

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

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# PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **29 OCT 2018**

Applicant's or agent's file reference  
BABA008503WO

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/US18/48771

International filing date (day/month/year)

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Priority date (day/month/year)

31 August 2017 (31.08.2017)

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

IPC - H04B 10/116; G07C 9/00; H04L 9/32 (2018.01)

CPC - B62H 5/00; H04B 10/116; H04L 9/3226; G07C 9/00174

Applicant **ALIBABA GROUP HOLDING LIMITED**

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US  
Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450  
Facsimile No. 571-273-8300

Date of completion of this opinion

11 October 2018 (11.10.2018)

Authorized officer

Shane Thomas

PCT Helpdesk: 571-272-4300  
PCT OSP: 571-272-7774

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## Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
  - the international application in the language in which it was filed.
  - a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2.  This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3.  With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
  - a.  forming part of the international application as filed:
    - in the form of an Annex C/ST.25 text file.
    - on paper or in the form of an image file.
  - b.  furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
  - c.  furnished subsequent to the international filing date for the purposes of international search only:
    - in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
    - on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).
4.  In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims	<u>2-7, 9-12, 18-20</u>	YES
	Claims	<u>1, 8, 14-17</u>	NO
Inventive step (IS)	Claims	<u>2-7, 9-12</u>	YES
	Claims	<u>1, 8, 14-20</u>	NO
Industrial applicability (IA)	Claims	<u>1-12, 14-20</u>	YES
	Claims	<u>NONE</u>	NO

## 2. Citations and explanations:

Claims 1, 8 and 14-17 lack novelty under PCT Article 33(2) as being anticipated by CN 107070554 A to GUANGDONG HUTLON TECH CO LTD (hereinafter "Guangdong").

As per claims 1 and 16, Guangdong discloses an unlocking system comprising (a system for unlocking lock, abstract): a non-transitory computer-readable storage medium having embedded therein program instructions, which when executed by a processor causes the processor to execute a method of unlocking an object, the method comprising (a server (computer readable medium and processor) performing searching and comparisons (program instruction) for unlocking a lock, paragraphs [0040]-[0050]): a mobile computing device that obtains unlocking information (the unlocking password is input in a mobile terminal, abstract), converts the unlocking information into a flashing sequence (converting the unlocking password into data for controlling the flicking (flashing) of a flashlight, abstract), and controls a light-emitting component of the mobile computing device to output the flashing sequence as a flashing light sequence (controlling the flickering of a flashlight to correspond to the unlocking password, abstract); a flash detecting device that detects the flashing light sequence, and outputs a flashing signal that varies in response to the flashing light sequence (an optical signal receiving module receives the light emitted from the mobile terminal and converts it into a binary code, claim 4); and an unlocking device coupled to the flash detecting device to receive the flashing signal (a server receiving the input binary code, claim 4), extract a digital key from the flashing signal (converting the input binary code to a character string, claim 4), compare the digital key to a prestored digital key (comparing the input character string to the stored unlocking password, claim 4), and output an unlock signal when the digital key matches the prestored digital key (receiving an unlock instruction from the server when the character string and the unlocking password are the same, claim 4).

As per claim 8, Guangdong discloses an unlocking method, comprising (a method for unlocking lock, abstract): obtaining unlocking information (the unlocking password is input in a mobile terminal, abstract); converting the unlocking information into a flashing sequence (converting the unlocking password into data for controlling the flicking (flashing) of a flashlight, abstract); and controlling a light-emitting component to output the flashing sequence as a flashing light sequence (controlling the flickering of a flashlight to correspond to the unlocking password, abstract).

As per claim 14, Guangdong discloses the unlocking method according to claim 8. Guangdong additionally discloses further comprising detecting the flashing light sequence, and outputting a flashing signal that varies in response to the flashing light sequence (an optical signal receiving module receives the light emitted from the mobile terminal and converts it into a binary code, claim 4).

As per claim 15, Guangdong discloses the unlocking method according to claim 14. Guangdong additionally discloses further comprising receiving the flashing signal, extracting a digital key from the flashing signal (a server receiving the input binary code, claim 4), comparing the digital key to a pre-stored digital key, and outputting an unlock signal when the digital key matches the pre-stored digital key (receiving an unlock instruction from the server when the character string and the unlocking password are the same, claim 4).

As per claim 17, Guangdong discloses the medium according to claim 16. Guangdong additionally discloses wherein the method further comprises unlocking the object in response to the unlock signal (receiving an unlock instruction to unlock the lock of a door, abstract, paragraph [0002], claim 4).

Claims 18 lacks an inventive step under PCT Article 33(3) as being obvious over Guangdong in view of CN 201662606 U to SOLTEC BV (hereinafter "Soltec").

