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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	9900-76021US11
First Named Inventor	Woo Chang CHUN
Title	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHO
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. ☐ **Applicant asserts small entity status.** See 37 CFR 1.27
3. ☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. ☑ **Specification** [*Total Pages* 49] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. ☑ **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 30]
6. **Inventor's Oath or Declaration** [*Total Pages* 3] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
7. ☑ **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   ☐ Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** (*if applicable, items a. – c. are required*)
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ACCOMPANYING APPLICATION PAPERS

10. ☐ **Assignment Papers** (cover sheet & document(s))
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11. ☐ **37 CFR 3.73(c) Statement** (*when there is an assignee*) ☑ **Power of Attorney**
12. ☐ **English Translation Document** (*if applicable*)
13. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
14. ☐ **Preliminary Amendment**
15. ☐ **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. ☐ **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. ☐ **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. ☑ **Other:** TrackOne Request

Note*: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

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Name (Print/Type)	David K. Purks	Registration No. (Attorney/Agent)	40,133

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MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Application No. 15/931,006, filed May 13, 2020, which is a continuation of U.S. Application No. 15/888,981, filed February 5, 2018, which is a continuation of U.S. Application No. 14/561,090, filed December 4, 2014, now U.S. Patent No. 9,888,168, which is a continuation of U.S. Application No. 13/174,549, filed June 30, 2011, now U.S. Patent No. 8,913,176, which claims the benefit of earlier filing date and right of priority to Korean Application No. 10-2010-0098558, filed October 11, 2010, and which is a continuation-in-part of U.S. Application No. 12/351,591, filed January 9, 2009, now U.S. Patent No. 8,416,306, which claims the benefit of earlier filing date and right of priority to Korean Application No. 10-2008-0087800, filed on September 5, 2008, the contents of which are all hereby incorporated by reference herein in their entirety.

BACKGROUND

FIELD

[0002] This document relates to photographing images, and more particularly, to a mobile terminal capable of controlling a camera efficiently and conveniently to capture an image and a method of photographing an image using the same.

DISCUSSION OF THE RELATED ART

[0003] As the functionality of terminals, such as personal computers, notebooks, and mobile phones, is diversified, the terminals have been implemented as multimedia players capable of performing complex functions. For example, the complex functions performed by the terminals include capturing images and video, playing music or video files, providing games, and receiving broadcasts.

[0004] Terminals can be divided into mobile terminals and stationary terminals according to their motility. Mobile terminals can also be divided into handheld terminals and vehicle mount terminals depending on how they are carried while moving.

[0005] In order to support and increase the functionality of terminals, structural and/or software portions of the terminals have been continuously improved. In recent years, a touch screen has been adopted by a variety of terminals including mobile terminals. The touch screen tends to have a large screen and is used as an input and output device to meet various needs of a user to overcome physical limits, such as the size of the terminals. Further, efforts have been made to diversify the complex functions of the terminals as multimedia players according to the needs of users and to provide a user interface (UI) capable of performing these functions conveniently.

SUMMARY

[0006] An object of the present invention is to provide a mobile terminal capable of controlling a camera using a touch screen conveniently and efficiently to effectively photograph a desired image a method of photographing an image using the same.

[0007] In one aspect of the present invention, a mobile terminal comprises a camera; a touch screen; and a controller configured to display a preview image that includes at least one object and is captured through the camera on the touch screen, to display a first guide including a specific point on the preview image in a predetermined size when receiving touch input applied to the specific point, to determine a focusing area for focusing on an object corresponding to the specific point while varying the size of the displayed first guide, to perform focusing on the image based on the determined focusing area and to capture the focused image.

[0008] In another aspect of the present invention, a mobile terminal comprises a camera; a touch screen; and a controller configured to display a preview image captured through the camera on the touch screen, to display a guide including a specific point on the preview image when receiving touch input applied to the specific point, to perform focusing on the image based on the specific point and to adjust the

position of a lens included in the camera to finely adjust the focusing when a predetermined touch trace is input.

[0009] In another aspect of the present invention, a mobile terminal comprises a camera; a touch screen; and a controller configured to display a preview image captured through the camera on the touch screen, to perform multi-focusing on plural points on the preview image when receiving touch input for designating the plural points and to capture the multi-focused image.

[0010] In another aspect of the present invention, a method of capturing an image in a mobile terminal equipped with a touch screen comprises the steps of displaying a preview image that includes at least one object and is captured through a camera on the touch screen; displaying a first guide including a specific point on the preview image in a predetermined size when touch input applied to the specific point is received; and determining a focusing area for focusing on an object corresponding to the specific point while varying the size of the displayed first guide, performing focusing on the image based on the determined focusing area and capturing the focused image.

[0011] In another aspect of the present invention, a method of capturing an image in a mobile terminal equipped with a touch screen comprises the steps of displaying a preview image captured through a camera on the touch screen; displaying a guide including a specific point on the preview image when touch input applied to the specific point is received and performing focusing on the image based on the specific point; and adjusting the position of a lens included in the camera to finely adjust the focusing when a predetermined touch trace is input.

[0012] In another aspect of the present invention, a method of capturing an image in a mobile terminal equipped with a touch screen comprises the steps of displaying a preview image captured through a camera on the touch screen; performing multi-focusing on plural points on the preview image when touch input for designating the plural points is received; and capturing the multi-focused image.

[0013] According to the mobile terminal and the method of photographing an image using the same according to the present invention, a user can control a camera conveniently and efficiently and perform focusing on an image in various manners and then capture the image.

[0014] Furthermore, in the use of a face recognition function, the user can scan only an intended area of a preview image without scanning the entire preview image to effectively detect a face from the preview image, and thus the quantity of resources used for the face recognition function can be remarkably reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The above and other aspects, features, and advantages of the present invention will become more apparent upon consideration of the following description of preferred embodiments, taken in conjunction with the accompanying drawings.

[0016] FIG. 1 is a block diagram of a mobile terminal according to an embodiment of the present invention.

[0017] FIG. 2A is a perspective view of a front side of a mobile terminal according to an embodiment of the present invention.

[0018] FIG. 2B is a perspective view of a rear side of the mobile terminal shown in FIG. 2A.

[0019] FIGS. 3A and 3B are front views of a mobile terminal according to an embodiment of the present invention showing an operating state.

[0020] FIG. 4 is a conceptual diagram showing the proximity depth of a proximity sensor in a mobile terminal according to an embodiment of the present invention.

[0021] FIG. 5 is a flowchart illustrating image capturing in a mobile terminal equipped with a touch screen according to an embodiment of the present invention.

[0022] FIGS. 6A to 6E and 7A and 7B are diagrams illustrating image capturing via a touch screen of a mobile terminal according to an embodiment of the present invention.

[0023] FIGS. 8A and 8B are diagrams illustrating image capturing via a touch screen of a mobile terminal according to another embodiment of the present invention.

[0024] FIG. 9 is a flowchart illustrating image capturing in a mobile terminal according to another embodiment of the present invention.

[0025] FIGS. 10 to 15 are diagrams illustrating the image capturing process shown in FIG. 9.

[0026] FIG. 16 is a flowchart illustrating image capturing in a mobile terminal according to another embodiment of the present invention.

[0027] FIGS. 17 to 23 are diagrams illustrating the image capturing process shown in FIG. 16.

[0028] FIG. 24 is a flowchart illustrating image capturing in a mobile terminal according to another embodiment of the present invention.

[0029] FIGS. 25 to 37 are diagrams illustrating the image capturing process shown in FIG. 24.

[0030] FIGS. 38, 39 and 40 are diagrams illustrating an example to which embodiments of the present invention are applied when a panorama image is photographed.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0031] In the following detailed description, reference is made to the accompanying drawing figures which form a part hereof, and which show by way of illustration specific embodiments of the invention. It is to be understood by those of ordinary skill in this technological field that other embodiments may be utilized, and structural, electrical, as well as procedural changes may be made without departing from the scope of the present invention. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or similar parts.

[0032] A mobile terminal related to the present invention will now be described in detail with reference to the accompanying drawings. It is to be noted that the suffixes of constituent elements used in the following description, such as "module" and "unit", are simply used by considering the easiness of writing this specification, but are not particularly given importance and roles. Accordingly, the terminologies "module" and "unit" can be uses interchangeably. Further, a mobile terminal described in this specification may include, for example, mobile phones, smart phones, notebooks computers, terminals for digital broadcast, personal digital assistants (PDA), portable multimedia players (PMP), and navigators.

[0033] FIG. 1 illustrates components of a mobile terminal according to an embodiment of the present invention. The mobile terminal 100 includes components such as a wireless communication unit 110, an audio/video (NV) input unit 120, a user input unit 130, a sensing unit 140, an output unit 150, memory 160, an interface unit 170, a controller 180, and a power supply 190. The components shown in FIG. 1 are not indispensable, but it is understood that a mobile terminal having greater or fewer components may alternatively be implemented.

[0034] The wireless communication unit 110 may include one or more modules, enabling wireless communications between the mobile terminal 100 and a wireless communication system or between the mobile terminal 100 and a network where the mobile terminal 100 is located. For example, the wireless communication unit 110 includes a broadcast receiving module 111, a mobile communication module 112, a wireless Internet module 113, a short-range communication module 114, and a position-location module 115.

[0035] The broadcast receiving module 111 receives broadcast signals and/or broadcast associated information from an external broadcast managing entity via a broadcast channel. The broadcast channel may include a satellite channel and a terrestrial channel. The broadcast managing entity refers generally to a system, which generates and transmits broadcast signals and/or broadcast associated information, or a system, which receives previously generated broadcast signals and/or broadcast associated information and provides them to a terminal. The broadcast signals may be implemented as TV broadcast signals, radio broadcast signals, and data broadcast signals, among others. If desired, the broadcast signals may further include broadcast signals combined with TV or radio broadcast signals.

[0036] The broadcast associated information refers to information associated with a broadcast channel, a broadcast program or a broadcast service provider. The broadcast associated information may also be provided via a mobile communication network and received by the mobile communication module 112.

[0037] The broadcast associated information may exist in various forms. For example, the broadcast associated information includes an electronic program guide (EPG) of digital multimedia broadcasting (DMB), or electronic service guide (ESG) of digital video broadcast-handheld (DVB-H).

[0038] The broadcast receiving module 111 may be configured to receive broadcast signals transmitted from various types of broadcast systems. By nonlimiting example, such broadcasting systems include digital multimedia broadcasting-terrestrial (DMB-T), digital multimedia broadcasting-satellite (DMB-S), media forward link only (MediaFLO®), digital video broadcast-handheld (DVB-H), and integrated services digital broadcast-terrestrial (ISDB-T). It is also to be understood that the broadcast receiving module 111 may be configured to be suitable for other broadcast systems, which provide broadcast signals, as well as the digital broadcast systems. The broadcast signal and/or broadcast associated information received via the broadcast receiving module 111 may be stored in the memory 160.

[0039] The mobile communication module 112 transmits/receives radio signals to/from a base station, an external terminal, and an entity over a mobile communication network. The radio signals may include various forms of data according to transmission/reception of voice call signals, video telephony call signals and text/multimedia messages.

[0040] The wireless Internet module 113 refers to a module for wireless Internet access. This module may be internally or externally coupled to the mobile terminal 100. For example, wireless Internet technologies include wireless LAN (WLAN) (Wi-Fi), wireless broadband (WiBro), world interoperability for microwave access (Wimax), and high-speed downlink packet access (HSDPA).

[0041] The short-range communication module 114 refers to a module for short-range communications. For example, suitable short-range communication technologies include BLUETOOTH, radio frequency identification (RFID), infrared data association (IrDA), ultra-wideband (UWB), and ZigBee.

[0042] The position-location module 115 is a module for identifying or otherwise obtaining the location of a mobile terminal 100. A representative one of examples of the position-location module 115 includes a global positioning system (GPS). According to the current technology, the GPS module 115 can calculate three-dimensional position information on the basis of latitude, longitude, and altitude with respect to one point (object) on a specific time by calculating information about the distance of the one point (object) from three or more satellites and information about the time where the distance information was measured and then applying trigonometry to the calculated distance information. A method of calculating position and time information using three satellites and modifying error of the calculated position and time information using another satellite is also used. The GPS module 115 also continues to calculate a current location in real-time and calculates velocity information based on the current location.

[0043] Further referring to FIG. 1, the A/V input unit 120 is configured to input audio or video signals. The A/V input unit 120 may include a camera 121, a microphone

122 and the like. The camera 121 receives and processes image frames of still pictures or video obtained by an image sensor in a video call mode or a photographing mode. The processed image frames may be displayed on the display 151.

[0044] The image frames processed in the camera 121 may be stored in the memory 160 or transmitted to the outside via the wireless communication unit 110. Two or more cameras 121 may be included according to the configuration aspect of a terminal.

[0045] The microphone 122 receives external sound signals in various modes, such as a phone call mode, a recording mode, and a voice recognition mode, and processes the sound signals into electrical voice data. The processed voice data can be converted into a form, which can be transmitted to a mobile communication base station through the mobile communication module 112, for example, in the phone call mode, and then output as a sound or voice via the output unit 150 such as an audio output unit 152. Various noise removing algorithms for removing noise occurring in the course of receiving external sound signals may be implemented in the microphone 122.

[0046] The user input unit 130 generates input data responsive to user manipulation of an associated terminal or terminals. Examples of the user input unit 130 include a keypad, a dome switch, a jog wheel, a jog switch, and a touchpad, such as static pressure/capacitance.

[0047] The sensing unit 140 senses a current status of the mobile terminal 100 and generates a sensing signal for controlling an operation of the mobile terminal 100. For example, the sensing unit 140 detects an open/close status of the mobile terminal 100, a position of the mobile terminal 100, a presence or absence of user contact with the mobile terminal 100, orientation of the mobile terminal 100, and acceleration/deceleration of the mobile terminal 100. For example, when the mobile terminal 100 is configured as a slide-type mobile terminal, the sensing unit 140 senses whether a sliding portion of the mobile terminal 100 is open or closed. Other

examples include the sensing unit 140 sensing the presence or absence of power provided by the power supply 190, the presence or absence of a coupling or other connection between the interface unit 170 and an external device. The sensing unit 140 may further include a proximity sensor 141 which is described below in more detail.

[0048] The output unit 150 is configured to generate outputs associated with the sense of sight, the sense of hearing, tactile sense, and so on and may include a display 151, the audio output unit 152, an alarm unit 153, a haptic module 154 and the like.

[0049] The display 151 displays information processed in the mobile terminal 100. For example, when the mobile terminal 100 is in a phone call mode, the display 151 displays a user interface (UI) or a graphic user interface (GUI), which is associated with a phone call. When the mobile terminal 100 is in a video call mode or a photographing mode, the display 151 displays photographed and/or received images, UI or GUI.

[0050] The display 151 may be implemented using known display technologies including, for example, a liquid crystal display (LCD), a thin film transistor-liquid crystal display (TFT-LCD), an organic light-emitting diode display (OLED), an a flexible display and a three-dimensional display. Some of the displays 151 may be configured in a transparent type or a light-transmitting type, enabling the outside to be seen therethrough. This is called a transparent display. Representative examples of the transparent display include a transparent LCD. Some of the displays 151 may also be configured in a rear-side structure or light-transmitting type of the display 151. Such configurations enable a user to see objects located in the rear of a terminal body through an area occupied by the display 151 of the terminal body.

[0051] Two or more displays 151 may be present according to the configuration type of the mobile terminal 100. For example, a plurality of the displays 151 may be arranged with them being spaced apart from each other or integrally on one surface

of the mobile terminal 100 and arranged on different surfaces of the mobile terminal 100.

[0052] When the display 151 and a touch sensor, which is a sensor for sensing a touch operation, constitute a mutually layered structure or a touch screen, the display 151 may also be used as an input device as well as an output device. The touch sensor may have a form such as a touch film, a touch sheet, and a touch pad.

[0053] The touch sensor may be configured to convert a change in the pressure applied to a specific portion of the display 151 or electrostatic capacitance occurring at a specific portion of the display 151 into an electrical input signal. The touch sensor may be configured to sense pressure at the time of touch as well as a touched position and area.

[0054] When a touch input is received by the touch sensor, a corresponding signal(s) is sent to a touch controller. The touch controller processes the signal(s) and transmits corresponding data to the controller 180. Thus, the controller 180 can determine which area of the display 151 has been touched.

[0055] The proximity sensor 141 may be positioned in an internal area of the mobile terminal 100, which is surrounded by the touch screen, or near the touch screen. The proximity sensor 141 refers to a sensor for sensing objects approaching a specific detection surface or whether objects exist nearby without a direct contact by employing electromagnetic force or infrared rays. The proximity sensor 141 has a longer lifespan than that of a contact type sensor and also has increased efficiency.

[0056] Examples of the proximity sensor 141 include a transmit type photoelectric sensor, a direct reflection type photoelectric sensor, a mirror reflection type photoelectric sensor, a high frequency oscillation type proximity sensor, an electrostatic capacitance type proximity sensor, a magnetic type proximity sensor, and an infrared proximity sensor.

[0057] When the touch screen is an electrostatic type, the touch screen is configured to sense the proximity of a pointer based on a change in electric field according to the proximity of the pointer. In this case, the touch screen (touch sensor) may be classified as a proximity sensor.

[0058] Hereinafter, for convenience of description, a behavior in which a pointer comes close to the touch screen without touching the touch screen and, therefore, the pointer is recognized as if it exists on the touch screen is referred to as a "proximity touch", and a behavior in which a pointer is actually touched on the touch screen is referred to as a "contact touch". A proximity touch position of the pointer on the touch screen refers to a position where the pointer vertically corresponds to the touch screen when the pointer becomes the proximity touch.

[0059] The proximity sensor 141 is configured to sense a proximity touch action and a proximity touch pattern, which includes, for example, a proximity touch distance, a proximity touch direction, a proximity touch speed, a proximity touch time, a proximity touch position, and a proximity touch moving status. Information corresponding to the sensed proximity touch operation and the proximity touch pattern may be output on a touch screen.

[0060] The audio output unit 152 may output audio data, which is received from the wireless communication unit 110 or stored in the memory 160, in various modes including a call-receiving mode, a call-placing mode, a recording mode, a voice recognition mode and a broadcast reception mode. The audio output unit 152 outputs audio relating to a particular function, for example, call received or message received, which is performed in the mobile terminal 100. The audio output unit 152 may be implemented using receivers, speakers, buzzers, and the like.

[0061] The alarm unit 153 outputs signals to inform the occurrence of events in the mobile terminal 100. For example, the events occurring in the mobile terminal 100 include signals, including call-received and message-received, a key entry signal, and a touch input. The alarm unit 153 may also output signals to inform the occurrence of events in different ways other than the audio or video signal, for

example, through vibration. The video signal or the audio signal may also be output through the display 151 or the audio output unit 152.

[0062] The haptic module 154 generates a variety of haptic effects which can be felt by a user. One of representative examples of the haptic effects, which are generated by the haptic module 154, includes a vibration effect. The intensity and pattern of vibration generated by the haptic module 154 can be controlled. For example, different vibrations may be combined or output or sequentially output.

[0063] The haptic module 154 may generate various haptic effects, for example, an effect caused by the stimulus of arrangement of pins, which move vertically to a contact skin surface, an effect caused by a stimulus through spraying force or suction force by the air through an injection nozzle or an inlet, an effect caused by a stimulus passing over the skin surface, an effect caused by a stimulus through the contact of an electrode, an effect caused by a stimulus employing electrostatic force, and an effect caused by the reappearance of a feeling of cold and warmth employing an element that may absorb or generate heat, as well as the vibration effect.

[0064] The haptic module 154 may be implemented to not only transfer the haptic effects through a direct contact, but also make the haptic effects felt through a user's body parts such as a finger and an arm. Two or more haptic modules 154 may be included according to a configuration of the mobile terminal 100.

[0065] The memory 160 may store programs for an operation of the controller 180 and also temporarily store input/output data, such as phonebook data, messages, pictures, and video. The memory 160 may store data relating to various patterns of vibrations and sounds, which are output at the time of touch entry on a touch screen.

[0066] The memory 160 may include at least one type of storage media, including a flash memory type, a hard disk type, a multimedia card microphone type, card type memory such as SD or XD memory, random access memory (RAM), static random access memory (SRAM), read-only memory (ROM), electrically erasable programmable read-only memory (EEPROM), programmable read-only memory

(PROM) magnetic memory, magnetic disk, and optical disk. The mobile terminal 100 may also operate in association with a web storage that performs a storage function of the memory 160 on the Internet.

[0067] The interface unit 170 is often implemented to couple the mobile terminal 100 with external devices. The interface unit 170 is configured to receive data or power from the external devices and transfer the data or power to each component within the mobile terminal 100 or transmit data within the mobile terminal 100 to the external devices. For example, a wired/wireless headset port, an external charger port, a wired/wireless data port, a memory card port, an identity module card port, an audio input/output (I/O) port, a video I/O port, and an earphone port may be included in the interface unit 170.

[0068] The identity module is a chip that stores various pieces of information for authenticating usage right of the mobile terminal 100 and may include a user identify module (UIM), a subscriber identity module (SIM), a universal subscriber identity module (USIM) and the like. An apparatus equipped with the identity module or identity device may be fabricated in a smart card form. Accordingly, the identity device may be connected to the mobile terminal 100 via a port.

[0069] The interface unit 170 may become a passage through which power source from an external cradle is supplied to the mobile terminal 100 when the mobile terminal 100 is coupled to the cradle or a passage through which a variety of command signals input from the cradle are transferred to the mobile terminal 100 by a user. The variety of command signals or power source input from the cradle may operate as signals to recognize that the mobile terminal 100 has been mounted in the cradle accurately.

[0070] The controller 180 typically controls the overall operations of the mobile terminal 100. For example, the controller 180 performs the control and processing associated with voice calls, data communications, and video calls. The controller 180 may include a multimedia module 181 for multimedia playback. The multimedia module 181 may be implemented within the controller 180 or separately from the

controller 180. Further, the controller 180 may perform a pattern recognition processing in which writing entry or drawing entry performed on a touch screen can be recognized as text and images.

[0071] The power supply 190 provides internal power source and/or external power source required by various components under the control of the controller 180.

[0072] The various embodiments described herein may be implemented in a recording medium readable by a computer or its similar devices by employing, for example, software, hardware or some combinations thereof.

[0073] For a hardware implementation, the embodiments described herein may be implemented within at least one of application-specific integrated circuits (ASICs), digital signal processors (DSPs), digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), processors, controllers, micro-controllers, microprocessors, other electronic units designed to perform the functions described herein or a selective combination thereof. In some cases, the embodiments may be implemented by the controller 180.

[0074] For a software implementation, the embodiments such as procedures and functions may be implemented with separate software modules, each of which performs one or more of the functions and operations described herein. Software codes may be implemented using a software application written in any suitable programming language. The software codes may be stored in the memory 160 and executed by the controller 180.

[0075] FIG. 2A is a perspective view of a front side of the mobile terminal according to an embodiment of the present invention. In this embodiment, the mobile terminal 100 has a bar-type terminal body. The present invention is not limited to the above example, but may be applied to a variety of configurations in which two or more bodies are coupled in such a way as to move relative to each other, such as slide-type, folder-type, swing-type and swivel-type, and combinations thereof.

[0076] A body includes a case, such as a casing, a housing, or a cover, constituting an external appearance of the mobile terminal 100. In the present embodiment, the case is divided into a front case 101 and a rear case 102. A variety of electronic components are built in a space formed between the front case 101 and the rear case 102. At least one intermediate case may be further disposed between the front case 101 and the rear case 102. The cases may be fabricated by injecting synthetic resin or fabricated to have metal materials such as stainless steel (STS) or titanium (Ti).

[0077] As shown in FIG. 2A, the display 151, the audio output unit 152, the camera 121, the user input unit 130 (131, 132), the microphone 122, and the interface unit 170 are disposed in the terminal body, mainly, on the front case 101.

[0078] The display 151 occupies the greater part of a main surface of the front case 101. The audio output unit 152 and the camera 121 are disposed in an area adjacent to one of both ends of the display 151, and the user input unit 131 and the microphone 122 are disposed in an area adjacent to the other of both ends of the display 151. The user input unit 132 and the interface unit 170 are disposed on the sides of the front case 101 and the rear case 102.

[0079] The user input unit 130 is manipulated in order to receive commands for controlling the operations of the mobile terminal 100 and may include the plurality of user input units 131 and 132. The user input units 131 and 132 may also be collectively referred to as a `manipulating portion` and may adopt any kind of a method as long as it has a tactile manner, which allows a user to manipulate the user input units 131 and 132 while feeling a tactile sense.

[0080] Contents input by first and second manipulating portions may be set in various ways. For example, the first manipulating portion may be configured to receive commands, such as start, stop, and scroll, and the second manipulating portion may be configured to receive commands, such as a volume control of audio output from the audio output unit 152 or switching of the display 151 to a touch recognition mode.

[0081] FIG. 2B is a perspective view of a rear side of the mobile terminal 100. Referring to FIG. 2B, an additional camera 121' may be mounted on a rear side of the terminal body or in the rear case 102. The camera 121' may be a camera, which faces a direction that is substantially opposite to a direction faced by the camera 121 shown in FIG. 2A and have pixels different from that of the camera 121.

[0082] For example, the camera 121 may be operated to capture an image of a user's face with a relatively lower resolution that is sufficient to transmit the captured image to a counterpart party during a video communication. In contrast, the camera 121' may be operated to generate a relatively higher resolution image in order to obtain higher quality pictures for later use or for communicating to others. The cameras 121 and 121' may be installed in the terminal body such that they can be rotated or popped up.

[0083] A flash 123 and a mirror 124 may be further disposed adjacent to the camera 121'. The flash 123 irradiates light to a subject when the subject is photographed by the camera 121'. The mirror 124 is useful for assisting a user to position the camera 121 in a self-portrait mode.

[0084] An audio output unit 152' may be further disposed on the rear side of the terminal body. The audio output unit 152' may implement a stereo function together with the audio output unit 152 of the front side, as shown in FIG. 2A, and may be used to implement a speakerphone mode at the time of calls.

[0085] An antenna 124 for receiving broadcast signals other than an antenna for calls may be further disposed on the side of the terminal body. The antenna 124, constituting a part of the broadcast receiving module 111, as shown in FIG. 1, may be configured to be retracted from the terminal body.

[0086] The power supply 190 for supplying power to the mobile terminal 100 may be mounted in the terminal body. The power supply 190 may be configured internally or externally to the terminal body such that it is directly detachable therefrom.

[0087] A touch pad 135 for sensing touch may be further mounted in the rear case 102. The touch pad 135 may also be configured in a light-transmitting type display. When the display 151 is configured to output sight information from its both sides, the sight information can also be recognized even through the touch pad 135. Information output to both sides of the display 151 may be controlled by the touch pad 135. Unlike the above described embodiment, in one aspect of the present invention, a display 151 may be further mounted in the touch pad 135 and, therefore, a touch screen may be disposed in the rear case 102.

[0088] The touch pad 135 may operate in association with the display 151 of the front case 101. The touch pad 135 may be disposed in parallel to the display 151 in the rear of the display 151. The touch pad 135 may have a size which is identical to or smaller than that of the display 151.

[0089] Hereinafter, an associated operation method of the display 151 and the touch pad 135 is described with reference to FIGS. 3A and 3B. FIGS. 3A and 3B are front views of a mobile terminal according to an embodiment of the present invention. Various kinds of visual information may be displayed on the display 151. Such information may be displayed in the form of text, numerals, symbols, graphics, icons and the like.

[0090] In order to input such information, at least one of the text, numerals, symbols, graphics and icons may be displayed as a specific arrangement such that it may be implemented in the form of a keypad. This keypad may be referred to as a so-called `soft key`.

[0091] FIG. 3A illustrates that touch applied to the soft keys is input through the front side of a terminal body. The display 151 may be operated over the entire region or operated in the state in which the display is divided into a plurality of regions. In the latter case, the plurality of regions may be configured such that they operate in conjunction with each other.

[0092] For example, an output window 151a and an input window 151b are displayed on upper and lower sides of the display 151, respectively. Soft keys 151c, on which numerals for entering a number, such as a telephone number, are displayed, are output to the input window 151b. When the soft keys 151c are touched, numerals corresponding to the touched soft keys are displayed on the output window 151a. If the first manipulating portion or the user input unit 131 is manipulated, call connection to a telephone number displayed on the output window 151a is attempted.

[0093] FIG. 3B illustrates that touch applied to the soft keys is input through the rear side of a terminal body. While the terminal body is vertically disposed in portrait orientation in FIG. 3A, in FIG. 3B, the terminal body is horizontally disposed in landscape orientation. The display 151 may be configured to have its output screen changed according to the orientation of the terminal body.

[0094] Further referring to FIG. 3B, a text entry mode is actuated in the mobile terminal 100. An output window 135a and an input window 135b are displayed on the display 151. Soft keys 135c in each of which at least one of text, symbols, and numerals is displayed may be arranged in plural number in the input window 135b. The soft keys 135c may be arranged in a QWERTY key form.

[0095] When the soft keys 135c are touched through a touch pad 135, text, numerals, or symbols corresponding to the touched soft keys, are displayed on the output window 135a. As described above, touch input through the touch pad 135 can prevent the soft keys 135c from being covered with fingers at the time of touch as compared with touch input through the display 151. When the display 151 and the touch pad 135 are transparent, fingers located in the rear of the terminal body can be seen through the naked eye, enabling more accurate touch input.

[0096] The display 151 or the touch pad 135 may be configured to receive touch input through scrolling, as well as the input method disclosed in the above discussed embodiments. A user can move a cursor or pointer located in an object, for example, an icon, which is displayed on the display 151, by scrolling the display 151 or the touch pad 135. Furthermore, when a finger is moved on the display 151 or the touch

pad 135, a path along which the finger moves may be visually displayed on the display 151. This may be useful when editing images displayed on the display 151.

[0097] One of the functions of the mobile terminal 100 may be executed when the display 151 or touch screen and the touch pad 135 are touched at the same time within a specific time period. When the display 151 or touch screen and the touch pad 135 are touched at the same time, a user may clamp the terminal body using his thumb and index finger. One of the functions may be, for example, activation or inactivation of the display 151 or the touch pad 135.

[0098] The proximity sensor 141 described with reference to FIG. 1 is described in more detail with reference to FIG. 4. FIG. 4 illustrates the proximity depth of the proximity sensor. As shown in FIG. 4, when a pointer, such as a user's finger, approaches a touch screen, the proximity sensor 141 disposed within or near the touch screen detects such approach and outputs a proximity signal.

[0099] The proximity sensor 141 may be configured to output a different proximity signal depending on a distance between the pointer in proximity and the touch screen, and the distance is referred to as a "proximity depth." A distance in which a proximity signal is output when a pointer approaches the touch screen is called a detection distance. In short, the proximity depth can be determined by comparing proximity signals output from a plurality of proximity sensors 141 detecting different proximity depths.

[0100] FIG. 4 shows a cross section of a touch screen in which the proximity sensor 141 capable of detecting, for example, three proximity depths is disposed. Alternatively, a proximity sensor 141 capable of detecting less than three, or four or more proximity depths is also possible. Specifically, when the pointer is directly touched on the touch screen (D.sub.0), it is recognized as a contact touch. When the pointer is separated from the touch screen at a distance D.sub.1 or less, it is recognized as a proximity touch of a first proximity depth. When the pointer is separated from the touch screen by more than a distance D.sub.1 and less than a distance D.sub.2, it is recognized as a proximity touch of a second proximity depth.

When the pointer is separated from the touch screen by more than a distance D.sub.2 and less than a distance D.sub.3, it is recognized as a proximity touch of a third proximity depth. In addition, when the pointer is separated from the touch screen by a distance D.sub.3 or more, it is recognized that a proximity touch is released.

[0101] Accordingly, the controller 180 recognizes the proximity touch as various input signals according to a proximity distance or a proximity position of the pointer with respect to the touch screen and can perform various operation controls based on the recognized various input signals. In the following description of the present invention, the display 151 is implemented as a touch screen and the term touch screen 151 will be used instead of the display 151. Further, in the following description, `touch` includes both a proximity touch and a contact or direct touch. Moreover, `touch input` includes all types of input signals corresponding to various types of touches, such as touch down, touch up, the lapse of a present sustain time subsequent to touch, drag and drop.

