

Petitioner Shenzhen Xinzexing E-Commerce v. Patent Owner Shenzhen Carku Technology

PTAB Case No. IPR2024-00222

Claims 1–3, 6–23, and 25–33

of U.S. Patent No. 9,643,506 B2 for “Portable Backup Charger”

Patent Owner’s Demonstratives

Bing Ai, Perkins Coie LLP
Lead Counsel for Patent Owner

Oral Hearing via Video
May 7, 2025

Carku, Ex. 2009

Petitioner's 3 Groups of 11 Grounds based on Chen, Inskip and Nook

D. ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner asserts the following grounds of unpatentability. Pet. 1.

Reference(s)/Basis	35 U.S.C §	Challenged Claim(s)
Chen ¹	102	1, 9, 11–14, 16–19, 21, 26–28, 30–33
Chen, White ²	103	1–2, 6–9, 11–14, 16–22, 25–28, 30–33
Chen, Richardson ³	103	10
Chen, Gozdz ⁴	103	15, 29
Inskip, ⁵ Johnson ⁶	103	1, 3, 6–14, 16–17, 20–21, 23, 25–28, 30–31
Inskip, Johnson, Durando ⁷	103	19, 33
Nook ⁸	102	1, 2, 6, 8–16, 19–22, 26–30, 33
Nook, White	103	1, 2, 6–16, 19–22, 25–30, 33
Nook, Miller ⁹	103	3, 23
Nook, Richardson	103	10
Nook, Shoji ¹⁰	103	17–18, 31–32

U.S. Patent No. 9,643,506 B2 for “Portable Backup Charger”

(12) United States Patent Lei	(10) Patent No.: US 9,643,506 B2
	(45) Date of Patent: May 9, 2017
(54) PORTABLE BACKUP CHARGER	<i>H02J 9/06</i> (2006.01) <i>H05B 33/08</i> (2006.01)
(71) Applicant: Shenzhen Carku Technology Co., Ltd. , Shenzhen (CN)	(52) U.S. Cl. CPC <i>B60L 11/1822</i> (2013.01); <i>B60L 11/1818</i> (2013.01); <i>B60L 11/1864</i> (2013.01); <i>H02J 7/0021</i> (2013.01); <i>H02J 7/0026</i> (2013.01); <i>H02J 9/061</i> (2013.01); <i>H05B 33/0815</i> (2013.01); <i>Y02B 20/341</i> (2013.01); <i>Y10T 307/352</i> (2015.04)
(72) Inventor: Xingliang Lei , Shenzhen (CN)	(58) Field of Classification Search CPC .. <i>H02J 7/0026</i> ; <i>Y10T 307/352</i> ; <i>Y02B 20/341</i> ; <i>H05G 33/0815</i> USPC 307/150 See application file for complete search history.
(73) Assignee: SHENZHEN CARKU TECHNOLOGY CO., LTD. , Yifang Industrial Park, Bantian, Longgang District, Shenzhen (CN)	<i>Primary Examiner</i> — Robert Deberadinis (74) <i>Attorney, Agent, or Firm</i> — Jun He Law Offices P.C.; James J. Zhu
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	(57) ABSTRACT A portable backup charger includes a set of batteries; a charging circuit; a charge-discharge protection circuit; multiple DC-DC voltage adjusting circuits including a DC-DC 19 V-output boost circuit, a 12 V output circuit, and a DC-DC 5 V-output buck circuit; a MCU circuit; a 12 V output circuit outputting a current in the range of 100 A to 400 A; and a 150 A-250 A fuse. The set of batteries is composed of lithium iron phosphate batteries and lithium cobalt oxide batteries. The 12 V output circuit outputting a current in the range of 100 A to 400 A is directly connected to the set of batteries without interference with the charge-discharge protection circuit. The charger is convenient for carrying, and is capable of providing power for different electrical instruments including for an automobile.
(21) Appl. No.: 15/141,841	33 Claims, 10 Drawing Sheets
(22) Filed: Apr. 29, 2016	
(65) Prior Publication Data US 2016/0303989 A1 Oct. 20, 2016	
Related U.S. Application Data	
(63) Continuation-in-part of application No. 14/298,986, filed on Jun. 9, 2014, now Pat. No. 9,496,728, and a continuation-in-part of application No. PCT/CN2012/083793, filed on Oct. 31, 2012.	
(30) Foreign Application Priority Data Dec. 9, 2011 (CN) 2011 1 0409190	
(51) Int. Cl. <i>B60L 11/18</i> (2006.01) <i>H02J 7/00</i> (2006.01)	

