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(54) Title: BATTERY PACK CHARGER ASSEMBLY

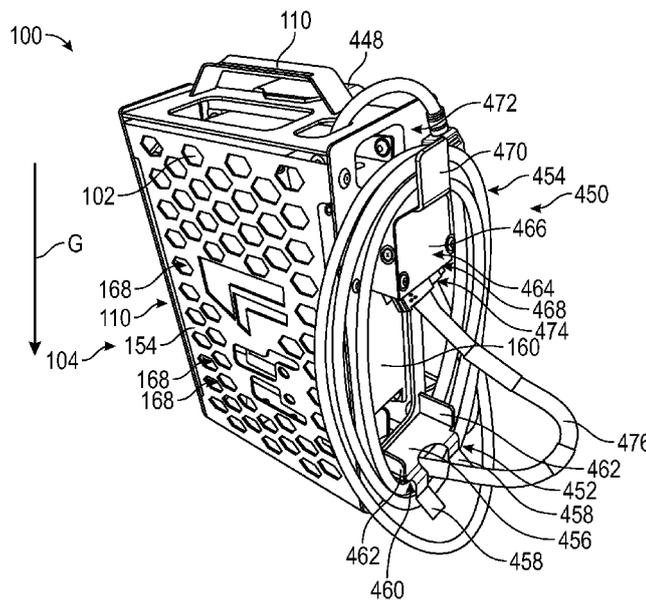


FIG. 11

(57) Abstract: A battery charger assembly can include a battery charger and a housing at least partially surrounding the battery charger. The housing can include a handle, a first latch arm, a second latch arm, a first multiple mounting brackets, and a first sidewall. The handle is arranged on a top side of the housing. The first plurality of mounting brackets extend from a bottom side of the housing. The first sidewall extends between the top side and the bottom side. The first sidewall defines a second plurality of mounting brackets. The first latch arm and the second latch arm are coupled to the first sidewall proximate the top side.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/029306

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. H01M 50/20; F02N 11/08; F02N 11/14 (2024.01)

ADD. H01M 10/42 (2024.01)

CPC - INV. H01M 50/20; F02N 11/08; F02N 11/14

ADD. H01M 10/42

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)

See Search History document

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

See Search History document

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2022/0190426 A1 (BRIGGS & STRATTON CORP) 16 June 2022; Figs. 1A, 1B, 7, 19; paras. {0059, 0069}	1-11, 13 --- 12
Y	US 2018/0323621 A1 (MILWAUKEE ELECTRIC TOOL CORPORATION) 18 November 2018	12
A	CN 106114272 A (HAHON ELECTRIC INT CO LTD) 16 November 2016; Entire Document	1-13
P,X	WO 2024/059329 A2 (BRIGGS & STRATTON CORP) 21 March 2024; Entire Document	1-13

Further documents are listed in the continuation of Box C.

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

“D” document cited by the applicant in the international application

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

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“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

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/029306

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

- 2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

- 3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

-Please See Supplemental Page-

- 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2. As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
- 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
- 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13

- Remark on Protest**
- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
 - The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
 - No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2024/029306

-***-Continued From Box No. III: Observations where unity of invention is lacking-***-

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fee must be paid.

Group I: Claims 1-13 are directed towards a sidewall with mounting brackets.

Group II: Claims 14-23 are directed towards a latch arm for removable mounting.

Group III: Claims 24-29 are directed towards a mounting plane.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical features of Group I include at least a first sidewall extending between the top side and the bottom side, the first sidewall defining a second plurality of mounting brackets, wherein the first latch arm and the second latch arm are coupled to the first sidewall proximate the top side, which are not present in Groups II and III.

The special technical features of Group II include at least wherein the latch arm is configured to removably couple the battery charger to a mounting wall on the chore product to facilitate onboard charging, and wherein the first plurality of mounting brackets are configured to support the housing and the battery charger on a ground surface to facilitate offboard charging, which are not present in Groups I and III.

The special technical features of Group III include at least the first plurality of mounting brackets defining a first mounting plane; a second plurality of mounting brackets extending from one of the first pair of opposing sidewalls, the second plurality of mounting brackets defining a second mounting plane perpendicular to the first mounting plane; and a pair of latch arms extending through the first mounting plane, which are not present in Groups I and II.

The common technical features shared by Groups I, II, and III are a battery charger assembly, comprising: a battery charger; and a housing at least partially surrounding the battery charger, the housing including: a handle arranged on a top side of the housing; a first latch arm; a first plurality of mounting brackets extending from a bottom side of the housing.

However, these common features are previously disclosed by US 2013/0337669 A1 to Najera, G. et al. (hereinafter "NAJERA"). NAJERA discloses a battery charger assembly, comprising: a battery charger; and a housing at least partially surrounding the battery charger, the housing including: a handle arranged on a top side of the housing; a first latch arm; a first plurality of mounting brackets extending from a bottom side of the housing (an EV charging assembly includes a housing, a handle a latch, and mounting brackets; abstract).

Since the common technical features are previously disclosed by the NAJERA reference, these common features are not special and so Groups I, II, and III lack unity.