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Señora Jefe de la
DIVISION DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E. S. D.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-078148- -00003-0000

Fecha: 2008-02-28 17:04:55 Dep. 2020 NUECREACIONE
Tra: 11 PATENTEIYII Eve: 379 FASENACIONALI
Act. 538 PETICION Folios: 3

Trámite :011
Evento :379
Actuación :538

Referencia : Expediente No. 07078148
Asunto : SOLICITUD DE PATENTE PARA MONTAJES DE CARGA
DE VEHICULO PARA MONTAR NIÑOS CON
PROTECCION DE ALIMENTACION TRASERA
Solicitante : MATTEL, INC.
Clase : B62K 001/000
Publicada en : La Gaceta No. 587 Del 18 de enero de 2008
Fecha de Solicitud : 31 de julio de 2007

1. Yo, Emilio FERRERO, identificado como aparece al pie de mi firma, actuando como apoderado en el asunto de la referencia, atentamente, solicito se efectúe el examen de patentabilidad de la solicitud en referencia presentada de acuerdo con el Capítulo I del PCT y según lo establecido en el artículo 44 de la Decisión 486 de la Comisión de la Comunidad Andina. Para tal efecto presento junto con este escrito el recibo por valor de \$ 420.000.00 correspondiente a la tasa fijada.

2. Ruego atentamente a la Señora Jefe se sirva ordenar que se anexe este recibo para que se efectúe dicho examen y se continúe con el trámite de la solicitud.

Señora Jefe,

EMILIO FERRERO
T.P.A. No. 31.929

COLO-00573-841-016-5
MVNISCTID-120187WPCL0573
No. M-2008-120187MVN

NIT 860.041.367-3

141

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 14,186
FECHA : FEBRERO 18 DE 2008

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-078148- -00003-0000

Fecha: 2008-02-28 17:04:55 Dep. 2020 NUECREACIONE
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***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PAGO	Vr. PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO DE BOGOTA	062754387	2808613	18/02/2008	39,393,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	114 PTC CAP-II EXAMEN DE PATENTIBILID	210,000.00
TOTAL :			\$ 210,000.00

SON: DOSCIENTOS DIEZ MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Colo 00573-841-0165

142

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 14,180
FECHA : FEBRERO 18 DE 2008

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-078148-00003-0000

Fecha: 2008-02-28 17:04:55 Dep. 2020 NUECREACIONE
Tra. 11 PATENTEIYII Eje: 379 FASENACIONALI
Act. 538 PETICION Folios: 3

***** CONSIGNACION *****

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SON: DOSCIENTOS DIEZ MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Cdo 00573 - 841016-5

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 07-78148

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **587** DE

FECHA **18 DE ENERO DE 2008** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **16 DE ABRIL DE 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X



US006509719B2

144

(12) **United States Patent**
Crofut et al.(10) **Patent No.:** **US 6,509,719 B2**
(45) **Date of Patent:** ***Jan. 21, 2003**(54) **CHILDREN'S RIDE-ON VEHICLE HAVING A BATTERY WITH AN INTERNAL CIRCUIT BREAKER**(75) Inventors: **Chuck J. Crofut**, East Aurora, NY (US); **Brian L. Bienz**, Orchard Park, NY (US)(73) Assignee: **Mattel, Inc.**, El Segundo, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/125,980**(22) Filed: **Apr. 19, 2002**(65) **Prior Publication Data**

US 2002/0109480 A1 Aug. 15, 2002

Related U.S. Application Data

(63) Continuation of application No. 09/585,677, filed on Jun. 1, 2000, now Pat. No. 6,377,026, and a continuation-in-part of application No. 09/357,065, filed on Jul. 19, 1999, now abandoned, and a continuation of application No. 09/013,846, filed on Jan. 27, 1998, now Pat. No. 5,928,020.

(51) Int. Cl.⁷ **H01M 10/46**(52) U.S. Cl. **320/134; 320/136**(58) Field of Search **320/110, 112, 320/113, 134, 136**(56) **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Edward H. Iso(74) *Attorney, Agent, or Firm*—Kolisch Hartwell, P.C.(57) **ABSTRACT**

An improved battery for children's ride-on vehicles. The battery includes a sealed housing that contains an internal circuit breaker that disconnects the flow of energy from the battery to the vehicle's one or more motors upon actuation. Upon removal of the actuating event, the circuit breaker automatically resets to reestablish the electrical circuit connecting the battery and the vehicle's one or more motors. The battery may alternatively include a manual reset that is accessible external the housing. Additionally, the battery may also include an internal one-shot fuse to protect against catastrophic failure of the battery.

15 Claims, 3 Drawing Sheets

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assembly 16 may have other forms than steering wheel 26. For example, the steering assembly may include a rotatable handlebar instead of a steering wheel.

Speed control 18 regulates the rate at which the vehicle moves by selectively controlling the flow of current from the vehicle's one or more batteries 28 to one or more motors 30 that are adapted to drive the vehicle's wheels. Speed control 18 may be either an on/off or two-or three-position control, or alternatively may enable varying speeds of the vehicle depending upon the relative position of the control. As shown, speed control 18 includes a foot pedal 32, however, it may also or alternatively, include one or more on/off switches, forward and reverse switches, high and low speed switches. Similarly, the speed control may be positioned elsewhere on the vehicle's body or on its steering assembly.

In FIG. 2, the vehicle's electrical system is shown at 40. As shown, system 40 includes the vehicle's speed control 18, motor or motors 30, and battery or batteries 28. In FIG. 2, speed control 18 is shown to foot pedal 32, and a reversing switch 42. As shown, battery 28 includes a housing 44 containing a plurality of cells 46 and a socket 48 that may be selectively coupled to a corresponding plug 50 to connect electrically the battery with the vehicle's motor or motors 30. Socket 48 may also be used to connect electrically the battery with a charger 52, which as shown includes a charging probe 54, and a transformer 56 in communication with an AC power source 58. It should be understood that battery 28 may include a plug, as opposed to socket 48. In this version, the plug is adapted to mate with corresponding sockets in charge, and the rest of the vehicles' electrical system.

Also shown in FIG. 2 is a circuit breaker 60, which is connected to the battery's cells 46 inside housing 44. The number of cells in a particular battery 28 may vary. For example, lead-acid cells are generally two-volt cells that may be coupled together to achieve the desired voltage for the battery. For a six-volt battery, three cells are connected in series, for a twelve-volt battery, six cells are used, etc. In FIG. 3, the circuit breaker is shown in series between cells 46. In FIG. 4, the circuit breaker is connected in series external the cells. Also shown in FIGS. 3 and 4 are linkages 61 interconnecting cells 46 other than those connected by circuit breaker 60.

