

EUROPEAN PATENT OFFICE  
U.S. PATENT AND TRADEMARK OFFICE

CPC NOTICE OF CHANGES 1501

DATE: AUGUST 1, 2023

PROJECT DP12076

The following classification changes will be effected by this Notice of Changes:

<u>Action</u>	<u>Subclass</u>	<u>Group(s)</u>
<b>DEFINITIONS:</b>		
Definitions New:	H01M	50/102, 50/103, 50/105, 50/109, 50/11, 50/112, 50/124, 50/128, 50/129, 50/131, 50/138, 50/141, 50/143, 50/145, 50/148, 50/167, 50/169, 50/198
	H01M	50/20, 50/202, 50/233, 50/244, 50/249, 50/269, 50/284, 50/289, 50/291, 50/296, 50/298
	H01M	50/358, 50/367
	H01M	50/40, 50/451, 50/471
	H01M	50/509, 50/519, 50/528, 50/553, 50/564, 50/566, 50/567, 50/569, 50/572, 50/576, 50/591, 50/593, 50/595, 50/598
	H01M	50/60
Definitions Modified:	H01M	50/00

No other subclasses/groups are impacted by this Notice of Changes.

This Notice of Changes includes the following [Check the ones included]:

1. CLASSIFICATION SCHEME CHANGES

- A. New, Modified or Deleted Group(s)
- B. New, Modified or Deleted Warning(s)
- C. New, Modified or Deleted Note(s)
- D. New, Modified or Deleted Guidance Heading(s)

2. DEFINITIONS

- A. New or Modified Definitions (Full definition template)
- B. Modified or Deleted Definitions (Definitions Quick Fix)

3.  REVISION CONCORDANCE LIST (RCL)

4.  CHANGES TO THE CPC-TO-IPC CONCORDANCE LIST (CICL)

5.  CHANGES TO THE CROSS-REFERENCE LIST (CRL)

## 2. A. DEFINITIONS (new)

Insert: The following new Definitions.

### H01M 50/102

#### Definition statement

*This place covers:*

Any primary casing characterised by shape or physical structure, e.g. cable-shaped casings being intrinsically flexible and having a height to diameter (or width) ratio of approximately 10 or more.

### H01M 50/103

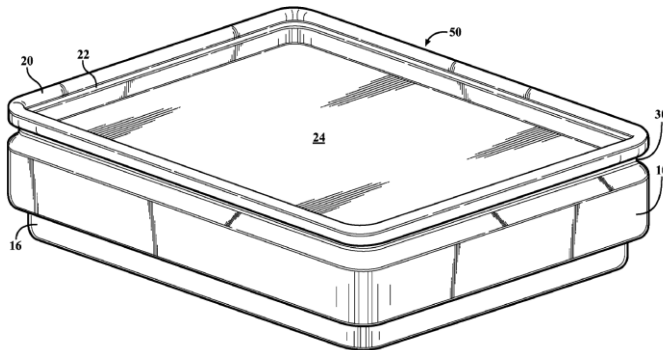
#### Definition statement

This place covers:

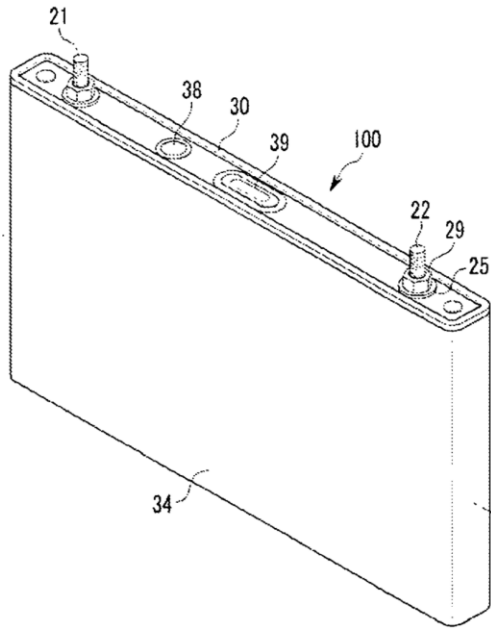
Prismatic or rectangular casings that are generally hard, rigid casings often comprising a distinct lid. The edges may also be rounded.

Illustrative examples of prismatic or rectangular shaped casing (50 of first drawing and 34 of second drawing):

1.



2.



**References**

**Limiting references**

*This place does not cover:*

Primary casings of button or coin shape	<a href="#">H01M50/109</a>
Primary casings having a structure in the form of a chip	<a href="#">H01M50/11</a>

**H01M 50/105**

**Definition statement**

*This place covers:*

Casings of pouch cells or flexible bag cells generally made of a flexible multi-layered laminate sheet sealed along at least an overlapping edge.

Illustrative example of pouch type battery casing (111-113a):

1.

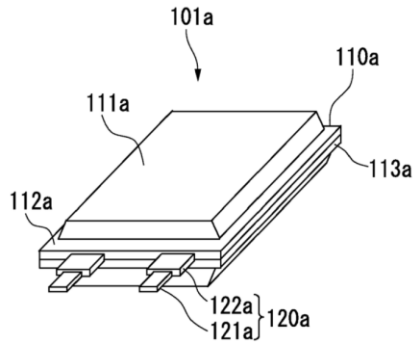
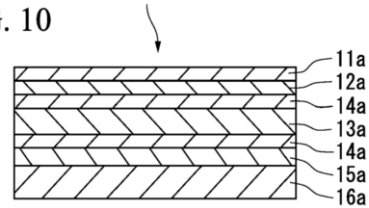


FIG. 10



### H01M 50/109

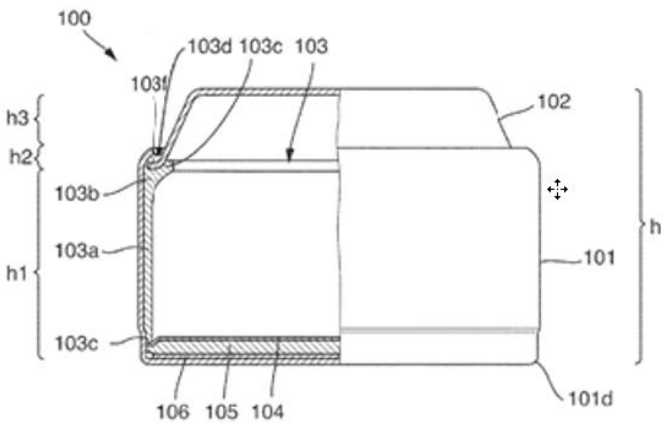
#### Definition statement

*This place covers:*

Button or coin-shaped casings having a cylindrical or an elliptical shape, and, further, having a height to diameter ratio of less than 1.

Illustrative example of a button or coin shaped casing (101, 102):

1.



## H01M 50/11

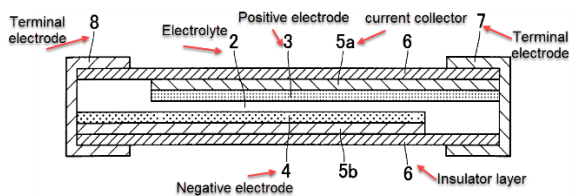
### Definition statement

*This place covers:*

Structures of microsized batteries and miniature power sources integrated on chips, e.g. structures of thin-film micro lithium-ion batteries or rolled-up microtube lithium-ion batteries.

