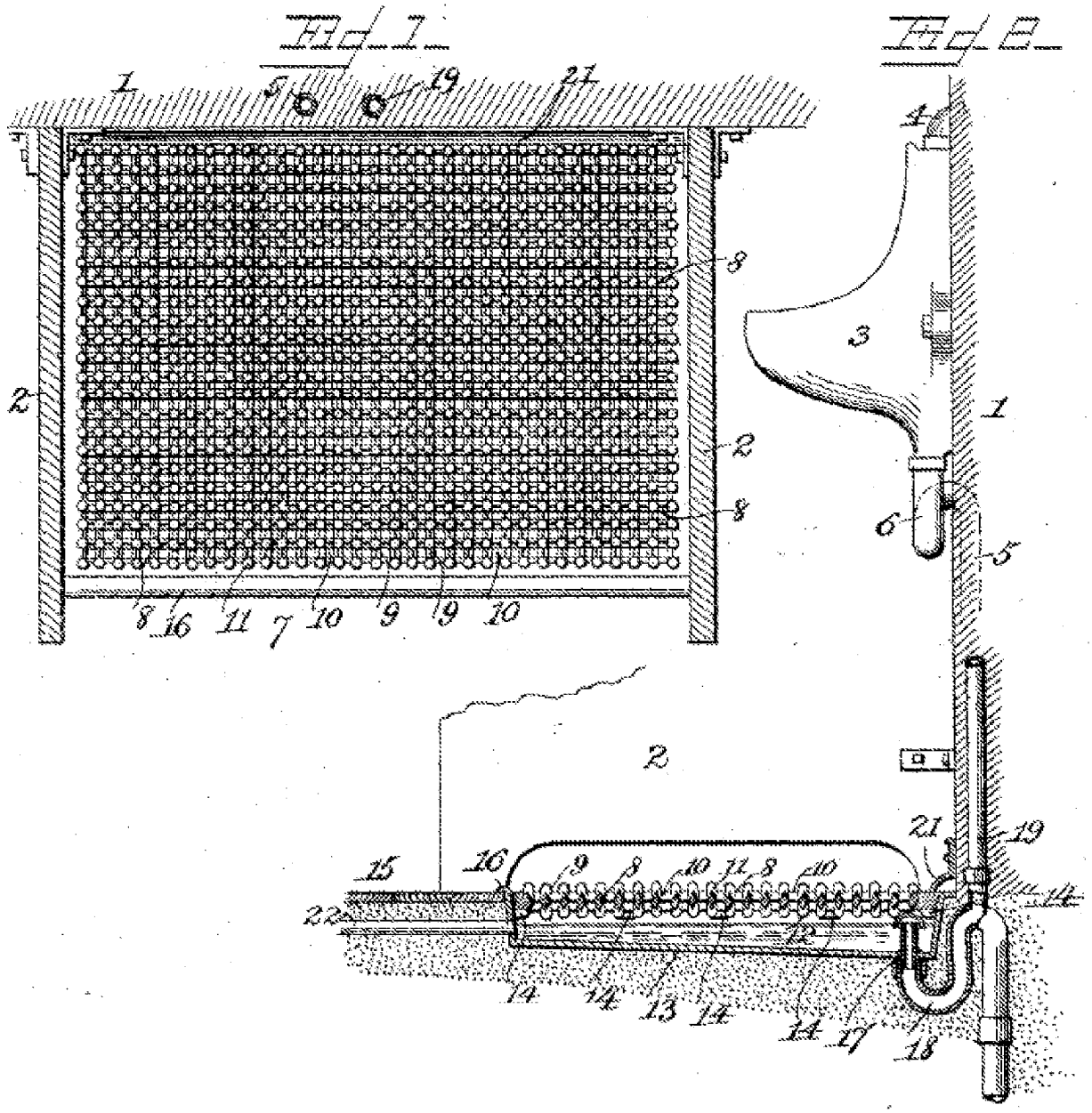
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screen flexible 12. *Id.* As explained in Muderlak, "[t]he screen is adaptable to conform to the contours of the surface of a urinal or other substrate." (internal citations omitted) Muderlak, par. [0039].

Clayton

Clayton discusses sanitary flooring. The objective of the Clayton flooring is to provide a sanitary floor surface and to reduce soiling on footwear. Clayton, col. 1, ll. 14-24. More specifically, Clayton explains that raised knobs or other projecting surfaces can be used to reduce soiling on footwear. *Id.* at col. 1, ll. 22-25. As illustrated in Figures 2 and 3 of Clayton, reproduced below, the longitudinal bars 8 and transverse bars 9 of the floor 7 are positioned in front of and below the urinal 3 such that a user of the urinal 3 stands upon the knobs 11 or 12.

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M.P.E.P. Section 2141.01(a) requires that, "[i]n order for a reference to be proper for use in an obviousness rejection under 35 U.S.C. 103, the reference must be analogous art to the claimed invention." (citing *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). In order to qualify as analogous art, a reference must meet at least one of two requirements: "(1) the reference is from the same field of endeavor as the claimed invention …; or (2) the reference is reasonable pertinent to the problem faced by the inventor." *Id.*

In the present case, Clayton fails to meet either requirement for analogous art. First, Clayton is not in the same field of endeavor as either the present application or as Muderlak. The

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field of endeavor for both Muderlak and the present application is apparatuses for use inside of a urinal to reduce splash and/or to screen debris from entering a urinal drain. *See, e.g.,* Muderlak, pars. [0006] and [0035]; *see also* pars. [0003], [0038], and [0047] of the present application. Clayton, on the other hand, discusses a floor for use in a restroom, beneath and **outside** of a urinal. Additionally, the floor disclosed in Clayton is designed to be stood upon and to support the weight of a person using a urinal, not to be flexible and conform to the surface of a urinal. For at least these reasons, Applicant submits that Clayton is not in the same field of endeavor as either Muderlak or the present application.

Furthermore, Clayton is not pertinent to the problem faced by the inventors of the present application or by Muderlak. As recited in Clayton, the purposes of Clayton are (1) "to secure a thoroughly sanitary floor surface for toilet rooms" and (2) to obviate disagreeable odors and soiling of foot wear by restroom flooring. *Clayton*, col. 1, ll. 12-23. These purposes are not pertinent to the design and use of urinal screens as discussed in both Muderlak and the present application. For at least these reasons, Applicant respectfully submits that Clayton is not analogous art to either of the present application or Muderlak.

No Reasonable Motivation to Combine Clayton and Muderlak

It is well established that, when basing a rejection on obviousness under 35 U.S.C. 103, "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." MPEP, Section 2142. With respect to claim 1, no reasonable motivation, other than the language of the pending claims, has been put forth to combine the floor of Clayton with the urinal screen of Muderlak. As explained above, Muderlak discloses a urinal screen which includes a flexible screen combined with a module that extends from an upper side of the flexible screen. Therefore, one would not be motivated to reverse the urinal screen of Muderlak, as such a reversal would result in positioning the module beneath the flexible screen, thereby removing the flexible screen from contact with the urinal.

For at least the reasons set forth above, Applicant respectfully submits that one of ordinary skill in the art would not have been motivated to combine the teachings of Clayton with the teachings of Muderlak. As such, Applicant submits that claims 1-19 are patentable over the cited references.

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Modifying Muderlak to Increase the Size of the Openings Improperly Relies on Hindsight

Claim 3 recites, among other features:

> a frame having … a plurality of openings extending through the frame between the first face and the second face … wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

The Office Action admits that Muderlak fails to show the openings occupying at least half of the frame. Office Action, pages 3-4. The Office Action argues that Clayton teaches a screen and that:

> It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

Office Action, page 4.

In addition to the arguments presented above regarding the non-analogous art, Applicant respectfully submits that the combination of Clayton with Muderlak to reject claim 3 relies on improper hindsight and is contrary to the teachings of Muderlak. Specifically, Muderlak explains that the slits 20 that form the openings in the flexible screens are "narrow." Muderlak, par. [0034]. As such, widening those slits to make them larger is not only lacking any motivation in either reference, but is directly contrary to the teachings of Muderlak.

Modifying Muderlak to Comprise Interconnected Cells Relies on Improper Hindsight

Claim 17 recites, among other features:

> a frame having … a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners … wherein each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, and wherein a majority of the cells have identical shapes.

The Office Action admits that Muderlak fails to show interconnected cells. Applicant respectfully submits that, in addition to the arguments presented above regarding non-analogous

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art, the combination of Muderlak and Clayton as applied to claim 17 improperly relies on hindsight bias and is contrary to the teachings of Muderlak.

As explained in Muderlak, the outer portion 16 of the flexible screen 12 comprises a plurality of elongate strips 18 with slits 20 therebetween. Muderlak, par. [0034] and Figures 1-13. This configuration "allows the screen 12, when positioned over the drain of a urinal, to substantially adapt and conform to the contours of the urinal surface and prevent passage of debris into the drain." *Id.*

The Office Action proposes:

> It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an interconnected cells in order to ensure the water or urine is allowed to flow through the screen.

Office Action, page 6.

Applicant respectfully submits that the above-proposed modification of the flexible screens of Muderlak not only improperly relies on the language of claim 17 for impermissible hindsight, but also requires a complete reconstruction of the flexible screens of Muderlak contrary to the teachings of Muderlak. In other words, modifying the screens of Muderlak to include the claimed interconnected cells would destroy the strip-slit construction of the Muderlak flexible screens. As such, Applicant respectfully submits that it would not have been obvious to modify Muderlak to include the claimed interconnected cells.

Dependent Claims

Claims 2-12, 14-16, 18, and 19 each depend directly or indirectly from one of claims 1, 13, and 17 and are therefore patentable for at least the same reasons claims 1, 13, and 17 are patentable.

New Claims

Each of new claims 20-27 depends directly or indirectly from one of claims 1, 13, or 17 and are therefore patentable for at least the same reasons claims 1, 13, and 17 are patentable.

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No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: September 27, 2017

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26562531

VECTAIR EX.1002, PG.170

Electronic Patent Application Fee Transmittal

Application Number:	14925369
Filing Date:	28-Oct-2015
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Benjamin Paul Johnson/Amy Rodriguez
Attorney Docket Number:	FRESHPR.061A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	8	40	320
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**320**

Electronic Acknowledgement Receipt

EFS ID:	30492992
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Benjamin Paul Johnson/Anthony Bonilla
Filer Authorized By:	Benjamin Paul Johnson
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	27-SEP-2017
Filing Date:	28-OCT-2015
Time Stamp:	17:00:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$320
RAM confirmation Number	092817INTEFSW17012200
Deposit Account	111410
Authorized User	Anthony Bonilla

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		OAResponse-FRESHPR061A.pdf	337606 579074893715726b3152179a95c54237fbb84a7b	yes	13

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Claims	2	5
Applicant Arguments/Remarks Made in an Amendment	6	13

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	30597 0035b4f503c33b506aada431219320265ab67bb0	no	2

Warnings:

Information:

Total Files Size (in bytes):	368203

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 06/27/2017

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EXAMINER
CRANE, LAUREN ASHLEY

ART UNIT	PAPER NUMBER
3754	

NOTIFICATION DATE	DELIVERY MODE
06/27/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jayna.cartee@knobbe.com
efiling@knobbe.com

Office Action Summary	Application No. 14/925,369	Applicant(s) BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) 1-19 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) 1-19 is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim(s) 1 and 11-16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026).

4. Regarding Claim 1, Muderlak shows a urinal screen as shown in Fig.3, comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame; wherein a plurality of ends of the plurality of second posts form a base upon which the urinal

screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set. Muderlak fails to show at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts. Clayton shows a floor covering. The covering includes a first face including a plurality of posts (11) and a second face include a second plurality of post (12). at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts., Fig.3. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts in order to allow the device to be reversed (column 2 lines 60-65).

5. Regarding Claims 11 and 12, Muderlak shows the urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

6. Regarding Claim 13, Muderlak shows a urinal screen comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame, Fig.3; Muderlak fails to show

the opening occupying at least half of the frame. Clayton teaches a screen. The screen includes opens that occupy at least half of the frame, Fig.5. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

7. Regarding Claim 14, Muderlak shows the urinal screen of claim 13, but fails to show the opening occupying 75% of the frame. Clayton teaches a screen. The screen has opens that occupy 75% of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

8. Regarding Claim 15, Muderlak shows the urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

9. Regarding Claim 16 Muderlak shows the urinal screen of claim 13, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface. Murderlak fails to show the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

1. Claims 2-10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026), as applied to claim 1 above and futher in view of Vidal (U.S. Patent 4,671,976).

2. Regarding claim 2, Muderlak shows the urinal screen of claim 1, but fails to show openings having a polygonal perimeter. Vidal teaches a urinal screen, Fig.8. The urinal screen includes a plurality of openings is defined by a polygonal perimeter structure. The urinal screen includes a plurality of openings. Each opening is defined by a perimeter structure having plurality of braces (3) and corners (3'). Each of plurality of first posts (12) extends from a corner of a perimeter structure of one or more of the plurality of openings. The plurality of posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings. Wherein at least one of the plurality of posts extends from each of the braces of the perimeter structure defining the openings. At least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. Wherein at least one of the plurality of posts extends from each of the braces of the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. The at least one of the plurality of posts extends from a brace or corner of the perimeter structure defining each opening. At least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include polygon shaped openings in order

to ensure the water or urine is allowed to flow through the screen. The combination yields first and second post located near the corners and brace of the urinal cover.

3. Claims 17-19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Clayton (U.S. Patent 927,026). Murderlak shows a urinal screen comprising: a frame (18') having: a first face; a second face opposite the first face; a plurality of first posts (24') extending from away from the first face, each of the plurality of first posts connected to a front side of the device; and a plurality of second posts extending away from the second face of the frame, Fig.3, each of the plurality of second posts connected to a side of the device. A thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Muderlak fails to show interconnect cells. Clayton teaches a screen. The screen includes a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners. Each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, wherein a majority of the cells have identical shapes, Fig. 5. The plurality of interconnected cells form a tessellation. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an interconnected cells in order to ensure the water or urine is allowed to flow through the screen.

Response to Arguments

2. Applicant's arguments with respect to claims 1-19 have been considered but are moot because the arguments have been address in the action above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on 9:30 am - 5:00 pm Monday - Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allana L. Bidder can be reached on (571) 272-5560. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

Notice of References Cited	Application/Control No. 14/925,369	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-927,026 A	07-1909	Clayton	E03D13/00	210/499
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 1 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	D255,744 S	07-08-1980	Dekko	
	2	D258,181 S	02-10-1981	Adam	
	3	D258,472 S	03-10-1981	Adam	
	4	D280,267 S	08-27-1985	Bryant, et al.	
	5	D329,893 S	09-29-1992	Luedtke, et al.	
	6	D341,414 S	11-16-1993	Baker	
	7	D370,938 S	06-18-1996	Roach	
	8	D393,896 S	04-28-1998	Wagner, et al.	
	9	D422,061 S	03-28-2000	Lee	
	10	D427,295 S	06-27-2000	Wagner	
	11	D438,710 S	03-13-2001	Chen	
	12	D442,246 S	05-15-2001	McCabe, et al.	
	13	D456,492 S	04-30-2002	Lourens	
	14	D464,122 S	10-08-2002	Mangan	
	15	D520,610 S	05-09-2006	Wrate	
	16	D528,193 S	09-12-2006	Lee	
	17	D561,327 S	02-05-2008	DeJonge, et al.	
	18	D598,075 S	08-11-2009	Uhl	
	19	D639,410 S	06-07-2001	Ramirez	
	20	D678,482 S	03-19-2013	Williams	
	21	D678,483 S	03-19-2013	Barker	
	22	D682,398 S	05-14-2013	Lee	
	23	D687,524 S	08-06-2013	Heiser	
	24	D687,525 S	08-06-2013	Heiser	
	25	333,935 A	01-05-1886	Duncan	
	26	555,888 A	03-03-1896	Roberts	
	27	810,973 A	01-30-1906	Pattenden, et al.	
	28	950,574 A	03-01-1910	Morgan	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Examiner Signature	/LAUREN A CRANE/	Date Considered	06/21/2017

*__Examiner:__ Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 2 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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Examiner Signature /LAUREN A CRANE/	Date Considered 06/21/2017

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PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 3 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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Examiner Signature	/LAUREN A CRANE/	Date Considered	06/21/2017

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	First Named Inventor	Douglas S. Brown
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SHEET 4 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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SHEET 5 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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	Art Unit	3754
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SHEET 6 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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Examiner Signature	/LAUREN A CRANE/	Date Considered	06/21/2017

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	Art Unit	3754
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SHEET 7 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 8 OF 8	Attorney Docket No.	FRESHPR.061A

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Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]
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Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	Art Unit
	LAUREN CRANE	3754

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
E03D13/005	12/13/2016	LC

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
4	256.1	12/13/2016	LC

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

RESPONSE TO OFFICE ACTION DATED DECEMBER 19, 2016

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated December 19, 2016, Applicant respectfully submits the following.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

VECTAIR EX.1002, PG.195

AMENDMENTS TO THE CLAIMS

1. (Original) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set; and

wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

2. (Original) The urinal screen of claim 1, wherein each of the openings is defined by a polygonal perimeter structure.

3. (Original) The urinal screen of claim 1, wherein each opening is defined by a perimeter structure having plurality of braces and corners.

4. (Original) The urinal screen of claim 3, wherein each of plurality of first posts extends from a corner of a perimeter structure of one or more of the plurality of openings.

5. (Original) The urinal screen of claim 3, wherein each of plurality of second posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings.

6. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the openings and wherein at least one of the

VECTAIR EX.1002, PG.196

plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. (Original) The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

10. (Original) The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. (Original) The urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. (Original) The urinal screen of claim 1, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

13. (Original) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

14. (Original) The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. (Original) The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

16. (Original) The urinal screen of claim 13, wherein the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface.

17. (Currently Amended) A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners;

a plurality of first posts extending from away from the first face, each of the plurality of first posts connected to a side or corner of the plurality of interconnected cells; and

a plurality of second posts extending away from the second face of the frame, each of the plurality of second posts connected to a side or corner of the plurality of interconnected cells;

wherein each of the interconnected cells shares at least one side and at least one corner with another interconnected cell, and wherein a majority of the cells have identical shapes.

18. (Original) The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

19. (Original) The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

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REMARKS

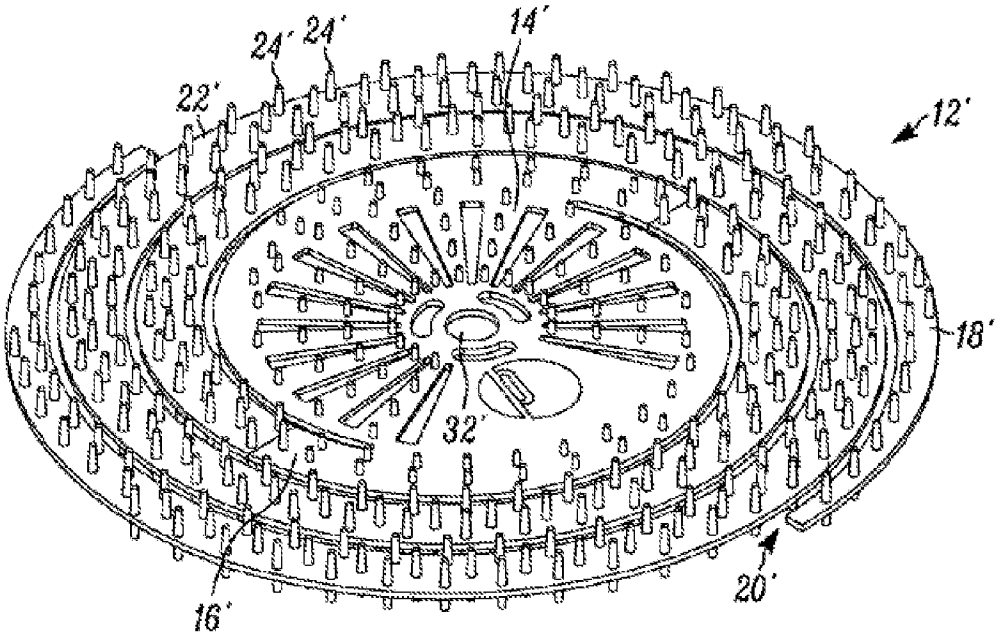
In response to the Office Action mailed December 19, 2016, Applicant has amended claim 17 without prejudice or disclaimer to previous versions thereof. As such, claims 1-19 remain pending for examination.

Claim Rejections under 35 U.S.C. 102

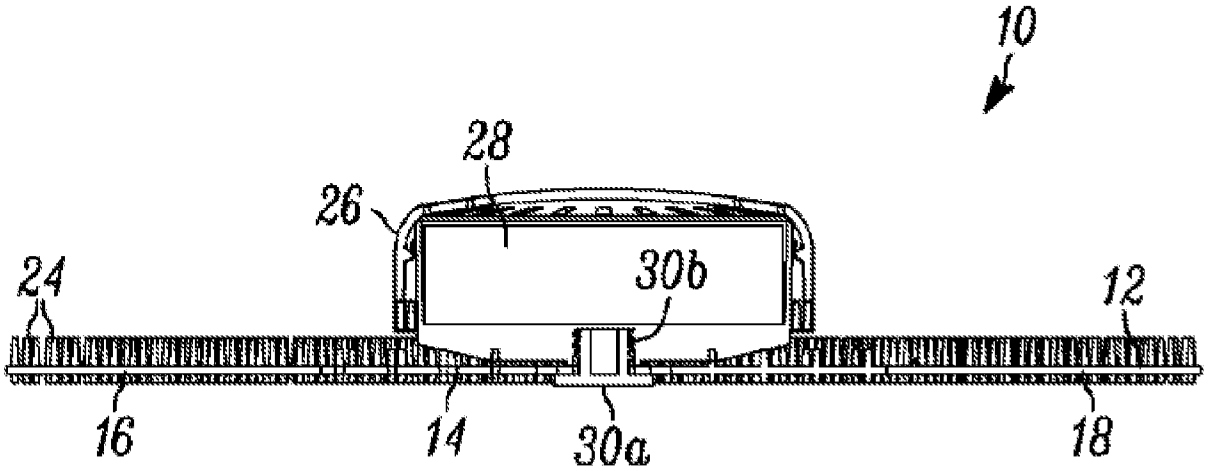
The Office Action rejected claims 1, 11, and 12 under 35 U.S.C. 102(a)(2) as being anticipated by U.S. Patent Pub. No. 2014/0259344 of Muderlak et al. Applicant respectfully traverses these rejections.

Claim 1 recites, among other features, "a plurality of first posts extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame … wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts." (emphasis added).

The Office Action argues that Figure 3 Muderlak shows a urinal screen with the above-identified features. Applicant respectfully disagrees. As illustrated in Figure 3 of Muderlak, the protrusions 24' extending from the top of the screen are not the same size and shape as the protrusions extending from the bottom side.



Instead, the protrusions extending from the bottom side of the screen are noticeably shorter than the protrusions extending from the top side of the screen. This is further illustrated in Figure 2B of Muderlak, reproduced below.



Nowhere does Muderlak describe the protrusions 24, 24' as being similar to or the same as the protrusions extending from the bottom of the screen. As such, for at least the reasons recited above, Applicant respectfully submits that claim 1 is patentable over the cited references. Claims 11 and 12 each depend directly from claim 1, and are therefore patentable for at least the same reasons claim 1 is patentable.

Claim Rejections under 35 U.S.C. 103

The Office Action rejected claims 2-10 under 35 U.S.C. 103 as being unpatentable over Muderlak in view of U.S. Patent No. 4,671,976 to Vidal. The Office Action rejected claims 13-16 as being unpatentable over Muderlak. Finally, the Office Action rejected claims 17-19 as being unpatentable over Muderlak in view of U.S. Patent Pub. No. 2014/0157501 of D'Amico. Applicant respectfully traverses these rejections. However, in order to expedite prosecution of the present application, Applicant has amended claim 17 without prejudice or disclaimer to previous versions thereof.

Claim 13

Claim 13 recites, among other features, "a plurality of openings extending through the frame between the first face and the second face … wherein the plurality of openings occupy at

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least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface."

The Office Action argues that "[i]t would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening [*sic*] in order to ensure the water or urine is allowed to flow through the screen." Applicant respectfully submits that this conclusion is improper hindsight and is contrary to the teachings of Muderlak.

It is well established that "rejections based on obviousness cannot be sustained with mere conclusory statements." MPEP, Section 2142 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). Further, "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." MPEP, Section 2142.

In this case, Muderlak makes clear that the slits 20 that form the openings are "narrow." Muderlak, par. [0034]. Muderlak has not been shown to provide any further guidance as to the size and shape of the openings in the screen. As such, Applicant respectfully submits that the rejection of claim 13 is improper.

Claim 17

Amended claim 17 recites, among other features, "a frame having … a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners … wherein a majority of the cells have identical shapes."

As admitted in the Office Action, Muderlak fails to show interconnected cells. Office Action, page 6. Applicant respectfully submits that D'Amico does not teach or suggest at least the above-recited features of claim 17. Instead, D'Amico illustrates screens having voids that increase in size from the center of the screen toward the outer edges of the screens. Further, D'Amico discusses a ring and spoke configuration which "allow[s] creation of **non-uniformly-shaped** voids between the rings and the spokes." (emphasis added). D'Amico, par. [0061]. Given that Muderlak does not include interconnected cells and that the voids of D'Amico are specifically designed to be non-uniform, Applicant submits that claim 17 is patentable over the cited references.

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Dependent Claims

Claims 2-10, 14-16, 18, and 19 each depend directly or indirectly from one of claims 1, 13, and 17 and are therefore patentable for at least the same reasons claims 1, 13, and 17 are patentable.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 17, 2017

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VECTAIR EX.1002, PG.202

INFORMATION DISCLOSURE STATEMENT

First Inventor	:	Douglas S. Brown
App. No.	:	14/925369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	Crane, Lauren Ashley
Art Unit	:	3754
Conf. No.	:	9748

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

References and Listing

Pursuant to 37 CFR 1.56, an Information Disclosure Statement listing references is provided herewith. Copies of any listed foreign and non-patent literature references are being submitted.

No Disclaimers

To the extent that anything in the Information Disclosure Statement or the listed references could be construed as a disclaimer of any subject matter supported by the present application, Applicant hereby rescinds and retracts such disclaimer.

Timing of Disclosure

This Information Disclosure Statement is being filed after receipt of a First Office Action, but before the mailing date of a Final Action and before the mailing date of a Notice of Allowance. This Statement is accompanied by the fees set forth in 37 CFR 1.17(p). The

Commissioner is hereby authorized to charge any additional fees which may be required or to credit any overpayment to Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 17, 2017

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VECTAIR EX.1002, PG.204

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 1 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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	Art Unit	3754
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SHEET 2 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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SHEET 3 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
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SHEET 4 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
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	Art Unit	3754
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SHEET 5 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 6 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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Examiner Signature	Date Considered

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	Art Unit	3754
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SHEET 7 OF 8	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
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Examiner Signature	Date Considered

*__Examiner:__ Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3754
(Multiple sheets used when necessary)	Examiner	Crane, Lauren Ashley
SHEET 8 OF 8	Attorney Docket No.	FRESHPR.061A

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Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T[1]
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Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[1]
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Examiner Signature	Date Considered

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Espacenet

Bibliographic data: DE1915249 (A1) — 1970-10-08

Insert for urinal troughs

Inventor(s): HENNINGER JUERGEN ± (HENNINGER,JUERGEN)

Applicant(s): HENNINGER JUERGEN ± (HENNINGER,JUERGEN)

Classification: **- international:** ***E03D13/00***
- cooperative: **E03D13/00; E03D13/005**

Application number: DE19691915249 19690326

Priority number(s): DE19691915249 19690326

Abstract of DE1915249 (A1)

Insert has a sieve-like perforation on the whole surface over the trough, pref. of 3-4 mm dia. Preferably its edge is raised, and it is made of synthetics, pref. polypropylene.

(51) Int. Cl.: E 03 d

BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(52) Deutsche Kl.: 85 h, 19

(10)
(11) # Offenlegungsschrift 1915 249

(21) Aktenzeichen: P 19 15 249.9
(22) Anmeldetag: 26. März 1969
(43) Offenlegungstag: **8. Oktober 1970**

Ausstellungspriorität: —

(30) Unionspriorität
(32) Datum: —
(33) Land: —
(31) Aktenzeichen: —

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(54) **Bezeichnung:** Einsatz für Urinalbecken

(61) Zusatz zu: —
(62) Ausscheidung aus: —

(71) Anmelder: Henninger, Jürgen, 6800 Mannheim

Vertreter: —

(72) Als Erfinder benannt: Erfinder ist der Anmelder

Benachrichtigung gemäß Art. 7 § 1 Abs. 2 Nr. 1 d. Ges. v. 4. 9. 1967 (BGBl. I S. 960): —

DT 1915249

VECTAIR EX.1002, PG.214

1915249

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Patentanwälte
67 Ludwigshafen/Rhein

Hans-Jürgen Henninger
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Mönchwörthstr. 220

10.7.1969

jhm 1289 Y/Sm

Einsatz für Urinalbecken

Die Erfindung betrifft einen Einsatz für Urinalbecken.

Der Abfluß solcher Becken ist durch hineingeworfene Zigarettenkippen, Tempotaschentücher und dergl. leicht verstopft. Das kann bei eingeschalteter Dauerspülung zur Überflutung des Bekkens, bei periodischer Spülung, wenn in den Intervallen ein Teil der Flüssigkeit doch abfließt, zu einem langzeitigen oder dauernden Vorhandensein von Urin oder stark urinhaltigem Wasser im Becken führen. Solche Abfälle können aber nicht nur den unmittelbaren Beckenabfluß, sondern auch das Abflußrohr des Beckens oder der ganzen Anlage an einer anderen Stelle beispielsweise an einem Rohrknie verstopfen. Die Beseitigung der Störung ist arbeitsaufwendig, verursacht ins Gewicht fallende Kosten und ist nicht immer sofort durchzuführen.

Diese Nachteile werden erfindungsgemäß durch einen Einsatz für Urinalbecken beseitigt, der auf seiner ganzen, dem Becken angepaßten Fläche, eine siebartige Lochung von vorzugsweise etwa 3 - 4 mm Durchmesser aufweist.

- 2 -

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Nach einer bevorzugten Ausführungsform der Erfindung ist der Rand des Einsatzes erhöht ausgebildet.

Es ist zweckmäßig an der Unterseite des Einsatzes Abstandhalter anzuordnen.

Es ist ferner zweckmäßig, wenn an der Oberfläche des Einsatzes mindestens ein griffartiges Element vorhanden ist.

Der Einsatz kann aus Kunststoff, vorzugsweise Polypropylen bestehen.

Es hat sich überraschenderweise gezeigt, daß ein solcher Einsatz nicht, wie man annehmen könnte, schon bald den Uringeruch annimmt, sodaß der Einsatz mindestens ein halbes Jahr brauchbar bleibt.

Die Erfindung wird anhand der Zeichnung näher erläutert.
Es zeigt:

Fig. 1 die Draufsicht auf den erfindungsgemäßen Einsatz;

Fig. 2 einen Schnitt nach der Linie II - II der Fig. 1;

Der Einsatz 1 weist Perforationslöcher 2 auf, die in größerer Menge vorzugsweise regelmäßig angeordnet, dem Einsatz einen siebartigen Charakter verleihen. Die Perforationslöcher haben einen Durchmesser von etwa 3 - 4 mm, d.h. einen geringeren als den einer Zigarette. Im erhöhten Rand 3 können zur Erhöhung der Stabilität die Perforationen fehlen.