In contrast to a fuse, which must be replaced after overload, circuit breaker 60 may be reset after cooling or after the actuating event or load has passed. Circuit breaker may reset automatically after cooling. Alternatively, battery 28 may include a manual reset 62 that is accessible from external the battery's housing 28, such as shown in FIG. 5. Examples of suitable manual resets 62 are switches, push-buttons or other suitable levers that include a user-accessible portion 64 that may be accessed from external the battery's housing, and an internal portion 66 that communicates with the circuit breaker to reset circuit breaker.

Preferably, housing 44 is a sealed housing that cannot be opened by a user. As such, housing 44 may be referred to as a tamper-resistant housing. Specifically, housing may be integrally formed as a monolithic unit, or more commonly, is formed from two or more components that are sealed together, such as by ultrasonic welding, adhesives, permanent fasteners (as opposed to screws, wing nuts and other reusable fasteners), and the like. For example, in FIG. 5, housing 44 is shown to include a main compartment 68 and a top, or cover, 70 that is permanently secured to the main compartment after assembly of the internal components of the battery. Because housing 28 is sealed, it eliminates the

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opportunity for the user to bypass the overload protection and thereby increases the safety of the battery and the vehicle. It also enables, but does not require, the components of the battery to be hard-wired or otherwise permanently secured together because the components do not need to be moved relative to each other. For Example, the circuit breaker may be directly soldered or otherwise coupled to the cell posts, thereby eliminating wires that could provide unprotected shorting of the battery.

An embodiment of battery 28 is shown in FIG. 6 for purposes of illustration. As shown, battery socket 48 is disposed in a socket depression 72. Wires 74 and 76 extend from socket 48 along wire routing channels 78 and 80 to positive and negative cell posts 82 and 84. The battery also includes a circuit breaker depression 86 in which are disposed lead posts 88. The lead posts are connected to adjacent cells 46 within the battery. Circuit breaker 60 is received within circuit breaker depression 86 and provides an electrical connection between lead posts 88. It should be understood that the construction shown in FIG. 4 is for purposes of illustration, and that any other suitable construction may be used. For example, battery 28 may have an internal construction that does not include depressions 72 and 86.

Another embodiment of the invented battery is shown in FIG. 7 and generally indicated at 100. Unless otherwise specified, battery 100 contains the same structure as battery 28 and is also adapted for use with a children's ride-on vehicle. In addition to the structure described with respect to battery 28, battery 100 further includes an internal fuse 102 that cannot be reset after actuation. Therefore, if fuse 102 is actuated, or blown, the battery must be replaced because the battery's sealed housing prevents removal and replacement of the fuse. Like the previously described circuit breaker, fuse 102 may couple adjacent cells together. Fuse 102 alternatively may be connected external the cells or coupled with circuit breaker 60.

Fuse 102 protects against "catastrophic failure" of the battery, such as a short circuit between the cells, which left unchecked, could severely damage the battery, as well as the vehicle and its users. Fuse 102 is designed to actuate, or blow, at a higher sustained current draw than circuit breaker 60. Therefore, under normal operation, neither the circuit breaker nor the fuse is actuated. When the current drawn achieves a sustained draw that exceeds a first threshold, circuit breaker 60 is actuated to stop the flow of current from the battery to the rest of the vehicle's electrical system. However, should the current draw continue to rise above a second threshold greater than the first threshold, then fuse 102 is actuated.

Breaker 60 and fuse 102 are adapted to actuate only if the current drawn therethrough exceeds the corresponding threshold for more than a determined time interval. This is because there may be short duration draws that exceed both thresholds, but because of their briefness do not pose dangers to the battery, vehicle or user. As an example, circuit breaker 60 may actuate at a threshold in the range of approximately 35-40 amps, but fuse 102 may not actuate until a sustained draw in the range of 45-50 amps is achieved. Despite this, instantaneous draws of up to and greater than 100 amps may be experienced, such as when an at-rest vehicle is quickly urged to its maximum full speed. Therefore, both the circuit breaker and fuse should be tuned to require a current draw that is sustained for a time period longer than those experienced for recurring pulses or surges that occur during normal operation of the vehicle. Typically, these surges or instantaneous draws last for milliseconds, while the sustained draws need to last at least a second, and

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often times a time period of several seconds, such as in the range of 2-5 seconds. Time periods and threshold currents outside of the above ranges are within the scope of the present invention, so long as the relative requirements discussed above are satisfied.

In FIG. 8, another embodiment of the invented battery is shown and indicated generally at 110. Unlike the previously discussed batteries, battery 110 does not contain an internal circuit breaker. However, it does contain an internal fuse 102 housed within the battery's sealed housing to protect against catastrophic failure of the battery. Battery 110 may include additional fuses or breakers external the housing, such as to protect against overloads that exceed the normal operating conditions of the battery, but are not significant enough to actuate fuse 102. In FIG. 8, fuse 102 is connected in series between the cells. In FIG. 9, fuse 102 is connected in series external the cells.

It is believed that the disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in its preferred form, the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense as numerous variations are possible. The subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein. Where the claims recite "a" or "a first" element or the equivalent thereof, such claims should be understood to include incorporation of one or more such elements, neither requiring nor excluding two or more such elements.

The following claims recite certain combinations and subcombinations that are directed to one of the disclosed inventions and are believed to be novel and non-obvious. Inventions embodied in other combinations and subcombinations of features, functions, elements and/or properties may be claimed through amendment of the present claims or presentation of new claims in this or a related application. Such amended or new claims, whether they are directed to a different invention or directed to the same invention, whether different, broader, narrower or equal in scope to the original claims, are also regarded as included within the subject matter of the inventions of the present disclosure.

We claim:

- 1. A children's ride-on vehicle, comprising:
 - a body having a seat sized to accommodate a child;
 - a plurality of wheels;
 - a steering assembly adapted to selectively steer at least one of the plurality of wheels;

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at least one electrically powered motor adapted to rotatably drive at least one of the plurality of wheels; and at least one battery adapted to provide power to the at least one motor and comprising:

- a sealed housing;
- a plurality of cells sealed within the housing and electrically connected together; and
- a resettable circuit breaker sealed within the housing and electrically connected with the plurality of cells.

2. The vehicle of claim 1, wherein the circuit breaker is adapted to automatically reset.

3. The vehicle of claim 1, wherein the circuit breaker is adapted to be reset manually by a user.

4. The vehicle of claim 3, wherein each of the at least one batteries includes a manual reset accessible by a user external the housing and in communication with the circuit breaker sealed within the housing.