'506 Patent Specification: Figure 1 and Figure 3 (Annotated by Patent Owner)

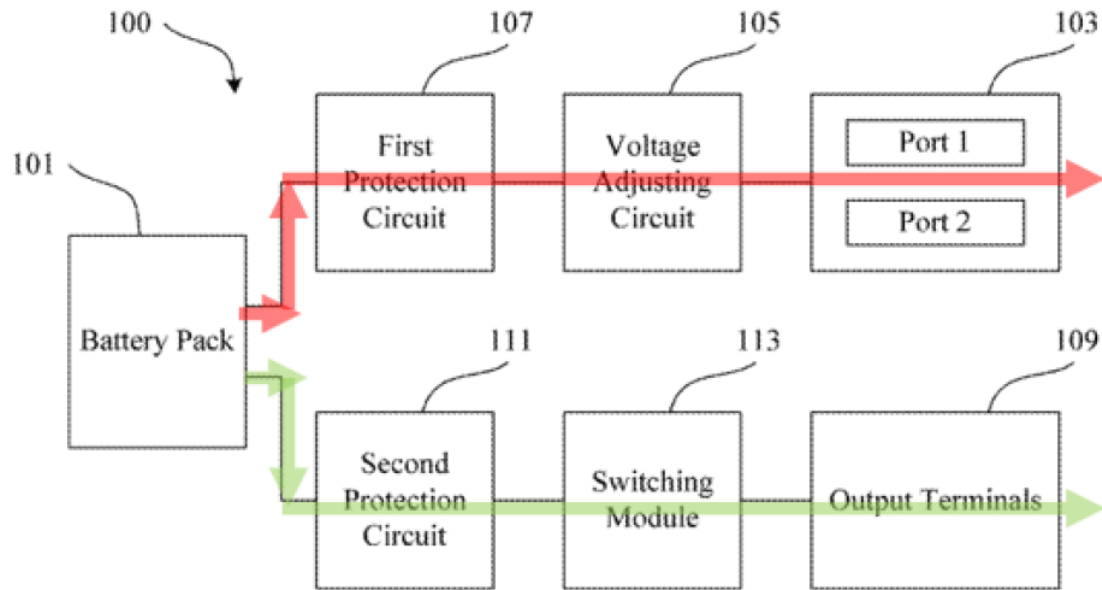


Figure 1

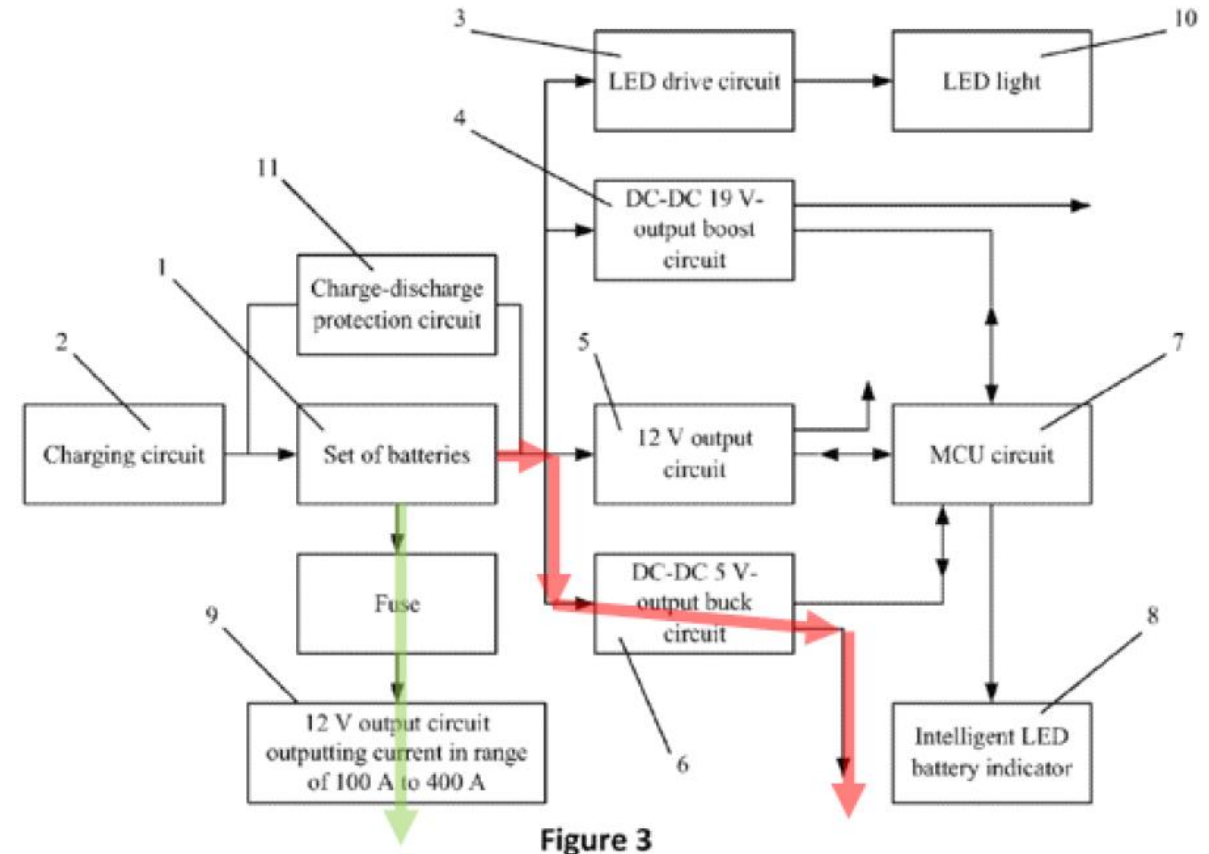


Figure 3

In view of the above described problem, it is one objective of the application to provide a portable backup charger which is able to provide DC-current outputs in various-level voltages, and is able to output a large current source as the start-up source of the automobile. 30

It is another objective of the application to improve the safety performance of the portable backup charger.

To achieve the above objectives, the present application provides a portable backup charger which has the function of self-charging, is able to provide DC-current outputs in various-level voltages, and is able to output a large current source as the start-up source of the automobile. 35

According to an aspect of the present application, there is provided a portable backup charger. The charger includes a battery pack having at least one battery cell; at least one output port coupled to the battery pack, wherein the battery pack is configured to output a first current through one or more output ports of the at least one output port in a first operating mode; a pair of output terminals detachably coupled to the battery pack and having a current path to the battery pack different from that of the at least one output port, wherein the battery pack is configured to output a second current capable of starting a vehicle engine through the pair of output terminals in a second operating mode, wherein the second current is higher than the first current; a first protection circuit coupled to the battery pack and configured to protect the battery pack when the battery pack is working in the first operating mode; a second protection circuit coupled to the battery pack and configured to prevent overcurrent condition of the second current when the battery pack is working in the second operating mode. 40 45 50 55

'506 Patent Specification: Summary

The advantages of the present application include: (1)
55 since the set of batteries is composed of lithium iron phosphate batteries or lithium cobalt oxide batteries that possesses the characteristics of light weight, small volume, durability, high instantaneous current, and high repeatability in charging, the portable backup charger is capable of
60 providing large start-up current for an automobile; (2) since multiple DC-DC voltage adjusting circuits outputting different voltages are connected to the set of batteries, by controlling the MCU circuit, the portable backup charger is able to supply power for different types of electrical instru-
65 ments including cellphone, computer, and digital camera; (3) since the portable backup charger comprises a LED drive circuit and a LED light, it is able to provide outdoor light.

