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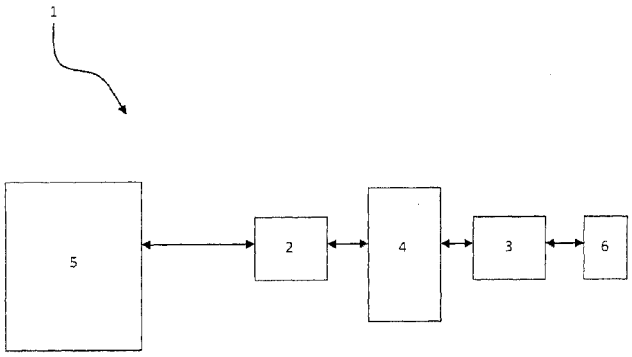
(54) Title: A BATTERY ADJUSTMENT SYSTEM

Figure 1



(57) Abstract: The present invention relates to a battery adjustment method which allows adjusting the number of batteries used in military thermal imaging devices operating with battery and thus allows adjusting the operation time of the device by the user. The objective of the present invention is to provide a battery adjustment system which enables the device operating with more than one battery to have the flexibility to be used functionally with different number of batteries and different operation times. The invention essentially comprises at least one adjustable switch (2) which is adapted to enable a desired number of batteries to be used, at least one control unit (3) which is adapted to determine the required power level and to transfer power to the devices. In addition, it also comprises at least one power circuit (4) which is provided between the adjustable switch (2) and the control unit (3) and which is adapted to provide the power required for the battery adjustment system (1), at least one battery socket (5) which enables the batteries to be connected to the battery adjustment system (1), and at least one connection unit (6) which is adapted to enable the required devices to be connected to the control unit (3).

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DESCRIPTION

A BATTERY ADJUSTMENT SYSTEM

Field of the Invention

The present invention relates to a battery adjustment system which allows to adjust the number of batteries used in military thermal imaging devices operating with battery and thus allows to adjust the operation time of the device by the user.

Background of the Invention

Chinese Utility Model no CN202488199 (U), an application known in the state of the art, discloses a multifunctional uninterrupted power supply. In this system having a battery pack, the desired supply is generated via alternative and/or direct current selections, different devices can be operated via the same supply. By means of the converters in the system, the kind of energy required by the device is provided, and different system requirements can be determined by the user. In addition, the system operates with lithium-ion battery.

United States Patent Document no US5323100 A, an application known in the state of the art, discloses a voltage regulating device. The said device which regulates the voltage of the battery according to the voltage to be used by the device utilizes a switch regulator.

United States Patent Document no US7925906 B2, an application known in the state of the art, discloses a power management unit. The said unit can provide different voltage values with different battery selections. The said unit which also has voltage regulator provides the voltage value required by the load and more than one device can actively be used simultaneously.

International Patent Document no WO03038980 (A1), an application known in the state of the art, discloses a battery operated power supply. The said system can be charged separately with AC and DC power supplies and it can provide the desired output voltage (AC or DC) without affecting the system.

In the documents known in the state of the art, the systems are disclosed which are for keeping the voltage values to be used by the documents fixed. However the number of batteries or the adjustment in battery usage time is not disclosed. More batteries are connected to the devices in order to operate with the same efficiency in the previous art, this situation increases the weight of the device, decreases the efficiency of the device and eliminates the option for using the device in a power level desired by the user.

Summary of the Invention

The objective of the present invention is to provide a battery adjustment method and system which allows adjusting the number of batteries used in military thermal imaging devices operating with battery and thus allows adjusting the operation time of the device by the user.

Another objective of the present invention is to provide a battery adjustment method and system which enables the device operating with more than one battery to have the flexibility to be used functionally with different number of batteries and different operation times.

Detailed Description of the Invention

A battery adjustment system developed to fulfill the objective of the present invention is illustrated in the accompanying figure, in which,

Figure 1 is the schematic view of the battery adjustment system.

The components shown in the figures are each given reference numbers as follows:

1. Battery adjustment system
2. Adjustable switch
3. Control unit
4. Power circuit
5. Battery socket
6. Connection unit

A battery adjustment system (1), which allows adjusting the number of batteries used in military thermal imaging devices operating with battery and thus allows adjusting the operation time of the device by the user, essentially comprises

- at least one adjustable switch (2) which is adapted to enable a desired number of batteries to be used,
- at least one control unit (3) which is adapted to determine the required power level and to transfer power to the devices,
- at least one power circuit (4) which is provided between the adjustable switch (2) and the control unit (3) and which is adapted to provide the power required for the battery adjustment system (1),
- at least one battery socket (5) which enables the batteries to be connected to the battery adjustment system (1),
- at least one connection unit (6) which is adapted to enable the required devices to be connected to the control unit (3).