5. The vehicle of claim 1, wherein the circuit breaker is connected in series with the plurality of cells.

6. The vehicle of claim 5, wherein the circuit breaker is connected in series between a pair of the plurality of cells.

7. The vehicle of claim 5, wherein the circuit breaker is connected in series external a pair of the plurality of cells.

8. The vehicle of claim 5, wherein the plurality of cells includes at least a pair of cells, and further wherein the circuit breaker is connected in series between the pair of cells.

9. The vehicle of claim 1, wherein the body is at least substantially formed from plastic.

10. The vehicle of claim 1, wherein the vehicle is a reduced-scale version of a full-sized vehicle and is sized to be operated by a child.

11. The vehicle of claim 1, wherein each of the at least one batteries is a rechargeable battery.

12. The vehicle of claim 1, wherein housing includes a socket that is adapted to receive a plug to electrically connect the battery with the at least one motor.

13. The vehicle of claim 12, wherein the housing includes a socket that is adapted to receive a charging probe to electrically connect the battery with a charger.

14. The vehicle of claim 12, wherein the socket is adapted to selectively receive a plug to electrically connect the battery with the at least one motor and a charging probe to electrically connect the battery with a charger.

15. The vehicle of claim 1, further including a speed control adapted to selectively control the actuation of the at least one motor by the at least one battery.

* * * * *

Fig. 1

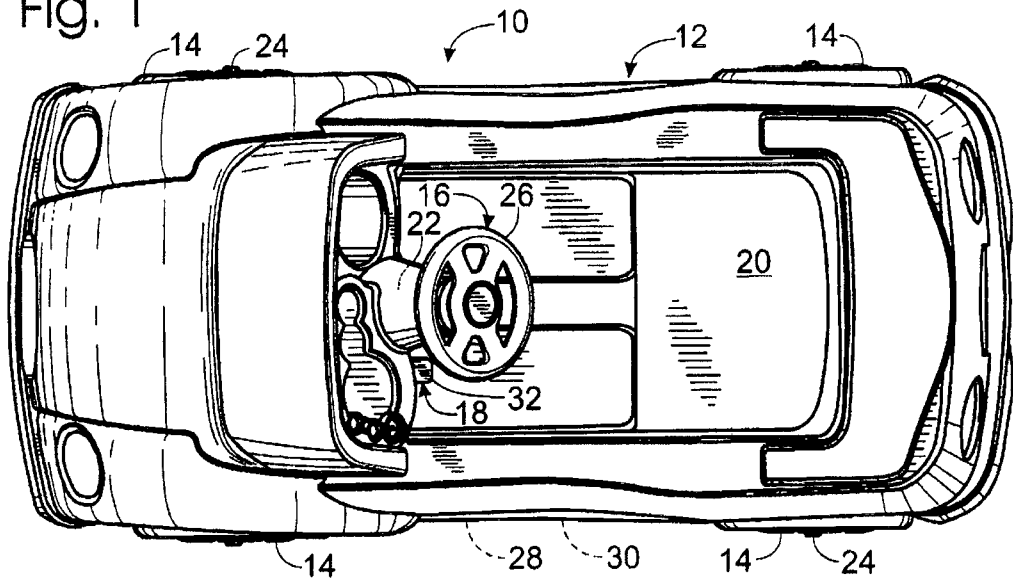


Fig. 2

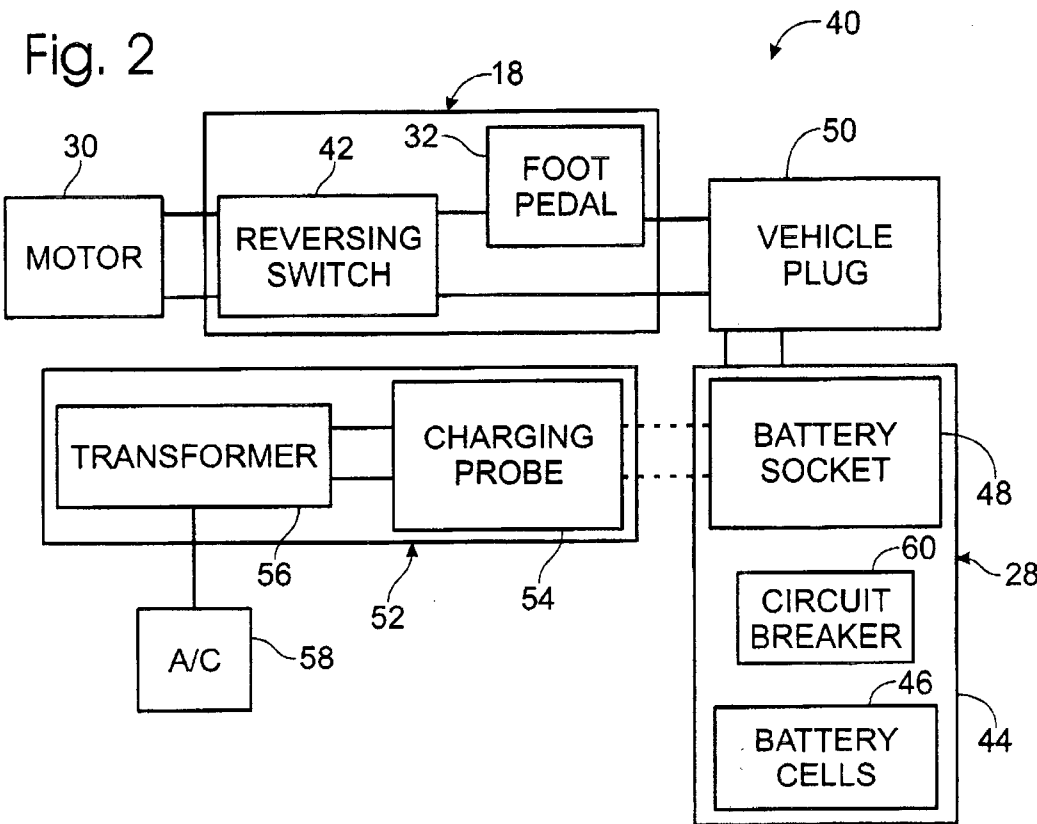
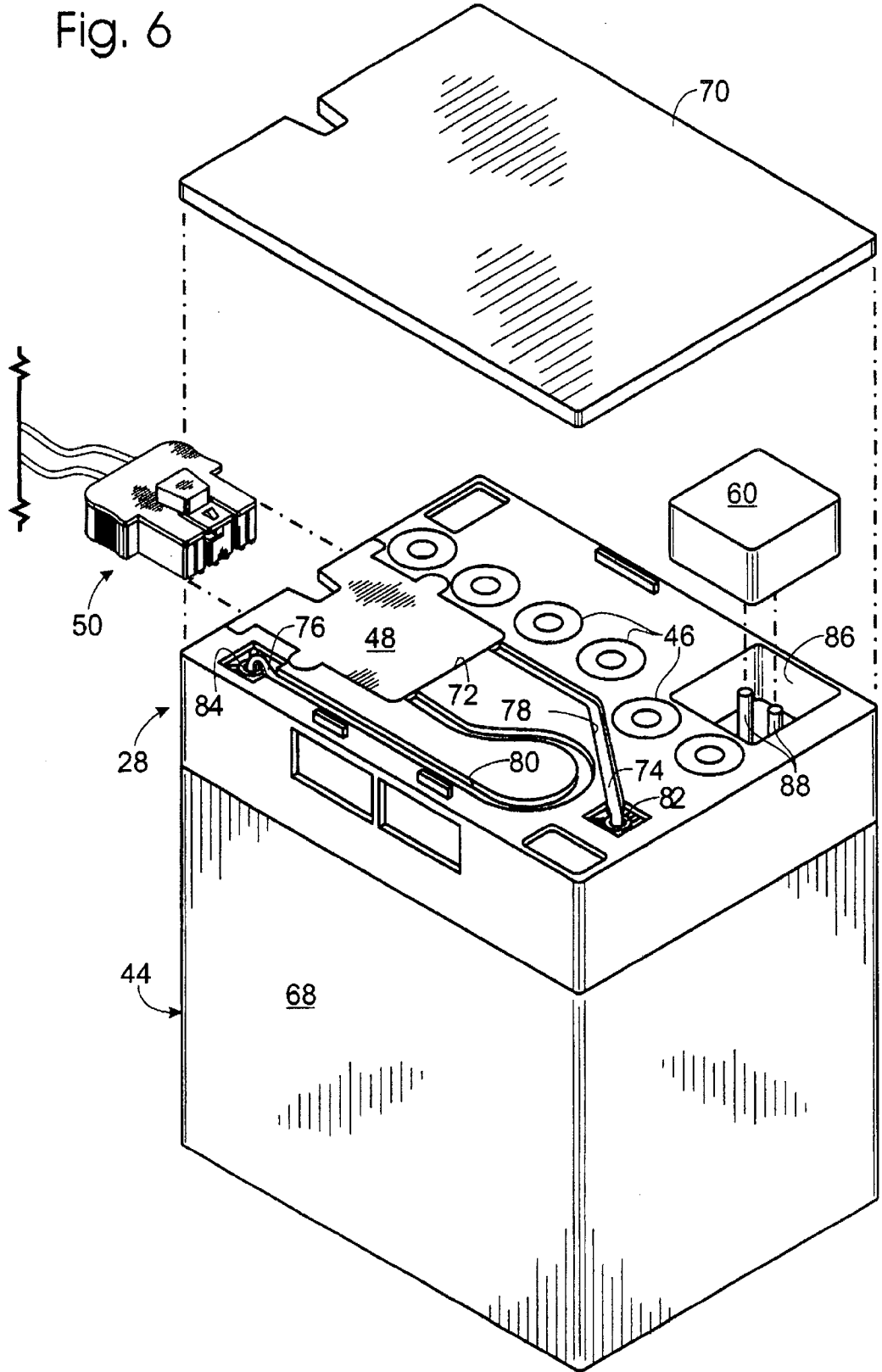