[0102] FIG. 5 is a flowchart illustrating a process of capturing an image in a mobile terminal equipped with a touch screen according to an embodiment of the present invention. FIGS. 6A to 6E and 7A and 7B illustrate a process performed on the touch screen of the mobile terminal, each figure corresponding to a different step in the flowchart shown in FIG. 5. An image capturing method in the mobile terminal 100 including the touch screen according to an embodiment of the present invention is described with reference to FIGS. 5 to 7B.

[0103] When a camera function is selected from a menu displayed on the touch screen 151, including the sensing unit 140, or when a camera function of the camera 121 or 121' in the mobile terminal 100 is initiated in response to a user input received via the user input unit 130 [S210], the controller 180 displays a preview of an image input or received through the camera 121 or 121' on the touch screen 151 [S220].

[0104] FIG. 6A shows an example in which S220 is implemented, displaying the preview image on the touch screen 151. The preview image is displayed on the touch screen 151 when an image is input through the camera 121 or 121'. For example,

the image is processed into a low-resolution image and then displayed on the touch screen 151.

[0105] Further referring to FIG. 6A, an auto focus guide (AFG), indicating a position on which focusing will be performed or a focus window for an image to be captured, is generally displayed at a central portion of the touch screen 151. In one aspect of the present invention, the AFG is displayed at the central portion of the touch screen 151 by default when the camera function is initiated. Alternatively, the AFG may not be displayed when the camera function is initiated until a touch input is received on the preview image.

[0106] In the image capturing method according to an embodiment of the present invention, a user moves the AFG to a specific position on the touch screen 151 such that auto focusing is performed on the specific position where the AFG is displayed. For example, when a preview image displayed on the touch screen 151 includes two objects Obj1 and Obj2 as shown in FIG. 6A, the user touches any one of the two objects to select an object to be focused. For example, in FIG. 6B, the first object Obj1 is selected by touching Obj1 with the user's finger or a stylus pen.

[0107] When an edge with a sharpness equal to or higher than a specific level is retrieved at the same position from image analysis of a plurality of images input via the camera 121 or 121', this is referred to as an object. According to the present embodiment, auto focusing is performed when the focus window is moved to a specific position on the touch screen 151 by a user's touch input. Accordingly, in the present invention, focusing on an object which is not located at the center of the touch screen 151 is possible.

[0108] In order to perform successful focusing with respect to a position on a preview image selected by touch according to the auto focusing method described below, an object or a target on which the focusing will be performed must be present at the selected position. Accordingly, if focusing is performed on the selected position, focusing is performed also on the object present at the selected position.

[0109] Accordingly, the controller 180 performs a focusing operation on an object present at a corresponding position by focusing on a position corresponding to a coordinate value, which is input according to touch on the touch screen 151, thereby without determining whether the object is present in the focus window or without conducting additional image analysis such as determination of sharpness for each pixel of the preview image. If focusing fails due to absence of an object at a position corresponding to a coordinate value input according to the touch, the controller 180 may perform focusing on an object that is adjacent to the position by widening the AFG or focus window as wide as a preset range based on the corresponding coordinate value and then re-performing focusing on the adjacent object.

[0110] While the number of objects displayed on the preview image is two in FIGS. 6A-8B for convenience of description, this configuration is only for illustrative purpose. It is to be understood that the number of objects is not limited and auto focusing may be performed when two or more objects are present on the preview image. The focusing according to the present invention can be performed with respect to any selected specific position and regardless of the position of an object on the screen. Therefore, an object that is selected by a user may be any object displayed on the preview image. However, the controller 180 may be configured such that edge portions of the touch screen 151 are not selected as a position for auto focusing, as auto focusing may not be performed successfully on the edge portions.

[0111] FIG. 7A shows an example in which the second object Obj2 is touched and selected on the preview image initially shown in FIG. 6A. The controller 180 determines whether touch input has been received on the touch screen 151 [S230]. While there are various types of touch input and the method of the touch input is not limited, in the present embodiment, touch is sustained for a preset period of time in order to be recognized as touch input for auto focusing.

[0112] When the touch screen 151 is touched and the touch or contact is sustained for a preset period of time, for example, one second or more, the controller 180 moves the focus window to the touched position and then displays the AFG at the position of the focus window, as shown in FIG. 6C. Next, the controller 180 performs

auto focusing at the position of the focus window where the touch input has been received [S240]. Control of the camera 121 or 121' for auto focusing may employ a known auto focusing mechanism depending on the type of the camera 121 or 121'. For example, the controller 180 controls focusing on the first object Obj1, present at the selected position, to be performed by directly controlling a lens provided in the camera 121 or 121' and a motor for driving the lens.

[0113] If the auto focusing on the first object Obj1 present at the selected position is successful [S241: Y], the controller 180 informs a user that auto focusing has been successful via the output unit 150 [S243]. For example, the controller 180 outputs a shutter sound through the alarm unit 153 and/or changes the color of the AFG, as shown in FIG. 6D. Further, the controller 180 may perform one or more of a variety of graphic representation in combination, including the output of a sound, a change in the color of an image and/or text on the touch screen 151, flicker and the like.

[0114] Once the user is informed about the result of focusing on the first object Obj1 present at the selected position, the user subsequently inputs an image capturing command to take a picture or capture the focused image. According to an embodiment of the present invention, the image capturing command is released of the contact or touch, for example, by taking off the user's finger or the stylus pen from the position where the contact or touch is currently sustained.

[0115] Accordingly, the controller 180 determines whether an image capturing command has been input by a user [S250]. If it is determined that the image capturing command has been input, the controller 180 immediately controls the camera 121 or 121' to capture an image focused on the first object Obj1 [S260], as shown in FIG. 6E. While FIG. 6E shows an image captured by performing auto focusing on the first object Obj1, FIG. 7B shows an image captured by performing auto focusing on the second object Obj2.

[0116] As shown in FIGS. 6E and 7B, according to the present invention, a position on which auto focusing will be performed, that is, a focus window can be changed by a user. Accordingly, in a captured image, any one object is focused and may be

displayed sharply while the remaining objects are not focused and may look blurred. Therefore, even a non-professional photographer can achieve a high-quality photograph, such that depth of a close subject is properly represented, by using the image capturing method according to the present invention.

[0117] While the controller 180 may perform image capturing by determining the end of the contact touch as the input for an image capturing command as described above, thus capturing the image right after the contact touch has been released, the controller 180 may also be configured to recognize the input for the image capturing command when a preset period of time has elapsed from the end of the contact touch, thus performing the image capturing after the preset period of time since the release of the contact touch.

[0118] Alternatively, after the focusing has been successful after the touch had been sustained for a preset period of time, the controller 180 may inform a user of the successful focusing such that the user can finish the touch input. Thereafter, if there is no additional touch input from the user for another preset period of time since the focusing was successful or the contact touch was released, the controller 180 recognizes an image capturing command after another preset period of time since the release of the contact touch and controls the camera 121 or 121' to capture an image at that time point.

[0119] Alternatively, the controller 180 may be configured to display a specific icon for inputting an image capturing command on the touch screen 151 when a camera function begins or the focusing has been successful such that the image is captured when the icon is selected by the user.

[0120] FIGS. 8A and 8B illustrate a process of performing image capturing in a mobile terminal according to an embodiment of the present invention. Some of the above described features may also be applied to this embodiment.

[0121] When the function of the camera 121 or 121' is initiated S210 as illustrated in FIG. 5, a preview image is displayed on the touch screen 151 at S220. Subsequently,

the controller 180 determines whether touch input has been received on the touch screen 151 at S230. In the present embodiment, the position to be focused on the preview image is controlled by touch input comprising a "drag-and-drop" operation.

[0122] Therefore, upon receiving the touch input, the controller 180 determines whether the touch input is a "drag-and-drop" operation. In the present invention, the "drag-and-drop" operation refers to touching or contacting an AFG on a preview image screen as shown in FIG. 8A, and then sliding a finger or a touching object from the initially contacted position or the AFG to another position, maintaining the contact with the touch screen 151 during the sliding, thus finishing the touch. This "drag-and-drop" operation includes a "touch-and-drag" operation.

[0123] Referring to FIG. 8A, a user performs a drag-and-drop operation by touching the position A where the AFG is initially displayed and then sliding the finger from the touched position A to the position B where the first object Obj1 is positioned on the preview image. If touch input according to the drag-and-drop operation is generated [S230: Y in FIG. 5], the controller 180 moves a focus window to the position B where the drop has occurred and then displays the AFG at the position of the focus window, as shown in FIG. 8B. Subsequently, the controller 180 performs auto focusing operation on the position of the focus window, that is, the position B where the drop has occurred [S240]. In other words, according to this embodiment, a user moves the AFG from a first position to a second position to be focused by the "drag-and-drop" or "touch-and-drag" operation.

[0124] In one aspect of the present invention, the controller 180 is configured to move the focus window and perform the auto focusing operation at the moved focus window only when the touch or contact is sustained at the position B where the drop has occurred for a period of time that is equal to or more than a preset period of time. If the auto focusing operation on the first object Obj1 or at the selected position B is successful [S241: Y], the controller 180 informs the user of the successful auto focusing [S243] via the output unit 150 such that the user can confirm the focusing with respect to the selected first object Obj1. Thereafter, an image capturing command is input, for example, by finishing or releasing the sustained touch or

contact touch [S250: Y], and the controller 180 controls the camera 121 or 121' to capture the focused image of the first object Obj1, as shown in FIG. 6E [S260].

[0125] Alternative to the above described embodiment, in one aspect of the present invention, the controller 180 may be configured to move the focus window to the position B where the drop has occurred and control the camera 121 or 121' to perform the auto focusing operation immediately after the drag-and-drop operation is executed. Thereafter, if additional touch input is not entered by a user for a preset period of time, the controller 180 captures an image when the preset period of time elapses.

[0126] FIG. 9 is a flowchart illustrating a process of capturing an image in a mobile terminal according to another embodiment of the present invention and FIGS. 10 to 15 are diagrams illustrating the image capturing process shown in FIG. 9.

[0127] The image capturing process according to this embodiment may be implemented in the mobile terminal 100 described above with reference to FIGS. 1, 2, 3 and 4. The image capturing process in the mobile terminal 100 and the operation of the mobile terminal 100 for implementing the image capturing process will now be explained in detail with reference to the attached drawings.

[0128] Referring to FIG. 9, the controller 180 may display a preview image captured through the camera 121 on the touch screen 151 [S300].

[0129] For example, when the mobile terminal enters an image capturing mode using the camera 121, as shown in FIG. 10, the controller 180 can capture a preview image 12 and display the preview image 12 on the touch screen 151. Furthermore, the controller 180 may provide a first guide 10 corresponding to the aforementioned AFG to a predetermined position while displaying the preview image 12, as shown in FIG. 10. For example, the first guide 10 can be located at the center of the touch screen 151 or the preview image 12 as a default position. In addition, the controller 180 may display a soft key 13 for receiving an image capturing command on the touch screen 151 as described below.

[0130] Further referring to FIG. 10, the preview image 12 may include at least one object 11. The preview image 12 generally includes a plurality of existent objects because the preview image 12 is acquired by taking a picture of the real world. The controller 180 may recognize at least part of the objects included in the preview image 12. The object 11 shown in FIG. 10 is a person and includes a first sub object 11a corresponding to the person's face and a second sub object 11b corresponding to the person's body. In this document, the object included in the preview image 12 is simplified for convenience of description. The preview image 12 can include a plurality of various objects when the technical spirit disclosed in this document is actually implemented.

[0131] The controller 180 may receive touch input applied to a specific point on the preview image 12 [S310]. For example, the user can touch a point corresponding to the first sub object 11 a with a finger, as shown in FIG. 11.

[0132] The controller 180 may display the first guide 10 on the touched point [S320]. For example, the controller 180 can display the first guide 10, which has been displayed at the center of the touch screen 151, on the first object 11 a corresponding to the touched point, as shown in FIG. 12.

[0133] Although the first guide 10 is automatically displayed on the touch screen 151 when the mobile terminal enters the image capturing mode in this embodiment, the technical spirit of the present invention is not limited thereto. For example, when the user touches a specific point on the preview image 12 while the first guide 10 is not provided at S300, the first guide 10 may be displayed on the touched point. The first guide 10 provided at S300 or S320 may be displayed in a predetermined size.

[0134] The controller 180 may determine a focusing area for focusing on the object corresponding to the touched point while varying the size of the first guide 10 displayed in the predetermined size [S330]. The focusing area means a reference area for detecting the sharpness of an edge when auto-focusing is performed. The focusing area may be referred to as an auto focus window (AFW).

[0135] For example, the controller 180 can determine the first guide 10 as the focusing area when the area of the first guide 10 including the object corresponding to the touched point becomes a minimum size. That is, the controller 180 can match the AFG corresponding to the first guide 10 and the AFW corresponding to the focusing area. The matching the AFG and the AFW may include not only 100% matching but also matching in an error range.

[0136] An example of the operation of the controller 180 to perform step S300 is explained with reference to FIGS. 13 and 14.

[0137] The controller 180 may magnify the first guide 10 shown in FIG. 12 at a predetermined magnification and display the magnified first guide 10 as shown in FIG. 13. The magnified first guide 10 can include the first sub object 11a on which the user wants to focus.

[0138] Referring to FIG. 14, the controller 180 may gradually reduce the size of the magnified first guide 10 until the first guide 10 circumscribes the first sub object 11a. The controller 180 may determine the first guide circumscribing the first sub object 11a as the focusing area. Upon determining the focusing area, the controller 180 may focus on the image currently displayed on the touch screen 151 based on the focusing area [S340].

[0139] The controller 180 may receive an image capturing command from the user [S350] and capture the image according to the image capturing command [S360]. The controller 180 may automatically capture the image as soon as the focusing is completed at S340.

[0140] When a face recognition function is activated and the object focused according to the embodiment is a person's face, the controller 180 may perform face recognition on the focusing area.

[0141] According to a conventional face recognition technique, the overall area of a preview image captured through the camera 121 is scanned to detect a face. However, the present invention performs face recognition on the focusing area, and thus the quantity of computations of the controller 180 can be remarkably reduced and various resources required to perform the face recognition can be effectively decreased.

[0142] The controller 180 may provide various menus relating to image characteristics when the focusing area is determined through a variation in the size of the first guide 10.

[0143] Referring to FIG. 15, the controller 180 can provide a menu window 15 including various menus relating to image characteristics in the vicinity of the first guide 10. The menu window 15 may be varied with the type of the object included in the first guide 10.

[0144] For example, when the first sub object 11 a corresponding to the first guide 10 is recognized as a face, as shown in FIG. 15, the controller 180 can provide at least one menu for varying the image characteristic of the recognized face.

[0145] In FIG. 15, menu "Face Beauty" corresponds to a function of removing blemishes of the recognized face and menu "Funny Face" corresponds to a function of overlaying a funny image on the recognized face to interest the user. In addition, menu "Caricature" corresponds to a function of giving cartoon effect or sketch effect tot eh recognized face.

[0146] Furthermore, the menu window 15 may include at least one menu for varying the characteristic of the whole preview image 12 irrespective of the recognized object 11a, as shown in FIG. 15. For example, the controller 180 can provide menu "Brightness" for adjusting the brightness of the preview image 12 and menu "Photometry" for controlling photometry through the menu window 15.

[0147] FIG. 16 is a flowchart illustrating a process of capturing an image in a mobile terminal according to another embodiment of the present invention and FIGS. 17 to 23 are diagrams illustrating the image capturing process shown in FIG. 16.

[0148] The image capturing process according to this embodiment may be implemented in the mobile terminal 100 described above with reference to FIGS. 1, 2, 3 and 4. The image capturing process in the mobile terminal 100 and the operation of the mobile terminal 100 to implement the image capturing process will now be explained in detail with reference to the attached drawings.

[0149] Referring to FIG. 16, the controller 180 may display a preview image captured through the camera 121 on the touch screen 151 [S400], which corresponds to step S300 according to the above embodiment.

[0150] The controller 180 may receive touch input applied to a specific point on the preview image displayed on the touch screen 151 [S410], which corresponds to step S310 according to the above embodiment.

[0151] The controller 180 may display the first guide including the touched specific point [S42], which corresponds to step S320 according to the above embodiment, and focus on the image based on the touched specific point [S430].

[0152] Steps S410, S420 and S430 may be performed according to the above embodiment shown in FIG. 9. For example, when the user touches the first sub object 11a, as shown in FIG. 17, the controller 180 can display the first guide 10 such that the first guide 10 includes the first sub object 11a and focus on the image based on the area corresponding to the first guide 10 or a reference point (for example, center point) in the first guide 10.

[0153] The controller 180 may receive predetermined touch trace upon focusing on the image based on the specific point [S440]. For example, the user can input circular touch trace 20 to the touch screen 151, as shown in FIG. 18.

[0154] The position of the lens included in the camera module providing the auto-focusing function can be changed or adjusted for auto-focusing, in general.

[0155] The controller 180 may change the position of the lens included in the camera 121 based on at least one of the moving distance and direction of the touch trace 20 [S450].

[0156] FIG. 19 illustrates an example of changing the position of the lens according to the touch trace.

[0157] Referring to FIG. 19, if the position of the lens 1211 when the focusing has completed at S430 corresponds to point 0, the controller 180 may move the lens 1211 to point F1 when the user inputs a first touch trace 21 having a length corresponding to a half circuit clockwise through the touch screen 151.

[0158] When the user inputs a second touch tract 22 having a length corresponding to a circle clockwise, the controller 180 may move the lens 1211 to point F2. When the user inputs a third touch trace 23 having a length corresponding to a half circle or a fourth touch tract 24 having a length corresponding to a circle counter clockwise with the lens 1211 located at point 0, the controller 180 may move the lens 1211 to point R1 or R2. The predetermined touch trace is not limited to the forms shown in FIGS. 18 and 19.

[0159] FIG. 20 illustrates another example of changing the position of the lens according to the touch trace.

[0160] Referring to FIG. 20, the user may input a fifth touch trace 26 in the form of a straight line starting from point 0 and extending to the right through points A and B. When the fifth touch tract 26 reaches point A, the controller 180 may move the lens 1211 to point F1 of FIG. 19. When the fifth touch tract 26 is arrived at point B, the controller 180 may move the lens 1211 to point F2 of FIG. 19.

[0161] The user may input a sixth touch tract 27 in the form of a straight line starting from point 0 and extending to the left through points C and D. The controller 180 may move the lens 1211 to point R1 of FIG. 19 when the sixth touch trace 27 reaches point C and move the lens 1211 to point R2 of FIG. 19 when the sixth touch tract 27 is arrived at point D.

[0162] In this manner, the controller 180 can discontinuously adjust the position of the lens. Otherwise, the controller 180 can continuously adjust the position of the lens.

[0163] The controller 180 may restrict the lens position adjustment range in consideration of the physical limit of the mobile terminal 100 or the camera 121.

[0164] On the assumption that the lens discontinuously moves to the five points 0, F1, F2, R1 and R2, as shown in FIG. 19, when the user inputs a touch trace starting from point 0 and passing through point A corresponding to point F1 and point B corresponding to point F2, as shown in FIG. 21, the controller 180 cannot further move the lens 1211 in response to the touch tract after moving the lens 1211 to point F2. In this case, the controller 180 may provide an information window 30, as shown in FIG. 21, to inform the user that the lens position cannot be adjusted any more.

[0165] When the user touches a confirmation button 31 included in the information window 30, the information window 30 may disappear from the touch screen 151.

[0166] Furthermore, the controller 180 may output a warning message and/or warning sound, such as a message ("it is beyond adjustment range"), through the audio output unit 152.

[0167] The controller 180 may display an indicator or a progress bar that indicates an adjustment degree of the lens location on the touch screen 151 while adjusting the lens position according to input of the touch trace.

[0168] Referring to FIG. 22, the controller 180 can display the indicator 34 or progress bar 33 for indicating a degree to which the lens position is adjusted when the touch trace for adjusting the lens position is input. The indicator 34 indicating the lens position may move on the progress bar 33 in response to the distance and direction of the touch trace. For example, when the user inputs touch trace starting from point E and passing through points F and G, as shown in FIG. 22, the controller 180 can move the indicator 34 to point 34a corresponding to point E. In FIG. 22, the indicator 34 may move to point 34b when the touch tract reaches point F and the indicator 34 may move to point 34c when the touch tract is arrived at point G.

[0169] FIG. 23 shows touch trace in a direction opposite to the touch trace shown in FIG. 22 and the indicator 34 and the progress bar 33 according to the touch trace. Referring to FIG. 23, the indicator 34 may move to point 34d when the touch tract starts from point E and reaches point H and the indicator 34 may move to point 34e when the touch trace reaches point I.

[0170] Although the predetermined touch trace is input on the touch screen 151 in this embodiment, the technical spirit of this document is not limited thereto. For example, the touch trace for adjusting the lens position may be configured to be input through the first guide 10.

[0171] Furthermore, the controller 180 may return the lens to the original position (the position after the focusing is performed at S430) when receiving a predetermined command.

[0172] The controller 180 may perform focusing based on the specific point when the lens position is changed as described above [S460]. Then, the controller 180 may receive an image capturing command [S470] and capture the image according to the image capturing command [S480]. Steps S470 and S480 respectively correspond to steps S350 and S360 in the above embodiment shown in FIG. 9.

[0173] FIG. 24 is a flowchart illustrating a process of capturing an image in a mobile terminal according to another embodiment of the present invention and FIGS. 25 through 37 are diagrams illustrating the image capturing process shown in FIG. 24.

[0174] The image capturing process according to this embodiment may be implemented in the mobile terminal 100 described above with reference to FIGS. 1, 2, 3 and 4. The image capturing process in the mobile terminal 100 and the operation of the mobile terminal 100 to implement the image capturing process will now be explained in detail with reference to the attached drawings.

[0175] Referring to FIG. 24, the controller 180 may display a preview image captured through the camera 121 on the touch screen 151 [S500]. Step S500 corresponds to step S300 in the above embodiment shown in FIG. 9.

[0176] The controller 180 may receive touch input for designating a plurality of points on the preview image [S510] and perform multi-focusing on the designated points [S520]. Steps S510 and S520 may be executed in various manners, which will be now explained according to various embodiments of the present invention.

[0177] Referring to FIG. 25, the controller 180 may display the first guide 10 at a predetermined position (the center of the touch screen 131) when displaying the preview image on the touch screen 151. The preview image shown in FIG. 25 includes three objects 40, 41 and 42. These three objects 40, 41 and 42 are composed of sub objects corresponding to the face and body of a person.

[0178] Referring to FIG. 26, the user may touch a point included in the first guide 10. The controller 180 may additionally display a second guide 44 having the same size as the first guide 10, as shown in FIG. 27, when the point in the first guide 10 is touched.

[0179] When the user touches a point included in the first guide 10 or the second guide 44, as shown in FIG. 28, the controller 180 may additionally display a third guide 45 having the same size as the first and second guides 10 and 44, as shown

in FIG. 29. That is, a guide identical to the first guide 10 may be additionally displayed on the touch screen 151 whenever the user touches the first guide 10. The user may move the first, second and third guides 10, 44 and 45 to desired points.

[0180] Referring to FIG. 30, the user may drag the third guide 45 to drop the third guide 45 on a face 40a included in a third object 40. Referring to FIG. 31, the user may touch the face 40a included in the third object 40 with a finger.

[0181] The controller 180 may move the third guide 45 to the face 40a and display the third guide 45 thereon, as shown in FIG. 32, according to the drag-and-drop operation shown in FIG. 30 and the touch operation shown in FIG. 31. Here, the aforementioned embodiment shown in FIG. 9 may be applied to the third guide 45. That is, the controller 180 may determine the focusing area for focusing on the face 40a while varying the size of the third guide 45.

[0182] The controller 180 can receive touch input for designating the faces 40a, 41a and 42a respectively included in the first, second and third objects 40, 41 and 42 from the user according to the above method (refer to FIG. 30 or 31)

[0183] FIG. 33 illustrates an example that the first, second and third guides 10, 44 and 45 are displayed respectively corresponding to the faces 42a, 41a and 40a upon receiving the touch input for designating the faces 40a, 41a and 42a. Here, the controller 180 can determine focusing areas for the faces 40a, 41a and 42a, as described above.

[0184] The controller 180 may perform multi-focusing based on the determined focusing areas. The multi-focusing can be sequentially carried out when the focusing areas are determined as the first, second and third guides 10, 44 and 45 are displayed corresponding to the 42a, 41a and 40a. Furthermore, the multi-focusing may be automatically performed when the controller 180 receives a predetermined command signal or a predetermined condition is satisfied.

[0185] For example, when the focusing areas for the faces 40a, 41a and 42a are determined, as shown in FIG. 33, the controller 180 can automatically perform the multi-focusing based on the faces 40a, 41a and 42a.

[0186] Referring to FIG. 37, when the user touches a point of the touch screen 151 and maintains the touch for a predetermined time (long touch), the controller 180 can perform the multi-focusing based on the faces 40a, 41a and 42a.

[0187] The controller 180 can execute steps S510 and S520 in a manner different from the manner explained with reference to FIGS. 25 to 33.

[0188] For example, when the user touches the specific object 41a, as shown in FIG. 34, the controller 180 can display the first guide 10 such that the first guide 10 corresponds to the touched object 41. Here, the controller 180 can determine the focusing area for focusing on the touched object 41a while varying the size of the first guide 10, as described above.

[0189] Referring to FIG. 35, when the user touches the object 40a while the first guide 10 is displayed corresponding to the object 41a, the controller 180 may display the second guide 44 corresponding to the object 40a. In this manner, a new AFG can be generated and displayed whenever the user touches an object that the user wants to focus. The controller 180 can determine the focusing area whenever a new AFG is displayed according to the above embodiment shown in FIG. 9.

[0190] Referring to FIG. 36, when plural objects 40a and 41a are simultaneously touched (multi-touch), the controller 180 may recognize the multi-touch as touch input for designating the objects 40a and 41a and perform multi-focusing for the objects 40a and 41a. The multi-touch may be applied to two, three or more points (which may correspond to objects) if the user can touch the points.

[0191] The controller 180 may receive an image capturing command from the user [S530] and capture the image on which the multi-focusing has been performed

according to the image capturing command [S540]. Steps S530 and S540 respectively correspond to steps S350 and S360 shown in FIG. 9.

[0192] In the multi-focusing in this embodiment of the invention, priority may be given to at least part of plural points based on a predetermined standard and focusing accuracy may depend on the priority. That is, a point having a high priority can be focused with high accuracy. The predetermined standard may include a variety of standards. A method of giving priority based on various standards will now be explained in detail.

[0193] The controller 180 may give the priority based on the time when the controller 180 receives the touch input for multi-focusing. For example, the controller 180 can give the highest priority to the face 41a corresponding to the first point touched for the multi-focusing, as shown in FIGS. 34 and 35. The controller 180 may perform focusing with the highest accuracy on the face 41a when performing the multi-focusing on the faces 40a, 41a and 42a.

[0194] In addition, the controller 180 can give a priority lower than that of the face 41a and higher than that of the face 42a to the face 40a and perform the multi-focusing according to the given priorities.

[0195] Furthermore, the controller 180 may give the priority based on whether an object corresponding to a specific point among plural points touched for the multi-focusing corresponds to data stored in the memory 160. For example, if the specific face 40a among the faces 40a, 41a and 42a shown in FIG. 33 is an object registered in a contact book (for example, phonebook) stored in the memory 160, the controller 180 can give a high priority to the specific face 40a. If another specific face 41a is registered as a friend according to a Social Network Service (SNS) application or corresponds to a person with whom the user of the mobile terminal 100 exchanged data through the application, the controller 180 can give a high priority to the specific face 41a.

[0196] Moreover, the controller 180 may give the priority based on whether a specific point among plural points corresponds to an area having a large number of objects classified as a specific type. For example, when many people gather in an area corresponding to a specific point among the plural points designated for the multi-focusing, the controller 180 can give a higher priority to that point.

[0197] In addition, the controller 180 may give the priority based on the sizes of AFGs respectively corresponding to the plural points. Referring to FIG. 33, the first guide 10 has the largest size (that is, the largest focusing area is determined for the first guide 10), and thus the controller 180 can give the highest priority to the face 42a corresponding to the first guide 10.

[0198] Meantime, it may be required to change a specific point for focusing because the user changes his/her mind or makes a mistake while plural guides (for example, the first, second and third guides 10, 44 and 45 shown in FIG. 33) are displayed.

[0199] To prepare for this case, the controller 180 may display a soft key (not shown) for resetting on the touch screen 151. For example, when the user touches the reset soft key in the state shown in FIG. 33, all the first, second and third guides 10, 44 and 45 disappear and the process returns to the stage before the multi-focusing is performed.

[0200] Furthermore, when the user touches a specific guide among the first, second and third guides 10, 44 and 45 in the state shown in FIG. 33, the controller 180 may delete the touched guide from the touch screen 151 and cancel focusing for the touched guide. That is, display and deletion of a specific guide can be repeated whenever the user touches the specific guide in a toggle manner.

[0201] The above-described embodiments can be applied to a case that a panorama image including plural images is photographed.

[0202] FIGS. 38, 39 and 40 are diagrams illustrating an example to which the above-described embodiments of the invention are applied when a panorama image is photographed.

[0203] Referring to FIG. 38, when the mobile terminal 100 enters a mode of photographing a panorama image including plural images through the camera 121, the controller 180 may display a fixed guide 50 on a predetermined position on preview images respectively corresponding to the plural images and display a moving guide 51 moving with the movement of the mobile terminal 100 to connect the plural images.

[0204] In FIG. 38, reference numeral 52 represents images captured before preview images currently displayed on the touch screen 151 and included in the panorama image. FIG. 38 shows that the panorama image includes three images 52a, 52b and 52c. In addition, a preview image including two objects 11 and 54 is displayed on the touch screen 151 in FIG. 38. The user may touch a specific object 11 a according to the above-describe embodiment of the present invention to focus on the specific object 11a. Furthermore, the user may touch a photographing soft key 13 to capture the currently displayed preview image. Upon capturing the currently displayed preview image, the moving guide 51 moves to the right edge of the touch screen 151, as shown in FIG. 39, and the mobile terminal 100 enters a preview image display mode.

[0205] As shown in FIG. 39, the panorama image is composed of four images 52a, 52b, 52c and 52d, which include the image 52d captured in the step shown in FIG. 38. The user may move the mobile terminal 100 to the right, as shown in FIG. 40, in order to capture the next image to construct the panorama image, that is, the next image following the image 52d captured in the step shown in FIG. 38.

[0206] The moving guide 51 moves to the fixed guide 50 as the mobile terminal 100 moves to the right, as shown in FIG. 40. The user can capture images constructing the panorama image using the fixed guide 50 and the moving guide 51 so as to connect the images seamlessly.

[0207] As described above, the aforementioned embodiments can be applied to capturing images constructing a panorama image.

[0208] The above-described image capturing method in a mobile terminal equipped with a touch screen according to the present invention may be recorded in computer-readable recording media as a program for being executed in computers. The image capturing method in the mobile terminal equipped with the touch screen according to the present invention may be executed through software. When the image capturing is executed through the software, the constituting means of the present invention are code segments executing a necessary task. Programs or code segments may be stored in processor-readable media or transmitted through computer data signals combined with carriers over transmission media or a communication network.

[0209] Computer-readable recording media include all kinds of recording devices in which data capable of being read by a computer system is stored. For example, the computer-readable recording media may include ROM, RAM, CD-ROM, DVD-ROM, DVD-RAM, magnetic tapes, floppy disks, hard disks, and optical data storages. The computer-readable recording media may also be stored and executed as codes, which are distributed into computer apparatuses connected over a network and readable by computers in a distributed manner.

[0210] According to the inventive mobile terminal including the touch screen and the method of capturing images using the same, focusing can be performed on any object which is present at a specific position on a preview image to be captured by a simple touch input action. The position to be focused may be changed easily through a simple touch input method without the need for searching a menu or manipulating a key button, thereby facilitating user convenience.

[0211] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of the inventions. Thus, it is intended that the present invention covers the

modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

CLAIMS

1. A mobile terminal comprising:

a camera;

a touch screen; and

a controller configured to:

control the touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

2. The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

3. The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

4. The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

5. The mobile terminal of claim 1, wherein:

the controller is configured to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

6. The mobile terminal of claim 1, wherein the controller is further configured to recognize displayed objects in the preview images, and to adjust size of the auto focus guide based on size of one of the displayed objects that is touch selected by the user.