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Therefore, the portable backup charger of the present application has multiple functions, is convenient for carrying, and is capable of providing power for different electrical instruments in living, touring, or travelling.

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BRIEF DESCRIPTION OF THE DRAWINGS

'506 Patent Specification: Detailed Description, Column 3

DETAILED DESCRIPTION

Exemplary embodiments of the present application will be described below. 35

FIG. 1 is a block diagram of a portable backup charger 100 according to an embodiment of the present application. The portable backup charger 100 can be used as a backup power source to charge or supply mobile electronic devices such as mobile phones, tablet computers or laptop computers. Moreover, the portable backup charger 100 can be used as a starter for starting a vehicle engine, or specifically, for starting an electric motor of the vehicle engine. The electric motor can generally be started by a high current at a voltage of 12 V or 24 V. The vehicle engine may be an internal combustion engine of a vehicle such as a car, a truck, a bus, a sport utility vehicle or the like. 40 45

As shown in FIG. 1, the portable backup charger 100 includes a battery pack 101 (corresponding to referral 1 of FIG. 3), which may be consisted of one or more battery cells. The battery cells may be coupled in series and/or in parallel to increase an output voltage or capacity of the battery pack 101. In certain embodiments, the battery pack 101 has three battery cells that are coupled in series with each other. Each battery cell may be of an output voltage of 3.0V to 4.2 V (e.g. 3.7V) such that the battery pack 101 has an output voltage of 9.0V to 12.6V, which is capable to start the 12V electric motor of the vehicle engine or electric motors operable under a rating voltage lower than 12V. It will be appreciated that the number of battery cells of the battery pack 101 may be determined according to practical requirements. For example, six battery cells may be included in the battery pack 101 for the 24V vehicle-starting application. 50 55 60

'506 Patent Specification: Detailed Description, Column 4

Still referring to FIG. 1, the portable battery charger 100 can work in a first operating mode or in a second operating mode. In certain embodiments, the portable backup charger 100 may further include a controller (not shown) (corresponding to referral 7 of FIG. 3) to control its operating mode. In some other embodiments, the portable backup charger 100 may be responsive to the connection of loads (e.g. devices to be charged or started) to work in the first operating mode or the second operating mode. In other words, the portable backup charger 100 may automatically change its operating mode according to one or more of its output port that are being connected with the load(s).

Specifically, when the portable battery charger 100 is working in the first operating mode, it can output one or more output currents to one or more external electronic devices, respectively. The output currents may be used to supply the operation of the electronic devices, or charge external rechargeable batteries of the electronic devices. Accordingly, the portable battery charger 100 has at least one output ports 103 coupled to the battery pack 101 through which the output currents can be output from the battery pack 101. For example, the output ports 103 may include a DC 5V output port such as a USB port, a DC 12V output port, or a DC 19V output port for connection with an input port of the laptop computer. The amplitude of the current may vary with the output port, and in certain embodiments, the current is of 0.5 to 10 A. For example, the DC 5V output port may output a current of 0.5A, 1 A or 2 A; the DC 12V output port may output a current of 10A, and the DC 19V output port may output a current of 3.5 A.

In certain embodiments, the portable battery charger 100 may further include at least one voltage adjusting circuit 105 (corresponding to referrals 4, 5 and 6 of FIG. 3) each coupled between the battery pack 101 and one of the at least one output port 103. The voltage adjusting circuit 105 is used to elevate or reduce the output voltage of the battery pack 101 to predetermined voltages at the respective output port 103. For example, the voltage adjusting circuit 105 may include a 19V output boost circuit (not shown) (corresponding to referral 4 of FIG. 3) that elevates the output voltage of the battery pack (e.g. 12V) to 19V at the DC 19V output port. The voltage adjusting circuit 105 may also include a 5V output buck circuit (not shown) (corresponding to referral 6 of FIG. 3) that reduces the output voltage of the battery pack to 5V at the DC 5V output port. It would be appreciated that the voltage adjusting circuit 105 may not be necessary for some output ports. For example, the DC 12V output port may be coupled to the 12V battery pack without voltage adjusting circuit (corresponding to referral 5 of FIG. 3) coupled therebetween.