Fig. 6



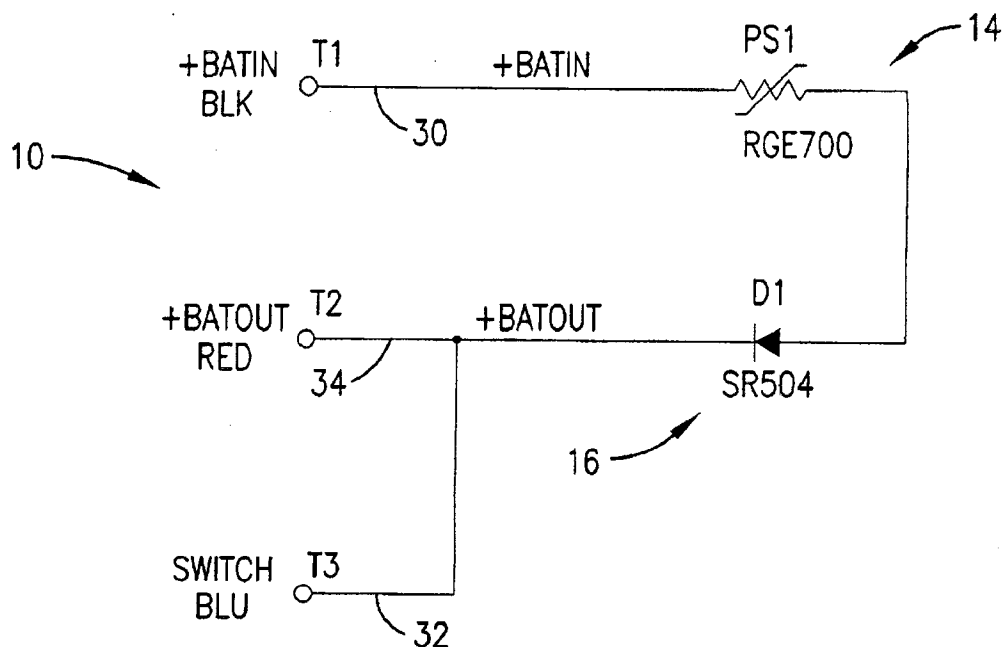


US 20020158609A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2002/0158609 A1**
(43) **Pub. Date: Oct. 31, 2002**(54) **BATTERY CHARGER PROTECTION CIRCUIT**(52) **U.S. Cl. 320/165**(76) **Inventors: Robert H. Lavington, Emporia, KS (US); Jerry Wedel, Emporia, KS (US)**(57) **ABSTRACT**

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2405 Grand, Suite 400
Kansas City, MO 64108 (US)

A battery charger protection circuit (10) interposable between a charger system or charger battery (22) and a lead acid or gel cell charging battery (26) to allow 1-to-1 charging thereof while protecting against short circuit and reverse current conditions. The circuit (10) broadly comprises a printed circuit board (12); a self-resettable fuse (14); a Schottky barrier diode 16; and connection wires (18). The self-resettable fuse (14) includes a temperature-sensitive polymer fuse material operable at a predetermined maximum current, defined by the polymer fuse material's composition, to increase in electrical resistance and thereby reduce current flow.