- 3 -

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Es hat sich als zweckmäßig erwiesen, an der Unterseite des Einsatzes 1 Abstandhalter 4 anzuordnen. Desgleichen haben sich griffartige Elemente 5 als nützlich erwiesen, mit deren Hilfe der Einsatz leicht aus dem Becken entfernt werden kann. Diese griffartigen Elemente können eine beliebige Form haben und dienen dem Angriff der Hand oder eines geeigneten Werkzeugs.

Die Becken unterscheiden sich in Größe und Form, jedoch sind die Formunterschiede, wenn man von Eckbecken absieht, nicht sehr wesentlich. Es ist daher möglich für alle Becken mit der obengenannten Ausnahme den gleichen Einsatz zu verwenden, der je nach Beckengröße höher oder tiefer in diesem sitzt, wobei er entweder am Rande 3 aufliegt oder sich auf die Abstandhalter 4 stützt. Dabei hängt die Mitte des Einsatzes korbartig durch.

Die Abstandhalter 4 haben die zusätzliche Eigenschaft, die Entstehung von Spritzern zu verhindern. Es hat sich nämlich gezeigt, daß solche Spritzer bei flach aufliegendem Einsatz im Becken leicht auftreten, jedoch dadurch verhindert werden können, daß man den Einsatz leicht anhebt.

Versuche haben gezeigt, daß der Einsatz weder durch Urin noch durch die üblichen Reinigungs- und Desinfektionsmittel zerstört wird und daß das verwendete Material - Polypropylen - der Ansiedlung von Mikroorganismen nicht förderlicher ist als andere mögliche Werkstoffe auch.

VECTAIR EX.1002, PG.217

1915249

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4

Hans-Jürgen Henninger
6800 Mannheim 23
Mönchwörthstr. 220

10.7.1969

jhm 1289 Y/Sm

Patentansprüche

1. Einsatz für Urinalbecken, dadurch gekennzeichnet, daß er auf seiner ganzen dem Becken angepaßten Fläche eine siebartige Lochung (2) von vorzugsweise etwa 3 - 4 mm Durchmesser aufweist.

2. Einsatz nach Anspruch 1, dadurch gekennzeichnet, daß sein Rand (3) erhöht ausgebildet ist.

3. Einsatz nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß an seiner Unterseite Abstandhalter (4) angeordnet sind.

4. Einsatz nach Anspruch 1 - 3, dadurch gekennzeichnet, daß an seiner Oberfläche mindestens ein griffartiges Element(5) vorhanden ist.

5. Einsatz nach Anspruch 1 - 4, dadurch gekennzeichnet, daß er aus Kunststoff, vorzugsweise Polypropylen besteht.

VECTAIR EX.1002, PG.218

85 h 19 AT: 26.03.1969 OT: 08.10.1970 1915249

Fig. 2

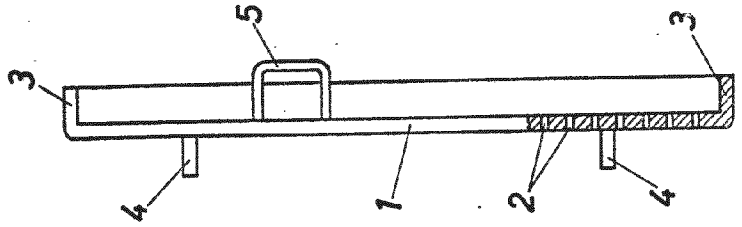
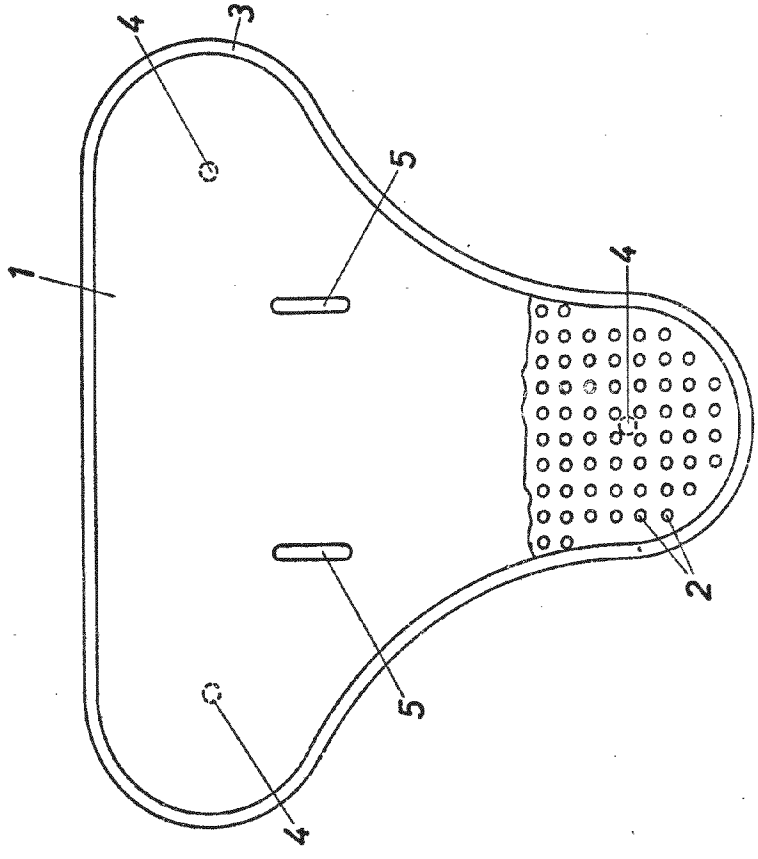


Fig. 1



VECTAIR EX.1002, PG.219

Espacenet

Bibliographic data: DE19541911 (A1) — 1997-05-15

Splash guard for WC

Inventor(s): NEUGEBAUER RAINER [DE] ± (NEUGEBAUER, RAINER, 64832 BABENHAUSEN, DE)

Applicant(s): NEUGEBAUER RAINER [DE] ± (NEUGEBAUER, RAINER, 64832 BABENHAUSEN, DE)

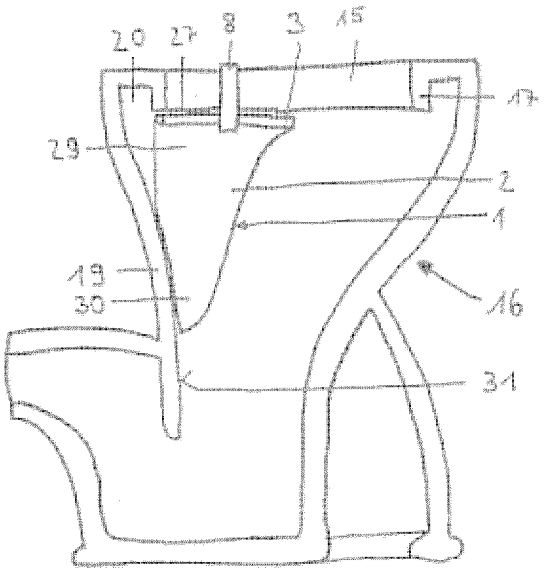
Classification: **- international:*A47K17/00; E03D13/00; E03D9/00;***
(IPC1-7): A47K17/00; E03D13/00
- cooperative: A47K17/00; E03D13/00; E03D13/005; E03D9/00

Application number: DE1995141911 19951110

Priority number (s): DE1995141911 19951110

Abstract of DE19541911 (A1)

The insert (1) is positioned inside the upper rear rim of the WC basin and prevents splashing of urine when used by males. The insert is funnel shaped and is made of flexible mesh material. Clips (8) grip into holes around the rear rim of the insert. The plastic clips are shaped to grip over the edge of the WC basin. The upper edge of the insert has a hem (3) for added strength. The clips are elastic and are simple to fit.



(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENTAMT

(12) **Offenlegungsschrift**

(10) **DE 195 41 911 A 1**

(51) Int. Cl.[6]:
A 47 K 17/00
E 03 D 13/00

(21) Aktenzeichen: 195 41 911.1
(22) Anmeldetag: 10. 11. 95
(43) Offenlegungstag: 15. 5. 97

DE 195 41 911 A 1

(71) Anmelder:
Neugebauer, Rainer, 84832 Babenhausen, DE

(72) Erfinder:
gleich Anmelder

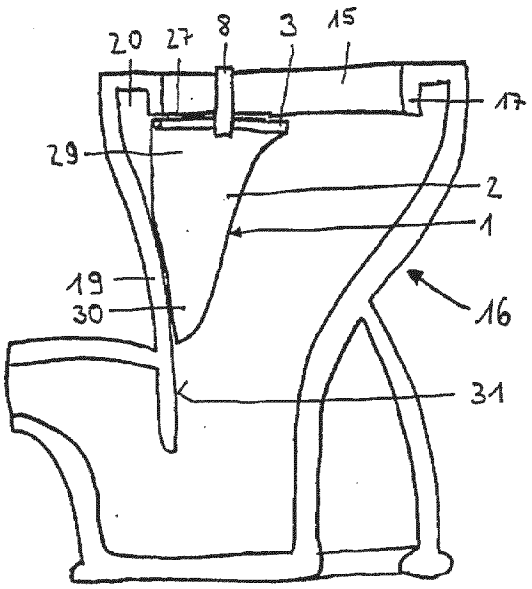
(56) Entgegenhaltungen:

DE-OS	23 17 058
DE-OS	18 02 407
DE	91 08 677 U1
DE	82 13 710 U1
FR-OS	24 34 242
US	47 16 602
US	46 70 918
US	36 14 790
US	28 29 377

Prüfungsantrag gem. § 44 PatG ist gestellt

(54) Vorrichtung zur Verhinderung des Verspritzens von Urin

(57) Die Erfindung betrifft eine Vorrichtung (1, 32) zur Verhinderung des Verspritzens von Urin über einen Rand (15) einer Toilettenschüssel (16) und/oder eines Urinbeckens beim Urinieren von Toilettenbenutzern. Erfindungsgemäß ist die Vorrichtung (1, 32) als trichter- oder röhrenförmiges Segment (1, 32) ausgebildet.



DE 195 41 911 A 1

VEGTAIR EX.1002, PG.221

Beschreibung

Die Erfindung betrifft eine Vorrichtung zur Verhinderung des Verspritzens von Urin über einen Rand einer Toilettenschüssel und/oder eines Urinbeckens beim Urinieren von Toilettenbenutzern gemäß dem Oberbegriff des Anspruchs 1

Beim Urinieren verspritzen männliche WC-Benutzer aus Nachlässigkeit oder Unvermögen Urin über den Toilettenschüsselrand auf den Boden neben die Toilette, was zu einem erheblichen Mehraufwand bei der Toiletten-Reinigung führt. In der EP-OS 0 609 773 ist deshalb eine Vorrichtung zur Verhinderung des Verspritzens von Urin über den Rand der Toilettenschüssel beim Urinieren männlicher Toilettenbenutzer mit zwei sich beiderseits des Toilettenschüsselrandes nach oben erstreckenden Seitenwandabschnitten vorgeschlagen. Zwar ist nunmehr der Fußboden neben der Toilette geschützt und braucht nicht mehr so oft gereinigt zu werden, nachteilig sammeln sich jedoch in der Vorrichtung Bakterienkulturen an und greifen auf die Toilettenbrille über. Von daher muß die Vorrichtung oft gereinigt werden und der Mehraufwand an Reinigung hat sich von dem Fußboden auf die Vorrichtung verlagert.

Aus dem DE-GM 92 14 722 ist eine Einlegeplatte für eine Toilettenschüssel für medizinische Zwecke bekannt, die ein Verschwinden des Kots in einem Tiefspülbecken verhindert und eine Kontrolle des Kots ermöglicht. Von der Funktion her ist diese Einlegeplatte jedoch nicht als Spritzschutz ausgelegt und bei einem normalen Gebrauch der Toilette eher hinderlich.

Ein Einsatz aus einem Maschendrahtgewebe, der ein Zurückprallen des oft mit hartem Strahl auftreffenden Urins verhindert, ist beispielsweise in der DE-OS 24 34 750 beschrieben. Dieser Einsatz ist jedoch für Urinale bestimmt, die nicht für das Ablassen von Kot ausgelegt sind.

Der Erfindung liegt daher die Aufgabe zugrunde, einen einfachen Spritzschutz für eine Toilette und/oder eines Urin-Beckens anzugeben. Insbesondere soll eine einfache Toiletten-Reinigung ermöglicht sein.

Diese Aufgabe wird gemäß der Merkmale des Anspruchs 1 gelöst. Erfindungsgemäß ist die Vorrichtung als trichter- oder röhrenförmiges Segment ausgebildet und in die Toilettenschüssel und/oder in das Urin-Bekken einsetzbar. Das trichter- beziehungsweise das röhrenförmige Segment formt im wesentlichen eine Trichter- beziehungsweise eine Röhrenhälfte aus. Dabei wird der Trichter beziehungsweise die Röhre im wesentlichen durch eine Ebene geteilt, wobei die Ebene die Längsachse durch die Mitten der oberen und der unteren Öffnung einschließt. Das Segment kleidet den hinteren Teil, also die dem Benutzer zugewandte Fläche der Toilettenschüssel aus. Der Urinstrahl wird an dem Segment gebrochen und nach unten in das Wasserreservoir abgelenkt. Bei jedem Spülvorgang wird das Segment gereinigt.

In einfacher Weise ist das Segment sieb- oder netzartig ausgebildet oder aus einem Maschendrahtgewebe gefertigt. Die Löcher innerhalb des Siebes brechen den Urinstrahl und lenken diesen nach unten in das Wasserreservoir ab. Damit wird das Zurückspritzen des Urins verhindert.

In vorteilhafter Weise ist das trichter- beziehungsweise das röhrenförmige Segment flexibel ausgestaltet. Damit ist das Segment in verschieden ausgeformte Toilettenschüsseln einsetzbar und nicht nur auf eine Ausführungsform beschränkt. Als Herstellungsmaterial eignet

sich in vorteilhafter Weise ein Kunststoff.

In vorteilhafter Weise weist das Segment an seinem oberen Rand einen Wulst auf. Der Wulst versteift den siebartigen Einsatz und hält diesen in der gewünschten Form.

In vorteilhafter Weise ist an dem Wulst zumindest ein Halteelement angeordnet. Die Haltelemente dienen zur Befestigung des trichterbeziehungsweise des röhrenförmigen Segmentes in der Toilettenschüssel.

In vorteilhafter Weise durchdringt das Haltelement eine Öffnung des Segmentes und umgreift den Wulst. Damit ist das Segment bezüglich des Haltelementes drehbar angeordnet, so daß das Halteelement an verschiedenen Orten der Toilettenschüssel anbringbar ist.

In vorteilhafter Weise ist das Halteelement als elastischer Streifen auch aus einem Kunststoff ausgebildet. Der elastische Streifen umgreift den Toilettenschüsselrand und durchdringt den Zwischenraum zwischen Toilettenschüsselrand und Brille. Aber auch andere Befestigungsmöglichkeiten mit Saugnäpfen oder einer Spreizfeder innerhalb einer Ausnehmung des Toilettenschüsselrandes sind denkbar. Dabei kann ein elastischer Haltering in die Ausnehmung eingesetzt und darin verklemmt sein. Auch kann das Segment mit der Toilettenschüssel verklebbar sein.

Um Schutz nachgesucht wird auch für eine Toilettenschüssel mit einer derartigen Vorrichtung.

Zum besseren Verständnis der Erfindung wird nachfolgend ein Ausführungsbeispiel anhand der Zeichnung näher erläutert.

Es zeigen

Fig. 1 ein trichterförmiges Segment mit Halteelementen in Draufsicht,

Fig. 2 ein Halteelement in Seitenansicht,

Fig. 3 ein Halteelement einen Toilettenschüsselrand umgreifend,

Fig. 4 das trichterförmige Element in eine Toilettenschüssel eingesetzt,

Fig. 5 ein Halbrohr in Seitenansicht und

Fig. 6 das Halbrohr in Draufsicht.

Fig. 1 zeigt ein trichterförmiges Segment **1** mit einem Sieb **2** und einen Wulst **3**. Das Segment ist symmetrisch zu einer Achse **4** ausgebildet. Zwischen dem Sieb **2** und dem Wulst **3** sind zwei Öffnungen **5** und **6** in dem Sieb **2** eingelassen. Durch die Öffnungen **5** und **6** sind zwei Halteelemente **7** und **8** geführt, die als flexible Streifen ausgebildet sind.

Fig. 2 zeigt das Haltelement **7** im unbenutzten Zustand, das zwei Rollen **9** und **10** mit im wesentlichen vier Abschnitte **11, 12, 13** und **14** aufweist.

Fig. 3 zeigt das Halteelement **7** im benutzten Zustand einerseits den Wulst **3** des trichterförmigen Segmentes **1** und andererseits einen Toilettenschüsselrand **15** einer Toilettenschüssel **16** umgreifend. Der Toilettenschüsselrand **15** weist eine Innenwand **17**, eine obere Wand **18** und eine Außenwand **19** auf, die eine Ausnehmung **20** begrenzen. Dabei dient der aufgerollte Abschnitt **11** zur Aufnahme des Wulstes **3**. Die Rolle **10** liegt mit ihrem Abschnitt **12** an einer Innenfläche **21** der Innenwand **17**, mit dem Abschnitt **13** an einer Oberfläche **22** der oberen Wand **18** und mit dem Abschnitt **14** an einer Außenfläche **23** der Toilettenschüssel **16** an. Der Wulst **3** liegt in der Verlängerung und unterhalb der Innenwand **17** beziehungsweise an deren nach unten gerichteten Oberfläche **24** an. Das Halteelement **7** durchgreift dabei mit dem Abschnitt **13** einen ersten Zwischenraum **25** zwischen dem Toilettenschüsselrand **15** und einer Toilettenbrille **26**, die mit Noppen auf dem Rand **15** aufliegt

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und ansonsten von dem Rand **15** beabstandet ist. Durch Unebenheiten an der Oberfläche **24** und des Wulstes **3** wird ein zweiter Zwischenraum **27** zwischen der Oberfläche **24** der Innenwand **17** und dem Wulst **3** gebildet. Dieser Zwischenraum **27** kann noch durch den Abschnitt **11** vergrößert werden, wenn dieser zwischen die Oberfläche **26** und dem Wulst **3** geschoben ist. Das Sieb **2** weist Durchlässe **28** auf.

Fig. 4 zeigt das trichterförmige Segment **1** mit dem Halteelement **8** eingehängt in der Toilettenschüssel **16**. Das Sieb **2** hängt in etwa parallel zu der Außenwand **19** und ist mit einer oberen Hälfte **29** zu dieser beabstandet. Damit wird eine Federwirkung erzielt und der Urinstrahl weich abgefangen. Das Sieb **2** liegt mit einer unteren Hälfte **30** an der Außenwand **19** an. Der an der Außenwand **19** anliegende Bereich kann auf ein Drittel oder weniger reduziert sein. Die Länge des Wulstes **3** entspricht dem halben Umfang der inneren Toilettenumrandung **15**, die von der Innenwand **17** gebildet ist. Beim Spülen wird Spülwasser in die Ausnehmung **20** gepreßt, das teilweise von der Innenwand **17** nach unten fällt und teilweise an einer Innenfläche **31** der Außenwand **19** nach unten läuft. Dabei wird das Spülwasser auch durch den Zwischenraum **27** gespritzt, so daß das trichterförmige Segment **1** von beiden Seiten gereinigt wird. Im eingesetzten Zustand formt das trichterförmige Segment **1** eine Trichterhälfte aus. Dabei wird der Trichter im wesentlichen durch eine Ebene geteilt, wobei die Ebene die Längsachse durch die Mitten der oberen und der unteren Öffnung einschließt. Zum besseren Zielen kann in der Mitte des Siebes **2** ein Loch oder eine kreisförmige Verfärbung vorgesehen sein.

Anstelle des trichterförmigen Segmentes **1** kann auch ein Segment **32** eingesetzt sein, das im wesentlichen der Form eines zylindrischen Halbrohres **32** nachempfunden ist. Solch ein Halbrohr **32** ist in den **Fig.** 5 und 6 dargestellt. Wesentlich ist, daß das trichter- oder röhrenförmige Segment **1, 32** der inneren Kontur der Toilettenschüssel **16** und/oder eines Urinbeckens nachgebildet, in den Schacht der Toilette beziehungsweise des Urinbeckens einsetz- oder einhängbar ist und mit seinem unteren Rand knapp die Wasseroberfläche der Toilettenschüssel beziehungsweise knapp den Boden des Urinbeckens berührt. Der Wulst kann auch eine Nut aufweisen oder als zweiteiliger Stab ausgeführt sein und das Netz in die Nut einsetzbar beziehungsweise das Netz zwischen den zweiteiligen Stab verklemmbar sein.

Patentansprüche

1. Vorrichtung **(1, 32)** zur Verhinderung des Verspritzens von Urin über einen Rand **(15)** einer Toilettenschüssel **(16)** und/oder eines Urinbeckens beim Urinieren von Toilettenbenutzern, **dadurch gekennzeichnet,** daß die Vorrichtung **(1, 32)** als trichter- oder röhrenförmiges Segment **(1, 32)** ausgebildet ist.
2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß das Segment **(1, 32)** siebartig ausgebildet ist.
3. Vorrichtung nach Anspruch 1 und/oder 2, dadurch gekennzeichnet, daß das Segment **(1, 32)** flexibel ausgebildet ist.
4. Vorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Segment **(1, 32)** an einem oberen Rand einen Wulst **(3)** aufweist.
5. Vorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß zumindest ein Halteelement **(7, 8)** an dem Wulst **(3)** angeordnet ist.
6. Vorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Halteelement **(7, 8)** durch eine Öffnung **(5, 6)** in dem Segment **(1)** geführt ist und den Wulst **(3)** umgreift.
7. Vorrichtung nach einem oder mehreren der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß das Halteelement **(7, 8)** als elastischer Streifen ausgebildet ist.
8. Toilette mit einer Vorrichtung **(1, 32)** nach einem der vorhergehenden Ansprüche.
9. Urinbecken mit einer Vorrichtung **(1, 32)** nach einem der vorhergehenden Ansprüche.

Hierzu 2 Seite(n) Zeichnungen

VECTAIR EX.1002, PG.223

– Leerseite –

Nummer: DE 195 41 911 A1
Int. Cl.[6]: A 47 K 17/00
Offenlegungstag: 15. Mai 1997

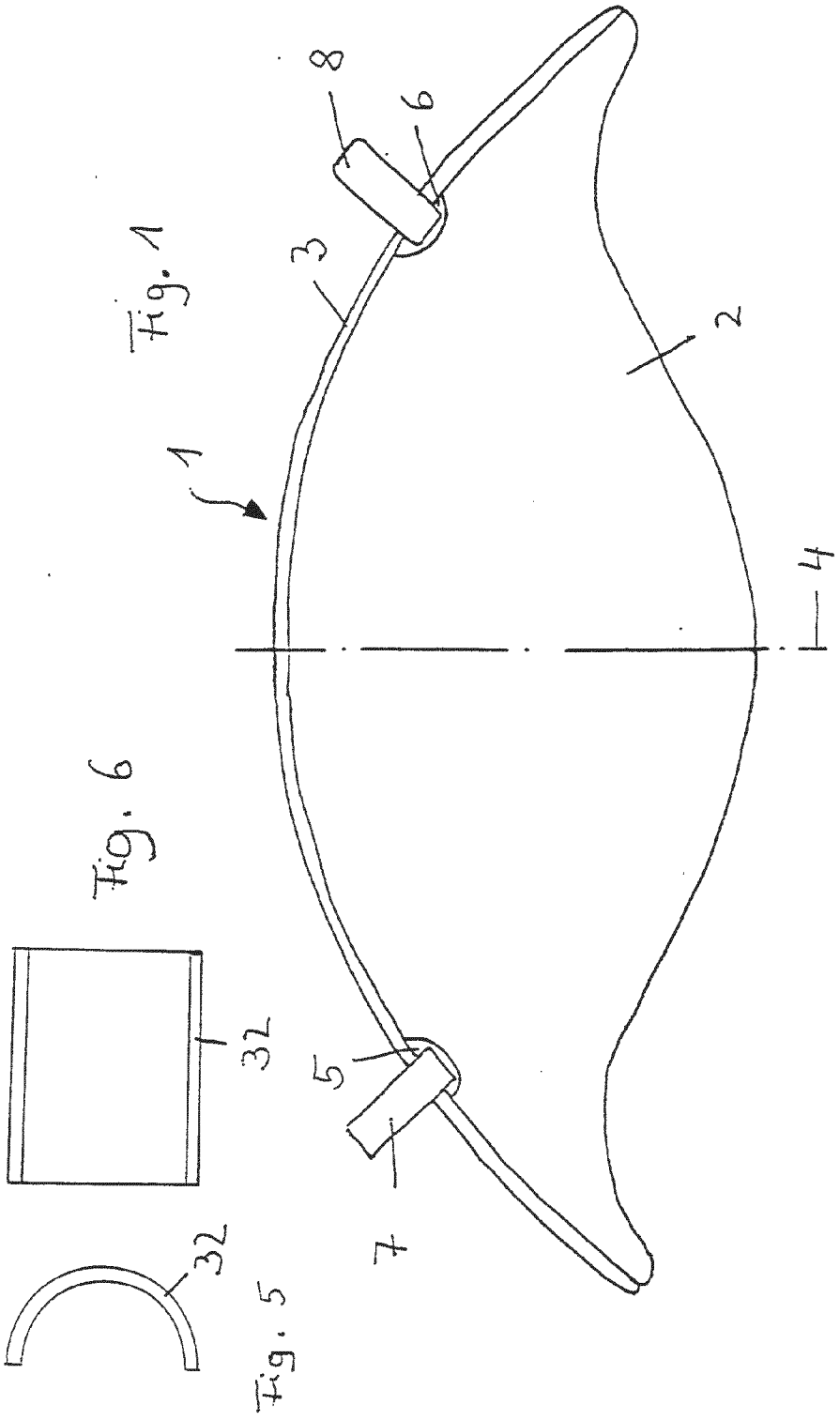


Fig. 1

Fig. 6

Fig. 5

VECTAIR EX.1002, PG.225

Nummer: DE 196 41 911 A1
Int. Cl.[6]: A 47 K 17/00
Offenlegungstag: 15. Mai 1997

Fig. 4

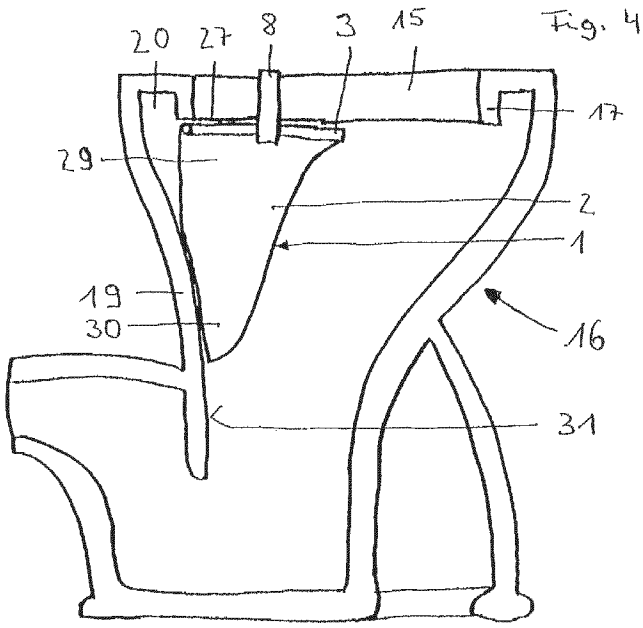


Fig. 3

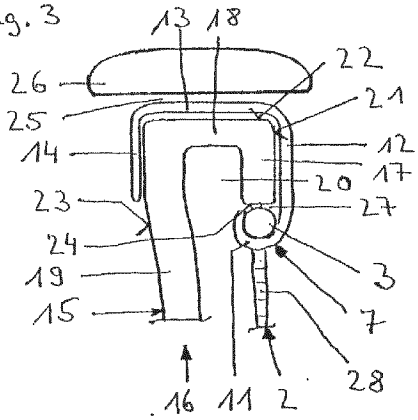
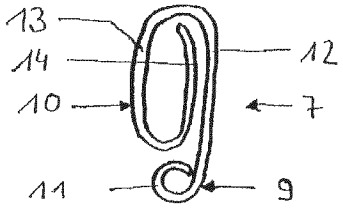


Fig. 2



VECTAIR EX.1002, PG.226

Espacenet

Bibliographic data: FR2681232 (A1) — 1993-03-19

Musical lid for W.C. pan

Inventor(s): ROGER LECAT ± (LECAT ROGER)

Applicant(s): FACT ANAL [FR] ± (FACT ANAL)

Classification: - international: ***A47K13/24;*** (IPC1-7): A47K13/30
- cooperative: **A47K13/24**

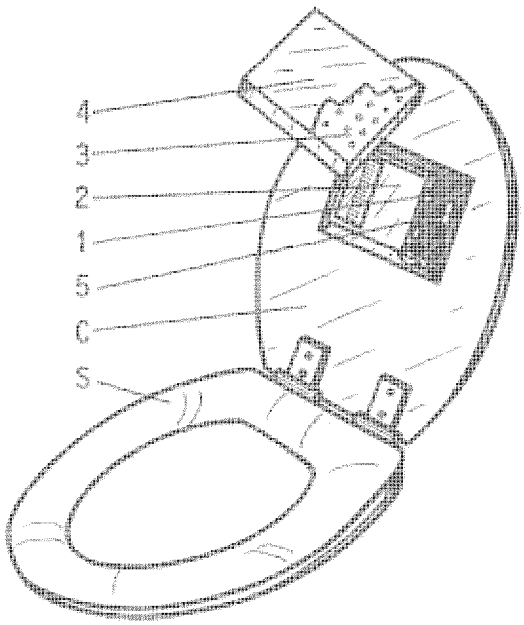
Application number: FR19910011306 19910913

Priority number(s): FR19910011306 19910913

Also published as: FR2681232 (B1)

Abstract of FR2681232 (A1)

The subject of the present invention is a fold-down lid for a W.C. pan, in which a cavity 1 is made forming a housing provided in order to receive an extra-flat sound-emitting apparatus (2) powered by batteries, such as a mini cassette player, as well as a radio receiver, the stop/start operation of which is controlled by a contactor itself controlled by the position of the lid. The connector controlling the operation of the apparatus may, for example, be a mercury switch 5 giving rise to starting-up of the apparatus when the lid is in the open vertical position and interrupting it when the lid is in the horizontal or closed position. A perforated protection element 3 covered with a plastic film allowing the sounds to pass through is placed in front of the apparatus.; The cavity may occupy the entire inner surface of the lid in order to accommodate, at its periphery, an aerial with a view to improving reception.



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(56) **Liste des documents cités dans le rapport de recherche :** *Se reporter à la fin du présent fascicule.*

(60) **Références à d'autres documents nationaux apparentés :**

(71) **Demandeur(s) :** *Société FACT-ANAL Société Civile Particulière* — FR.

(72) **Inventeur(s) :** Lecat Roger.

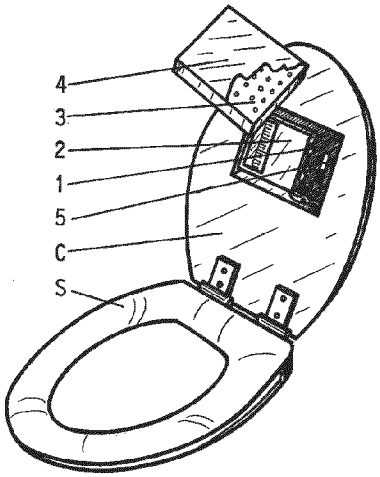
(73) **Titulaire(s) :**

(74) **Mandataire :** Letheule Jacqueline.

