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- (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, 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, 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.

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**Declarations under Rule 4.17:**

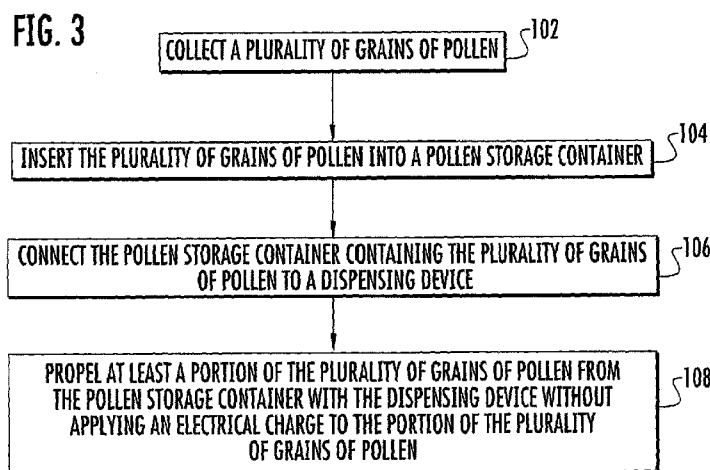
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

**Published:**

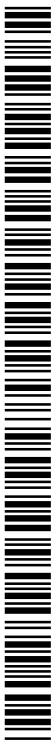
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

- (88) **Date of publication of the international search report:**  
3 January 2013

(54) **Title:** APPARATUS AND METHOD FOR DISPENSING GRAINS OF POLLEN



(57) **Abstract:** An apparatus configured for dispensing grains of pollen may include a pollen storage container, a flow source configured to dispense the grains of pollen from the pollen storage container, and a control mechanism configured to selectively activate the flow source. The apparatus may or may not apply an electrical charge to the grains of pollen. Related methods may include steps of collecting pollen, inserting the pollen into a pollen storage container, connecting the pollen storage container to a dispensing device such as the above-described apparatus, and dispensing the pollen from the pollen storage container with the dispensing device. Known grains of pollen may be dispensed to create predetermined gamete crosses with known plants. Further, an outlet of a fan which dispenses the pollen from the pollen storage container or other parts of the dispensing device may be cleaned when swapping the pollen storage container to prevent cross-contamination.



## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2012/029743****A. CLASSIFICATION OF SUBJECT MATTER***A01H 1/02(2006.01)i, A01H 1/00(2006.01)i*

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)

A01H 1/02; A01H 1/00; A01G 7/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: pollen, pollinate, electrical charge, pollen storage container, dispensing device, fan, flow rate, control mechanism

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	KR 10-2010-0006464 A (LIM, H.Y.), 19 January 2010 See claims 1,3; figures. 2-3 and paragraphs [0033],[0051]	1-8, 11-12, 16-18 9-10, 13-15, 19-21
Y A	US 04751791 A (AL-RAWI; OMAR M. A.) 21 June 1988 See figures 4-8; column 3 lines 12-30 and column 4 lines 33-54	1-8, 11-12, 16-18 9-10, 13-15, 19-21
A	KR 10-2004-0037515 A (MITSUWA CO., LTD. et al.), 7 May 2004 See figures 1-6; pages. 4-5	1-21
A	KR 20-0196753 Y1 (NAM, K.J.), 15 September 2000 See figures. 1-4 and pages. 3-4	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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

29 OCTOBER 2012 (29.10.2012)

Date of mailing of the international search report

**30 OCTOBER 2012 (30.10.2012)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
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City, 302-701, Republic of Korea

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/029743**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 10-2010-0006464 A	19.01.2010	None	
US 04751791 A	21.06.1988	None	
KR 10-2004-0037515 A	07.05.2004	None	
KR 20-0196753 Y1	15.09.2000	None	