(21) **Appl. No.: 09/841,813**(22) **Filed: Apr. 25, 2001****Publication Classification**(51) **Int. Cl.⁷ H02J 7/04; H02J 7/16**

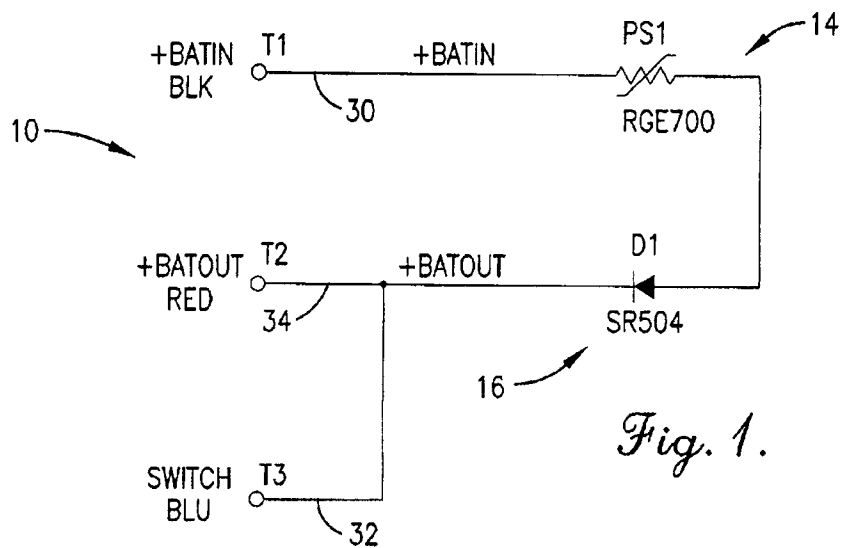


Fig. 1.

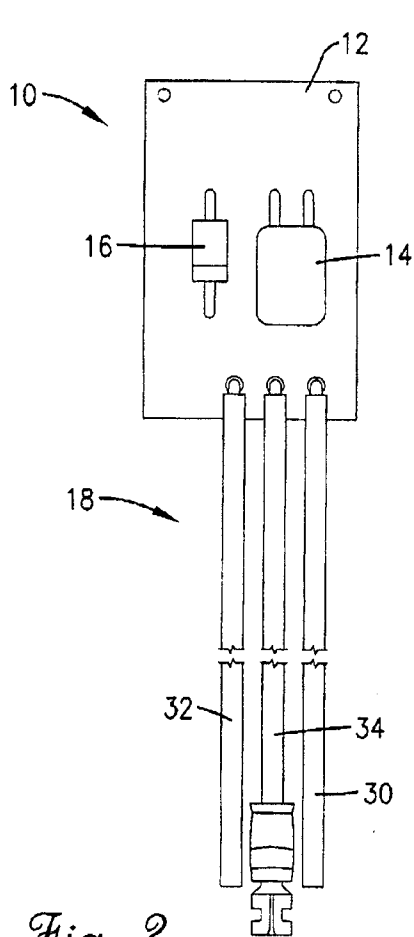


Fig. 2.

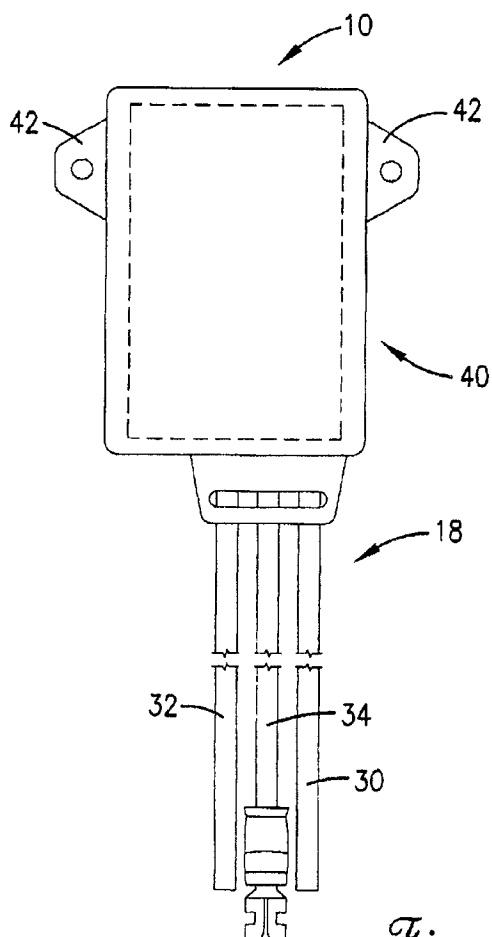


Fig. 3.

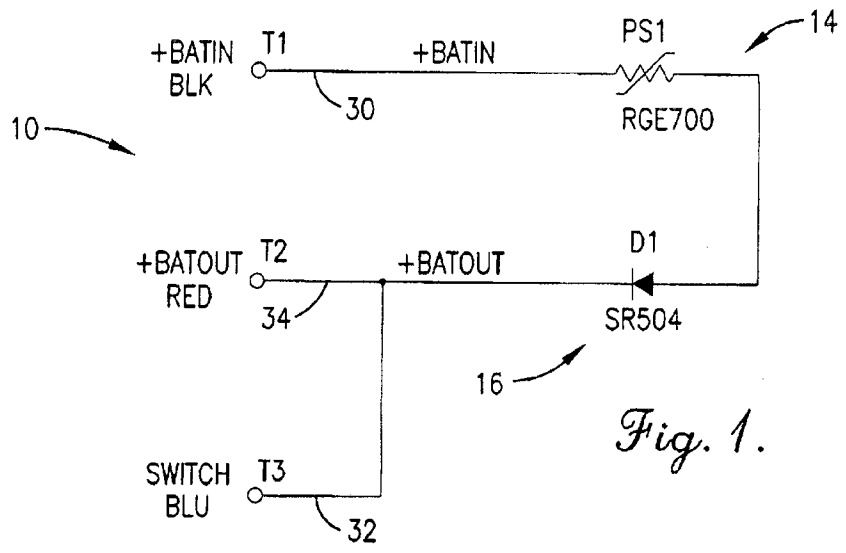


Fig. 1.

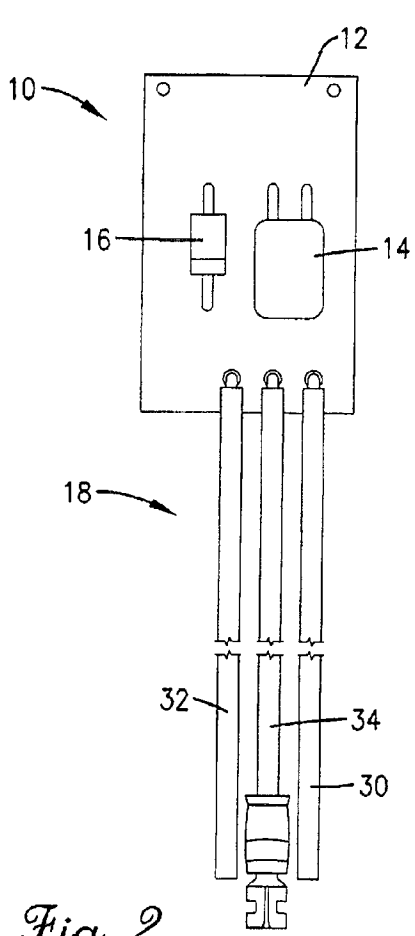


Fig. 2.