Illustrative example of a casing having a chip structure:

1.



## H01M 50/112

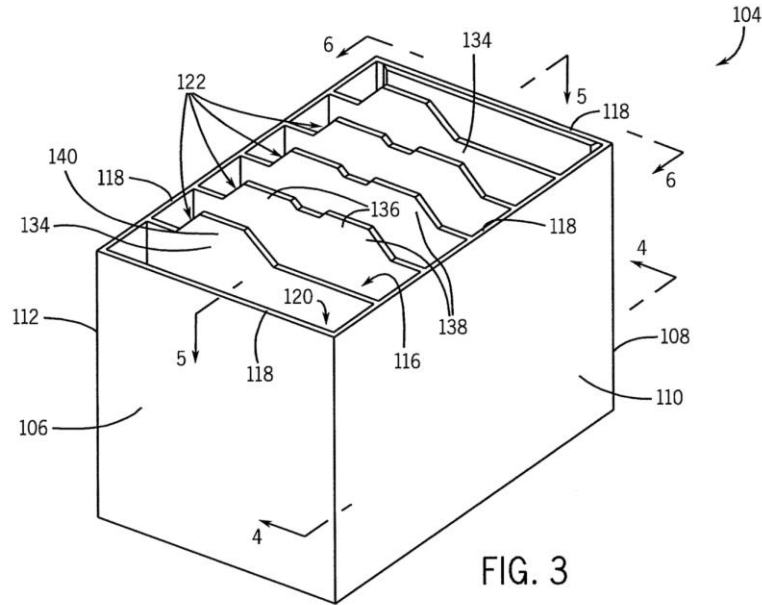
### Definition statement

*This place covers:*

Casings consisting of an integral housing with multiple compartments for holding bare electrochemical cells.

Illustrative example of monobloc casing (106) with multiple compartments (122):

1.



## H01M 50/124

### Special rules of classification

Classification of multilayered casings, jackets or wrappings in this group or in groups H01M 50/126, H01M 50/128 or H01M 50/129 requires consideration of the number of layers present.

In multilayered objects, adhesive layers are not considered as distinct layers for determining the number of layers.

Any layer providing functionality beyond simple adhesion should be counted as a distinct layer.

Layered structures are further classified according to the material of each layer, e.g. a layered structure comprising a metal layer should be classified in H01M50/119 and H01M50/124.

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## H01M 50/128

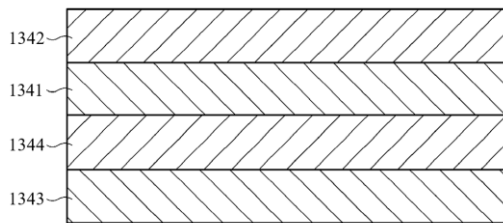
### Definition statement

*This place covers:*

Casings comprising three or more layers with two or more layers of only inorganic material.

Illustrative example:

1.



A pouch for a battery may be formed as a layer structure. The layer structure may include an outermost surface protection layer 1342 made of a first polymer and an innermost sealant layer 1343 made of a second polymer. A gas barrier layer 1341 made of a metal and a heat dissipation layer 1344 made of a ceramic may be stacked between the outer and inner layers.

The pouch of this example is classified in H01M50/128 and in H01M50/129.

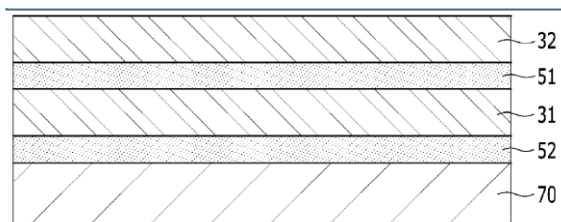
## H01M 50/129

### Definition statement

*This place covers:*

Illustrative example:

1.



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An outer case for a secondary battery may include a first polymer resin layer 31, a second polymer resin layer 32 disposed on a first surface of the first polymer resin layer 31 and attached by interposing a first adhesive layer 51, and an inner resin layer 70 disposed on a second surface of the first polymer resin layer 31 and attached by interposing a second adhesive layer 52, wherein each of the first polymer resin layer and the second polymer resin layer comprises a fluorine-containing resin.

## **H01M 50/131**

### **Definition statement**

*This place covers:*

Primary casings, jackets or wrappings of a single cell or a single battery characterised by physical properties such as flexibility or heat resistance.

### **Special rules of classification**

Primary casings, jackets or wrappings with heat resistant properties related to protection against damage by fire or explosion caused by external factors are classified in H01M 50/143.

## **H01M 50/138**

### **Definition statement**

*This place covers:*

Electrochemical cell operating at high temperatures, e.g. molten salt electrolyte batteries, thermal batteries or sodium sulfur batteries [NAS].

Air batteries, e.g. zinc air or lithium air batteries.

Deep sea batteries. Deferred-action cells.

Illustrative example:

A high temperature rechargeable electrochemical cell (10) may comprise a cell casing defining an anode compartment for containing an alkali metal anode and a cathode compartment containing a liquid electrolyte. The cell may have an operating

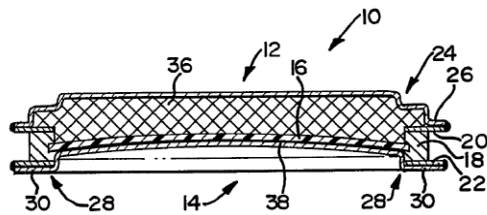


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temperature at which the anode and liquid electrolyte are molten. The anode compartment may be separated from the cathode compartment by a separator (16) comprising a solid electrolyte which is a conductor of ions of the alkali metal of the anode at the operating temperature of the cell. The casing may comprise a cathode cover (12) of sheet material enclosing the cathode-side surface of the separator and an anode cover (14) of sheet material enclosing the anode-side surface of the separator. The cathode cover and the anode cover may be electronically conductive and electronically insulated from each other and may respectively form a cathode terminal and an anode terminal of the cell.

1.



### H01M 50/141

#### Definition statement

*This place covers:*

Primary casings, jackets or wrappings for protecting against humidity or preventing the ingress of moisture, e.g. waterproofing wrappings.

### H01M 50/143

#### Definition statement

*This place covers:*

Primary casings, jackets or wrappings for protecting against fire or explosion, e.g. thermally insulating layer for preventing a thermal runaway.

Example:

A battery comprising a fire-resistant sheet comprising a fire-resistant resin composition comprising an endothermic agent having a thermal decomposition onset temperature of 800°C or lower and an amount of heat absorbed of 300 J/g or larger, and a resin, a content of the endothermic agent per 100 parts by mass of the resin being 10 to 10000

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parts by mass; and a battery cell, wherein the fire-resistant sheet is attached to the surface of the battery cell.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Arrangements for facilitating escape of gases	<a href="#">H01M50/30</a>
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### Special rules of classification

Primary casings, jackets or wrappings with heat resistant properties not related to protection against damage by fire or explosion are classified in H01M 50/131.

