



- (51) International Patent Classification:
A61L 2/18 (2006.01) A61L 2/232 (2006.01)
C11D 17/04 (2006.01)
- (21) International Application Number: PCT/EP2013/059755
- (22) International Filing Date: 11 May 2013 (11.05.2013)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 1208282.2 11 May 2012 (11.05.2012) GB
- (71) Applicant: SURFACESKINS LIMITED [GB/GB];
Centre For Technical Textiles, University Of Leeds, Leeds,
Yorkshire LS29JT (GB).
- (72) Inventors: RUSSELL, Stephen John; 41 Hookstone
Oval, Harrogate, Yorkshire HG2 8QE (GB). SCOTT
HARDEN, Simon Geoffrey John; 22 Hawthorn Gardens,
Kenton, Newcastle Upon Tyne, Tyne and Wear NE3 3DE
(GB). WALKER, Adam David; 22 Walton Chase, Thorp
Arch, Wetherby, Yorkshire LS23 7RA (GB). FOWLER,
Christopher Edward; 298 Tadcaster Road, York, York-
shire YO24 1ET (GB).

- (74) Agent: WHITE, Nicholas; Tangible IP Ltd, Bramley
House, 22 Otley Road, Harrogate, Yorkshire HG20DN
(GB).
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: DELIVERY DEVICE

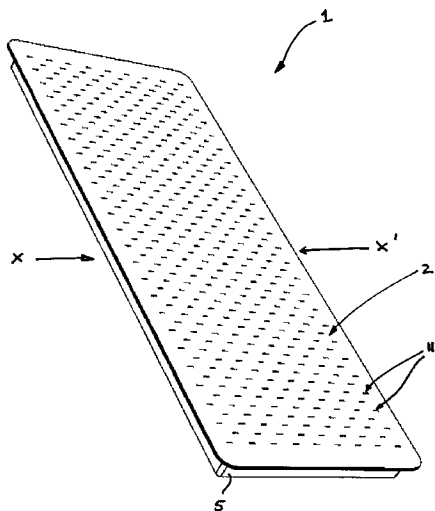


FIGURE 1

(57) Abstract: A delivery device is described for intermittently delivering materials such as liquids or gels over a sustained period of time to a surface in a controlled way. The surface mountable delivery device is capable of delivering, for example, an antimicrobial agent to protect surfaces from microbial contamination and/or to disinfect surfaces, e.g. door handles, push plates, hand rails, etc. as an aid in preventing and/or hindering the spread of infectious agents. In one arrangement the device utilises a foam based reservoir in combination with a nonwoven fabric wicking layer and an elastomeric liquid delivery contact layer having valve like pore and/or slits; the combination provides for control of material delivery and longevity for the device in use.





Published:

(88) Date of publication of the international search report:

3 January 2014

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2013/059755

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-16, 43, 44, 46, 51

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2013/059755

A. CLASSIFICATION OF SUBJECT MATTER
INV. A61L2/18 C11D17/04 A61L2/232
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)
A61L C11D A61F A61K E05B
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.
X	US 2007/049894 A1 (FITTS JAMES R JR [US] ET AL FITTS JR JAMES R [US] ET AL) 1 March 2007 (2007-03-01) paragraphs [0008] - [0011], [0014], [0031] - [0041], [0052] - [0055], [0059], [0070] - [0073], [0075] - [0082], [0085], [0088]; claims; figures 1-3	1-16,43, 44,46,51
X	US 2011/111000 A1 (RUSSELL STEPHEN JOHN [GB] ET AL) 12 May 2011 (2011-05-12) cited in the application paragraphs [0017] - [0021], [0023], [0028], [0029], [0034], [0035], [0066] - [0070]; claims; figures ----- -/--	1-16,44, 46

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 27 August 2013	Date of mailing of the international search report 20/11/2013
---	--

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

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2013/059755

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/022427 A1 (CURRO JOHN JOSEPH [US] ET AL) 21 February 2002 (2002-02-21) paragraphs [0002], [0030], [0031], [0037], [0038], [0045], [0046], [0048] - [0053], [0062], [0066], [0067], [0069], [0072], [0073], [0091], [0092] paragraphs [0095], [0105]; claims; figures -----	1,3-16, 44

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/EP2013/059755

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2007049894	A1	01-03-2007	AU 2006285336 A1	08-03-2007
			BR PI0615380 A2	17-05-2011
			CN 101258025 A	03-09-2008
			EP 1919697 A1	14-05-2008
			KR 20080039448 A	07-05-2008
			US 2007049894 A1	01-03-2007
			WO 2007027260 A1	08-03-2007
US 2011111000	A1	12-05-2011	EP 2029353 A1	04-03-2009
			JP 2009538241 A	05-11-2009
			US 2011111000 A1	12-05-2011
			WO 2007135424 A1	29-11-2007
US 2002022427	A1	21-02-2002	CA 2448217 A1	03-01-2003
			CN 1642501 A	20-07-2005
			EP 1397097 A1	17-03-2004
			JP 4173804 B2	29-10-2008
			JP 2005511413 A	28-04-2005
			US 2002022427 A1	21-02-2002
			WO 03000162 A1	03-01-2003

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16, 43, 44, 46, 51

Delivery device comprising a reservoir in communication with an elastic liquid delivery layer having a plurality of closed slits and/or pores.

2. claims: 17-26

Delivery device comprising a reservoir of porous material in communication with a liquid delivery layer, wherein the reservoir material has a compression modulus within the range of 150 to 650 N m⁻² Delta mm⁻¹.

3. claims: 27-42, 45

Delivery device, comprising a reservoir in communication with a wicking layer separating the reservoir from a liquid delivery layer in communication with the wicking layer.

4. claims: 47-49

Method for printing onto an elastic liquid delivery layer comprising pre-heating the layer at a temperature within the range of 150 to 180°C and then cooling the pre-heated film prior to printing.

5. claims: 50, 52, 53

Elastomeric film, its method of manufacture and delivery device comprising the same.