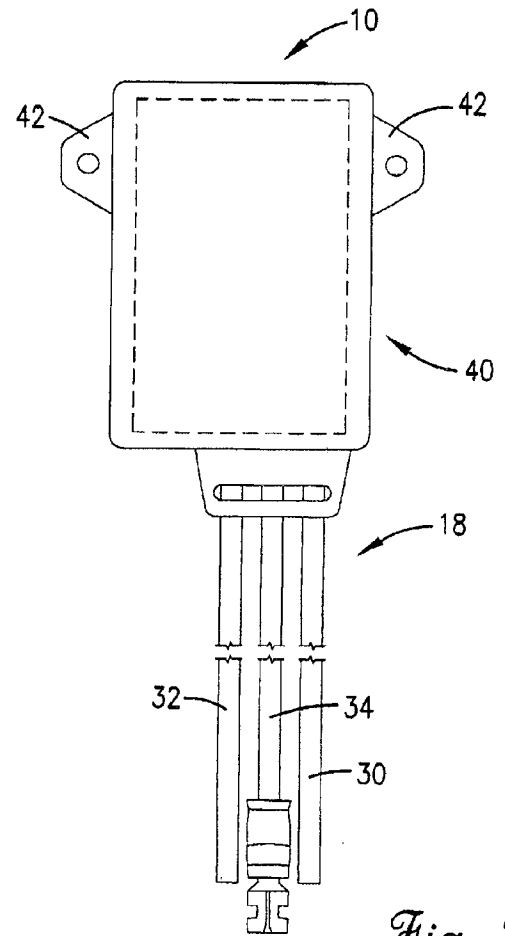


Fig. 3.

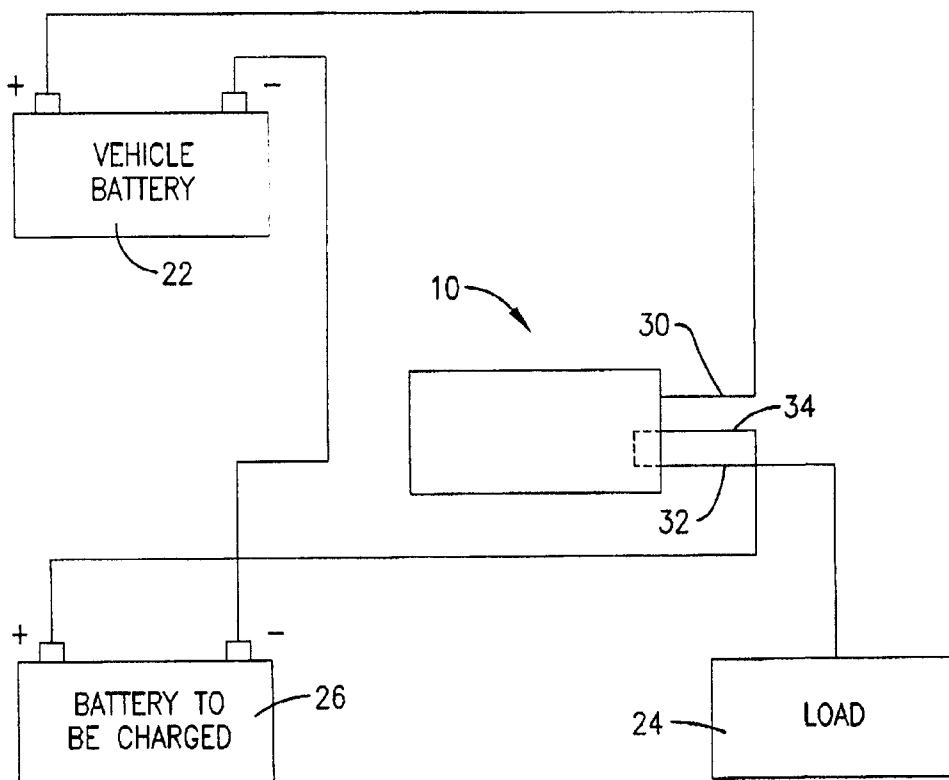


Fig. 4.

BATTERY CHARGER PROTECTION CIRCUIT

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention is broadly concerned with short circuit and reverse current protection circuits for battery chargers. More particularly, the present invention relates to a battery charger protection circuit incorporating a temperature-sensitive self-resettable fuse providing short circuit protection, and a diode providing reverse current protection.

[0003] 2. Description of the Prior Art

[0004] It is often desirable to charge an uncharged battery (hereafter charging battery) by, for example, electrically connecting the charging battery either directly to a charger system or indirectly thereto through a second battery (hereafter charger battery). Unfortunately, without protection, short circuit conditions could arise wherein the charging battery draws an unsafe amount of current from the charger system, or reverse current conditions could arise wherein the charging battery discharges back into the charger system or charger battery. In either case, damage can potentially result to one or both batteries, the charger system, and any other electrical load systems coupled therewith.

[0005] It is known to interpose fuses, resettable or otherwise, between the charging battery and the charger system or charger battery. Unfortunately, once tripped these fuses typically require manual resetting, which, in turn, requires that the fuse be accessibly located and housed. So locating the fuse can be undesirable from a design standpoint, particularly where such locations are limited and other systems are more preferably accessibly located. So housing the fuse typically requires either that the fuse be left undesirably exposed to ambient operating environments, including dust, residue, and debris, or that the fuse be protectively housed in a relatively complex and expensive enclosure having a sealed but moveable cover.

[0006] Due to the above-identified and other problems in the art, an improved battery charger protection circuit is needed.

SUMMARY OF THE INVENTION

[0007] The present invention solves the above described and other problems in the art by providing a battery charger protection circuit interposable between a charger system or charger battery and a lead acid or gel cell charging battery to allow 1-to-1 charging thereof while protecting against short circuit and reverse current conditions. The preferred circuit broadly comprises a printed circuit board (PCB); a self-resettable fuse; a Schottky barrier diode; and connection wires. The PCB is conventional and operable to provide both a mounting surface and electrical traces for electrically connecting other components of the circuit. The self-resettable fuse is mounted to the PCB and comprises a temperature-sensitive polymer fuse material operable at a predetermined maximum current, defined by the polymer's composition, to increase in electrical resistance and thereby decrease current flow. The Schottky barrier diode is also mounted to the PCB and operable to prevent current flowing from the charging battery to the charger battery. The connection wires serve to facilitate electrical interposition of the

circuit between the charger system or charger battery and the charging battery as well as any electrical loads also present.

