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(72) **Inventeurs/Inventors:**
FOURQUIN, XAVIER, FR;
HOUSNI, JAMAL, FR

(73) **Propriétaire/Owner:**
DRNC HOLDINGS, INC., US

(74) **Agent:** RIDOUT & MAYBEE LLP

(54) **Titre : TELEPHONE MOBILE DU TYPE A COQUE AVEC APPAREIL DE PRISE DE VUES**
(54) **Title: MOBILE PHONE OF THE CLAMSHELL'S TYPE WITH CAMERA**

(57) **Abrégé/Abstract:**
The invention relates to a mobile phone (1) with a housing of the clamshell's type comprising a first part (10) and a second part (11) linked rotating to the first part (10) through a hinge (12) so that the mobile phone can be in a closed position or in an open position. According to the invention, a single camera (14) is located on an internal side (10b) of said first part (10) so that it is directed to a user of the mobile phone when mobile phone is in said open position for capturing images and/or videos which are displayed on a first display (13) accessible to the user when phone is in the open position, the same camera being also used for capturing images and/or videos when mobile phone is in said closed position, which are displayed on a second external display (15) thanks to an opening (16) provided on said second part (11).

ABSTRACT

The invention relates to a mobile phone (1) with a housing of the clamshell's type comprising a first part (10) and a second part (11) linked rotating to the first part (10) through a hinge (12) so that the mobile phone can be in a closed position or in an open position. According to the invention, a single camera (14) is located on an internal side (10b) of said first part (10) so that it is directed to a user of the mobile phone when mobile phone is in said open position for capturing images and/or videos which are displayed on a first display (13) accessible to the user when phone is in the open position, the same camera being also used for capturing images and/or videos when mobile phone is in said closed position, which are displayed on a second external display (15) thanks to an opening (16) provided on said second part (11).

MOBILE PHONE OF THE CLAMSHELL'S TYPE WITH CAMERA

The present invention relates to a mobile phone with a housing of the clamshell's type comprising a first part and a second part linked rotating to the first part through a hinge so that the mobile phone can be in a closed position or in an open position, said mobile phone further comprising a first display which is accessible to a user when mobile phone is in said open position, a second display which is accessible to a user on an external side of said first part when mobile phone is in said closed position, and a camera on said first part.

Today, several mobile phones are of the clamshell type, i.e. present two parts linked to each other through a hinge, either parallel to the longitudinal axis of the phone (the phone can be thus open like a book, in landscape or portrait mode), or orthogonal to the longitudinal axis (flip phone).

Generally, the camera is located on the external side of the first part and is used when the mobile phone is in its open position. Indeed, the user of the mobile phone can the direct the camera towards the scene he wants to capture while seeing the scene on the first display. In these known solutions however, it is not very simple for the user to capture an image and/or a video of himself since, in this case, he has to direct the camera towards himself and thus, cannot view the scene on the first display.

One possible solution to this problem would be to modify the software of the mobile phone in order that a scene to be captured can be seen either simultaneously on both displays, whatever the current position (open or closed) of the mobile phone, or only on first display when the mobile phone is open and only on second display when the mobile is closed. This solution would be satisfactory in case the camera is always used in relation with an image and/or video capturing mode of the mobile phone, i.e. a mode in which image or video is captured and then stored for later playback.

However, this solution would be useless for cases in which the camera is used for a videoconference mode of the mobile phone, i.e. a communication mode wherein the user is in communication with other persons through at least the associated mobile communication network, and captured video of the user is to be sent in real time to these other persons. Indeed, in this case, the mobile phone must absolutely be held by the user in its open position because the acoustic means for communications (namely microphone and loudspeaker) are located inside the mobile phone. In this case, the user cannot use the camera located on the external side in the videoconference mode user.

Another known solution consists in providing the mobile phone with two cameras for capturing images and/or video on both positions of the mobile phone. This solution is however a costly solution.

Still another known solution consists in providing the mobile phone camera with a single camera mounted on mechanical means enabling the rotation of the camera depending on the scene the user wants to capture. However, the user has to manipulate the camera, and mechanical means are fragile.

An aim of the invention is to provide a mobile phone of the clamshell's type wherein a single camera can be used whatever the open or closed position of the mobile phone, without the drawbacks of the know nsolutions.

To this aim, the present invention proposes a mobile phone with a housing of the clamshell's type comprising a first part and a second part linked rotating to the first part through a hinge so that the mobile phone can be in a closed position or in an open position, said mobile phone further comprising a first display which is accessible to a user when mobile phone is in said open position, a second display which is accessible to a user on an external side of said first part when mobile phone is in said closed position, and a camera on said first part, characterized in that said

camera is located on an internal side of said first part so that it is directed to a user of the mobile phone when mobile phone is in said open position for capturing images and/or videos which are displayed on said first display, and in that said second part comprises an opening through which camera can capture images and/or videos when mobile phone is in said closed position, which are displayed on said second display.

In one embodiment, said camera is used for an image and/or video capturing mode of the mobile phone whatever the open or closed position of the mobile phone. In this case, the user of the mobile phone, thanks to a unique camera, can easily capture images or video of any scene, including himself.

Alternatively, or in combination, said camera can also be used for an image and/or video capturing mode of the mobile phone when said mobile phone is in said closed position, while said camera is used for a videoconference mode of the mobile phone when said mobile phone is in said open position.

Features and advantages of the invention will become apparent from the following description of the invention given by way of a non-limiting example only, and with reference to the accompanying drawings, in which:

- Figures 1a and 1b shows a phone according to the present invention in the closed position, respectively on a front view and a rear view;
- Figure 2 shows phone of figures 1a and 1b in the open position.