(54) Couvercle musical pour cuvette de W.C.

(57) La présente invention.-a pour objet un couvercle abattant pour cuvette de W.C. dans lequel est pratiquée une cavité 1 formant logement prévu pour recevoir un appareil sonore extra-plat (2) alimenté par piles tel qu'un mini-lecteur de cassettes aussi bien qu'un récepteur radio dont le fonctionnement marche-arrêt est commandé par un contacteur, lui-même commandé par la position du couvercle.

Le connecteur commandant le fonctionnement de l'appareil peut être par exemple un connecteur à mercure 5 provoquant la mise marche de l'appareil lorsque le couvercle est en position verticale ouverte et l'interrompant lorsque le couvercle est en position horizontale ou fermée. Un élément de protection 3 percé et recouvert d'un film de plastique laissant passer les sons est placé devant l'appareil. La cavité peut occuper toute la surface intérieure du couvercle pour loger à sa périphérie une antenne en vue d'améliorer la réception.



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2681232

La présente invention a pour objet un couvercle abattant pour cuvette de W.C. conçu pour recevoir un appareil reproducteur ou émetteur musical tel que mini-lecteur de bandes magnétiques enregistrées ou mini-récepteur radio, et dont le levage provoque la mise en marche de l'appareil tandis que son abaissement sur le siège de la cuvette provoque l'arrêt de l'appareil.

Cette invention est applicable à tous les couvercles pour sièges de W.C. standard à la seule condition que le couvercle soit creux ou comporte une cavité pouvant recevoir un appareil extra-plat tel qu'on en trouve actuellement dans le commerce.

On comprendra miaux les caractéristiques de l'invention en se référant à la Figure unique annexée à titre non limitatif qui représente la partie supérieure d'un appareil de W.C. comprenant l'habituel abattant formant siège S et un couvercle C aménagé conformément à l'invention sur une cuvette de W.C. non représentée.

Dans l'épaisseur du couvercle C est pratiquée une cavité 1 dans laquelle peut trouver place un appareil musical extra-plat 2 alimenté par piles. Cette cavité est pourvue d'un élément de protection 3 percé de trous,emboîté à force dans la cavité et recouvert d'une feuille en matière plastique 4 de faible épaisseur laissant passer les vibrations sonores à la manière d'une membrane de haut-parleur.

La référence 5 désigne un commutateur à bascule tel qu'un commutateur à mercure ,disposé de manière telle que le contact soit coupé lorsque le couvercle Cest en position horizontale de fermeture provoquant l'arrêt de l'appareil,et établi lorsque le couvercle est placé en position verticale d'ouverture,comme représenté sur la Figure,provoquant la mise en marche de l'appareil 2.

On peut donner à la cavité 1 pratiquée dans le couvercle toutes

dimensions et formes souhaitées. Ainsi on peut agrandir la cavité 1 de telle sorte qu'elle s'étende sur toute la surface intérieure du couvercle,et on peut par exemple fixer à la périphérie de celle-ci un fil servant d'antenne. De cette manière lorsque le couvercle sera maintenu ouvert l'antenne reliée à l'appareil récepteur radio développée sur toute la périphérie intérieure du couvercle permettr d'améliorer la réception.

Au commutateur à mercure commandant selon la position du couvercle le mise en marche ou l'arrêt de l'appareil peut être substitué tout autre moyen équivalent procurant les mêmes effets.

REVENDICATIONS

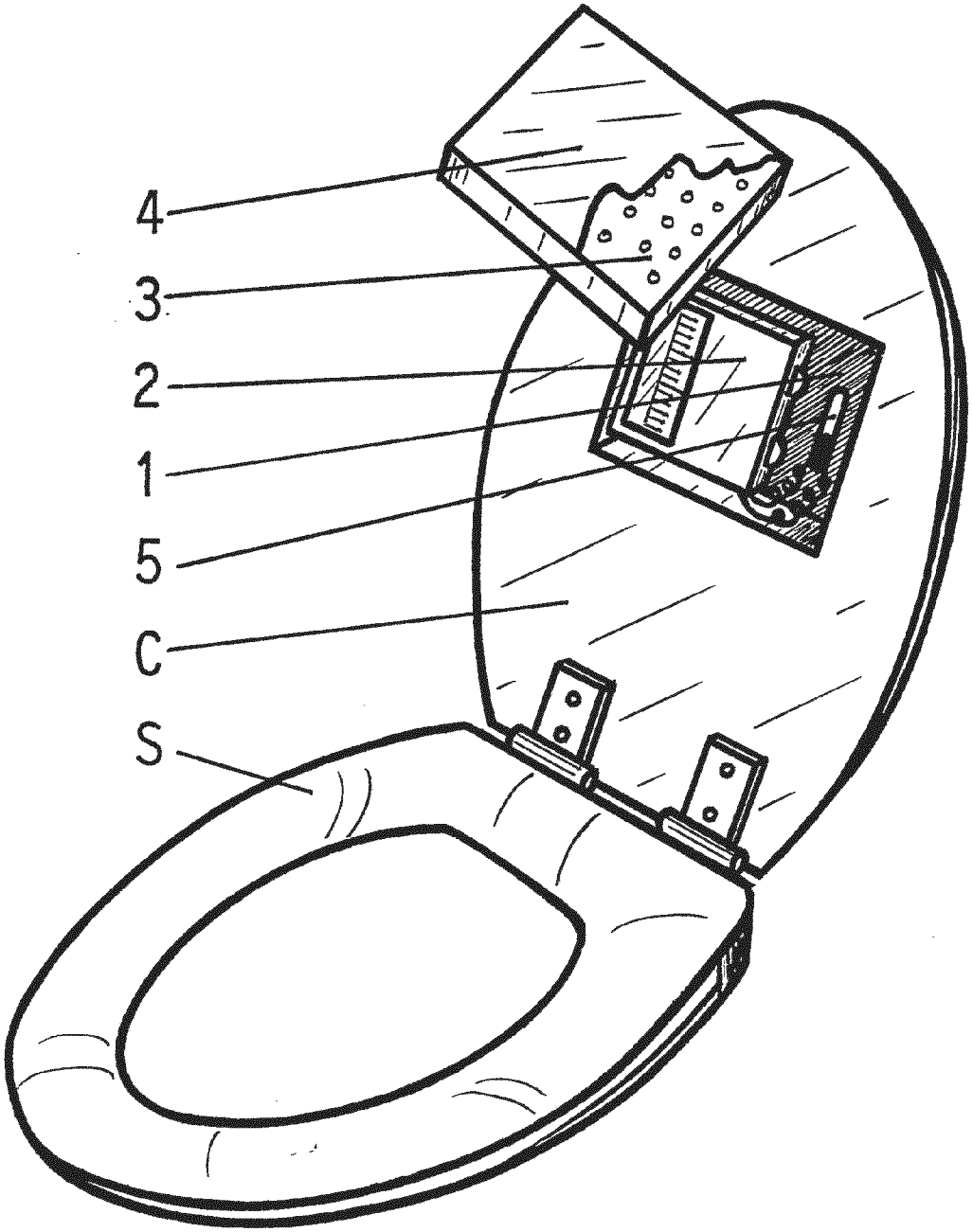
1. Couvercle abattant pour cuvette de W.C. à l'intérieur duquel est pratiquée une cavité (1) formant logement prévu pour recevoir un appareil sonore extra-plat alimenté par piles (2) ,tel qu'un mini-lecteur de cassettes enregistrées aussi bien qu'un récepteur radio dont le fonctionnement marche-arrêt est commandé par un contacteur , lui-même commandé par la position du couvercle.

2. Couvercla abattant selon la revendication 1, caractérisé en ce que le contacteur assurant la mise en marche ou l'arrêt de l'appareil est un contacteurtel qu'à mercure,qui établit le contact provoquant la mise en marche de l'appareil lorsque le couvercle est en position verticale ouverte,et interrompant le contact provoquant l'arrêt de l'appareil lorsque le couvercle est en position horizontale ou fermée.

3. Couvercle abattant selon la revendication 1, caractérisé en ce qu'il est pourvu d'un élément de protection (3) de l'appareil, percé et recouvert par un film de plastique léger (4) laissant passer les sons par vibration à la manière d'une membrane de haut-parleur.

4. Couvercle abattant selon la revendication 1, caractérisé en ce que la cavité occupe toute la surface intérieure du couvercle de manière à pouvoir y loger un fil conducteur servant d'antenne disposé sur la périphérie de la dite surface intérieure, aux fins d'améliorer la réception.

PL.UNIQUE



REPUBLIQUE FRANÇAISE

2681232

N° d'enregistrement national

INSTITUT NATIONAL
de la
PROPRIETE INDUSTRIELLE

RAPPORT DE RECHERCHE

établi sur la base des dernières revendications déposées avant le commencement de la recherche

FR 9111306
FA 461977

DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes	Revendications concernées de la demande examinée
Y A	US-A-4 736 471 (JOHNSON) * colonne 2, ligne 50 - colonne 3, ligne 28 * * colonne 3, ligne 53 - colonne 4, ligne 9 * * figures 1-5 *	1,2 3
Y A	FR-A-2 501 992 (LECAT) * page 2, ligne 19 - ligne 30; figures 1,3 *	1,2 3
A	US-A-4 521 919 (MOLLOY)	

DOMAINES TECHNIQUES RECHERCHES (Int. Cl.5)

A47K

Date d'achèvement de la recherche: 22 MAI 1992

Examinateur: PORWOLL H.P.

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EPO FORM 1503 03.82 (P0413)

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T : théorie ou principe à la base de l'invention
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D : cité dans la demande
L : cité pour d'autres raisons

& : membre de la même famille, document correspondant

N° 18,394 A.D. 1895

Date of Application, 2nd Oct., 1895

Complete Specification Left, 2nd July, 1896—Accepted, 8th Aug., 1896

PROVISIONAL SPECIFICATION.

Improvements in Lamps and other Vessels.

We, THOMAS FLETCHER BRAIME, of 148 Chapeltown Road, Leeds, in the County of York, Oilcan Manufacturer, and JAMES HENRY BRAIME, of Rothwell, near Leeds, aforesaid, Engineer, do hereby declare the nature of this invention to be as follows :—

This invention has for its object, improvements in lamps and other vessels, and it consists in an improved method and means of constructing the filling hole of such lamps or other vessels, whereby the said lamps or other vessels are made to be the more easily and economically filled than when provided with the ordinary screw-feed hole.

In order to affect this we make the lamp or other vessels with, or provide and attach thereto, a suitable flange or ring around a suitable orifice in the surface or body portion of the lamp or other vessel, which thereby constitutes the filling hole of the said lamp or other vessel.

We then make a suitable cover or stopper, say of brass or any other suitable material, providing it with a suitable edge or surface such as will fit in or on or engage with the above said flange or ring fitted to the lamp or other vessel. We preferably make the surface of the flange or ring of the lamp or other vessels, and that surface of the cover or stopper which are desired to come into contact, in such a manner that they shall be, say, somewhat in the form of a ball-valve, or spherical faced seating at the place of contact, but we would have it understood that we may make them in any other suitable form.

On a part of the flange or ring we form or provide and attach thereto a suitable catch or projection, which may be fixed rigid therewith, or have a spring or other connection, or we may use the flange or ring before mentioned as that part in lieu of the above catch or projection, and under which the edge or a projection formed on the edge of the cover or stopper shall engage when the cover or stopper is resting on its seating on the said flange or ring.

On the side of the cover or stopper opposite to that engaging with the above catch or projection we form an arm having a suitable hole through it. Through this hole in the arm of the cover or stopper we pass a rod, pin, or the like which we secure either to the outside of the lamp or other vessel, or cause to pass through a suitable hole into the interior of the lamp or other vessel.

In the case in which this rod, pin or the like, is secured to the outside of the lamp or vessel, we place a spiral or other suitable spring in such a manner as to press or pull down the arm of the cover or stopper, when such cover or stopper is on its seating and held by its engagement with the catch or projection, or part of the flange or ring as the case may be, such pressing or pulling-down action of the spring or other means, causing the side of the cover or stopper on which the arm is situated to be held on its seating, whilst the catch or projection is holding the opposite side, the cover or stopper thus being firmly held down on its seating. Or in lieu of the spring we may use a screw or other suitable means for the same purpose.

Or when the rod, pin, or the like which passes through the arm of the cover or stopper, passes into the interior of the lamp or other vessel, we place a spiral or other spring in compression, one end being secured to the rod, pin, or the like, and

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VECTAIR EX.1002, PG.234

the other resting under the surface of the lamp or other vessel. The spring thus causing the end of the rod, pin, or the like, which in this case is provided with a suitable head, which rests on the arm of the cover, to hold or pull down the arm of the cover or stopper and thus to keep the cover or stopper on its seating as in the first described method.

From the above construction it will be seen that the cover or stopper, engaging at one side with, or being held by the catch or projection or the flange or ring fitted to the lamp or other vessel, and the other and opposite side of the cover or stopper being held down by means of the spring or other means pressing on or pulling down the arm fitted thereto, the cover will be held on all its seating surface on the flange or ring, effectually closing the feedhole of the lamp or other vessel.

In order to uncover the feedhole of the lamp or other vessel, we cause the cover or stopper to move sideways, or to turn on its pivot, by means of pressing or pulling at its edge or a lip formed thereon; by so doing the side held by the catch or projection is disengaged therefrom and the cover or stopper allowed to swivel around the rod, pin, or the like, passing through its arm.

In order to replace the cover or stopper on its seating, we cause the same to swivel round and force the side which engages with the catch or projection on the flange or ring under or into engagement therewith, forcing the cover on to and over its seating, when it is held thereon by the spring or other suitable means employed to press upon the arm of the cover or stopper; the opposite side being held by the catch or projection or part of the edge of the flange or ring as the case may be.

Dated this First day of October 1895.

THOMAS FLETCHER BRAIME,
JAMES HENRY BRAIME,
By W. Fairburn-Hart,
Agent.

COMPLETE SPECIFICATION.

Improvements in Lamps and other Vessels.

We, THOMAS FLETCHER BRAIME, of 148 Chapeltown Road, Leeds, in the County of York, Oilcan Manufacturer, and JAMES HENRY BRAIME, of Rothwell, near Leeds, aforesaid, Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has for its object, improvements in lamps and other vessels, and it consists in an improved method and means of constructing and closing the filling hole of such lamps or other vessels, whereby the said lamps or other vessels, all of which are hereinafter termed and included in the term "lamps," are made to be the more easily and economically filled than when provided with the ordinary screw-feedhole.

Lamps with feed holes and coverings constructed according to this invention are illustrated in the annexed drawings, in which,

Fig. 1 is a sectional elevation and Fig. 2 a plan looking at the top with a feed hole and cover constructed according to this invention.

Fig. 3 a sectional elevation with the feed hole uncovered.

Figs. 4 and 5 are sectional elevations showing means for attaching the cover to the body portion of the lamp.

Like parts in all the views are marked with similar letters of reference.

A is the body of the lamp, B the spout or wick tube, and C the stay for

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strengthening purposes. All these parts may be constructed in the ordinary and well known manner, or as described in the said Thomas Fletcher Braime's Specification No. 17638 dated 21st September 1895. If desired, the stay C may be dispensed with.

In the drawings the opening or orifice D is shown at the top of the body A of the lamp but it may be formed in any other portion thereof.

The orifice D in the body of the lamp A is provided with a flange or ring E, hereafter termed and included in the term flange, which is either formed on or attached to the body A by any suitable means, such as for example by stamping or soldering, or galvanizing. This consitutes the filling hole of the lamp.

A suitable cover or stopper hereafter termed the cover F say of brass or any other suitable material, is provided with a suitable edge or surface, hereafter termed the edge G, such as will fit in or on or engage with the above said flange E which is fitted to the lamp body A as described. The surface of the flange E, and that surface of the edge G of the cover F which are desired to come into contact, are preferably made in such a manner that they shall be, say, somewhat in the form of a ball valve, or spherical faced seating, or in angular form similar to a mushroom valve, at the place of contact, and as shown in the drawings, but we would have it understood that the edge G may be made in any other suitable form. The cover F may be made out of a single piece of metal bent or stamped to the shape shown; or of two or more pieces bent, or pressed, or soldered or otherwise fastened together to form the shape required.

On a part of the flange E is formed or provided and attached thereto a suitable catch or projection H, which may be fixed rigid therewith, or have a spring or other connection, or we may use the flange before mentioned as that part in lieu of the above catch or projection, and under an edge or a projection (not shown in the drawings) formed on the edge of the cover F is made to engage when the cover or stopper is resting on its seating on the said flange E. But the method we prefer to employ is that shown in the drawings in which the edge of the cover F is made to pass under the catch H which is formed on or attached to the ring E.

On the side of the cover F opposite to that engaging with the above catch H is formed an arm I having a suitable hole through it. Through this hole in the arm I of the cover F is passed a rod, pin, or the like hereafter termed the pin J which is secured either to the outside of the lamp as shown at Figs. 1, 3 and 5, or caused to pass through a suitable hole into the interior of the lamp body as shown at Fig. 4.

In the cases in which this pin J is secured to the outside of the lamp, a spiral or other suitable spring K (enclosed if required in a tube or cap L) is placed in such a manner as to press or pull down the arm I of the cover F, when such cover or stopper is on its seating and held by its engagement with the catch H, or part of the flange or ring as the case may be, such pressing or pulling-down action of the spring K causing the side of the cover F on which the arm I is situated to be held on its seating, whilst the catch H is securely holding the opposite side. By this means the cover F is firmly held down on its seating. Or in lieu of the spring we may use a screw or its equivalent for the same purpose.

But when the pin J, which passes through the arm I of the cover F, passes into the interior of the lamp body A as at Fig. 4, the spiral or other spring K is in compression, one end being secured to the pin J, and the other resting under the surface of the lamp body A. The spring K (which may or may not be enclosed in a tube L) thus causing the end of the pin J, which in this case is provided with a suitable head J^1, arranged to rest on the arm I of the cover F, to hold or pull down the arm of the cover F and thus to keep the said cover on its seating as in the first described method.

A similar arrangement to that shown at Fig. 4 for securely holding down the cover F is applied to the outside of the lamp body as illustrated at Fig. 5.

At Fig. 1 the pin J is prolonged to form a handle M.

From the above construction it will be seen that by the cover F engaging at one

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side with, or being held by the catch H or with the flange E fitted to the lamp or other vessel,—and the other and opposite side of the cover F is held down by means of the spring K which pressing on or pulling down the arm I fitted thereto, the cover F will be held on all its seating surface E of the flange, thereby effectually closing the feedhole D of the lamp.

In order to uncover the feedhole or orifice D of the lamp, the cover F is caused to move sideways, or to be turned on its pivot, which is formed by the pin J as shown at Fig. 3, by means of pressing or pulling at its edge or a lip N formed thereon; by so doing the side held by the catch or projection is disengaged therefrom and the cover F allowed to swivel around the pin J which passes through the arm I.

In order to replace the cover or stopper on its seating, the cover F is caused to swivel round and the side which engages with the catch H on the flange E is passed under or into engagement therewith; the cover F being forced on to and over its seating, when it is held thereon by the spring K or its equivalent employed to press upon the arm I of the cover F. The opposite side of the cover F being held by the catch H or part of the edge of the flange as the case may be as before described.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

In lamps and other vessels the method of constructing the filling hole and its cover substantially as described, which consists of (1) the flange E formed on or attached to the lamp body A so as to form a seating for the cover, and provided with a catch for securing the same, (2) the moveable cover F shaped to fit the seating portion of the flange and to engage with the said catch, and also provided with a lip N and arm I as set forth, and (3) the pin J forming the pivot for the cover F upon which a spring K or its equivalent, as described, is mounted (with or without a covering tube or cap L) for holding down the arm I and one portion of the said cover when closed upon the flange E whilst the opposite portion of said cover is held down by the catch H—all combined and arranged in the manner and for the purposes herein described and illustrated.

Dated this First day of July 1896.

THOMAS FLETCHER BRAIME,
JAMES HENRY BRAIME,
By W. Fairburn-Hart,
Agent.

London: Printed for Her Majesty's Stationery Office, by Darling & Son, Ltd.—1896

VECTAIR EX.1002, PG.237

A.D. 1895. Oct. 2. N° 18,394.

BRAIME & *another's* Complete Specification. (1 SHEET)

Fig. 1.

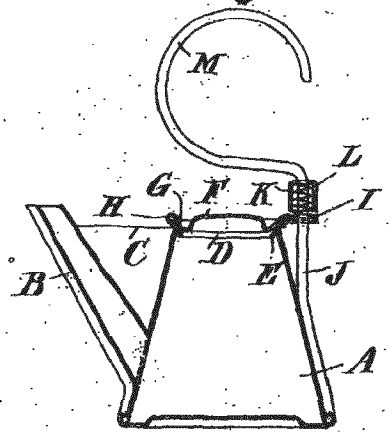


Fig. 4.

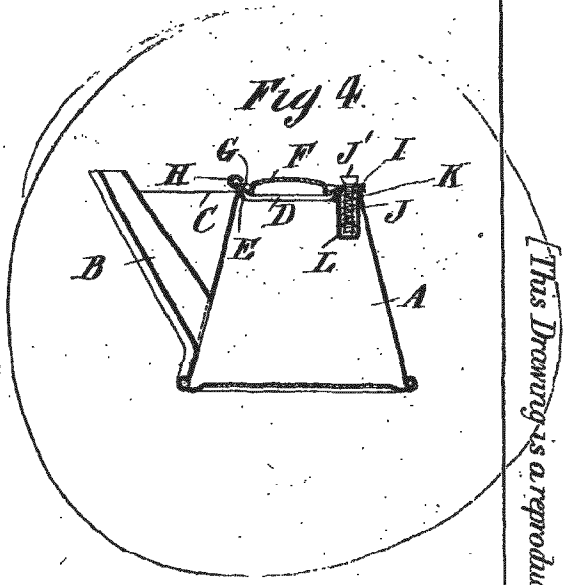


Fig. 2.

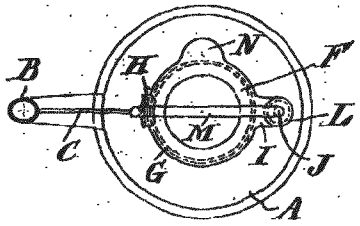


Fig. 5.

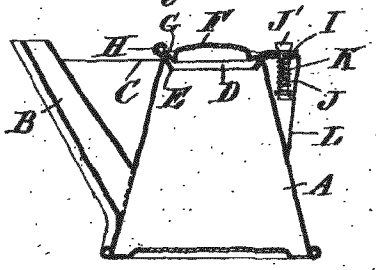
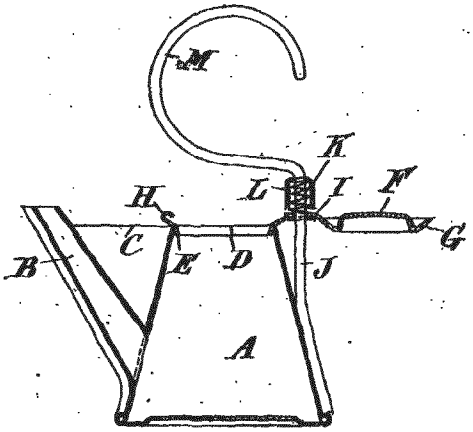


Fig. 3.



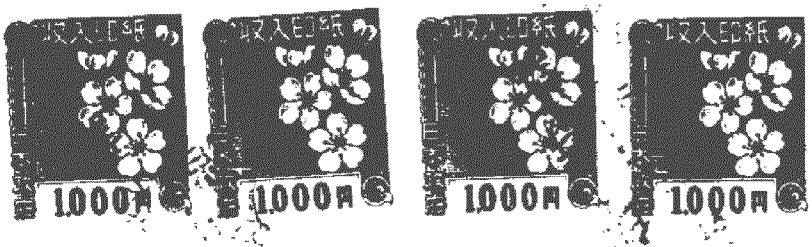
[This Drawing is a reproduction of the Original on a reduced scale.]

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VECTAIR EX.1002, PG.238



(4000円)

適

実用新案登録願

適

昭和55年7月4日

特許庁長官 川原能雄 殿

フリガナ ショウベンキ ヨウ メザラ
1. 考案の名称 小便器用目皿

2. 考案者

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代表者 ヤマダカツジ 山田勝次

4. 添付書類の目録

(1)	明細書	1	通
(2)	図面	1	通
(3)	願書副本	1	通
(4)	(		通)

特許庁 55.7.7 出願第二課

55 095081

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方式審査

VECTAIR EX.1002, PG.239

明　　細　　書

1.　考案の名称

小便器用目皿

2.　実用新案登録請求の範囲

同心で且つ同一平面上に断面略半長円形の相似形円輪を数個、等間隔に配置したことを特長とする小便器用目皿。

3.　考案の詳細な説明

従来の小便器用目皿は図面に示す如く上面が略平面状に形成されているために、小便がこの目皿上面に射水された場合、その跳ね返りが便器外に飛散し易く小便器周辺および衣服等を汚す欠点が有つた。

本考案は上記欠点を解消した小便器用目皿を提供せんとするものである。

以下図面に基づき本考案の実施の一例を説明する。

断面略半長円形の相似形の内輪（１），（1′），（1″），（1‴）を同心で且つ同一平面上に相互

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の間隔（２）が等しく成るように配置し、該円輪（１），（1′），（1″），（1‴）の下面に適宜連結棒（３）を接合し円輪（１），（1′），（1″），（1‴）を一体化した構造とする。円輪の断面形状は上部を円形とした略半長円形とし、高さ寸法（ａ）は幅寸法（ｂ）よりやや大きく形成する。円輪相互の間隔（２）および最小円輪（1‴）の空洞部（４）寸法はタバコの吸殻，チューイングガム等が小便器排水路内に落下しないような寸法とし、最大円輪（１）は小便器排水路径よりやや大きく形成する。

本考案の小便器用目皿は以上のような構成なので、タバコの吸殻，チューイングガム等の異物が排水路内に落下するのを防止するとともに、目皿上面に小便が射水されても目皿上面には平面部分がほとんど無く、大部分が下向き傾斜面か垂直面となつているため、小便の跳ね返りは下向きに飛散し便器外に飛び出すことが無い実用価値大なるものである。

4. 図面の簡単な説明

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第１図は本考案に係る小便器目皿の平面図、第２図はＩ－Ｉ線断面図、第３図は従来の小便器用目皿の断面図。

（１），（１′），（１″），（１‴）：円輪

（２）：円輪相互の間隔

（３）：連結棒

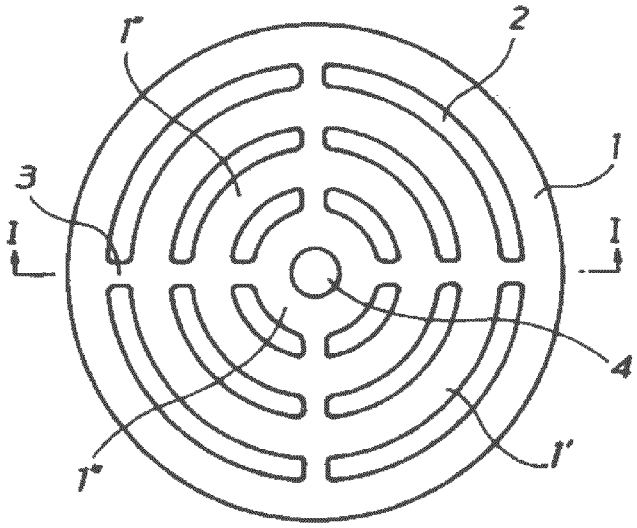
（４）：空洞部

実用新案登録出願人　東陶機器株式会社

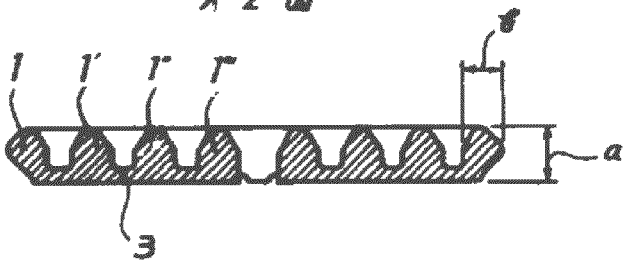
VECTAIR EX.1002, PG.242

[redacted]

第1図



第2図



第3図



[redacted]

実用新案登録出願人　東陶機器株式会社

17599

5. 前記以外の考案者

住所（居所）北九州市小倉北区中島2丁目1番1号
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（トウトウキキ ナイ）

氏名 河本博雄
（カワモト ヒロオ）

17599

⑲日本国特許庁（JP）　⑪実用新案出願公開

⑫公開実用新案公報（U）　昭60－178497

⑤1Int.Cl.⁴	識別記号	庁内整理番号
A 47 K 11/00	117	6654－2D
E 03 D 11/00	102	6572－2D

⑬公開　昭和60年(1985)11月27日

審査請求　未請求　（全　頁）

⑤4考案の名称　消音マスク

⑳実　願　昭59－66371

㉒出　願　昭59(1984)5月7日

⑦2考案者　榊　法　泉　郡山市麓山2丁目3－18

⑦1出願人　榊　法　泉　郡山市麓山2丁目3－18

明　細　書

1,　考案の名称

消　音　マ　ス　ク

実用新案登録請求の範囲

2,　実用新案登録請求の範井

放尿のときの嫌な音を消すために、単層又は複層にし、表面を着色・模様・化粧成形した消音マスク。

3,　考案の詳細な説明

この考案は和風式の大便器・大小兼用便器及び汲み取り用大便器において小便をしようとしたとき、便器のトラップ溜水に放尿するようになるためにとても嫌な音が他室まで聞える。女性は嫌な音を消すためにいろいろと苦労している。

このような欠点を除くために「消音マスク」を考案したものである。

従来、放尿のとき男性はなるべく音がしないように便器の端とか、前方の金隠しの奥壁の部分とかに方向をかえて放尿するために便器外に出たり跳ね返えったりして便所の床をよごすことが多い。女性にあっては音を消すためにロータンクのレ

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VECTAIR EX.1002, PG.246

バーを大に回し、多量の水を流しながら放尿する。放尿後に紙を使用するためにまた水を流すという現状であるため多量の水を使用している。

以下その構造を図面とともに説明する。

第１図は本考案の平面図である。

消音マスク１は6, 7, 8, を組合せたものと支持ピン２と骨組材３と伸縮自在支持パイプ４と便器支持金具５とによって構成するものである。

１を３によってたわみをなくし、３を４に回転するように固定し、４を５に固定したものである。

２は３に２個を固定する。

第２図は第１図のＡ－Ａ断面図である。

消音マスク１は３層になっており、表面層６は毛状・針状・網状・ろ過紙状・不織布のような粗い隙間もつ布地・スポンジ状及び杉の葉のように成型したもので、着色・模様・絵・化粧成型したものであり、放尿のときに跳ね返りをなくし、通水するもの。中層７は縦繊維状のもので繊維方向に通水すやすいもの。裏面層８は網状及びろ過紙状のもの。上記の6, 7, 8, を組合せたものである。

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素材は不吸収性のもので、骨組材3によってたわまないようにし、円形・角形・だい円形・動植物・創作図形などの形状に作ったものである。
以上の構造である。その使用方法を説明する。

第3図は便器に本考案を取り付けた平面図である。便器支持金具5によって便器の縁にはめこんで固定し、伸縮自在支持パイプ4によって便器の巾に固定される。

第4図は便器に本考案を取り付けた断面図である。消音マスクの取り付け位置は排便通過寸法12を取り、それを底点として登り角度になるようにして支持ピン2にて支持する。2は金隠しの奥壁にて2点でささえ、金隠しの上部より放水される水によって消音マスクが洗浄される。