In a preferred embodiment of the invention, on the inventive battery adjustment system (1), there is an adjustable switch (3) which is adapted to enable a desired number of batteries to be used, a control unit (3) which is adapted to determine the required power level and to transfer power to the devices. In addition, there is also power circuit (4) which is provided between the adjustable switch (2) and the

control unit (3) and which is adapted to provide the power required for the battery adjustment system (1), battery socket (5) which enables the batteries to be connected to the battery adjustment system (1), and connection unit (6) which is adapted to enable the required devices to be connected to the control unit (3).

In one embodiment of the invention, the adjustable switch (2) provided on the inventive battery adjustment system (1) functions manually and/or automatically, it provides the desired number of batteries automatically or manually via the user.

In one embodiment of the invention, the control unit (3) provided on the inventive battery adjustment system (1) determines the requirement of the connected device, and enables the adjustable switch (2) to operate automatically or manually. It can also show the power requirement on the screen preferably connected to the control unit (3). By means of this display, the user can decide how much adjustment they should make during manual adjustment. Furthermore, the control unit (3) also transfers power to the devices connected to the battery adjustment system (1).

In one embodiment of the invention, on the inventive battery adjustment system (1), there is a power circuit (4) which is provided between the adjustable switch (2) and the control unit (3) and which is adapted to provide the power required for the battery adjustment system (1). The power circuit (4) can provide power in a desired level as well as it can cut the power off in order to protect the devices in emergencies and thus can elongate life of the devices. In addition, the power values output in unit time are kept fixed with the filters provided on the power circuit (4), and thus the power required by the devices connected to the battery adjustment system (1) can be given in desired level.

In one embodiment of the invention, the battery socket (5) provided on the inventive battery adjustment system (1) and enabling the batteries to be connected to the system (1) protects the batteries against intense military conditions and thus elongates the life of the batteries. It can also minimize the possibilities such as

wetting, corrosion and breaking down originating from the environmental conditions.

In one embodiment of the invention, there is a connection unit (6) provided on the inventive battery adjustment system (1) which is adapted to enable the required devices to be connected to the control unit (3). By means of the connection points provided on the connection unit (6), almost all kind of models can be connected to the battery adjustment system (1).

In one embodiment of the invention, the battery adjustment system (1) is independent from the number of batteries in which output voltage is used and the input voltage, it can always provide the required output voltage. This situation does not affect the functionality of the devices connected to the battery adjustment system (1) and allows them to operate for desired time.

CLAIMS

1. A battery adjustment system (1), which allows adjusting the number of batteries used in military thermal imaging devices operating with battery and thus allows adjusting the operation time of the device by the user, essentially **characterized by**

- at least one adjustable switch (2) which is adapted to enable a desired number of batteries to be used,
- at least one control unit (3) which is adapted to determine the required power level and to transfer power to the devices,
- at least one power circuit (4) which is provided between the adjustable switch (2) and the control unit (3) and which is adapted to provide the power required for the battery adjustment system (1),
- at least one battery socket (5) which enables the batteries to be connected to the battery adjustment system (1),
- at least one connection unit (6) which is adapted to enable the required devices to be connected to the control unit (3).

2. A battery adjustment system (1) according to claim 1, **characterized by** at least one adjustable switch (2) which is adapted to function manually and automatically.

3. A battery adjustment system (1) according to claim 1, **characterized by** control unit (3) which is adapted to enable the adjustable switch (2) to operate automatically or manually.

4. A battery adjustment system (1) according to claim 1, **characterized by** control unit (3) which can display the power requirement via a screen preferably connected thereon.

5. A battery adjustment system (1) according to claim 1, **characterized by** control unit (3) which is adapted to enable the user to decide how much adjustment they will make.

6. A battery adjustment system (1) according to claim 1, **characterized by** power circuit (4) which is adapted to cut off the power for protecting the device in emergencies and thus elongate the life of the devices.

7. A battery adjustment system (1) according to claim 1, **characterized by** power circuit (4) which is adapted to keep the power values output in unit time via the filters thereon and thus to give the power required by the connected devices in a desired level.

8. A battery adjustment system (1) according to claim 1, **characterized by** battery socket (5) which can protect the batteries from intense military conditions by means of its closable configuration and thus elongate the life of the batteries.

9. A battery adjustment system (1) according to claim 1, **characterized by** battery socket (5) which can reduce the possibilities of wetting, corrosion and breaking down originating from environmental conditions by means of its closable configuration.

