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(25) 申请语言: 中文

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(71) 申请人 (对除美国外的所有指定国): 华为技术有限公司 (HUAWEI TECHNOLOGIES CO., LTD.)
[CN/CN]; 中国广东省深圳市龙岗区坂田华为总部办公楼, Guangdong 518129 (CN)。

(72) 发明人: 及

(75) 发明人/申请人 (仅对美国): 李英涛 (LI, Yingtao)
[CN/CN]; 中国广东省深圳市龙岗区坂田华为总部办公楼, Guangdong 518129 (CN)。

(74) 代理人: 深圳中一专利商标事务所 (SHENZHEN ZHONGYI PATENT AND TRADEMARK OFFICE);
中国广东省深圳市福田区深圳中路 1014 号老特区

报社四楼西区 (5 号信箱), Guangdong 518028 (CN)。

(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): 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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[见续页]

(54) Title: METHOD AND DEVICE FOR CONTACT-FREE CONTROL BY HAND GESTURE

(54) 发明名称: 一种非接触式手势控制方法及装置

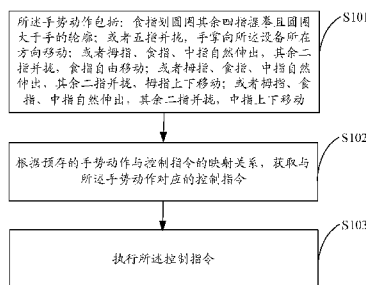


图 1 / Fig. 1

S101 THE HAND GESTURE INCLUDES: DRAWING A CIRCLE BY AN INDEX FINGER WITH THE REMAINING FOUR FINGERS CLENCHED INTO A FIST AND WITH THE CIRCLE BEING LARGER THAN THE CONTOUR OF THE HAND; OR KEEPING THE FIVE STRETCHED FINGERS TOGETHER WITH THE PALM MOVING TOWARDS THE DEVICE; OR STRETCHING THE THUMB, INDEX FINGER AND MIDDLE FINGER OUT IN A NATURAL WAY WITH THE REMAINING TWO FINGERS KEPT TOGETHER AND THE INDEX FINGER MOVING FREELY; OR STRETCHING THE THUMB, INDEX FINGER AND MIDDLE FINGER OUT IN A NATURAL WAY WITH THE REMAINING TWO FINGERS KEPT TOGETHER AND THE THUMB MOVING UP AND DOWN; OR STRETCHING THE THUMB, INDEX FINGER AND MIDDLE FINGER OUT IN A NATURAL WAY WITH THE REMAINING TWO FINGERS KEPT TOGETHER AND THE MIDDLE FINGER MOVING UP AND DOWN
S102 ACQUIRING A CONTROL COMMAND CORRESPONDING TO THE HAND GESTURE ACCORDING TO PRE-STORED MAPPING RELATIONSHIPS BETWEEN HAND GESTURES AND CONTROL COMMANDS
S103 EXECUTING THE CONTROL COMMAND

(57) Abstract: The present invention is applicable in the technical field of human computer interaction, and provides a method and device for contact-free control by hand gestures. The method comprises: acquiring a hand gesture from a user; acquiring a control command corresponding to the hand gesture according to pre-stored mapping relationships between hand gestures and control commands; and executing the control command; wherein the hand gesture includes: drawing a circle by an index finger with the remaining four fingers clenched into a fist and with the circle being larger than the contour of the hand; or keeping the five stretched fingers together with the palm moving towards the device; or stretching the thumb, index finger and middle finger out in a natural way with the remaining two fingers kept together and the index finger moving freely; or stretching the thumb, index finger and middle finger out in a natural way with the remaining two fingers kept together and the thumb moving up and down; or stretching the thumb, index finger and middle finger out in a natural way with the remaining two fingers kept together and the middle finger moving up and down. The present invention effectively solves the problems in the prior art that there are too many hand gesture rules, making them difficult to learn and to memorize, and making the operation thereof complicated, thus leading to poor operation smoothness.

(57) 摘要:

[见续页]



WO 2012/126426 A3

**本国际公布:**

- 包括国际检索报告(条约第 21 条(3))。
- 在修改权利要求的期限届满之前进行, 在收到该修改后将重新公布(细则 48.2(h))。

— 根据申请人的请求, 在条约第 21 条(2)(a)所规定的期限届满之前进行。

(88) **国际检索报告公布日期:** 2013 年 4 月 25 日

本发明适用于人机交互技术领域, 提供了一种非接触式手势控制方法及装置, 所述方法包括: 获取用户的手势动作; 根据预存的手势动作与控制指令的映射关系, 获取与所述手势动作对应的控制指令; 执行所述控制指令; 所述手势动作包括: 食指划圆圈其余四指握拳且圆圈大于手的轮廓; 或者五指并拢, 手掌向所述设备所在方向移动; 或者拇指、食指、中指自然伸出, 其余二指并拢, 食指自由移动; 或者拇指、食指、中指自然伸出, 其余二指并拢, 拇指上下移动; 或者拇指、食指、中指自然伸出, 其余二指并拢, 中指上下移动。通过本发明, 可有效解决现有技术存在的手势规则太多, 难以学习和记忆以及操作复杂, 操作流畅性差的问题。