7. The mobile terminal of claim 6, wherein the controller is configured to adjust the size of the auto focus guide to circumscribe the one of the displayed objects that is touch selected by the user.

8. The mobile terminal of claim 1, wherein the controller is configured to adjust size of the auto focus guide to circumscribe an object displayed at the specific point.

9. The mobile terminal of claim 1, wherein:

the first direction and the second direction are opposite directions along the touch screen.

10. The mobile terminal of claim 1, wherein the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

11. The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to

decrease the value of the image capture setting when the object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

12. The mobile terminal of claim 11, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

13. The mobile terminal of claim 11, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

14. The mobile terminal of claim 11, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

15. The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

16. The mobile terminal of claim 15, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

17. The mobile terminal of claim 15, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

18. The mobile terminal of claim 15, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

19. The mobile terminal of claim 1, wherein the controller is further configured to perform face recognition processing to recognize a displayed object

in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object in the preview images as a person's face.

20. The mobile terminal of claim 1, wherein the camera includes a movable lens, wherein the image capturing setting corresponds to a position of the movable lens,

wherein the controller is further configured to change the position of the movable lens to perform fine focus adjustment in response to a distance or a direction the object is dragged along the touch screen.

21. The mobile terminal of claim 20, wherein the controller is further configured to control the camera to adjust a pointing direction of the movable lens based on at least the distance or the direction the object is dragged along the touch screen.

22. A computer program product comprising a non-transitory computer readable medium storing program code that is executable to configure at least one processor of a mobile terminal to:

control a touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

23. The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

24. The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

25. The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

26. The computer program product of claim 22, wherein the program code further configures the at least one processor to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

27. The computer program product of claim 22, wherein:

the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

28. The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

29. The computer program product of claim 28, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

30. The computer program product of claim 28, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

31. The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

32. The computer program product of claim 22, wherein the program code further configures the at least one processor to perform face recognition processing to recognize a displayed object in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object as a person's face.

ABSTRACT OF THE DISCLOSURE

The present invention provides a mobile terminal and a method of capturing an image using the same. The mobile terminal controls a camera conveniently and efficiently to capture an image and performs focusing in various manners to capture an image. Accordingly, a user can obtain a desired image easily and conveniently.

FIG. 1

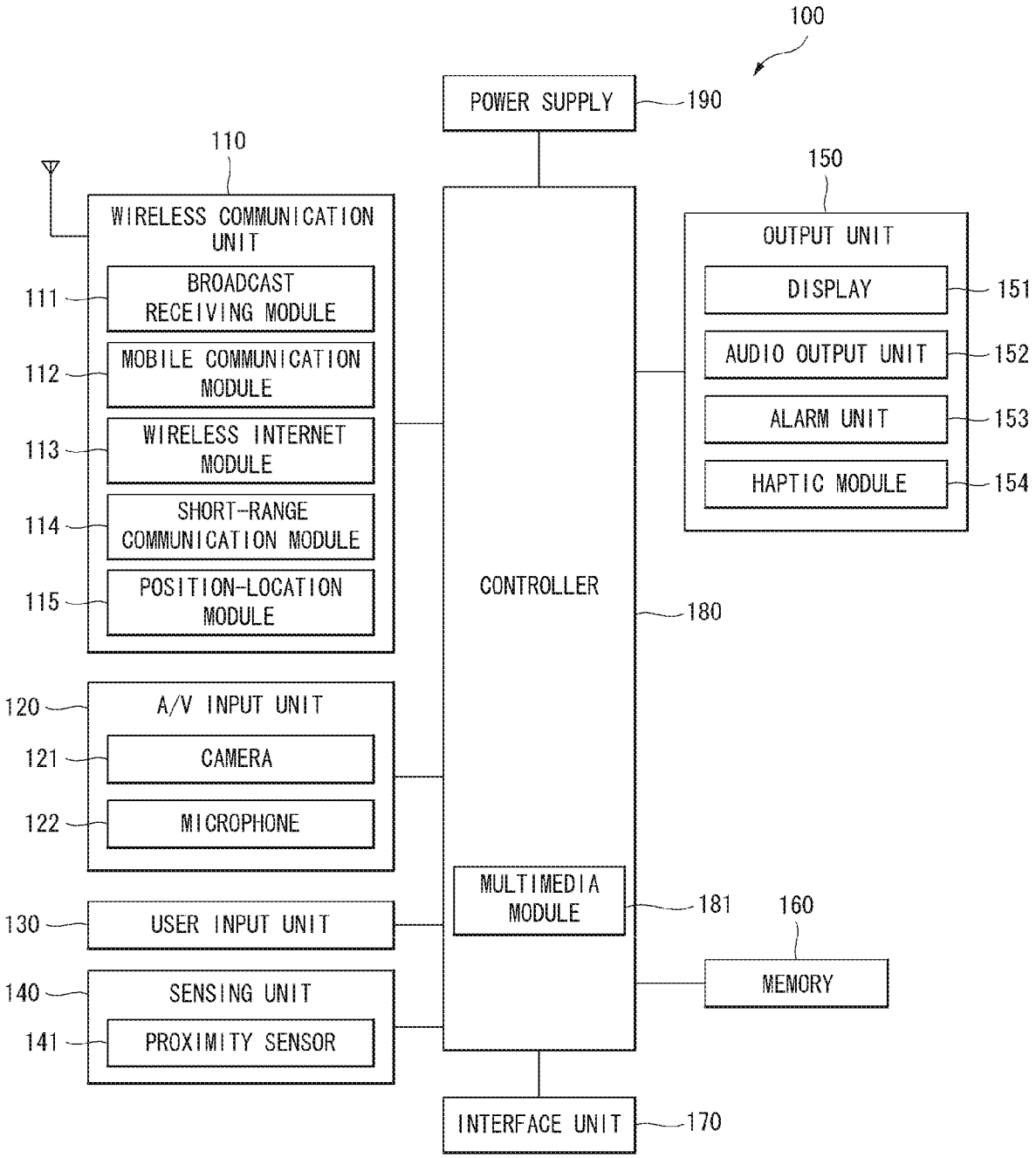

100
POWER SUPPLY
190
110
WIRELESS COMMUNICATION UNIT
111
BROADCAST RECEIVING MODULE
112
MOBILE COMMUNICATION MODULE
113
WIRELESS INTERNET MODULE
114
SHORT-RANGE COMMUNICATION MODULE
115
POSITION-LOCATION MODULE
150
OUTPUT UNIT
DISPLAY
151
AUDIO OUTPUT UNIT
152
ALARM UNIT
153
HAPTIC MODULE
154
CONTROLLER
180
120
A/V INPUT UNIT
121
CAMERA
122
MICROPHONE
MULTIMEDIA MODULE
181
160
MEMORY
130
USER INPUT UNIT
140
SENSING UNIT
141
PROXIMITY SENSOR
INTERFACE UNIT
170

FIG. 2A

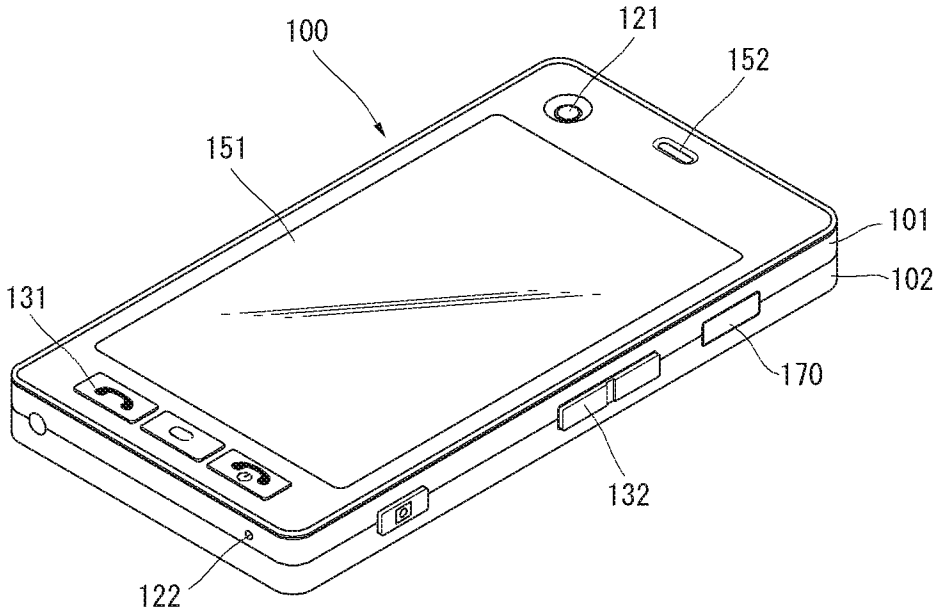

100
121
152
151
101
102
131
170
132
122

FIG. 2B

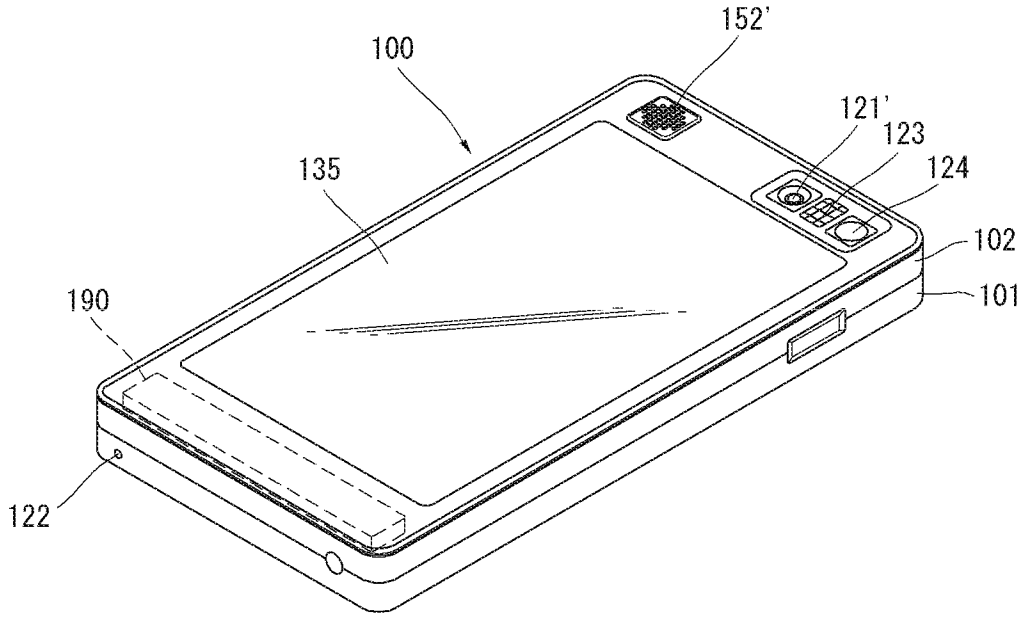

152'
100
121'
123
135
124
102
190
101
122

FIG. 3A

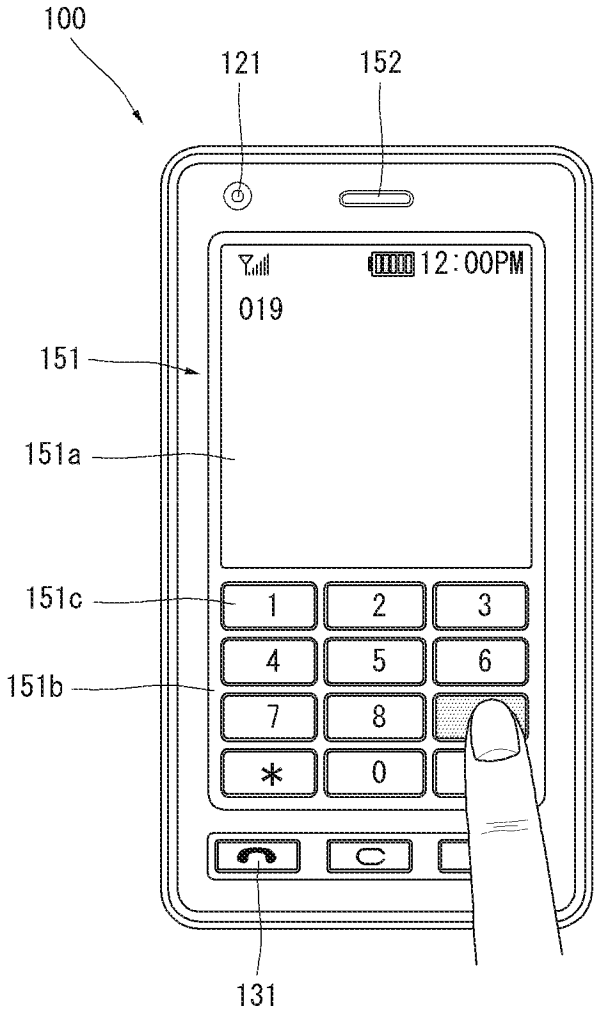


FIG. 3B

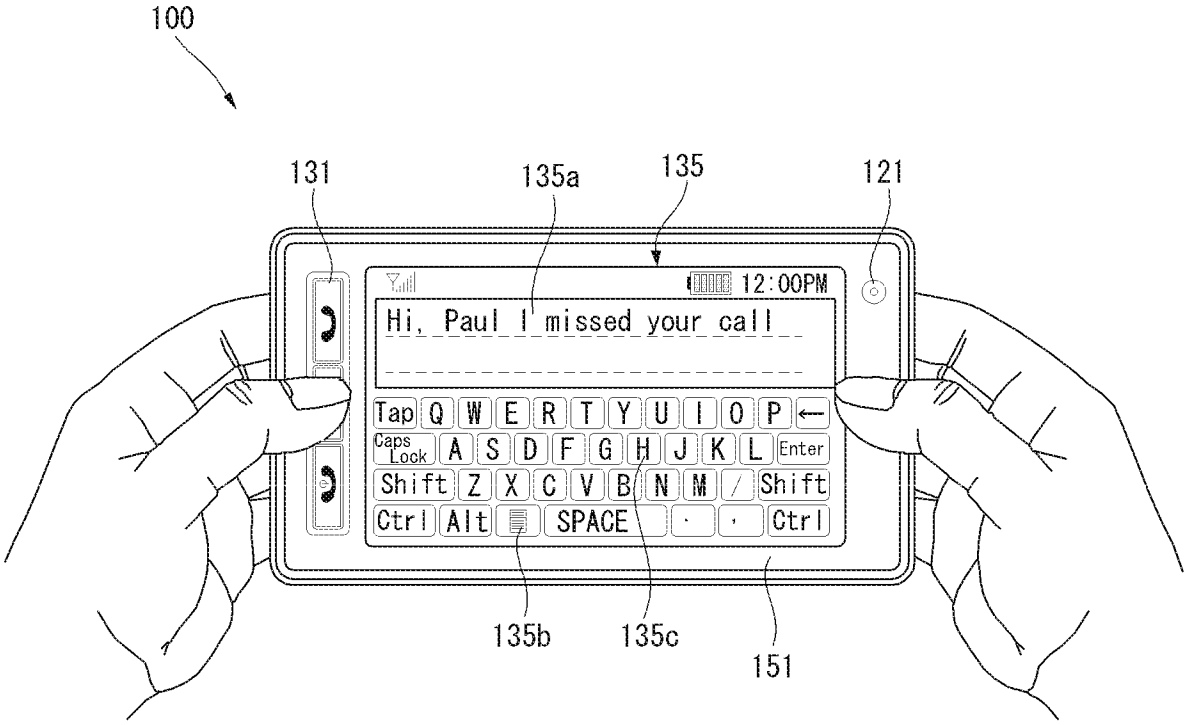

100
131
135a
135
121
12:00PM
Hi, Paul I missed your call
Tap Q W E R T Y U I O P ←
Caps Lock A S D F G H J K L Enter
Shift Z X C V B N M / Shift
Ctrl Alt SPACE . , Ctrl
135b
135c
151

FIG. 4

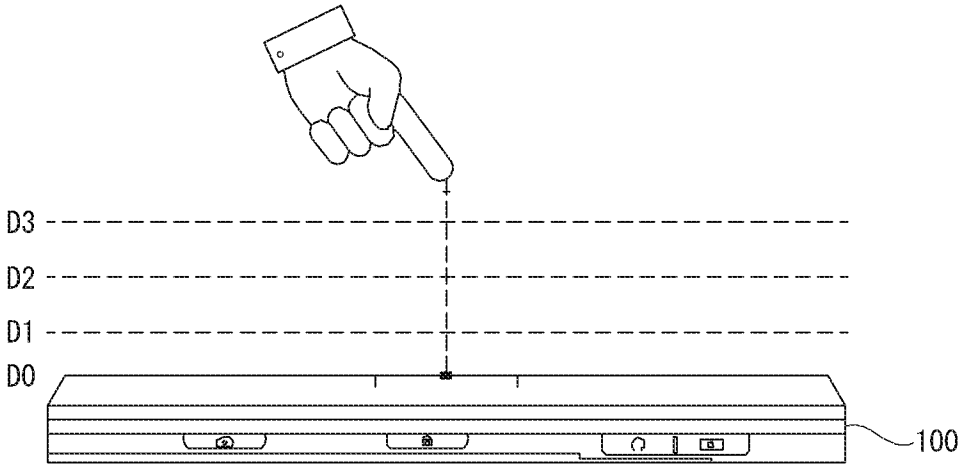


FIG. 5

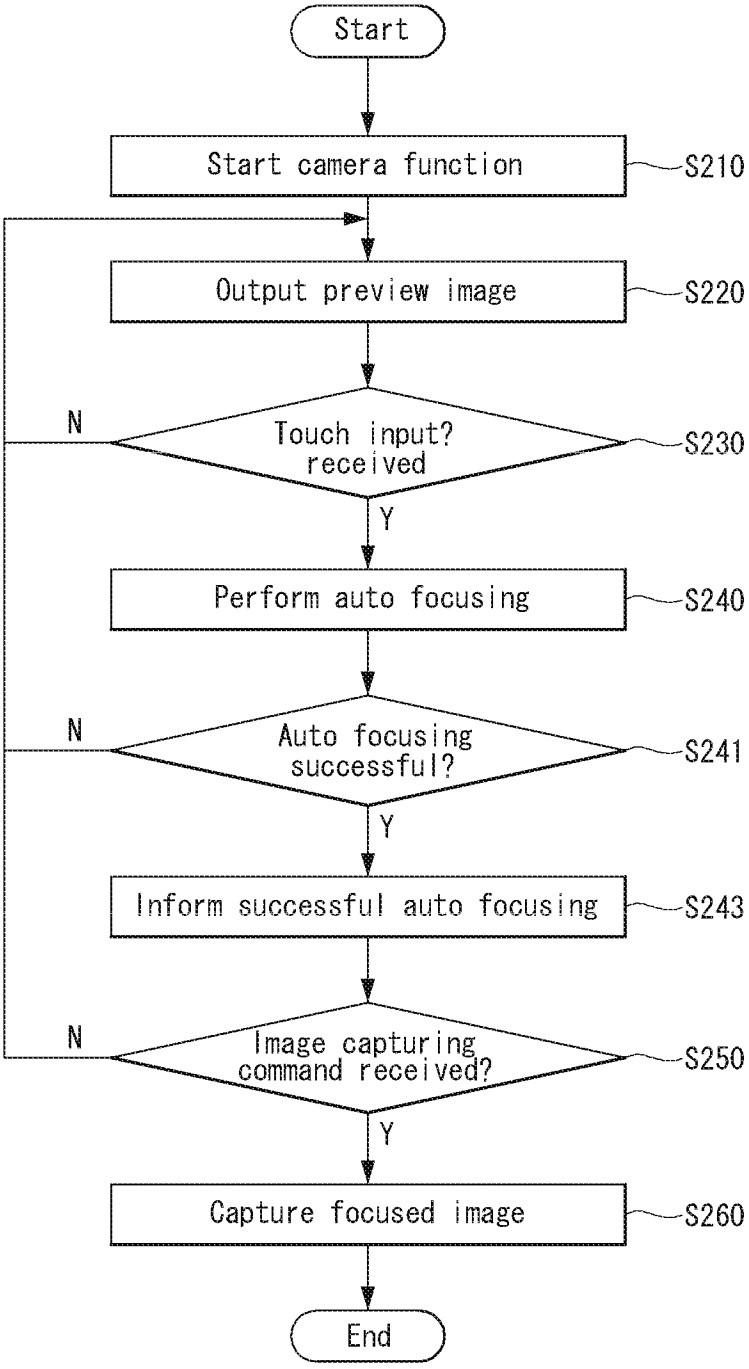

Start
Start camera function
S210
Output preview image
S220
N
Touch input? received
S230
Y
Perform auto focusing
S240
N
Auto focusing successful?
S241
Y
Inform successful auto focusing
S243
N
Image capturing command received?
S250
Y
Capture focused image
S260
End

FIG. 6A

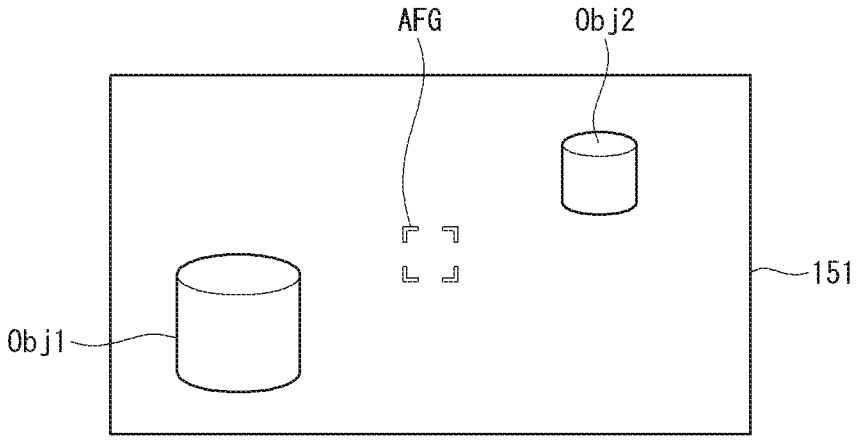


FIG. 6B

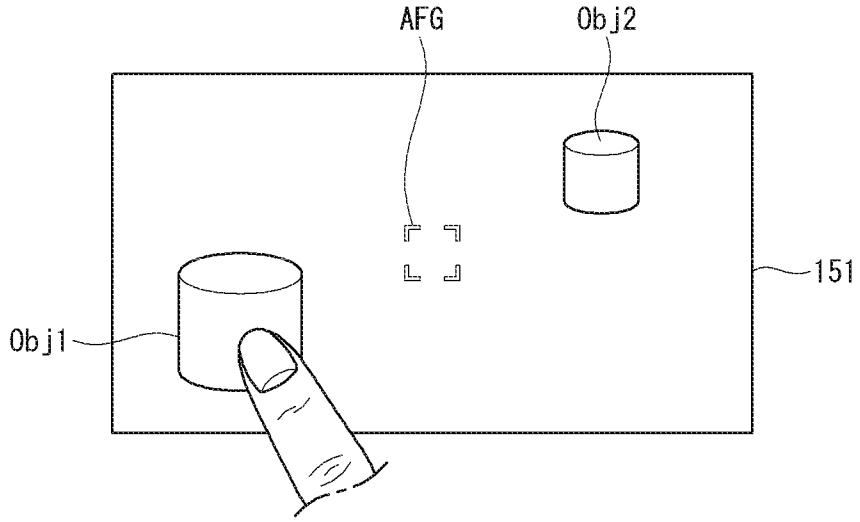


FIG. 6C

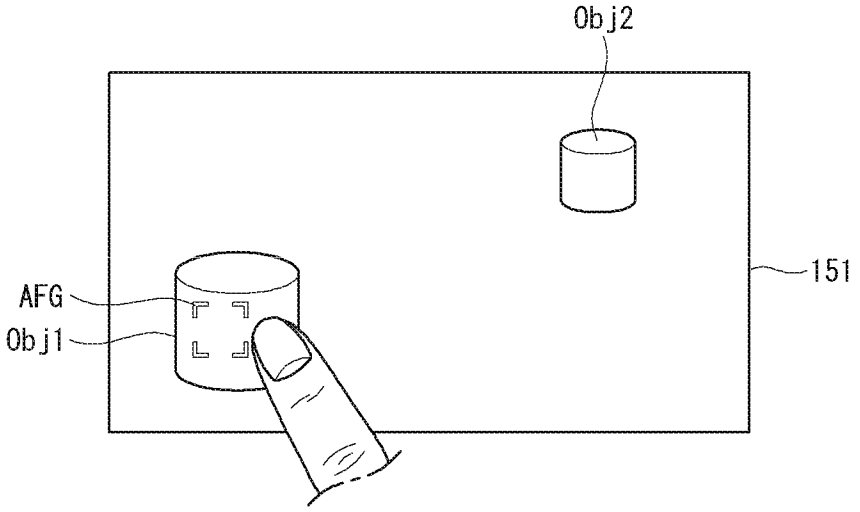


FIG. 6D

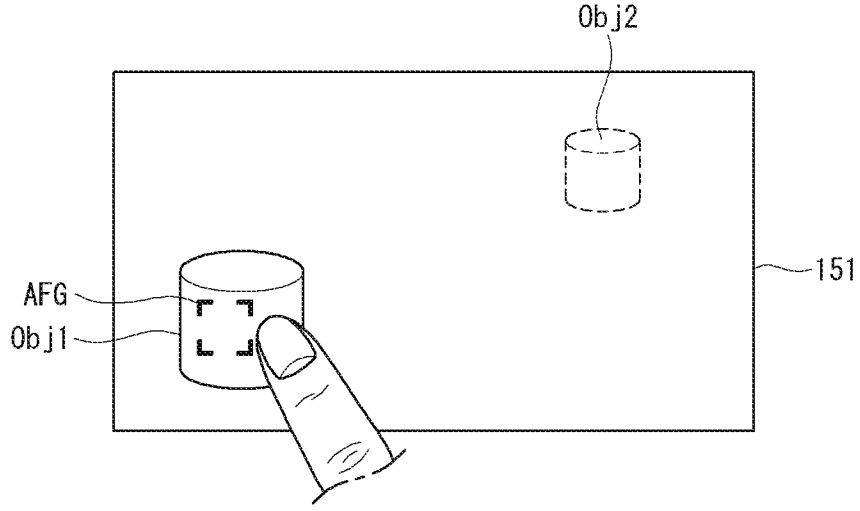


FIG. 6E

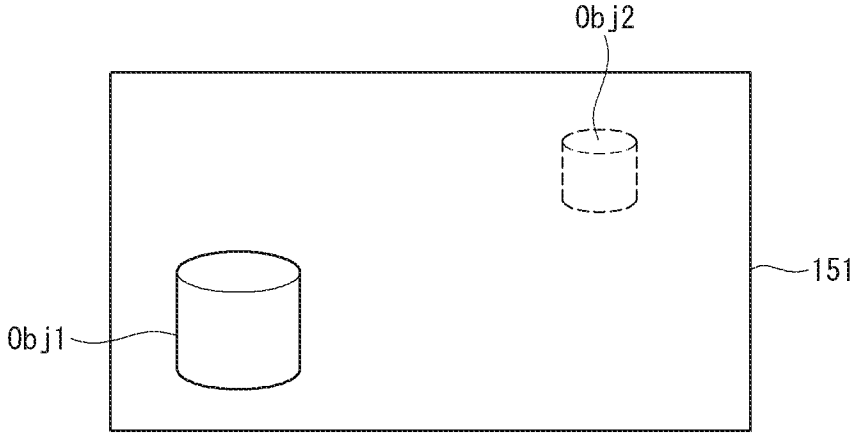


FIG. 7A

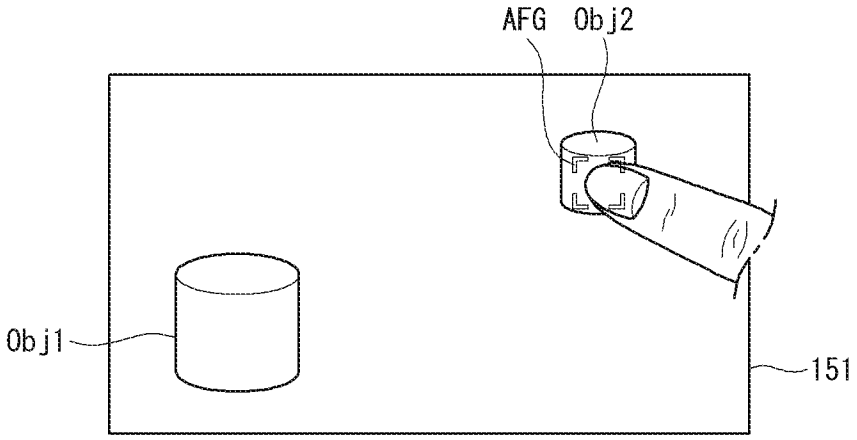


FIG. 7B

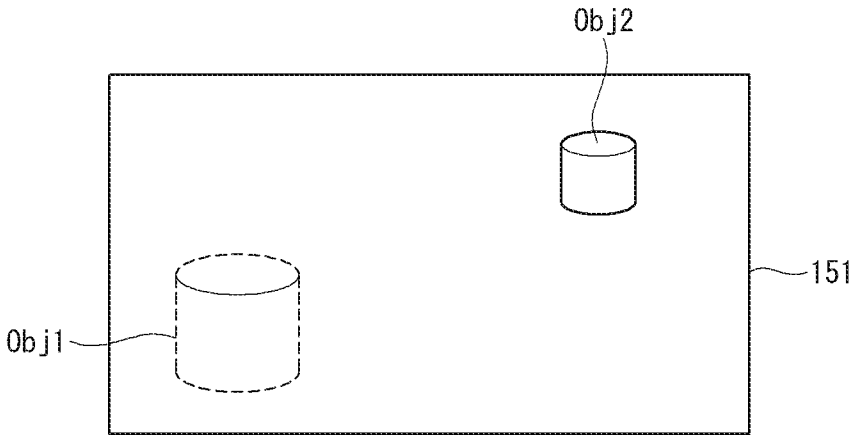


FIG. 8A

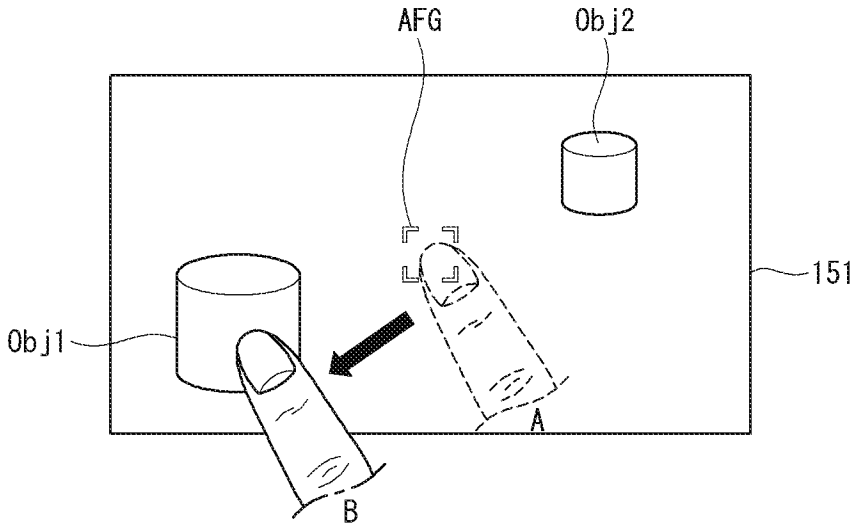


FIG. 8B

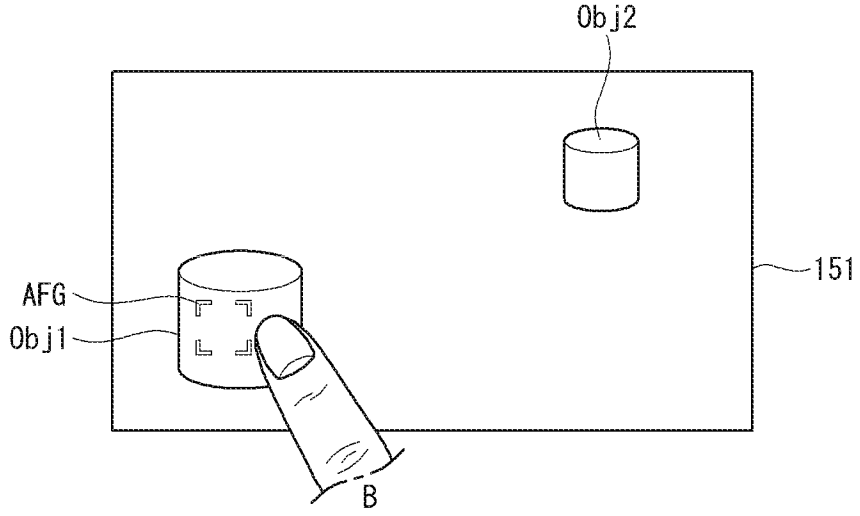


FIG. 9

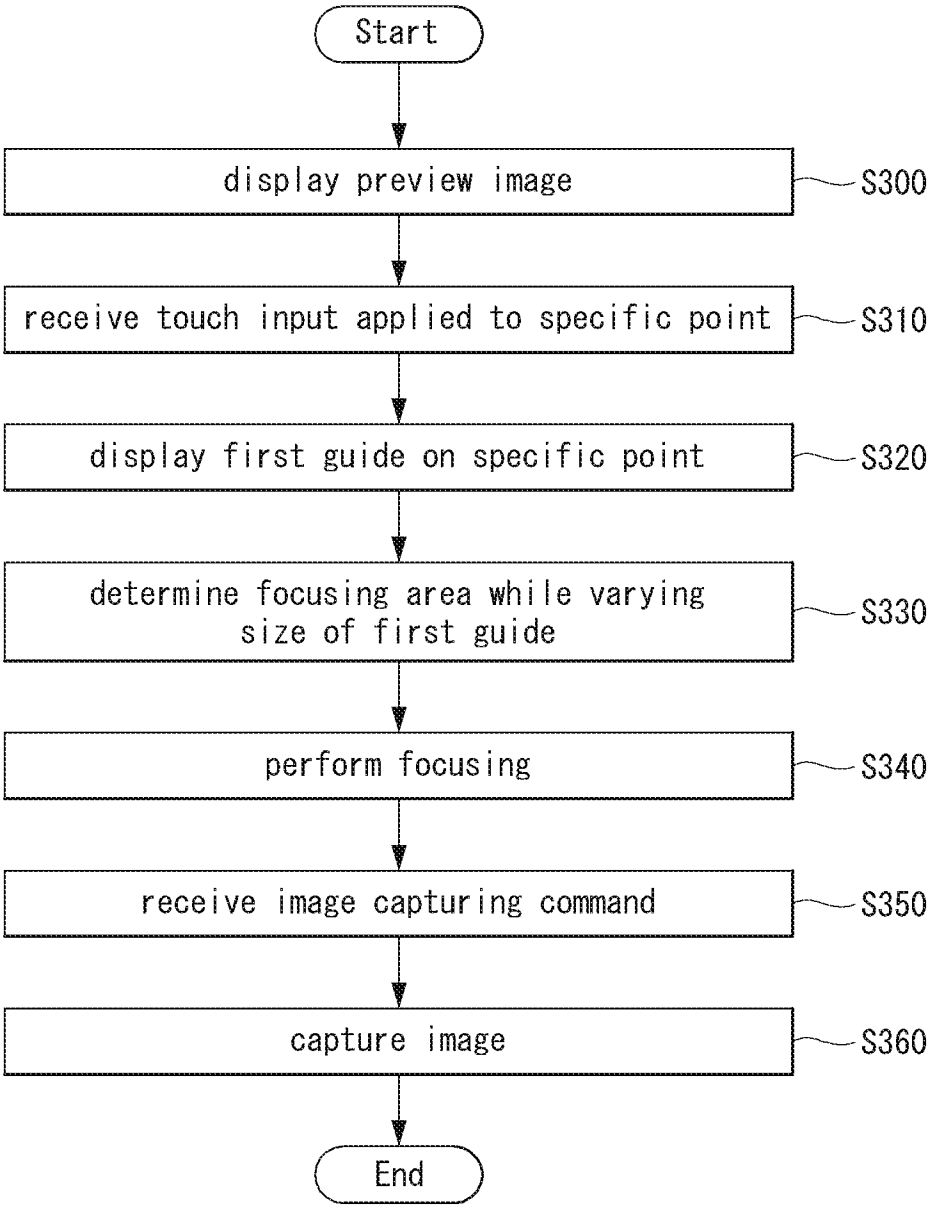

Start
display preview image
S300
receive touch input applied to specific point
S310
display first guide on specific point
S320
determine focusing area while varying size of first guide
S330
perform focusing
S340
receive image capturing command
S350
capture image
S360
End