'506 Patent Specification: Detailed Description, Column 5

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The portable battery charger 100 includes a first protection circuit 107 (corresponding to referral 11 of FIG. 3) coupled to the battery pack 101. The first protection circuit 107 is used to protect the battery pack 101 when the current is output through the output ports 103. For example, the first protection circuit 107 is capable of detecting the voltage across each battery cell of the battery pack 101 and the output voltage of the battery pack 101, and further comparing the detected voltages with predefined voltage scopes. The voltage exceeding the predefined voltage scopes indicates overdischarge condition or overcharge condition of the corresponding battery cell or the battery pack 101. Upon detection of the voltage exceeding the predefined voltage scope, the voltage first protection circuit 107 will prohibit current outputting from the battery pack 101, for example, by switching off a relay or MOS switch coupled between the battery pack 101 and the output ports 103.

The first protection circuit 107 may also be used to protect overcurrent condition of the current outputting through the output ports 103. Upon detection of an excess current flowing through the output ports 103, the first protection circuit 107 will prohibit the current outputting from the battery pack 101, for example, by switching off the relay or MOS switch between the battery pack 101 and the output ports 103. Moreover, the first protection circuit 107 may also be used to protect overcharge condition of each battery cell or the battery pack 101. The first protection circuit 107 may be any commercially available IC chips such Model No. S8254A provided by SEIKO.

'506 Patent Specification: Detailed Description, Column 5

Moreover, when the portable battery charger **100** is working in the second operating mode, it can output a high current capable of starting the vehicle engine. For example, the portable battery charger **100** further includes a pair of output terminals **109** coupled to the battery pack **101**, through which the high current can be output from the battery pack **101** to the vehicle engine. The current for starting the vehicle engine is higher than the currents output through the output ports **103**. For example, the current for starting the vehicle engine may be of 100 A to 400 A. The pair of output terminals **109** may be coupled to two electrodes of a battery of the vehicle, which are further connected to the input nodes of the electric motor of the vehicle engine. In some embodiments, the pair of output terminals may be fixedly coupled to the battery pack **101**, or may be detachably coupled to the battery pack **101**.

The pair of output terminals **109** provides a current path different and separate from the current path from the battery pack **101** to the output ports **103**. The first current protection circuit **107** will not detect the current flowing through the pair of output terminals **109** and therefore will generally not affect the current outputting through the pair of output terminals **109**. However, if the current output through the pair of output terminals **109** significantly affects the voltage across the battery pack **101**, for example, exceeding the predetermined voltage scopes, the first current protection circuit **107** will work to cut off the current path through the pair of output terminals **109**.

'506 Patent Specification: Detailed Description, Columns 5-6

In another embodiment, the charger can work in a third operating mode. In the third operating mode, the charger can output current through the at least one output ports **103** and through the pair of output terminals **109** simultaneously. In such a case, the charger will have both current path outputting two currents at the same time, which are protected by the first protection circuit and a second protection circuit **111** (detailed below), respectively. In other words, when working in the third operating mode, both the first protection circuit **107** and the second protection circuit **111** are active.

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In certain embodiments, the charger may have two or more output ports for outputting currents at different voltages, for example, at 5V and 12V. In a preferred embodiment, when working in the first operating mode, the charger may supply currents to the respective loads coupled to the two or more output ports simultaneously.

The portable battery charger **100** also includes the second protection circuit **111** (corresponding to referral **8** of FIG. **3**) coupled to the battery pack **101**, which is used to protect overcurrent condition of the second current when the second current is output through the pair of output terminals **109**. The second protection circuit **111** may limit the second current below a predetermined threshold such as 400 A or less. In certain embodiments, the over-current protection module may include a fuse, which has a rating current of 150 to 250 A, for example. When the pair of output terminals **109** is short-circuited due to mis-operation or other reasons, the second protection circuit **111** will be activated to cut off the current path from the battery pack **101** to the pair of output terminals **109**, thereby ensuring the safety of the battery pack **101**.

