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Ministerio de Desarrollo Económico

E. S. D.

Ref.: Expediente No. **00.052.291**

Solicitud de Patente de Invención titulada : **"TAPON CON DEFLECTOR
PARA ELECTROLITO"**.

Solicitante: **JOHSON CONTROLS TECHNOLOGY COMPANY**

Yo, **MARGARITA CASTELLANOS ABONDANO**, mayor de edad,
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APPLICATION NUMBER: 09/351,701

FILING DATE: July 12, 1999



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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 510553.91580
First Inventor or Application Identifier Brian J. Thomas
Title Electrolyte Baffling Plug
Express Mail Label No. EJ636881365US

APPLICATION ELEMENTS

See MPEP Chapter 600 concerning utility patent application contents

ADDRESS TO:

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- 1 ☒ Fee transmittal Form
(Submit an original and a duplicate for fee processing)
- 2 ☒ Specification [Total Pages 18]
(preferred arrangement set forth below)
- Descriptive title of the invention
 - Cross References to Related Applications
 - Statement Regarding Fed Sponsored R&D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- 3 ☒ Drawing(s) (35 USC 113) [Total Sheets 5]
4. Oath or Declaration [Total Pages 3]
- a. ☒ Newly executed (original or copy)
- b. ☐ Copy from prior Application (37 CFR 1.63(d))
(for continuation/divisional with Box 17 completed)
(Note Box 5 below)
- i. ☐ DELETION OF INVENTOR(S)
Signed Statement attached deleting inventor(s) named in prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
- 5 ☐ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference herein.

- 6 ☐ Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
- a ☐ Computer readable Copy
- b ☐ Paper Copy (identical to computer copy)
- c ☐ Statement Verifying identity of above

ACCOMPANYING APPLICATION PARTS

- 8 ☒ Assignment Papers (cover sheet & documents)
- 9 ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(where there is an assignee)
- 10 ☐ English Translation Document (if applicable)
- 11 ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
- 12 ☐ Preliminary Amendment
- 13 ☒ Return receipt postcard (MPEP 503)
(Should be specifically itemized)
- 14 ☐ *Small Entity Statement filed in prior application
Statement(s) ☐ Status still proper and desired
- 15 ☐ Certified copy of priority Document(s)
(if foreign priority is claimed)
- 16 ☐ Other:

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Prior application information: Examiner _____ Group/Art Unit _____

18. CORRESPONDENCE ADDRESS

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ELECTROLYTE BAFFLING PLUG

CROSS-REFERENCE TO RELATED APPLICATIONS

Not Applicable

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STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

FIELD OF INVENTION

- 10 The present invention relates generally to the art of electric storage batteries, for example automotive and truck batteries. More particularly, the invention relates to venting systems for such batteries which provide a flow path for the escape of hydrogen and oxygen formed during the electro-chemical reactions which take place in such batteries, while providing resistance to acid spewing. Still more specifically, the
- 15 invention relates to a cover design so that it will not become entrained in the flow of gases escaping through the flow path of the venting systems.

BACKGROUND OF THE INVENTION

- 20 Conventional lead-acid batteries, such as those used for automobiles and trucks, generally include a number of cells disposed in a battery housing. Each cell typically includes a plurality of positive and negative battery plates or electrodes, and separators are sandwiched between the plates to prevent shorting and undesirable electron flow during the reactions which take place during manufacture and use of the batteries. The plates and separators are immersed in electrolyte disposed in the cells, the most common
- 25 type of electrolyte being aqueous sulfuric acid and infrequently the electrolyte is in the form of a gel. The positive plate generally is constructed of a lead-alloy grid covered with lead oxide, while the negative plate generally contains lead as the active material, again covering a lead alloy grid.

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In most battery constructions the battery housing includes a box-like base to contain the cells and which is made from a moldable resin. The housing is generally rectangular in horizontal cross-section, the cells being provided by vertical casing, the cover including terminal bushings and a series of filler holes to allow electrolyte to be added to the cells and to permit whatever servicing is required. To prevent undesirable spillage of electrolyte from the fill holes, most prior art batteries have included some sort of filler hole cap.

The electromotive potential of each battery cell is determined by the chemical composition of the electroactive substrates employed for the electrochemical reactions. For lead-acid batteries, such as those described above, the potential is usually about two volts per cell, regardless of cell volume. Vehicles manufactured by original equipment manufacturers (OEMs) typically require twelve volt batteries, so most of today's batteries include six cells (6 cells x 2 volts per cell=12 volts). The size of the housing for the battery is selected for the "envelope" for a particular vehicle, i.e. the physical dimensions defined by the vehicle manufacturer for containment of the battery in the engine compartment.

Battery electrolyte spillage or spewing can be caused by a number of factors, including vibration or tilting as a vehicle maneuvers during normal use. Electrolyte escape may also be caused by battery overheating, a problem especially pronounced in recent years with smaller engines, which tend to run hotter than prior engines.

In addition to preventing spillage or spewing of electrolyte from the cells, the battery cover design and the filler caps need to perform an important and different function. This is because gases are liberated from lead-acid batteries during the charge and discharge reactions. Such reactions start at the time the battery is originally charged (called the "formation process") by the manufacturer or by the retailer or vehicle manufacturer. They also occur during normal operation of the battery. Factors such as high current charge and discharge conditions, and changes in temperature, can affect the rate at which gas evolution occurs. Control of gas generation and evolution in lead-acid battery construction is particularly important, because the gases are hydrogen and

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oxygen, and it is important to vent such gases in a controlled way from the battery to prevent pressure buildups in the housing which could lead to electrolyte leaks, housing failures, or most significantly explosions within the housing. It is also desirable, and well known, to prevent an external flame from entering the battery through gas exhaust

5 ports.

The control for releasing gases from the electrolyte cells has often been accomplished by providing gas release slots on the primary cover in addition to the barrel openings. One drawback for providing such gas release slots is that during the formation process, the gas release slot become an additional passageway through which electrolytes

10 escape. As a result, during the formation process, these gas release slots need to be blocked off in addition to the barrel openings.

Two of the problems previously mentioned, i.e. electrolyte spewing and gas evolution, are really interrelated and important in the construction of an effective cover and vent system. For example, electrolyte may enter the vent cap through several

15 mechanisms. One mechanism is through vibrational or tilting flow of electrolyte in the cap, and another is through a mechanism frequently referred to as pumping. The latter occurs when gas evolved in the battery bubbles from the cells and carriers or forces electrolyte out the fill hole in into the cap. When electrolyte enters the caps of some prior designs it may be carried out the exhaust passageway and cause damage to external

20 battery components, such as the battery terminals or adjacent engine components.

One particularly useful venting system to minimize the entrance of electrolyte into the flow path of the evolved gases is described in commonly owned U.S. Pat. No. 5,702,841. The venting system includes a base containing the cells covered by a primary cover having a barrel extending into each cell. A secondary cover having baffles and

25 splash guards is bonded to the primary cover to form chambers which allow the gases to escape while inhibiting the electrolyte from following the gas flow path. This particular system, however, requires filling the cells with electrolyte prior to bonding the secondary cover to the primary cover. The step of bonding the secondary cover to the primary cover, such as by heat sealing, after the cells are filled with the electrolyte adds an

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additional expense to the battery assembly process. It is preferable to accomplish all of the bonding processes prior to introducing the electrolyte into the cells.

SUMMARY OF THE INVENTION

5 The present invention provides a battery of the type having electrolyte therein, comprising a case defining at least one electrolyte containing cell, and a primary cover bonded to the case. The primary cover has a barrel extending into the electrolyte cell. A secondary cover bonded to the primary cover top, and an aperture concentric with the primary cover barrel. A baffling plug is disposed in the secondary cover aperture and
10 extends into the barrel.

 The baffling plug has an annular base having a top, bottom, and outer surface. A lid closes said base top, and splash guards prevent the electrolyte from splashing out of the cells while allowing gas to escape. A primary retaining member formed part of said base retains the plug in the aperture.

15 A general object of the present invention is to provide a battery which is economical to manufacture. This objective is accomplished by providing a battery with a cover comprising a primary and secondary cover bonded to the battery base prior to filling the cells with an electrolyte through the fill holes. The fill holes are sealed by pressing the baffling plugs into the fill holes.