### Glossary of terms

*In this place, the following terms or expressions are used with the meaning indicated:*

fireproof or fire-resistant material	material that withstands heat and prevents the spread of fire
heat-resistant material	material that remains unaffected by heat

## H01M 50/145

### Definition statement

*This place covers:*

The protection of primary casings against corrosion, e.g. the protection of metallic casings against corrosion caused by water.

### Special rules of classification

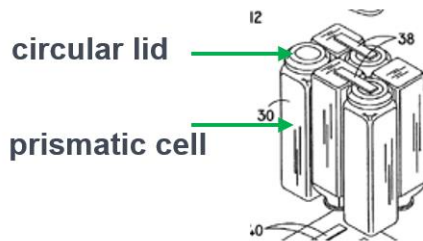
Documents related to corrosion resistance and protection against humidity are classified in H01M50/141 and H01M50/145.

## H01M 50/148

### Special rules of classification

In the subgroups, lids or covers are classified according to the geometrical shape of the primary casing.

In the below example, the circular lid is classified in H01M50/105 as it concerns prismatic cells.



A lid or cover for a chip-shaped casing is classified in H01M50/148.

## H01M 50/167

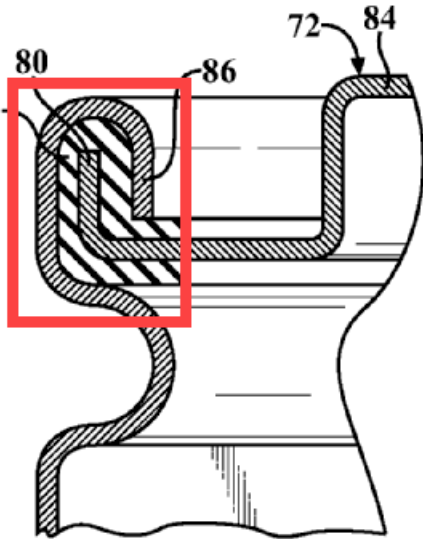
### Definition statement

*This place covers:*

Methods of assembling casing with lid by crimping.

Illustrative example:

1.



The upper part of the casing (86) is assembled with the lid (80) by crimping.

### H01M 50/169

#### Definition statement

*This place covers:*

Methods of assembling casing with lid by welding, brazing or soldering.

The welding processes concern welding metal to metal and the fusion of plastic materials.

### H01M 50/198

#### Definition statement

*This place covers:*

Primary casings, jackets or wrappings of a single cell or a single battery characterised by physical properties of the sealing material and supported by numerical values or exemplifying the solution of the problem to be solved, e.g. adhesiveness.

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**H01M 50/20****Definition statement***This place covers:*

Constructional details or processes of manufacture. Such details may include:

- Secondary casings, modules, packs, racks, holders;
- Suspension devices, shock absorbers, transport or carrying devices;
- Materials;
- Adaptation to shape of encompassed primary casing batteries;
- Physical properties of casings or racks;
- Methods of mounting;
- Lids or covers for racks or secondary casings;
- Details of integrating PCBs;
- Spacing elements;
- Fastening means; or
- Terminals of battery packs.

**References****Limiting references***This place does not cover:*

Structural combination of accumulators with charging apparatus	H01M 10/46
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**Application-oriented references**

*Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:*

Electrically operated smoking devices; Component parts thereof; Manufacture thereof; Maintenance or testing thereof; Charging means specially adapted therefor	A24F40/00
Electrotherapy, e.g. implantable medical devices	A61N
Tools for drilling machines	B23B51/00
Portable power-driven tools	B25F

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Arrangement of batteries specially adapted for vehicles	B60K1/04
Adaptation of battery structures of electric vehicles, e.g. integration into control or safety systems, crash-resistant casings or vibration-damping means	B60L50/64
Exchange of the energy storage elements for electric vehicles	B60L53/80
Supplying batteries to, or removing batteries from, vehicles	B60S5/06

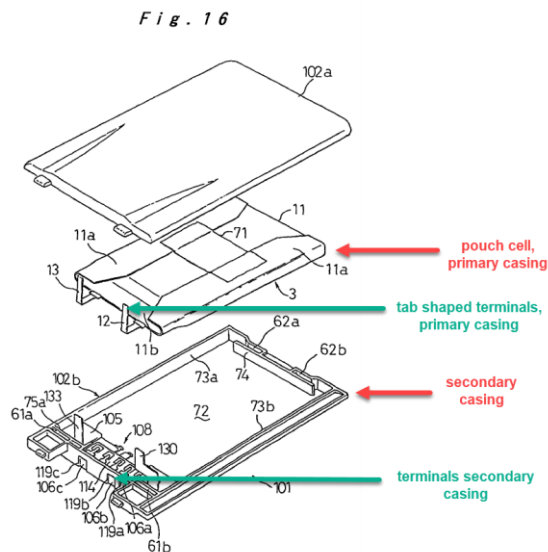
**H01M 50/202****Definition statement**

*This place covers:*

Constructional details or processes of manufacture of secondary casings or frames around the primary casing of a single cell or a single battery.

Illustrative example of a single primary battery housed in a secondary casing:

1.



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## **H01M 50/233**

### **Special rules of classification**

Physical properties should only be classified if supported by numerical values or exemplifying the solution of the problem to be solved (e.g. flexibility, foldability; protection against vibrations/impact/swelling).

## **H01M 50/244**

### **Definition statement**

*This place covers:*

Methods and mounting arrangements for secondary casings, racks, suspension devices, carrying devices and holders per se.

The mounting of cells or batteries within these casings, racks, etc.

### **Special rules of classification**

Methods and arrangements for mounting secondary casings, racks, etc. in finished products, e.g. appliances or vehicles, are classified in H01M 50/247, H01M 50/249, H01M 50/251 if the invention relates to the battery casings.

Methods of mounting casings in finished products such as appliances or cars are classified in places appropriate to the finished product if the invention relates to the product, appliance or vehicle.

## **H01M 50/249**

### **Definition statement**

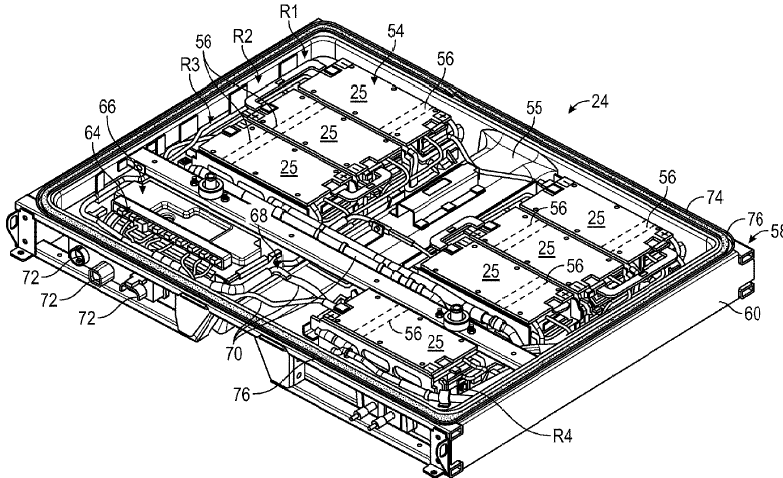
*This place covers:*

Illustrative example:

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1.