FIG. 10

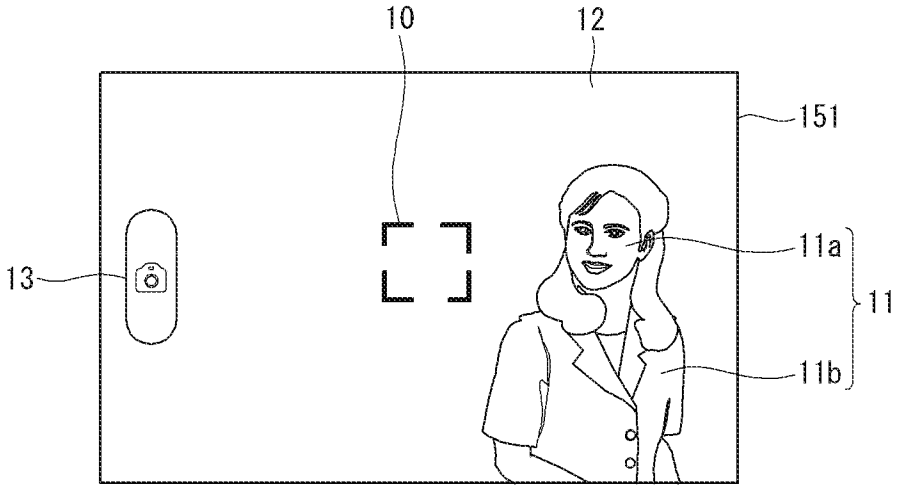


FIG. 11

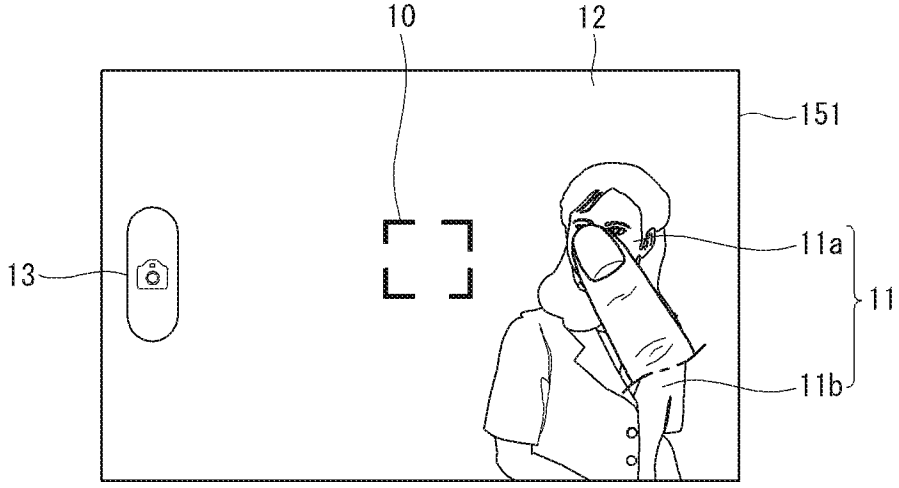


FIG. 12

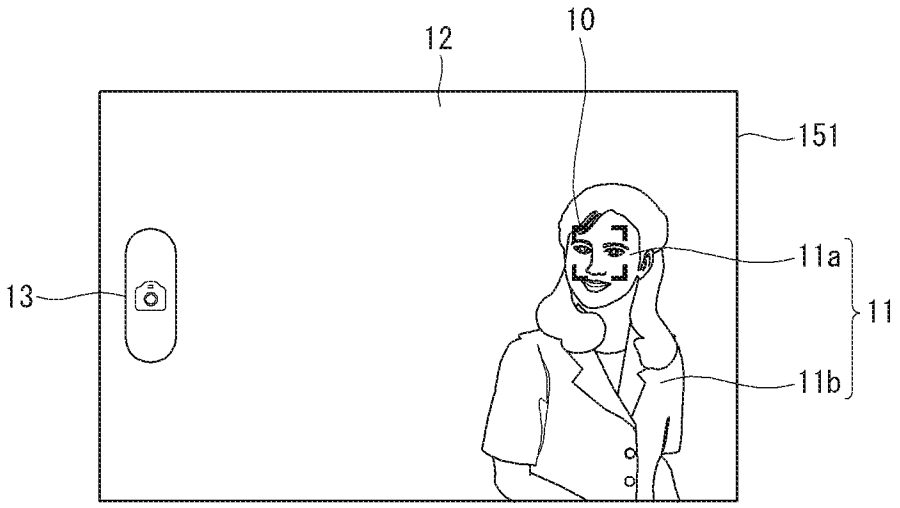


FIG. 13

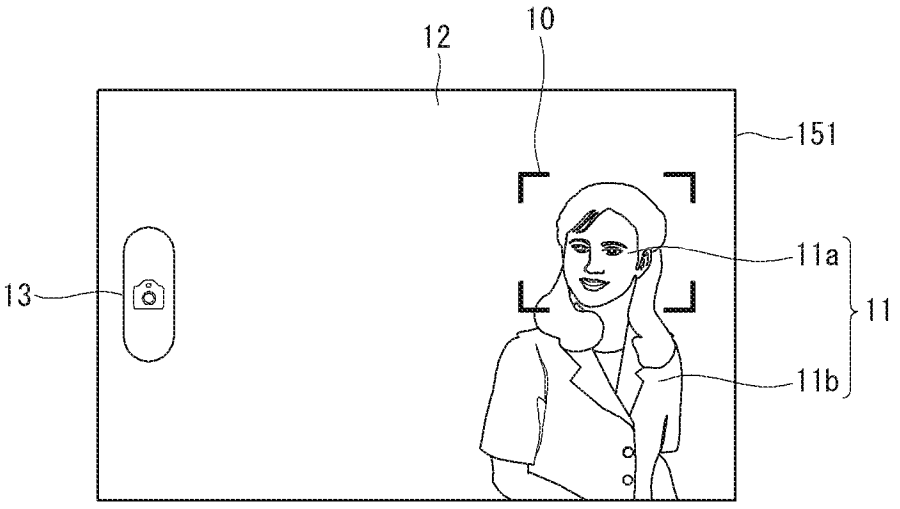


FIG. 14

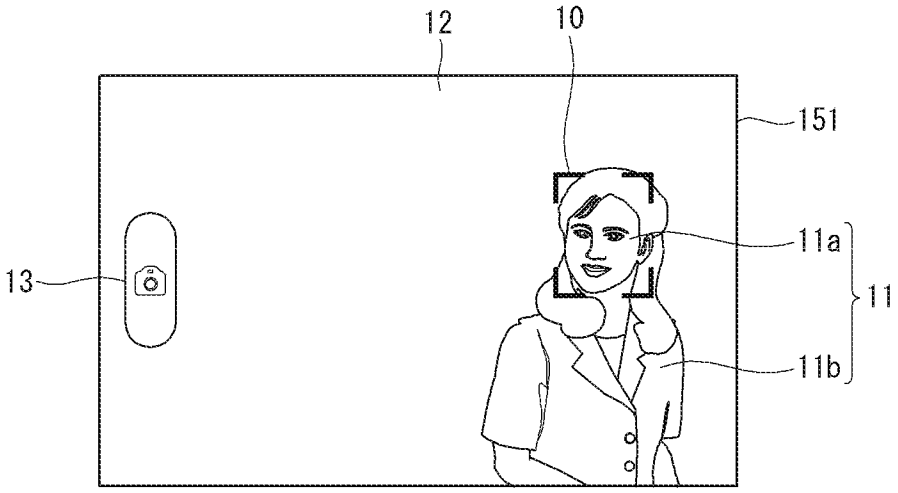

12
10
151
13
11a
11
11b

FIG. 15

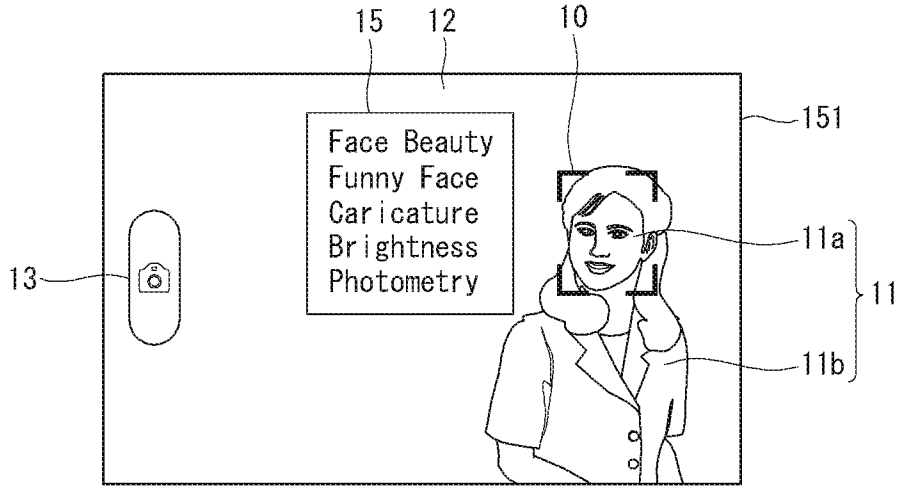

15
12
10
151
Face Beauty
Funny Face
Caricature
Brightness
Photometry
13
11a
11
11b

FIG. 16

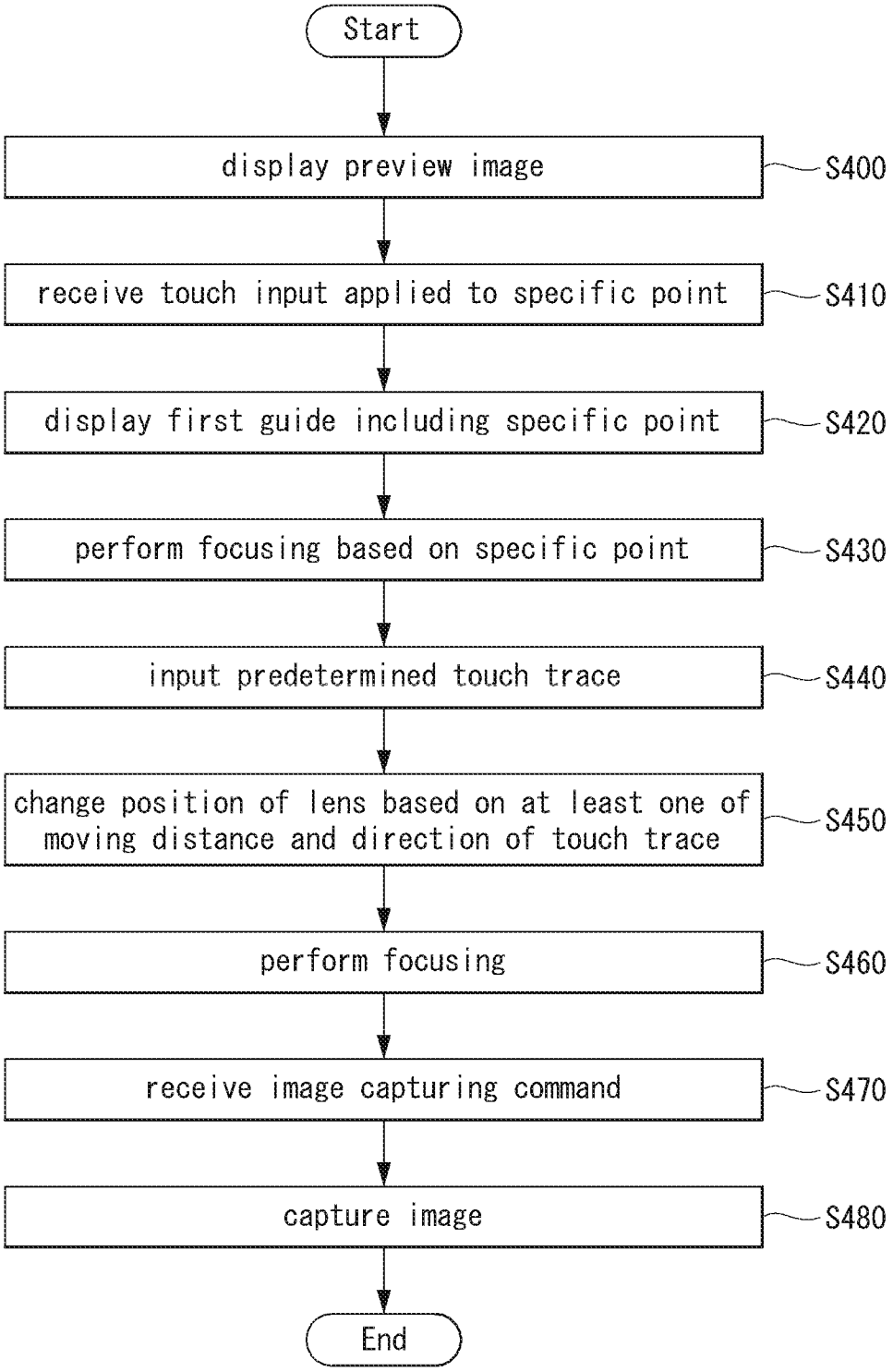

Start
display preview image
S400
receive touch input applied to specific point
S410
display first guide including specific point
S420
perform focusing based on specific point
S430
input predetermined touch trace
S440
change position of lens based on at least one of moving distance and direction of touch trace
S450
perform focusing
S460
receive image capturing command
S470
capture image
S480
End

FIG. 17

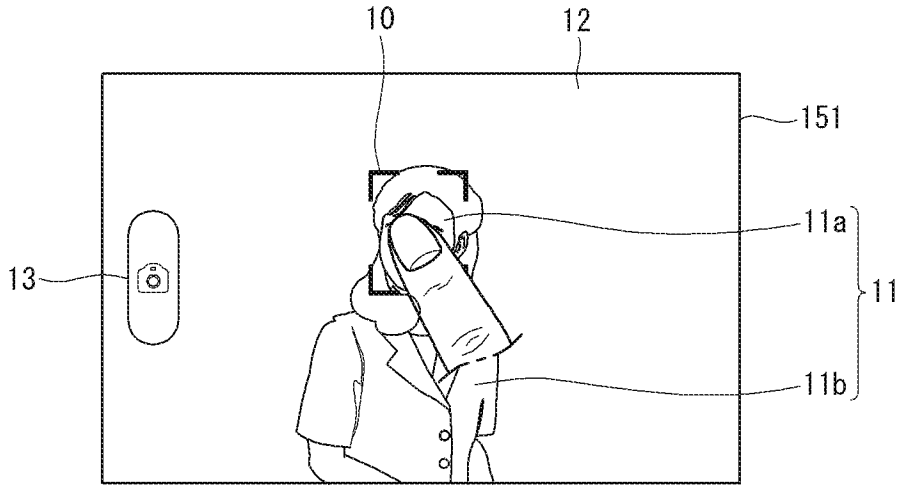


FIG. 18

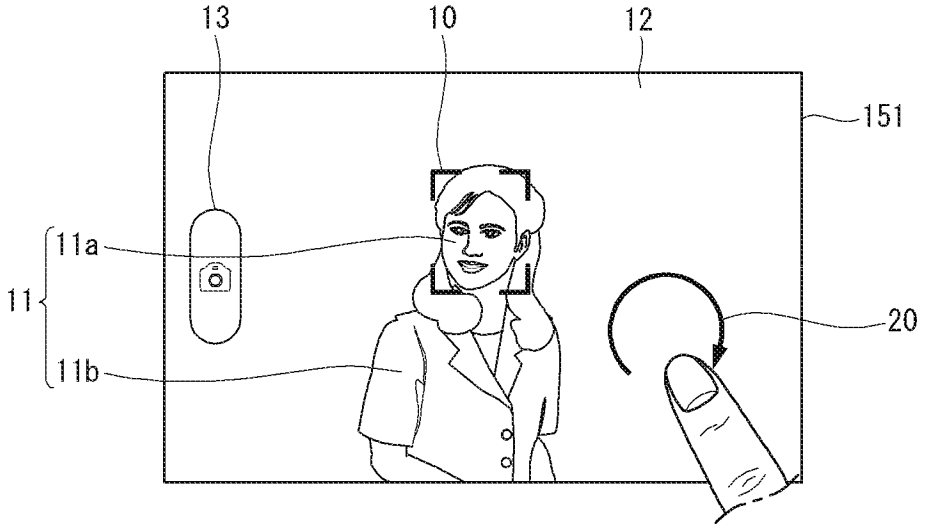


FIG. 19

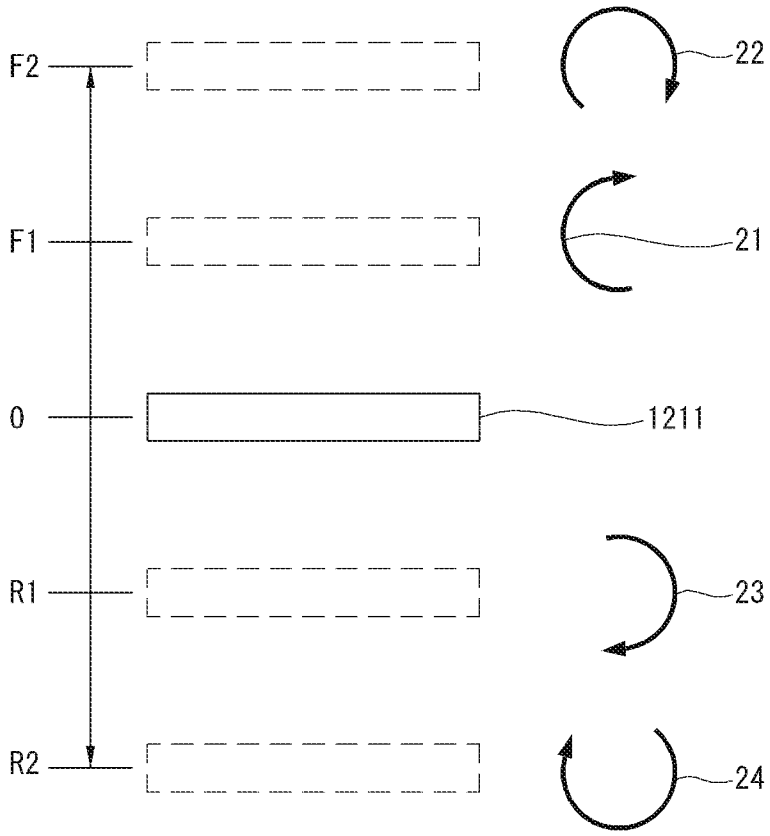


FIG. 20

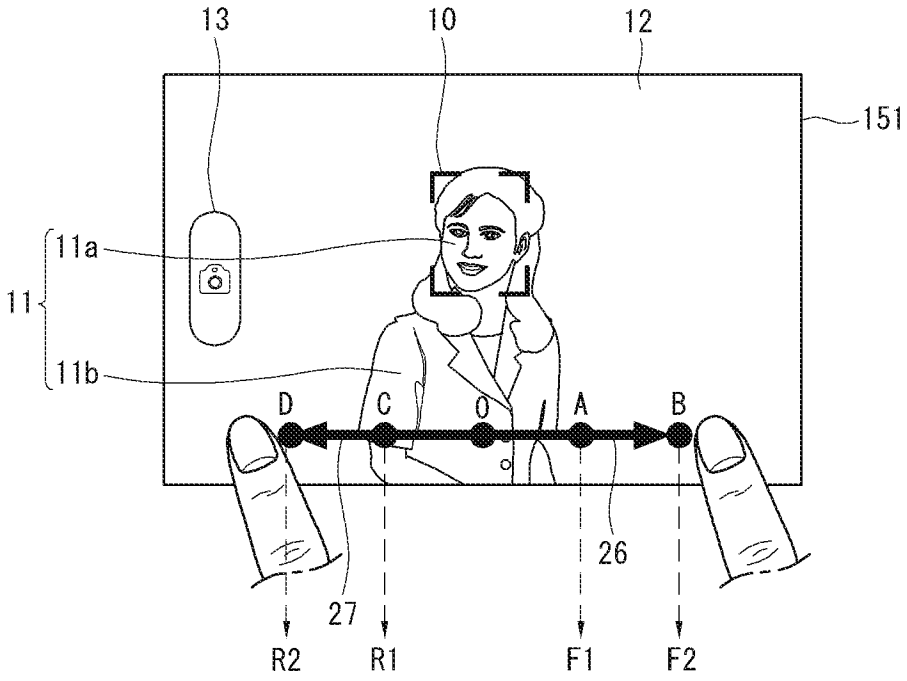


FIG. 21

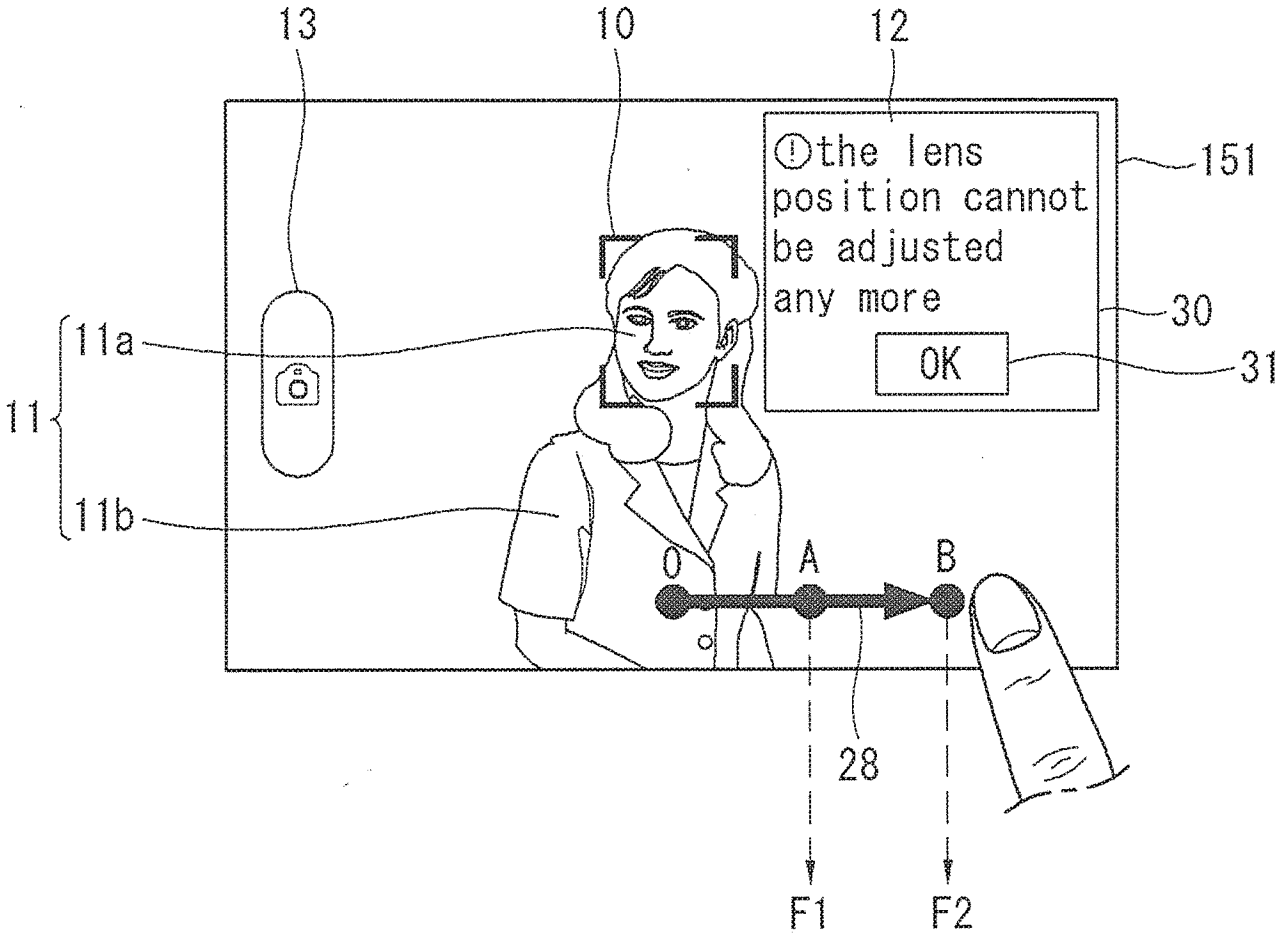

13
10
12
①the lens position cannot be adjusted any more
151
30
OK
31
11
11a
11b
O
A
B
28
F1
F2