20 Another objective of the present invention is to provide a baffling plug which inhibits the escape of electrolytes from the battery cell while providing a path for escaping gases. This objective is accomplished by providing a baffling plug having a pair of splash guards which is disposed in the fill hole for each cell.

 Additional objects, features and advantages will become apparent upon
25 consideration of the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

 Fig. 1 is an exploded top perspective view of a battery incorporating the present invention;

Fig. 2 is a sectional view of the battery cover taken along line 2-2 of Fig. 1;

Fig. 3 is a sectional view of the secondary battery cover with baffling plugs taken along line 3-3 of Fig. 1.

Fig. 4 is a top perspective view of the primary cover and a bottom perspective view of the secondary cover with the baffling plugs of Fig. 1;

Fig. 5 is a sectional view of the primary cover taken along line 5-5 of Fig. 4;

Fig. 6 is a sectional view of the secondary cover with a baffling plug taken along line 6-6 of Fig. 4;

Fig. 7 is a sectional view of the secondary cover with a partially inserted baffling plug taken along line 6-6 of Fig. 4; and

Fig. 8 is a perspective view of a primary cover and a secondary cover according to a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Before proceeding to the detailed description of the preferred embodiment, several general comments are warranted with regard to the applicability and the scope of the present invention.

First, the present invention is illustrated in connection with a centerline vent battery 10 shown in Fig. 1, in which the vents are aligned along the center axis of the battery, and a centerline post battery, in which the electrodes (or posts as they are commonly called) are aligned along the center axis of the battery. These two configurations are commonly used at the present in connection with automotive and truck batteries. However, the principles of the invention could readily be adapted to other configurations.

Second, the present invention is illustrated in connection with a six-cell battery. The invention could easily be adapted to batteries having a different number of cells, such as 4 or 8 cells.

In the following discussion of the present invention applied to the six-cell battery, the six cells and their corresponding structure are identified with suffixes *a-f*. Elements

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which correspond to any of the six cells are labeled as "NNx," where "NN" is the number identifying the structural element and "x" is the letter identifying the associated cell.

When only "NN" is referenced, it is intended that the discussion of the element "NN" applies generically to all other like elements.

5 Proceeding now to a description of the first and the preferred embodiment of the present invention, the perspective view of a primary cover 20 and a secondary cover 40 are illustrated in FIG. 1. The primary cover 20 is adapted to fit over a conventional battery casing 12 of the type which includes six cells containing battery plates, separators and electrolyte. In the illustrated, rectangular configuration, the primary cover 20
10 includes a negative terminal post 60 and a positive terminal post 65. The two covers 20, 40 are typically made from the same type of material used for conventional batteries and battery casing, namely polyethylene or polypropylene materials which are able to withstand the harsh environment of lead-acid batteries.

As shown best in FIG. 2, a lip 53 is provided around the edge of the primary
15 cover 20 to allow it to be attached to the battery casing in a conventional manner, which includes sealing the two components through adhesives, heated platens, ultrasonic welding, and other techniques known in the art for joining such materials. Likewise, a lip 55 is provided around the edge of the secondary cover 40 to allow it to be attached to the primary cover 20 in a similar conventional manner. As best seen in FIGS. 5 and 6,
20 the lip 55 of the secondary cover 40 is inserted into recessed grooves 54 provided on the primary cover 20.

The attachment of the terminals to the electrodes of the battery cells located beneath the primary cover 20 will not be explained in detail, as those components, in and of themselves, are not part of the present invention. It will be understood, however, that
25 the negative plates of the cell located beneath negative terminal post 60 will be coupled electrically to that terminal post, while the positive plates of the cell located beneath positive terminal post 65 will be similarly coupled to that terminal post.

Primary cover 20 includes six splash barrels, numbered 22a, 22b, 22c, 22d, 22e and 22f (See FIG. 2), and arranged in a linear, spaced-apart relationship, as illustrated

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best in FIG. 4. The barrels 22a-f extend downwardly from the surface of the primary cover 20 and are positioned for alignment with the respective cells of the battery when the primary cover 20 is attached to the battery casing.

FIG. 2 is a sectional view of the primary cover taken along line 2--2 of FIG. 1 and shows barrels 22a-f. The view of barrel 22a is a plan view, whereas views of barrels 22b-f are sectional views. The structure of the barrels 22a-f is identical and a discussion of one barrel applies equally to the other five barrels. As shown in FIG. 2, each barrel 22 has a generally cylindrical tubular portion 23 which extend downward into its respective cell.

At the bottom tip of the barrel 22, on a side away from the posts 60, 65, a generally rectangular cutout 24 is provided. The cutout 24 is provided to allow electrolyte to flow more easily into the cells of the battery when the battery is initially filled with electrolyte. The cutout 24 is positioned on a side of the barrel away from the posts 60, 65, because electrolyte filling is usually conducted with the battery tilted with the posts 60, 65 higher with respect to the barrels 22a-f

The primary cover 20 provides a plurality of baffles which tend to isolate electrolytes which escape from the cells of the battery through the barrels 22a-f. One set of such baffles defines the walls 32 which isolate the primary cover 20 six sectors 26a-f. Each sector 26 has a generally rectangular shaped and a lower surface 27 (labeled in FIG. 5) which is inclined. FIGS. 4 and 5 show the incline of the lower surface 27 to be increasing in a direction away from the centerline of the battery. The inclined lower surface 27 allows the electrolyte which has escaped into the sector 26 to drain into the barrel 22 by the force of gravity.

Another set of baffles is a set of c-shaped ridges 29a-f (only one labeled) which is located above and around each barrel 22. The c-shaped ridges 29 isolate the barrels 22 from the sector 26 except through the open section of their c-shape. As shown in FIG. 4, the open section of a c-shaped ridge 29 is aligned toward the low side of the inclined surface 27. The alignment of the open section in such a manner is important to combat electrolyte leakage from tilting. When the battery is tilted post side up, the electrolyte

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will be trapped by the closed section of the c-shaped ridge 29. When the battery is tilted post side down, the electrolyte will be trapped by the partition wall 32 adjacent to the open section and will eventually drain back into the cell.

Adjacent to the open section of the c-shaped ridge 29, a flat portion 30 is
5 provided on the inclined surface 27. The flat portion 30 allows the electrolyte to drain more easily into the barrel 22 once any electrolyte which escaped into sector 26 reaches the open section of the c-shaped ridge 29. As shown in FIG. 5, the height of the c-shaped ridge 29 is equal to the height of the walls 32 which partition the primary cover 20 into the sections 26a-f. The primary cover 20 also has formed thereon two circular ridges 31a
10 and 31f which define receptacles 33a and 33f. These will be described hereafter.

Referring back to Fig. 1, the secondary cover 40 is joined to the primary cover to allow gases released from the cells to escape while preventing the electrolyte in the battery to leak out. The secondary cover 40 has a plurality of baffles which generally correspond to the plurality of baffles arranged on the primary cover 20. When the
15 secondary cover 40 is attached to the primary cover 20, and the baffles on the primary cover are joined to the baffles on the secondary cover, a plurality of openings emerge through the baffles. These openings define passageways through which evolved gases released from the cells of the battery may escape.

The secondary cover 40 also has a plurality of fill holes 80a-f (only one labeled),
20 each of which are surrounded by a retention ring 82 (only one labeled), and are arranged to correspond concentrically with the barrels 22a-f of the primary cover 20. The fill holes 80a-f provide a path for the electrolyte when filling the cells. The retention rings 82a-f have an inside diameter substantially equal to the fill hole diameters, and extend away from the secondary cover bottom. A retention ring inner wall 84a-f substantially
25 parallel the fill hole axes 86a-f engages a retaining member 88a-f of a baffling plug 90a-f to retain the member in the fill hole and form a seal to prevent the escape of the electrolyte.

Referring to Fig. 4, the secondary cover 40 has o-shaped ridges 46a-f (only one labeled) which are concentric with the retention rings 82a-f, and are aligned to

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correspond with the c-shaped ridges 29a-f of the primary cover 20. The joining of the o-shaped ridge 46 with the c-shaped ridge 29 creates a cylindrical barrier which is sealed on one side to the primary cover 20 and on the other side to the secondary cover 40. The only break or opening through this cylindrical barrier is through the open section of c-shaped ridge 29. A tooth 92 extending from the O-shaped ridge 46 into the open section of the c-shaped ridge 29 reduces the size of the opening when the primary and secondary covers are assembled together. The smaller opening further improves the baffling characteristics of the assembled covers.