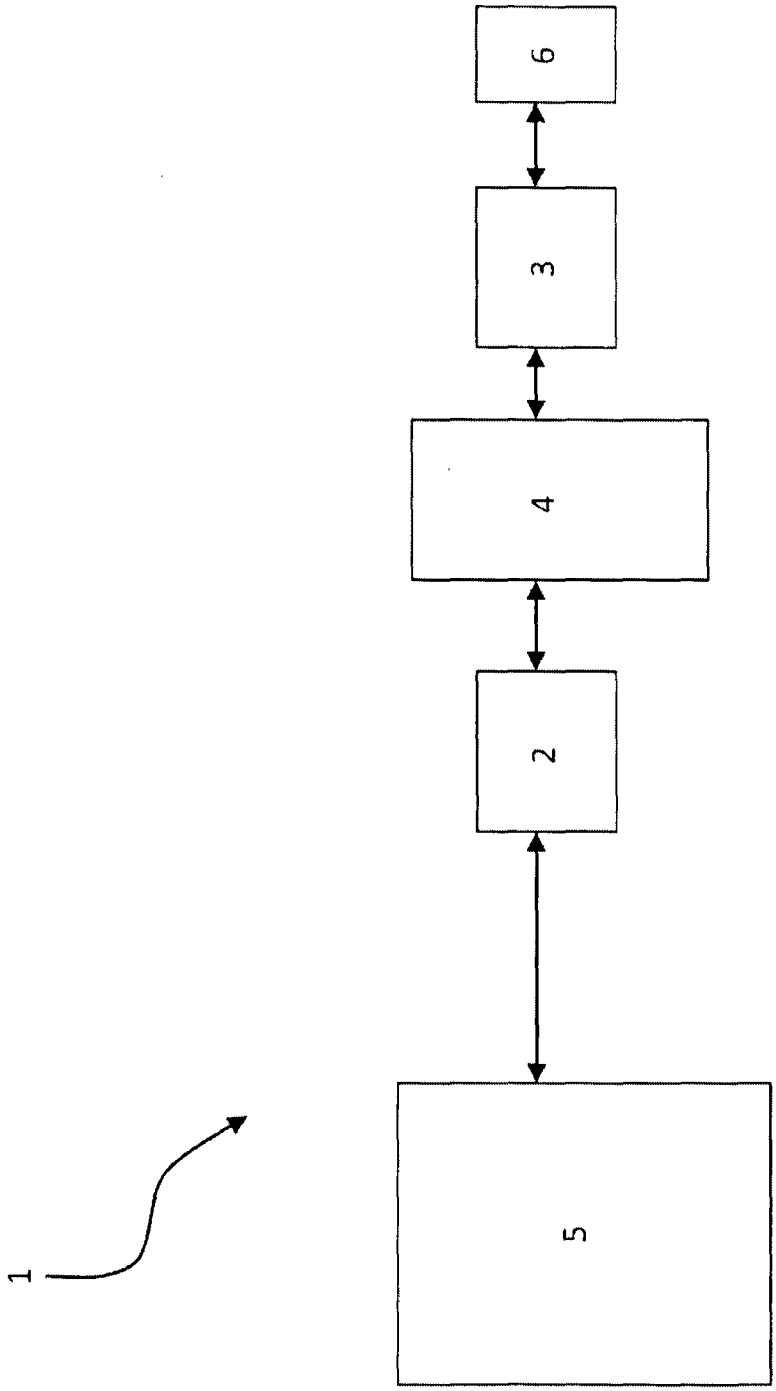

Figure 1

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2014/065576

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01M10/42 H02J7/00
ADD.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H01M H02J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/292947 A1 (SCHERRER ERNST [CH]) 27 November 2008 (2008-11-27) abstract paragraphs [0004], [0006], [0021], [0022], [0025], [0028]; claims 1,2; figures 1,2, 4a, 4b	1,2,5-9
X	US 2012/114983 A1 (STOKES ROBERT M [US] ET AL) 10 May 2012 (2012-05-10) abstract paragraphs [0017], [0021], [0022], [0028] - [0031], [0035], [0036]; figures 1,2,4A,4B,5-7	1,2,4,5, 7-9
X	US 2008/315840 A1 (MORI NOBUYUKI [JP] ET AL) 25 December 2008 (2008-12-25) abstract paragraphs [0072] - [0076]; figures 4,5	1,4,6-9

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 February 2015	04/03/2015

Name and mailing address of the ISA/	Authorized officer
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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2013/049477 A1 (TOZAWA KATSUMI [JP] ET AL) 28 February 2013 (2013-02-28) abstract paragraph [0082]; figures 3,5 -----	1-3,5-8

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IB2014/065576

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