FIG. 22

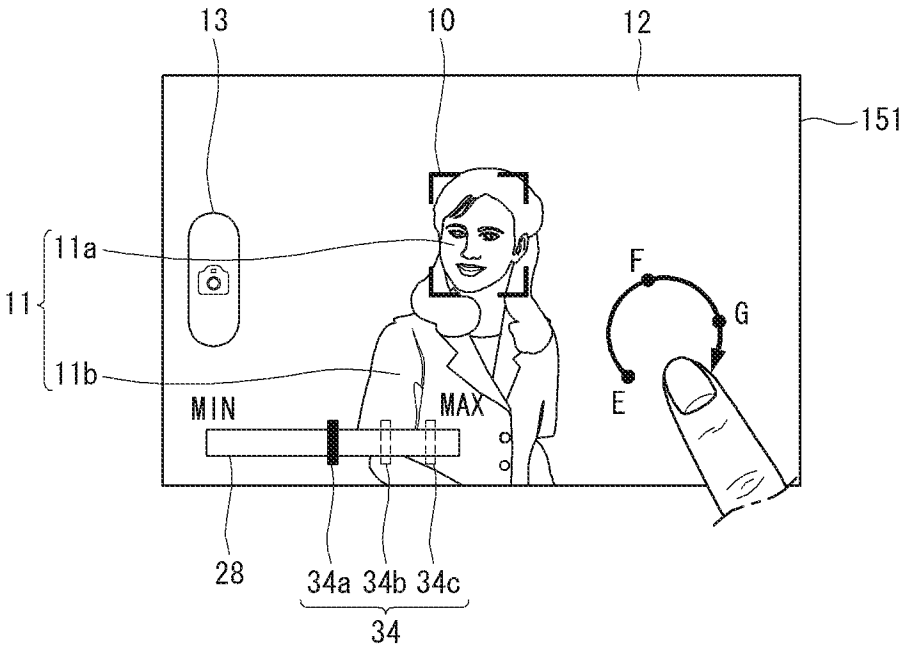

13
10
12
151
11a
11
11b
MIN
MAX
F
G
E
28
34a 34b 34c
34

FIG. 23

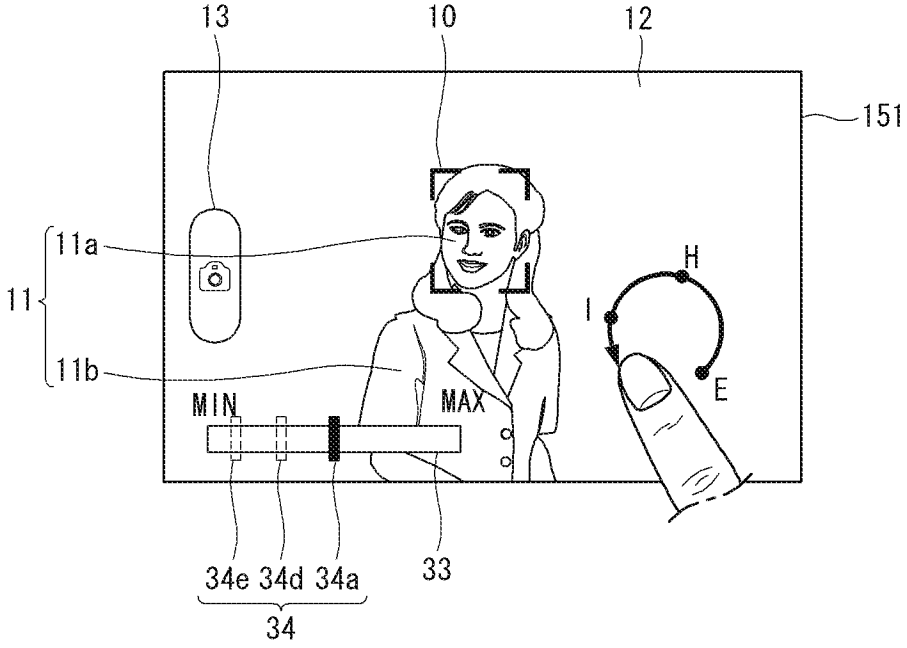

13
10
12
151
11a
11
11b
MIN
MAX
H
I
E
34e 34d 34a
33
34

FIG. 24

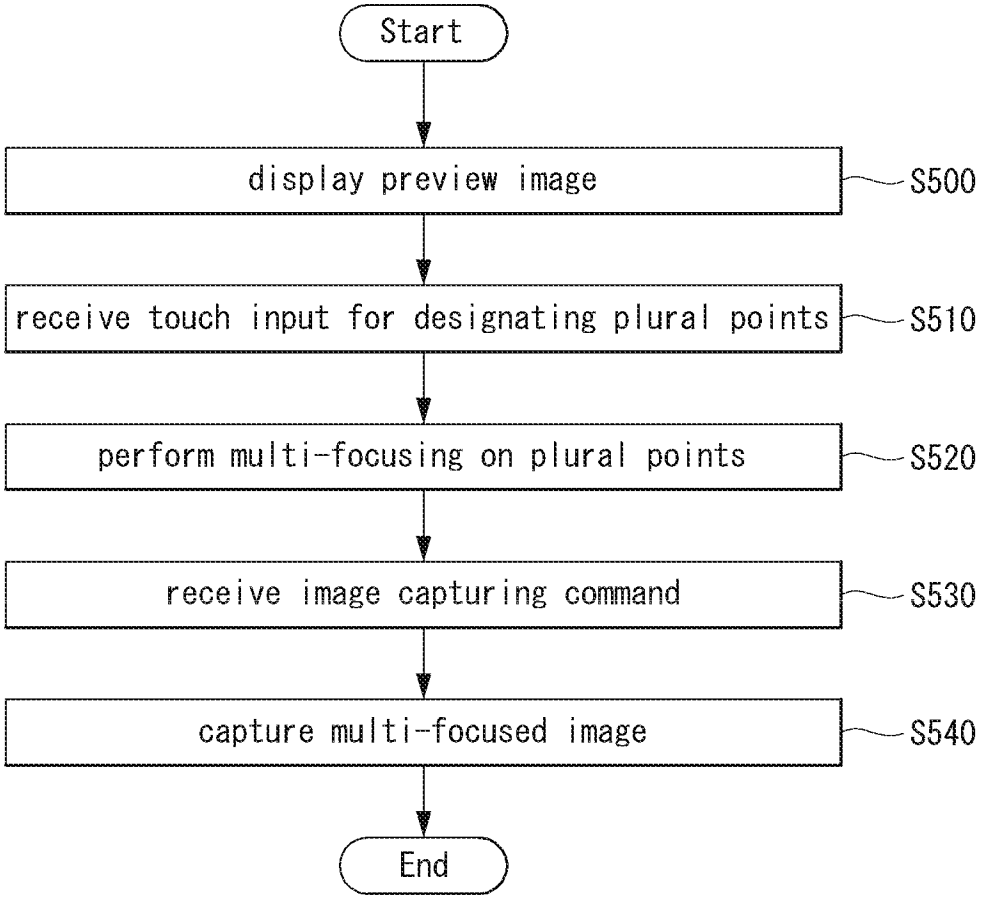

Start
display preview image
S500
receive touch input for designating plural points
S510
perform multi-focusing on plural points
S520
receive image capturing command
S530
capture multi-focused image
S540
End