The secondary cover 40 further includes a plurality of partition walls 47 which correspond to the partition walls 32 on the primary cover 20. The joining of the walls 47 with the walls 32 creates a plurality of compartments, whose wall boundaries define a rectangular shape. The only openings which allow gaseous communication between these compartments are through breaks 48 provided in the walls 47 of the secondary cover 40. The breaks 48 are positioned adjacent to a wall side which faces the open section of the c-shaped ridge 29. The positioning of the breaks 48 in such a manner is important to combat electrolyte leakage from tilting. When the battery is tilted post side up, electrolytes will be trapped at the far end (the end which is farther from the center axis of the battery), because there are no breaks in the partitions of the compartment at this end. When the battery is tilted post side down, electrolytes could flow over partition wall 32 through the break 48 provided on the secondary cover 20, but before this happens, tests conducted have shown that most, if not all, of the electrolyte will drain back into the cell.

External ports 70a, 70f are also provided on the secondary cover 40. Each external port 70 is in gaseous communication with a corresponding cylindrical conduit 71, which is surrounded by a partially open circular ridge 72 formed on the secondary cover 40. The partially open circular ridge 72 is aligned to be opposite to the circular ridge 31, such that when the two are joined, the opening through the partially open circular ridge 72 defines the sole passageway for gas.

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The cylindrical conduit 71 is received in the receptacle 33 of the primary cover 20. The diameter of the cylindrical conduit 71 is less than that of the receptacle 33 and when received within the receptacle 33, the cylindrical conduit 71 does not extend to the bottom of the receptacle 33. In other words, gaps remain in the annular region between cylindrical conduit 71 and the receptacle 33 and between the bottom of the receptacle 33 and the axial end of the cylindrical conduit 71.

In the preferred embodiment, bosses 34 are provided atop the bottom surface of the receptacle 33 (see FIG. 5). A porous plate 35 (only shown in FIG. 5) is inserted into the receptacle 33 atop the bosses 34 before the cylindrical conduit 71 of the secondary cover is received into the receptacle 33. The bosses 34 prevent the submersion of the porous plate 35 under the rare conditions where electrolytes have escaped into receptacle 33.

The evolved gases from the cells of the battery reach the external ports 70a, 70f in the following manner. First, gases are evolved in the respective cells as a result of charge and discharge reaction taking place therein. Second, these gases travel upwards in the annular region between the outer guard 42 and the inner guard 43, until they escape through the slots 44 into the cylindrical chamber defined by the joining of c-shaped ridge 29 and the o-shaped ridge 46. The gases then travel through the open section in the c-shaped ridge 29 into the rectangular shaped compartment. From there, they escape through the break 48 in the partition walls 47, until they reach the rectangular shaped compartment corresponding to one of the end sectors, either 26a or 26f. The gases then enter the annular region between the receptacle 33 and the cylindrical conduit 71 through the partially open section of the partially open circular ridge 72. At this point, the gases pass through the porous plate 35 into the center region of the cylindrical conduit 71 and out the external port 70. The porous plate 35 functions as a final device for preventing electrolyte from reaching the external port 70, if any electrolyte has traveled the just described circuitous route to reach the porous plate 35.

As best shown in Figs. 3 and 6, baffling plug 90 is pressed into the fill hole 80 formed in the secondary cover 40 to inhibit the escape of the electrolyte from the cells.

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Each baffling plug 90 has a lid 94 with a bottom 96, a pair of tubular splash guards 42, 43 extending from the lid bottom 96, and a retaining member 88 for retaining the plug 90 in the fill hole 80. The splash guards include a coaxially arranged outer tubular splash guard 42 and inner tubular splash guard 43. When the plug 90 is pressed into the fill hole 80 the splash guards 42, 43 extend into the barrels 22 of the primary cover 20. In the preferred embodiment, the retaining member 88 is formed as an integral part of the outer splash guard 42.

Looking particularly at Fig. 7, the outer guard 42 has wedge shaped portion to provide a temporary retaining member during battery assembly. The guard 42 has an outer surface 98 with a ridge 100 having an outer diameter greater than the fill hole diameter to form the wedge shape. As shown in Fig. 7, by providing a ridge diameter larger than the fill hole diameter, the outer guard 42 is cammed inward when the ridge 100 is forced through the fill hole 80 and retention ring 82, and expands once the ridge 100 passes through the retention ring 82. Advantageously, the ridge 100 is a temporary retaining member and allows the plugs 90a-f to be loosely inserted into the fill holes 80a-f after the cells are filled with the electrolyte, and prior to the plugs 90a-f being pressed into place further down an assembly line. The temporary retaining members prevents the plugs 90a-f from popping out as the battery travels down the assembly line.

The outer guard 42 and the inner guard 43 are substantially the same length. The extension of these splash guards into the barrel 22 ends near the line indicated by arrow 51 (shown in Fig. 5). The length of the tubular splash guards 42, 43 is critical because splash guards which are too long tend to create pumping action on the electrolyte contained in the cells which would force electrolyte into the covers. Splash guards which are too short do not prevent splashing satisfactory.

The outer tubular splash guards 42a-f have slots 44a-f formed through their surfaces. Explosive gases evolved in the cells escape through these slots 44a-f. The preferred embodiment has four slots for each outer tubular splash guard 42. The slots are formed symmetrically and extend from the lower tip toward the retaining member 88.

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Each inner tubular splash guard 43 is aligned coaxially with a respective outer tubular splash guard 42 and defines an inner chamber 45 at its center. The only opening into the inner chamber 45 is through its bottom opening, so any evolved gases and electrolyte driven into the inner chamber 45 are returned to the cells through the bottom opening of the inner chamber 45.

The tubular splash guards 42, 43 operate to knock electrolytes back into the cells when the battery is being vibrated. The slots 44 allow adequate release of the gases evolved in the cells. It is preferred that the slots 44 extend along the whole length of the outer guard 42, because the desired amount of gaseous communication through the slots 44 is achieved above the barrel 22 in the region encompassed by c-shaped ridge 29, the width of which is large enough to permit gaseous communication with the annular region between the inner and outer tubular members.

Each plug 90a-f is retained in the respective fill hole 80a-f by the respective retaining member 88a-f. In the preferred embodiment, the retaining member 88 is a wedge-shaped flange surrounding the annular base 92 having an angled surface 106 extending from the base bottom 96 outwardly toward the base top 94, and an orthogonal surface 88 extending radially away from the base 88. Forcing the plug 90 into the fill hole 80 compresses the retaining member 88 against the retention member inner wall 84 to create an interference press fit which seals the fill hole 80 and retains the plug 90 therein. Advantageously, the compressed retaining member 88 presses against the retention member inner wall 84 causing a cold flow of the retention ring material to form a ring seal which prevents the electrolyte from escaping through the fill hole 80.

FIG. 7 is a perspective view of a venting system according to a second embodiment of the present invention. In the second embodiment, the posts 60, 65 of the battery are aligned along the centerline of the battery. The structural elements of the primary cover 20 and the secondary cover 40 are identical to that of the first embodiment. The only differences are in the dimensions, e.g. lengths of the partition walls 32, 47 and the length of the secondary cover 40.

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Using the above described embodiments, venting of evolved gases and prevention of electrolyte leakage are achieved favorably. The venting of the gases is achieved through the passageways described above. The prevention of electrolyte leakage is achieved in the following manner.

5 First, the coaxial splash guards operate to suppress electrolyte leakage into the cylindrical chamber which is formed when the c-shaped ridge 29 and the o-shaped ridge 46 are joined together. If electrolyte still leaks into this cylindrical chamber and into the sector 26 through the open section of the c-shaped ridge, the electrolyte will not enter an adjacent rectangular shaped compartment unless it has accumulated sufficiently to flow

10 over the partition walls 32 through the break 48. Otherwise, gravity acting on the electrolyte through the inclined surface 27 will force the electrolyte toward the open section of the c-shaped ridge 29 to be drained into the barrel 22. Further, even if electrolyte reaches the end sectors 26a, 26f, it must accumulate sufficiently at the end sectors 26a, 26f, so as to reach a level higher than the ridge height of the circular ridge 31

15 in order for the electrolyte to leak into the receptacle 33 through the partially open section of the partially open circular ridge 72. Leakage of electrolyte is further prevented by the porous plate 35 which is effective against electrolyte leakage as long as the porous plate 35 is not completely submerged in the electrolyte.