Battery pack 24 that can be used in an electric vehicle.

The battery pack 24 include a battery system 54 housed in a housing assembly 58. The housing assembly 58 may be a sealed housing, and may be embodied in any size, shape, and configuration within the scope of the present disclosure. In an embodiment, the housing assembly 58 includes a tray 60 and a cover. During assembly, the battery system 54 can be positioned within the tray 60, and then the cover can be fixedly secured to the tray 60 to seal the battery system 54 therein (discussed further below). The tray 60 and the cover can be made of any material or combination of materials, including metal and/or polymer materials.

The battery system 54 includes a plurality of battery cells 56 that store energy used to power various electrical loads of the electric vehicle 12. The battery cells 56 of the battery system 54 may be stacked side by side to form a group of battery cells 56, sometimes referred to as a battery array. In the embodiment, the battery cell 56 is a prismatic lithium ion battery cell.

The battery system 54 depicted in the figure above includes a plurality of adjacent rows R1-R4 of the battery array 25. In the embodiment, for a total of seven battery arrays, the rows R1 to R3 of the battery system 54 each include two battery arrays, and the row R4 includes one battery array.

The battery array 25 may be arranged in the housing assembly 58 in any configuration. In an embodiment, adjacent battery arrays 25 of rows R1 to R3 are separated by structural beams 55 extending between opposing side walls of tray 60.



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## Relationships with other classification places

B60L50/64 covers adaptation of battery structures of electric vehicles, e.g. integration into control or safety systems, crash-resistant casings or vibration-damping means.

## References

### Limiting references

*This place does not cover:*

Constructional details of batteries specially adapted for electric vehicles	<a href="#">B60L50/64</a>
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## H01M 50/269

### Definition statement

*This place covers:*

Illustrative example for switching between “in series” and “mixed” (“series-parallel”) wiring by means of reconfigurable connection pins (40).

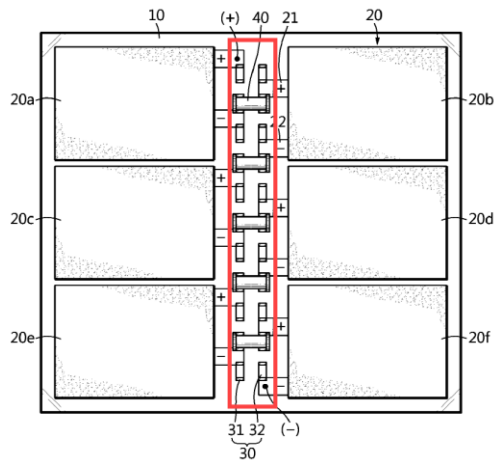
Illustrative examples:

1.

“In-series” connection configuration

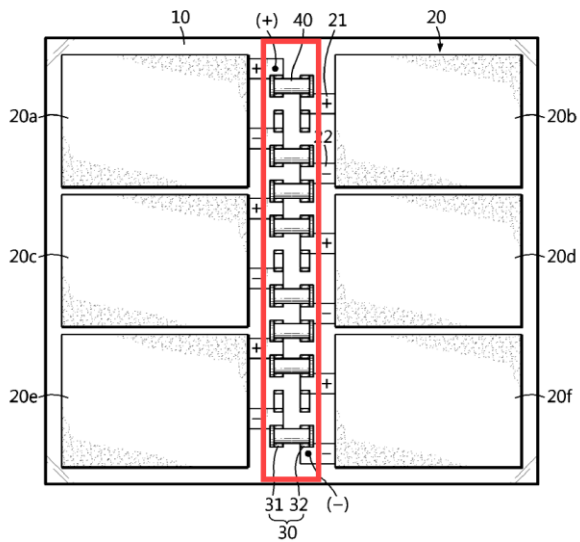
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“Mixed” connection configuration

2.



## References

### Limiting references

*This place does not cover:*

Methods or arrangements for servicing or maintenance	H01M6/50, H01M10/42
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## H01M 50/284

### Definition statement

*This place covers:*

Printed circuit boards [PCB] integrated within mountings, secondary casings, racks, modules or packs, suspension devices, shock absorbers, transport or carrying devices, or holders.

### Special rules of classification

Printed circuit boards [PCB] combined with or integrated in interconnectors are classified in H01M50/519. This also encompasses the releasable fixing of PCB to an interconnector.

## H01M 50/289

### References

#### Limiting references

*This place does not cover:*

Spacing elements inside cells other than separators, membranes or diaphragms	<a href="#">H01M50/471</a>
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### Special rules of classification

Cooling plates that do not provide a spacing function are classified in H01M 10/60 and subgroups.

Battery modules assembled by alternately stacking frames and batteries should be classified in H01M 50/289 and in H01M 50/204 and subgroups.

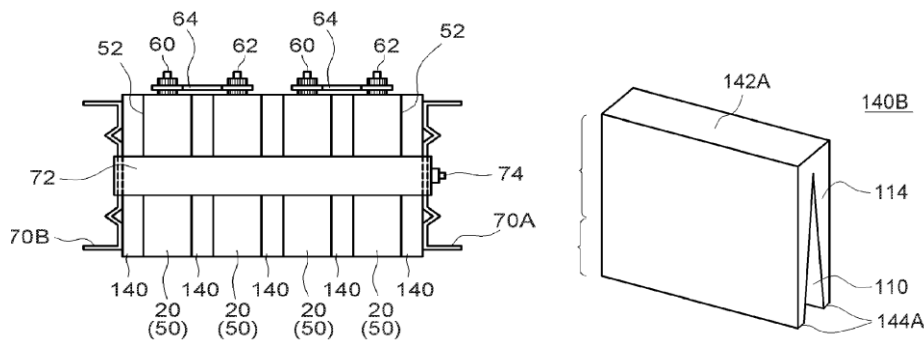
## H01M 50/291

### Definition statement

*This place covers:*

Illustrative example of spacing elements (140):

1.



## H01M 50/296

### Definition statement

*This place covers:*

Terminals of secondary casings/battery packs.

### References

#### Limiting references

*This place does not cover:*

Terminals of batteries
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H01M50/543
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#### Special rules of classification

Terminals of secondary casing battery are classified in H01M50/296 only.

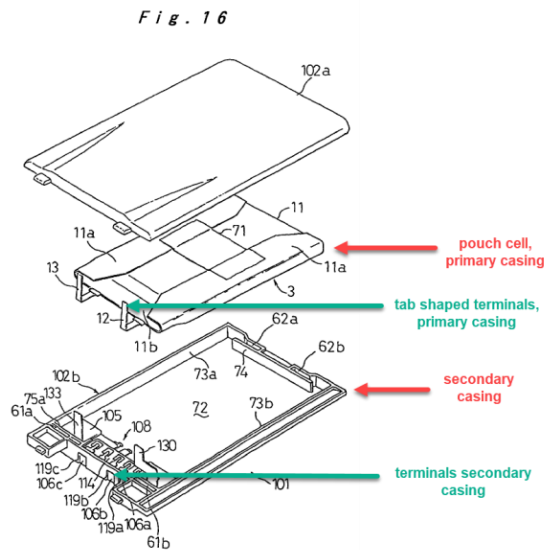
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Terminals of primary casing battery or terminals formed by the primary casing itself, on the contrary, are classified in subgroups of H01M50/543.