FIG. 25

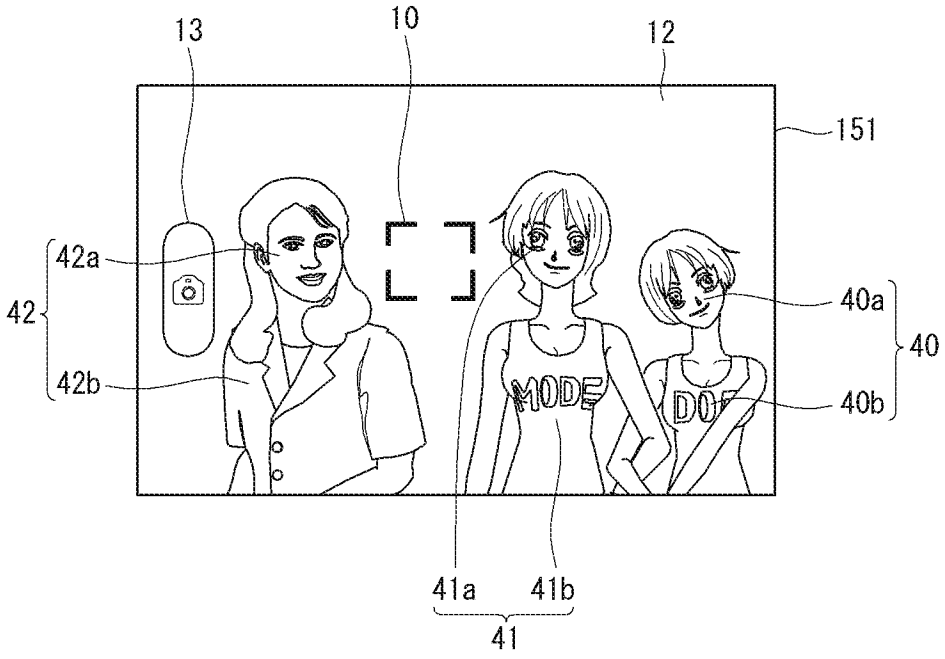

13
10
12
151
42a
42
42b
40a
40
40b
MODE
DOF
41a
41b
41

FIG. 26

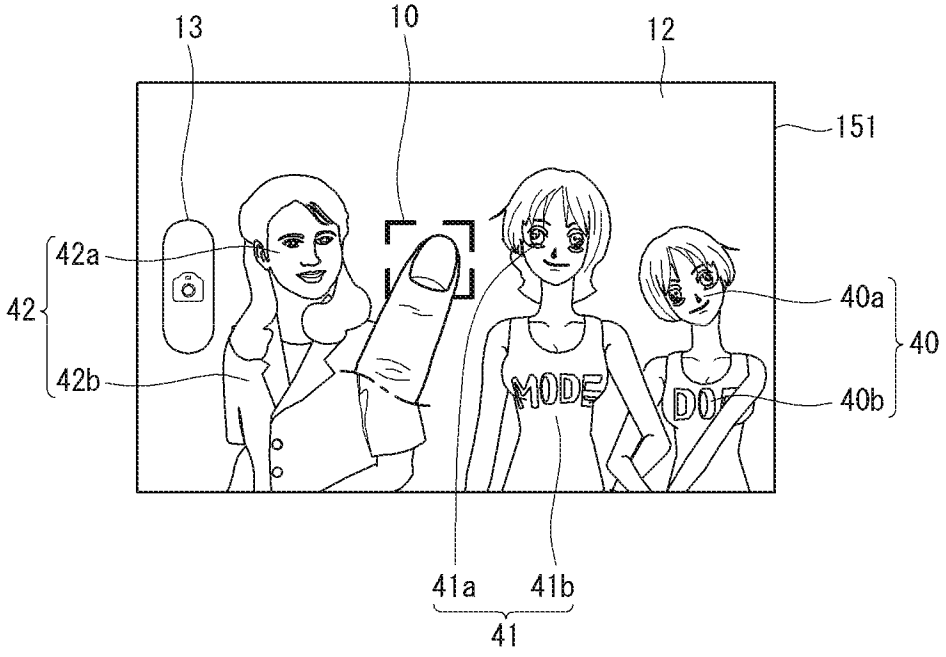

13
10
12
151
42a
42
42b
40a
40
40b
MODE
DOF
41a
41b
41

FIG. 27

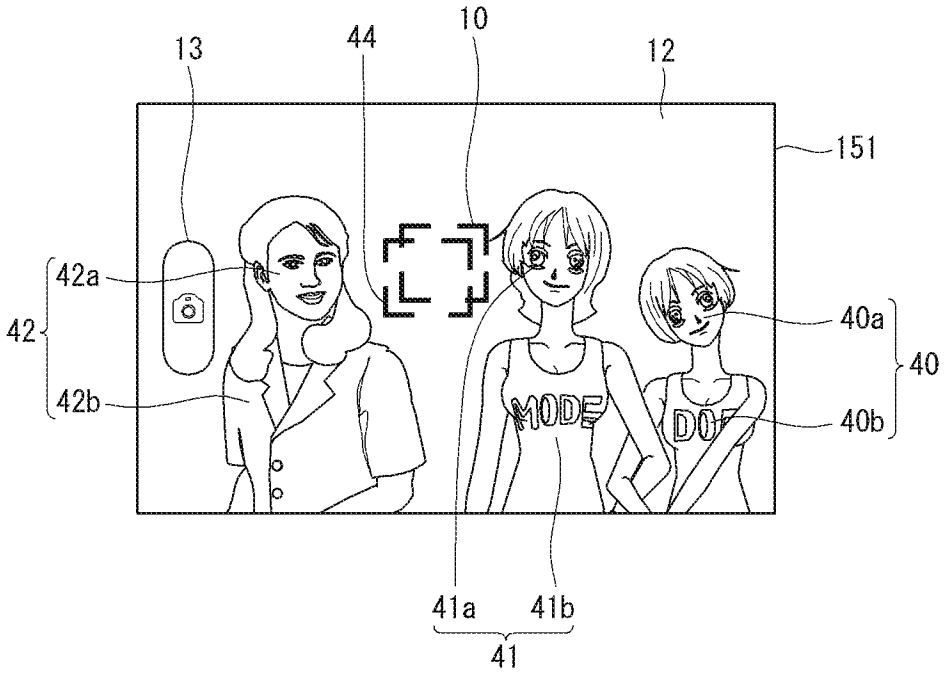

13
44
10
12
151
42a
42
42b
40a
40
40b
MODE
DOF
41a
41b
41

FIG. 28

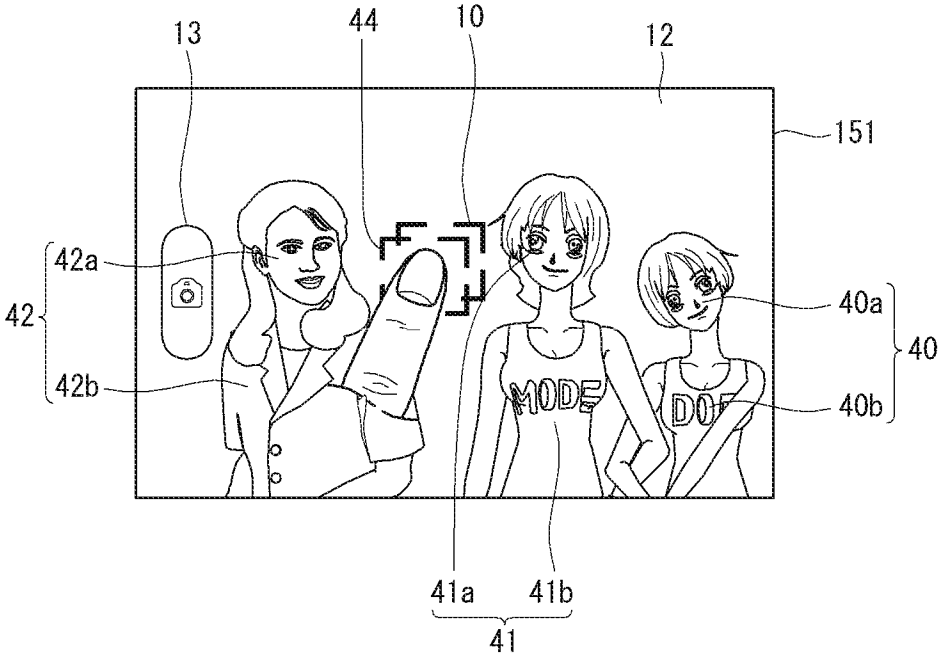

13
44
10
12
151
42a
42
42b
40a
40
40b
MODE
DOF
41a
41b
41

FIG. 29

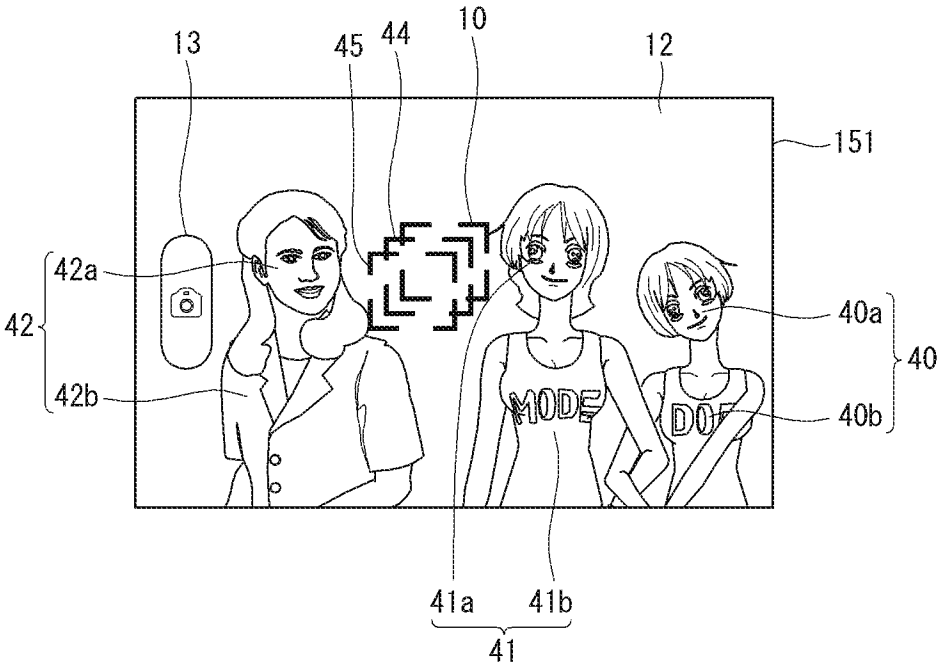

13
45
44
10
12
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 30

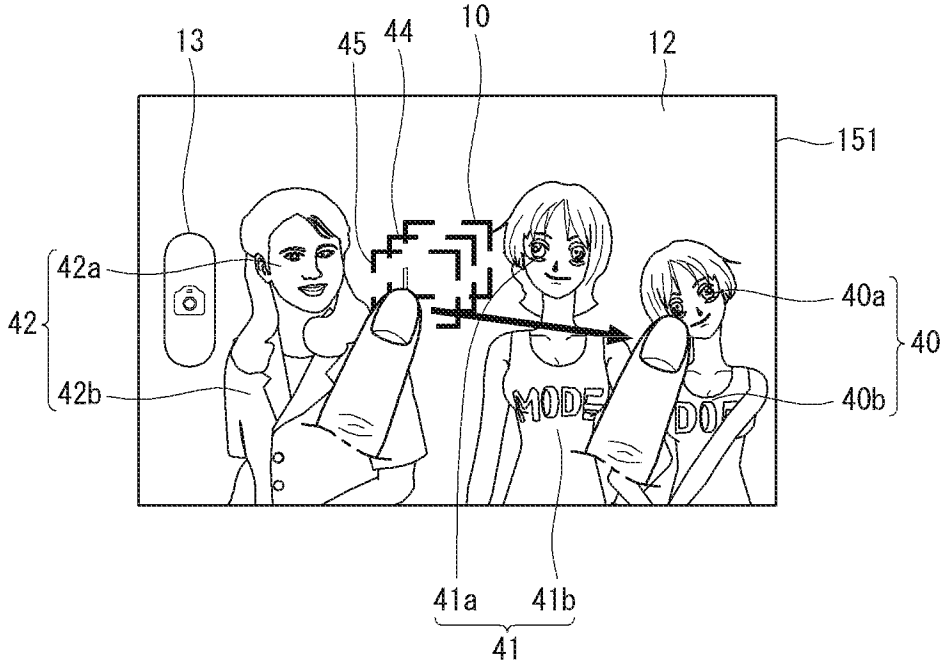

13
45
44
10
12
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 31

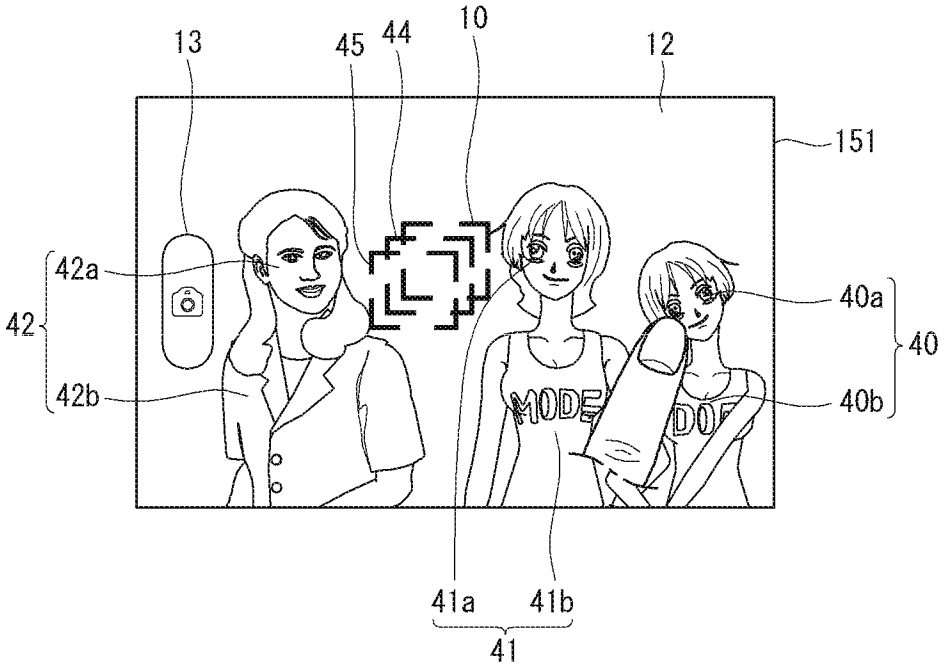

13
45
44
10
12
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 32

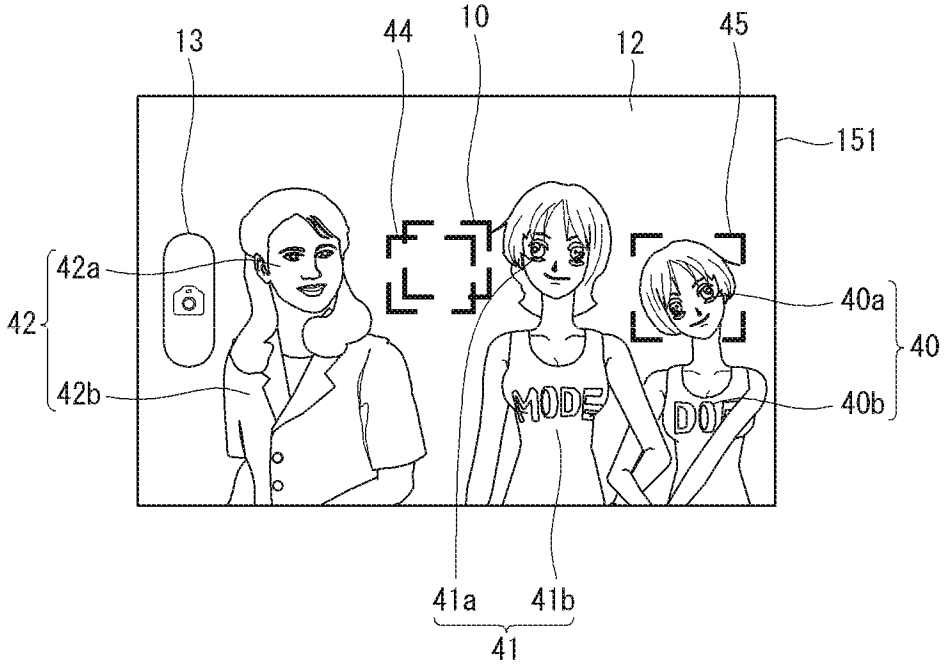

13
44
10
12
45
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 33

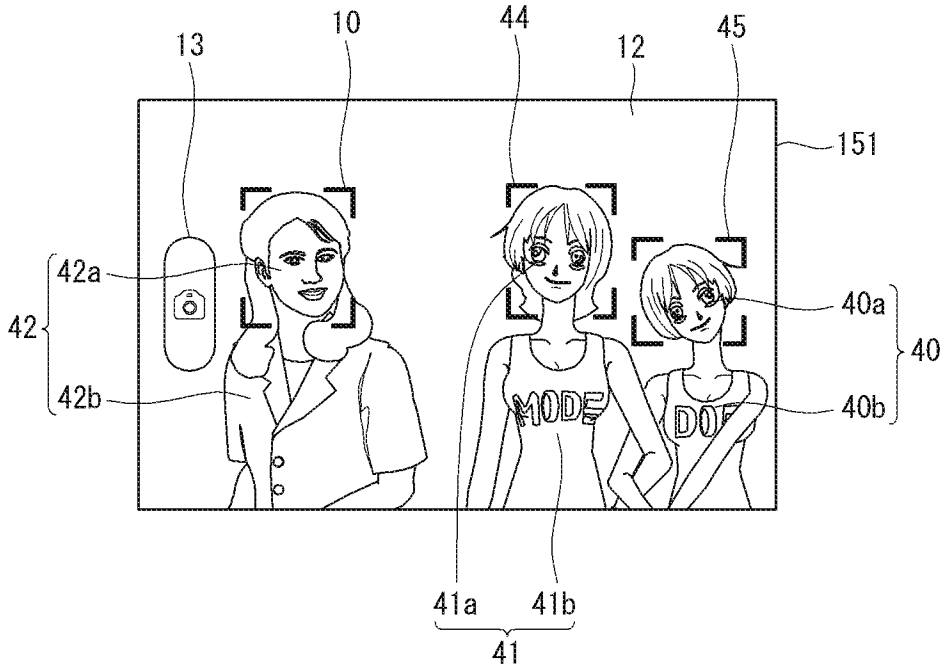

13
10
44
12
45
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 34

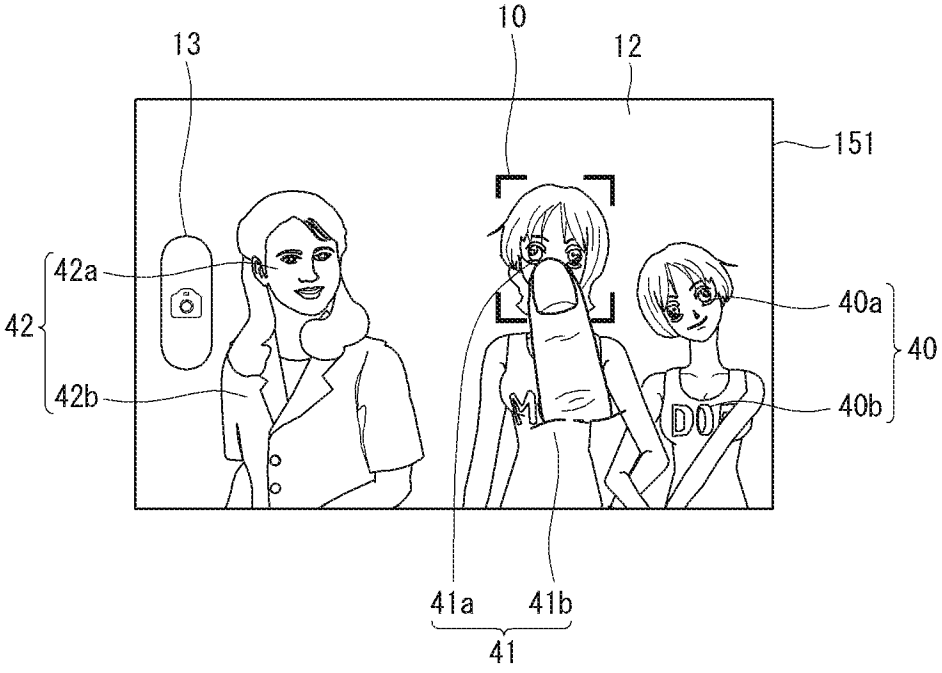

13
10
12
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 35

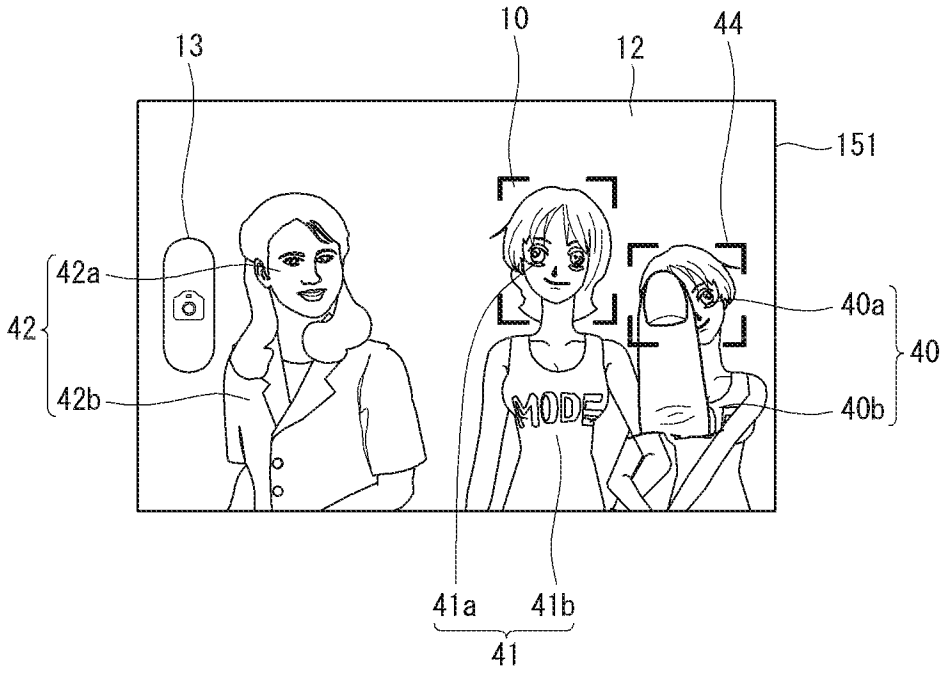

13
10
12
44
151
42a
42
42b
40a
40
40b
MODE
41a
41b
41

FIG. 36

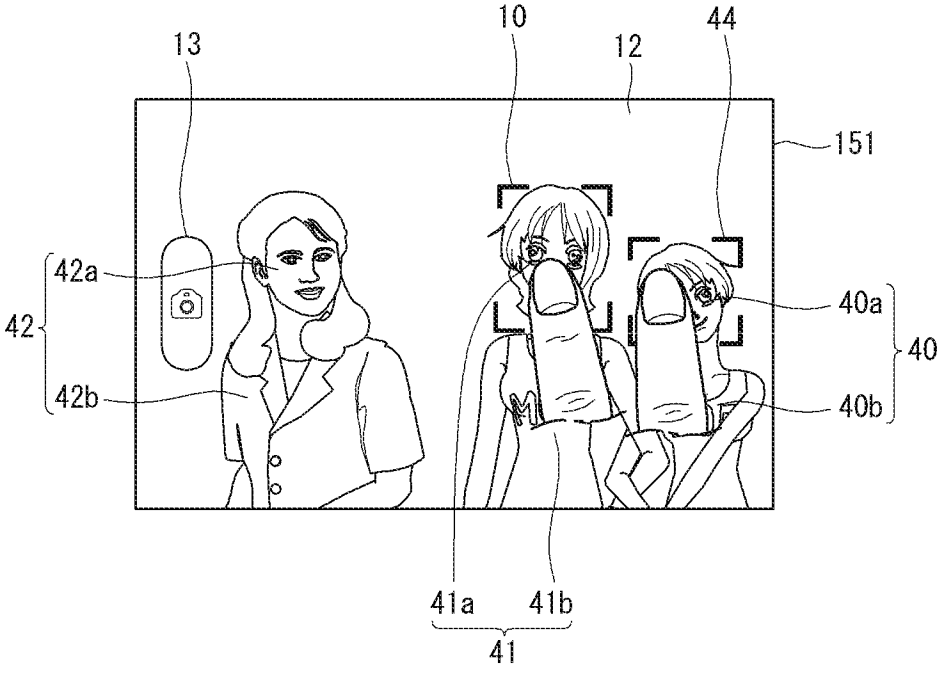

13
10
12
44
151
42a
42
42b
40a
40
40b
41a
41b
41

FIG. 37

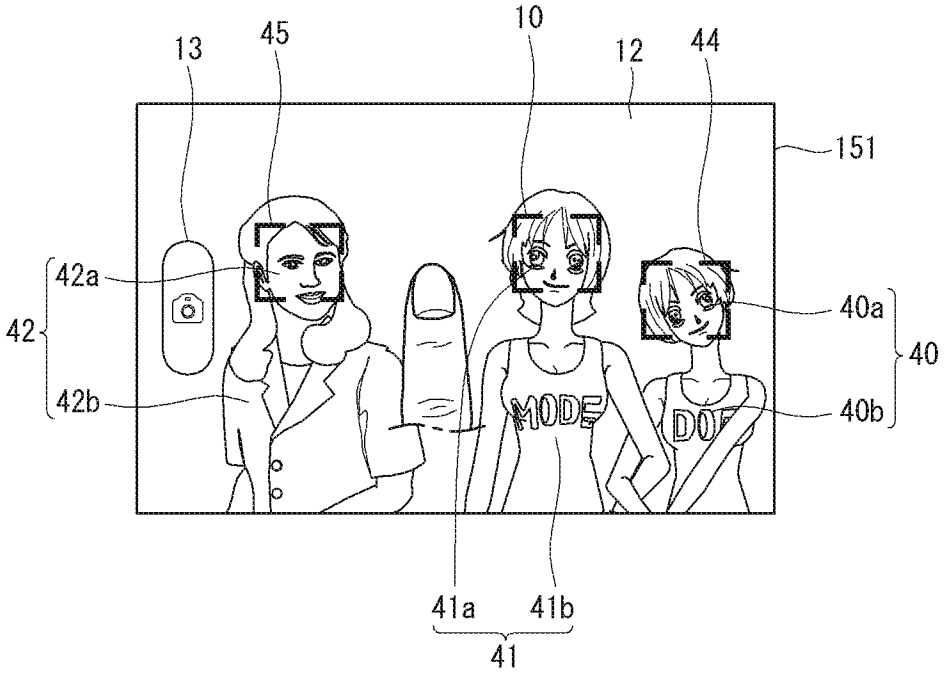

13
45
10
12
44
151
42a
42
42b
40a
40
40b
MODE
41a
41b
41

FIG. 38

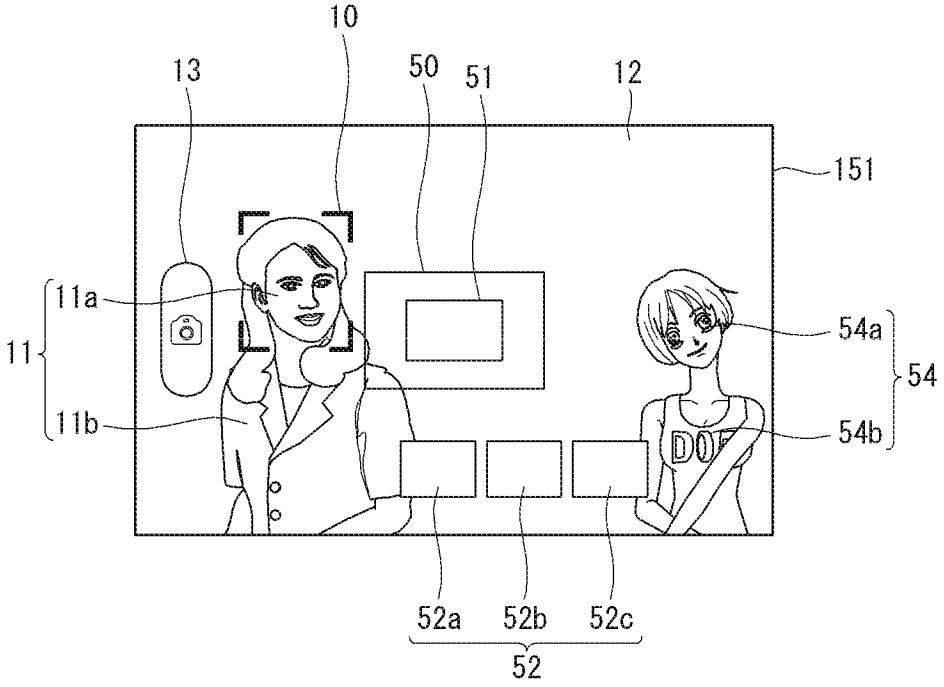

10
13
50
51
12
151
11a
11
11b
54a
54
54b
52a
52b
52c
52

FIG. 39

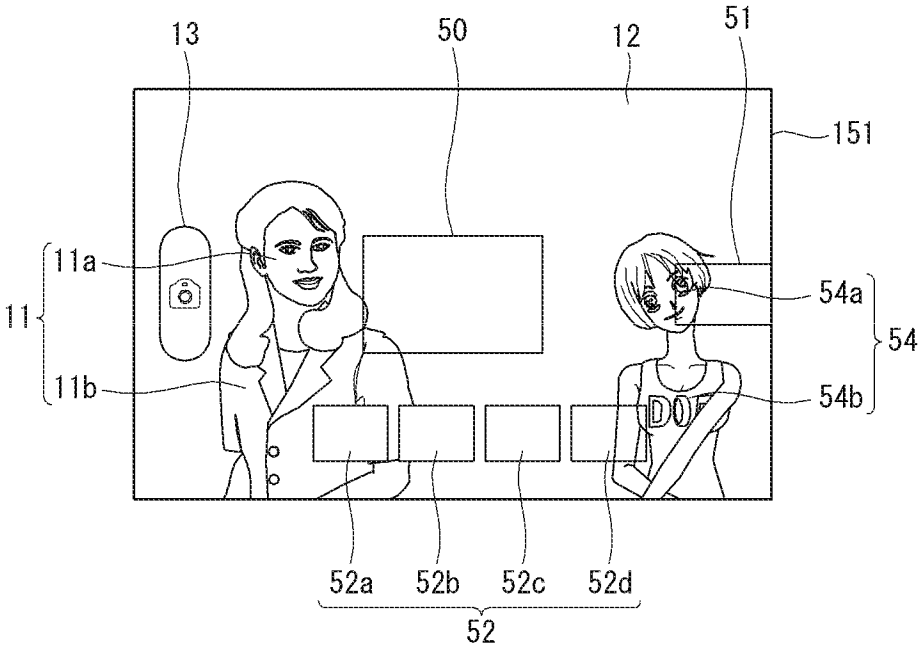
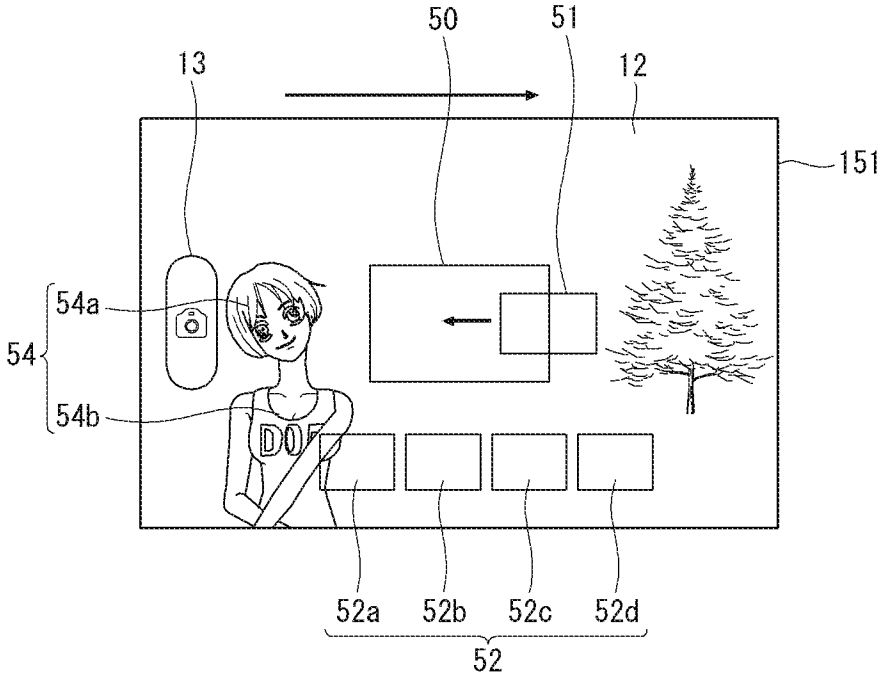

13
50
12
51
151
11a
11
11b
54a
54
54b
52a
52b
52c
52d
52

FIG. 40


50
51
13
12
151
54a
54
54b
52a
52b
52c
52d
52

Attorney Docket No. [illegible]

[illegible]

[illegible]

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number

filed on

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and may be returned.

LEGAL NAME OF INVENTOR

Inventor: Woo Chang CHUN Date (Optional):

Signature:

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must be submitted with this form. Use additional PTO/SB/64A/B/C forms for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Attorney Docket No. [illegible]

[illegible]

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number

  filed on [illegible]

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not available to the public.

LEGAL NAME OF INVENTOR:

Inventor: Jin Sang YUN Date (Optional): [illegible]

Signature: [illegible]

Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must be completed for each inventor. Use an additional PTO/SB/A/81 form for each additional inventor.

[illegible]

[illegible]

PTO/AIA/01 (08-12)
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number _____ filed on _____

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Ja Won KOO Date (Optional): 12 Oct 2014

Signature: _____

Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/SB/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY

The undersigned, being a duly authorized representative of **TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)** (hereinafter referred to as "Ericsson") having its registered office at SE-164 83 Stockholm, Sweden, does hereby authorize **Sage Patent Group practitioners associated with United States Patent and Trademark Office Customer Number**

146825

to represent Ericsson before the United States Patent and Trademark Office in any and all matters regarding patents or patent applications filed by Ericsson or wherein Ericsson is the assignee of the entire interest thereto in accordance with 37 CFR 3.73(c).

This Power of Attorney shall include the right for **Sage Patent Group practitioners associated with United States Patent and Trademark Office Customer Number 146825** to sign and submit in Ericsson's name and on Ericsson's behalf any document, notification, filing, petition or request in connection with any patent applications or patents owned by or assigned to Ericsson.

This Power of Attorney does not include the right to appoint substitutes but only the persons associated with the above United States Patent and Trademark Office Customer Number.

We hereby revoke all previous authorization, if any made, in respect of same matter or proceeding. This Power of Attorney may be revoked at any time by Ericsson.

TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)

By: Roger Burleigh

Roger Burleigh
Director U.S. Patent Department, Ericsson

Date: 3/1/17

I, the undersigned, Pamela Kay Ewing **Notary Public of** Texas **, hereby certify that**

Roger Burleigh

duly authorized to sign for

TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)

has issued and signed the foregoing document.

Pamela Kay Ewing

Signature: Notary Public

Pamela Kay Ewing
Notary Public,
State of Texas
Expires 11-14-2018

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Woo Chang		CHUN	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Seoul	Country of Residence i	KR

Mailing Address of Inventor:

Address 1	c/o LG ELECTRONICS INC. IP GROUP
Address 2	327-23, Kasan-dong, Kumchon-gu
City	Seoul
State/Province	
Postal Code	153-801
Country i	KR

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Jin Sang		YUN	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Seoul	Country of Residence i	KR

Mailing Address of Inventor:

Address 1	c/o LG ELECTRONICS INC. IP GROUP
Address 2	327-23, Kasan-dong, Kumchon-gu
City	Seoul
State/Province	
Postal Code	153-801
Country i	KR

Inventor 3 Remove

Legal Name

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Prefix	Given Name	Middle Name	Family Name	Suffix
	Ja Won		KOO	

Residence Information (Select One) US Residency ◉ Non US Residency Active US Military Service

City	Seoul	Country of Residence i	KR

Mailing Address of Inventor:

Address 1	c/o LG ELECTRONICS INC. IP GROUP		
Address 2	327-23, Kasan-dong, Kumchon-gu		
City	Seoul	**State/Province**	
Postal Code	153-801	**Country** i	KR

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	146825		
Email Address	instructions@sagepat.com	Add Email	Remove Email

Application Information:

Title of the Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME		
Attorney Docket Number	9900-76021US11	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	30	**Suggested Figure for Publication (if any)**	1

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country i

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	◯ Limited Recognition (37 CFR 11.9)
Customer Number	146825		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	15/931006	2020-05-13
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/931006	Continuation of	15/888981	2018-02-05
Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/888981	Continuation of	14/561090	2014-12-04	9888168	2018-02-06

Prior Application Status	Patented		Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14/561090	Continuation of	13/174549	2011-06-30	8913176	2014-12-16

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Prior Application Status: Patented — Remove

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/174549	Continuation in part of	12/351591	2009-01-09	8416306	2013-04-09

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. — Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
10-2008-0087800	KR	2008-09-05	

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
10-2010-0098558	KR	2010-10-11	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. — Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (11-15)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	Telefonaktiebolaget LM Ericsson (publ)		
Mailing Address Information For Applicant:			
Address 1	SE-164 83		
Address 2			
City	Stockholm	**State/Province**	
Country	SE	Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/David K. Purks/			Date (YYYY-MM-DD)	2020-09-18
First Name	David K.	Last Name	Purks	Registration Number	40133

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	9900-76021US11
	Application Number	
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Attorney Docket No. 9900-76021US11 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Woo Chang CHUN et al.
Application Serial No.: TBD
Filed: Herewith
For: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Date: September 18, 2020

Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Sir:

In accordance with 37 C.F.R. 1.56, 1.97, and 1.98, applicants' undersigned attorney brings to the attention of the Patent and Trademark Office the documents listed on the attached Information Disclosure Statement.

Pursuant to 37 CFR 1.98(d), copies of the references cited in the attached Information Disclosure Statement are not included because copies were provided in Information Disclosure Statements and/or cited by the U.S. Patent and Trademark Office in U.S. Patent Application Serial No. 15/931,006 filed May 13, 2020, of which the present application claims the priority benefit under 35 U.S.C. 120. However, copies can be provided if necessary.

In accordance with 37 CFR 1.97(g), the information disclosure statement shall not be construed as a representation that a search has been made.

In accordance with 37 CFR 1.97(h), the information disclosure statement shall not be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in §1.56(b).

No fee is believed due. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 60-1438.

Respectfully submitted,

/David K. Purks/

David K. Purks
Registration No. 40,133

Customer Number 146825
Sage Patent Group
P.O. Box 30789
Raleigh, NC 27622
984-219-3358
984-538-0416 (Fax)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				***Complete if Known***	
				Application Number	
				Filing Date	Herewith
				First Named Inventor	Woo Chang CHUN
				Art Unit	
				Examiner Name	
Sheet	**A1**	of	**A2**	Attorney Docket Number	9900-76021US11

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document Number Number-Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US- 5970261 A	10-19-1999	Ishiguro	
	2.	US- 2007/0286589 A1	12-13-2007	Ishiwata	
	3.	US- 2009/0015703 A1	01-15-2009	Kim	
	4.	US- 2004/0189856 A1	09-30-2004	Tanaka	
	5.	US- 7034881 B1	04-25-2006	Hyodo et al.	
	6.	US- 2002/0063696 A1	05-30-2002	Kubo et al.	
	7.	US- 2006/0092306 A1	05-04-2006	Kim	
	8.	US- 2008/0044171 A1	02-21-2008	Hyatt	
	9.	US- 2007/0018069 A1	01-25-2007	Higashino	
	10.	US- 2005/0275742 A1	12-15-2005	Baron	
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	28.	US- 2007/0013782 A1	01-18-2007	Kobayashi	
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	30.	US- 2007/0296848 A1	12-27-2007	Terashima	
	31.	US- 2004/0189849 A1	09-30-2004	Hofer	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				***Complete if Known***	
				Application Number	
				Filing Date	Herewith
				First Named Inventor	Woo Chang CHUN
				Art Unit	
				Examiner Name	
Sheet	**A2**	of	**A2**	Attorney Docket Number	9900-76021US11

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code, Number, Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
	1.	EP 2164244	03-17-2010	LG Electronics Inc.		
	2.	EP 2169946	03-31-2010	LG Electronics Inc.		
	3.	KR 10-2009-0103790	10-01-2009	Sony Corporation		
	4.	JP 2004-117490	04-15-2004	Fuji Photo Optical Co Ltd		
	5.	JP 2010-211497	09-24-2010	Nippon Kogaku KK		
	6.	JP 2006-099119	04-13-2006	Hewlett Packard Development Co		
	7.	JP 2006-276683	10-12-2006	Casio Computer Co Ltd		
	8.	JP 2008-277903	11-13-2008	Sony Corp		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	1.	U.S. Patent Application Serial No. 14/513,545 Office Action dated August 18, 2015, 25 pgs.	
	2.	Korean Patent Application Serial No. 10-2010-0098558 Office Action dated June 8, 2016, 6 pgs.	
	3.	U.S. Patent Application Serial No. 14/561,090 Office Action dated June 19, 2017, 20 pgs.	
	4.	U.S. Patent Application Serial No. 14/513,545 Final Office Action dated November 27, 2015, 31 pgs.	
	5.	European Patent Application Serial No. 11183886.8 Office Action dated February 18, 2013, 4 pgs.	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Filer:	David Kent Purks/Jennifer Jones
Attorney Docket Number:	9900-76021US11

Filed as Large Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4000	4000
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	12	100	1200
Miscellaneous-Filing:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
PROCESSING FEE, EXCEPT PROV. APPLS.	1830	1	140	140

Petition:	
Patent-Appeals-and-Interference:	
Post-Allowance-and-Post-Issuance:	
Extension-of-Time:	
Miscellaneous:	
Total in USD ($)	**7060**

Electronic Acknowledgement Receipt

EFS ID:	40596260
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	18-SEP-2020
Filing Date:	
Time Stamp:	10:35:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$7060
RAM confirmation Number	E20209HA35470214
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	TrackOne Request	P76021_US11_Request_for_Prioritized_Examination_TrackOne.pdf	114716 cfa6f10788c23327a49702bdfb424490666af685	no	2
Warnings:					
Information:					
2	Transmittal of New Application	P76021_US11_Application_Transmittal.pdf	277202 98c65bafe093b00978fee614beeeec12eb795cc5	no	2
Warnings:					
Information:					
3		P76021_US11_Application.pdf	223883 0583bce7e2601da65f3d46b2de672e7c9cf4bd7a	yes	49

Multipart Description/PDF files in .zip description

Document Description	Start	End
Specification	1	42
Claims	43	48
Abstract	49	49

Warnings:					
Information:					
4	Drawings-only black and white line drawings	P76021_US11_Drawings.pdf	1622351 638034069698d9ec1065513d2c50e1cd04bbebdb	no	30
Warnings:					
Information:					
5	Oath or Declaration filed	P76021_US11_Declaration.pdf	1775170 9052704e3cce4f0d4b9d71df7e5aba2c47fc95ef	no	3

Warnings:					
Information:					
6	Power of Attorney	Executed_General_POA_146825.pdf	199846 fa60b996dde0234433677dc43d9afe9c9d8d9ad2	no	1
Warnings:					
Information:					
7	Application Data Sheet	P76021_US11_ADS.pdf	1823726 ca16eb04a4e9b79a713ee8f79851caefcc338c61	no	9
Warnings:					
Information:					
8	Transmittal Letter	P76021_US11_IDS_Transmittal.pdf	18373 c6a3ab86977cf1bd676971ce738ebce410eacb63	no	1
Warnings:					
Information:					
9	Information Disclosure Statement (IDS) Form (SB08)	P76021_US11_IDS_Ref_Listing.pdf	38791 632c1748535354ffd7daba242f8fbcf415187d52	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
10	Fee Worksheet (SB06)	fee-info.pdf	41963 379f6c0c38f61996bbf3bf905d335eb3a5061ac8	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	6136021	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Woo Chang CHUN	Nonprovisional Application Number (if known):	
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /David K. Purks/	Date September 18, 2020
Name (Print/Typed) David K. Purks	Practitioner Registration Number 40133

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/024,831	09/18/2020	1737	2920	9900-76021US11	32	2

CONFIRMATION NO. 7812

146825
Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

FILING RECEIPT

OC000000120213750

Date Mailed: 09/28/2020

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Woo Chang CHUN, Seoul, KOREA, REPUBLIC OF;
Jin Sang YUN, Seoul, KOREA, REPUBLIC OF;
Ja Won KOO, Seoul, KOREA, REPUBLIC OF;

Applicant(s)

Telefonaktiebolaget LM Ericsson (publ), Stockholm, SWEDEN;

Power of Attorney: The patent practitioners associated with Customer Number 146825

Domestic Priority data as claimed by applicant

This application is a CON of 15/931,006 05/13/2020
which is a CON of 15/888,981 02/05/2018
which is a CON of 14/561,090 12/04/2014 PAT 9888168
which is a CON of 13/174,549 06/30/2011 PAT 8913176
which is a CIP of 12/351,591 01/09/2009 PAT 8416306

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
REPUBLIC OF KOREA 10-2008-0087800 09/05/2008 No Access Code Provided
REPUBLIC OF KOREA 10-2010-0098558 10/11/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 09/25/2020
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/024,831**
Projected Publication Date: 01/07/2021
Non-Publication Request: No
Early Publication Request: No
Title

MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Preliminary Class

430

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative,

this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/024,831

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	660
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760
TOTAL CLAIMS (37 CFR 1.16(i))	32 minus 20 =	* 12			OR	x 100 =	1200
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 460 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	2920

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

146825 7590 10/20/2020

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

EXAMINER	
ART UNIT	PAPER NUMBER
2696	

NOTIFICATION DATE	DELIVERY MODE
10/20/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

instructions@sagepat.com

Decision Dismissing Request for Prioritized Examination (Track I)	Application No. 17/024,831	Applicant(s) CHUN et al.	
	Examiner JoAnne L Burke	Art Unit OPET	AIA (FITF) Status No

1. THE REQUEST FILED 18 September 2020 IS **DISMISSED** BECAUSE:

A. ☐ The application is not a utility application under 35 U.S.C. 111(a) filed by EFS-Web or a plant application under 35 U.S.C. 111(a) filed by paper:
   i. ☐ The application is a utility application that was not filed by EFS-Web.
   ii. ☐ The application is neither a utility application nor a plant application, but rather is a _____ , which is excluded from the Track I program.

B. ☐ The request was not filed with the application or on the same date of the application.

C. ☐ One or more of the following fees were not filed with the application:
   i. ☐ Basic filing fee, as set forth in 37 CFR 1.16(a), or for a plant application, 37 CFR 1.16(c).
   ii. ☐ Search fee, as set forth in 37 CFR 1.16(k), or for a plant application, 37 CFR 1.16(m).
   iii. ☐ Examination fee, as set forth in 37 CFR 1.16(o), or for a plant application, 37 CFR 1.16(q).
   iv. ☐ Publication fee, as set forth in 37 CFR 1.18(d).
   v. ☐ Track I processing fee, as set forth in 37 CFR 1.17(i).
   vi. ☐ Track I prioritized examination fee, as set forth in 37 CFR 1.17(c).
   vii. ☐ Application size fee, due because the specification and drawings exceed 100 sheets of paper, as set forth in 37 CFR 1.16(s).
   viii. ☐ Excess independent claim fee, due because the number of independent claims exceeds three, as set forth in 37 CFR 1.16(h).
   ix. ☐ Excess claim fee, due because the number of claims exceeds twenty, as set forth in 37 CFR 1.16(i).

D. ☐ The executed inventor's oath or declaration, or an application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) was not filed with the application or on the same date the application was filed.

E. ☑ The application contains or has been amended to contain:
   i. ☐ More than four independent claims.
   ii. ☑ More than thirty total claims.
   iii. ☐ One or more multiple dependent claims.

F. ☐ The Track I program has exceeded its limit of 10,000 requests for the current fiscal year.

G. ☐ Other: _____

2. CONCLUSION

☑ **ALL of the above defect(s) consist only of one or more of items E (i-iii). Applicant is hereby accorded a non-extendable ONE MONTH time period from the mailing date of this Decision to (1) correct the subject defect(s) and (2) file a petition under 37 CFR 1.181 requesting reconsideration of prioritized examination. If no such petition is timely filed, the application will not undergo prioritized examination.**

- OR -

☐ **The application will not undergo prioritized examination, because the request was not accompanied by all of the required items.**

Telephone inquiries with regard to this decision should be directed to JoAnne Burke at (571)272-4584 . In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/JOANNE L BURKE/ Lead Paralegal Specialist, OPET	

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/024,831	Filing Date 09/18/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/30/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 32	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/LAVINIA D JOHNSON/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/024,831	Filing Date 09/18/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	10/30/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 32	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/LAVINIA D JOHNSON/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Attorney Docket No. 9900-76021US11 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Woo Chang CHUN et al. Conf. No.: 7812
Application Serial No.: 17/024,831
Filed: September 18, 2020
For: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Date: October 30, 2020

Attn: Joanne L Burke
Office of Petitions
Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

PETITION UNDER 37 CFR 1.81 REQUESTING RECONSIDERATION OF DECISION DISMISSING PRIORITIZED EXAMINATION (TRACK 1)

Sir:

Applicant filed the above-referenced Application in accordance with the provisions of Prioritized Examination under 37 CFR 1.102(e), however there were inadvertently more than thirty total claims included in the filing. Applicant submits herewith the attached preliminary amendment which reduces to total number of claims to thirty as set forth in the provisions of Prioritized Examination under 37 CFR 1.102(e).

Applicant respectfully requests reconsideration of the Decision, and that the subject application be included in the Track 1 Program.

The Applicant requests that the Petitions Examiner contact the undersigned attorney (at 984 219-3377) if any further issue regarding the Request for Prioritized Examination (Track 1) should need to be resolved.

No additional fee is believed to be due at this time, however, the Commissioner is hereby authorized to charge any additional fee, which may be required, or credit any refund, to our Deposit Account No. 60-1438.

Respectfully submitted,

/David K. Purks/

David K. Purks
Registration No. 40,133
Attorney for Applicant

Customer Number **146825**
Sage Patent Group
P.O. Box 30789
Raleigh, NC 27622
984 219-3377

REMARKS

Entry of this Preliminary Amendment, prioritized examination of the application, and allowance of the application are respectfully requested. The Applicant requests that the Petitions Examiner contact the undersigned attorney (at 984 219-3377) if any further issue regarding the Request for Prioritized Examination (Track 1) should need to be resolved.

Respectfully submitted,

/David K. Purks/

David K. Purks
Registration No. 40,133
Attorney for Applicant

Customer Number **146825**
Sage Patent Group
P.O. Box 30789
Raleigh, NC 27622
984 219-3377
984 538-0416 (Fax)

In the Claims:

Based on the preliminary amendment filed December 17, 2019, please amend the claims as follows:

1. (Original) A mobile terminal comprising:

a camera;

a touch screen; and

a controller configured to:

control the touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

2. (Original) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

3. (Original) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

4. (Original) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

5. (Original) The mobile terminal of claim 1, wherein:

the controller is configured to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

6. (Original) The mobile terminal of claim 1, wherein the controller is further configured to recognize displayed objects in the preview images, and to adjust size of the auto focus guide based on size of one of the displayed objects that is touch selected by the user.

7. (Original) The mobile terminal of claim 6, wherein the controller is configured to adjust the size of the auto focus guide to circumscribe the one of the displayed objects that is touch selected by the user.

8. (Original) The mobile terminal of claim 1, wherein the controller is configured to adjust size of the auto focus guide to circumscribe an object displayed at the specific point.

9. (Original) The mobile terminal of claim 1, wherein:

the first direction and the second direction are opposite directions along the touch screen.

10. (Original) The mobile terminal of claim 1, wherein the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

11. (Original) The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

12. (Original) The mobile terminal of claim 11, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

13. (Original) The mobile terminal of claim 11, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

14. (Original) The mobile terminal of claim 11, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

15. (Original) The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

16. (Original) The mobile terminal of claim 15, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

17. (Original) The mobile terminal of claim 15, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

18. (Original) The mobile terminal of claim 15, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

19. (Original) The mobile terminal of claim 1, wherein the controller is further configured to perform face recognition processing to recognize a displayed object in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object in the preview images as a person's face.

20. (Original) The mobile terminal of claim 1, wherein the camera includes a movable lens, wherein the image capturing setting corresponds to a position of the movable lens,

wherein the controller is further configured to change the position of the movable lens to perform fine focus adjustment in response to a distance or a direction the object is dragged along the touch screen.

21. (Original) The mobile terminal of claim 20, wherein the controller is further configured to control the camera to adjust a pointing direction of the movable lens based on at least the distance or the direction the object is dragged along the touch screen.

22. (Original) A computer program product comprising a non-transitory computer readable medium storing program code that is executable to configure at least one processor of a mobile terminal to:

control a touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

23. (Original) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

24. (Original) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

25. (Original) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

26. (Original) The computer program product of claim 22, wherein the program code further configures the at least one processor to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

27. (Original) The computer program product of claim 22, wherein:

the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

28. (Original) The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the object is

dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

29. (Original) The computer program product of claim 28, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

30. (Original) The computer program product of claim 28, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

31. (Canceled)

32. (Canceled)

Attorney Docket No. 9900-76021US11 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Woo Chang CHUN et al. Conf. No.: 7812
Application Serial No.: 17/024,831
Filed: September 18, 2020
For: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Date: October 30, 2020

Attn: Joanne L Burke
Office of Petitions
Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Sir:

Please enter the Preliminary Amendment before examination of the present application. The present amendments are made to further amend the claims included in the application filed September 18, 2020 by canceling Claims 31 and 32 to reduce the total number of claims to 30 as required by the provisions of Prioritized Examination under 37 CFR 1.102(e).

The Commissioner is hereby authorized to charge any additional fee, which may be required, or credit any refund, to our Deposit Account No. 60-1438.

Amendments to the claims begin on Page 2 of this paper.

Remarks begin on Page 8 of this paper.

Electronic Acknowledgement Receipt

EFS ID:	40998641
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	30-OCT-2020
Filing Date:	18-SEP-2020
Time Stamp:	15:35:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	P076021US11_Petition_for_Reconsideration_of_Track_One_Request.pdf	18571 8d69dac6afa0e8832e113fc76620f4604e3a9da8	no	1

Warnings:

Information:					
2		P076021US11_Preliminary_Amendment-Track_One.pdf	37604 7f5c116a456409c4ce20fd4ee7174a7dcb5eb7b8	yes	8

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Applicant Arguments/Remarks Made in an Amendment	8	8
Claims	2	7
Preliminary Amendment	1	1

Warnings:	
Information:	
Total Files Size (in bytes):	56175

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

146825 7590 11/06/2020

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

EXAMINER	
ART UNIT	PAPER NUMBER
2696	

NOTIFICATION DATE	DELIVERY MODE
11/06/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

instructions@sagepat.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Doc Code:
TRACK1.GRANT

Decision Granting Request for Prioritized Examination (Track I or After RCE)	Application No.: 17/024,831

The petition, filed 30 October 2020, requesting reconsideration of the decision, mailed 20 October 2020, which initially dismissed the Request for Prioritized Examination, Track 1, is **GRANTED**.

1. THE REQUEST FILED 18 September 2020 IS **GRANTED.**

The above-identified application has met the requirements for prioritized examination
- A. ☒ for an original nonprovisional application (Track I).
- B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

- A. filing a **petition for extension of time** to extend the time period for filing a reply;
- B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
- C. filing a **request for continued examination**;
- D. filing a notice of appeal;
- E. filing a request for suspension of action;
- F. mailing of a notice of allowance;
- G. mailing of a final Office action;
- H. completion of examination as defined in 37 CFR 41.102; or
- I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to JoAnne Burke at 571-272-4584. In his/her absence, calls may be directed to the Petitions Help Desk at 571-272-3282..

/JoAnne L Burke/
[Signature]

Lead Paralegal Specialist, Office of Petitions
(Title)

U.S. Patent and Trademark Office
PTO-2298 (Rev. 02-2012)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

146825 7590 11/27/2020

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

EXAMINER	
KHAN, USMAN A	

ART UNIT	PAPER NUMBER
2696	

NOTIFICATION DATE	DELIVERY MODE
11/27/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

instructions@sagepat.com

Office Action Summary	Application No. 17/024,831	Applicant(s) CHUN et al.	
	Examiner Usman A Khan	Art Unit 2696	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 18 September 2020.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-30 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-30 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☑ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 18 September 2020 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☑ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☑ Certified copies of the priority documents have been received in Application No. 12631591.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 09/18/2020 has been considered by the examiner. The submission is in compliance with the provisions of 37 CFR 1.97. Note: the listed foreign references are provided in parent applications.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double

patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more

information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

5. **Claims 1 - 30** are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 - 29 of U.S. Patent No. 10,819,901. Although the claims at issue are not identical, they are not patentably distinct from each other because present application claims and the parent application claims amount to similar features and present application claims are therefore obvious variants thereof and/or are broader representations of the claims.