While particular embodiments according to the invention have been illustrated

20 and described above, it will be clear that the invention can take a variety of forms and embodiments within the scope of the appended claims.

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CLAIMS

We claim:

1. A battery of the type having electrolyte therein, the vent cap assembly comprising:
 - a casing defining at least one electrolyte containing cell;
 - a primary cover bonded to said casing having a top side, bottom side, and
 - 5 at least one barrel extending away from said bottom side into said cell;
 - a secondary cover bonded to said primary cover top, and having a top side, bottom side, and at least one aperture concentric with said primary cover barrel; and
 - a baffling plug disposed in said secondary cover aperture and extending into said barrel.
2. The battery of claim 1, wherein said baffling plug has a retention member for retaining said plug in said aperture.
3. The battery as in claim 1, wherein said baffling plug forms a seal in said aperture.
4. The battery as in claim 3, wherein said seal is formed by a cold flow of material surrounding said baffling plug.
5. The battery of claim 1, wherein said baffling plug has a temporary retaining member for retaining said plug in said aperture prior to engaging said retention member.
6. The battery as in claim 1, wherein an o-shaped ridge formed on said secondary cover top side surrounds said aperture and corresponds with a c-shaped ridge formed on the primary cover bottom side.

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7. The battery as in claim 6, wherein a tooth formed on said o-shaped ridge extends into an opening formed by said c-shaped ridge.

8. The battery as in claim 1, wherein the baffling plug has a lid with a bottom, an inner tubular splash guard extending away from said lid bottom, an outer splash guard concentrically spaced from said inner tubular splash guard, and a primary retaining member formed part of said outer splash guard.

9. A battery cover suitable for use with a battery casing defining at least one electrolyte containing cell, comprising:

a primary cover having a top side, bottom side, and at least one barrel extending away from said bottom side;

5 a secondary cover mounted to said primary cover top, and having a top side, bottom side, and at least one aperture concentric with said primary cover barrel; and

a baffling plug disposed in said secondary cover aperture and extending into said barrel.

10. The battery cover of claim 9, wherein said baffling plug has a retention member for retaining said plug in said aperture.

11. The battery as in claim 9, wherein said baffling plug forms a seal in said aperture.

12. The battery as in claim 11, wherein said seal is formed by a cold flow of material surrounding said baffling plug.

13. The battery cover of claim 9, wherein said baffling plug has a temporary retaining member for retaining said plug in said aperture prior to engaging said retention member.

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14. The battery cover as in claim 9, wherein a retaining ring surrounds said aperture.

15. The battery cover as in claim 9, wherein an o-shaped ridge formed on said secondary cover top side surrounds said aperture and corresponds with a c-shaped ridge formed on the primary cover bottom side.

16. The battery cover as in claim 15, wherein a tooth formed on said o-shaped ridge extends into an opening formed by said c-shaped ridge.

17. The battery cover as in claim 9, wherein the baffling plug has a lid with a bottom, an inner tubular splash guard extending away from said lid bottom, an outer splash guard concentrically spaced from said inner tubular splash guard, and a primary retaining member formed part of said outer splash guard.

18. An electrolyte baffling plug comprising:
a lid having a bottom;
an inner tubular splash guard extending away from said lid bottom;
an outer splash guard concentrically spaced from said inner tubular splash
5 guard; and
a primary retaining member formed part of said outer splash guard.

19. The baffling plug as in claim 18, wherein a temporary retaining member is formed on said outer splash guard.

20. The baffling plug as in claim 19, wherein said temporary retaining member is a ridge formed on an outer surface of said outer splash guard.

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22. The baffling plug as in claim 18, wherein said primary retaining member is a flange formed part of said outer splash guard, and having an engagement surface.

[illegible]

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Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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PTO/SB/01 (6-95)
Approved for use through 9/30/98. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION ☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing	Attorney Docket Number	510553.91580
	First Named Inventor	Brian J. Thomas
	COMPLETE IF KNOWN	
	Application Number	
	Filing Date	Herewith
	Group Art Unit	
	Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ELECTROLYTE BAFFLING PLUG

(Title of the invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56

I hereby claim foreign priority benefits under Title 35, United States Code § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
n/a			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign applications numbers are listed on a supplemental priority sheet attached hereto:

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

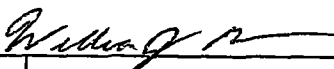
Application Number(s)	Filing Date (MM/DD/YYYY)	☐ Additional provisional application numbers are listed on a supplemental priority sheet attached hereto
n/a		

Burden Hour Statement: This form is estimated to take .4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box ☐

DECLARATION				Page 2	
I hereby claim benefit under Title 35, United States Code §120 of any United States application(s), or §365(C) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT international application in the manner provided in the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.					
U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)		
n/a					
☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto					
As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and all continuation and divisional applications based thereon, and to transact all business in the Patent and Trademark Office connected therewith:					
☐ Firm Name OR ☒ List attorney(s) and/or agent(s) name and registration number below Customer Number or label 					
Name		Registration Number		Name	
Neil E. Hamilton		19,869		Gregory A. Nelson	
Thomas W. Ehrmann		20,374		Keith M. Baxter	
Barry E. Sammons		25,608		John D. Franzini	
J. Rodman Steele		25,931		Joseph W. Bain	
Nicholas J. Seay		27,386		Robert J. Sacco	
George E. Haas		27,642		Jean C. Baker	
Michael J. McGovern		28,326		David G. Ryser	
Carl R. Schwartz		29,437		Bennett J. Berson	
Jill A. Fahrlander		42,518		Michael A. Jaskolski	
				Daniel G. Radler	
				30,577	
				31,233	
				31,356	
				34,290	
				35,667	
				35,433	
				36,407	
				37,094	
				37,551	
				43,028	
☐ Additional attorney(s) and/or agents named on a supplemental priority sheet attached hereto					
Please direct all correspondence to ☐ Customer Number or label OR ☒ Fill in correspondence address below					
Name Daniel G. Radler					
Address Quarles & Brady LLP					
Address 411 East Wisconsin Ave. Suite 2550					
City Milwaukee State WI Zip 53202-4497					
Country USA Telephone (414) 277-5000 Fax (414) 271-3552					
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.					
Name of Sole or First Inventor: A petition has been filed for this unsigned inventor					
Given Name Brian		Middle Initial J.		Family Name Thomas	
Suffix e.g. Jr.					
Inventor's Signature					Date 7/12/99
Residence: Pewaukee		State WI		Country USA	
Citizenship USA					
Post Office Address N31 W23450 Green Road					
Post Office Address					
City Pewaukee		State WI		Zip 53072	
Country USA		Applicant Authority			
☒ Additional inventors are being named on supplemental sheet(s) attached hereto					

Please type a plus sign (+) inside this box ☐

DECLARATION										ADDITIONAL INVENTOR(S) Supplemental Sheet									
Name of Additional Joint Inventor, if any:										A petition has been filed for this unsigned inventor									
Given Name		William			Middle Initial		J.		Family Name		Ross			Suffix e.g. Jr.					
Inventor's Signature												Date		7/12/99					
Residence:		Mukwonago			State		WI		Country		USA			Citizenship		USA			
Post Office Address		354 Atkinson Street																	
Post Office Address																			
City		Mukwonago			State		WI		Zip		53149			Country		USA			
														Applicant Authority					
Name of Additional Joint Inventor, if any:										A petition has been filed for this unsigned inventor									
Given Name					Middle Initial				Family Name					Suffix e.g. Jr.					
Inventor's Signature												Date							
Residence:					State				Country					Citizenship					
Post Office Address																			
Post Office Address																			
City					State				Zip					Country					
														Applicant Authority					
Name of Additional Joint Inventor, if any:										A petition has been filed for this unsigned inventor									
Given Name					Middle Initial				Family Name					Suffix e.g. Jr.					
Inventor's Signature												Date							
Residence:					State				Country					Citizenship					
Post Office Address																			
Post Office Address																			
City					State				Zip					Country					
														Applicant Authority					
Name of Additional Joint Inventor, if any:										A petition has been filed for this unsigned inventor									
Given Name					Middle Initial				Family Name					Suffix e.g. Jr.					
Inventor's Signature												Date							
Residence:					State				Country					Citizenship					
Post Office Address																			
Post Office Address																			
City					State				Zip					Country					
														Applicant Authority					