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2012/075798

A. CLASSIFICATION OF SUBJECT MATTER

G06F 3/01 (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)

IPC: G06F 3/-; G06T

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)

CNPAT, CNKI, WPI, EPODOC, IEEE: no w contact+, non w contact+, contactless, gesture?, hand 2d sign???, map+, match+, order+, command+?, instruct+.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 102339125 A (SHARP KK) 01 February 2012 (01.02.2012) description, paragraphs [0032]-[0047], and claims 1-5	1-15
A	CN 102053702 A (UNIVERSITY NANJING AERONAUTICS AND ASTRONAUTIC) 11 May 2011 (11.05.2011) the whole document	1-15
A	US 2011/0096954 A1 (ELLIPTIC LABORATORIES AS) 28 April 2011 (28.04.2011) the whole document	1-15

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

☒ See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search 04 February 2012 (04.02.2012)	Date of mailing of the international search report 07 March 2013 (07.03.2013)
Name and mailing address of the ISA State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451	Authorized officer JI, Zhangyuan Telephone No. (86-10) 62413659

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2012/075798

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 102339125 A	01.02.2012	WO 2012011614 A1	26.01.2012
CN 102053702 A	11.05.2011	None	
US 2011/0096954 A1	28.04.2011	WO 2009115799 A1	24.09.2009
		AU 2009227717 A1	24.09.2009
		EP 2281231 A1	09.02.2011
		CA 2718680 A1	24.09.2009
		CN 102027440 A	20.04.2011
		JP 2011517584 A	16.06.2011

国际检索报告

国际申请号
PCT/CN2012/075798

A. 主题的分类

G06F 3/01 (2006.01) i

按照国际专利分类(IPC)或者同时按照国家分类和 IPC 两种分类

B. 检索领域

检索的最低限度文献(标明分类系统和分类号)

IPC: G06F3/-; G06T

包含在检索领域中的除最低限度文献以外的检索文献

在国际检索时查阅的电子数据库(数据库的名称, 和使用的检索词(如使用))

CNPAT, CNKI, WPI, EPODOC, IEEE: 非接触, 手势, 控制, 映射, 匹配, 动作, 命令, 指令, no w contact+, non w contact+, contactless, gesture?, hand 2d sign???, map+, match+, order+, command?, instruct+.

C. 相关文件

类 型*	引用文件, 必要时, 指明相关段落	相关的权利要求
X	CN102339125A(夏普株式会社) 01.2 月 2012(01.02.2012) 说明书第 [0032]-[0047]段、权利要求 1-5	1-15
A	CN102053702A(南京航空航天大学) 11.5 月 2011(11.05.2011) 全文	1-15
A	US2011/0096954A1(ELLIPTIC LABORATORIES AS) 28.4 月 2011(28.04.2011) 全文	1-15

☐ 其余文件在 C 栏的续页中列出。

☒ 见同族专利附件。

* 引用文件的具体类型:

“A” 认为不特别相关的表示了现有技术一般状态的文件

“E” 在国际申请日的当天或之后公布的在先申请或专利

“L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件(如具体说明的)

“O” 涉及口头公开、使用、展览或其他方式公开的文件

“P” 公布日先于国际申请日但迟于所要求的优先权日的文件

“T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件

“X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性

“Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性

“&” 同族专利的文件

国际检索实际完成的日期
04.2 月 2012(04.02.2012)

国际检索报告邮寄日期
07.3 月 2013 (07.03.2013)

ISA/CN 的名称和邮寄地址:
中华人民共和国国家知识产权局
中国北京市海淀区蓟门桥西土城路 6 号 100088
传真号: (86-10)62019451

受权官员

吉张媛
电话号码: (86-10) **62413659**

国际检索报告
关于同族专利的信息

国际申请号
PCT/CN2012/075798

检索报告中引用的 专利文件	公布日期	同族专利	公布日期
CN102339125A	01.02.2012	WO2012011614A1	26.01.2012
CN102053702A	11.05.2011	无	
US2011/0096954A1	28.04.2011	WO2009115799A1	24.09.2009
		AU2009227717A1	24.09.2009
		EP2281231A1	09.02.2011
		CA2718680A1	24.09.2009
		CN102027440A	20.04.2011
		JP2011517584A	16.06.2011