6. **Claims 1 - 30** are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 - 18 of U.S. Patent No. 9,888,168. Although the claims at issue are not identical, they are not patentably distinct from each other because present application claims and the parent application claims amount to similar features and present application claims are therefore obvious variants thereof and/or are broader representations of the claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hyodo et al. (US Patent No. 7,034,881) teaches a touch screen camera with focus guide.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman A Khan whose telephone number is (571)270-

1131. The examiner can normally be reached on M - Th 5:30 AM - 2 PM, F 5:30 AM - Noon.

9. Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Usman Khan
/USMAN A KHAN/
Primary Examiner, Art Unit 2696
11/23/2020

Notice of References Cited	Application/Control No. 17/024,831	Applicant(s)/Patent Under Reexamination CHUN et al.	
	Examiner Usman A Khan	Art Unit 2696	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-7034881-B1	04-2006	Hyodo; Manabu	H04N5/232945	348/333.12
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/23/2020								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
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	28	✓								
	29	✓								
	30	✓								
	31	-								
	32	-								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	Art Unit
	Usman A Khan	2696

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04N5/23216, 5/23245, 5/2253, 5/2254, 5/23212	11/17/2020	UK
G06F3/0484, 3/04883	11/17/2020	UK
H04N5/23212, 5/23219, 5/23229, 5/23293	11/17/2020	UK

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
348	333.11, 208.12, 220.1, 345	11/17/2020	UK

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
EAST (Including databases: US-PGPUB, USPAT, USOCR, FPRS, EPO, JPO, DERWENT, IBM_TDB): See attached EAST search history	11/17/2020	UK
Inventor name search	11/17/2020	UK
Patent case (12/351,591; 13/174,549; 14/561,090; 15/888,981) review	11/17/2020	UK
IP.com search; please see attached	11/17/2020	UK
Related case (14/513,545; 16/357,069; 16/357,123; 16/357,093) review	11/17/2020	UK
Related case (15/931,006) review	11/17/2020	UK

/USMAN A KHAN/ Primary Examiner, Art Unit 2696	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
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Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	PgPub text search, see interference search history printout	11/17/2020	UK

/USMAN A KHAN/ Primary Examiner, Art Unit 2696	

Main Concept Text
==========
The present invention provides a mobile terminal and a method of capturing an image using the same. The mobile terminal controls a camera conveniently and efficiently to capture an image and performs focusing in various manners to capture an image. Accordingly, a user can obtain a desired image easily and conveniently

(No Concept Modifiers)
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(No Filters)
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Publication Number
US20150085173
US20200275015
US20180160033
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Switzerland Applications
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Yugoslavia/Serbia and Montenegro Patents
Yugoslavia/Serbia and Montenegro Applications
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India Patents
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Indonesia Applications
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Jordan Patents
Kyrgyzstan Patents
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Mongolia Patents
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Philippines Patents
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Singapore Applications
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Tajikistan Applications
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ARIPO Patents
ARIPO Applications
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Tunisia Applications
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	
				Filing Date	Herewith
				First Named Inventor	Woo Chang CHUN
				Art Unit	
				Examiner Name	
Sheet	A1	of	A2	Attorney Docket Number	9900-76021US11

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document Number / Number-Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US- 5970261 A	10-19-1999	Ishiguro	
	2.	US- 2007/0286589 A1	12-13-2007	Ishiwata	
	3.	US- 2009/0015703 A1	01-15-2009	Kim	
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	5.	US- 7034881 B1	04-25-2006	Hyodo et al.	
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	10.	US- 2005/0275742 A1	12-15-2005	Baron	
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	14.	US- 2005/0151854 A1	07-14-2005	Maki	
	15.	US- 2006/0181639 A1	08-17-2006	Ueda et al.	
	16.	US- 2006/0197845 A1	09-07-2006	Masaki	
	17.	US- 2008/0079824 A1	04-03-2008	Sawachi	
	18.	US- 2008/0080747 A1	04-03-2008	Takagi	
	19.	US- 2008/0122943 A1	05-29-2008	Itoh	
	20.	US- 2008/0025710 A1	01-31-2008	Sugimoto	
	21.	US- 2010/0141826 A1	06-10-2010	Thorn	
	22.	US- 2003/0160886 A1	08-28-2003	Misawa et al.	
	23.	US- 2005/0140815 A1	06-30-2005	Nakano et al.	
	24.	US- 9888168 B2	02-06-2018	Chun et al.	
	25.	US- 2015/0085173 A1	03-26-2015	Chun et al.	
	26.	US- 2006/0092315 A1	05-04-2006	Payonk et al.	
	27.	US- 2010/0182264 A1	07-22-2010	Hahn et al.	
	28.	US- 2007/0013782 A1	01-18-2007	Kobayashi	
	29.	US- 2010/0171863 A1	07-08-2010	Kim et al.	
	30.	US- 2007/0296848 A1	12-27-2007	Terashima	
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Examiner Signature	/USMAN A KHAN/	Date Considered	11/17/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /U.A.K/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	
				Filing Date	Herewith
				First Named Inventor	Woo Chang CHUN
				Art Unit	
				Examiner Name	
Sheet	A2	of	A2	Attorney Docket Number	9900-76021US11

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code, Number, Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
	1.	EP 2164244	03-17-2010	LG Electronics Inc.		
	2.	EP 2169946	03-31-2010	LG Electronics Inc.		
	3.	KR 10-2009-0103790	10-01-2009	Sony Corporation		
	4.	JP 2004-117490	04-15-2004	Fuji Photo Optical Co Ltd		
	5.	JP 2010-211497	09-24-2010	Nippon Kogaku KK		
	6.	JP 2006-099119	04-13-2006	Hewlett Packard Development Co		
	7.	JP 2006-276683	10-12-2006	Casio Computer Co Ltd		
	8.	JP 2008-277903	11-13-2008	Sony Corp		

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	1.	U.S. Patent Application Serial No. 14/513,545 Office Action dated August 18, 2015, 25 pgs.	
	2.	Korean Patent Application Serial No. 10-2010-0098558 Office Action dated June 8, 2016, 6 pgs.	
	3.	U.S. Patent Application Serial No. 14/561,090 Office Action dated June 19, 2017, 20 pgs.	
	4.	U.S. Patent Application Serial No. 14/513,545 Final Office Action dated November 27, 2015, 31 pgs.	
	5.	European Patent Application Serial No. 11183886.8 Office Action dated February 18, 2013, 4 pgs.	

Examiner Signature	/USMAN A KHAN/	Date Considered	11/17/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /U.A.K/

Bibliographic Data

Application No: 17/024,831

Foreign Priority claimed: (●) Yes ( ) No

35 USC 119 (a-d) conditions met: [✓] Yes [ ] No [ ] Met After Allowance

Verified and Acknowledged: /USMAN A KHAN/ Examiner's Signature | Initials

Title: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/18/2020	348	2696	9900-76021US11
RULE			

APPLICANTS

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Jin Sang YUN, Seoul, KOREA, REPUBLIC OF

Ja Won KOO, Seoul, KOREA, REPUBLIC OF

CONTINUING DATA

This application is a CON of 15931006 05/13/2020 PAT 10819901

15931006 is a CON of 15888981 02/05/2018 PAT 10827115

15888981 is a CON of 14561090 12/04/2014 PAT 9888168

14561090 is a CON of 13174549 06/30/2011 PAT 8913176

13174549 is a CIP of 12351591 01/09/2009 PAT 8416306

FOREIGN APPLICATIONS

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KOREA, REPUBLIC OF KR10-2010-0098558 10/11/2010

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	28	(US-20060104523-$ or US-20080122939-$ or US-20080025558-$ or US-20050264658-$ or US-20030025812-$ or US-20090316016-$ or US-20060069999-$).did. or (US-6327436-$ or US-5812193-$ or US-7558408-$ or US-7269292-$ or US-7248294-$ or US-7440594-$ or US-7298412-$).did. or (WO-2005004488-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 12:39
S2	388	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 12:41
S12	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S13	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S14	2	(S12 OR S13)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S15	6	("20080107411" | "7561201" | "7781710").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2011/12/29 13:21

			DERWENT; IBM_TDB			
S16	3	"20060072028"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S17	3	"20070018069"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S18	21	"7034881"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S19	7	("6888567" | "6919927" | "7034881" | "7248796" | "7417683" | "7551223" | "7809260").PN. OR ("8077249").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:31
S20	2	"20040189856"	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:39
S21	1	"20060238622"	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:39
S22	2	("20050168621" | "20060008264").PN. OR ("7781710").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:40
S23	11	notify NEAR5 user NEAR5 (image OR photo OR photograph OR picture) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 15:03
S24	1,530	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/29 16:18
S25	197	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/29 16:18

S26	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S27	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S28	2	(S26 OR S27)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S29	1,656	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/06/06 14:14
S30	213	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/06/06 14:47
S31	447	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 14:47
S32	2	touch NEAR3 (screen OR panel) NEAR5 focus$4 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 14:48
S33	949	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 15:13

S34	3	"20020063696"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 09:36
S35	2	S34 AND touch AND releas$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 09:36
S36	39	auto NEAR4 focus NEAR10 sound	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:10
S37	0	auto NEAR4 focus NEAR5 comple$4 NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:17
S39	29	focus NEAR5 complet$4 NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:18
S42	6	touch NEAR3 (screen OR panel) NEAR20 focus NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/14 08:55
S43	31	blink$4 NEAr5 focus NEAr5 (window OR rectangle OR area OR box)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/14 09:46

S44	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S45	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S46	2	(S44 OR S45)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S47	1,854	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/12/27 13:42
S48	240	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/12/27 13:57
S49	530	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 14:00
S50	1,116	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 14:05
S53	9	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15

S54	14	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15
S55	20	(S53 OR S54)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15
S56	2,270	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/01/28 09:16
S57	162	panoram$4 WITH (image OR picture OR photo OR photograph) WITH arrow	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 11:25
S58	10	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S59	14	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S60	21	(S58 OR S59)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S61	242	focus NEAR5 (level OR amount OR priority) WITH assign$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2014/07/07 09:34

			DERWENT; IBM_TDB			
S80	13	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S81	16	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S82	17	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S83	37	(S80 OR S81 OR S82)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S84	28	("20020063696" | "20080044171" | "20070296848" | "20100171863" | "7034881" | "20030160886" | "20070018069" | "20100141826" | "20050275742" | "20040189849" | "20050140815").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:02
S85	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" | "5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S86	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" |	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02

		"5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.				
S87	7	("20040189849" | "20070018069" | "20070296848" | "20100141826" | "20100171863" | "7034881").PN. OR ("8913176").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S88	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" | "5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S89	83	("20020057353" | "20020075244" | "20020105582" | "20020110354" | "4386347" | "4933660" | "5289168" | "5396287" | "5467102" | "5671014" | "5689742" | "5862419" | "5867158" | "5923908" | "6104334" | "6239790" | "6414671").PN. OR ("6919927").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S90	2,818	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:41
S91	366	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:41
S92	5,266	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:42
S93	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:42
S95	194,174	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2016/08/11 09:42

			DERWENT; IBM_TDB			
S97	26	touch NEAR3 (screen OR panel) SAME focus$4 AND S95	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:47
S98	33	("20020063696" | "20080044171" | "20070296848" | "20070013782" | "20100171863" | "7034881" | "20040189849" | "20070296848" | "20030160886" | "7034881" | "20070018069" | "20100141826" | "20050275742" | "20040189849" | "20050140815" | "20040189856" | "20070018069").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 12:21
S99	3	"20150085173"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 14:38
S100	14	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S101	16	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S102	17	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S103	38	(S100 OR S101 OR S102)	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2016/12/09 15:49

			JPO; DERWENT; IBM_TDB			
S104	2,817	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S105	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S106	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S107	6,604	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/12 08:12
S108	12	"8913176"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 08:10
S109	18	"8416306"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 08:12
S110	3	"20160072999"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 10:59
S111	20	("20050140813" | "20060104623" | "20070146503" | "20080291284" | "20090022422" | "20100020221" | "20100141826" | "20100166404" | "20110016970" | "20130038759" | "20130155276" | "5111228" | "6778217" | "6839452" | "6919927" | "7054552" | "7551223" | "8259208" | "8416306").PN. OR ("8804022").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:00

S112	20	("20050140813" | "20060104623" | "20070146503" | "20080291284" | "20090022422" | "20100020221" | "20100141826" | "20100166404" | "20110016970" | "20130038759" | "20130155276" | "5111228" | "6778217" | "6839452" | "6919927" | "7054552" | "7551223" | "8259208" | "8416306").PN. OR ("8804022").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:00
S113	35	("20010012072" | "20020018136" | "20030142880" | "20030174230" | "20050007486" | "4614975" | "5121152" | "5225940" | "5629735" | "6388707" | "6493027" | "6522360" | "6785469" | "6919927" | "6972799" | "6975361" | "6977687" | "7034881" | "7071985" | "7171625").PN. OR ("7551223").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:01
S114	2	"20100208122"	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:01
S115	43	("6700618" | "20090073275" | "20090019399" | "20080037975" | "20020106206" | "20090167931" | "20090244357" | "20100045800" | "20100110278" | "20060182433" | "20090002516" | "20100020221" | "20120120277" | "20110007029").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:01
S116	22	touch screen exposure NEAR2 control	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:06
S117	36	touch NEAR2 screen focus (trace OR tracing OR drag OR dragging)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:06
S118	740	touch NEAR2 screen focus (area OR region)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:07

S119	15	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S120	17	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S121	18	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S122	39	(S119 OR S120 OR S121)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S123	2,819	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:38
S124	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:44
S125	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:44
S126	8,676	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:44
S127	15	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2017/10/06 07:26

			DERWENT; IBM_TDB			
S128	17	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S129	18	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S130	39	(S127 OR S128 OR S129)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S131	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S132	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S133	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S134	9,364	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:34
S139	402,846	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/04 14:41
S140	212	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin")	US-PGPUB; USPAT; USOCR;	WITH	ON	2018/06/04 14:41

		near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S141	273	usman.xp.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:37
S142	66	S141 AND touch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:38
S143	47	S141 AND touch AND focus$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:38
S144	55	capture image predetermined time after release	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:52
S145	108	timer capture image predetermined time	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:55
S146	23	("4937673" | "20030184674" | "20030193578" | "20040136685" | "5990937" | "20040201715" | "20050200718" | "20060215039" | "20060209197" | "20080144906").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 10:04
S147	2,636	camera self$1timer	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2018/06/05 10:14

			JPO; DERWENT; IBM_TDB			
S148	504	camera self$1timer button	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 10:14
S149	807	((("HAMADA") near3 ("Masataka"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S150	16	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S151	18	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S152	20	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S153	41	(S150 OR S151 OR S152)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S154	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:33

S155	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:33
S156	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:34
S157	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:34
S158	10,697	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S159	12,359	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S160	14,811	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S161	30,206	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S162	26,815	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	USPAT	WITH	ON	2018/06/05 11:36
S163	17	("20020063696" | "20030160886" | "20040189849" | "20040189856" | "20050140815" | "20050275742" | "20060092315" | "20070013782" | "20070018069" | "20070296848" | "20080044171" | "20100141826" | "20100171863" | "20100182264" | "20150085173" | "7034881" | "9888168").PN.	US-PGPUB; USPAT	WITH	ON	2018/06/05 11:41

S164	36	("20020063696" | "20080044171" | "20100182264" | "20070296848" | "20060092315" | "20150085173" | "20100171863" | "7034881" | "20030160886" | "20070018069" | "20050275742" | "9888168" | "20040189849" | "20050140815").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S165	28,626	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S166	402,894	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S167	9	"12351591"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:55
S168	413,273	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S169	17	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S170	19	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25

S171	22	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S172	43	(S169 OR S170 OR S171)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S173	1,067	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S174	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S175	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S176	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S178	0	touch NEAR3 screen focus icon change color	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:34
S179	3	touch NEAR3 screen focus icon color	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:34
S180	37	focus$3 (complete OR succes$5) icon	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:35
S181	1,140	focus$3 (complete OR succes$5) (icon OR indicat$4)	US-PGPUB; USPAT;	WITH	ON	2018/11/20 06:36

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S182	49	focus$3 icon green	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:39
S183	22	focus$3 icon green AND touch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:40
S184	4	focus$3 icon green AND touch screen	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:40
S186	77	"20060097991"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:46
S187	109	"5923908"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:48
S188	240	focus$3 (complete OR succes$5) (icon OR indicat$4) AND (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 07:00

S189	18	focus$3 (complete OR succes$5) (icon OR indicat$4) SAME (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 07:02
S190	17	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S191	19	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S192	22	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S193	43	(S190 OR S191 OR S192)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S194	413,630	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S195	1,067	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35

S196	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S197	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S198	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S199	2	"14513545"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 11:46
S200	437,363	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S201	25	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S202	24	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S203	28	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S204	52	(S201 OR S202 OR S203)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2019/12/30 06:20

			DERWENT; IBM_TDB			
S205	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/12/30 06:28
S206	69	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 07:12
S207	272	self NEAR2 timer touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 07:32
S208	1,223	shutter NEAR3 (button OR icon) touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:35
S209	93	shutter NEAR3 (icon) touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:36
S210	17	shutter NEAR3 (icon) touch NEAR3 (screen OR panel) AND timer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:36
S211	57	shutter NEAR3 (icon) AND self NEAR2 timer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:37
S212	443,436	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT;	WITH	ON	2020/04/08 09:18

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S213	25	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S214	24	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S215	28	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S216	52	(S213 OR S214 OR S215)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S217	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S218	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S219	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S220	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S221	17,077	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2020/04/08 09:36

			JPO; DERWENT; IBM_TDB			
S222	17,769	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S223	22,946	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S224	43,394	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S225	70	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:37
S226	5,727	touch NEAR3 (screen OR panel) NEAR5 finger (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (image OR photo OR photograph OR picture OR snapshot OR shot OR frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 10:50
S227	9	("20070286589" | "20090015703" | "5970261").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/12 10:35
S230	17,227	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2020/05/28 07:43

			JPO; DERWENT; IBM_TDB			
S231	251	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:43
S232	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 07:44
S233	17,340	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S234	39,006	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S235	83,494	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S236	36,566	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S237	15,299	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45

S238	16,346	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S239	44,820	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S240	408	focus$3 (complete OR succes$5) (icon OR indicat$4) AND (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:55
S241	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-0286589-$ | US-0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ |	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 08:47

		US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.				
S242	17,995	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S243	23,447	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S244	44,009	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S245	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S246	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S247	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S248	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:50
S249	265,949	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/05/28 12:59

			DERWENT; IBM_TDB			
S250	269,509	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:09
S251	17,563	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:10
S252	258	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:10
S253	17,743	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S254	39,967	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S255	84,847	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S256	36,924	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/07/07 13:22

			DERWENT; IBM_TDB			
S257	15,585	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S258	16,842	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S259	45,276	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S260	18,376	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S261	24,274	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S262	45,054	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S263	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:22

S264	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S265	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S266	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S267	5,869	touch NEAR3 (screen OR panel) NEAR5 finger (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (image OR photo OR photograph OR picture OR snapshot OR shot OR frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 14:11
S269	5,024	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 14:22
S273	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 10:44
S274	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 11:09
S275	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 11:09
S277	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-0286589-$ | US-	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 10:44

		0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ | US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.				
S283	10,218	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	USPAT	WITH	ON	2020/11/16 12:08
S285	271	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 12:08
S286	18,612	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 12:08
S287	228	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S288	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S289	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S290	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56

S291	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:57
S292	18,594	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:01
S293	41,894	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:01
S294	87,662	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S295	38,742	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S296	16,449	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S297	18,218	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S298	50,780	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/11/16 13:02

			DERWENT; IBM_TDB			
S299	19,266	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S300	25,998	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S301	48,048	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S302	74	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:33
S305	4,225	touch NEAR3 (screen OR panel) NEAR5 (release$4 OR depress$2) (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:39
S306	869	touch NEAR3 (screen OR panel) NEAR5 (release$4 OR depress$2) (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (drag$5 or grab$5 or move or moving or hold$4 adj down)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:41
S307	1	("10819901").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/17 10:39

S308	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/17 11:02
S309	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-0286589-$ | US-0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ | US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 11:09

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S51	28	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2012/12/27 14:30
S52	90	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2012/12/27 14:41

S63	11	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2014/07/07 10:19
S135	77	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2017/10/06 08:31
S136	250	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2017/10/06 08:31
S137	16	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2017/10/06 08:31
S270	93	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2020/07/07 14:49
S271	302	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2020/07/07 14:49
S272	26	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2020/07/07 14:49
S310	95	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2020/11/17 11:40
S311	306	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2020/11/17 11:40
S312	27	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2020/11/17 11:40

11/17/2020 2:10:22 PM
C:\Users\ukhan\Documents\EAST\Workspaces\17024831 15931006 15888981 14561090 13174549 12351591_touch_screen_focus_capture.wsp

Attorney Docket No.: 9900-76021US11 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Woo Chang CHUN et al. Confirmation No.: 7812
Application No.: 17/024,831 Group Art Unit: 2696
Filed: September 18, 2020 Examiner: Khan, Usman A
For: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Date: December 4, 2020

Via EFS-Web

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOVEMBER 27, 2020 NON FINAL OFFICE ACTION

Applicants provide the present Response to address the issues raised in the Office Action mailed November 27, 2020. Please reconsider the rejections for at least the reasons presented in the following remarks.

No additional fee is believed to be due at this time. If any extension of time for the accompanying response or submission is required, please consider this a petition therefor. The Commissioner is hereby authorized to charge any additional fee, which may be required, or credit any refund, to our Deposit Account No. 60-1438.

Amendments to the specification begin on Page 2 of this paper;

Listing of the claims begins on Page 3 of this paper;

Remarks begin on Page 9 of this paper.

Electronic Acknowledgement Receipt

EFS ID:	41299989
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	04-DEC-2020
Filing Date:	18-SEP-2020
Time Stamp:	15:25:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		P076021US11_Response_to_NFOA_mailed_2020-11-27_with_Terminal_Disclaimer.pdf	44843 692004bb744f9063c1a98cc4fc6e6ba42b81a821	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	9	10
	Claims	3	8
	Specification	2	2
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	44843	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

Applicant appreciates the thorough examination of the claims as evidenced by the Non-Final Office Action mailed November 27, 2020 (hereinafter, "Office Action").

Applicant respectfully requests reconsideration and allowance of the claims for at least the reasons presented herein below.

Status of Claims in Office Action

Claims 1-32 were pending in this application.

Specification:

The title of the invention has been amended to overcome the objection to the title. Applicant submits the new title is clearly indicative of the invention to which the claims are directed.

Double Patenting

Claims 1-32 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 10,819,901 and over claims 1-18 of U.S. Patent No. 9,888,168. A terminal disclaimer to U.S. Patent No. 10,819,901 and U.S. Patent No. 9,888,168 is filed herewith to overcome the double patenting rejection.

Applicants' filing of the terminal disclaimer is made to expedite allowance and is not an admission that any of the claims are patentably indistinct from any of the claims of U.S. Patent No. 10,819,901 and U.S. Patent No. 9,888,168.

Applicants respectfully submit that all of the pending claims and specification are in condition for allowance. If the Examiner should believe that any issues remain after consideration of the remarks provided above, the Examiner is encouraged to contact the undersigned by telephone to facilitate expedited resolution thereof.

It is not believed that an extension of time and/or additional fee(s)-including fees for net addition of claims-are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to Deposit Account No. 60-1438.

Respectfully submitted,

/David K Purks/

David K. Purks
Registration No. 40,133

USPTO Customer No. 146825
Sage Patent Group
Post Office Box 30789
Raleigh, North Carolina 27622-0789
Telephone: 984/219-3377
dpurks@sagepat.com

In the Claims:

Although no amendments to the claims are presented herein, the following clean listing of the claims is provided for the examiner's records:

1. (Previously Presented) A mobile terminal comprising:

a camera;

a touch screen; and

a controller configured to:

control the touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

2. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

3. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

4. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response

to a second touch input by the object.

5. (Previously Presented) The mobile terminal of claim 1, wherein:

the controller is configured to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

6. (Previously Presented) The mobile terminal of claim 1, wherein the controller is further configured to recognize displayed objects in the preview images, and to adjust size of the auto focus guide based on size of one of the displayed objects that is touch selected by the user.

7. (Previously Presented) The mobile terminal of claim 6, wherein the controller is configured to adjust the size of the auto focus guide to circumscribe the one of the displayed objects that is touch selected by the user.

8. (Previously Presented) The mobile terminal of claim 1, wherein the controller is configured to adjust size of the auto focus guide to circumscribe an object displayed at the specific point.

9. (Previously Presented) The mobile terminal of claim 1, wherein:

the first direction and the second direction are opposite directions along the touch screen.

10. (Previously Presented) The mobile terminal of claim 1, wherein the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

11. (Previously Presented) The mobile terminal of claim 1, wherein the controller is

configured to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

12. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

13. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

14. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

15. (Previously Presented) The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

16. (Previously Presented) The mobile terminal of claim 15, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

17. (Previously Presented) The mobile terminal of claim 15, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

18. (Previously Presented) The mobile terminal of claim 15, wherein the image

capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

19. (Previously Presented) The mobile terminal of claim 1, wherein the controller is further configured to perform face recognition processing to recognize a displayed object in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object in the preview images as a person's face.

20. (Previously Presented) The mobile terminal of claim 1, wherein the camera includes a movable lens, wherein the image capturing setting corresponds to a position of the movable lens,

wherein the controller is further configured to change the position of the movable lens to perform fine focus adjustment in response to a distance or a direction the object is dragged along the touch screen.

21. (Previously Presented) The mobile terminal of claim 20, wherein the controller is further configured to control the camera to adjust a pointing direction of the movable lens based on at least the distance or the direction the object is dragged along the touch screen.

22. (Previously Presented) A computer program product comprising a non-transitory computer readable medium storing program code that is executable to configure at least one processor of a mobile terminal to:

control a touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing

setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

23. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

24. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

25. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

26. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

27. (Previously Presented) The computer program product of claim 22, wherein:

the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

28. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the

object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

29. (Previously Presented) The computer program product of claim 28, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

30. (Previously Presented) The computer program product of claim 28, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

31. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

32. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to perform face recognition processing to recognize a displayed object in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object as a person's face.

In the Specification:

Please amend the title on page 1 as follows:

CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

~~MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME~~

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	17024831
Filing Date	18-Sep-2020
First Named Inventor	Woo Chang CHUN
Attorney Docket Number	9900-76021US11
Title of Invention	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Telefonaktiebolaget LM Ericsson (publ)	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

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as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

Applicant claims the following fee status:

○ Small Entity

○ Micro Entity

◉ Regular Undiscounted

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 40133

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application

○ A joint inventor; all of whom are signing this request

Signature	/David K. Purks/
Name	David K. Purks

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	17024831
Filing Date:	18-Sep-2020
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Filer:	David Kent Purks/Jennifer Jones
Attorney Docket Number:	9900-76021US11

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	1814	1	170	170
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**170**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 17024831

Filing Date: 18-Sep-2020

Applicant/Patent under Reexamination: CHUN

Electronic Terminal Disclaimer filed on December 4, 2020

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	41300060
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	04-DEC-2020
Filing Date:	18-SEP-2020
Time Stamp:	15:28:15
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$170
RAM confirmation Number	E2020B4F28116519
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33561 b64a1e5c1a12c82a9e8649f69b50a24b28768f3b	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30689 5105546ea5cefd8e33b5774d79d383627de4f657	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	64250		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/024,831	Filing Date 09/18/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/04/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 32	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/VINCENT S BUTLER/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

146825 7590 12/11/2020

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

EXAMINER	
KHAN, USMAN A	

ART UNIT	PAPER NUMBER
2696	

NOTIFICATION DATE	DELIVERY MODE
12/11/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

instructions@sagepat.com

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. 17/024,831	Applicant(s) CHUN et al.
	Art Unit OED2	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

The amendment document filed on 12/04/2020 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
  - ☐ A. Amended paragraph(s) do not include markings.
  - ☐ B. New paragraph(s) should not be underlined.
  - ☐ C. Other _____ .
- ☐ 2. Abstract:
  - ☐ A.Not presented on a separate sheet. 37 CFR 1.72.
  - ☐ B.Other _____ .
- ☐ 3. Amendments to the drawings:
  - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet", "New Sheet", or "Annotated Sheet" as required by 37 CFR 1.121(d).
  - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required .
  - ☐ C. Other _____ .
- ☑ 4. Amendments to the claims:
  - ☐ A. A complete listing of all of the claims is not present.
  - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
  - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
  - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
  - ☑ E. Other: Claims 31 and 32 - improper status identifiers .
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4): For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment or an amendment filed after allowance, or a drawing submission (only) If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **two months** from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1 to 4 are checked, the correction required is only the corrected section of the non-compliant amendment in compliance with 37 CFR 1.121.

   Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

   Failure to timely respond to this notice will result in:

   Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or

   Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable /VINCENT S BUTLER/ Telephone No: (571)272-7237

Attorney Docket No.: 9900-76021US11 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Woo Chang CHUN et al. Confirmation No.: 7812
Application No.: 17/024,831 Group Art Unit: 2696
Filed: September 18, 2020 Examiner: Khan, Usman A
For: MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME

Date: December 18, 2020

Via EFS-Web

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO DECEMBER 11, 2020 NOTICE OF NON-COMPLIANT AMENDMENT

(*Amendment filed in response to non-final Office Action mailed November 27, 2020*)

This Amendment is responsive to the Notice of Non-Compliant Amendment mailed December 11, 2020 regarding the above-referenced patent application. Please enter the amendment and consider the remarks provided below to address the issues raised in the non-final Office Action mailed November 27, 2020, for which a response was previously submitted on December 4, 2020.

No additional fee is believed to be due at this time. If any extension of time for the accompanying response or submission is required, please consider this a petition therefor. The Commissioner is hereby authorized to charge any additional fee, which may be required, or credit any refund, to our Deposit Account No. 60-1438.

Amendments to the specification begin on Page 2 of this paper;

Listing of the claims begins on Page 3 of this paper;

Remarks begin on Page 9 of this paper.

In the Specification:

Please amend the title on page 1 as follows:

CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

~~MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME~~

In the Claims:

Although no amendments to the claims are presented herein, the following clean listing of the claims is provided for the examiner's records:

1. (Previously Presented) A mobile terminal comprising:

a camera;

a touch screen; and

a controller configured to:

control the touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

2. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

3. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

4. (Previously Presented) The mobile terminal of claim 1, wherein:

the indicator for indicating the current image capturing setting is displayed in response

to a second touch input by the object.

5. (Previously Presented) The mobile terminal of claim 1, wherein:

the controller is configured to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

6. (Previously Presented) The mobile terminal of claim 1, wherein the controller is further configured to recognize displayed objects in the preview images, and to adjust size of the auto focus guide based on size of one of the displayed objects that is touch selected by the user.

7. (Previously Presented) The mobile terminal of claim 6, wherein the controller is configured to adjust the size of the auto focus guide to circumscribe the one of the displayed objects that is touch selected by the user.

8. (Previously Presented) The mobile terminal of claim 1, wherein the controller is configured to adjust size of the auto focus guide to circumscribe an object displayed at the specific point.

9. (Previously Presented) The mobile terminal of claim 1, wherein:

the first direction and the second direction are opposite directions along the touch screen.

10. (Previously Presented) The mobile terminal of claim 1, wherein the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

11. (Previously Presented) The mobile terminal of claim 1, wherein the controller is

configured to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

12. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

13. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

14. (Previously Presented) The mobile terminal of claim 11, wherein the image capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

15. (Previously Presented) The mobile terminal of claim 1, wherein the controller is configured to increase the value of the image capture setting when the object is dragged in the first direction along a line and to decrease the value of the image capture setting when the object is dragged in the second direction along the line.

16. (Previously Presented) The mobile terminal of claim 15, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

17. (Previously Presented) The mobile terminal of claim 15, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

18. (Previously Presented) The mobile terminal of claim 15, wherein the image

capturing setting corresponds to camera zoom to adjust zoom of objects in the image to be captured.

19. (Previously Presented) The mobile terminal of claim 1, wherein the controller is further configured to perform face recognition processing to recognize a displayed object in the preview images as a person's face, and to control the image capturing setting of the camera based on recognizing the displayed object in the preview images as a person's face.

20. (Previously Presented) The mobile terminal of claim 1, wherein the camera includes a movable lens, wherein the image capturing setting corresponds to a position of the movable lens,

wherein the controller is further configured to change the position of the movable lens to perform fine focus adjustment in response to a distance or a direction the object is dragged along the touch screen.

21. (Previously Presented) The mobile terminal of claim 20, wherein the controller is further configured to control the camera to adjust a pointing direction of the movable lens based on at least the distance or the direction the object is dragged along the touch screen.

22. (Previously Presented) A computer program product comprising a non-transitory computer readable medium storing program code that is executable to configure at least one processor of a mobile terminal to:

control a touch screen to display preview images received via the camera;

control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point;

focus the preview images based on a location of the auto focus guide;

determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction;

control the touch screen to display an indicator for indicating the current image capturing

setting while maintaining the displayed auto focus guide at the specific point; and

capture an image according to the current image capturing setting.

23. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed separate from the displayed auto focus guide.

24. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to the first touch input.

25. (Previously Presented) The computer program product of claim 22, wherein:

the indicator for indicating the current image capturing setting is displayed in response to a second touch input by the object.

26. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to control the touch screen to display the auto focus guide at the specific point of the touch screen and to display the indicator for indicating the current image capture setting in response to the object touching the specific point to provide the first touch input, and configured to determine the image capturing setting of the camera responsive to the object being dragged from the specific point along the touch screen.

27. (Previously Presented) The computer program product of claim 22, wherein:

the value of the image capturing setting is changed based on a distance the object is dragged along the touch screen.

28. (Previously Presented) The computer program product of claim 22, wherein the program code further configures the at least one processor to increase the value of the image capture setting when the object is dragged in the first direction along one of a clockwise arc and a counterclockwise arc, and to decrease the value of the image capture setting when the

object is dragged in the second direction along the other one of the clockwise arc and the counterclockwise arc.

29. (Previously Presented) The computer program product of claim 28, wherein the image capturing setting corresponds to brightness to adjust brightness of objects in the image to be captured.

30. (Previously Presented) The computer program product of claim 28, wherein the image capturing setting corresponds to position of the lens to adjust focus of objects in the image to be captured.

31. (Canceled)

32. (Canceled)

REMARKS

In response to the Notice of Non-Compliant Amendment, Applicant has amended the status identifiers to indicate 'Canceled' for claims 31 and 32 as mentioned in the notice. Thus, Applicant respectfully submits that the amended claims presented herewith meet the requirements as set forth in 37 CFR 1.121 and are compliant. Accordingly, Applicant respectfully requests the amendments and arguments provided below and the terminal disclaimer previously submitted on December 4, 2020 be formally accepted.

Applicant appreciates the thorough examination of the claims as evidenced by the Non-Final Office Action mailed November 27, 2020 (hereinafter, "Office Action").

Applicant respectfully requests reconsideration and allowance of the claims for at least the reasons presented herein below.