消音マスクの角度をつけることによって放尿をやわらげてトラップ溜水にすみやかに流し込む。

便器の掃除のときは消音マスクを手前に回してできる。上記の方法が便器にはめこむだけでできる。　以下、その効果について説明する。

放尿のときの嫌な音をなくし、臭のたちあがり

VECTAIR EX.1002, PG.248

を少なくするとともに消音マスクの表面の模様によってさわやかな気持にしてくれる。

また、女性が従来、使用する水は放尿時と紙を流すために21ℓ～27ℓ使うが消音マスクを使用すれば1回ですむので5ℓ～7ℓですむ。よって16ℓ～20ℓの節水となる。

フラッシュバルブ（直結式）の便器でも8ℓ～13ℓの節水となる。以上のように消音及び節水並びにさわやかさを与える効果がある。

4, 図面の簡単な説明

第1図　本考案の平面図

第2図　第1図のA－A断面図

第3図　本考案の取り付け平面図

第4図　第3図のB－B断面図

1　消音マスク

2　支持ピン

3　骨組材

4　伸縮自在支持パイプ

5　便器支持金具

6　消音マスクの表面層

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7　消音マスクの中層

8　消音マスクの裏面層

9　和風便器

10　便器トラップ溜水

11　便ばちの水

12　排便通過寸法

13　便器の金隠しの縁

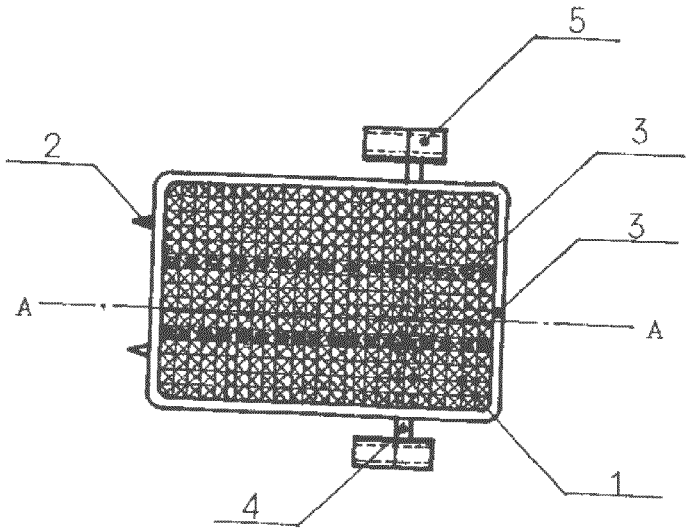
実用新案登録出願人

榊　　法　泉

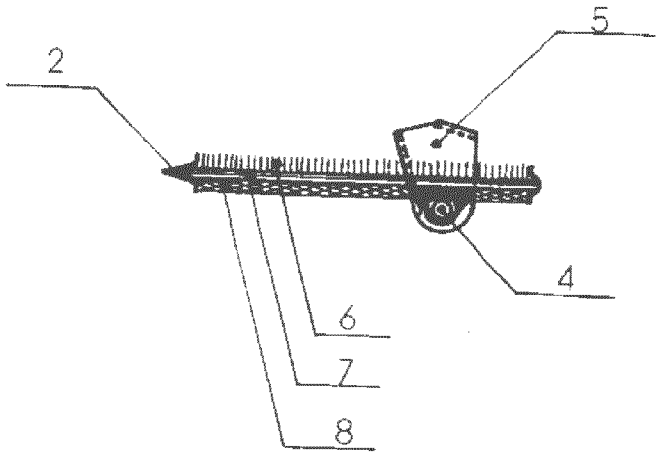
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VECTAIR EX.1002, PG.250

図　　面



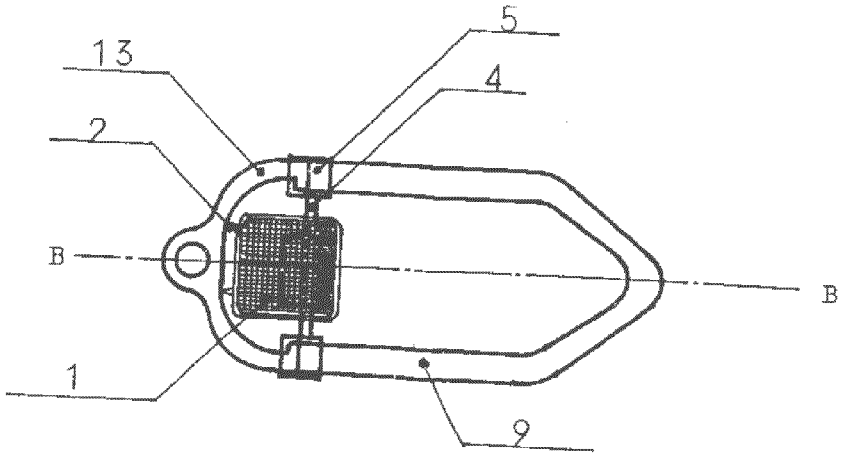
第 1 図



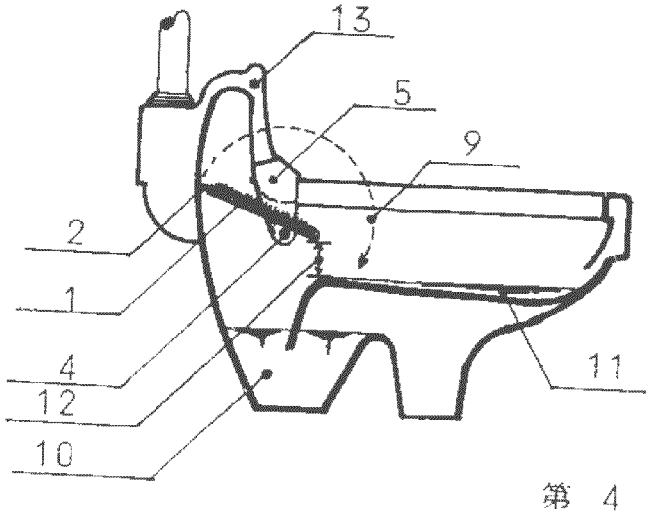
第 2 図

VECTAIR EX.1002; PG;251

図　　面



第 3 図



第 4 図

VECTAIR EX.1002, PG.252
実開60-178497

⑲日本国特許庁（JP）　⑪実用新案出願公開

⑫公開実用新案公報（U）　昭60－190865

⑤Int.Cl.⁴	識別記号	庁内整理番号
E 03 D 9/00		6572－2D
13/00		6572－2D

⑬公開　昭和60年(1985)12月18日

審査請求　未請求　（全　頁）

⑭考案の名称　排泄尿飛散防止器

㉑実　願　昭59－79240

㉒出　願　昭59(1984)5月29日

㉒考案者　伏見　宏二　小平市上水南町1丁目11番12－4

㉑出願人　伏見　宏二　小平市上水南町1丁目11番12－4

明　　細　　書

1.　考案の名称　　排泄尿飛散防止器

2.　実用新案登録請求の範囲

小便器の内側周辺の形状に合せて形成した、L字形辺の枠(1)に、網(2)を張りつけて、ブラシ(3)を植えた立面形辺(4)と底面形辺(5)の係合する箇所を、支承軸支(6)して形成した本体に係止具(7)を取りつけて、小便器の内側へとりつけて使用する排泄尿飛散防止器。

3.　考案の詳細な説明

この考案は、小便器の内側の形状に合せて形成したL字形辺の外側枠の全面に、網を張設し、ブラシを植えつけた立面形辺と、底面形辺の係合する箇所を、支承軸支した本体に、先端をまげた張着足の係止具を取りつけて、小便器の内側周縁に張着して使用する排泄尿飛散防止器に関するものである。

従来の小便器は、陶器、又は、プラスチック等で作製されたその硬い表面に、直接放尿したので尿は激突し飛散して流失し、その一部は玉飛沫と

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VECTAIR EX.1002, PG.254

なつて遠方へ飛び散り、周辺の床、壁、着衣、履物等に付着するので、悪臭の原因となり不衛生であり、非常に不愉快である。

本考案はその欠点を除くために考案されたものである。

これを図面について説明すれば、

小便器の内側の周辺に合せて形成したL字形辺の枠(1)の立面形辺(5)と、底面形辺(6)の全面に、細かい網(2)を張り、ブラシ(3)を植えつけた本体の各、辺の係合する箇所を、脱着、折曲自在に支承軸支(6)して取り扱いを容易にした本体に、先端を曲げた張着足を多数設けた、係止具(7)を、小便器の内側周縁に張着する排泄尿飛散防止器である。

本器を、小便器の内側周縁に、張着足の先端を滑動しながら押止し張着して使用すると、全体がブラシ及び、細かい網の弾性体で構成されてあるので、放尿はブラシと網により、分流減圧し、衰勢し、消勢消音して他に飛散することなく流失する。

従つて、飛沫を完全に防止出来るので、衛生的

VECTAIR EX.1002, PG.255

で安心して使用出来る。

形状が小便器の内側周辺に合せて形成してあるので、洗滌管より流出する洗滌水が、全体に降りかかり易く洗滌出来るので、常に、清潔が保たれ、又、受尿面積が広く形成してあるので、使用間隔を損うことがない。

今日迄、使用してきた小便器の形態では、排尿の飛散を防ぐことは困難である。

通常の設備の便所では、飛散して付着するのは肉眼では発見出来なかつた。又、寸時の事でわすれられている。然し、他人との混合した尿が着衣などに付いていることは、非常に不潔感で、不愉快な事はない。

本考案は上記の欠点を、全面的に解決した環境衛生上具備しなければならない物である。

本考案の実施態様として、次の如きことが出来る。

イ　係止具(7)を吸盤にて取りつける。

ロ　係止具(7)を磁石にして取りつける。

ハ　係止具(7)を底面形辺の裏側へ取り付けて、

VECTAIR EX.1002, PG.256

小便器の排水口内へ張着する。

4. 図面の簡単な説明

第1図は本考案の斜視図

第2図は使用斜視図

第3図は他の実施例を示す説明図

第4図は他の実施例を示す説明図

第5図は他の実施例を示す説明図

(1)は枠　(2)は網　(3)はブラシ　(4)は立面形辺

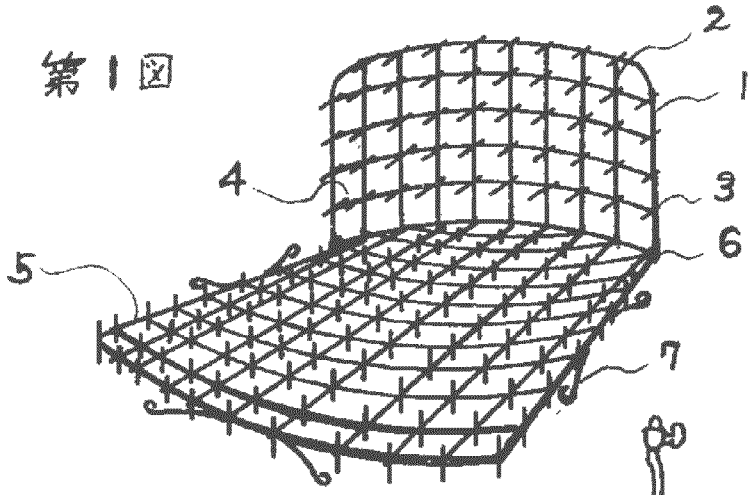
(5)は底面形辺　(6)は支承軸支箇所　(7)は係止具

実用新案登録出願人　伏　見　宏　二

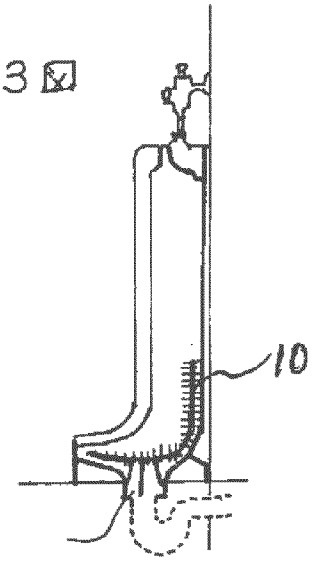
VECTAIR EX.1002, PG.257

図面

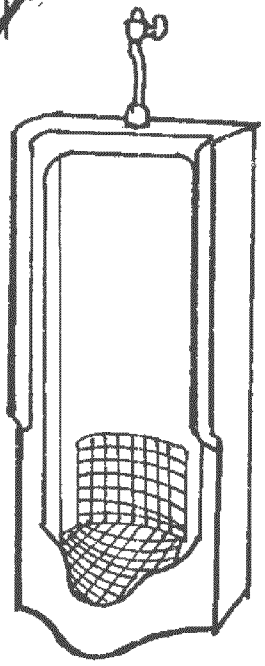
第1図



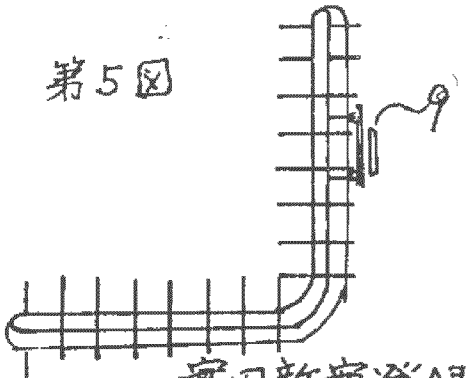
第3図



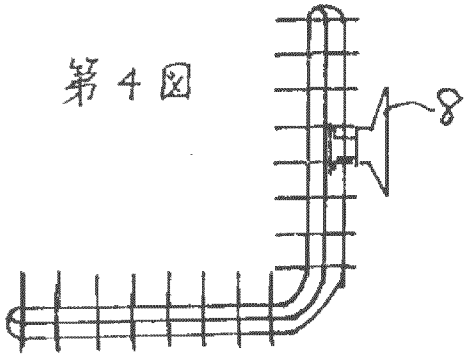
第2図



第5図



第4図



実用新案登録出願人　伏見宏二

VECTAIR EX.1002, PG.258

⑲日本国特許庁（JP）　⑪実用新案出願公開

⑫公開実用新案公報（U）　昭63－116585

⑤1Int.Cl.⁴	識別記号	庁内整理番号	④3公開　昭和63年(1988)7月27日
E 03 D 13/00		8503－2D	
9/00		F－8503－2D	

審査請求　有　（全　頁）

⑤4考案の名称　小便用便器

⑵1実　願　昭62－5793

⑵2出　願　昭62(1987)1月19日

⑦2考案者　馬場　フタヨ　長崎県諫早市小野町1100番地35

⑦1出願人　馬場　フタヨ　長崎県諫早市小野町1100番地35

明　細　書

1,　考案の名称

小便用便器

2,　実用新案登録請求の範囲

小便器本体の受尿壁に、

(イ)　先端部を鋭角的に尖らせた丸棒状の突起器を無数に取付ける。

(ロ)　当該突起器は夫々先端を上方に向けて適当な角度を設けて取付けてある。

(ハ)　当該突起器は、かかつた小便を分散可能な細さに設けてある。

以上の様に構成した小便用便器。

3.　考案の詳細な説明

(　産業上の利用分野　)

本考案は小便用便器に関する。さらに詳細には、使用時に於ける小便の飛散を防ぐことが可能な男性用の小便用便器に関するものである。

(　従来の技術　)

従来より使用されている男性用の小便器にはおもに壁面取付型のやや小型のものと、床取付

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型の大型のものがある。これらには様々な形状を有してはいるものの、そのデザインに主眼をおいている為、使用時に小便の飛散を防ぐ構造を持たず、単なる受皿的な要素のものが多い。

（　考案が解決しようとする問題点　）

これら従来の便器を使用する場合、その使用のたびに小便が飛散し、その為手やズボン等の衣服、あるいは床や壁面等にはね返り、ぬらしてしまう事が多い。

特に老人や子供の場合に於ては小便のはね返りや飛散に対して留意しながら使用するという事が少ない為、手やズボン等をぬらしてしまう場合が多く、数回の使用でかなり濡らせてしまい不衛生この上ないという事も少なくない。

（　問題点を解決するための手段　）

上述のような問題点を解決するために、本考案は次の様な構成としている。すなわち、本考案に係る小便器は、

(イ)　小便器本体の受尿壁に、先端部を鋭角的に尖らせた、丸棒状の突起器を無数に取付けて

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ある。

(ロ) 当該突起器は、夫々先端を上方に向けて適当な角度を設けて取付けてある。

(ハ) 当該突起器はかかつた小便を分散可能な細さに設け且つ受尿壁面に均等に配してある。

以上の様に設けたものである。

(作用)

本考案の小便用便器の、突起器を設けた受尿壁に放出された小便流は、まず突起器群に衝突して速度が弱められ、また適度に分散させられながら受尿壁にぶつかり飛散しようとする。しかしながら衝突速度が弱められている為、さらにその流向も分散させられているために受尿壁ではね返り飛散しようとする力は弱い。さらに突起器が上方に角度を設けて取付けられているので、受尿壁ではね返り飛散しようとするしずくは行く手を阻まれる事になり、再度突起器に衝突してその運動エネルギーをうばわれ、飛散できなくなる。

尚、突起器は小便流より細く、且つ先端を

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鋭角的に尖らせてあるので、これに衝突した小便流は分散させられ運動エネルギーを弱められるのみであり、ここで飛散する恐れはない。

（　実施例　）

以下本考案の実施例を図面を参照しながら説明する。

第１図は本考案の斜視図、第２図は中央断面図、第３図は突起器の拡大説明図である。

小便器本体(1)の受尿壁(2)には、先端部(3)を鋭角的に尖らせた突起器(4)を取付ける。当該突起器(4)は小便流より細くなる様直径５ミリメートル程度の太さに設けてある。

当該突起器(4)と突起器(4)との間隔は、７～10ミリメートル程度に設けてあり、受尿壁(2)の外周部(2)を除き均等に配列して、小便流の効果的な分散を可能にしてある。

さらにこの突起器(4)群はその先端部(3)を上方に向けて４５度の角度で傾けて取付けてあり、受尿壁(2)ではね返つた小便流が飛散しな

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い様に、返り止めの役割を付加してある。

（　考案の効果　）

本考案に係る小便器の使用については従来のものと同様であるが、まず放出された小便流は突起器(4)群に衝突してその流れは分散される。その後に受尿壁(2)にぶつかり、そこで飛散しようとするが、当初の運動エネルギーは減衰しているので大きく飛散する事はできない。そこに於て飛散しようとするしずくも再度突起器(4)によつて行く手を阻まれ、飛散の為のエネルギーを失つてしまう。その為小便流は受尿壁(2)や側壁(5)、あるいは突起器(4)等を伝つて本体(1)下部に設けられた碗部(6)に溜り、排出口(7)より排出される。その後に洗浄弁等(8)を作動させて水を流せば、上方からの水流により受尿壁(2)及び突起器(4)の汚れは洗い流されるものである。さらに普段の手入れに於ても、一般的に利用されている液状洗剤を使用する事が可能で、めんどうな手間も必要ではない。

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本考案は上述の様に小便流の運動エネルギーをうばう事により飛散を防ぐため、使用する人の手や衣服、あるいは壁や床等を汚す事なく小用をすます事が出来、また洗浄も容易なので、保健衛生上きわめて有益なものである。

4. 図面の簡単な説明

第1図は斜視図、第2図は中央断面図、第3図は突起器の拡大説明図。(1)・・・小便器本体(2)・・・受尿壁、(3)・・・先端部、(4)・・・突起器、(5)・・・側壁、(6)・・・餅部、(7)・・・排出口、(8)・・・洗浄弁等。

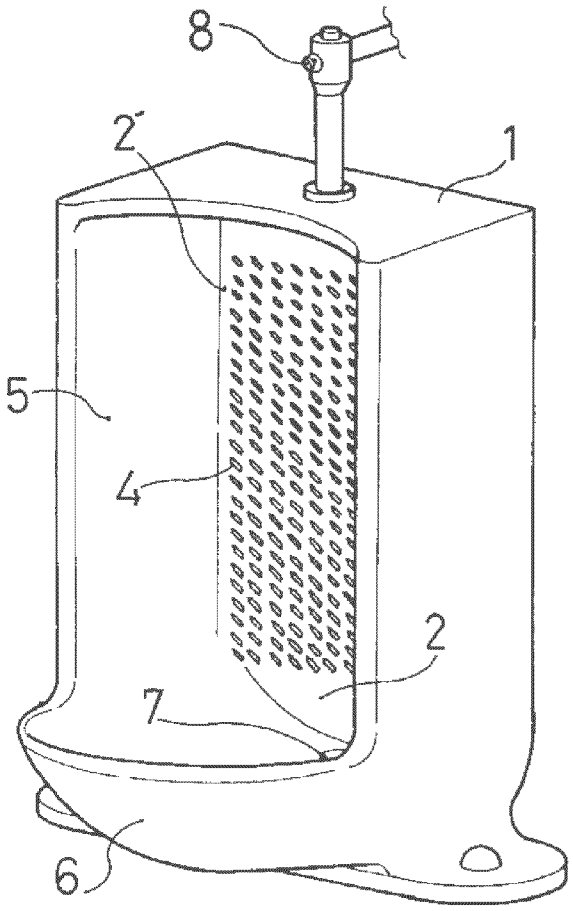
実用新案登録出願人　馬場フタヨ

1017

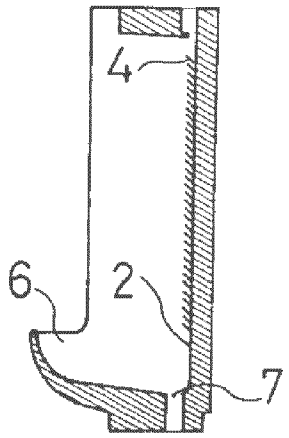
VECTAIR EX.1002, PG.265

図　面

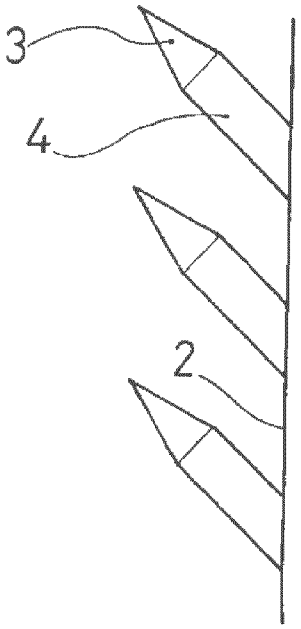
第 1 図



第 2 図



第 3 図



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手続補正書

昭和６２年５月７日

特許庁長官　殿

１．事件の表示

昭和６２年実用新案登録願第５７９３号

２．考案の名称

小便用便器

３．補正をする者

事件との関係　実用新案登録出願人

住所　長崎県諫早市小野町１１００番地３５

氏名　馬場フタヨ　印

４．補正命令の日付

昭和６２年４月２８日（　発送　）

５．補正の対象

手続補正書の差出書

６．補正の内容

別紙の通り

特許庁
62.5.-9
出願二課
受付係

1019

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手 続 補 正 書

昭和６２年３月１１日

特許庁長官　殿

１，事件の表示

昭和６２年実用新案登録願第５７９３号

２，考案の名称

小便用便器

３，補正をする者

事件との関係　実用新案登録出願人

住　所　長崎県諫早市小野町１１００番地３５

氏　名　馬場（ババ）フタヨ　印

４，補正命令の日付

５，補正の対象

図　面

６，補正の内容

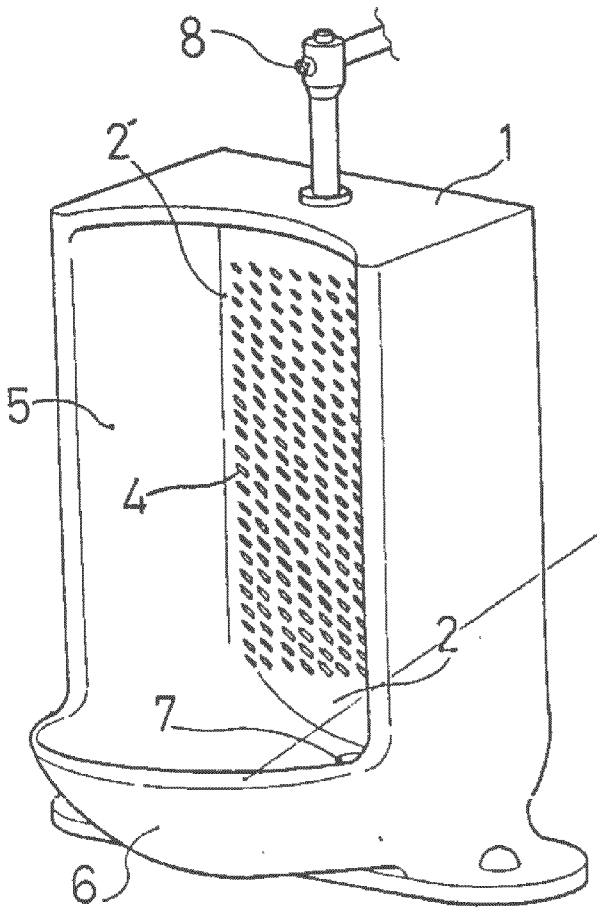
別紙の通り

1020

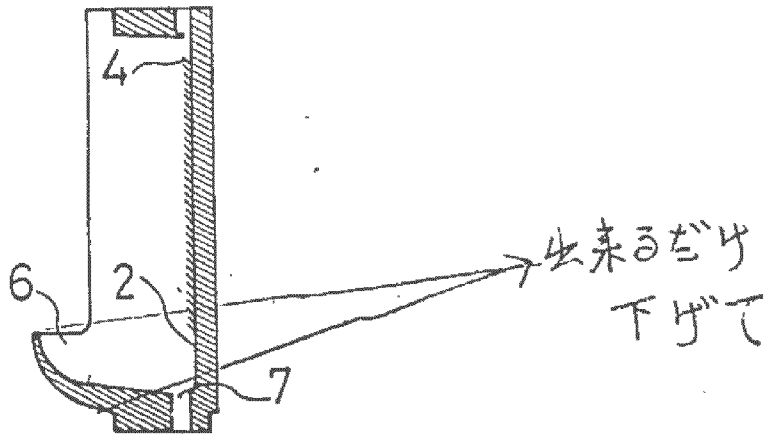
VECTAIR EX.1002, PG.268

図　面

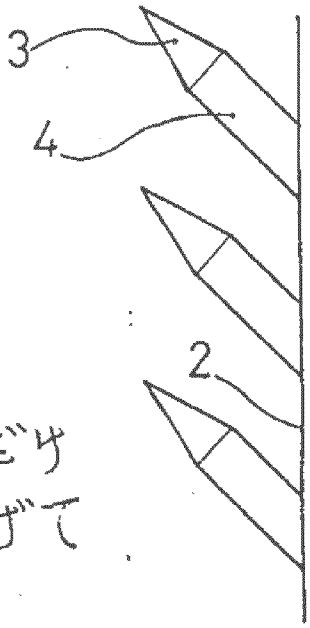
第１図



第２図



第３図



実用新案登録出願人　馬場フタヨ

昭62.3.11

62.3.11 ㊞
1021

実開63-116585

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手続補正書

昭和62年5月14日

特許庁長官　殿

1，事件の表示

昭和62年実用新案登録願第62-005793号

2．考案の名称

小便用便器

3，補正をする者

事件との関係　　実用新案登録出願人

郵便番号　８５４

住　　所　長崎県諫早(イサハヤ)市小野(オノ)町1100番地35

氏　　名　馬場(ババ)　フタヨ　㊞

4．補正の対象

明細書、図面

5．補正の内容

明細書及び図面の全文を補正する。

別紙の通り

特許庁
62.5.15
出願二課
受付係

方式審査　藤森

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明　細　書

1．考案の名称

小便用便器

2．実用新案登録請求の範囲

（1）小便器本体の受尿壁に、

イ）　先端部を鋭角的に尖らせた丸棒状の突起器を無数に取り付ける。

ロ）　当該突起器は各々先端を上方に向けて適当な角度を設けて取り付けてある。

ハ）　当該突起器は、かかった小便を分散可能な細さに設けてある。

以上のように構成した小便用便器。

（2）板状体の表面に無数の突起器を取り付け、小便器本体の受尿壁に取り付け取り外し自在に設けたことを特徴とする、実用新案登録請求の範囲第一項記載の、小便用便器。

3．考案の詳細な説明

（　産業上の利用分野　）

本考案は小便用便器に関する。さらに詳細には使用時に於ける小便の飛散を防ぐことが可能な男

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性用の小便用便器に関するものである。

（　従来の技術　）

従来より使用されている男性用の小便器には主に壁面取り付け方のやや小型のものと、床取り付け方の大型のものがある。これらには様々な形状を有して入るものの、そのデザインに主眼をおいているため使用時に小便の飛散を防ぐ構造を持たず、単なる受け皿的な要素の物が多い。

（　考案が解決しようとする問題点　）

これら従来の便器を使用する場合、その使用の度に小便が飛散し、そのため手やズボン当の衣服、あるいは床や壁面等にはね返り、濡らしてしまうことが多い。

特に老人や子供の場合においては小便のはね返りや飛散に対して留意しながら使用するということが少ない為、手やズボン等を濡らしてしまう場合が多く、数回の使用でかなり湿らせてしまい不衛生この上ないということも少なくない。

（　問題点を解決するための手段　）

上述のような問題点を解決するために、本考案

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は次のような構成としている。すなわち、本考案にかかる小便器は、

（イ）小便器本体の受尿壁に、先端部を鋭角的に尖らせた、丸棒状の突起器を無数に取り付けてある。

（ロ）当該突起器は、各々先端を上方に向けて適当な角度を設けて取り付けてある。

（ハ）当該突起器はかかった小便を分散可能な細さに設け、かつ受尿壁面に均等に配してある。

以上の様に設けたものである。

（　作用　）

本考案の小便用便器の、突起器を設けた受尿壁に放出された小便流は、まず突起器群に衝突して速度が弱められ、また適度に分散させられながら受尿壁にぶつかり飛散しようとする。しかしながら衝突速度が弱められているため、さらにその流向も分散させられているために受尿壁で跳ね返り飛散しようとする力は弱い。さらに突起器が上方に角度を設けて取り付けられているので、受尿壁で跳ね返り、飛散しようとするしずくは行く手を

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阻まれることになり、再度突起器に衝突してその運動エネルギーを奪われ、飛散できなくなる。

尚、突起器は小便流より細く、かつ先端を鋭角的に尖らせてあるので、これに衝突した小便流は分散させられ運動エネルギーを弱められるのみであり、個々で飛散する恐れはない。

（　実施例　）

以下、本考案の実施例を図面を参照しながら説明する。

第一図は本考案の斜視図、第二図は中央断面図、第三図は突起器の拡大説明図、第四図は実施例２を示す斜視図である。

小便器本体１の受尿壁２には、先端部３を鋭角てきに尖らせた突起器４を取り付ける。当該突起器４は小便流より細くなるよう直径５ミリメートル程度の太さに設けてある。

当該突起器４と突起器４との間隔は、７～10ミリメートル程度に設けてあり、受尿壁２の外周部を除き均等に配列して、小便流の効果的な分散を可能にしてある。

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さらにこの突起器４群はその先端部３を上方に向けて45度の角度で傾けて取り付けてあり、受尿壁２ではね返った小便流が飛散しないように、返り止めの役割を付加してある。

尚、第４図に示すように、板状体５の表面に突起器４群を設け、固定具６で小便器本体１の受尿壁２に取り付け及び取り外しを自在に設けておけば、掃除もしやすく衛生的でもある。