Illustrative example for distinction between a terminal of primary casing battery and a terminal of a secondary casing battery:

1.



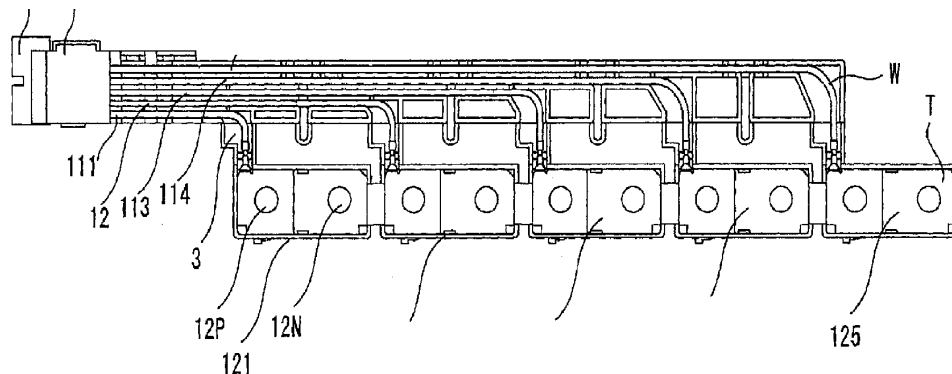
## H01M 50/298

### Definition statement

*This place covers:*

Illustrative example of wiring module (W) of batteries (12):

1.



## H01M 50/358

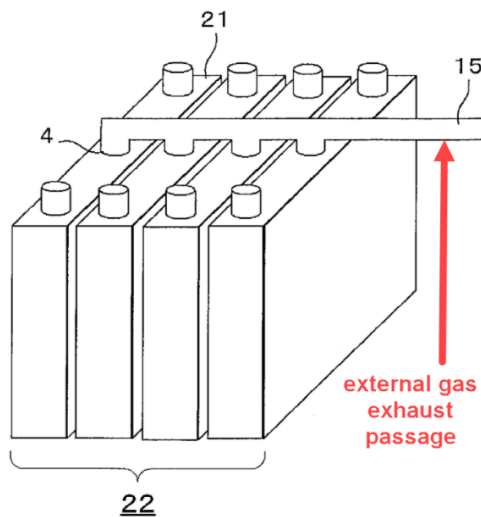
### Definition statement

*This place covers:*

Gas exhaust passages that are external to the cover/lid and located on the cover or case.

Illustrative example for an external gas exhaust passage on the lids:

1.



## H01M 50/367

### Definition statement

*This place covers:*

Gas exhaust passages that are internal, i.e. integrated within the cover, lid or casing.

Illustrative example for an internal gas exhaust passage (shown: double cover vent system 20):

1.

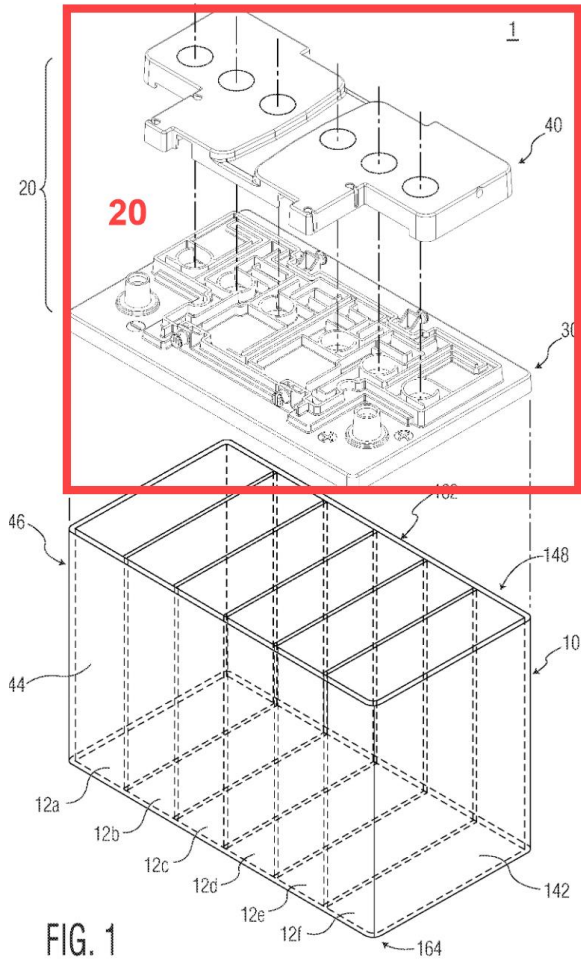
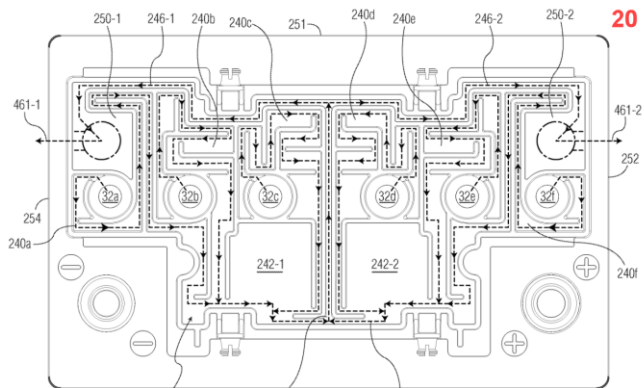


FIG. 1

2.



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## **H01M 50/40**

### **Special rules of classification**

Solid electrolytes acting as separators are classified in the application place, such as H01M10/056 or H01M12/08, and H01M50/40 and subgroups for the details concerning composition, structure or manufacturing processes.

## **H01M 50/451**

### **Definition statement**

*This place covers:*

Separators comprising layers of only organic material and layers containing inorganic material.

Organic binders can be used in the inorganic layers to hold the inorganic materials together.

## **H01M 50/471**

### **Definition statement**

*This place covers:*

Spacing elements.

Note:

Spacing elements are elements arranged within the primary casing but not between opposing electrochemically active electrodes.

Spacing elements differ from separators or diaphragms by virtue of their positioning inside the primary casing.

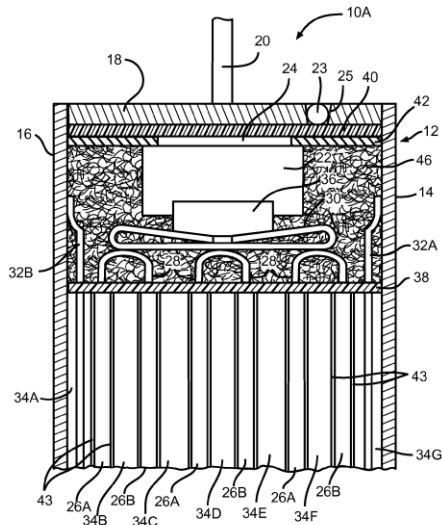
Illustrative example of spacer (glass wool 46 in head spacer: H01M50/474 and H01M50/483):



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1.