In certain embodiments, the pair of output terminals may be detachably coupled with the battery pack **101** via a pair of connecting wires. For example, a first connecting wire of the pair of connecting wires connects a positive electrode of the battery pack **101** with a first output terminal of the pair of output terminals, and a second connecting wire of the pair of connecting wires connects a negative electrode of the battery pack **101** with a second output terminal of the pair of output terminals. With the pair of output terminals, the positive and negative electrodes of the battery pack **101** may be coupled to positive and negative electrodes of an internal battery of the vehicle to be started. The connecting wire may be external to a battery pack housing (not shown) enclosing the battery pack **101**, thereby it may be easy to connect the pair of connecting wires to or disconnect them from the battery pack **101**.

'506 Patent Specification: Detailed Description, Columns 6-7

In certain embodiments, a switching module 113 (corresponding to referral 9 of FIG. 3) functioning as output circuit
55 may be coupled in the pair of output terminals 109. The switching module 113 is operable to switch on or off the current from the battery pack 101 through the pair of output terminals 109, for example, in response to a manual input of a user, or according to a predetermined control instruction.
60 For example, the switching module 113 may prohibit the outputting of the starting current after a predetermined time period from the outputting of the current, because the starting current is of a big amplitude such as 100 A or even higher. Timely switching off the switching module 113 helps
65 to reduce the power consumption of the engine starting as well as increase the lifetime of the battery pack 101. In certain embodiments, the output circuit may further detect

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the voltage of the external vehicle battery, and compare the detected voltage with a reference voltage scope. The output circuit may switch on the current outputting through the pair of output terminals only if the detected voltage falls within the reference voltage scope. In certain embodiments, the
5 output circuit may periodically switch on and off the connection with the external vehicle battery. For example, the connection is periodically switched off for 0.5 seconds after being switched on for five seconds. Each time the portable backup charger is reconnected with the external vehicle
10 battery, the output circuit will detect the voltage of the external vehicle battery, and then determine whether or not to maintain the current outputting through the pair of output terminals. In certain embodiments, the switching module 113 may be built into at least one of the pair of connecting
15 wires. For example, the switching module 113 may be implemented on a printed circuit board or in an integrated circuit chip, which is further enclosed inside a compact housing and coupled in the pair of connecting wires. In some other embodiments, the switching module 113 may be built
20 into the battery pack housing instead of into the pair of connecting wires.

In certain embodiments, the pair of connecting wires has a reverse connection-proof plug. The reverse connection-proof plug can prevent false connection of the pair of
25 connecting wires with a socket in the housing of the portable backup charger, thereby improving the safety of the portable backup charger. In certain embodiments, the pair of connecting wires are silica-gel wires of different lengths.

'506 Patent Specification: Detailed Description, Column 7

As shown in FIG. 3, the set of batteries is connected to multiple DC-DC voltage adjusting circuits including a DC-DC 19 V-output boost circuit 4, a 12 V output circuit 5, and a DC-DC 5 V-output buck circuit 6. Each of the multiple DC-DC voltage adjusting circuits is connected to a MCU circuit 7. By controlling the MCU circuit 7, the user can flexibly choose a particular output voltage for the charger (19 V, 12 V, or 5 V) to supply current source for a particular instrument (a cellphone, a computer, a digital camera, and etc.). Furthermore, by observing the intelligent LED battery indicator 8 which is connected to the MCU circuit 7, the power storage of the set of batteries 1 is known.