（　考案の効果　）

本考案に係る小便器の使用については従来のものと同様であるが、まず放出された小便流は突起器４群に衝突してその流れは分散される。その後に受尿壁２にぶつかり、そこで飛散しようとするが、当初の運動エネルギーは減衰しているので大きく飛散することは出来ない。そこにおいて飛散しようとするしずくも再度突起器４によって行く手を阻まれ、飛散のためのエネルギーを失ってしまう。その為、小便流は受尿壁２や側壁７、あるいは突起器４等を伝わって本体１下部に設けられた碗部８に溜り、排出口９より排出される。その

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後に洗浄弁等10を作動させて水を流せば、上方からの水流により受尿壁２及び突起器４の汚れは洗い流されるものである。さらに普段の手入れに於いても、一般的に利用されている液状洗剤を使用することが可能で、面倒な手間も必要ではない。

本考案は上述のように小便流の運動エネルギーを奪うことにより飛散を防ぐため、使用する人の手や衣服、あるいは壁や床等を汚すこと無く小用を済ますことができ、また洗浄も容易なので、保健衛生上極めて有益なものである。

４．図面の簡単な説明

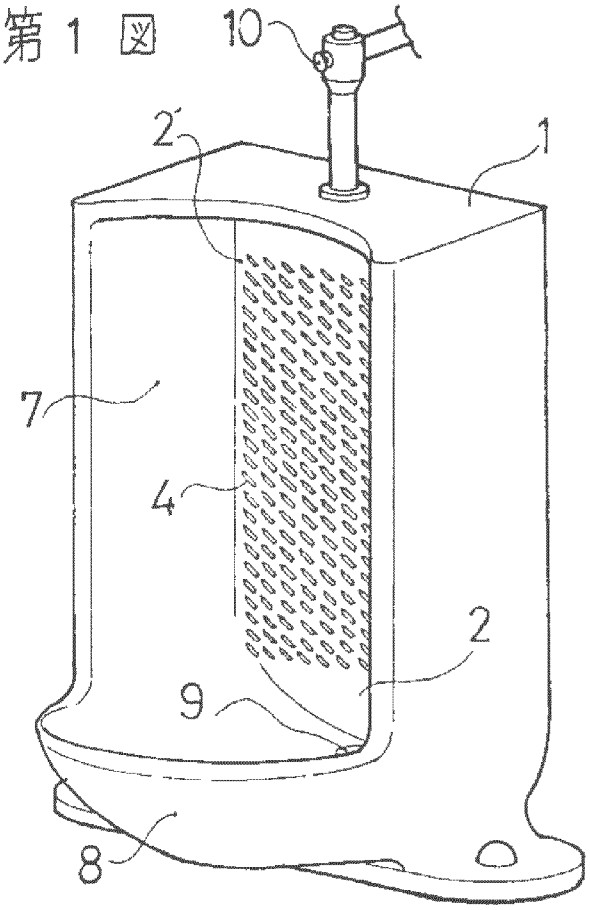
第一図は斜視図、第二図は中央断面図、第三図は突起器の拡大説明図、第四図は実施例２を示す斜視図。１・・小便器本体、２・・受尿壁、３・・先端部、４・・突起器、５・・板状体、６・・固定具、７・・側壁、８・・碗部、９・・排出口、10・・洗浄弁等。

実用新案登録出願人　　馬場フタヨ

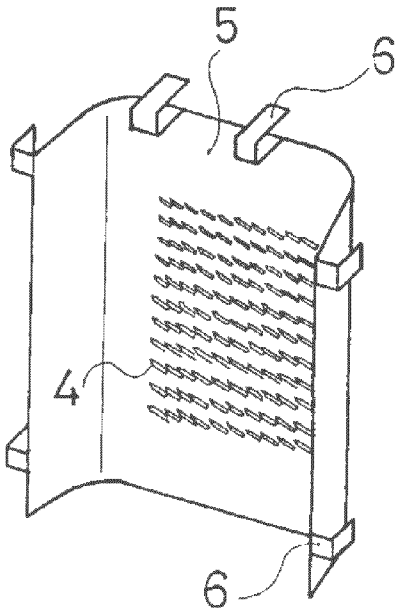
VECTAIR EX.1002, PG.276

図 面

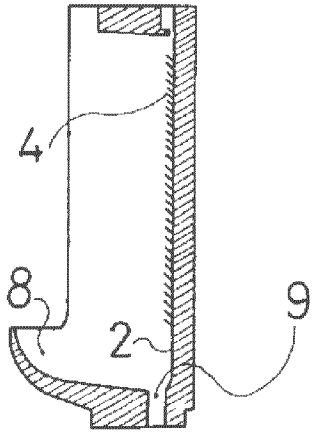
第1図



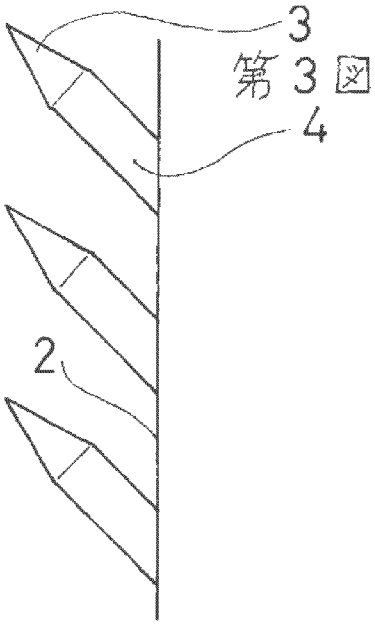
第4図



第2図



第3図



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実用新案登録出願人 馬場フタヨ

平62. 5. 14

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PATENT ABSTRACTS OF JAPAN

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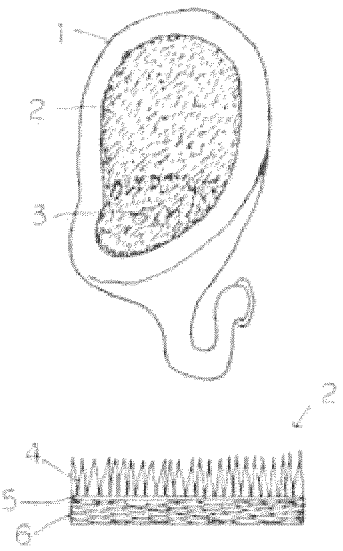
(51)Int.Cl. A47K 11/00

(21)Application number : 63-253741
(22)Date of filing : 11.10.1988

(71)Applicant : MITSUBISHI MINING & CEMENT CO LTD
SHINKANSEN TETSUDO SEIBI KK
(72)Inventor : TANO SHIGEO
KITAJIMA KANICHI
HIRATA JUNICHIRO
INOUE YOSHIAKI

(54) DEODORIZING MAT

(57)Abstract:
PURPOSE: To process the malodor source or uncomfortable color of an urine toilet by spreading a layer which is composed of a flocked unwoven fabric or a porous elastic body to have a specified aperture as a first layer, spreading another layer to be composed an artificial sod-shaped body whose aperture is higher than that of the first layer as a second layer, and including a microbe or/and an enzyme in these layers.
CONSTITUTION: The first basic layer 6 composed of the flocked unwoven fabric or porous elastic body whose aperture is ≥20%, is spread in the urine toilet bowl and the second layer 4 composed of the artificial sod-shaped body, flocked unwoven fabric or porous elastic body, whose aperture is higher than that of the first layer, is spread on the first layer. Then, the total sum of layer thickness is made ≥3mm. A deodorizing mat 2 of a layer-shaped porous elastic body to include the microbe or/and enzyme in these layers is spread in a toilet 1, namely, spread in the surface of toilet bowl. Thus, when urine drops down on the surface of permeable mat to have the large aperture, the urine is speedily permeated to a lower part and decomposed in the lower part of the mat to include the enzyme or microbe according to an aerobic condition. Then, the urine is deodorized.



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⑤4発明の名称　防臭マット

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明　細　書

1．発明の名称　防臭マット

2．特許請求の範囲

二重層よりなり、第1層を基層とし、開孔率は、その上の第2層より小さくし、開孔率20%以上の植毛状不織布或い多孔質弾性体よりなる層を第1層、第1層より開孔率の高い人工芝状体、植毛状不織布或い多孔質弾性体よりなる層を第2層とし、合計の厚さが3㎜以上であり、これらの層に微生物或いは／及び酵素を含浸せしめ、所望により、微生物及び酵素の作用を促進する剤で加工したことを特徴とする便器内に敷設する防臭マット。

3．発明の詳細な説明

［産業上の利用分野］

本発明は、トイレ便器の中で用いる防臭マットに関し、特に、公衆衛生上又は環境衛生上に必要な、トイレ便器内で使用する便器用防臭マットに関する。

［従来の技術］

トイレ便器材料としては、通常、陶器や磁器が用いられ、また、移動式トイレの場合、鉄板式から、最近ではプラスチック製が多くなっている。特に、不浄な所であるため、水洗トイレを優先的に考えた様式が主流を占めている。

最近人口増により、使用頻度が多くなるに従い、清潔感が重要になり、このため防臭、消臭のため化学芳香剤、洗剤が多量に使用されるている。また、多数人使用、多数回使用されるために、男子トイレ便器では、尿石の析出、蓄積が多く見られ、多く悪臭の原因になっている。

それらを取り除くことは、非常に困難であり、手間のかかるものである。

［発明が解決しようとする問題点］

従って、本発明者らは、種々研究を重ねた結果、小便のはね返りがなく、尿石の蓄積がなく、微生物散布により防臭効果が増大でき、臭気がなく、美観を有するトイレ便器用防臭マットを発明した。従って、本発明は、少量の水でクリーン化でき、洗浄作業手間をはぶくことができ、且つ、

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清潔感のあるトイレ便器内で使用する防臭マットを提供することができた。即ち、従来のトイレ便器では、薬品や化学洗剤等で消毒とクリーン化を図っているが、本発明の便器用防臭マットでは、薬品、芳香剤の使用なしで、防臭でき、清潔感が保持でき、消毒剤や化学洗剤による環境悪化の心配がなく、悪臭源や不愉快色を処理することのできる。

［問題点を解決するための手段］

本発明の要旨とするものは、二重層よりなり、第1層を基層とし、開孔率は、その上の第2層より小さくし、開孔率20％以上の植毛状不織布或い多孔質弾性体よりなる層を第1層、第1層より開孔率の高い人工芝状体、植毛状不織布或い多孔質弾性体よりなる層を第2層とし、合計の厚さが3㎜以上であり、これらの層に微生物或いは／及び酵素を含浸せしめ、所望により、微生物及び酵素の作用を促進する剤で加工したことを特徴とする便器内敷設用防臭マットである。

は、その上の第2層より小さくし、開孔率20％以上の植毛状不織布或い多孔質弾性体よりなる層を第1層、第1層より開孔率の高い人工芝状体、植毛状不織布或い多孔質弾性体よりなる層を第2層とし、合計の厚さが3㎜以上であり、これらの層に微生物或いは／及び酵素を含浸せしめた層状多孔質弾性体の防臭マットを、トイレ便器内に敷き、即ち、トイレ便器材料の表面に敷設する。

尿が、通気性で開孔率の大きいマット表面上に落下した時に、速やかに下部へ浸透する。そして、尿水は、マット下部に流下浸透し、酵素や微生物を含浸させたマット下部では、酵素や微生物の存在により、浸透した尿は、好気性の条件で分解を促進される。このことで、尿は分解され、無臭化される。従って、本発明のマットでは、尿石の蓄積はなく、例え、あったとしても、尿中の成分から形成された尿石は、酵素や微生物の活動により、分解されるものと思われる。この酵素や微生物の活動を促進させ、増大させるために、これらの酵素や微生物を、湿潤に近い状態に保持する

本発明者らは、種々の研究の結果から、本発明のトイレ便器内で使用する防臭マットを作製する条件として、次のように考えた。

即ち、人の尿は、体内にある時には、あまり悪臭を出さないが、体外に出て、空気中の微生物が附着することにより、悪臭を発する。特に、多数の人が利用する公共トイレの男子便器では、陶器表面に、特に、陶器表面にあるピンホールを中心に、尿石の蓄積がよく生じることがあり、その尿石は、悪臭を発生する源となる。即ち、悪臭源の尿石は、人が摂取する有機物（カロリー）を取るために、人の尿中に30g／日含まれている尿素等が、尿のかかった便器表面に附着して、乾燥して、固形物となって生成する。この固形物は、この時点では、あまり悪臭を発しないが、日を経るにつれて、空気中の菌や微生物の働きにより、分解が進むに従って悪臭を発生する。一般に、消毒剤や、化学剤等でこれらの物質の除去を試みても、不可能なものである。

本発明によると、第1層を基層とし、開孔率

ことが必要である。

本発明のマットでは、種々に研究を重ねた結果、上記のように、二重層よりなり、第1層を基層とし、開孔率は、その上の第2層より小さくし、開孔率20％以上の植毛状不織布或い多孔質弾性体よりなる層を第1層、第1層より開孔率の高い人工芝状体、植毛状不織布或い多孔質弾性体よりなる層を第2層とし、合計の厚さが3㎜以上であり、これらの層に微生物或いは／及び酵素を含浸せしめた構造により、微生物及び酵素の作用を促進させることを可能になることを見出したものである。特に、本発明のマットでは、基層の第1層は、連通孔を有する多孔質フォーム材又は不織布、フェルト等を使用することにより、所望の条件の一部が確保できることが、判明した。即ち、このような構造の第1層内では、空気との接触面積を大きくすることが、容易であるからである。

本発明の防臭マットでは、更に、そのような構造体に対して、所望により、微生物及び酵素の作

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用を促進する剤で加工したものを用いることができる。これには、例えばバイオキャリヤー等を用いることができる。

即ち、本発明のマットは、二重層よりなり、第1層を基層とし、開孔率は、その上の第2層より小さくし、開孔率20％以上の植毛状不織布或い多孔質弾性体よりなる層を第1層、第1層より開孔率の高い人工芝状体、植毛状不織布或い多孔質弾性体よりなる層を第2層とし、合計の厚さが3㎜以上のものである。

以上のような構造の防臭マットに対して、微生物或いは／及び酵素を散布しておき、そして、上部層が粗で、開孔率が大きいもので、下部層を密にし、開孔率をより小さくした構造であるので、飛散した尿は、上部層中は流下し易く、下部層では、微生物及び酵素の繁殖に都合のよい条件が整えられ、後から、例えば、雑菌が尿とともに入ってきたとしても、微生物等のための条件があるので、自然と排除されてしまう。

そして、本発明の防臭マットにおいては、上部層が粗密度で、下部層がより密であり、連通孔を有する層であるので、下部層では常に湿潤状態にある傾向がある。そして、ある程度は、下層でも、空気との接触があり、好気性微生物の繁殖に好都合な条件が、保たれることになる。これらは、微生物の繁殖条件の水分と空気の必要条件を満足するために必要である。また更に、保水性の良い材料であることが、好適である。即ち、湿潤状態を容易に保持できるものになるからである。

トイレ便器に対しては、次のようである。即ち、人の尿は、無機質材料（例えば陶器表面）に附着しやすいものである。これは、無機質材料は、一見緻密な表面を有するように見えるが、ミクロ的に見ると、表面には凹凸や亀裂があり、疎水性でなく、ピンホールが無数にある。そのために、尿中の成分が、表面に附着して、沈着するために、その除去が困難である。また、ピンホールに浸透した尿は、容易に分解しないために、日が経るにつれ、悪臭源となる。更に、このようなピンホールや亀裂を析出中心となり尿石が析出はじめ、その沈積がたまりだし、また、悪臭源となる。

これに対して、本発明の防臭マットは、前記の問題点を除くと共に、尿を流下浸透せしめて、表面に尿の痕跡を残さなく。そのためにも、トイレ便器の美観が維持される。また、臭気は、尿石等又は便器表面より蒸発する尿により発生するが、ここでは、尿は直ぐに、下に流下浸透してしまい、マット下部層では、水分と空気が充分に存在し、酵素や微生物の作用が活性化されるために尿の分解が速やかに行なわれる。

本発明の防臭マットに含浸させて利用すべき微生物、酵素としては、蛋白質分解酵素或いは、澱粉質、糖類、蛋白質等の有機物を分解する能力を有する微生物を用いる。例えば、プロテアーゼ(Protease)、アミラーゼ(Amylaze)、ヘミセルラーゼ(Hemicellulase)、ウレアーゼ(Urease)等の酵素、そして、バチルス(Bacillus)属、ニトロソモナス(Nitrosomonas)属、ニトロバクター(Nitrobacter)属、セルロモナス(Cellulomonas)属等の微生物を使用するのが、好適である。本発明の防臭マットには、上記のような酵素及び／又は微生物の含浸で利用するものである。

また、本発明の防臭マットに利用する微生物として用いるバチルス(Bacillus)属は、特に、ズブチルス(B.subtillis)[IAM(Institute of Applied Microbiology:東京大学応用微生物研究所 有用菌株保存施設の略称:以下同様にこの略称で示す)1168及び12118]が好適であるが、この他に、ナットウ(B.natto)[IFO(Institute for Fermentation Osaka：財団法人発酵研究所：の略称:以下同様にこの略称で示す) 3009]菌、コアギュランス(B.coagulans)[IAM 1115]、マセランス(B.macerans)[IAM 1243]を併用してもよい。

更に、ニトロソモナス(Nitrosomonas)属、ニトロバクター(Nitrobacter)属、セルロモナス(Cellulomonasc)属等の微生物を利用できる。

また、本発明の防臭マットには、香料成分を用い、尿特有の臭気をマスク又は中和するためには、残香性の高い植物性香料が好適に用いること

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もできる。そして、例えば、アビエス油（松科植物の抽出物）、カヤブテ油（サトイモ科植物の抽出物）、樟脳油（クスノキ科植物の抽出物）、セダーウッド油（ヒノキ科植物の抽出物）、ラベンダー油（シソ科植物の抽出物）などの植物から抽出した精油が好適であり、またデオドラント香料も用いることができる。

［作用］

本発明の防臭マットでの防臭のメカニズムは次のようなものと考えられる。

尿は、連通孔のある上部層の中を容易に通過し、下部層に、流下する。その際に、上部層を通過する時に好気性の微生物や酵素が、存在する中を通過するので、ここで、尿の一部は、好気性条件下で、CO_2とH_2OとN_2等に分解される。一方、下部層に流下した尿は、嫌気性微生物や酵素の作用により、分解が促進される。嫌気性条件下で分解したものは、次の尿水の流下を行なわれるときに、流出され、好気性条件に移動され、無臭化される。このように、本発明の防臭マットでは、悪臭が生じなく、また、使用も容易なものである。

また、尿中に含まれるカルシウムは、よく便器に付着し、問題を起こしがちであるが、本発明の防臭マットに付着した尿は、カルシウムをその多孔質層内で析出されるため、粉末状で付着し、洗浄で容易に除去される。

本発明による、便器内の表面に敷設するための防臭マットが具備しなければならない必要条件としては、次のものである。

第1に、形状的には多孔質で通気性を有するだけでなく、通水性を具備し、保水性に優れるものである。第2に、第1の機能を有すると共に酵素や微生物を固定化できる形状である。第3に、特に、微生物の増殖を妨げない条件であることである。第4に、酵素の働きを充分に行なわれるような条件を満足することである。第5に、弾力性を有する有機繊維を主体とする材料によることである。第6に、マット材料としては、すべて親水性の機能を有することが好適である。

従来では、便器の清掃洗浄は、水洗が主流であり、便器は、常には水が流れていないために、乾燥しやすく、人の尿は、乾燥することにより沈着して、尿石が発生し、また、液中でも沈着することが多いものである。これらのために、日を経るに従って悪臭を発生して、雑菌の温床になっている。

これに対して、本発明の防臭マットにおいては、その下部には、多孔質で連通孔を有する多孔質フォーム材、又は不織布又はフェルトを使用し、このために、保水性をよくするとともに流動性を有するためである。この下部層の厚さは、約$\frac{1}{16}$mm以上が好適である。

また、上部層は、人工芝、不織布、フェルトで、繊維、フィラメントでは下部層より太く、0.05mmφ以上であり、より好適には、1mmφ～3mmφである。所望により、0.5mmφ以上の厚さを有する布帛に、開孔率が20%以上、好適には、40～60%の開孔率を有する布帛又は膜を使用する。下部層と上部層は、適当に接着又は取付けしたものである。この時、下部層と上部層の合わせての厚さは、4mm以上が好適である。膜を使用する場合、上部層は、1.5mm以上の厚さが好適であり、下部層は、2mm以上の厚さが好適である。

下部層として、多孔質で連通孔を有するフォームを使用する場合、気孔が、2mmφ以下が好適であり、0.3～0.5mmφの連通孔を有するものが、好適である。

一方、上部層に人工芝を使用する場合には、下部層は、フィルムマットを使用したものに準じるものを使用する。また、人工芝を不織布に植え付けるようにした場合、特別に組合わせることもできる。

例えば、ウレタンフォームは、下部層としては、適当な連通孔を有し得、保水性にすぐれ、有用であるが、上部層としては、不適当である。

本発明の防臭マットの厚さとしては、3mm以上のものが好適である。即ち、微生物などの繁殖に適する条件を保持するために、3mm以上の厚さを

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必要とするからである。

本発明の防臭マットは、特に、尿石析出の防止に効果的であり、短時間で消臭させ、どのような種類のトイレにも適するものである。

次に、本発明による、男子便器内に敷設して使用する防臭マットについて具体例により説明するが、本発明は、次の実施例に限定されるものではない。

[実施例1]

本発明の防臭マットの使用状態を第1図A、Bの斜視図に示す。即ち、男子用トイレ便器1の内側の表面、特に、小便がかかる箇所に、本発明のマット2を敷設、或いは載置したものである。小便は、このマット2にかかり、その中を流下、浸透していき、流下口3から排出される。

第1表　酵素と微生物

項目	名称
酵素	プロテアーゼ(Protease)
	アミラーゼ(Amylase)
	ヘミセルラーゼ(Hemicellulase)
	ウレアーゼ(Urease)
微生物	バチルス(Bacillus)
	ニトロソモナス(Nitrosomonas)
	ニトロバクター(Nitrobacter)
	セルロモナス(Cellulomonas)

本発明のマットは、第2図の断面図に示す断面を有する。そして、防臭マットの下部層として、軟質発泡ウレタンで、孔径0.7㎜φの連通孔を有する厚さ5㎜のフォーム層6を使用して、上層としては、ポリエチレン製の人工芝層4を用い、その基質布5には、開孔率70%のものを使用して形成し、人工芝層4、5は、総厚さ6㎜のものである。下部層6と上部層4、5は、ゴム糊でスポット接着したものである。

このような防臭マット2を、第1図A、Bに示すように、トイレ便器1に敷設して使用した。第1表に示す酵素と微生物を1g／ℓの割合で水中に分散したものを、0.2ℓ／㎡の割合で、防臭マット2に散布した。

このようにして作製した防臭マット2を、水洗式トイレであるが、1回の水洗水量は4ℓであるのを1ℓに変更して、使用した。

トイレ使用平均105名／日で、1週間使用したが、臭気はほとんどなく、尿石の蓄積は見られなかった。

1週間後、防臭マット2を水洗し、同様に処理し、繰り返し使用した結果、半年間は、臭気なく、尿石は見られなかった。この防臭マットの性能評価の結果を、マット使用しない比較例と比べて、他の実施例の結果と一緒に、第2表に示す。

[実施例2]

第4図の断面図に示す敷質を利用した構造の防臭マット2について、実験した。下部層として、軟質発泡ウレタンで、孔径0.7㎜φの連通孔を有する厚さ5㎜のフォーム層6を使用して、上部層としては、塩化ビニール製の敷質(一般には、日よけに使用する織)7で形成し、敷質4は総厚3㎜のものである。下部層6と上部層7との間は、ゴム糊で、スリット式に接着したものである。　この防臭マット2を第3図に示すように男子トイレ便器1に敷設して使用した。第1表に示す酵素と微生物を1g／ℓの割合で水中に分散したものを0.2ℓ／㎡の割合で防臭マット2に散布した。

水洗式トイレであるが、1回の水洗水量を従来の4分の1の1ℓ／回に変更して、使用し、第4図に示す防臭マット2を便器内に敷設して、使用実験した。

トイレ使用量は、平均98名／日で、1週間使用した結果、臭気はほとんどなく、尿石の蓄積も見られなかった。1週間後、この防臭マット2を

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水洗し、同様に処理し、繰り返し使用した結果、半年間臭気なく、尿石の見られなかった。この防臭マットの性能評価の結果を、マット使用しない比較例と比べて、他の実施例の結果と一緒に、第2表に示す。

［実施例3］

下部層として、繊維が木材繊維で作られた厚さ2㎜で、150g／㎡の不織布6を使用し、上部層として、ポリエチレン製の人工芝6を用い、その基質布5には、開孔率70％のものを使用して、形成し、第2図の断面図に示す構造の防臭マット2を作製した。人工芝層4、5は、総厚さ6㎜のものである。下部層8と上部層4、5は、ゴム糊でスポット接着したものである。このような防臭マット2を実施例1、2と同じ条件に調整した防臭マット2を、トイレ使用平均83名／日で、1週間使用した結果、臭気はほとんどなく、尿石の蓄積も見られなかった。この防臭マットの性能評価の結果を、マット使用しない比較例と比べて、他の実施例の結果と一緒に、第2表に示す。

第2表　　性能評価

経日	測定項目 洗浄水量	マットなし1 （4ℓ／日）	マットなし2 （1ℓ／回）	実施例1 （1ℓ／回）	実施例2 （1ℓ／回）	実施例3 （1ℓ／回）
4日	NH_3(ppm)	0	0	1	0	0
	H_2S(ppm)	0	0	0	0	0
	臭気	3	3	3	3	3
	色	白	やや黄味	グリーン	グリーン	グリーン
7日	NH_3(ppm)	0	0	0	0	0
	H_2S(ppm)	0	0	0	0	0
	臭気	3	3	3	2	2
	色	白	やや黄味	グリーン	グリーン	グリーン
1ヶ月	NH_3(ppm)	0	4	0	0	0
	H_2S(ppm)	0	1	0	0	0
	臭気	3	4	2	2	2
	色	やや黄色	やや黄味	グリーン	グリーン	グリーン
6ヶ月	NH_3(ppm)	10	20	0	0	0
	H_2S(ppm)	5	8	0	0	0
	臭気	4	5	1	1	1
	色	やや黄色	黄色	グリーン	グリーン	グリーン

注：マットなし1は、平均40人／日の使用頻度であり、マットなし2は、平均20人／日の使用頻度であり、実施例1は、105人／日の使用頻度で、実施例2は、98人／日の使用頻度で、実施例3は、83人／日の使用頻度であった。

(1)NH_3及びH_2Sは、北川式検知管でppm単位で測定した。

(2)臭気は、5段階評価で行なった。即ち、（匂わない）1～3～5（非常に臭い）という評価である。

(3)実験を行なったトイレは、建築後2年以上使用した使用中のトイレであり、通常毎日掃除を行なっている。

［発明の効果］

本発明のトイレ便器内で使用される防臭マットは、

第1に、前記の如く、尿が理想的な分解機能で分解でき、好気性の微生物や酵素と酵素の接触を最大にし、尿の分解を促進させる防臭マットを提供できること、即ち、下部層が嫌気性で働く微生物や酵素の作用で分解したものを好気性条件へ移行させて、再度分解して、無臭化させる機能を有し、このため、悪臭を発することがないこと、

第2に、尿石の蓄積がなく、そのために、容易に清掃でき、悪臭の発生のない構造の防臭トイレ便器を提供できること、

第3に、小便のはね返りがなく、美観の保持できる防臭男子トイレ便器用マットを提供すること

第4に、現在使用している男子トイレ便器に容易にセットし、使用でき、所期の目的が達せられるトイレ便器用マットを提供できること、

第5に、水洗式のトイレに使用した場合、使用水量を少量にできるトイレ防臭マットを提供すること、

などの顕著な技術的効果が得られた。

4．図面の簡単な説明

第1図A、Bは、本発明の防臭マットを適用した例の使用形態を示す斜視図である。

第2図は、本発明の防臭マットの断面を示す説明断面図である。

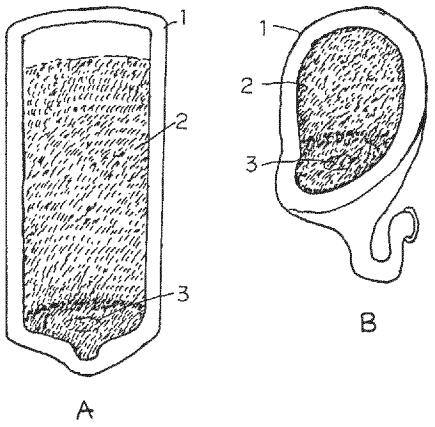
第3図は、本発明の他の例の防臭マットを適用した使用形態を示す斜視図である。

第4図は、第3図の例の本発明防臭マットの断面を示す説明断面図である。

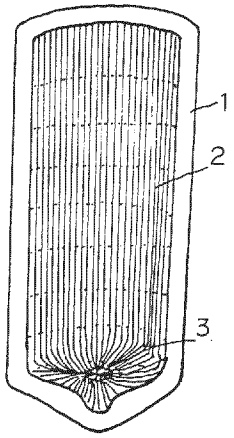
特許出願人　三菱鉱業セメント株式会社（外1名）

代理人　弁理士　倉持　裕

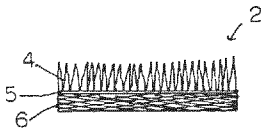
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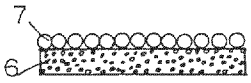
第1図



第3図



第2図



第4図

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(19)日本国特許庁（ＪＰ）　(12) **公開実用新案公報**（Ｕ）　(11)実用新案出願公開番号

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(21)出願番号　実願平3－61050

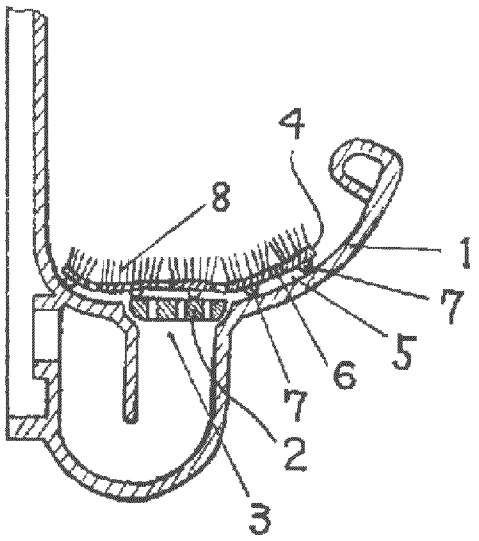
(22)出願日　平成３年(1991)４月11日

(71)出願人　591168024
中村　良江
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(54)【考案の名称】　小便器の尿飛沫防止具

(57)【要約】
【目的】男性用小便器の目皿や排出口及びその周辺の、小便を受ける男性用小便器の底面や目皿の形状に関係なく、軟性シートに植毛したブラシによって、放尿時の尿飛沫を完全に防止する。
【構成】ブラシ状に植毛したシートを男性用小便器底面の小便落下部を覆うように敷設し、このシートには、シート下部を通って小便器の尿排出口へ尿を速やかに排出するための多数の孔と、シート下部に多数の小突起を設ける。このブラシ状に植毛したシートは、男性用小便器の目皿や排出口及びその周辺の、小便を受ける男性用小便器の底面の形状に沿うよう軟性のシートを用いる。