Additional inventors are being named on supplemental sheet(s) attached hereto

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FIG. 1

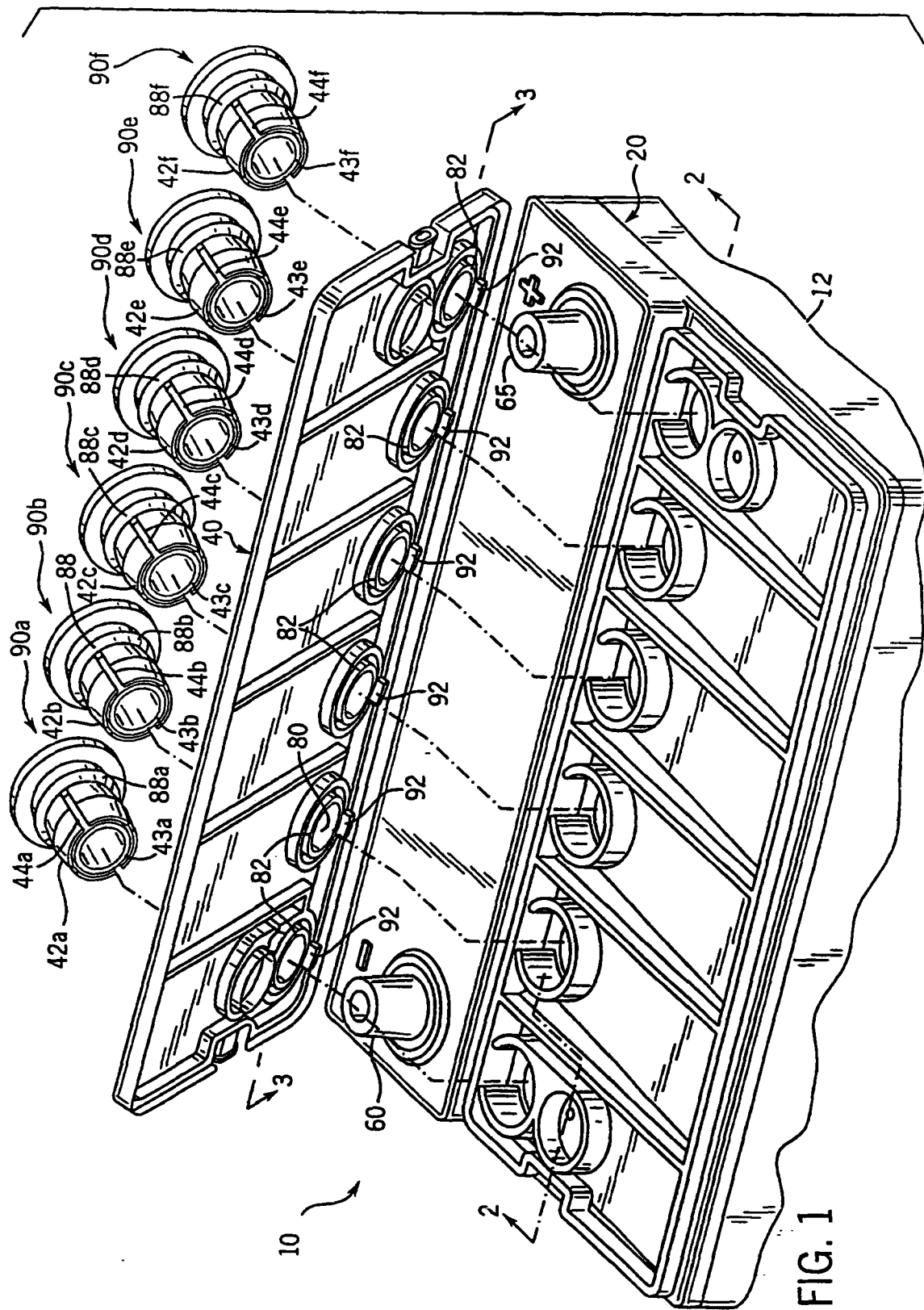


FIG. 1

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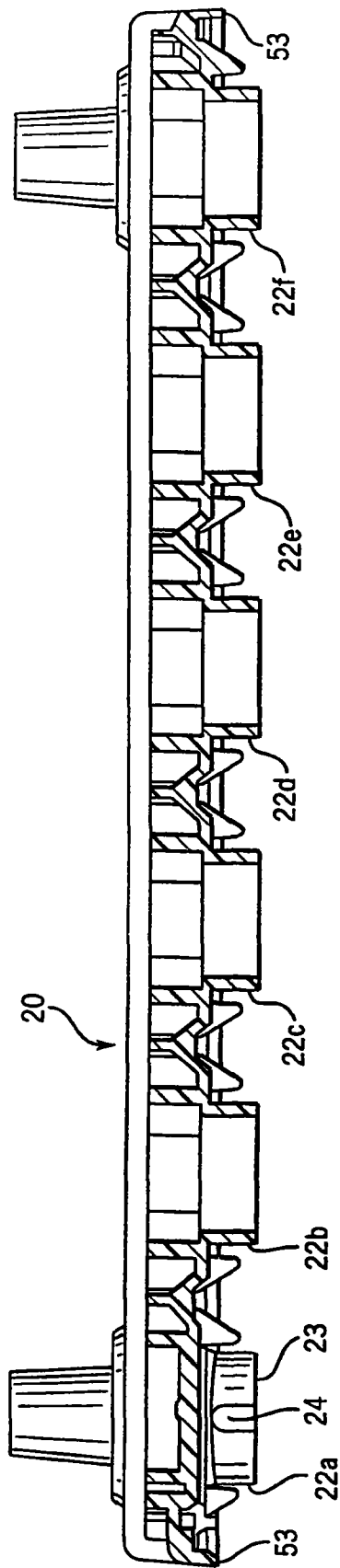