## References

### Limiting references

*This place does not cover:*

Spacing elements for preventing incorrect contact inside or outside batteries	H01M50/584
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## H01M 50/509

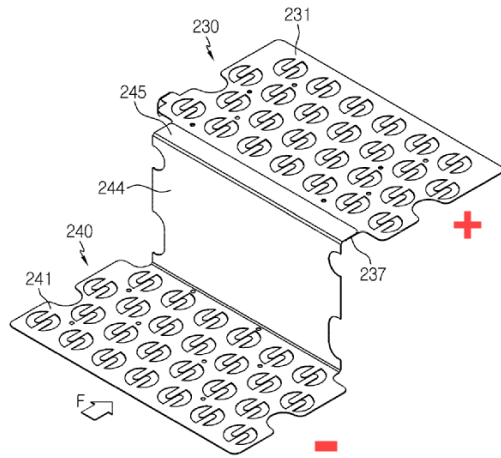
### Definition statement

*This place covers:*

Illustrative example of series-parallel connections:

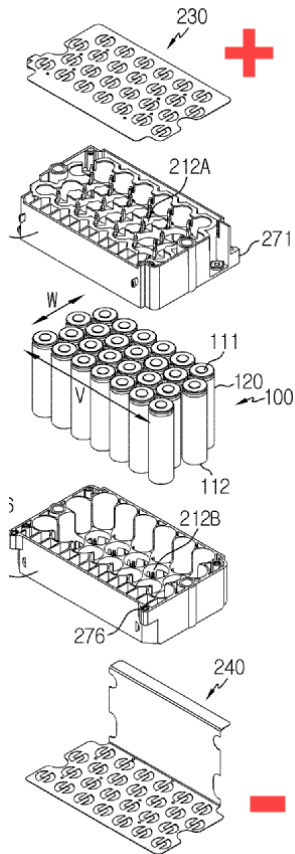
One portion 240 of a plate connects the negative terminals of a first group of cells together in parallel. Another portion 230 of the plate connects the positive terminals of a second group of cells together in parallel. Another portion 244 of the plate connects the groups of cells in series, forming the basis of a series-parallel group (when the opposite ends of the cells are similarly connected to additional plates).

1.



Illustrative example for interconnection only parallel (H01M50/512):

2.



## Synonyms and Keywords

*In patent documents, the following words/expressions are often used as synonyms:*

“series-parallel” and “mixed connections”

## H01M 50/519

### Definition statement

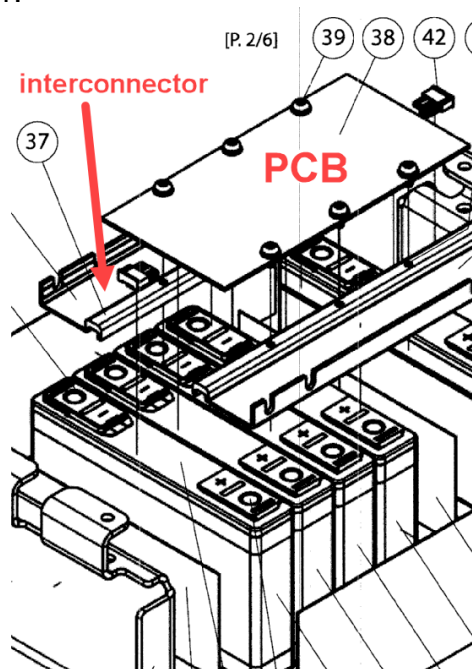
*This place covers:*

Interconnectors comprising printed circuit boards [PCB].

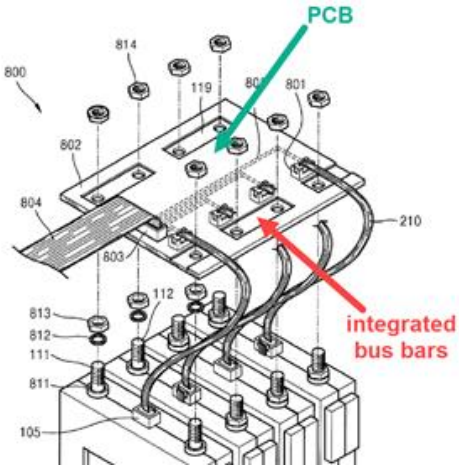
The PCB is located on or attached directly to the interconnector.

Illustrative examples for PCB fixed to an interconnector:

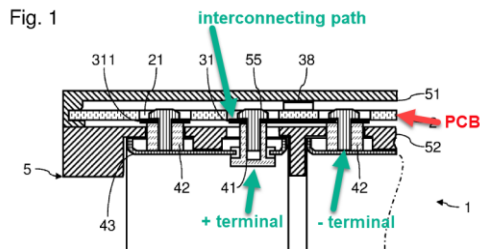
1.



2.



3.



## H01M 50/528

### Definition statement

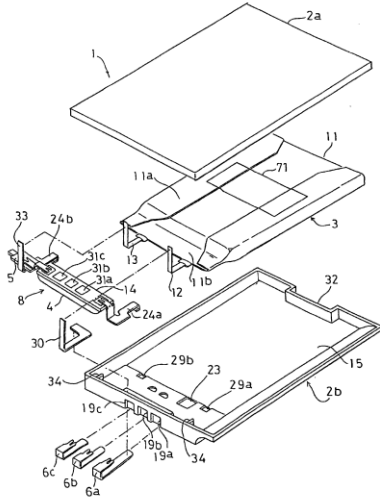
*This place covers:*

Connections not intended for disconnection in the primary or secondary casing.

Illustrative example:

Connection members (30 and 33), which are not intended for disconnection, are welded to the primary casing battery terminal tabs (12 and 13, respectively) for connection to the protective circuit and the external terminals of the secondary casing battery:

1.



**H01M 50/553**

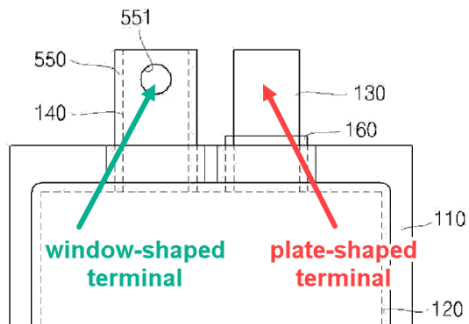
**Definition statement**

*This place covers:*

Terminals of primary casing batteries adapted to prismatic, pouch or rectangular cells.

Illustrative example for a pouch cell having both a window-shaped terminal (H01M50/555) and a plate-shaped terminal (H01M50/557):

1.

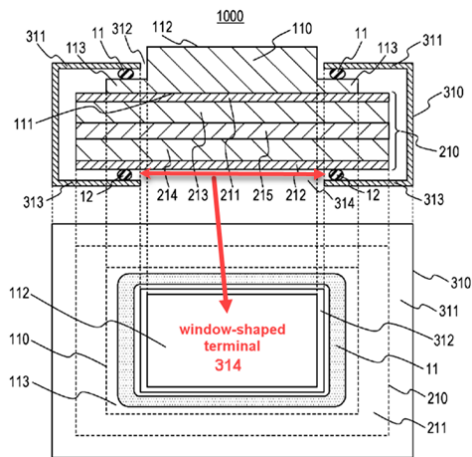


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Illustrative example for a solid-state primary casing battery having two different terminals, namely a window-shaped terminal (H01M50/555) and a knob-shaped terminal (H01M50/553):

2.