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【実用新案登録請求の範囲】

【請求項　1】男性用小便器底面の小便排出口とその周囲の小便受部など、放尿時の小便落下部を覆うように敷設するブラシ状に植毛した軟性シートに、放尿時の尿を速やかに排出するための多数の孔と、下面に多数の小突起を設けたことを特徴とする尿飛沫防止具。

【図面の簡単な説明】

【図１】男性用小便器への軟性シート敷設状態の断面図である

【図２】男性用小便器への軟性シート敷設状態の平面図である

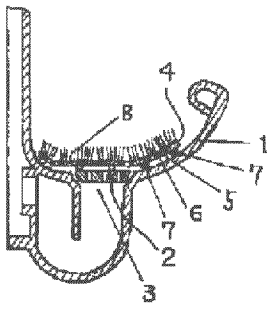
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【図３】軟性シートへの吸着板取付部横断面図である

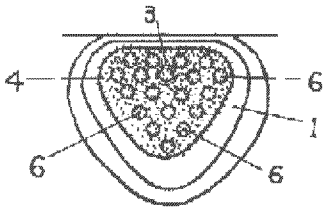
【符号の説明】

1　男性用小便器
2　目皿
3　排出口
4　軟性シート
5　間隙
6　孔
7　小突起
8　毛
9　吸着板

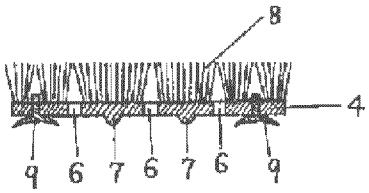
【図１】



【図２】



【図３】



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【考案の詳細な説明】

【０００１】

【産業上の利用分野】

本考案は、放尿時における男性用小便器からの尿飛沫飛散防止具に関する。

【０００２】

【従来の技術】

男性用小便器底面の小便受部分から、放尿時の尿飛沫が便器外へ飛散することを防止するために、かねてから、男性用小便器の形状や排出口の目皿の工夫が講じられてきた。

【０００３】

しかし、放尿時の男性用小便器に当たる尿の角度が、鋭角になる男性用小便器の底面部から尿飛沫が飛散したり、排出口の目皿についても、構造上、澱み部分が避けられないため尿飛沫が生じやく、これらの尿飛沫が便器外にも飛散する。

放尿に勢いがある場合は、多くの尿飛沫が便器外にも飛び散り、この飛沫の完全防止は困難である。

【０００４】

放尿時によく観察すると、便器外に飛散した尿飛沫が、便器外の床面を汚したり衣服の裾や靴に付着していることを見かけ、衛生上好ましくないといった問題がある。

【０００５】

このような問題を解決するために、男性用小便器の底面部に金網を敷設するなど、尿飛沫の飛散防止具についても工夫されてきたが、男性用小便器の底面の形状に沿っていないことから、小便飛散防止具の、男性用小便器底面との間隔が大きい部分については、放尿後の水洗が十分出来ないため尿の乾燥汚物が滞積して、使用を開始して間もなく目詰りが発生したり、臭気を放つなどによって実用化に至っていない。

【０００６】

【考案が解決しようとする課題】

男性用小便器の目皿や排出口及びその周辺の、小便を受ける男性用小便器の底

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面部から、放尿時に発生する尿飛沫を完全に防止することが困難である。

【０００７】

そこで、放尿時の尿飛沫を完全に防止すると共に、放尿後の水洗水によって水洗出来る尿飛沫防止具を提供するものである。

【０００８】

【課題を解決するための手段】

シートに植毛したブラシによって、放尿時の尿飛沫を防止することを目的とし、このブラシを植毛したシートは、男性用小便器の日皿や排出口及びその周辺の小便を受ける男性用小便器の底面の形状に、自重で沿うよう軟性の合成樹脂を用い、尿の排出と水洗を容易にするため、このシートに多数の孔と下部に多数の小突起を設ける。

【０００９】

【作用】

これによって、例えば１０mm程度以上に伸びた西洋芝生の上に放尿した時、尿が芝生の下部に溜るまでは尿の飛沫が発生しないと同様に、放尿時の尿飛沫がブラシ状に植毛した毛によって完全に抑制されて、周囲へ飛び散ることを防止する。

【００１０】

【実施例】

図１は、ブラシ状に植毛した軟性シートを、男性用小便器に敷設した状態の断面図であり、図２は、この平面図をあらわす。

図３は、軟性シートへの吸着板取付部横断面の拡大図をあらわす。

【００１１】

放尿時の尿を軟性シート４上に滞留させることなく、軟性シート下部の男性用小便器底面との間隙５へ速やかに導くために、軟性シートに多数の孔６を設けると共に、男性用小便器１の各部と軟性シートの間隙５をほぼ一定に保ち得るよう、軟性シート下面に多数の小突起７を設ける。

【００１２】

これによって、放尿時の尿を軟性シート下面の間隙５を通り、男性用小便器１

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の目皿２の部分を経由して尿排出口３へスムーズに導く共に、水洗用水の殆どは軟性シート上部のブラシの毛８を洗浄すると共に、水洗用水の一部がシートの下部を洗浄することができるので、軟性シート上部のブラシの部分や、軟性シート下部と男性用小便器の間隙５に、尿が滞留して汚れることを防いで、小便飛沫防止具や男性用小便器の清潔を保てる。

【０００１３】

ブラシ状に植毛する毛８の材料は合成樹脂を用いるが、シュロなどの植物その他の材料を用いてもよい。

植毛は密集の必要はなく、ブラシの毛の長さは約１０mm以上とすることによって、放尿時にシート上で発生する尿飛沫の周囲へ飛び散りを完全に防止する。

【０００１４】

軟性シートは、男性用小便器の底面の形状に沿うよう軟性の樹脂を用いるが、水洗水の勢いによって、飛沫飛散防止具が浮遊して移動することを防ぐために、軟性シートにはゴムなどの比重の大きい軟性の材料を用いてもよく、必要によって軟性シート下面の２乃至３か所に吸着板９を設け、男性用小便器の底面に吸着させておく。

【０００１５】

この小便器の飛沫防止具は、小便器のみならず研究所などにおける実験用薬液廃棄時の、受層からの薬液飛沫の飛散防止用にも適用することができる。

【０００１６】

【考案の効果】

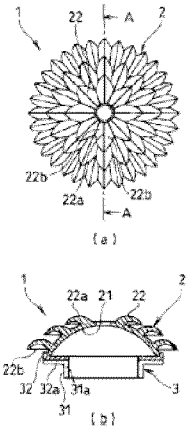
以上説明してきたように、本考案によれば、放尿時に男性用小便器の底面部に落ちた時に発生する尿の飛沫が、ブラシ状に植毛した毛によって打ち消されて、放尿時の男性用小便器からの飛沫の発生が完全に防止できるので、便器外の床面や衣服、靴などを汚すことなく、便器の清潔さも保つことができる。

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Legal Stat

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(22)Date of filing 19.04.2000
(71)Applicant ITO KATSUFUMI
(72)Inventor ITO KATSUFUMI



(54)DROPLET SPLASH-PROOFING TOOL

(57)Abstract
PROBLEM TO BE SOLVED: To provide a droplet splash-proofing tool which can prevent splash of urine droplets, and has a deodorizing function so that maintenance for deodorization is mostly dispensed with.
SOLUTION: The droplet splash-proofing tool 1 is set in a urinal, and has a urine receiving portion 2 which can prevent splash of voided urine droplets. A substrate of the urine receiving portion 2 is formed of a material which is a mixture of granules of tourmaline.

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（P2001－303642A）
(43)公開日　平成13年10月31日(2001.10.31)

(51)Int.Cl.[7]	識別記号	ＦＩ	テーマコード（参考）
Ｅ０３Ｄ　9/00		Ｅ０３Ｄ　9/00	Ｆ　２Ｄ０３８ Ｂ

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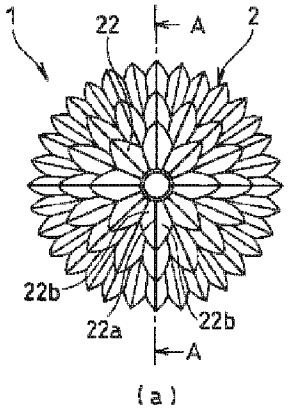
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横浜市港南区丸山台３丁目13番15号
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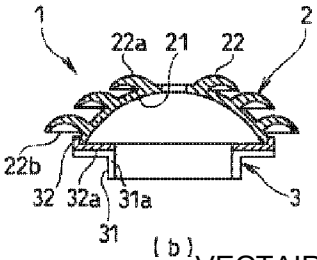
Ｆターム(参考)　2D038 BC01 ZA02

(54)【発明の名称】　飛沫飛散防止器

(57)【要約】
【課題】　小水の飛沫の飛散を防止すると共に、消臭のためのメンテナンスがほとんど不要な消臭機能を有する飛沫飛散防止器を提供する。
【解決手段】　飛沫飛散防止器１は、便器内に設置され、排泄された小水の飛沫の飛散を防止することが可能な小水受け部２を有し、かつその小水受け部２が、基材に、電気石の粒状物を混合した材料から成形されている。



(a)



(b)

VECTAIR EX.1002, PG.292

【特許請求の範囲】
【請求項１】　便器内に設置され、排泄された小水の飛沫の飛散を防止することが可能な小水受け部を有し、かつ前記小水受け部が、基材に、電気石の粒状物を混合した材料から成形されていることを特徴とする飛沫飛散防止器。
【請求項２】　請求項１記載の飛沫飛散防止器であって、前記小水受け部が、放射状に配設される多数の反射部を有して構成されていることを特徴とする飛沫飛散防止器。
【請求項３】　請求項２記載の飛沫飛散防止器であって、前記反射部が、下方に垂れ下がるように湾曲した稜線を中心として、その両側に、下方に向かって傾斜する反射面を有する形状に形成されていることを特徴とする飛沫飛散防止器。
【請求項４】　請求項２又は３記載の飛沫飛散防止器であって、前記反射部が、鉛直方向に複数段配設されていることを特徴とする飛沫飛散防止器。

【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、便器内に設置され、排泄された小水の飛沫の飛散を防止する飛沫飛散防止器に関する。
【０００２】
【従来の技術】従来、家庭用又は公共用の男性用小便器は、その底面部内側が、排水口に向かって緩やかな曲面状に形成されており、また、排水口には、小水の飛散防止のための受け皿が配設されている。また、消臭のため、便器内に球状等に形成された消臭剤が入れられているものがある。
【０００３】しかしながら、従来の男性用小便器では、上述したように、底面部内側が曲面状に形成され、かつ排水口に受け皿が配設されることによって、小水の大きな飛散を防止することは可能であるが、小さな飛沫の手前側への跳ね返りを防ぐことができず、これにより、便器廻りを汚し易い。一方、消臭剤は、交換が必要であり、メンテナンスに手間を要する。また、小水が消臭剤に当たって飛散することもあり、便器廻りの衛生状態を害する一因となっていた。
【０００４】
【発明が解決しようとする課題】本発明は上記に鑑みなされたものであり、小水の飛沫の飛散を防止すると共に、消臭のためのメンテナンスがほとんど不要な消臭機能を有する飛沫飛散防止器を提供することを課題とする。
【０００５】
【課題を解決するための手段】上記課題を解決するため、請求項１記載の本発明の飛沫飛散防止器は、便器内に設置され、排泄された小水の飛沫の飛散を防止することが可能な小水受け部を有し、かつ前記小水受け部が、基材に、電気石の粒状物を混合した材料から成形されていることを特徴とする。
【０００６】請求項２記載の本発明の飛沫飛散防止器は、請求項１記載の飛沫飛散防止器であって、前記小水受け部が、放射状に配設される多数の反射部を有して構成されていることを特徴とする。
【０００７】請求項３記載の本発明の飛沫飛散防止器は、請求項２記載の飛沫飛散防止器であって、前記反射部が、下方に垂れ下がるように湾曲した稜線を中心として、その両側に、下方に向かって傾斜する反射面を有する形状に形成されていることを特徴とする。
【０００８】請求項４記載の本発明の飛沫飛散防止器は、請求項２又は３記載の飛沫飛散防止器であって、前記反射部が、鉛直方向に複数段配設されていることを特徴とする。
【０００９】
【発明の実施の形態】以下、本発明の実施の形態を図面に基づき詳細に説明する。図１は、本発明の一の実施の形態にかかる飛沫飛散防止器を示す図であり、（ａ）は平面図、（ｂ）は（ａ）のＡ－Ａ部断面図である。この図に示したように、この飛沫飛散防止器１は、小水受け部２と、それを支持する取付部３とを有して構成される。
【００１０】小水受け部２は、断面略円弧状のベース部２１と、これに設けられる反射部２２とから構成される。ベース部２１は、その表面が球面状に形成されたもののほか、網目状又は格子状に形成されたものなどを用いることができる。反射部２２は、ベース部２１の表面に、放射状に多数配設されている。各反射部２２は、それぞれ、下方に垂れ下がるように湾曲した稜線２２ａを中心として、その両側に、下方に向かって傾斜する反射面２２ｂ，２２ｂを有する形状に形成されている。また、反射部２２は、鉛直方向に複数の段を成すように配設されている。
【００１１】上記した小水受け部２（ベース部２１及び反射部２２）は、基材に、電気石の粒状物を混合した材料から成形されている。基材としては、プラスチック材料やセラミックス材料などを用いることができるが、本実施の形態では、プラスチック材料を用いている。電気石の粒状物としては、原石を数ミリメートルから数百マイクロメートルの大きさに粉砕した粗粒状のもの、数百マイクロメートルから数十マイクロメートルの大きさに粉砕した細粒状のもの、又は粗粒状のものと細粒状のものとを混合したものを用いることができる。
【００１２】そして、基材としてのプラスチック材料に、電気石の粒状物を混入し、攪拌混合した材料を用いて、小水受け部２を上記した所定の形状に成形している。なお、本実施の形態では、小水受け部２を構成するベース部２１と反射部２２とが一体に成形されているが、両者を別個に形成した後、ベース部２１に反射部２

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２を取り付けるようにしてもよい。

【００１３】取付部３は、便器の排水口の口径よりも小さい外径を有する略筒形の落とし込み部３１と、その落とし込み部３１の上端に設けられ、小水受け部２を構成するベース部２１を支持する略円盤状の支持部３２とを有して構成される。また、取付部３には、便器内に放射された小水が排水口へと流れ込むための排水路が設けられる。本実施の形態では、排水路として、支持部３２の下面に排水用溝３２ａが刻設されると共に、落とし込み部３１の周壁に、排水用溝３２に連通するスリット３１ａが設けられ、便器内に放射された小水は、この排水用溝３２ａ及びスリット３１ａを通じて排水口へと流れ込むようになっている。

【００１４】上記した構成の飛沫飛散防止器１は、男性用便器の底面部内側に開口する排水口に、取付部３の落とし込み部３１を落とし込んで設置され、使用される。小水受け部２に小水が放射されると、小水受け部２を構成する反射部２２の各稜線２２ａに当たった小水は、図２上、実線矢印で示したように、外部に跳ね返ることなく、各稜線２２ａに沿って下方に流れ落ちると共に、左右に分かれて、各稜線２２ａの両側に配置された反射面２２ｂへと流れ落ちる（図２（ａ）及び（ｂ）参照）。また、隣接する反射部２２の各反射面２２ｂに当たった小水は、各反射面２２ｂに当たることで跳ね返り、飛沫を発生させるが、かかる飛沫同士がぶつかり合って、互いに勢いを打ち消し合うことから、飛沫が便器廻りにまで飛ぶことがない（図３（ａ）参照）。また、反射部２２は、鉛直方向に複数段配設されているため、例えば、最上段の反射部２２に当たった小水は、徐々に勢いが減衰されながら最下段の反射部２２へと流れ落ちていき、最終的に、便器の底面部内側に当たってもほとんど跳ね返りがない。さらに、小水受け部２の周囲で、便器４に直接小水が当たると、小水が跳ね返り、飛沫が発生するが、ベース部２１から外方に放射状に延びるように配設された反射部２２の下部に当たることによって、かかる飛沫の飛散を防止することができる（図３（ｂ）参照）。

【００１５】また、小水受け部２の成形材料中に電気石の粒状物が含まれていることから、この電気石の作用により、小水の臭いを消し去ることができる。すなわち、小水が小水受け部２に放射されることによって、電気石が刺激を受け、空気中の水分を電気分解してヒドロキシルイオンを発生させる。このヒドロキシルイオンが空気中に発散される小水の悪臭成分と結合して、これを包み込み、悪臭成分の付着性を失わせることにより、小水の臭いが消し去られる。また、電気石は、長期間使用しても特性がほとんど変化しないことから、消臭のためのメンテナンスがほとんど不要である。

【００１６】なお、上記した説明では、反射部２２が断面略円弧状のベース部２１の表面に、鉛直方向に複数の段を成すように配設されているが、これに限定されるものではなく、例えば、ベース部を鉛直に起立した略筒状の部位（筒状部）を有する形状に形成し、そのベース部の筒状部に、各段の反射部をそれぞれ独立して回転可能に配設することもできる。

【００１７】

【発明の効果】以上説明したように、本発明の飛沫飛散防止器によれば、便器内に設置され、排泄された小水の飛沫の飛散を防止することが可能な小水受け部を有し、かつ前記小水受け部が、基材に、電気石の粒状物を混合した材料から成形されているため、小水の飛沫の飛散を防止して、便器廻りの衛生状態を良好に維持することができる。また、小水の臭いを消し去ることができ、さらに、消臭のためのメンテナンスにかかる負担を不要とすることができる。

【図面の簡単な説明】

【図１】図１は、本発明の一の実施の形態にかかる飛沫飛散防止器を示す図であり、（ａ）は平面図、（ｂ）は（ａ）のＡ－Ａ部断面図である。

【図２】図２は、同実施の形態にかかる飛沫飛散防止器の作用を説明するための図である。

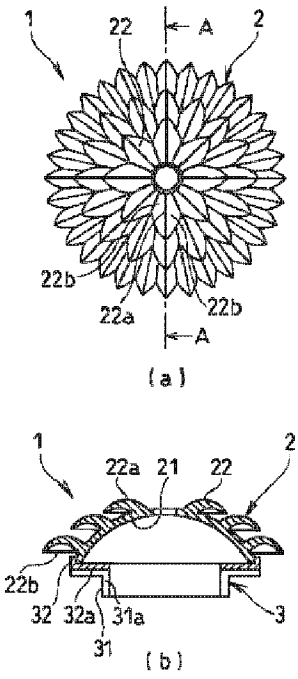
【図３】図３は、同実施の形態にかかる飛沫飛散防止器の作用を説明するための図である。

【符号の説明】

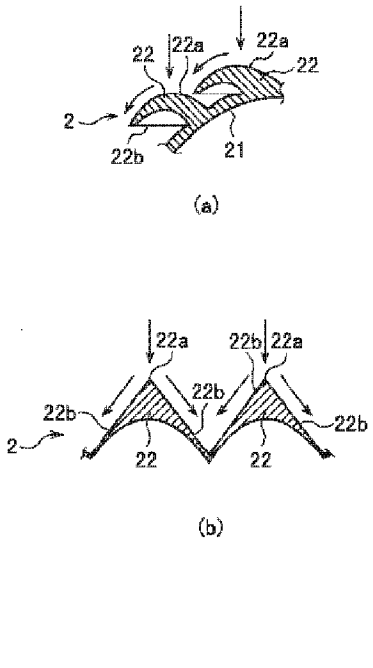
１　飛沫飛散防止器
２　小水受け部
２１　ベース部
２２　反射部
２２ａ　稜線
２２ｂ　反射面
３　取付部
３１　落とし込み部
３１ａ　スリット
３２　支持部
３２ａ　排水用溝

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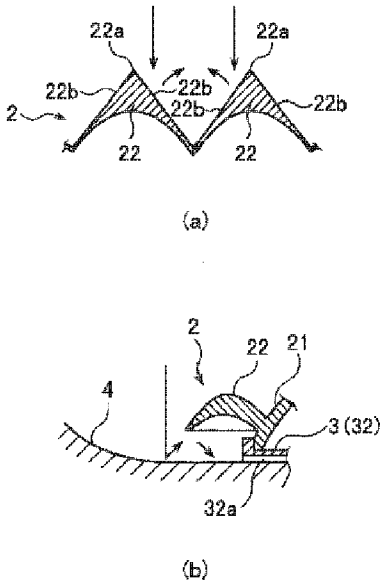
【図１】


1
22
A
2
22b
22a
22b
A
(a)
1
22a
21
22
2
22b
32
32a
31a
31
3
(b)

【図２】


22
22a
22a
22
2
22b
21
(a)
22a
22b
22a
22b
2
22b
22
22
22b
(b)

【図３】

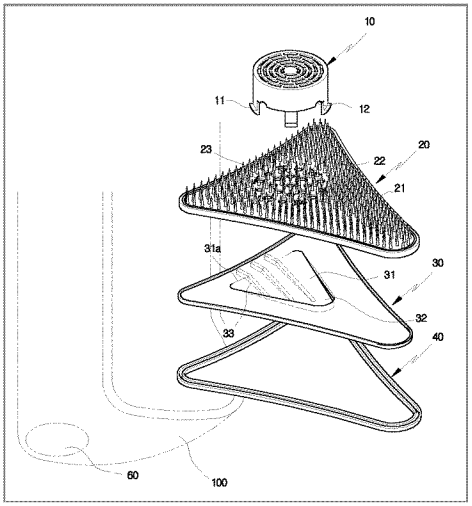

22a
22a
22b
22b
22b
2
22b
22
22
(a)
2
22
21
4
3 (32)
32a
(b)

남성용 소변기의 소변비산방지 및 악취차단구조

Structure of prevent urine from dispersing andquarantine stench in urinal

(51) Int. CL	A47K 11/12(2006.01) E03D 13/00(2006.01)
(*) CPC	
(21) Application No.(Date)	2020040023723 (2004.08.19)
(71) Applicant	최병만 유근훈
(11) Registration No.(Date)	2003688460000 (2004.11.18)
(65) Unex. Pub. No.(Date)	
(11) Publication No.(Date)	(2004.12.03)
(86) Int'l Application No.(Date)	
(87) Int'l Unex. Pub. No.(Date)	
(30) Priority info. (Country / No. / Date)	
Legal Status	Ended
Final Status of Examination Proceeding	Request for registration of establishment
Trial Info	
Kind/Right of Org. Application	/
Right of Org. Application No.(Date)	
Related Application No.	
Request for an examination(Date)	N
Number of examination claims	4

Zoom



Abstract (Machine Translation) The invention relates to the urine shatter prevention and bad-smell intercepting structure%structure of blocking bad smell of the urinal for man. And as to the urinal for man in which the urine drain is formed in the inside surface, multiple shatter prevention protrusions are protruded

VECTAIR EX.1002, PG.297

from the tightly in the upper side in order to prevent the flying of urine. The upper side is combined in the central part in the lower part of the splasher and the splasher: in which multiple urine elimination balls are formed. In order to flow up and down the fluid of one side of an inner circumference surface in the central part to the shaft and the urine elimination outlet of the outer periphery is opened and is closed the bad smell blocking plate in which the cover is comprised is included and organized.

According to the invention, it has the advantage using the urinal the generated bad smell is effectively cut off from the drain of the urinal it prevents from urine splattering on the garment or the urinal surrounding bottom surface of the user in urine.

The urinal, the shatter prevention, and the bad smell blocking .

(19) 대한민국특허청(KR)
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A47K 11/12		(11) 등록번호	20-0368846
E03D 13/00		(24) 등록일자	2004년11월18일
(21) 출원번호	20-2004-0023723		
(22) 출원일자	2004년08월19일		
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(73) 실용신안권자	최병만 대한민국 415-812 경기도 김포시 고촌면 태리 1026-1 유근훈 대한민국 136-130 서울특별시 성북구 하월곡동 46-5
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(77) 심사청구	심사관: 허호신

(54) 출원명 **남성용 소변기의 소변비산방지 및 악취차단구조**

요약

본 고안은 남성용 소변기의 소변비산방지 및 악취차단구조에 관한 것으로, 내측 바닥면에 소변 배수구가 형성된 남성용 소변기에 있어서, 상면에 소변의 비산을 방지하도록 복수 개의 비산방지돌기가 서로 조밀하게 돌설되고, 중앙부에는 다수의 소변배출공이 형성된 비산방지판; 및 상기 비산방지판의 하부에 결합되되, 중앙부에는 내주면 일측의 유동선을 축으로 상하 유동하여 그 외주면의 소변배출구를 개폐시키도록 커버가 구성된 악취차단판을 포함 구성된다.

본 고안에 의하면, 소변시 소변이 사용자의 의복이나 소변기 주위 바닥에 튀는 것을 방지하고, 소변기의 배수구로부터 발생되는 악취를 효과적으로 차단시킴으로써, 보다 위생적으로 소변기를 사용할 수 있는 이점이 있다.

대표도

도1

색인어

소변기, 비산방지, 악취차단

명세서

도면의 간단한 설명

도 1은 본 고안에 따른 소변비산방지 및 악취차단구조를 도시한 분해사시도.

도 2는 도 1의 요부를 도시한 측단면도.

* 도면의 주요 부분에 대한 부호의 설명 *

10 ; 탈취제수용캡　20 ; 비산방지판

21 ; 비산방지돌기　22 ; 소변배출공

30 ; 악취차단판　31 ; 커버

31a ; 유동선　32 ; 소변배출구

33 ; 리브　40 ; 고무패킹

60 ; 배수구　100 ; 소변기

고안의 상세한 설명

고안의 목적

고안이 속하는 기술 및 그 분야의 종래기술

본 고안은 남성용 소변기에 적용되는 소변비산방지 및 악취차단구조에 관한 것으로, 더욱 상세하게는 소변기의 내측 하부 배수구에 비산방지판 및 악취차단판을 고정 설치함으로써, 소변이 사용자의 의복이나 소변기 주위 바닥에 튀는 것을 방지하고, 소변기로부터 발생되는 악취를 효과적으로 차단할 수 있도록 한 남성용 소변기의 소변비산방지 및 악취차단구조에 관한 것이다.

종래의 남성용 소변기는 상하방향으로 제작되어 바닥면에는 소변을 배출하는 배수구가 형성된 구조로서, 소변시 소변줄기의 속도에 의해 소변이 소변기 바닥면에 부딪힌 후 사용자의 옷이나 신발 또는 소변기의 주위 바닥 등에 튀는 현상이 빈번하게 발생하게 되었다. 이는 위생적으로도 좋지 않을뿐더러 화장실 내부를 오염시켜 바닥을 누렇게 변색시키거나 악취를 발생시키게 되는 직접적인 원인이 되었다.

또한, 이 같은 소변기의 배수구는 통상 하부의 정화조 등과 연결되어 있으므로 이를 통해 정화조나 그 연결관의 악취가 화장실 내로 역류하는 현상이 발생되는 등의 문제점이 있었다.

고안이 이루고자 하는 기술적 과제

따라서, 본 고안은 상기와 같은 문제점을 해결하기 위해 안출된 것으로, 남성용 소변기의 내측 하부 배수구에 소변비산방지판 및 악취차단판을 설치하여 소변이 사용자나 소변기 주위에 튀어 오염되는 것을 방지하고, 소변기로부터 발생되는 악취를 효과적으로 차단시킴으로써, 위생성을 보다 향상시킨 남성용 소변기의 소변비산방지 및 악취차단구조를 제공하는데 그 목적이 있다.

상기와 같은 목적을 달성하기 위한 본 고안의 남성용 소변기의 소변비산방지 및 악취차단구조는, 바닥면에 소변 배수구가 형성된 남성용 소변기에 있어서, 상면에 소변의 비산을 방지하도록 복수 개의 비산방지돌기가 서로 조밀하게 돌설되고, 중앙부에는 다수의 소변배출공이 형성된 비산방지판; 및 상기 비산방지판의 하부에 결합되되, 중앙부에는 내주면 일측의 유동선을 축으로 상하 유동하여 소변배출구를 개폐시키도록 커버가 구성된 악취차단판을 포함 구성되는 것을 특징으로 한다.

고안의 구성 및 작용

이하, 본 고안의 바람직한 실시예를 첨부한 도면을 참조하여 상세히 설명하면 다음과 같다.

도 1은 본 고안에 따른 소변비산방지 및 악취차단구조를 도시한 분해사시도, 도 2는 도 1의 요부를 도시한 측단면도이다.

도 1 및 도 2에 도시한 바와 같이, 본 고안의 소변비산방지 및 악취차단구조는 바닥면에 소변 배수구(60)가 형성된 남성용 소변기에 있어서, 소변의 비산을 방지함은 물론, 일부 몰지각한 사용자들이 무단 투기한 담배꽁초나 쓰레기 등의 이물질이 소변기(100)의 배수구(60)를 막아 소변의 원활한 배출을 방해하는 것을 방지할 수 있도록 상부에 위치하는 비산방지판(20)과; 상기 비산방지판(20) 하부에 결합되어 상기 배수구(60)로부터 역류하거나 소변기(100) 바닥면으로부터 발생되는 악취를 차단시키는 악취차단판(30)을 포함하여 구성된다.

상기 비산방지판(20)은 합성수지 재질로 이루어지되, 상면에는 소변시 소변줄기가 수차례 부딪히도록 하여 소변이 소변기(100) 외부로 튀는 것을 방지하도록 복수 개의 비산방지돌기(21)가 서로 조밀하게 돌설되고, 그 중앙부에는 이러한 소변을 모아 하부로 배출하도록 다수의 소변배출공(22)이 형성된 구조를 갖는다.

상기 비산방지판(20) 하부에 결합되는 악취차단판(30)은, 중앙부에 내주면 일측의 유동선(31a)을 축으로 절개되어 상기 유동선(31a)을 중심으로 상하 유동 가능하도록 커버(31)가 구성되며, 이에 따라 커버(31) 크기만큼의 절개된 부분은 상기 비산방지판(20)으로부터 유입된 소변을 배출하는 소변배출구(32)로 형성되어 상기 커버(31)의 상하 유동에 따라 상기 소변배출구(32)가 개폐되는 구조를 갖는다.

즉, 상기 커버(31)는 탄력에 의해 평상시엔 소변배출구(32)가 닫힌 상태를 유지하여 소변기(100)의 배수구(60) 및 정화조로부터 역류되는 악취를 차단하다가, 사용자가 소변을 보게 되면 상기 비산방지판(20)의 소변배출공(22)으로부터 배출되는 소변의 낙하에 의해 커버(31)가 하부로 눌리게 되어 소변배출구(32)가 개방됨으로써 소변을 배수구(60) 쪽으로 하향 배출시키는 것이다.

이때, 상기 악취차단판(30)은 바람직하게는 커버(31) 저면에 유동선(31a)을 걸치는 형태로 다수 개의 리브(33)를 구성하여 소정 시간 경과 후 커버(31)의 탄지력이 약화되어 커버(31)의 소변배출구(32)에 대한 자동 개폐기능이 상실되는 방지하도록 구성된다.

또한, 상기 비산방지판(20)은 그 외주둘레에 비산방지판(20)을 배수구(60) 상부에 소정 이격하여 소변기(100) 내벽에 안정적으로 지지할 수 있도록 고무패킹을 추가로 부착하여 고정력을 향상시킬 수 있다.

한편, 이 같이 구성된 상기 비산방지판(20)의 상면에는 탈취제를 수용하여 탈취 및 살충작용을 할 수 있도록 탈취제수용캡(10)을 추가 설치할 수 있다.