FIG. 2

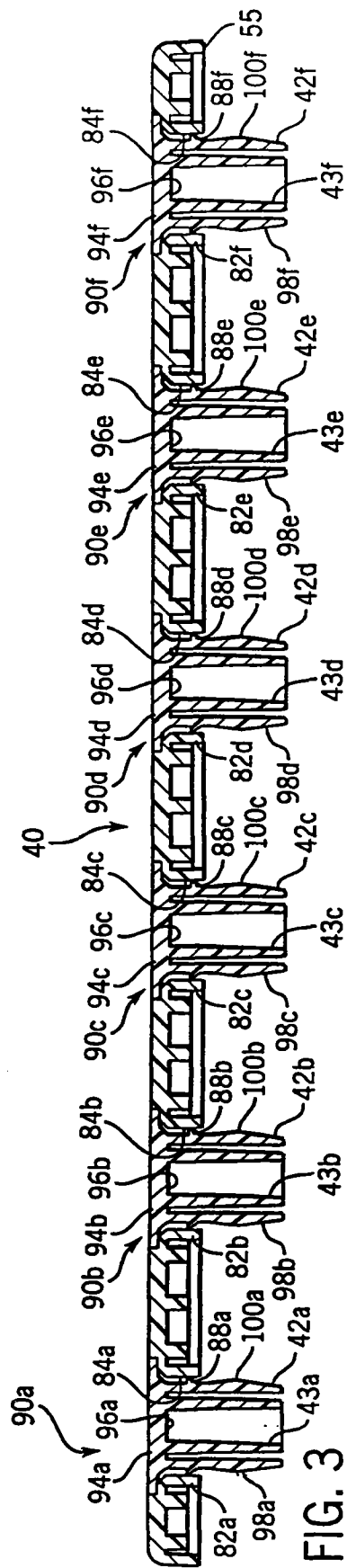


FIG. 3

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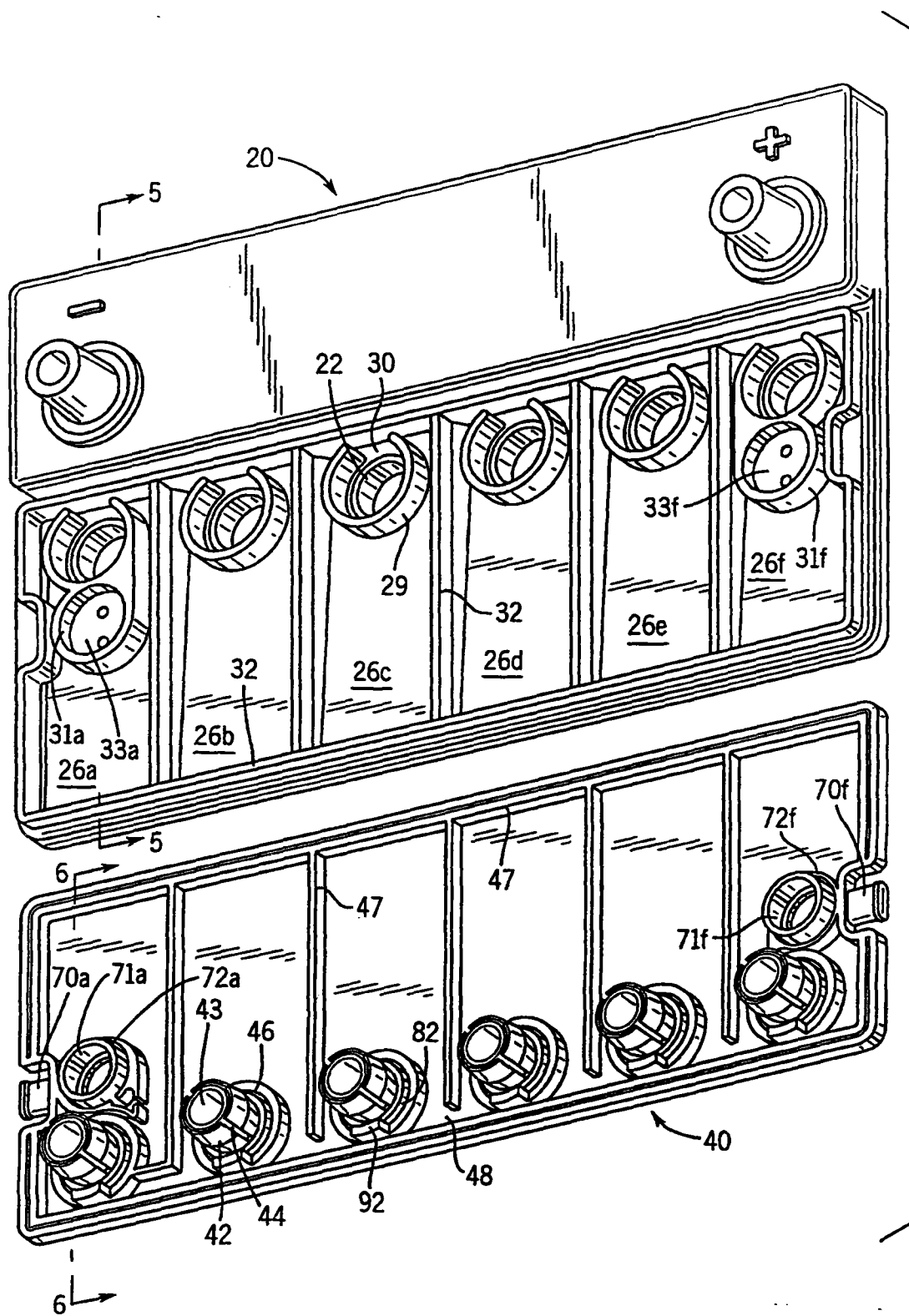
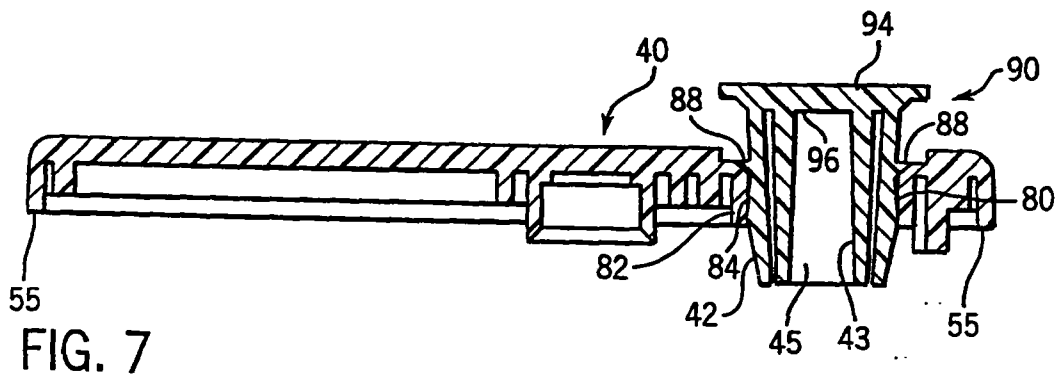
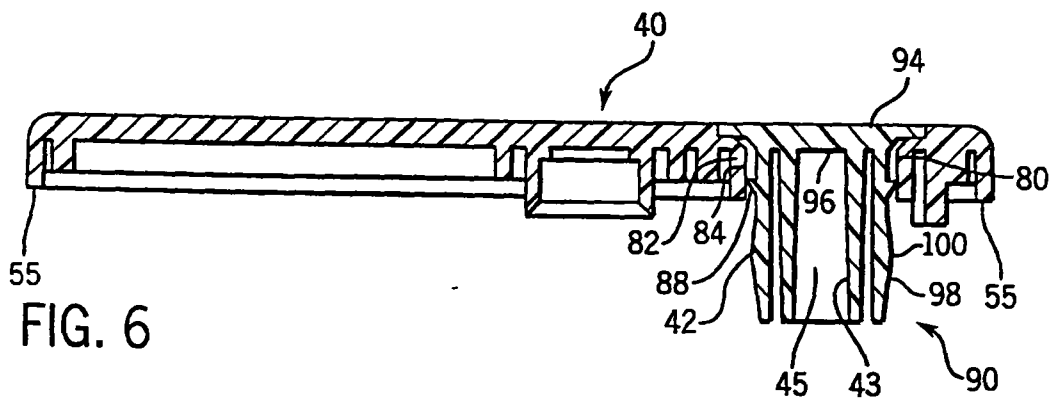
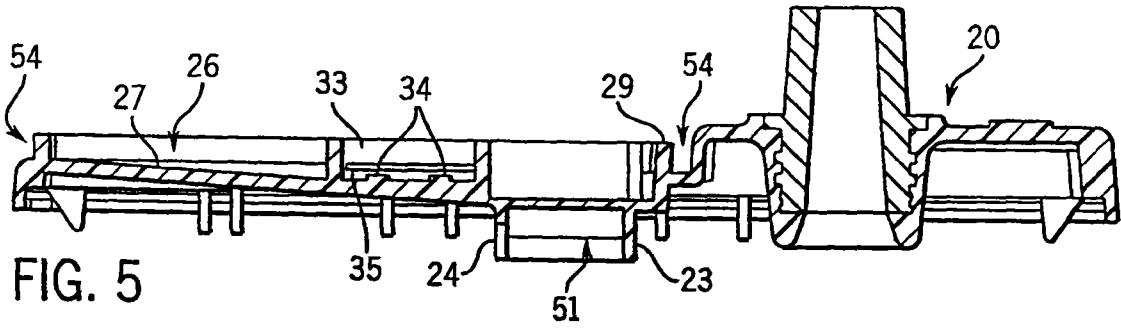