[0008] Once assembled, the circuit can be completely encased, but for the connection wires, in a protective molded plastic housing. The housing preferably includes mounting tabs for accommodating screws or other fasteners which facilitates mounting the unit on a vehicular or other convenient surface.

[0009] These and other features of the battery charger circuit are described in more detail below in the section titled DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A preferred embodiment of the present invention is described in detail below with reference to the attached drawing figures, wherein:

[0011] FIG. 1 is a circuit schematic showing a preferred embodiment of the battery charger protection circuit of the present invention;

[0012] FIG. 2 is a top plan view of the battery charger protection circuit corresponding to the circuit schematic of FIG. 1;

[0013] FIG. 3 is a top plan view of the battery charger protection circuit of FIG. 2 encased within a protective housing; and

[0014] FIG. 4 is a block diagram showing the battery charger protection circuit incorporated into a preferred embodiment of a battery charger system.

[0015] The drawing figures do not limit the present invention to the specific embodiments disclosed and described herein. The drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

[0016] Referring to FIGS. 1 and 2, a battery charger protection circuit (hereafter the circuit) 10 is shown operable to allow charging of a lead acid or gel cell charging battery while protecting against short circuit and reverse current conditions. In a preferred embodiment, the circuit 10 broadly comprises a printed circuit board (PCB) 12; a self-resettable fuse 14; a Schottky barrier diode 16; and connection wires 18.

[0017] The PCB 12 is a conventional printed circuit board operable to provide a stable and secure surface for mounting and electrically interconnecting the other circuit components. As will be appreciated by those with skill in the electrical arts, leg or lead portions of the self-resettable fuse 14, Schottky barrier diode 16, and connection wires 18, are received within mounting holes provided in the PCB material, electrically conductive traces extend between and surround these mounting holes, and the leg or lead portions are soldered or otherwise electrically connected to these traces. Though final dimensions will vary with design considerations, in a preferred embodiment the PCB 12 measures 2.000 +/-0.015 inch long and 1.280 +/-0.015 inch wide.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.

Doctor
EMILIO FERRERO
Apoderado.

ASUNTO	Radicación	07-078148
	Trámite	011
	Evento	378
	Actuación	519
	Oficio	<u>NO 154.11</u>
	Folios	13

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☐
		Cap. II	☒
No. Sol. Internacional	PCT/US2006/003662		
Fecha de Presentación Internal.	2006-02-01		

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción:	Folios: 88-115
Reivindicaciones:	Folios: 67-73
Dibujos:	Folios: 75-79
Prioridad:	El solicitante presentó las prioridades de Estados Unidos con números de referencia US60/649857 de fecha 2005-02-02 y US11/344651 con fecha de 2006-01-31, (ver folio 11)

El peticionario presentó una solicitud de examen de patentabilidad de acuerdo con lo estipulado por el artículo 44 de la Decisión 486. (Folios 140-141)

2. Objeto de la invención

La presente solicitud fue titulada originalmente: "Montaje de carga de vehículo de montar para niños con protección de retroalimentación" folio 1.

De acuerdo con el texto de la descripción, los dibujos y las reivindicaciones, el objeto de la presente solicitud es proporcionar un "vehículo con un montaje de carga de

batería con protección eléctrica el cual puede ser accionada sobre una variedad de superficies, incluyendo concreto, tierra y pasto, tanto en vías inclinadas en ascenso como en descenso, por lo que se desea regular al alto consumo de energía en ascenso (35-40 amp) en comparación con el descenso (2-5 amp)". (Folio 89).

Por lo anterior, para solucionar este problema la presente solicitud proporciona las reivindicaciones 1-26, folios 67-73.

IPC: B62K1/00.

3. De la solicitud de Patente

3.1. Sobre las reivindicaciones (artículo 30 D 486)

La redacción de las partes que conforman el vehículo de montar para niño en la reivindicación 17, y que se hace de orden distinto pero siendo las mismas partes, generan falta de concisión en la reivindicación 17 ya que la reivindicación independiente 1 sumada con las reivindicaciones dependientes 7-14 hacen que se conforme de manera equivalente el objeto de dicha reivindicación independiente 17, por lo que se sugiere retirarla junto con las reivindicaciones redundantes para así replantear correctamente el capítulo reivindicatorio. Para fines del estudio de patentabilidad se tomará la reivindicación 1 para dicho análisis con las dependientes 2-16.

4. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de prioridad más antigua es el 2005-02-02, se encontró los siguientes documentos relevantes:

N°	Documento	Contenido	Fecha de Publicación
D1	US6509719 Inventor: Chuck J. Crofurt Solicitante: Mattel Inc	Children's ride-on vehicle having a battery with an internal circuit breaker (Vehículo de montar los niños en el cual se tiene una batería con un interruptor de circuito interno)	2003-01-21
D2	US2002/0158609 Inventor y solicitante: Robert H. Lavington	Battery charger protection (Batería con protección de carga)	2002-10-31

Se anexa las páginas correspondientes a los documentos, ver folios 144-151.

Respecto del estado de la técnica:

D1 divulga una mejora en la batería para vehículo de niños la cual incluye una carcasa sellada que contiene un circuito de protección que desconecta el flujo de energía desde la batería del vehículo a uno o más motores que son accionados.

D1 divulga un circuito de protección para la carga de una batería interpuesta en medio de un sistema de carga de la batería donde esta puede ser de celdas de acido o gel, para permitir una a una la carga mientras se realiza la protección contra el corto circuito y la corriente de retroceso se acondiciona.

5. Análisis de patentabilidad (artículo 81 D486)

5.1. Novedad y nivel inventivo (artículo 16 y 18 D486)

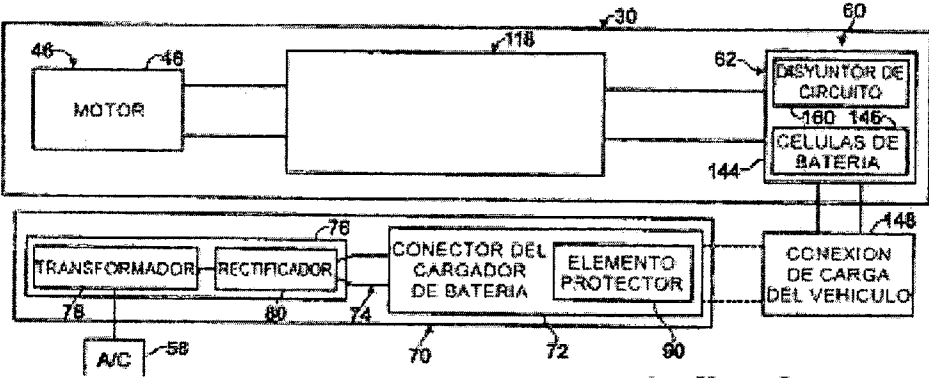


FIGURA 1

Teniendo en cuenta tal y como se plantea la reivindicación 1, se plantea la siguiente tabla comparativa de características reivindicadas dando a entender que las contiene (SI) o que no las contiene (NO).