As per claim 18, Guangdong discloses the medium according to claim 17. Guangdong additionally discloses the flash-detecting device (an optical signal receiving module, claim 4); and the flashing signal (photosensitive resistor output converted into a binary code, paragraph [0047], claim 4). Guangdong does not disclose a solar cell; and a voltage change value output by the solar cell. Soltec discloses a solar cell (solar panel, abstract); and a voltage change value output by the solar cell (detecting the magnitude (change value) of output voltage generated by the solar panel, abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the medium of Guangdong to include a solar cell; and a voltage change value output by the solar cell as taught by Soltec, in order to gain the advantages of increasing scalability by allowing different types of light detectors and their associated outputs to be used in the flash detection system.

-\*\*\*-Continued Within the Next Supplemental Box-\*\*\*-

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**Box No. VII Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Claim 13 objected to under PCT Rule 66.2(a)(iii) as containing the following defect in the form or contents thereof:

There is no claim numbered thirteen (13), the numbering goes to twelve (12) followed by fourteen (14). For the purposes of clarity the numbering of claims 14-20 has remained the same.

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

\*\*\*-Continued from Box V: Citations and Explanations-\*\*\*

Claim 19 lacks an inventive step under PCT Article 33(3) as being obvious over Guangdong in view of US 2009/0206437 A1 to TAKEYAMA, T et al (hereinafter "Takeyama").

As per claim 19, Guangdong discloses the medium according to claim 17. Guangdong additionally discloses the flash-detecting device (an optical signal receiving module, claim 4); and the flashing signal (photosensitive resistor output converted into a binary code, paragraph [0047], claim 4). Guangdong does not disclose a photodiode; and a change value of a reverse output voltage output by the photodiode. Takeyama discloses a photodiode; and a change value of a reverse output voltage output by the photodiode (detecting a change in an output current of the photodiode occurring due to switching of the reverse voltage, abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the medium of Guangdong to include discloses a photodiode; and a change value of a reverse output voltage output by the photodiode as taught by Takeyama, in order to gain the advantages of increasing scalability by allowing different types of light detectors and their associated outputs to be used in the flash detection system.

Claim 20 lacks an inventive step under PCT Article 33(3) as being obvious over Guangdong in view of EP 2278579 A2 to SAMSUNG ELECTRONICS CO., LTD. (hereinafter "Samsung").

As per claim 20, Guangdong discloses the medium according to claim 17. Guangdong additionally discloses the flash-detecting device (an optical signal receiving module, claim 4); and the flashing signal (photosensitive resistor output converted into a binary code, paragraph [0047], claim 4). Guangdong does not disclose a camera; and a luminance change value detected by the camera. Samsung discloses a camera; and a luminance change value detected by the camera (the camera detects a change in ambient light luminance values, paragraphs [0038], [0041]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the medium of Guangdong to include a camera; and a luminance change value detected by the camera as taught by Samsung, in order to gain the advantages of increasing scalability by allowing different types of light detectors and their associated outputs to be used in the flash detection system.

Claims 2 and 9 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest wherein to obtain unlocking information, the mobile computing device to: obtain identification information of a to-be-unlocked object; send an unlocking request to a server the unlocking request including the identification information and user identity information; and receive the unlocking information from the server when the server determines that the unlocking request is legitimate based on the identification information and the user identity information.

In the closest prior art, Guangdong discloses sending an unlocking request to a server, the unlocking request including user identity information (the unlocking password and input binary code are sent to a server for unlocking control, claim 4); receive unlocking information from the server when the server determines that the unlocking request is legitimate based on the user identity information (receiving an unlock instruction from the server when the character string and the unlocking password are the same, claim 4).

In additional prior art, CN 104240356 A to BEIHAI HESI TECHNOLOGY CO LTD (hereinafter "Beihai") discloses obtain identification information of a to-be-unlocked object (reading an nth door identifier, abstract); and send an unlocking request to a server the unlocking request including the identification information and user identity information (the mutual information and the identifying information are sent to a server (the nth door identifier in the mutual information and the identity information of the user are sent to the server for release of the locking mechanism, abstract).

In additional prior art, CN 105957208 A to HEBEI CHIKAI TECH CO LTD (hereinafter "Hebei") discloses wherein to obtain unlocking information, the mobile computing device to (a smartphone flashlight emits a flash signal in which a password is embedded, the password is randomly generated, abstract); receive unlocking information from the server (the server app stores the password for unlocking which is accessed and converted by the mobile phone, paragraph [0119]).

Since Guangdong, Beihai, and Hebei fail to meet the prescribed claim language, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to have employed this system and method because the references taken solely, or in combination, fail to provide the required limitations, and modification of any complementary combination of the references of record would be impermissible and not provide any advantages over the present application. Guangdong discloses sending a password to a server for unlocking, however the unlocking information is not obtained through this process, it is instead input by a user at the beginning of the process; Guangdong also does not disclose obtaining an object identifier. Beihai discloses obtaining an object identifier, however the unlocking information is not obtained by sending this information to the server, instead the server uses this information to directly unlock a door. Hebei discloses the mobile terminal obtaining unlocking information from a server, but not using a request with identifiers.

Claims 3-7 and 10-12 meet the criteria set out in PCT Article 33(2)-(3), because they depend on claims 1 and 9, respectively.

Claims 1-12 and 14-20 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.