## H01M 50/564

### Definition statement

*This place covers:*

Processes of manufacturing terminals, including fixing the terminals of primary casing batteries to the lid, to the casing or to inner connectors.

### Special rules of classification

If terminals are electrically connected to cell internal contacts during the process, then it is classified in H01M50/564 and H01M50/528.

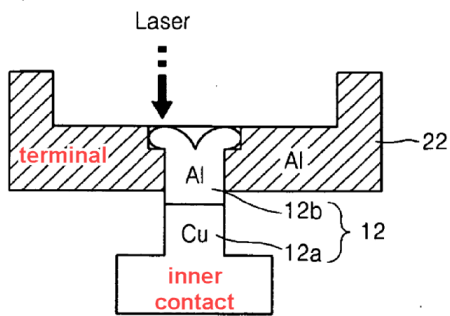
## H01M 50/566

### Definition statement

*This place covers:*

Illustrative example for a fixing process by welding:

1.



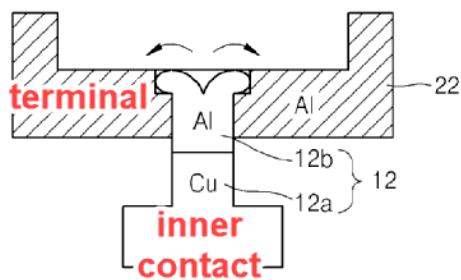
## H01M 50/567

### Definition statement

*This place covers:*

Illustrative example for a fixing process by riveting:

1.



## H01M 50/569

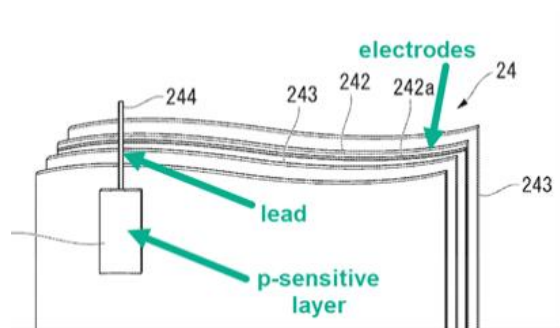
### Definition statement

*This place covers:*

Arrangements of current conducting connections for detecting conditions inside cells or batteries.

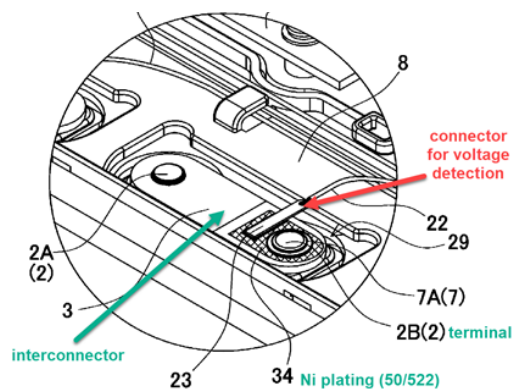
Illustrative example of the integration of a pressure sensitive detector inside a battery:

1.



Illustrative example of an electrical connection probe specifically fixed to an interconnector for detecting voltage:

2.





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## References

### Limiting references

*This place does not cover:*

Battery terminal connectors with integrated measuring arrangements	G01R31/364
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## H01M 50/572

### Definition statement

*This place covers:*

Means for preventing incorrect electrical contact inside or outside a (primary or secondary) casing.

## H01M 50/576

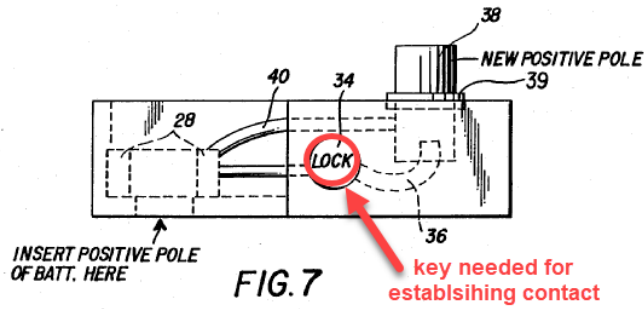
### Definition statement

*This place covers:*

This encompasses aspects relating to the interruption of an established current connection and to aspects denying establishment of a current connection in the event of a (detected) theft or the absence of authorizing features (as a result of theft).

Illustrative example of a device requiring authorization by means of a key:

1.



## H01M 50/591

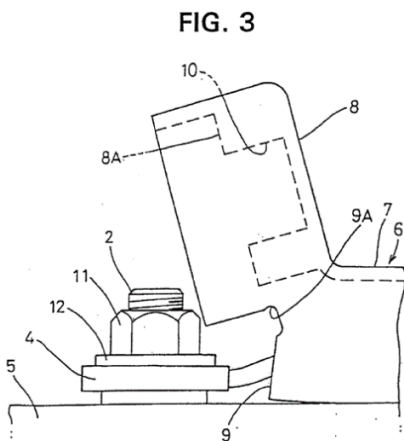
### Definition statement

*This place covers:*

Covers for preventing incorrect or inadvertent electrical contact inside or outside a casing, e.g. for protecting terminals.

Illustrative example for a cover-like contact preventing means (H01M50/591) being outside the casing (H01M50/588):

1.



## H01M 50/593

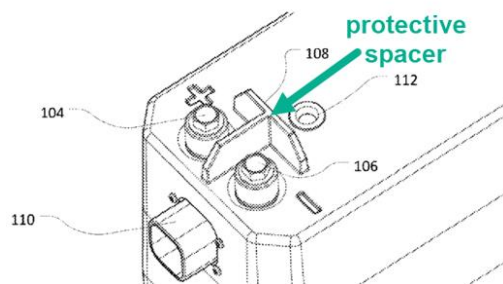
### Definition statement

*This place covers:*

Spacers, insulating plates or barriers outside a primary or secondary casing for preventing incorrect or inadvertent electrical contact, e.g. short circuits between terminals.

Illustrative example for a spacer-like contact preventing means (H01M50/593) being outside the casing (H01M50/588):

1.



## H01M 50/595

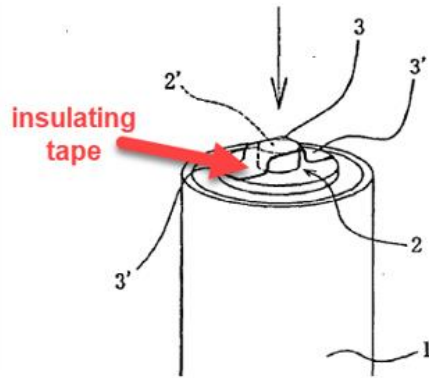
### Definition statement

*This place covers:*

Means for preventing incorrect electrical contact inside or outside a (primary or secondary) casing having the shape of a tape.

Illustrative example for a tape-like contact preventing means (H01M50/595) being outside the casing (H01M50/588):

1.



