506152985 07/14/2020

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6199717

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------|----------------|
| SUHANG XU | 06/19/2020 |

RECEIVING PARTY DATA

| Name: | ALIBABA GROUP HOLDING LIMITED | |
|-------------------|---------------------------------|--|
| Street Address: | FOURTH FLOOR, ONE CAPITAL PLACE | |
| Internal Address: | PO BOX 847 | |
| City: | GRAND CAYMAN | |
| State/Country: | CAYMAN ISLANDS | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16570392 |

CORRESPONDENCE DATA

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| ATTORNEY DOCKET NUMBER: | AB1-0782US | |
|-------------------------|-----------------|--|
| NAME OF SUBMITTER: | AMANDA SASSER | |
| SIGNATURE: | /Amanda Sasser/ | |
| DATE SIGNED: | 07/14/2020 | |

Total Attachments: 3

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PATENT 506152985 REEL: 053205 FRAME: 0830

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| Serial Number |
|--|
| Filing Date |
| Inventorship |
| Attorney's Docket No |
| Client Docket No |
| Title: |
| PATENT ASSIGNMENT |
| PARTIES TO THE ASSIGNMENT |
| Assignor(s): |
| Suhang XU |
| c/o Alibaba Group Legal Department |
| 5/F, Building 3, No.969 West Wen Yi Road, |
| Yu Hang District, Hangzhou, China. 311121 |
| Assignee: |
| Alibaba Group Holding Limited |
| Fourth Floor, One Capital Place |
| P.O. Box 847 |
| Grand Cayman |
| Cayman Islands |
| AGREEMENT |
| WHEREAS, ASSIGNOR(S) (listed above) are inventor(s) of an invention entitled |
| "Key Encryption Methods, Apparatuses, and Systems" for which: |
| a provisional application for United States Letters Patent was filed on and |
| was given U.S. Serial Noand/or |
| 🛮 a foreign priority Chinese patent application was filed on 15 March 2017 and was |
| given CN Patent Application Serial No. 201710153405.2and/or |
| ☑ a PCT international application for was filed on 02 March 2018 and was given PCT |
| Serial No. PCT/CN2018/077817and/or |

Page 1 of 3

PATENT REEL: 053205 FRAME: 0831

Attorney Docket No. AB1-0782US Client Docket No. PCT10191US

☑ a non-provisional application for United States Letters Patent was:

∏ filed on 13 September 2019 and was given U.S. Serial No. 16/570,392; or filed concurrently herewith. Assignors hereby authorize and request ASSIGNEE's legal representatives, of Lee & Hayes, P.C., 601 W Riverside Ave, Suite 1400, Spokane, Washington 99201, who are associated with customer number 29150, to insert in the caption above the serial number and filing date of the patent application when known.

WHEREAS, Alibaba Group Holding Limited (hereinafter referred to as ASSIGNEE), a corporation of Cayman Islands having a place of business at Fourth Floor, One Capital Place, P.O. Box 847, Grand Cayman, Cayman Islands, is desirous of acquiring the entire right, title and interest in and to the invention and in and to any letters patent that may be granted therefore in the United States and in any and all foreign countries;

NOW, THEREFORE, in exchange for good and valuable consideration, the receipt of which is hereby acknowledged, ASSIGNOR(S) hereby sell, assign and transfer unto ASSIGNEE, the entire right, title and interest in and to said invention, said application and any and all letters patent which may be granted for said invention in the United States of America and its territorial possessions and in any and all foreign countries, and in any and all divisions, reissues and continuations thereof, including the right to file foreign applications directly in the name of ASSIGNEE and to claim priority rights deriving from said United States application to which said foreign applications are entitled by virtue of international convention, treaty or otherwise, said invention, application and all letters patent on said invention to be held and enjoyed by ASSIGNEE and its successors and assigns for their use and benefit and of their successors and assigns as fully and entirely as the same would have been held and enjoyed by ASSIGNOR(S) had this assignment, transfer and sale not been made. ASSIGNOR(S) hereby authorize and request the Commissioner of Patents and Trademarks to issue all letters patent on said invention to ASSIGNEE. ASSIGNOR(S) agree to execute all instruments and documents required for the making and prosecution of applications for United States and foreign letters

Page 2 of 3

patent on said invention, for litigation regarding said letters patent, or for the purpose of protecting title to said invention or letters patent therefore.

| 徐苏木之 | 黄睿 |
|----------------------------------|-----------------------------|
| Suhang XU | Witness Signature |
| 6/19/2020 Date (mm/ dd/ yyyy) | <u> </u> |
| | 6/19/2020 Date (mm/dd/yyyy) |