Figures 1a, 1b and 2 show a phone 1 with a housing of the clamshell's type. More precisely, said housing comprises a first or front part 10 and a second or back part 11 linked rotating together through a hinge 12. Phone 1 can be either in a closed position (figures 1a and 1b) or in an open position (figure 2).

Phone 1 also comprises a first display 13 accessible to a user when phone 1 is in said open position. and a second display 15 which is accessible to a user on an external side 10 of said first or front part 10 when phone 1

is in said closed position (see figure 1a) and a camera 14 for capturing image and/or video. At last, microphone M and loudspeaker L are accessible to the user when the mobile is in its open position for communication via an associated mobile network.

According to the invention, said camera 14 is located on an internal side 10b of said first part 10 so that it can be directed to a user of the mobile phone when mobile phone is in said open position for capturing images and/or videos (see figure 2). Captured images and/or video can be displayed on first display 13. For use of the same camera while the mobile phone is in its closed position, second part 11 comprises an opening 16 which faces said camera when mobile phone is closed, as shown on figure 1b. Camera 14 can thus be also used in order to capture images and/or videos when mobile phone is in said closed position, said captured images and/or video being then displayed on said second display 15.

Thus, according to the invention, it is possible to use the same camera located inside the phone in order to capture images and/or videos whatever the position (closed or open) of the phone.

More precisely, when the phone is closed, camera will be used in an image and/or video capturing mode. When the phone is open, camera can be used:

- effther in an image and/or video capturing mode. Consequently, the user can also take a picture or a video of himself;
- or in a videoconference mode.

Advantageously, a lens (not shown) can be fixed in opening 16 in order to enable a zoom on the images to be captured only when the phone is in closed position.

CLAIMS

1. A mobile phone with a housing of a clamshell type comprising:

a first part and a second part linked rotating to the first part through a hinge so that the mobile phone can be in a closed position or in an open position;

a camera disposed on an internal side of said first part and exposed through an opening in said second part when the mobile phone is in said closed position;

a first display disposed on an internal side of said first part; and

a second display disposed on an external side of said first part and configured to display an image of a scene to be captured by the camera when mobile phone is in said closed position, wherein

said camera is adapted to be used for a videoconference mode of the mobile phone when the mobile phone is in said open position, wherein in the video conference mode:

said mobile phone is adapted to be used for a video conference call over at least an associated mobile communication network;

said mobile phone is adapted to send, in real time, a video of a subject to be captured by the camera of the mobile phone; and

said first display is configured to display a captured video when the mobile phone is in said open position.

2. The mobile phone according to claim 1, wherein said camera is adapted to capture videos, and wherein said camera is used for an image capturing mode, a video capturing mode, or any combination thereof, of the mobile phone whatever the open or closed position of the mobile phone.

3. The mobile phone according to claim 1 or claim 2, wherein a lens is fixed in said opening in order to enable a zoom on the images to be captured.

4. The mobile phone according to claim 3, further comprising a lens is fixed in the opening in order to enable a zoom on the images to be captured.

5. The mobile phone according to claim 1, wherein the camera is used for an image capturing mode, a video capturing mode, or any combination thereof, of the mobile phone when the mobile phone is in the closed position, and the camera is used for a videoconference mode of the mobile phone when the mobile phone is in the open position.

6. The mobile phone according to claim 5, further comprising a lens is fixed in the opening in order to enable a zoom on the images to be captured.

7. The mobile phone according to claim 1, further comprising a lens is fixed in the opening in order to enable a zoom on the images to be captured.

8. A mobile phone, comprising: a first part and a second part linked by a hinge to exist in one of a closed position and an open position; a first display accessible to a user when the mobile phone is in the open position; a second display accessible to a user on an external side of the first part when the mobile phone is in the closed position; and a camera on the first part, wherein the camera is located on an internal side of the first part so that it is directed to a user of the mobile phone when the mobile phone is in the open position for capturing images displayed on the first display, and the second part includes an opening through which the camera can capture images when the mobile phone is in the closed position that are displayed on the second display.

9. The mobile phone according to claim 8, wherein the camera is used for capturing of the images in any of the open or closed positions.

10. The mobile phone according to claim 9, further comprising a lens affixed in the opening to enable a zoom mode during the capturing of the images.

11. The mobile phone according to claim 8, wherein the camera is used for an image capturing mode of the mobile phone when the mobile phone is in the closed position, and the camera is used for a videoconference mode of the mobile phone when the mobile phone is in the open position.

12. A mobile phone, comprising: a first part and a second part linked by a hinge to exist in one of a closed position and an open position; a first display accessible to a user when the mobile phone is in the open position; a second display accessible to a user on an external side of the first part when the mobile phone is in the closed position; and a camera on the first part, wherein the camera is located on an internal side of the first part so that it is directed to a user of the mobile phone when the mobile phone is in the open position for capturing video images displayed on the first display, and the second part includes an opening through which the camera can capture video images when the mobile phone is in the closed position that are displayed on the second display.

13. The mobile phone according to claim 12, wherein the camera is used for capturing of the video images in any of the open or closed positions.

14. The mobile phone according to claim 12, further comprising a lens affixed in the opening to enable a zoom mode during the capturing of the video images.

15. The mobile phone according to claim 12, wherein the camera is used for a video capturing mode of the mobile phone when the mobile phone is in the closed position, and the camera is used for a videoconference mode of the mobile phone when the mobile phone is in the open position.

Application number / numéro de demande: 02570463

Figures: Fig. 1AB & 2

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