## H01M 50/598

### Definition statement

*This place covers:*

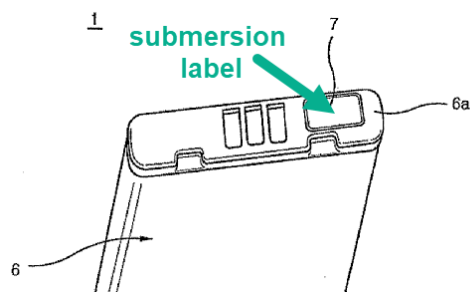
Means capable of indicating improper use of a battery.

As an example, submersion labels are cited, irreversibly changing their colour, for instance, when having had contact with liquid water or excessive humidity. The manufacturer can then challenge the guarantee due to proven improper use.

Labels, e.g. guarantee labels, may be visibly located at the outside of the housing or be hidden inside, to identify if the battery has been used.

Illustrative example for a guarantee label (H01M50/598) being outside the casing (H01M50/588):

1.



**H01M 50/60**

**Definition statement**

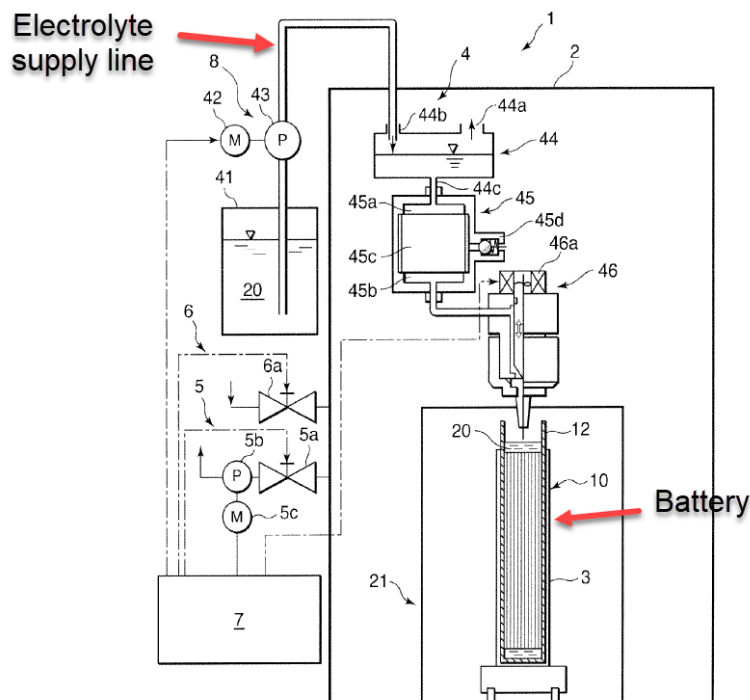
*This place covers:*

Constructional details or processes for filling/topping-up with liquids or for draining liquids from casings.

Liquids may be an electrolyte, liquids for rinsing, liquids poured into casing in exceptional cases such as an emergency.

Illustrative example for a fire extinguishing liquid deliverable into casing by means of delivery conduits (H01M50/673) for supplying electrolyte to a battery:

1.



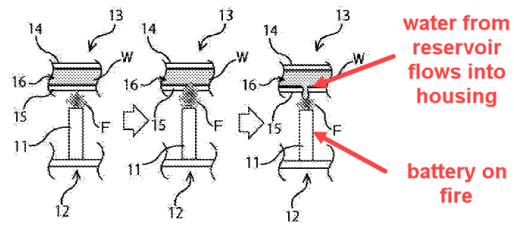
Illustrative example for a (fire extinguishing) liquid poured into casing from a container integrated in the lid of a battery casing (H01M50/682):

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2.



## 2. A. DEFINITIONS (modified)

### H01M 50/00

#### Definition statement

Replace: The existing Definition statement text with the following updated text.

Constructional details of non-active parts of batteries, or details of their manufacture. Such parts may include:

- Primary and secondary casings, jackets or wrappings, lids or covers, carrying devices, racks, mountings, holders, fixing devices;
- Vents, vent plugs, mechanical arrangements for allowing the escape of gas;
- Separators, diaphragms, spacing elements inside a primary casing;
- Current-conducting connections for terminals for cells, means for affording protection against corrosion or for preventing undesired use;
- Arrangements or processes for filling or topping-up casings with liquid, arrangements or processes for draining liquids from casings;
- Arrangements for stirring or circulating electrolytes.

#### References

##### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Replace: The existing Informative references table with the following updated table.

Constructional details or processes of manufacture of the non-active parts of fuel cells	H01M8/00
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Electrically operated smoking devices; Component parts thereof; Manufacture thereof; Maintenance or testing thereof; Charging means specially adapted therefor	A24F40/00
Electrotherapy, e.g. implantable medical devices	A61N
Working or processing of sheet metal or metal tubes	B21D
Casting of metals	B22D
Tools for drilling machines	B23B51/00
Portable power-driven tools	B25F
Shaping of substances in a plastic state	B29C
Producing particular articles from plastics or from substances in a plastic state	B29D
Arrangement of batteries specially adapted for vehicles	B60K1/04
Supplying batteries to, or removing batteries from vehicles	B60S 5/06
Container for batteries	B65D2585/88
Diaphragms; spacing elements for electrolytic or electrophoretic process for the production of compounds or non-metals	C25B 13/00
Diaphragms; spacing elements for electrolytic production, recovery or refining of metals	C25C 7/04
Sealing	F16J15/00
Valves	F16K
Apparatus for testing electrical condition of accumulators or electric batteries	G01R 31/36
Electrically conductive connectors connecting the battery to the load or electric system	H01R

Insert: The following new Glossary of terms section.

**Glossary of terms**

*In this place, the following terms or expressions are used with the meaning indicated:*

primary casing	casing containing the electrochemical cell, i.e. arranged closest to the electrodes, the electrolyte and any separators
secondary casing	housing/casing/structure comprising or enveloping one or more primary casing(s)



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single cell, battery	a cell is a primary casing containing a single electrochemical cell. A battery is a primary casing containing more than one cell. The term “battery” is sometimes loosely used to mean a single cell
battery pack, module	secondary casing containing one (or more) (single) cell(s) or batteries
button cell, coin cell	cells having a button- or coin-shaped casing, often of circular, elliptical or polygonal shape, and having a height-to-width ratio of less than 1
pouch or flexible bag	generally made of a flexible multi-layered laminate sheet sealed along at least an overlapping edge
jacket, wrapping	additional layer of material around at least a portion of a primary casing; not intrinsically formed with primary casing; generally having an additional functionality such as displaying information, additional external protection
separator, diaphragm	an electronically insulating, but ion-permeable porous body to be arranged between two electrochemically active electrodes; a separator or diaphragm may also be used for preventing liquids from being intermixed, e.g. in redox flow batteries
spacer, spacing element	an inert object to be arranged between two other objects for keeping a defined distance there between; usually electronically insulating; can be placed inside or outside primary casing battery; to be clearly distinguished from a separator by its positioning if inside a primary casing
terminal	electrical contact exposed at and accessible from the outside of a primary or secondary casing
interconnector	external electrical contacting element between terminals on a battery case (including primary and secondary cases)

Insert: The following new Synonyms and Keywords section.

### **Synonyms and Keywords**

*In patent documents the following abbreviations are often used:*

[PCB]	Printed circuit board
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