Status of Claims in Office Action

Claims 1-30 were pending in this application.

Specification:

The title of the invention has been amended to overcome the objection to the title. Applicant submits the new title is clearly indicative of the invention to which the claims are directed.

Double Patenting

Claims 1-30 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 10,819,901 and over claims 1-18 of U.S. Patent No. 9,888,168. A terminal disclaimer to U.S. Patent No. 10,819,901 and U.S. Patent No. 9,888,168 is filed herewith to overcome the double patenting rejection.

Applicants' filing of the terminal disclaimer is made to expedite allowance and is not an admission that any of the claims are patentably indistinct from any of the claims of U.S. Patent No. 10,819,901 and U.S. Patent No. 9,888,168.

Applicants respectfully submit that all of the pending claims and specification are in condition for allowance. If the Examiner should believe that any issues remain after

consideration of the remarks provided above, the Examiner is encouraged to contact the undersigned by telephone to facilitate expedited resolution thereof.

CONCLUSION

It is not believed that an extension of time and/or additional fee(s)-including fees for net addition of claims-are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to Deposit Account No. 60-1438.

Respectfully submitted,

/David K Purks/

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Electronic Acknowledgement Receipt

EFS ID:	41429548
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	MOBILE TERMINAL AND METHOD OF PERFORMING MULTI-FOCUSING AND PHOTOGRAPHING IMAGE INCLUDING PLURALITY OF OBJECTS USING THE SAME
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	18-DEC-2020
Filing Date:	18-SEP-2020
Time Stamp:	12:18:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		P076021US11_Response_to_Notice_of_Non-Compliant_Amendment-NFOA_mailed_2020-11-27.pdf	46875 2660343b91d415e2b90fb6776e98be9406abe656	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Specification	2	2
	Claims	3	8
	Applicant Arguments/Remarks Made in an Amendment	9	10
Warnings:			
Information:			
	Total Files Size (in bytes):	46875	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
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PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/024,831	Filing Date 09/18/2020	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $460 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	12/18/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 30	Minus	** 30	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/CHANTAE S DESSAU/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11

CONFIRMATION NO. 7812

146825
Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

PUBLICATION NOTICE

OC000000122505831

Title:CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

Publication No.US-2021-0006711-A1
Publication Date:01/07/2021

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

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NOTICE OF ALLOWANCE AND FEE(S) DUE

146825 7590 01/13/2021

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

EXAMINER	
KHAN, USMAN A	
ART UNIT	PAPER NUMBER
2696	

DATE MAILED: 01/13/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

TITLE OF INVENTION: CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	04/13/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

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146825 7590 01/13/2021

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PO BOX 30789
RALEIGH, NC 27622-0789

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

TITLE OF INVENTION: CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1200	$0.00	$0.00	$1200	04/13/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
KHAN, USMAN A	2696	348-333110

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

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❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	09/18/2020	Woo Chang CHUN	9900-76021US11	7812

146825 7590 01/13/2021

Sage Patent Group/Telefonaktiebolaget LM Ericsson
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RALEIGH, NC 27622-0789

EXAMINER	
KHAN, USMAN A	

ART UNIT	PAPER NUMBER
2696	

DATE MAILED: 01/13/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/024,831	Applicant(s) CHUN et al.	
	Examiner Usman A Khan	Art Unit 2696	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 12/18/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-30 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☑ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☑ Certified copies of the priority documents have been received in Application No. 12631591 .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/USMAN A KHAN/
Primary Examiner, Art Unit 2696

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

2. Applicant has amended the title of the invention to overcome the objection to the title provided in the previous office action.

Terminal Disclaimer

3. The terminal disclaimer filed on 12/04/2020 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of **9,888,168** has been reviewed and is accepted. The terminal disclaimer has been recorded.

4. The terminal disclaimer filed on 12/04/2020 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of **10,819,901** has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

5. Claims 1 – 30 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding independent **claim 1**, the prior art of record fails to teach or fairly suggest control the touch screen to display an auto focus guide at a specific point of the

touch screen in response to a first touch input to the specific point; focus the preview images based on a location of the auto focus guide; determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction; control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and capture an image according to the current image capturing setting; in combination with other elements of the claim.

Regarding **claims 2 - 21**, claims 2 - 21 are allowed as being dependent from allowed independent claim 1.

Regarding independent **claim 22**, the prior art of record fails to teach or fairly suggest control a touch screen to display preview images received via the camera; control the touch screen to display an auto focus guide at a specific point of the touch screen in response to a first touch input to the specific point; focus the preview images based on a location of the auto focus guide; determine an image capturing setting of the camera responsive to an object dragged along the touch screen, wherein a value of the image capturing setting is increased responsive to the object being dragged in a first direction and is decreased responsive to the object being dragged in a second direction; control the touch screen to display an indicator for indicating the current image capturing setting while maintaining the displayed auto focus guide at the specific point; and capture an

image according to the current image capturing setting; in combination with other elements of the claim.

Regarding **claims 23 - 30**, claims 23 - 30 are allowed as being dependent from allowed independent claim 22.

Conclusion

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman A Khan whose telephone number is (571)270-1131. The examiner can normally be reached on M - Th 5:30 AM - 2 PM, F 5:30 AM - Noon.

8. Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/USMAN A KHAN/
Usman Khan
01/05/2021
Primary Examiner, Art Unit 2696

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

CPC						
Symbol					**Type**	**Version**
H04N	/	5	/	23216	F	2013-01-01
G06F	/	3	/	04883	I	2013-01-01
H04N	/	5	/	23212	I	2013-01-01
H04N	/	5	/	23219	I	2013-01-01
H04N	/	5	/	23229	I	2013-01-01
H04N	/	5	/	232945	I	2018-08-01
H04N	/	5	/	232133	I	2018-08-01
H04N	/	5	/	23293	I	2013-01-01
G06F	/	3	/	0484	I	2013-01-01
H04N	/	5	/	232935	I	2018-08-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/USMAN A KHAN/ Primary Examiner, Art Unit 2696	05 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H04N	/	5	/	232

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**
348	348

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/USMAN A KHAN/ Primary Examiner, Art Unit 2696	05 January 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19	28	28								
2	2	11	11	20	20	29	29								
3	3	12	12	21	21	30	30								
4	4	13	13	22	22		31								
5	5	14	14	23	23		32								
6	6	15	15	24	24										
7	7	16	16	25	25										
8	8	17	17	26	26										
9	9	18	18	27	27										

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 30	
/USMAN A KHAN/ Primary Examiner, Art Unit 2696 (Primary Examiner)	05 January 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	11/23/2020	01/04/2021							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
4	4	✓	=							
5	5	✓	=							
6	6	✓	=							
7	7	✓	=							
8	8	✓	=							
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26	26	✓	=							
27	27	✓	=							
28	28	✓	=							
29	29	✓	=							
30	30	✓	=							
	31	-	-							
	32	-	-							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	**Art Unit**
	Usman A Khan	2696

CPC - Searched*		
Symbol	**Date**	**Examiner**
H04N5/23216, 5/23245, 5/2253, 5/2254, 5/23212	01/04/2021	UK
G06F3/0484, 3/04883	01/04/2021	UK
H04N5/23212, 5/23219, 5/23229, 5/23293	01/04/2021	UK

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
348	333.11, 208.12, 220.1, 345	01/04/2021	UK

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
EAST (Including databases: US-PGPUB, USPAT, USOCR, FPRS, EPO, JPO, DERWENT, IBM_TDB): See attached EAST search history	01/04/2021	UK
Inventor name search	01/04/2021	UK
Patent case (12/351,591; 13/174,549; 14/561,090; 15/888,981) review	01/04/2021	UK
IP.com search; please see attached	01/04/2021	UK
Related case (14/513,545; 16/357,069; 16/357,123; 16/357,093) review	01/04/2021	UK
Related case (15/931,006) review	01/04/2021	UK

/USMAN A KHAN/ Primary Examiner, Art Unit 2696	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/024,831	CHUN et al.
	Examiner	Art Unit
	Usman A Khan	2696

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	PgPub text search, see interference search history printout	01/04/2021	UK

/USMAN A KHAN/ Primary Examiner, Art Unit 2696	

Main Concept Text
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a mobile terminal comprises a camera; a touch screen; and a controller configured to display a preview image that includes at least one object and is captured through the camera on the touch screen, to display a first guide including a specific point on the preview image in a predetermined size when receiving touch input applied to the specific point, to determine a focusing area for focusing on an object corresponding to the specific point while varying the size of the displayed first guide, to perform focusing on the image based on the determined focusing area and to capture the focused image.

(No Concept Modifiers)
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(No Filters)
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Publication Number
US20150085173
US8913176
KR20120037047A
US20150029382
US20190215448
US20110267530
US10819901
US20200275015
US20180160033
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Options
=======
De-dup: None
Cut-off: None
Sort: Relevance

Content: Patents + NPL (189)
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Japan Applications
Korea Patents
Korea Applications
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IEEE Xplore Publications: IEEE Periodicals
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Other Literature: IBM Redbooks
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Bibliographic Data

Application No: 17/024,831

Foreign Priority claimed: (●) Yes ( ) No

35 USC 119 (a-d) conditions met: [✓] Yes [ ] No [ ] Met After Allowance

Verified and Acknowledged: /USMAN A KHAN/ Examiner's Signature | Initials

Title: CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/18/2020	348	2696	9900-76021US11
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CONTINUING DATA

This application is a CON of 15931006 05/13/2020 PAT 10819901

15931006 is a CON of 15888981 02/05/2018 PAT 10827115

15888981 is a CON of 14561090 12/04/2014 PAT 9888168

14561090 is a CON of 13174549 06/30/2011 PAT 8913176

13174549 is a CIP of 12351591 01/09/2009 PAT 8416306

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	28	(US-20060104523-$ or US-20080122939-$ or US-20080025558-$ or US-20050264658-$ or US-20030025812-$ or US-20090316016-$ or US-20060069999-$).did. or (US-6327436-$ or US-5812193-$ or US-7558408-$ or US-7269292-$ or US-7248294-$ or US-7440594-$ or US-7298412-$).did. or (WO-2005004488-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 12:39
S2	388	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 12:41
S12	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S13	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S14	2	(S12 OR S13)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:20
S15	6	("20080107411" | "7561201" | "7781710").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2011/12/29 13:21

			DERWENT; IBM_TDB			
S16	3	"20060072028"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S17	3	"20070018069"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S18	21	"7034881"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 13:27
S19	7	("6888567" | "6919927" | "7034881" | "7248796" | "7417683" | "7551223" | "7809260").PN. OR ("8077249").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:31
S20	2	"20040189856"	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:39
S21	1	"20060238622"	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:39
S22	2	("20050168621" | "20060008264").PN. OR ("7781710").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2011/12/29 13:40
S23	11	notify NEAR5 user NEAR5 (image OR photo OR photograph OR picture) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2011/12/29 15:03
S24	1,530	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/29 16:18
S25	197	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/12/29 16:18

S26	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S27	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S28	2	(S26 OR S27)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 13:55
S29	1,656	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/06/06 14:14
S30	213	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/06/06 14:47
S31	447	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 14:47
S32	2	touch NEAR3 (screen OR panel) NEAR5 focus$4 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 14:48
S33	949	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/06 15:13

S34	3	"20020063696"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 09:36
S35	2	S34 AND touch AND releas$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 09:36
S36	39	auto NEAR4 focus NEAR10 sound	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:10
S37	0	auto NEAR4 focus NEAR5 comple$4 NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:17
S39	29	focus NEAR5 complet$4 NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/13 14:18
S42	6	touch NEAR3 (screen OR panel) NEAR20 focus NEAR10 (sound OR audio)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/14 08:55
S43	31	blink$4 NEAr5 focus NEAr5 (window OR rectangle OR area OR box)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/06/14 09:46

S44	2	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S45	1	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S46	2	(S44 OR S45)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 13:40
S47	1,854	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/12/27 13:42
S48	240	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2012/12/27 13:57
S49	530	touch NEAR3 (screen OR panel) NEAR5 focus$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 14:00
S50	1,116	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2012/12/27 14:05
S53	9	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15

S54	14	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15
S55	20	(S53 OR S54)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 09:15
S56	2,270	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/01/28 09:16
S57	162	panoram$4 WITH (image OR picture OR photo OR photograph) WITH arrow	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/01/28 11:25
S58	10	(("JIN SANG") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S59	14	(("JA WON") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S60	21	(S58 OR S59)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2014/07/07 09:34
S61	242	focus NEAR5 (level OR amount OR priority) WITH assign$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2014/07/07 09:34

			DERWENT; IBM_TDB			
S80	13	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S81	16	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S82	17	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S83	37	(S80 OR S81 OR S82)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:01
S84	28	("20020063696" | "20080044171" | "20070296848" | "20100171863" | "7034881" | "20030160886" | "20070018069" | "20100141826" | "20050275742" | "20040189849" | "20050140815").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:02
S85	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" | "5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S86	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" |	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02

		"5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.				
S87	7	("20040189849" | "20070018069" | "20070296848" | "20100141826" | "20100171863" | "7034881").PN. OR ("8913176").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S88	84	("4189744" | "4769695" | "4816874" | "5028950" | "5063407" | "5172234" | "5319416" | "5369463" | "5412487" | "5471535" | "5477264" | "5625415" | "5706049" | "5808678" | "5838370" | "5838371" | "5881170" | "6011547" | "6040825" | "6067114" | "6111605" | "6222646" | "6300955" | "6317156" | "6710802" | "6919927").PN. OR ("7034881").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S89	83	("20020057353" | "20020075244" | "20020105582" | "20020110354" | "4386347" | "4933660" | "5289168" | "5396287" | "5467102" | "5671014" | "5689742" | "5862419" | "5867158" | "5923908" | "6104334" | "6239790" | "6414671").PN. OR ("6919927").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2016/08/11 09:02
S90	2,818	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:41
S91	366	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:41
S92	5,266	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:42
S93	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/08/11 09:42
S95	194,174	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2016/08/11 09:42

			DERWENT; IBM_TDB			
S97	26	touch NEAR3 (screen OR panel) SAME focus$4 AND S95	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 09:47
S98	33	("20020063696" | "20080044171" | "20070296848" | "20070013782" | "20100171863" | "7034881" | "20040189849" | "20070296848" | "20030160886" | "7034881" | "20070018069" | "20100141826" | "20050275742" | "20040189849" | "20050140815" | "20040189856" | "20070018069").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/08/11 12:21
S99	3	"20150085173"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 14:38
S100	14	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S101	16	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S102	17	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/09 15:49
S103	38	(S100 OR S101 OR S102)	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2016/12/09 15:49

			JPO; DERWENT; IBM_TDB			
S104	2,817	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S105	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S106	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2016/12/09 15:50
S107	6,604	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/12 08:12
S108	12	"8913176"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 08:10
S109	18	"8416306"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 08:12
S110	3	"20160072999"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2016/12/13 10:59
S111	20	("20050140813" | "20060104623" | "20070146503" | "20080291284" | "20090022422" | "20100020221" | "20100141826" | "20100166404" | "20110016970" | "20130038759" | "20130155276" | "5111228" | "6778217" | "6839452" | "6919927" | "7054552" | "7551223" | "8259208" | "8416306").PN. OR ("8804022").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:00

S112	20	("20050140813" | "20060104623" | "20070146503" | "20080291284" | "20090022422" | "20100020221" | "20100141826" | "20100166404" | "20110016970" | "20130038759" | "20130155276" | "5111228" | "6778217" | "6839452" | "6919927" | "7054552" | "7551223" | "8259208" | "8416306").PN. OR ("8804022").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:00
S113	35	("20010012072" | "20020018136" | "20030142880" | "20030174230" | "20050007486" | "4614975" | "5121152" | "5225940" | "5629735" | "6388707" | "6493027" | "6522360" | "6785469" | "6919927" | "6972799" | "6975361" | "6977687" | "7034881" | "7071985" | "7171625").PN. OR ("7551223").URPN.	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:01
S114	2	"20100208122"	US-PGPUB; USPAT; USOCR	WITH	ON	2017/06/13 09:01
S115	43	("6700618" | "20090073275" | "20090019399" | "20080037975" | "20020106206" | "20090167931" | "20090244357" | "20100045800" | "20100110278" | "20060182433" | "20090002516" | "20100020221" | "20120120277" | "20110007029").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:01
S116	22	touch screen exposure NEAR2 control	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:06
S117	36	touch NEAR2 screen focus (trace OR tracing OR drag OR dragging)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:06
S118	740	touch NEAR2 screen focus (area OR region)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:07

S119	15	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S120	17	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S121	18	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S122	39	(S119 OR S120 OR S121)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:28
S123	2,819	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:38
S124	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:44
S125	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/13 09:44
S126	8,676	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/06/13 09:44
S127	15	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2017/10/06 07:26

			DERWENT; IBM_TDB			
S128	17	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S129	18	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S130	39	(S127 OR S128 OR S129)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:26
S131	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S132	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S133	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/10/06 07:34
S134	9,364	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2017/10/06 07:34
S139	402,846	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/04 14:41
S140	212	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin")	US-PGPUB; USPAT; USOCR;	WITH	ON	2018/06/04 14:41

		near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	FPRS; EPO; JPO; DERWENT; IBM_TDB			
S141	273	usman.xp.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:37
S142	66	S141 AND touch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:38
S143	47	S141 AND touch AND focus$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:38
S144	55	capture image predetermined time after release	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:52
S145	108	timer capture image predetermined time	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 09:55
S146	23	("4937673" | "20030184674" | "20030193578" | "20040136685" | "5990937" | "20040201715" | "20050200718" | "20060215039" | "20060209197" | "20080144906").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 10:04
S147	2,636	camera self$1timer	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2018/06/05 10:14

			JPO; DERWENT; IBM_TDB			
S148	504	camera self$1timer button	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 10:14
S149	807	((("HAMADA") near3 ("Masataka"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S150	16	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S151	18	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S152	20	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S153	41	(S150 OR S151 OR S152)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:28
S154	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:33

S155	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:33
S156	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:34
S157	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/05 11:34
S158	10,697	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S159	12,359	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S160	14,811	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S161	30,206	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:34
S162	26,815	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	USPAT	WITH	ON	2018/06/05 11:36
S163	17	("20020063696" | "20030160886" | "20040189849" | "20040189856" | "20050140815" | "20050275742" | "20060092315" | "20070013782" | "20070018069" | "20070296848" | "20080044171" | "20100141826" | "20100171863" | "20100182264" | "20150085173" | "7034881" | "9888168").PN.	US-PGPUB; USPAT	WITH	ON	2018/06/05 11:41

S164	36	("20020063696" | "20080044171" | "20100182264" | "20070296848" | "20060092315" | "20150085173" | "20100171863" | "7034881" | "20030160886" | "20070018069" | "20050275742" | "9888168" | "20040189849" | "20050140815").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S165	28,626	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S166	402,894	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:42
S167	9	"12351591"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/06/05 11:55
S168	413,273	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S169	17	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S170	19	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25

S171	22	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S172	43	(S169 OR S170 OR S171)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/07 09:25
S173	1,067	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S174	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S175	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S176	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/07 09:26
S178	0	touch NEAR3 screen focus icon change color	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:34
S179	3	touch NEAR3 screen focus icon color	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:34
S180	37	focus$3 (complete OR succes$5) icon	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:35
S181	1,140	focus$3 (complete OR succes$5) (icon OR indicat$4)	US-PGPUB; USPAT;	WITH	ON	2018/11/20 06:36

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S182	49	focus$3 icon green	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:39
S183	22	focus$3 icon green AND touch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:40
S184	4	focus$3 icon green AND touch screen	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:40
S186	77	"20060097991"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:46
S187	109	"5923908"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 06:48
S188	240	focus$3 (complete OR succes$5) (icon OR indicat$4) AND (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 07:00

S189	18	focus$3 (complete OR succes$5) (icon OR indicat$4) SAME (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 07:02
S190	17	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S191	19	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S192	22	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S193	43	(S190 OR S191 OR S192)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S194	413,630	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 10:32
S195	1,067	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35

S196	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S197	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S198	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/20 10:35
S199	2	"14513545"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2018/11/20 11:46
S200	437,363	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S201	25	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S202	24	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S203	28	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 06:20
S204	52	(S201 OR S202 OR S203)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2019/12/30 06:20

			DERWENT; IBM_TDB			
S205	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/12/30 06:28
S206	69	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 07:12
S207	272	self NEAR2 timer touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 07:32
S208	1,223	shutter NEAR3 (button OR icon) touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:35
S209	93	shutter NEAR3 (icon) touch NEAR3 (screen OR panel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:36
S210	17	shutter NEAR3 (icon) touch NEAR3 (screen OR panel) AND timer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:36
S211	57	shutter NEAR3 (icon) AND self NEAR2 timer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2019/12/30 09:37
S212	443,436	((("LG") near3 ("ELECTRONICS") near3 ("INC"))).AS,AANM.	US-PGPUB; USPAT;	WITH	ON	2020/04/08 09:18

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S213	25	(("Jin Sang") near2 (YUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S214	24	(("Woo Chang") near2 (CHUN)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S215	28	(("Ja Won") near2 (KOO)).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S216	52	(S213 OR S214 OR S215)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:18
S217	1,068	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S218	2,821	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S219	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S220	227	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/04/08 09:35
S221	17,077	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2020/04/08 09:36

			JPO; DERWENT; IBM_TDB			
S222	17,769	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S223	22,946	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S224	43,394	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:36
S225	70	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 09:37
S226	5,727	touch NEAR3 (screen OR panel) NEAR5 finger (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (image OR photo OR photograph OR picture OR snapshot OR shot OR frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/08 10:50
S227	9	("20070286589" | "20090015703" | "5970261").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/04/12 10:35
S230	17,227	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2020/05/28 07:43

			JPO; DERWENT; IBM_TDB			
S231	251	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:43
S232	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 07:44
S233	17,340	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S234	39,006	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S235	83,494	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:44
S236	36,566	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S237	15,299	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45

S238	16,346	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S239	44,820	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:45
S240	408	focus$3 (complete OR succes$5) (icon OR indicat$4) AND (((touch or resistive or capacit$5 or touch$1sensitive) adj2 (screen or panel or display or pad or monitor or device or apparatus or system or unit or module or equipment or hardware or machine)) or touch$1screen$1 or resistive$1screen$1 or touch$1panel$1 or touch$1pad$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 07:55
S241	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-0286589-$ | US-0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ |	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 08:47

		US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.				
S242	17,995	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S243	23,447	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S244	44,009	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/05/28 11:22
S245	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S246	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S247	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:24
S248	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/28 11:50
S249	265,949	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/05/28 12:59

			DERWENT; IBM_TDB			
S250	269,509	(("LG") near3 ("ELECTRONICS") near3 ("INC")).AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:09
S251	17,563	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:10
S252	258	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:10
S253	17,743	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S254	39,967	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S255	84,847	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S256	36,924	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/07/07 13:22

			DERWENT; IBM_TDB			
S257	15,585	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S258	16,842	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S259	45,276	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S260	18,376	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S261	24,274	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S262	45,054	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 13:22
S263	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:22

S264	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S265	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S266	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 13:23
S267	5,869	touch NEAR3 (screen OR panel) NEAR5 finger (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (image OR photo OR photograph OR picture OR snapshot OR shot OR frame)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 14:11
S269	5,024	touch NEAR3 (screen OR panel) NEAR5 release$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/07/07 14:22
S273	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 10:44
S274	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 11:09
S275	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/08 11:09
S277	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 10:44

		0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ | US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.				
S283	10,218	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	USPAT	WITH	ON	2020/11/16 12:08
S285	271	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 12:08
S286	18,612	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 12:08
S287	228	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S288	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S289	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56
S290	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:56

S291	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/16 12:57
S292	18,594	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:01
S293	41,894	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:01
S294	87,662	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S295	38,742	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S296	16,449	H04N5/23219.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S297	18,218	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S298	50,780	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	WITH	ON	2020/11/16 13:02

			DERWENT; IBM_TDB			
S299	19,266	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S300	25,998	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S301	48,048	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/16 13:02
S302	74	touch NEAR3 (screen OR panel) NEAR5 release$4 captur$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:33
S305	4,225	touch NEAR3 (screen OR panel) NEAR5 (release$4 OR depress$2) (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:39
S306	869	touch NEAR3 (screen OR panel) NEAR5 (release$4 OR depress$2) (captur$4 or record$4 or stor$4 or memoriz$4 or pick$1up or (pick$3 up) or sense or sensing or sensed or photograph$3 or shutter$4 or release or imag$3 or camera) (drag$5 or grab$5 or move or moving or hold$4 adj down)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 07:41
S307	1	("10819901").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/17 10:39

S308	1	("9888168").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/11/17 11:02
S309	129	(US-20090103790-$ | US-20100098558-$ | US-0013782-$ | US-0015703-$ | US-0018069-$ | US-0025710-$ | US-0044171-$ | US-0063696-$ | US-0079824-$ | US-0080747-$ | US-0085173-$ | US-0091254-$ | US-0092306-$ | US-0092315-$ | US-0098558-$ | US-0103790-$ | US-0122943-$ | US-0134700-$ | US-0140815-$ | US-0141826-$ | US-0150727-$ | US-0151854-$ | US-0160886-$ | US-0171863-$ | US-0181639-$ | US-0182264-$ | US-0189849-$ | US-0189856-$ | US-0197845-$ | US-0275742-$ | US-0286589-$ | US-0296848-$ | US-11183886-$ | US-2164244-$ | US-2169946-$ | US-5970261-$ | US-7034881-$ | US-9888168-$ | US-20020063696-$ | US-20040189856-$ | US-20060092306-$ | US-20070018069-$ | US-20070286589-$ | US-20080044171-$ | US-20090015703-$ | US-20030160886-$ | US-20040091254-$ | US-20040150727-$ | US-20040189849-$ | US-20050134700-$ | US-20050140815-$ | US-20050151854-$ | US-20050275742-$ | US-20060092315-$ | US-20060181639-$ | US-20060197845-$ | US-20070013782-$ | US-20070296848-$ | US-20080025710-$ | US-20080079824-$ | US-20080080747-$ | US-20080122943-$ | US-20100141826-$ | US-20100171863-$ | US-20100182264-$ | US-20150085173-$).DID.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2020/11/17 11:09
S313	281	((("CHUN") near3 ("Woo") near3 ("Chang")) OR (("YUN") near3 ("Jin") near3 ("Sang")) OR (("KOO") near3 ("Ja") near3 ("Won"))).INV.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:20
S314	19,343	((("TELEFONAKTIEBOLAGET") near3 ("LM") near3 ("ERICSSON") near3 ("(PUBL)"))).AS,AANM.	US-PGPUB; USPAT; USOCR; FPRS; EPO;	WITH	ON	2021/01/04 08:20

			JPO; DERWENT; IBM_TDB			
S315	228	(348/346).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/04 08:20
S316	673	(348/333.11).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/04 08:20
S317	1,069	(348/220.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/04 08:20
S318	2,822	(348/345).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/04 08:20
S319	365	(348/208.12).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/01/04 08:20
S320	19,039	H04N5/23216.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S321	43,033	G06F3/0484.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S322	89,158	G06F3/04883.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S323	38,813	H04N5/23212.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S324	16,751	H04N5/23219.CPC.	US-PGPUB; USPAT;	WITH	ON	2021/01/04 08:21

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S325	18,715	H04N5/23229.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S326	50,810	H04N5/23293.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S327	19,645	H04N5/23245.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S328	26,919	H04N5/2253.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21
S329	48,181	H04N5/2254.CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	WITH	ON	2021/01/04 08:21

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S51	28	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2012/12/27 14:30
S52	90	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2012/12/27 14:41

S63	11	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2014/07/07 10:19
S135	77	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2017/10/06 08:31
S136	250	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2017/10/06 08:31
S137	16	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2017/10/06 08:31
S270	93	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2020/07/07 14:49
S271	302	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2020/07/07 14:49
S272	26	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2020/07/07 14:49
S310	95	touch NEAR3 (screen OR panel) NEAR5 focus$4.clm.	US-PGPUB	WITH	ON	2020/11/17 11:40
S311	306	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2020/11/17 11:40
S312	27	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2020/11/17 11:40
S330	308	touch NEAR3 (screen OR panel) NEAR5 release$4.clm.	US-PGPUB	WITH	ON	2021/01/04 09:28
S331	27	focus NEAR5 (level OR amount OR priority) WITH assign$4.CLM.	US-PGPUB	WITH	ON	2021/01/04 09:46

1/5/2021 8:31:12 AM
C:\Users\ukhan\Documents\EAST\Workspaces\17024831 15931006 15888981 14561090 13174549 12351591_touch_screen_focus_capture.wsp

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
17024831	18-Sep-2020	Woo Chang CHUN	9900-76021US11	7812

TITLE OF INVENTION :

CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Regular Undiscounted	Utility under 35 USC 111(a)	2696	333110	USMAN KHAN

Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
$1200	$0	$1200	13-Apr-2021	$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
146825 Sage Patent Group/Telefonaktiebolaget LM Ericsson PO BOX 30789 RALEIGH NC 27622-0789 UNITED STATES 984-219-3444 instructions@sagepat.com	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status

Change in Entity Status

○ Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.

○ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

◉ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:

☒ Issue Fee	☐ I authorize USPTO to apply my previously paid issue fee to the current fees due
☐ Publication Fee	☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____
☐ Advance Order - # of copies _____	☒ If **in addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency or credit any overpayment, to Deposit Account Number 601438. The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed

NOTE: If no name is listed, no name will be printed
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1. SAGE PATENT GROUP
2.
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5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
Telefonaktiebolaget LM Ericsson (publ)	Stockholm		sweden	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/David K. Purks/	**Date**	03-05-2021
Name	David K. Purks	**Registration Number**	40133

Electronic Patent Application Fee Transmittal

Application Number:	17024831
Filing Date:	18-Sep-2020
Title of Invention:	CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN
First Named Inventor/Applicant Name:	Woo Chang CHUN
Filer:	David Kent Purks/Jennifer Jones
Attorney Docket Number:	9900-76021US11

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1200**

Electronic Acknowledgement Receipt

EFS ID:	42098286
Application Number:	17024831
International Application Number:	
Confirmation Number:	7812
Title of Invention:	CONTROLLING IMAGE CAPTURING SETTING OF CAMERA BASED ON DIRECTION OBJECTED IS DRAGGED ALONG TOUCH SCREEN
First Named Inventor/Applicant Name:	Woo Chang CHUN
Customer Number:	146825
Filer:	David Kent Purks/Jennifer Jones
Filer Authorized By:	David Kent Purks
Attorney Docket Number:	9900-76021US11
Receipt Date:	05-MAR-2021
Filing Date:	18-SEP-2020
Time Stamp:	11:02:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1200
RAM confirmation Number	E202135B02173364
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	46007 6530cdc3c4ae3d27f090e0d7706fa7be681ebfa4	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32393 4237a7cf0a9cea1214acb6c0ed5e954edbea2ef5	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	78400		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/024,831	04/06/2021	10972654	9900-76021US11	7812

146825 7590 03/17/2021

Sage Patent Group/Telefonaktiebolaget LM Ericsson
PO BOX 30789
RALEIGH, NC 27622-0789

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Woo Chang CHUN, Seoul, KOREA, REPUBLIC OF;
Telefonaktiebolaget LM Ericsson (publ), Stockholm, SWEDEN;
Jin Sang YUN, Seoul, KOREA, REPUBLIC OF;
Ja Won KOO, Seoul, KOREA, REPUBLIC OF;

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AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 **Director of the U.S. Patent and Trademark Office** **P.O. Box 1450** **Alexandria, VA 22313-1450**	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of North Carolina, Western Division on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
5:23-CV-570-D-RJ	10/11/2023	Eastern District of North Carolina, Western Division

PLAINTIFF	DEFENDANT
Telefonaktiebolaget LM Ericsson et al.	Lenovo (United States), Inc. et al.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7,151,430	12/19/2006	Telefonaktiebolaget LM Ericsson
2	9,509,273	11/29/2016	Telefonaktiebolaget LM Ericsson
3	9,313,178	4/12/2016	Ericsson AB
4	11,122,313	9/14/2021	Ericsson AB
5	10,972,654	4/6/2021	Telefonaktiebolaget LM Ericsson

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
Peter A. Moore, Jr.	Stephanie Mann	10/12/2023

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**