FIG. 4



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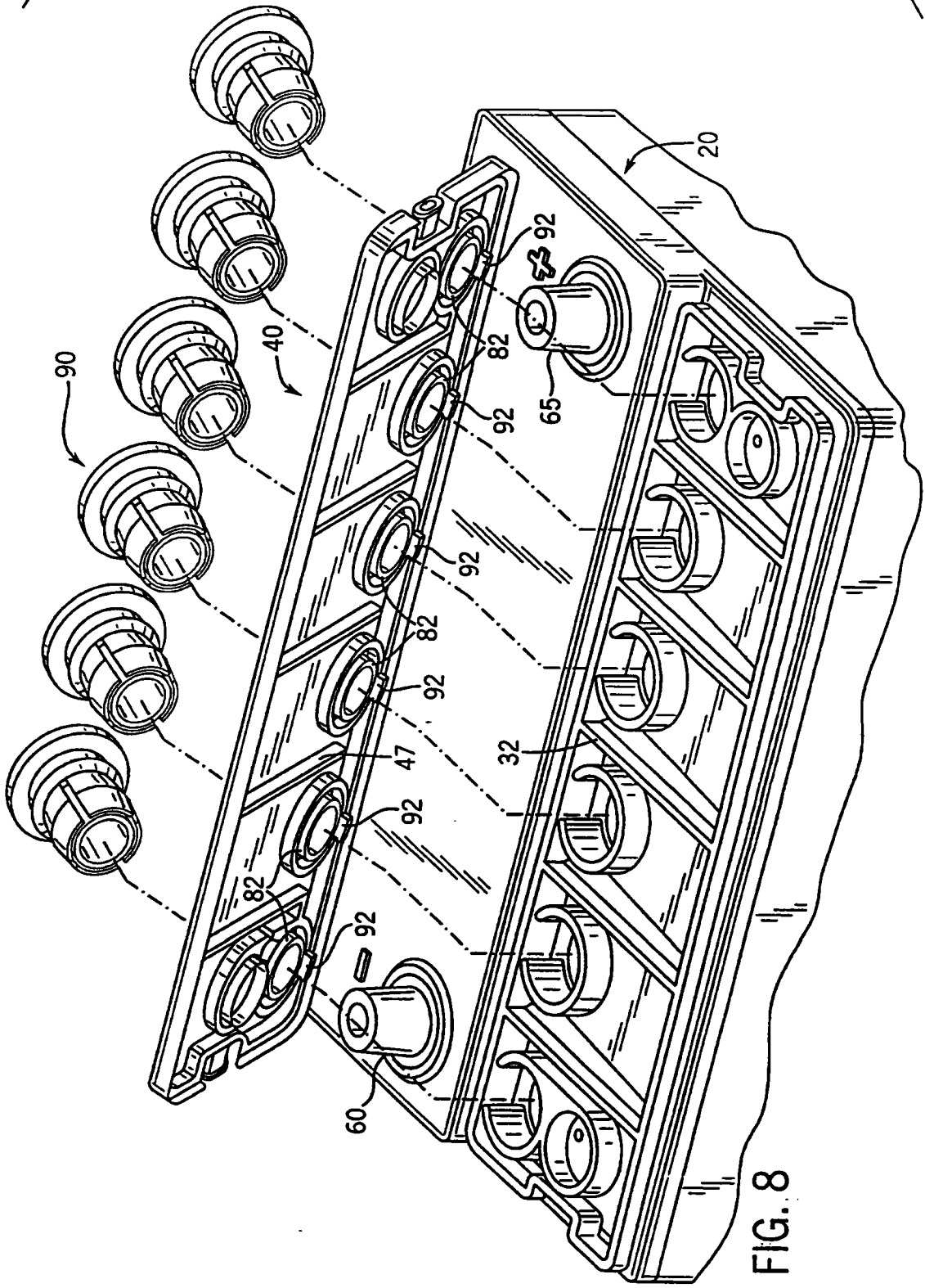


FIG. 8

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LOS ESTADOS UNIDOS DE AMÉRICA

A TODOS AQUELLOS A QUIENES LA PRESENTE VINIERE:

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS

OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS

11 DE AGOSTO DE 1999

POR LA PRESENTE SE CERTIFICA QUE LO QUE OBRA ANEXO A ÉSTA ES COPIA FIEL DE LOS REGISTROS EN LA OFICINA DE PATENTES Y MARCAS DE LOS ESTADOS UNIDOS DE AQUELLOS ESCRITOS DE LA SOLICITUD DE PATENTE MÁS ADELANTE IDENTIFICADA QUE REUNIÓ LOS REQUISITOS PARA QUE SE LE CONCEDIERA UNA FECHA DE PRESENTACIÓN SOBRE LA BASE DE 35 USC 111.

NÚMERO DE SOLICITUD : 09/351,701

FECHA DE PRESENTACIÓN: 12 DE JULIO DE 1999

POR AUTORIDAD DEL

COMISIONADO DE PATENTES Y MARCAS

N. WILLIAMS

FUNCIONARIO CERTIFICANTE

(HAY UN SELLO-OBLEA).

REIVINDICACIONES

1.- Una batería del tipo que contiene un electrolito, comprendiendo el conjunto de la tapa de venteo:

una envoltura o cuerpo, que define por lo menos una celda que contiene el electrolito;

una tapa primaria, adherida a dicha envoltura, que tiene un lado superior, un lado inferior o de fondo, y por lo menos un caño que se extiende alejándose de dicho lado inferior hacia el interior de dicha celda;

una tapa secundaria, adherida a dicha parte superior tapa primaria, y que tiene un lado superior, un lado inferior o de fondo, y por lo menos una abertura concéntrica con dicho caño de la tapa primaria; y

un tapón con deflector, dispuesto en dicha abertura de la tapa secundaria y que se extiende dentro de dicho caño.

2.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con deflector tiene un miembro de retención para retener dicho tapón en dicha abertura.

3.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con deflector forma un sello en dicha abertura.

4.- La batería de acuerdo con la reivindicación 3, en la cual dicho sello está formado por un flujo frío de material que rodea a dicho tapón con deflector.

5.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con

deflector tiene un miembro de retención temporario para retener dicho tapón en dicha abertura antes de acoplarse con dicho miembro de retención.

6.- La batería de acuerdo con la reivindicación 1, en la cual una cresta configurada en o formada sobre dicha tapa secundaria rodea a dicha abertura y se corresponde con una cresta configurada en c formada en el lado inferior de la tapa primaria.

7.- La batería de acuerdo con la reivindicación 6, en la cual un diente formado en dicha cresta configurada en o se extiende al interior de una abertura formada por dicha cresta configurada en c.

8.- La batería de acuerdo con la reivindicación 1, en la cual el tapón con deflector tiene una tapa con un fondo, una guarda contra salpicaduras interior y tubular que se extiende alejándose desde dicho fondo de la tapa, una guarda contra salpicaduras exterior separado circunferencialmente con respecto a dicha guarda contra salpicaduras tubular interior, y un miembro de retención primario que forma parte de dicha tapa contra salpicaduras exterior.

La tapa de batería adecuada para ser montada en la envoltura o caja de una batería de por lo menos celda que contiene un elemento, que comprende:

la tapa primaria, que tiene un lado superior, un lado inferior o de fondo, y por lo menos un miembro que se extiende alejándose de dicho lado

secundaria, montada en dicha parte

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superior de la tapa primaria, y que tiene un lado superior, un lado inferior o de fondo, y por lo menos una abertura concéntrica con dicho caño de la tapa primaria; y

un tapón con deflector, dispuesto en dicha abertura de la tapa secundaria y que se extiende dentro de dicho caño.

10.-La batería de acuerdo con la reivindicación 9, en la cual dicho tapón con deflector tiene un miembro de retención para retener dicho tapón en dicha abertura.

11.-La batería de acuerdo con la reivindicación 9, en la cual dicho tapón con deflector forma un sello en dicha abertura.

12.-La batería de acuerdo con la reivindicación 11, en la cual dicho sello está formado por un flujo frío de material que rodea a dicho tapón con deflector.

13.-La tapa de batería de acuerdo con la reivindicación 1, en la cual dicho tapón con deflector tiene un miembro de retención temporario para retener dicho tapón en dicha abertura antes de acoplarse con dicho miembro de retención.

14.-La tapa de batería de acuerdo con la reivindicación 9, en la cual un miembro de retención rodea a dicha abertura.

15. - La tapa de batería de acuerdo con la reivindicación 9, en la cual una cresta configurada en o formada sobre dicha tapa secundaria rodea a dicha abertura y se corresponde con una cresta configurada en c formada en el lado inferior de la tapa primaria.

16.-La tapa de batería de acuerdo con la

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reivindicación 15, en la cual un diente formado en dicha cresta configurada en o se extiende al interior de una abertura formada por dicha cresta configurada en c.

17.-La tapa de batería de acuerdo con la reivindicación 9, en la cual el tapón con deflector tiene una tapa con un fondo, una guarda contra salpicaduras interior y tubular que se extiende alejándose desde dicho fondo de la tapa, una guarda contra salpicaduras exterior separado concéntricamente con respecto a dicha guarda contra salpicaduras tubular interior, y un miembro de retención primario que forma parte de dicha guarda contra salpicaduras exterior.