상기 탈취제수용캡(10)은 내부에 나프탈렌 등의 탈취제(13)를 수용하고 외측면은 탈취제(13)의 기능이 발현되도록 망 형태로 된 통체로서, 측면에는 소변이 소변배출공(22) 쪽으로 이동될 수 있도록 다수의 절개홈(12)이 형성되고, 하단 소정부위에는 상기 비산방지판(20) 위에 단단히 결합되도록 다수의 결합돌기(11)가 원주방향으로 돌설된 구조를 갖는다. 이때, 상기 비산방지판(20)은 그 상면에 상기 탈취제수용캡(10)의 결합돌기(11)가 끼워져 결합되도록 이와 부합되는 다수의 결합홈(23)이 원주방향을 따라 형성되는 것이다.

이와 같이 구성된 본 고안의 소변비산방지 및 악취차단구조에 따른 작동구조를 설명하면 다음과 같다.

사용자가 소변을 보게 되면 소변줄기가 상기 지지대(60)를 통해 소변기(100) 바닥 면에 설치된 비산방지판(20) 위에 부딪히게 되고, 이때 상기 소변줄기는 비산방지판(20) 상면에 형성된 복수 개의 비산방지돌기(21)에 수차례 재충돌하면서 소변기(100) 밖으로 튀는 것이 방지된 상태로 비산방지판(20)의 중앙부로 흘러 소변배출공(22)을 통해 하부로 배출되어진다.

이 같이 배출된 소변은 상기 비산방지판(20) 하부에 설치된 악취제거판(30)의 커버(31)를 하부로 누르게 되고, 이러한 소변의 낙하에 의해

커버(31)가 유동선(31a)을 축으로 하강하여 소변배출구(32)를 개방하게 되면 소변이 이 소변배출구(32)를 통해 배수구(60) 쪽으로 배출되는 것이다.

이와 반대로, 사용자가 용변을 마치게 되면 상기 악취차단판(30) 중 하강되어 있던 커버(31)가 탄력에 의해 최초 위치로 복귀되면서 개방되어 있던 소변배출구(32)를 패쇄된 상태로 유지하게 되고, 이에 배수구(60)로부터 발생되거나 역류되는 악취가 상기 소변배출구(32)를 통해 화장실 내로 유입되는 것을 효과적으로 차단하게 되는 것이다.

이와 같이 본 고안은 특정 실시예를 들어 설명하였지만 반드시 이에 한정하는 것은 아니며, 본 고안의 기술적 사상의 범주 내에서는 얼마든지 수정 및 변형 실시가 가능하다.

고안의 효과

이상에서 설명한 바와 같이, 본 고안의 남성용 소변기의 소변비산방지 및 악취차단구조에 따르면, 소변기의 내측 배수구 상부에 비산방지판 및 악취차단판을 설치함으로써, 소변시 소변이 사용자의 의복이나 소변기 주위 바닥에 튀는 것을 효과적으로 방지하고, 소변기의 배수구로부터 발생되는 악취를 효과적으로 차단하여 위생적인 면을 향상시킬 수 있는 효과가 있다.

(57) 청구의 범위

청구항 1.

바닥면에 소변 배수구(60)가 형성된 남성용 소변기(100)에 있어서,

상면에 소변의 비산을 방지하도록 복수 개의 비산방지돌기(21)가 서로 조밀하게 돌설되고, 중앙부에는 다수의 소변배출공(22)이 형성된 비산방지판(20); 및

상기 비산방지판(20)의 하부에 결합되되, 중앙부에는 내주면 일측의 유동선(31a)을 축으로 상하 유동하여 소변배출구(32)를 개폐시키도록 커버(31)가 구성된 악취차단판(30)을 포함 구성되는 것을 특징으로 하는 남성용 소변기의 소변비산방지 및 악취차단구조.

청구항 2.

제1항에 있어서,

상기 비산방지판(20)은 그 외주둘레에 소변기 내벽과의 고정력을 향상시키도록 고무패킹(40)이 추가 부착되는 것을 특징으로 하는 남성용 소변기의 소변비산방지 및 악취차단구조.

청구항 3.

제1항에 있어서,

상기 악취차단판(30)은 커버(31) 저면에 상기 커버(31)의 탄지력을 향상하도록 유동선(31a)에 걸치는 형태로 리브(33)가 구성된 것을 특징으로 하는 남성용 소변기의 소변비산방지 및 악취차단구조.

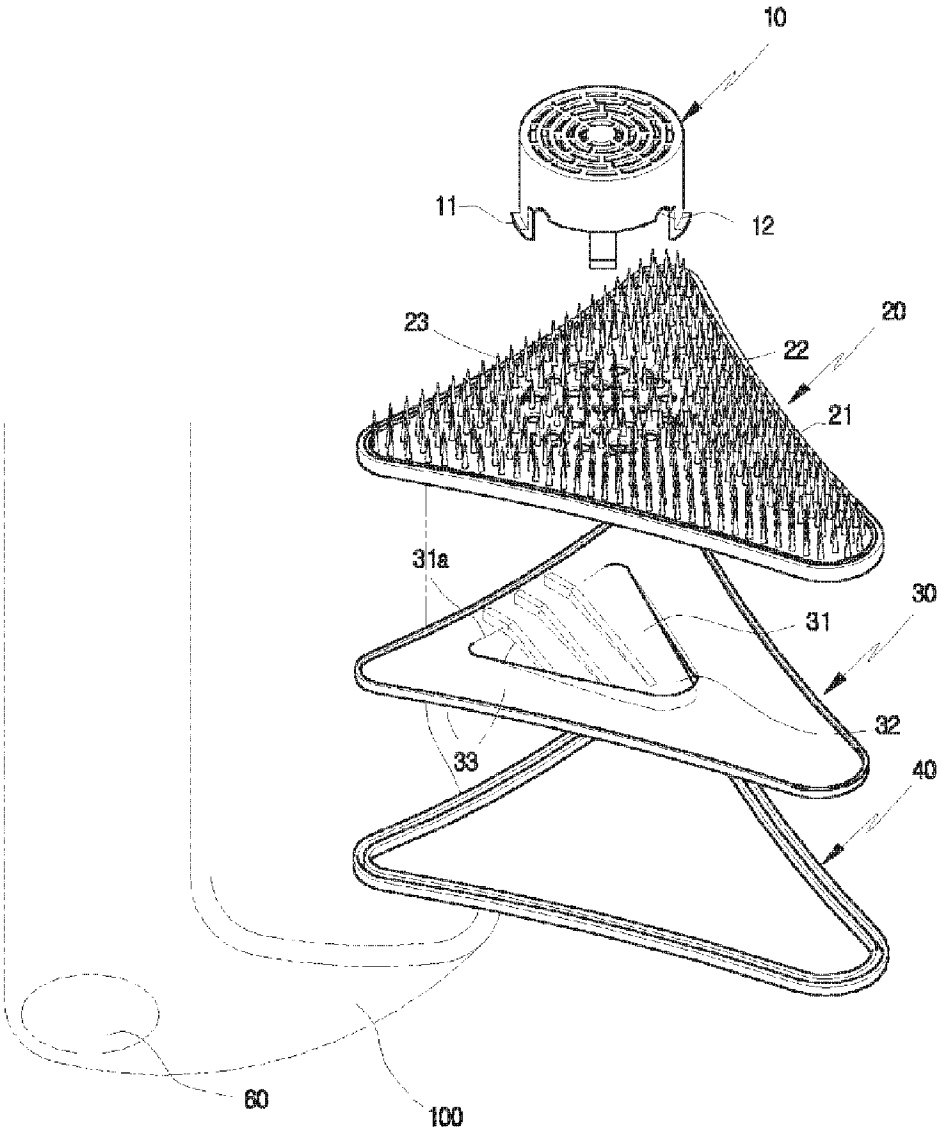
청구항 4.

제1항 또는 제2항에 있어서,

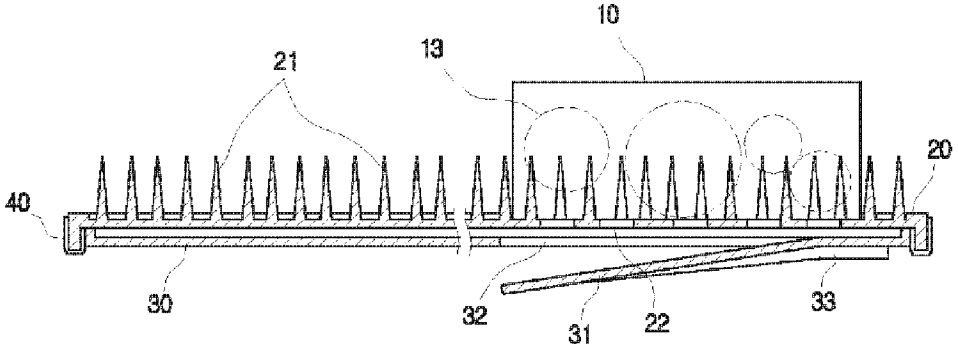
상기 비산방지판(20)의 상면에는 탈취제수용캡(10)이 추가 설치되는 것을 특징으로 하는 남성용 소변기의 소변비산방지 및 악취차단구조.

도면

도면 1


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31a
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100

도면 2


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Electronic Patent Application Fee Transmittal

Application Number:	14925369
Filing Date:	28-Oct-2015
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Benjamin Paul Johnson/Amy Rodriguez
Attorney Docket Number:	FRESHPR.061A

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Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	90	90
		Total in USD ($)		**90**

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Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Benjamin Paul Johnson/Angel Zehnder
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Payment was successfully received in RAM	$90
RAM confirmation Number	032017INTEFSW15105400
Deposit Account	111410
Authorized User	Angel Zehnder

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		OAResponse-FRESHPR061A.pdf	120453 db17879f030e6b57a298b11759481dbf1cb390b4	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	8

Warnings:

Information:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
2		IDS-FRESHPR061A.pdf	355072 aed2aab55d0d5f9c2fd0ebc68c65aaf8eb77679a	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	2
	Information Disclosure Statement (IDS) Form (SB08)	3	10

Warnings:

Information:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
3	Foreign Reference	DE1915249.pdf	611332 f8fbe8c28525d7aacab3effeee0e73a2657e2fbb	no	7

Warnings:

Information:

4	Foreign Reference	DE19541911.pdf	828727 29733748c353bb552768aa8a9ddf11215886394c	no	7
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Information:					
5	Foreign Reference	FR26813232.pdf	771433 2ea4f827fa162f749c75857f410ff75f221a2a7f	no	7
Warnings:					
Information:					
6	Foreign Reference	GB189518394.pdf	1328126 b2d2c076bf36fee80155a010488d8d01ae9bdd9a	no	5
Warnings:					
Information:					
7	Foreign Reference	JP57-17599.pdf	874931 51f5da7fdf0ffd46f7f7ede0a4809c41ca2267b0	no	6
Warnings:					
Information:					
8	Foreign Reference	JP60-178497.pdf	888840 6cb910210e8c049eabf93179d4b0f59915aa82ab	no	8
Warnings:					
Information:					
9	Foreign Reference	JP60-190865.pdf	747519 45af692a9077ef9b6c65a1da4cc94e8fa204fb97	no	6
Warnings:					
Information:					
10	Foreign Reference	JP63-116585.pdf	2202929 fca09a6b5838f29994cbc495584ef8ae412ae624	no	19
Warnings:					
Information:					

11	Foreign Reference	JP1990-102625.pdf	741684 6f670ffd669363cf79385fcd4a97100c7b0df214	no	8
Warnings:					
Information:					
12	Foreign Reference	JP1992-119880U.pdf	497402 304643019a995f27a498ba1e11448ff16e7c74b9	no	5
Warnings:					
Information:					
13	Foreign Reference	JP2001-303642.pdf	446878 7d269e95c92d0f1fd12fdeebf46bd4943517f57c	no	5
Warnings:					
Information:					
14	Foreign Reference	KR0368846U.pdf	430004 bfef22c3822b1055eca8c69fd8fed0b8fb4a995e	no	7
Warnings:					
Information:					
15	Non Patent Literature	Dugdale_Uroflometry.pdf	283355 9780e050503ca308cd18973597698899135 3f767	no	2
Warnings:					
Information:					
16	Non Patent Literature	Gray_MaleUrethra.pdf	416221 ff235b647d47f5caed684a34995c454903fd3f19	no	5
Warnings:					
Information:					
17	Non Patent Literature	Ritter_AnalysisofDropIntervals.pdf	476746 d2d3e15315a0bcaa3d54b0e8760a8a9c9ebbd165	no	11
Warnings:					
Information:					

18	Non Patent Literature	Ritter_PhysicalInformation.pdf	702298 fe5341b0bb7f57a14ff0fcb948853c53801951de	no	10
Warnings:					
Information:					
19	Fee Worksheet (SB06)	fee-info.pdf	30600 53c641bae70c9a1934170a7da0caced61ca821ca	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	12754550	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
14/925,369	10/28/2015	

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **03/17/2017**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
BRENDA HINES

This collection of information is required by 37 CFR 1.16. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A	9748

20995 7590 12/19/2016

KNOBBE MARTENS OLSON & BEAR LLP
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IRVINE, CA 92614

EXAMINER	
CRANE, LAUREN ASHLEY	

ART UNIT	PAPER NUMBER
3754	

NOTIFICATION DATE	DELIVERY MODE
12/19/2016	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jayna.cartee@knobbe.com
efiling@knobbe.com

Office Action Summary	Application No. 14/925,369	Applicant(s) BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-19* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-19* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

2. Claim(s) 1, 11, and 12 is/are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak).

3. Regarding Claim 1, Muderlak shows a urinal screen as shown in Fig.3, comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame; wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the

urinal screen is set; and wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

3. Regarding Claims 11 and 12, Muderlak shows the urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

Claim Rejections - 35 USC § 103

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

2. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of Vidal (U.S. Patent 4,671,976). Regarding claim 2, Muderlak shows the urinal screen of

claim 1, but fails to show openings having a polygonal perimeter. Vidal teaches a urinal screen, Fig.8. The urinal screen includes a plurality of openings is defined by a polygonal perimeter structure. The urinal screen includes a plurality of openings. Each opening is defined by a perimeter structure having plurality of braces (3) and corners (3'). Each of plurality of first posts (12) extends from a corner of a perimeter structure of one or more of the plurality of openings. The plurality of posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings. Wherein at least one of the plurality of posts extends from each of the braces of the perimeter structure defining the openings. At least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. Wherein at least one of the plurality of posts extends from each of the braces of the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. The at least one of the plurality of posts extends from a brace or corner of the perimeter structure defining each opening. At least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include polygon shaped openings in order to ensure the water or urine is allowed to flow through the screen. The combination yields first and second post located near the corners and brace of the urinal cover.

4. Claims 13-16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak).

1. Regarding Claim 13, Muderlak shows a urinal screen comprising: a frame having: a first face (18'); a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face; a plurality of first posts (24') extending from the first face of the frame; and a plurality of second posts extending from the second face of the frame, Fig.3; but fails to show the opening occupying at least half of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

2. Regarding Claim 14, Muderlak shows the urinal screen of claim 13, but fails to show the opening occupying 75% of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

3. Regarding Claim 15, Muderlak shows the urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

4. Regarding Claim 16 Muderlak shows the urinal screen of claim 13, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface. Murderlak fails to show the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as

measured parallel to a first plane face of the frame. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an appropriate number of opening in order to ensure the water or urine is allowed to flow through the screen.

5. Claims 17-19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Muderlak et al (U.S. Patent Publication 20140259344 herein after Muderlak) in view of D'Amico (U.S. Patent Publication 2014/0157501). Murderlak shows a urinal screen comprising: a frame (18') having: a first face; a second face opposite the first face; a plurality of first posts (24') extending from away from the first face, each of the plurality of first posts connected to a front side of the device; and a plurality of second posts extending away from the second face of the frame, Fig.3, each of the plurality of second posts connected to a side of the device. A thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. Muderlak fails to show interconnect cells. D'Amico teaches a urinal screen. The screen includes a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners. Each of the interconnected cells shares at least one side and at least one corner with another interconnected cell. The plurality of interconnected cells form a tessellation. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include an interconnected cells in order to ensure the water or urine is allowed to flow through the screen.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN CRANE whose telephone number is (571)270-5198. The examiner can normally be reached on 9:30 am - 5:00 pm Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN CRANE/
Primary Examiner, Art Unit 3754

Notice of References Cited	Application/Control No. 14/925,369	Applicant(s)/Patent Under Reexamination BROWN ET AL.	
	Examiner LAUREN CRANE	Art Unit 3754	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2014/0259344 A1	09-2014	Muderlak; Todd J.	E03D13/005	4/256.1
*	B	US-2014/0157501 A1	06-2014	D'Amico; Daniel	E03D13/005	4/256.1
*	C	US-4,671,976 A	06-1987	Vidal; Stella M.	A47K1/14	4/286
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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BIB DATA SHEET

CONFIRMATION NO. 9748

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/925,369	10/28/2015	004	3754	FRESHPR.061A

APPLICANTS
Fresh Products, Inc., Toledo, OH;

INVENTORS
Douglas S. Brown, Toledo, OH;
Jeffrey A. Smith, Perrysburg, OH;

**** CONTINUING DATA ***************************
This appln claims benefit of 62/075,827 11/05/2014

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
11/06/2015

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /LAUREN ASHLEY CRANE/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OH	5	19	3

ADDRESS

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614
UNITED STATES

TITLE

URINAL SCREENS

FILING FEE RECEIVED		
800	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	Art Unit
	LAUREN CRANE	3754

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner
E03D13/005	12/13/2016	LC

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
4	256.1	12/13/2016	LC

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925369	BROWN ET AL.
	Examiner	**Art Unit**
	LAUREN CRANE	3754

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	12/13/2016								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
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	16	✓								
	17	✓								
	18	✓								
	19	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	207	(E03D13/005).cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/13 15:06
S1	264	(4/300.3).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2016/12/13 09:34
S2	2	("20140259344").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2016/12/13 10:05
S3	211	(4/256.1).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2016/12/13 10:06
S4	31	("4574400" | "4574403" | "4671976" | "4866793" | "5165119").PN. OR ("5398347").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/13 11:24

EAST Search History (Interference)

< This search history is empty>

12/ 13/ 2016 3:07:14 PM
C:\ Users\ lheitzer\ Documents\ EAST\ Workspaces\ 14925369.wsp

Receipt date: 02/05/2016

PTO/SB/08 Equivalent

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925,369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3633
(Multiple sheets used when necessary)	Examiner	Unknown
SHEET 1 OF 1	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	5,813,058 A	09-29-1998	Quigley et al.	
	2	2010/0183694 A1	07-22-2010	Burke et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T^1

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^1

22390805
010516

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.A.C/

Examiner Signature	/LAUREN A CRANE/	Date Considered	12/13/2016

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T^1 - Place a check mark in this area when an English language Translation is attached.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A

CONFIRMATION NO. 9748

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

PUBLICATION NOTICE

OC00000082694401

Title:URINAL SCREENS

Publication No.US-2016-0122992-A1
Publication Date:05/05/2016

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

VECTAIR EX.1002, PG.325

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application No.	14/925,369
	Filing Date	October 28, 2015
	First Named Inventor	Douglas S. Brown
	Art Unit	3633
(Multiple sheets used when necessary)	Examiner	Unknown
SHEET 1 OF 1	Attorney Docket No.	FRESHPR.061A

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document Number *Number - Kind Code (if known)* Example: 1,234,567 B1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
	1	5,813,058 A	09-29-1998	Quigley et al.	
	2	2010/0183694 A1	07-22-2010	Burke et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document *Country Code-Number-Kind Code* Example: JP 1234567 A1	Publication Date MM-DD-YYYY	Name	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	**T[1]**

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	**T[1]**

22390805
010516

Examiner Signature	Date Considered

***Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

T[1] - Place a check mark in this area when an English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	24844145
Application Number:	14925369
International Application Number:	
Confirmation Number:	9748
Title of Invention:	URINAL SCREENS
First Named Inventor/Applicant Name:	Douglas S. Brown
Customer Number:	20995
Filer:	Edward A. Schlatter/Thomas Chmura
Filer Authorized By:	Edward A. Schlatter
Attorney Docket Number:	FRESHPR.061A
Receipt Date:	05-FEB-2016
Filing Date:	28-OCT-2015
Time Stamp:	20:36:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS_FRESHPR061A.pdf	140662 3188706ce69edea4c3dd325ec4964663388 0721d	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	2
	Information Disclosure Statement (IDS) Form (SB08)	3	3
Warnings:			
Information:			
	Total Files Size (in bytes):	140662	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT

Inventors	:	Douglas S. Brown et al.
App. No.	:	14/925,369
Filed	:	October 28, 2015
For	:	URINAL SCREENS
Examiner	:	To Be Assigned
Art Unit	:	3633
Conf. No.	:	9748

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

References and Listing

Pursuant to 37 CFR 1.56, an Information Disclosure Statement listing references is provided herewith. Copies of any listed foreign and non-patent literature references are being submitted.

No Disclaimers

To the extent that anything in the Information Disclosure Statement or the listed references could be construed as a disclaimer of any subject matter supported by the present application, Applicant hereby rescinds and retracts such disclaimer.

Timing of Disclosure

This Information Disclosure Statement is being filed before the receipt of a First Office Action on the merits, and presumably no fee is required.

If a First Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 CFR 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: February 5, 2016

By: /Edward A. Schlatter/
Edward A. Schlatter
Registration No. 32,297
Attorney of Record
Customer No. 20995
(949) 760-0404

22399270

VECTAIR EX.1002, PG.330

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/925,369	10/28/2015	Douglas S. Brown	FRESHPR.061A

CONFIRMATION NO. 9748

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

INFORMAL NOTICE



Date Mailed: 11/10/2015

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  Douglas S. Brown
  Jeffrey A. Smith

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/mabebe/

VECTAIR EX.1002, PG.331

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/925,369

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	19 minus 20 =	*	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	730		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/925,369	10/28/2015	3633	800	FRESHPR.061A	19	3

CONFIRMATION NO. 9748

FILING RECEIPT

20995
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

OC000000078548793

Date Mailed: 11/10/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Douglas S. Brown, Toledo, OH;
Jeffrey A. Smith, Perrysburg, OH;

Applicant(s)

Fresh Products, Inc., Toledo, OH;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/075,827 11/05/2014

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 11/06/2015
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/925,369**
Projected Publication Date: 05/05/2016
Non-Publication Request: No
Early Publication Request: No
**** SMALL ENTITY ****

Title

URINAL SCREENS

Preliminary Class

052

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

VECTAIR EX.1002, PG.334

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PTO/AIA/14 (07-14)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

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.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Douglas	S.	Brown	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Toledo	State/Province	OH	Country of Residence i	US

Mailing Address of Inventor:

Address 1	3516 Ridgewood		
Address 2			
City	Toledo	State/Province	OH
Postal Code	43606	Country i	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jeffrey	A.	Smith	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Perrysburg	State/Province	OH	Country of Residence i	US

Mailing Address of Inventor:

Address 1	2810 Stonefence Drive		
Address 2			
City	Perrsyburg	State/Province	OH
Postal Code	43551	Country i	US

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).

VECTAIR EX.1002, PG.336

PTO/AIA/14 (07-14)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

☐ **An Address is being provided for the correspondence Information of this application.**			
Customer Number	20995		
Email Address	efiling@knobbe.com	Add Email	Remove Email

Application Information:

Title of the Invention	URINAL SCREENS		
Attorney Docket Number	FRESHPR.061A	**Small Entity Status Claimed**	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	5	**Suggested Figure for Publication (if any)**	

Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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 and will not** be the subject of an application filed in another country, or under a multilateral international 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).
Either enter 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	○ Limited Recognition (37 CFR 11.9)
Customer Number	20995		

PTO/AIA/14 (07-14)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. 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.
When referring to the current application, please leave the application number blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Claims benefit of provisional	62/075827	2014-11-05

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Foreign Priority Information:

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☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

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◉ Assignee	○ Legal Representative under 35 U.S.C. 117	○ Joint Inventor
○ Person to whom the inventor is obligated to assign.	○ Person who shows sufficient proprietary interest	

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Name of the Deceased or Legally Incapacitated Inventor :	

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Organization Name	Fresh Products, Inc.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	FRESHPR.061A
	Application Number	
Title of Invention	URINAL SCREENS	

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Signature	/Edward A. Schlatter/			Date (YYYY-MM-DD)	2015-10-27
First Name	Edward	Last Name	Schlatter	Registration Number	32297

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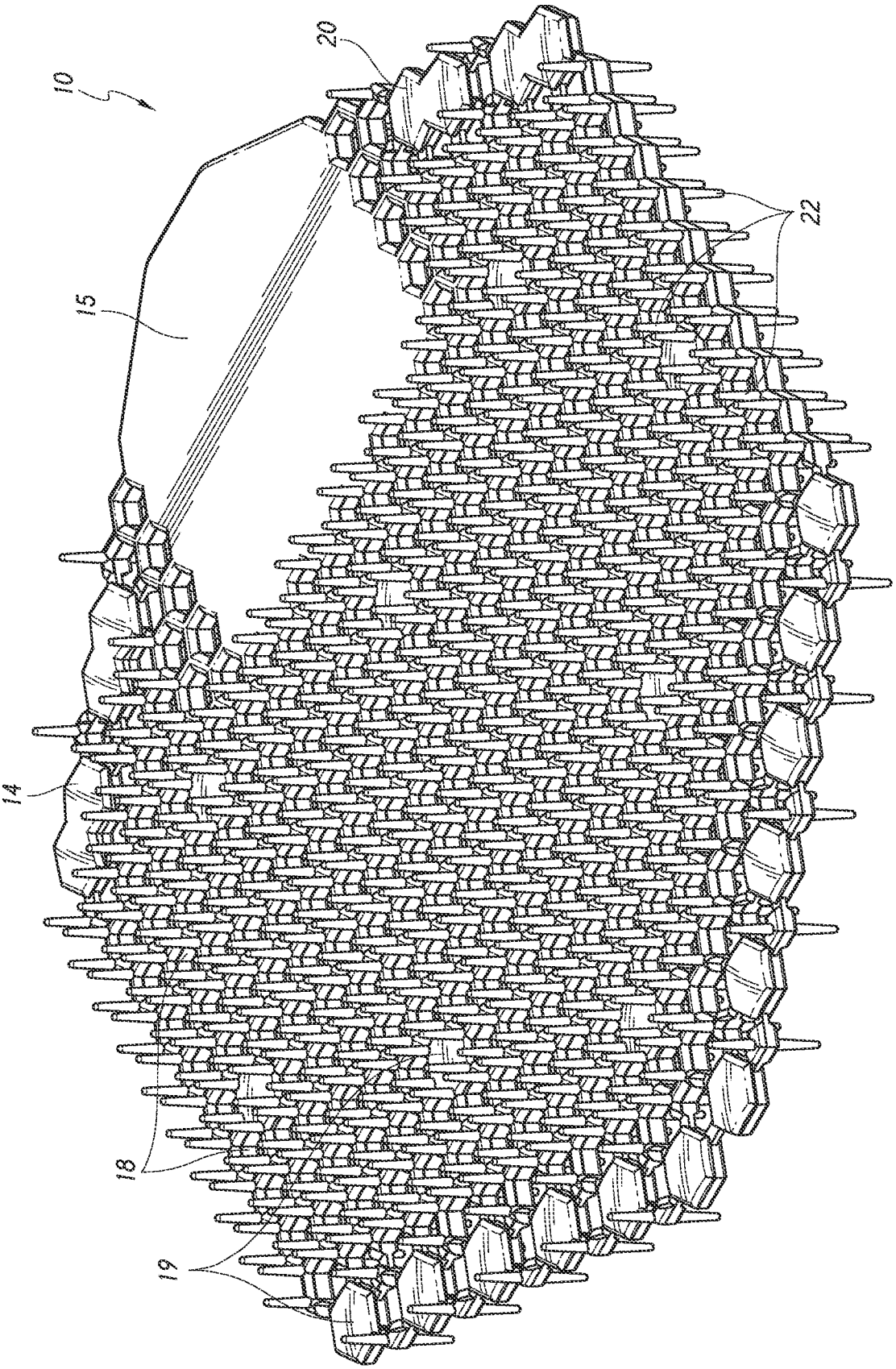