REIVINDICACION 1	D1	D2
Un montaje de vehículo para montar niños, que comprende: 1) Un vehículo para montar niños, que comprende: Un cuerpo que tiene al menos un asiento de un tamaño para un niño;	SI Un montaje de vehículo para montar un niño que comprende: un cuerpo que tienen un asiento (20) para acomodar un niño. Reivindicación 1 folio, renglones 45-46. Folio 146.	NO
2) Una pluralidad de ruedas rotablemente acopladas al cuerpo, en donde la pluralidad de ruedas incluye al menos una rueda de impulsión y al menos una rueda direccional;	SI Una pluralidad de ruedas (14), reivindicación 1 renglón 47, Folio 146.	NO
3) Un montaje de dirección que comprende un mecanismo de dirección adaptado para recibir entradas de dirección desde un niño sentado en al menos un asiento, y un enlace de dirección adaptado para transportar las entradas de dirección a al menos una rueda direccional;	SI Un montaje de dirección (16) adaptado para recibir entradas de dirección desde un niño sentado en al menos un asiento (20). Reivindicación 1 renglones 48-49. Folio 146.	NO
4) Un montaje de impulsión adaptado para impulsar selectivamente la rotación de al menos una rueda de impulsión, en donde el montaje de impulsión comprende: Un montaje de motor que comprende al menos un motor eléctrico, Un montaje de control de velocidad, y	SI Al menos un motor eléctrico de potencia (30) adaptado para hacer rotar al menos una de la pluralidad de ruedas (14). Reivindicación 1, columna 6 renglones 1-2.	NO
5) Un montaje de batería adaptado para energizar selectivamente el montaje de motor y que incluye al menos una batería recargable, y	SI Al menos una batería (28) adaptada para proveer energía a al menos un motor (30) y que incluye una batería recargable. Reivindicación 1 columna 6 renglones 3-4, y, reivindicación 112 folio 146.	NO se cita en que aplicación electromecánica se utiliza la batería

6) Una conexión de carga conectada eléctricamente a al menos una batería recargable; y	SI Una conexión de carga (54) conectada a una batería recargable (28), figura 2 folio 147.	SI Una conexión de carga, figura 4 folio 150, conectada eléctricamente a al menos una batería (22)
7) Un montaje de carga de batería, que comprende: Un cuerpo adaptador configurado para convertir una corriente de fuente a una corriente de carga adecuada para cargar al menos una batería;	SI Un montaje de carga de batería (52) que comprende un adaptador (transformador 56) configurado para convertir una corriente de fuente a una de carga adecuada para cargar una batería (28), figura 2 folio 147.	SI Un montaje de carga (figura 4 folio 150) que comprende un cuerpo adaptador (24) para convertir una corriente de fuente a una corriente de carga adecuada para cargar al menos una batería.
8) Una cuerda de cargador que se extiende desde el cuerpo adaptador a un conector de carga, en donde el conector de carga se configura para acoplar la conexión de carga para establecer una conexión eléctrica entre el cuerpo adaptador y la al menos una batería;	SI Una cuerda de cargador (50) que se extiende desde el cuerpo adaptador a un conector de carga, en donde el conector de carga se configura para acoplar la conexión de carga para establecer una conexión eléctrica entre el cuerpo adaptador y la al menos una batería; figura 6 folio 148.	SI Una cuerda (32) de cargador que se extiende desde el cuerpo adaptador a un conector de carga, en donde el conector de carga se configura para acoplar la conexión de carga para establecer una conexión eléctrica entre el cuerpo adaptador y la al menos una batería; figura 3-4 folio 150.
9) y al menos un elemento protector configurado para reducir la corriente de retro-flujo desde el montaje de batería en al menos una porción de la cuerda del cargador	NO	SI Un circuito de protección (10) con al menos un elemento de protección (14, 16) configurado para reducir la corriente de retro-flujo desde una batería (26) en al menos una cuerda del cargador (24), ver abstract folio 149, figuras 1 y 4 folios 150.

Se puede concluir de la anterior tabla que el estado de la técnica más cercano es D1, solo que tiene la diferencia de no citar al menos un elemento protector configurado para reducir la corriente de retro-flujo desde el montaje de batería en al menos una porción de la cuerda del cargador, por lo que el objeto de la reivindicación 1 de la presente solicitud SI es novedosa.

Por lo tanto si cumpliría con lo expuesto en el artículo 16 de la Decisión 486 de la Comunidad Andina de Naciones.

La solicitud se diferencia de D2 en que no está sugiriendo un vehículo de montar para un niño sin embargo sugiere, únicamente, un circuito de protección para una batería recargable (10) con al menos un elemento de protección (14, 16) configurado para reducir la corriente de retro-flujo desde una batería (26) en al menos una cuerda del cargador (24), ver abstract folio 149, figuras 1 y 4 folios 150.

Así pues, con el empleo de los dos documentos: D1 y D2, que hacen parte del estado de la técnica, se proporcionan herramientas de conocimiento a una persona del oficio normalmente conocedora de la materia técnica correspondiente, para emplearlos y derivar de ellos el resultado obtenido y que se desea proteger con la presente

solicitud, por tal razón la presente solicitud, en las reivindicaciones 1-16, no tiene nivel inventivo.

El estudio anterior permitiría afirmar que la solicitud NO cumpliría con lo estipulado en el artículo 18 de la Decisión 486 de la Comunidad Andina de Naciones.

6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento	Reivindicaciones Afectadas	Requisito que Afecta
D1	US6509719	1-16	NIVEL INVENTIVO
D2	US2002/0158609	1-16	NIVEL INVENTIVO

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la circular única N° 10 de 2001.



ALIX CARMENZA CÉSPEDES DE VERGEL
Directora de Nuevas Creaciones (C).

El anterior requerimiento fue notificado por fijación en lista, de fecha 26 NOV. 2010

CONCEPTO TÉCNICO No. 4026	EXAMINADOR TÉCNICO Código No. 202083
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