CLAIMS

1. A mobile device, wherein the mobile device comprises a battery, an analog switch and a connector, wherein

the connector comprises a charging pin and a ground pin; and

when the charging pin establishes a connection to an output pin of a charging device by using a charging cable or a battery charging stand, the analog switch connects ~~the~~ an anode pin of the battery to the charging pin and the charging pin receives a first current signal transmitted by the output pin of the charging device, and transmits the first current signal to ~~an~~ the anode pin of the battery via the analog switch so as to charge the battery, and when the charging pin does not establish a connection to the output pin of the charging device, the analog switch disconnects the anode pin of the battery from the charging pin so as to prevent electric leakage of the battery.

2. The mobile device according to claim ~~2~~1, wherein the mobile device further comprises a charging circuit and a universal serial bus USB port;

when the charging pin is disconnected from the output pin of the charging device, the analog switch disconnects the anode pin of the battery from the charging pin, and an output pin of the charging circuit is connected to the anode pin of the battery by using the analog switch; and

an input pin of the charging circuit is connected to the USB port, receives a second current signal transmitted by the USB port, and transmits the second current signal to the anode pin of the battery by using the output pin of the charging circuit and the analog switch, so as to charge the battery.

3. The mobile device according to claim 1, wherein the mobile device further comprises a controller and a voltage converting circuit, wherein

with one end connected to the charging pin, and the other end connected to the controller, the voltage converting circuit is configured to: when the charging pin establishes a connection to the output pin of the charging device by using a charging cable or a battery charging stand, convert a voltage of the charging pin and then transmit a converted voltage to the controller.

4. The mobile device according to claim 43, wherein the controller further comprises a bus port, and the connector further comprises a single-wire or multi-wire bus pin, wherein

the bus port is connected to the single-wire or multi-wire bus pin of the connector by using a bus, and is configured to transmit bus data or a control signal generated by the controller, so that the charging device adjusts the output first current signal after receiving the bus data or the control signal.

5. The mobile device according to claim 1, wherein the ground pin is connected to a first ground pin of the charging device by using the charging cable or the battery charging stand; and

the ground pin, a ground pin of the battery and a ground pin of the charging circuit are connected to each other.

6. The mobile device according to claim 1, wherein the connector is specifically a multi-pin port, a multi-contact port, or a port multiplexed with the USB port by using the analog switch.

7. A charging device, wherein the charging device comprises a switch charger module and a charging circuit, wherein

the charging circuit comprises an input pin and an output pin;

the input pin is connected to an output pin of the switch charger module, and is configured to receive a first current signal transmitted by the output pin of the switch charger module; and

when the output pin of the charging circuit establishes a connection to a charging pin of a mobile device using a charging cable or a battery charging stand, an analog switch in the mobile device connects an anode pin of a battery of the mobile device to the charging pin of the mobile device so as to use the first current signal to charge the battery of the mobile device, and when the output pin of the charging circuit does not establish a connection to the charging pin of the mobile device, the analog switch disconnects the anode pin of the battery from the charging pin so as to prevent electric leakage of the battery.

8. The charging device according to claim 7, wherein the charging circuit further

comprises a bus port, wherein

the bus port is connected to a single-wire or multi-wire bus pin of a connector in the mobile device by using a bus, and is configured to receive bus data or a control signal transmitted by the mobile device; and

the charging circuit is further configured to adjust the first current signal according to the bus data or the control signal.

9. The charging device according to claim 7, wherein the charging circuit further comprises a first ground pin and a second ground pin; wherein

the first ground pin is connected to a ground pin of the mobile device by using the charging cable or the battery charging stand; and

the second ground pin is connected to a ground pin of the switch charger module.

10. The charging device according to claim 7, wherein the charging circuit is specifically a switch charging circuit or a linear charging circuit.

11. A charging method, wherein the method comprises:

receiving, by a charging pin of a connector when the charging pin establishes a connection to an output pin of a charging device by using a charging cable or a battery charging stand, a first current signal transmitted by the output pin of the charging device; and

connecting, by an analog switch, an anode pin of a battery to the charging pin;

transmitting, by the charging pin and via the analog switch, the first current signal to ~~an~~ the anode pin of ~~a~~the battery, so as to charge the battery; and

disconnecting, by the analog switch, ~~an~~ the anode pin of ~~a~~the battery from the charging pin when the charging pin does not establish the connection to the output pin of the charging device.

12. The charging method according to claim 11, wherein the method further comprises:

generating, by a controller, bus data or a control signal; and

transmitting, by the controller, the bus data or the control signal to the charging device, so that the charging device adjusts the output first current signal.