FIG. 1

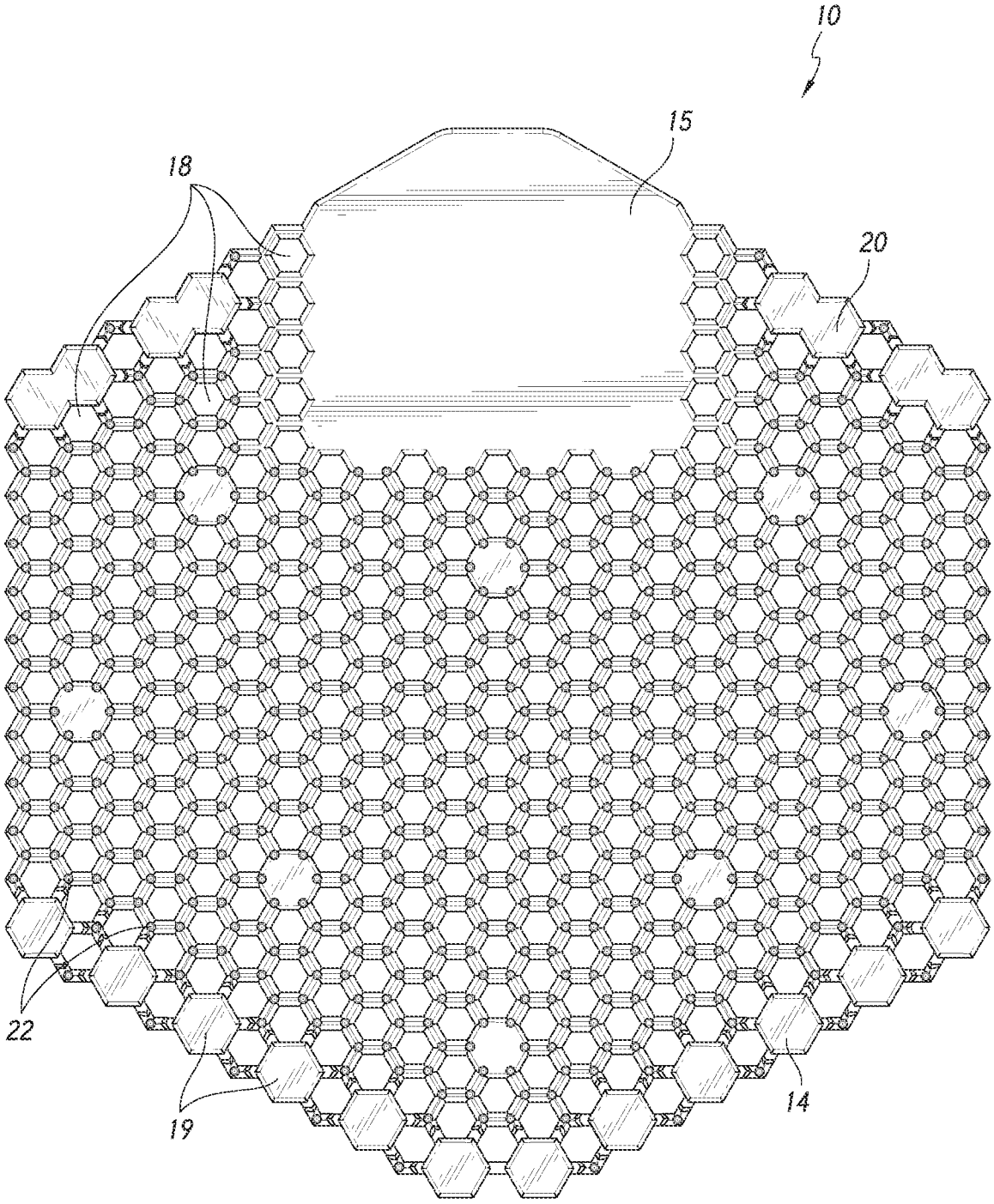


FIG. 2

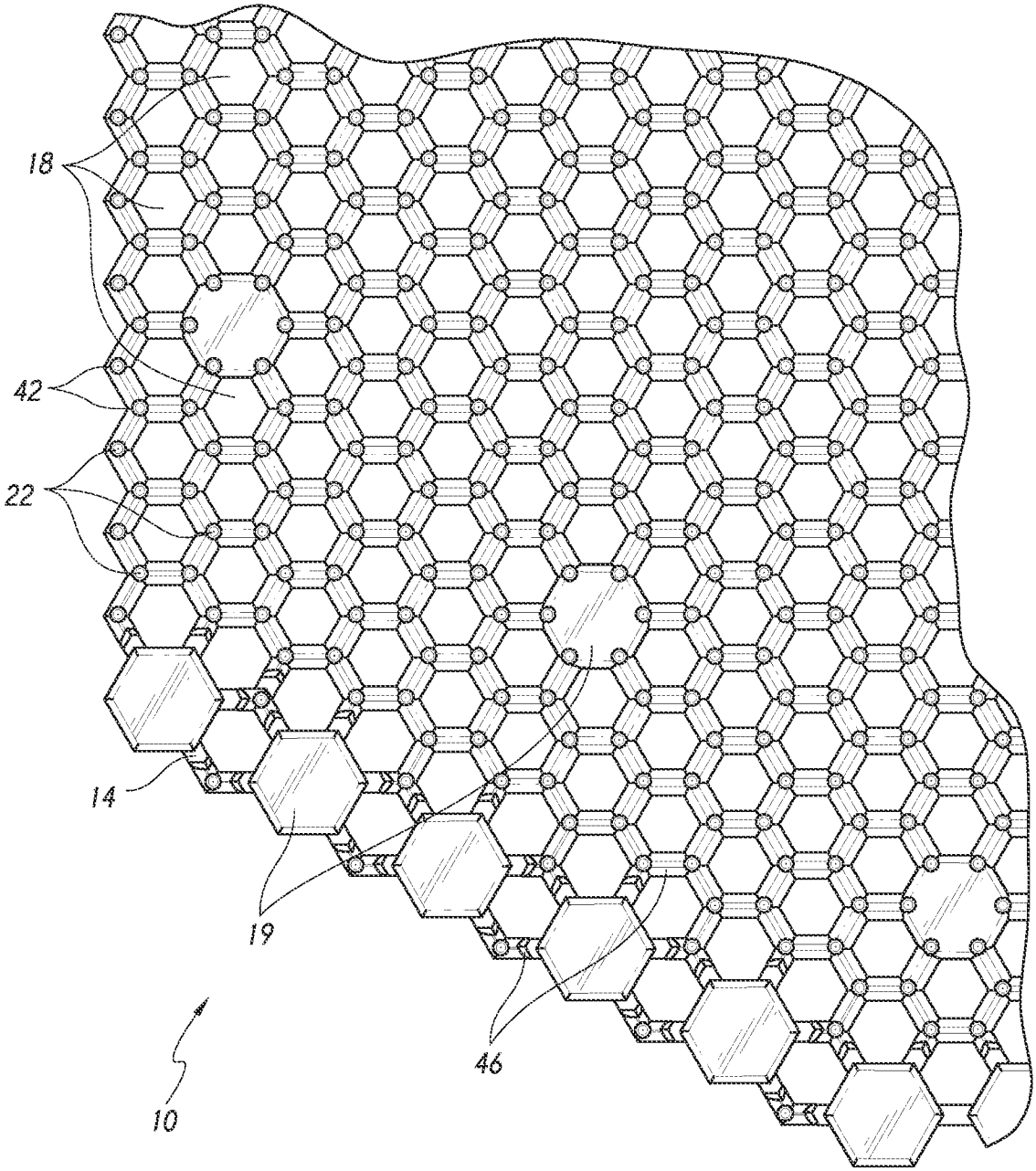


FIG. 3

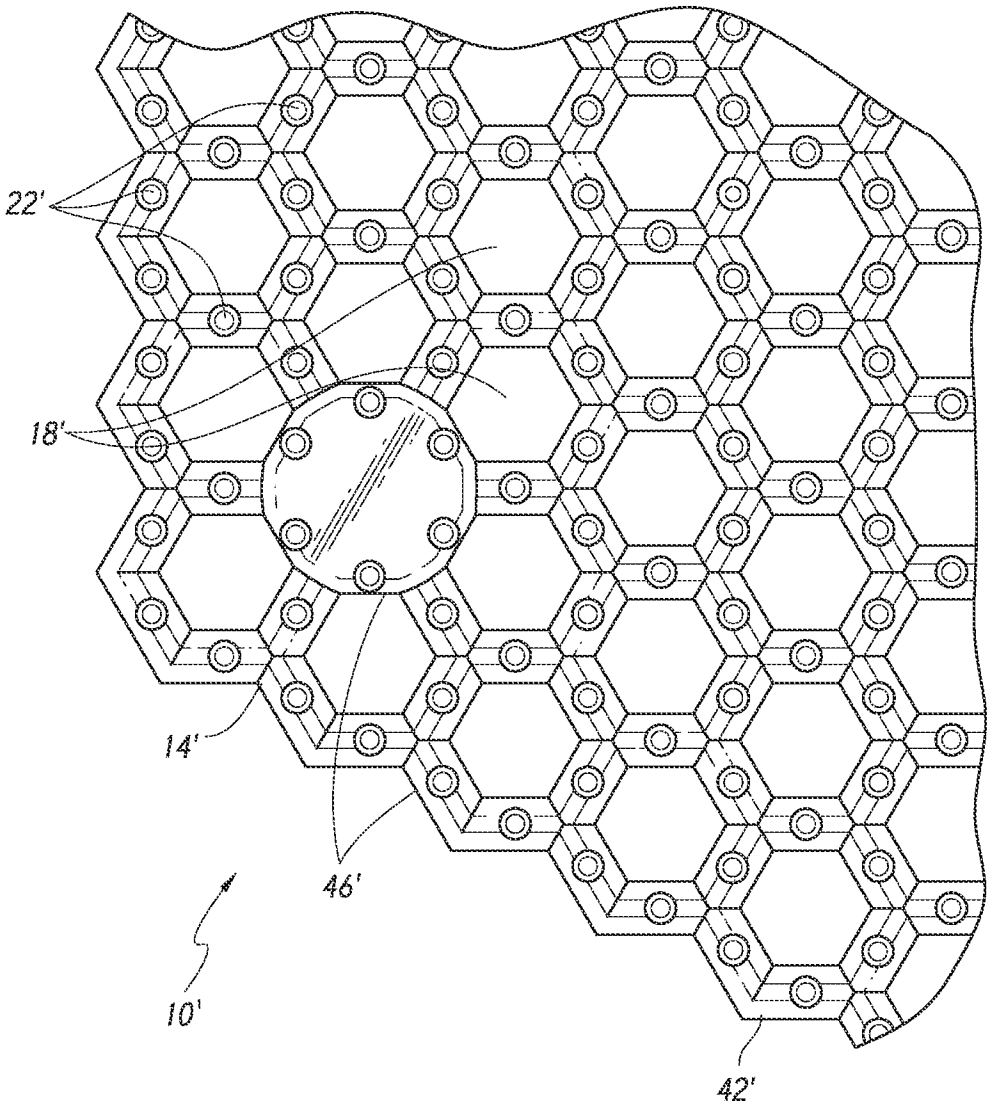


FIG. 4

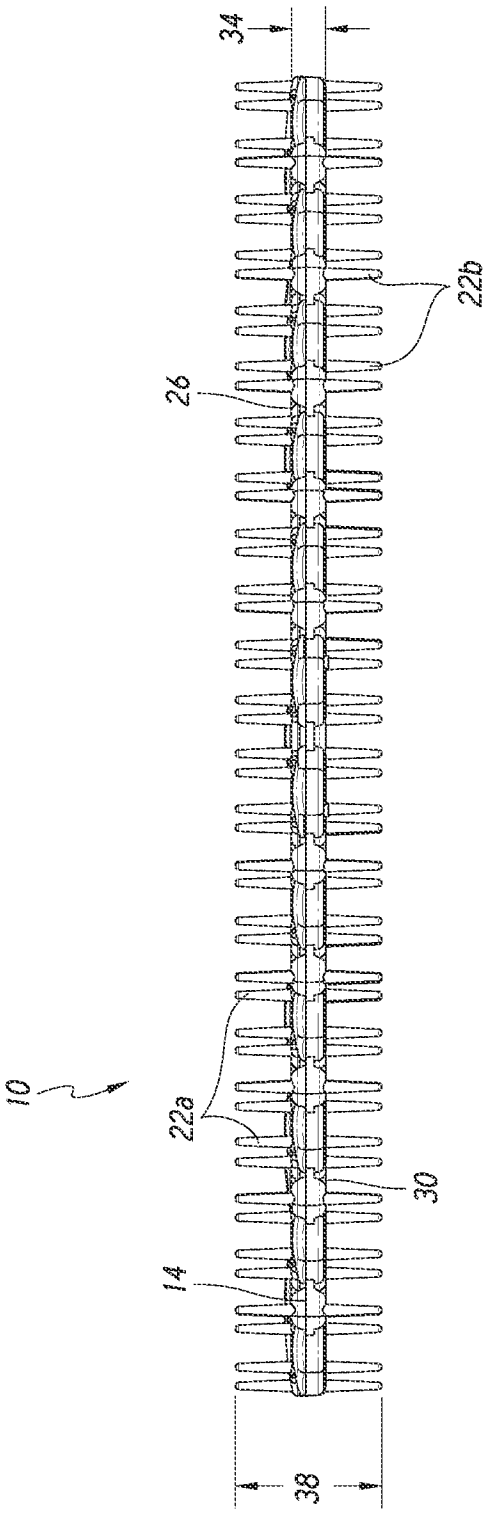


FIG. 5

URINAL SCREENS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] Any and all applications for which a foreign or domestic priority claims is identified in the Application Data Sheet as filed with the present application are hereby incorporated by reference under 37 CFR 1.57.

TECHNICAL FIELD

[0002] Certain embodiments discussed herein relate to restroom screens and mats, and, more particularly, the present inventions relate to restroom urinal screens and mats.

DISCUSSION OF THE RELATED ART

[0003] Urinal screens are widely used as air fresheners and to prevent debris from being flushed down a urinal drain. In some cases, a fragrance is provided with the screens to help sanitize and freshen the air in and around the urinal.

SUMMARY OF THE INVENTIONS

[0004] A urinal screen can include a frame. In some embodiments, the frame has a first face and a second face opposite the first face. The frame can include a plurality of openings extending through the first face and the second face. In some cases, the screen includes a plurality of first posts extending from the first face of the frame. The screen can include a plurality of second posts extending from the second face of the frame.

[0005] According to some variants, the portion of the frame defining each of the openings has a polygonal perimeter structure. In some embodiments, each perimeter structure defining an opening has a plurality of braces and corners. In some cases, a plurality of the braces and corners are shared between two or more openings. In some embodiments, the braces and corners form a tessellation. According to some variants, each of plurality of first posts extends from the portion of the frame defining a corner of a perimeter structure forming one or more of the plurality of openings. In some cases, each of plurality of second posts extends from a

midpoint of a brace of a the portion of the frame defining a perimeter structure forming one or more of the plurality of openings. In some embodiments, at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings. In some cases, at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. In some embodiments, at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings and at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings. According to some variants, at least one of the plurality of second posts extends from a brace or corner of the portion of the perimeter structure defining each opening. In some embodiments, at least one of the plurality of first posts extends from a brace of the perimeter structure defining each opening or corner of the perimeter structure defining each opening. In some cases, each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

[0006] According to some variants, a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. In some cases, a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame. In some embodiments, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame. In some cases, the plurality of openings occupy at least three fourths of a surface area of the frame as measured parallel to the first face (e.g., the first plane) of the frame. In some embodiments, the perimeter structures defining the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to the first face (e.g., the first plane) of the frame.

[0007] According to some variants, a urinal screen includes a frame. The frame can have: a first face; a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face. The urinal screen can include a plurality of first posts extending from the first face of the frame. In some embodiments, the urinal screen includes a plurality of second posts extending from the second face of the frame. In

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some embodiments, a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set. In some embodiments, at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

[0008] In some configurations, each of the openings is defined by a polygonal perimeter structure.

[0009] In some configurations, each opening is defined by a perimeter structure having plurality of braces and corners.

[0010] In some configurations, each of plurality of first posts extends from a corner of a perimeter structure of one or more of the plurality of openings.

[0011] In some configurations, each of plurality of second posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings.

[0012] In some configurations, at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

[0013] In some configurations, at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

[0014] In some configurations, at least one of the plurality of second posts extends from each of the braces of the openings. In some configurations, at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

[0015] In some configurations, at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

[0016] In some configurations, at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

[0017] In some configurations, a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

[0018] In some configurations, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

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[0019] According to some variants, a urinal screen includes a frame. The frame can have: a first face; a second face opposite the first face; and a plurality of openings extending through the frame between the first face and the second face. In some embodiments, the urinal screen includes a plurality of first posts extending from the first face of the frame. The urinal screen can include a plurality of second posts extending from the second face of the frame. In some embodiments, the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface. In some case, the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

[0020] In some configurations, each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

[0021] In some configurations, the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface.

[0022] According to some variants, a urinal screen includes a frame. The frame can include: a first face; a second face opposite the first face; and a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners. In some embodiments, the urinal screen includes a plurality of first posts extending from away from the first face, each of the plurality of first posts connected to a side or corner of the plurality of interconnected cells. In some embodiments, the urinal screen include a plurality of second posts extending away from the second face of the frame, each of the plurality of second posts connected to a side or corner of the plurality of interconnected cells. In some cases each of the interconnected cells shares at least one side and at least one corner with another interconnected cell.

[0023] In some configurations, the plurality of interconnected cells form a tessellation.

[0024] In some configurations, a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] The present inventions are described with reference to the accompanying drawings, in which like reference characters reference like elements, and wherein:

[0026] Figure 1 is a perspective view of an embodiment of a urinal screen;

[0027] Figure 2 is a top view of the urinal screen of Figure 1;

[0028] Figure 3 is a front view of the urinal screen of Figure 1;

[0029] Figure 4 is a close up top view of the urinal screen of Figure 1;

[0030] Figure 5 is a close up top view of another embodiment of a urinal screen.

DETAILED DESCRIPTION OF THE INVENTIONS

[0031] An embodiment of a urinal screen 10 is illustrated in Figures 1-2. The urinal screen 10 can be sized and shaped to fit into a urinal, toilet, or other bathroom appliance. As illustrated, the urinal screen 10 can include a frame 14. The frame 14 can be sized and shaped to fit over all or a portion of a drain of a toilet or urinal. The frame 14 can define a plurality of openings 18 through a thickness of the frame 14. In some embodiments, the urinal screen 10 includes a plurality of posts or structural supports 22 extending from one or more surfaces of the frame 14.

[0032] In some embodiments, the screen 10 has a polygonal, elliptical, circular, or other overall shape. For example, as illustrated in Figure 2, the screen 10 can have a generally hexagonal shape, though many other shapes are contemplated (e.g., rectangles, pentagons, triangles, circles, or some combination thereof). In some embodiments, the screen 10 is shaped to fit a particular urinal or toilet.

[0033] The frame 14 and/or posts 22 can be constructed from a polymeric or solid material. For example, the frame 14 and/or posts 22 can be constructed using a 3D printer. In some cases, additives are added to the material of the frame 14 and/or posts 22. Additives can include, for example, bacteria and/or odor neutralizers, silver ions, and other additives or combinations of additives. One method of manufacturing an embodiment of the urinal screen 10 can include providing plastic or EVA material, which may have a melting point of not greater than 250°F, loading the plastic or EVA with at least 15% to about 75% by weight of fragrance material to produce a fragranced plastic or EVA, loading the fragrance at a stage conducted at temperatures such that the fragranced plastic or EVA is from at least 15% by weight fragrance upon completion of the loading stage, and molding the fragranced plastic or EVA into a urinal

screen, sized and shaped to be disposed in a urinal, forming openings 18 in the frame 14, and forming posts 22 extending from the frame 14.

[0034] The openings 18 can have various shapes, including, but not limited to, polygons (e.g., triangles, rectangles, pentagons, hexagons, etc.), ellipses, and/or some combination thereof. In some embodiments, each of the openings 18 has a substantially identical shape. In some embodiments, one or more of the openings 18 has a different shape from one or more of the other openings.

[0035] The openings 18 can occupy a large percentage of the overall surface area of the frame 14 as viewed in Figure 2. For example, the openings 18 can occupy more than 1/8, more than 2/9, more than 1/3, more than 1/4, more than 3/8, more than 1/2, more than 5/8, more than 2/3, and/or more than 3/4 of the overall surface area of the frame 14 as viewed in Figure 2. Utilizing a large number of openings 18 can reduce the overall weight of the urinal screen 10.

[0036] A top surface (e.g., the first surface 26) of the frame 14 can lie on a first plane when the urinal screen 10 is set on a flat surface. In some cases, a bottom surface (e.g., the second surface 30) of the frame 14 can lie on a second plane when the urinal screen is set on a flat surface. In some embodiments, a maximum cross-sectional area of the frame 14 (e.g., the area not occupied by openings 18), as measured on a frame plane through the frame and parallel to the first and/or second planes is less than 1/2, less than 1/4, less than 1/5, less than 1/6, less than 1/7, less than 1/8, less than 1/9, less than 1/10, less than 1/12, less than 1/15, and/or less than 1/20 of the area defined by the outer perimeter of the frame as measured in the plane. Many variations are possible

[0037] As illustrated in Figure 2 and 3, one or more of the openings 18 (e.g., cells) can have a perimeter which includes a plurality of sides (e.g., braces) 42 and corners 46. In some cases, all or a portion of the frame 14 forms a tessellation of openings 18 wherein a plurality of the sides 42 of the openings 18 are shared between two or more openings 18. In some embodiments, each of the openings 18 shares at least one side and at least one corner with another opening.

[0038] In some cases, the sides 42 and/or corners 46 of the openings 18 have contoured (e.g., convex) upper and/or lower surfaces. The contoured surfaces of the sides 42 and corners 46 can deflect fluid (e.g., urine) to reduce splash in the urinal, toilet, or other environment in which the urinal screen 10 is installed.

[0039] In some embodiments, as illustrated in Figures 1 and 2, portions of the frame 14 include one or more solid or closed portions between or surrounding the openings 18. For example, the frame 14 can include one or more solid cells 19 positioned between and/or adjacent the openings 18 of the frame 14. The solid cells 19 can provide a surface area on which various letters, numbers, symbols, trademarks, and/or other visual features may be placed. For example, advertisements, installation instructions, date features, expiration dates, and/or other features may be included on the solid cells 19. In some embodiments, the frame 14 includes one or more intermediate solid cells 20 and/or large solid cells 15 for placement of larger/more complex visual features. For example, the intermediate solid cells 20 can occupy an area greater than or equal to 2, 3, 4, 5, and/or 6 openings 18. In some embodiments, the large solid cell 15 can occupy an area greater than or equal to 10 openings 18. Many variations are possible. In some embodiments, the one or more solid or closed portions facilitate easier removal of the screen 10 from a mold. In some cases, utilizing solid portions increases an amount of fragrance that can be embedded, coated, injected, or otherwise associated with the screen 10.

[0040] In some embodiments, the posts 22 extend from the corners 46 of the frame forming openings 18. Figure 4 illustrates an embodiment of a screen 10' wherein the posts 22' extend from the sides 42' (e.g., the midpoints of the sides 42') of the portions of the frame forming the openings 18' of the frame 14'. In some embodiments, posts 22 extend from both the portions of the fame forming the corners 46 and the portions of the frame forming the sides 42 or from some combination thereof. In some embodiments, posts 22 extend from the portions of the frame forming the corners 46 of the openings 18 on one side of the frame 14 (e.g., the first side 26, as shown in Figure 5) and from the portions of the frame forming the sides 42 of the openings 18 on the other side of the frame 14 (e.g., the second side 30).

[0041] As illustrated in Figure 5, the posts 22 can extend from a first surface 26 of the frame 14. In some embodiments, posts 22 extend from both the first surface 26 of the frame 14 and a second surface 30 of the frame 14. For example, a first plurality of posts 22a can extend from the first surface 26 of the frame 14 and a second plurality of posts 22b can extend from the second surface 30 of the frame 14. Each of the posts in the first plurality of posts 22a can be substantially identical to the each of the posts in the second plurality of posts 22b. For example, each of the posts can have the same height, width and/or overall shape.

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[0042] In some embodiments, at least half, at least 3/4, at least 1/5, at least 2/3, at least 1/3, at least 9/10, at least 4/5 and/or at least 1/10 of the first plurality of posts 22a have a same size and shape as at least half, at least 3/4, at least 1/5, at least 2/3, at least 1/3, at least 9/10, at least 4/5 and/or at least 1/10 of the second plurality of posts 22b. In some embodiments, one or more of the posts in the first plurality of posts 22a has a different shape and/or height than one or more of the posts in the second plurality of posts 22b. In some embodiments, the first plurality of posts 22a and/or the second plurality of posts 22b have a plurality of heights. For example, a percentage (e.g., 25%, 50%, 75% or some other percentage) of the posts 22 can be shorter than the remaining posts as measured from the first or second surfaces 26, 30 of the frame 14. In some embodiments, at least 4/5, at least 3/5, at least 1/2, and/or at least 1/4 of the posts 22 have a height differing from the remaining posts 22. In some embodiments, one or more of the posts 22 is at least 1/5, at least 1/10, at least 1/8, at least 1/4, and/or at least 1/3 shorter than one or more of the other posts 22. In some cases, each post is at least 1/5 shorter, at least 1/10 shorter, at least 1/8 shorter, at least 1/4 shorter, at least 1/3 shorter, at least 1/2 taller, at least 1/4 taller, at least 1/8 taller, at least 1/10 taller, and/or at least 1/16 taller than at least one of the 3 closest posts 22, at least one of the 5 closest posts 22, at least one of the 7 closest posts 22, at least one of the 9 closest posts 22, at least one of the 10 closest posts 22, at least one of the 12 closest posts 22, and/or at least one of the 15 closest posts 22. In some embodiments, shortening a percentage of the posts 22 can reduce the likelihood that debris is caught in the urinal screen 10. The posts 22 can extend perpendicularly from the frame 14 (e.g., from the first or second surfaces 26, 30 of the frame 14). In some embodiments, one or more of the posts 22 extends from the frame 14 at a non-perpendicular angle.

[0043] The frame 14 can have a generally planar or flat shape. In some embodiments, the frame 14 is curved or otherwise shaped in non-planar fashion. For example, the frame 14 can be molded in a non-planar shape to match the contours of a urinal or toilet.

[0044] The frame 14 can have a frame thickness 34 (e.g., a distance between the first and second surfaces 26, 30 of the frame 14). The frame thickness 34 can be uniform across the entire frame 14 or can vary in certain portions of the frame 14. An overall thickness 38 of the urinal screen 10 can be measured from a tip of the tallest post 22 extending from the first surface 26 of the frame 14 to a tip of the tallest post 22 extending from the second surface 30 of the fame 14 as measured perpendicularly from the first and second surfaces 26, 30. In some cases,

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wherein the frame 14 is not planar/flat, the overall thickness 38 of the urinal screen 10 can be determined via the tips of the posts 22 as measured perpendicularly to a tangent plane of the first surface 26 of the frame 14 at a point on the frame 14 where the thicknesses 34, 38 are being measured.

[0045] In some embodiments, the frame thickness 34 at a given position on the frame 14 is less than or equal to approximately 1/2 of the overall screen thickness 38 as measured perpendicularly to the first surface 26 of the frame 14 at the given position. In some embodiments, the frame thickness 34 is less than or equal to 2/3, less than or equal to 5/8, less than or equal to 3/8, less than or equal to 1/3, less than or equal to 1/4, less than or equal to 2/9, less than or equal to 1/8, less than or equal to 1/10, less than or equal to 1/16, and/or less than or equal to 1/32 of the overall screen thickness 38. Use of a thin frame 14 can reduce the overall weight of the urinal screen 10.

[0046] In some embodiments, the urinal screen 10 is configured such that a plurality of posts 22 space the frame 14 from the installation surface of a urinal or other fixture onto which the urinal screen 10 is installed. The posts 22 space the frame 14 from the installation surface independent from the orientation of the urinal screen 10. For example, the second plurality of posts 22b can form a base of the urinal screen 10 and can space the frame 14 from the installation surface when the screen 10 is installed with the second surface 30 of the frame 14 facing the installation surface. On the other hand, the first plurality of posts 22a can form a base of the urinal screen 10 and can space the frame 14 from the installation surface when the screen 10 is installed with the first surface 26 of the frame facing the installation surface. In some embodiments, the posts 22 space the frame 14 from the installation surface by at least 1/3 of the overall thickness 38 of the urinal screen 10. In some embodiments, the posts 22 space the frame 14 from the installation surface by at least 1/8, at least 1/7, at least 1/6, at least 1/5, at least 1/4, at least 3/8, and/or by at least 4/9 of the overall thickness 38 of the urinal screen 10.

[0047] Spacing the frame 14 from the installation surface can reduce the likelihood that the openings 18 are clogged by debris. In some embodiments, the posts 22 positioned between the frame 14 and the installation surface can reduce splashing in the urinal by deflecting urine or other fluids which pass between the frame 14 and the installation surface (e.g., fluid that passes through the openings 18 or around the perimeter of the frame 14).

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[0048] For expository purposes, the term "horizontal" as used herein is defined as a plane parallel to the plane or surface of the floor of the area in which the system being described is used or the method being described is performed, regardless of its orientation. The term "floor" floor can be interchanged with the term "ground." The term "vertical" refers to a direction perpendicular to the horizontal as just defined. Terms such as "above," "below," "bottom," "top," "side," "higher," "lower," "upper," "over," and "under," are defined with respect to the horizontal plane.

[0049] As used herein, the terms "attached," "connected," "mated," and other such relational terms should be construed, unless otherwise noted, to include removable, moveable, fixed, adjustable, and/or releasable connections or attachments. The connections/attachments can include direct connections and/or connections having intermediate structure between the two components discussed.

[0050] The terms "approximately", "about", "generally" and "substantially" as used herein represent an amount close to the stated amount that still performs a desired function or achieves a desired result. For example, the terms "approximately", "about", "generally," and "substantially" may refer to an amount that is within less than 10% of the stated amount.

[0051] While the preferred embodiments of the present inventions have been described above, it should be understood that they have been presented by way of example only, and not of limitation. It will be apparent to persons skilled in the relevant art that various changes in form and detail can be made therein without departing from the spirit and scope of the inventions. Thus the present inventions should not be limited by the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents. Furthermore, while certain advantages of the inventions have been described herein, it is to be understood that not necessarily all such advantages may be achieved in accordance with any particular embodiment of the inventions. Thus, for example, those skilled in the art will recognize that the inventions may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other advantages as may be taught or suggested herein.

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WHAT IS CLAIMED IS:

1. A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein a plurality of ends of the plurality of second posts form a base upon which the urinal screen rests when the plurality of first posts point away from a surface upon which the urinal screen is set; and

wherein at least half of the plurality of first posts are a same size and shape as at least half of the plurality of second posts.

2. The urinal screen of claim 1, wherein each of the openings is defined by a polygonal perimeter structure.

3. The urinal screen of claim 1, wherein each opening is defined by a perimeter structure having plurality of braces and corners.

4. The urinal screen of claim 3, wherein each of plurality of first posts extends from a corner of a perimeter structure of one or more of the plurality of openings.

5. The urinal screen of claim 3, wherein each of plurality of second posts extends from a midpoint of a brace of a perimeter structure of one or more of the plurality of openings.

6. The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the perimeter structure defining the openings.

7. The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

8. The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from each of the braces of the openings and wherein at least one of the plurality of first posts extends from each of the corners of the perimeter structure defining the openings.

9. The urinal screen of claim 3, wherein at least one of the plurality of second posts extends from a brace or corner of the perimeter structure defining each opening.

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10. The urinal screen of claim 3, wherein at least one of the plurality of first posts extends from a brace or corner of the perimeter structure defining each opening.

11. The urinal screen of claim 1, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one eighth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

12. The urinal screen of claim 1, wherein, when the urinal screen is set upon a surface such that the first or second face of the frame is oriented toward the surface, the frame is positioned away from the surface by at least one third of a thickness of the urinal screen as measured perpendicular to the first face of the frame.

13. A urinal screen comprising:

a frame having:

a first face;

a second face opposite the first face; and

a plurality of openings extending through the frame between the first face and the second face;

a plurality of first posts extending from the first face of the frame; and

a plurality of second posts extending from the second face of the frame;

wherein the plurality of openings occupy at least half of a surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

14. The urinal screen of claim 13, wherein the plurality of openings occupy at least 75% of the surface area of the frame as observed perpendicular to the first face of the frame when the frame is set on a flat surface.

15. The urinal screen of claim 13, wherein each of the plurality of first posts is substantially identical to one or more of the plurality of second posts.

16. The urinal screen of claim 13, wherein the perimeter structures of the plurality of openings occupy less than one fifth of a surface area of the frame as measured parallel to a first plane face of the frame, wherein the first plane face of the frame is a plane passing through the frame when the frame is set on a flat horizontal surface.

17. A urinal screen comprising:

a frame having:

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a first face;

a second face opposite the first face; and

a plurality of interconnected cells, each cell having a polygonal shape with a plurality of sides and corners;

a plurality of first posts extending from away from the first face, each of the plurality of first posts connected to a side or corner of the plurality of interconnected cells; and

a plurality of second posts extending away from the second face of the frame, each of the plurality of second posts connected to a side or corner of the plurality of interconnected cells;

wherein each of the interconnected cells shares at least one side and at least one corner with another interconnected cell.

18. The urinal screen of claim 17, wherein the plurality of interconnected cells form a tessellation.

19. The urinal screen of claim 17, wherein a thickness of the frame in a direction perpendicular to the first face of the frame is less than one fourth of an overall thickness of the urinal screen in the direction perpendicular to the first face of the frame.

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URINAL SCREENS

ABSTRACT OF THE DISCLOSURE

A urinal assembly having a frame and a plurality of posts or posts extending from the frame. The frame can include a plurality of openings. The openings can be defined by a plurality of sides and corners. The posts can extend from the corners and/or from the sides of the openings. In some embodiments, posts extend from a first face and a second face of the frame.

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First Named Inventor/Applicant Name:	Douglas S. Brown
Filer:	Edward A. Schlatter/Thomas Chmura
Attorney Docket Number:	FRESHPR.061A

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Miscellaneous-Filing:				
Late Filing Fee for Oath or Declaration	2051	1	70	70
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ADS_FRESHPR061A.PDF	1818978 47aacb6cfc637c58a2430c72b00766e79aaf973b	no	7
Warnings:					
Information:					
2	Drawings-only black and white line drawings	Drawings_FRESHPR061A.PDF	549070 a07246d1a84d9dfb2b9ddfa0a8172091f7b9f0b0	no	5
Warnings:					
Information:					
3		App_FRESHPR061A.pdf	127335 0bf91fea6f0b4166514f85461e36f59d07b53931	yes	14

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	10
Claims	11	13
Abstract	14	14

Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	36529 ed740df975da9cb7242b127adfda26a8bf1e7524	no	2
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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

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