Because the charger of the present application adopts lithium iron phosphate batteries or lithium cobalt oxide batteries to constitute an energy storage element, the charger possesses the characteristics of light weight, small volume, durability, high instantaneous current, and high repeatability in charging. In addition, since the input of the set of batteries 1 is connected to the output of a charging circuit 2, the charger is capable of self-charging. In addition, since the set of batteries 1 is connected to a 12 V output circuit outputting a current in the range of 100 A to 400 A 9, the charger can output a 100-400 A current source under a 12 V voltage and can be a start-up current source for an automobile in emergency. The 12 V output circuit outputting a current in the range of 100 A to 400 A 9 is directly connected to the two ends of the set of batteries without interference with the charging-discharging protection circuit. For the purpose of avoiding overheating the batteries by the short circuit between the positive clamp and the negative clamp or by the reverse connection in the emergent start-up process of an automobile, a 150 A-250 A fuse is connected between the set of batteries 1 and the 12 V output circuit outputting a current in the range of 100 A to 400 A 9. The output terminals of the 12 V output circuit outputting a current in the range of 100 A to 400 A 9 are connected to a reverse connection-proof plug, the external positive and negative connecting wires are silica-gel wires in different lengths.

'506 Patent: Independent Claim 1 of Challenged Claims 1-3 and 6-20

1. A portable backup charger, comprising:

a battery pack having at least one battery cell;

at least one output port coupled to the battery pack, wherein the battery pack is configured to output a first current through one or more output ports of the at least one output port in a first operating mode;

a pair of output terminals coupled to the battery pack and having a current path to the battery pack different from that of the at least one output port to the battery pack, wherein the battery pack is configured to output a second current capable of starting a vehicle engine through the pair of output terminals in a second operating mode, wherein the second current is higher than the first current;

a first protection circuit coupled to the battery pack and configured to protect the battery pack when the battery pack is working in the first operating mode; and

a second protection circuit coupled to the battery pack and configured to prevent overcurrent condition of the second current when the battery pack is working in the second operating mode.

'506 Patent: Example Dependent Claims of Challenged Claims 1-3 and 6-20

2. The portable backup charger of claim 1, wherein when the first protection circuit is configured to prevent overcurrent condition of the first current, and overcharge and overdischarge condition of the battery pack.

3. The portable backup charger of claim 1, wherein the battery pack is further configured to work in a third operating mode for outputting the first current and the second current simultaneously, and in the third operating mode both the first protection circuit and the second protection circuit are active.

'506 Patent: Example Dependent Claims of Challenged Claims 1-3 and 6-20

9. The portable backup charger of claim 1, further comprising a switching module operable to switch on or off the second current from the battery pack.
10. The portable backup charger of claim 9, wherein the switching module is further configured to prohibit the outputting of the second current after a predetermined time period has passed.
11. The portable backup charger of claim 1, further comprising at least one voltage adjusting circuit, each voltage adjusting circuit being coupled between the battery pack and one of the at least one output port and configured to elevate or reduce an output voltage of the battery pack to a predetermined voltage at the respective output port.

'506 Patent: Example Dependent Claims of Challenged Claims 1-3 and 6-20

12. The portable back up charger of claim 1, wherein the first current is of 0.5 to 10 A.

13. The portable backup charger of claim 1, wherein the second current is of 100 to 400 A.

14. The portable backup charger of claim 1, further comprising a controller configured to control the operating mode of the battery pack.

'506 Patent: Independent Claim 21 of Challenged Claims 21-23 and 25-33

21. A portable backup charger, comprising:

- a battery pack having at least one battery cell;

- a first current path through which a first current is output by the battery pack when it is working in a first operating mode;

- a second current path through which a second current capable of starting a vehicle engine is output by the battery pack when it is working in a second operating mode, wherein the second current is higher than the first current;

- a first protection circuit coupled to the battery pack and configured to protect the battery pack when it is working in the first operating mode; and

- a second protection circuit coupled in the second current path and configured to prevent overcurrent condition of the second current when it is working in the second operating mode.

'506 Patent: Example Dependent Claims of Challenged Claims 21-23 and 25-33

22. The portable backup charger of claim 21, wherein the first protection circuit is configured to prevent overcurrent condition of the first current, and overcharge and overdischarge condition of the battery pack.

23. The portable backup charger of claim 21, wherein the battery pack is further configured to work in a third operating mode for outputting the first current and the second current simultaneously, and in the third operating mode both the first protection circuit and the second protection circuit are active.

25. The portable backup charger of claim 21, further comprising:

a pair of connecting wires for detachably coupling the battery pack with the vehicle engine to allow the second current flow through the second current path;

wherein the second protection circuit is built into at least one of the pair of connecting wires.

'506 Patent: Example Dependent Claims of Challenged Claims 21-23 and 25-33

- 26. The portable backup charger of claim 21, further comprising a switching module operable to switch on or off the second current path.
- 27. The portable backup charger of claim 21, wherein the second current is of 100 to 400 A.
- 28. The portable backup charger of claim 21, further comprising a controller configured to control the operating mode of the battery pack.

Patent Owner's Claim Construction: "First Operating Mode"

D. Claim Construction

1. "first operating mode" (Claims 1, 21)

The proper construction for "first operating mode" is "an operating mode of the portable backup charger wherein the battery pack is configured to output a first current through one or more output ports of the at least one output port, and outputting a second current capable of starting a vehicle engine through the pair of output terminals is inhibited."

Patent Owner's Claim Construction: "Second Operating Mode"

2. "second operating mode" (Claims 1, 21)

The proper construction for "second operating mode" is "an operating mode of the portable backup charger wherein the battery pack is configured to output a second current capable of starting a vehicle engine through the pair of output terminals, and outputting a first current through one or more output ports of the at least one output port is inhibited." Ricketts ¶¶83-91. The reasoning for this

Patent Owner's Claim Construction: "Third Operating Mode"

3. The portable backup charger of claim 1, wherein the battery pack is further configured to work in a third operating mode for outputting the first current and the second current simultaneously, and in the third operating mode both the first protection circuit and the second protection circuit are active.

23. The portable backup charger of claim 21, wherein the battery pack is further configured to work in a third operating mode for outputting the first current and the second current simultaneously, and in the third operating mode both the first protection circuit and the second protection circuit are active.

Patent Owner's Claim Construction: "Current Path"

3. "a current path to the battery pack different from that of the at least one output port to the battery pack" (Claim 1)

The proper construction for "a current path to the battery pack different from that of the at least one output port to the battery pack" is "a current path between the output terminals and the battery pack that does not overlap with a current path between the at least one output port and the battery pack." Ricketts ¶¶92-99.

Patent Owner's Positions

Petitioner bears the ultimate burden of proof for unpatentability in this proceeding by a showing by a preponderance of the evidence making a *prima facie* showing of unpatentability. The Petition was fatally defective in multiple aspects, including, failures to identify “in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim” under 35 U.S.C. § 312 (a)(3). Examples of such fatal defects in the Petition include omissions or gaps in analyzing each and every claim limitation and showing relevant teachings in the cited prior art, as previously explained in Patent Owner Response (“Response”) and further explained in this Sur-Reply. The Petition substituted quantity of prior art grounds for quality of the teachings and technical analysis of each ground. The Response highlighted these omissions. Faced with numerous failures in the Petition to map the prior art to the claim limitations, Petitioner attempted to use the Reply to introduce new evidence and/or new arguments not previously cited presented in the

Petition to cure the fatal defects in the Petition. The new evidence/new arguments go well beyond what may be permissible to identify under *Axonics, Inc. v. Medtronic, Inc.*, which allows citation of new evidence only when a new claim construction may so require. 75 F.4th 1374, 1380-84 (Fed. Cir. 2023). Such impermissible newly identified evidence should be disregarded by the Board. Office Patent Trial Practice Guide, November 2019, p.80-81; *Axonics* 75 F.4th at 1380 (“a petitioner ‘may not submit new evidence or argument in reply that it could have presented earlier, e.g. to make out a *prima facie* case of unpatentability.’” U.S. Patent Trial and Appeal Board, Consolidated Trial Practice Guide 73 (Nov. 2019).”)