18.-Una tapón con deflector para electrolito, que comprende:

una tapa, que tiene un fondo:

una guarda contra salpicaduras, tubular interior, que se extiende alejándose con respecto a dicho fondo de la tapa:

una guarda contra salpicaduras, exterior, separada concéntricamente con respecto a dicha guarda contra salpicaduras, tubular interior; y

un miembro de retención primario, que forma parte de dicha guarda contra salpicaduras.

19.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual hay un miembro de retención temporario formado en dicha guarda contra salpicaduras, exterior.

20.-El tapón con deflector de acuerdo con la reivindicación 19, en el cual dicho miembro de retención temporal es una cresta formada en una superficie exterior de dicha guarda contra

salpicaduras, exterior.

21.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual se han formado ranuras en dicha guarda contra salpicaduras, exterior.

22.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual dicho miembro de retención primario es un reborde que forma parte de dicha guarda contra salpicaduras, exterior, y que tiene una superficie de acoplamiento.

ALVARO CASTELLANOS M. & CIA.
ABOGADOS
AGENTES DE LA PROPIEDAD INTELECTUAL
Carrera 9 No. 93-09
Bogotá-Colombia

Señora

Jefe de la División de Nuevas Creaciones

Superintendencia de Industria y Comercio

Ministerio de Desarrollo Económico

E. S. D.

Ref.: Expediente No. **00.052.291**

Solicitud de Patente de Invención para:

**"UN CONJUNTO DE TAPA DE VENTEO QUE TIENE UN TAPON
DEFLECTOR PARA ELECTROLITO PARA SER UTILIZADO EN UNA
TAPA DE BATERIA".**

Solicitante: **JOHNSON CONTROLS TECHNOLOGY COMPANY**

Yo, **MARGARITA CASTELLANOS ABONDANO**, mayor de edad, identificada y domiciliada como aparece al pie de mi firma, en atención a su auto No. **2444** Notificado por Estado el **7 de Septiembre del 2000**, atentamente me permito dar repuesta al mismo de la siguiente manera :

1. **Presentación de los documentos faltantes :**

1.1 El examinador menciona que ***"Se debe allegar la traducción oficial del poder, junto con el aval del traductor, expedido por el Ministerio de Relaciones Exteriores, de conformidad con el artículo 260 del Código de Procedimiento Civil"***.

Parece que esta observación corresponde a un error del examinador, por una parte, en la primera página del poder presentado, se observan dos columnas una en inglés y la otra en español, por lo tanto su traducción está implícita; por otro lado, la traducción de la certificación del Notario Público que se encuentra en idioma inglés fue realizada por la traductora oficial María Dora Duque de Bernal, cuya traducción está debidamente

avalada por el Ministerio de Relaciones Exteriores bajo el No. 003501 el día 13 de Enero del 2000.

1.2 El documento de prioridad **US No.09/351,701** de Julio 12 de 1999, junto con su traducción, se presentó con el memorial con número de radicación **00052291 00000001** el **6 de Octubre del 2000** (Anexo fotocopia de dicho memorial).

1.3 El documento de cesión de los inventores debidamente legalizado, junto con su traducción oficial.

2. **Respuesta a las observaciones del funcionario examinador :**

2.1 Advierte el funcionario examinador que "el título no es claro respecto a lo que desea proteger. Allí se expresa un TAPON pero el contenido de la solicitud, específicamente el capítulo reivindicatorio se refiere a una BATERIA".

De conformidad con esta observación, presentamos un nuevo título como sigue: **"UN CONJUNTO DE TAPA DE VENTEO QUE TIENE UN TAPON DEFLECTOR PARA ELECTROLITO PARA SER UTILIZADO EN UNA TAPA DE BATERIA".**

2.2 El examinador con respecto al capítulo reivindicatorio menciona **" referente a las reivindicaciones 1 a 17 no es claro respecto a lo que se desea proteger. La reivindicación principal 1 se refiere a un conjunto batería y la reivindicación 13, refiriéndose a ésta principal, pretende proteger una tapa. La reivindicación principal 9 se refiere a una tapa y sus subsidiarias se refieren es a una batería en algunas reivindicaciones y a la tapa en otras"**. Se sugiere precisar el capítulo reivindicatorio respecto a lo que desea proteger.

Con el objeto de atender a esta observación, presentamos un nuevo capítulo reivindicatorio como sustitutivo del anteriormente presentado, donde se precisaron mejor las reivindicaciones, de la siguiente forma:

- En las reivindicaciones 10 y 11 se cambió su enunciado de "la batería de acuerdo con la reivindicación 9" por el siguiente enunciado **"La tapa de batería de acuerdo con la reivindicación 9"**.

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ST

- En la reivindicación 12 se cambió su enunciado de "la batería de acuerdo con la reivindicación 11" por el siguiente enunciando **"La tapa de batería de acuerdo con la reivindicación 11"**.

- La reivindicación 13 ha quedado dependiente de la reivindicación 9.

2.3 Arte final

Para atender a las observación, presento el arte final de la figura característica.

3. De acuerdo con las modificaciones introducidas, se adjuntan los siguientes anexos y documento:

- Nuevo capítulo reivindicatorio
- Nuevas tarjetas de archivo temático y de propietarios, y nuevo extracto.
- Arte final
- Documento de cesión debidamente legalizado.
- Fotocopia del memorial presentando la copia certificada del documento de prioridad US No. 09/351,701 del 12 de Julio de 1999.

Cumplido así con lo dispuesto, atentamente solicito a Ud. se continúe con el trámite correspondiente a esta solicitud de Patente de Invención.

Del Señor Jefe,


Margarita Castellanos Abondano

C.C. No. **39.779.654** de Usaquén

T.P.A. No. **70819** del C. Sup. de la Judicatura

Carrera 9 No. 93 - 09 - Santa Fe de Bogotá

Teléfonos: 610 74 80 y 610 74 60

Santa Fe de Bogotá, D.C.,

xgt/4754

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REIVINDICACIONES

1.- Una batería del tipo que contiene un electrolito, comprendiendo el conjunto de la tapa de venteo:

una envoltura o cuerpo, que define por lo menos una celda que contiene el electrolito;

una tapa primaria, adherida a dicha envoltura, que tiene un lado superior, un lado inferior o de fondo, y por lo menos un caño que se extiende alejándose de dicho lado inferior hacia el interior de dicha celda;

una tapa secundaria, adherida a dicha parte superior tapa primaria, y que tiene un lado superior, un lado inferior o de fondo, y por lo menos una abertura concéntrica con dicho caño de la tapa primaria; y

un tapón con deflector, dispuesto en dicha abertura de la tapa secundaria y que se extiende dentro de dicho caño.

2.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con deflector tiene un miembro de retención para retener dicho tapón en dicha abertura.

3.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con deflector forma un sello en dicha abertura.

4.- La batería de acuerdo con la reivindicación 3, en la cual dicho sello está formado por un flujo frío de material que rodea a dicho tapón con deflector.

5.- La batería de acuerdo con la reivindicación 1, en la cual dicho tapón con

deflector tiene un miembro de retención temporario para retener dicho tapón en dicha abertura antes de acoplarse con dicho miembro de retención.

6.- La batería de acuerdo con la reivindicación 1, en la cual una cresta configurada en o formada sobre dicha tapa secundaria rodea a dicha abertura y se corresponde con una cresta configurada en c formada en el lado inferior de la tapa primaria.

7.- La batería de acuerdo con la reivindicación 6, en la cual un diente formado en dicha cresta configurada en o se extiende al interior de una abertura formada por dicha cresta configurada en c.

8.- La batería de acuerdo con la reivindicación 1, en la cual el tapón con deflector tiene una tapa con un fondo, una guarda contra salpicaduras interior y tubular que se extiende alejándose desde dicho fondo de la tapa, una guarda contra salpicaduras exterior separado concéntricamente con respecto a dicha guarda contra salpicaduras tubular interior, y un miembro de retención primario que forma parte de dicha guarda contra salpicaduras exterior.

9.- Una tapa de batería adecuada para ser utilizada con la envoltura o caja de una batería que define por lo menos celda que contiene un electrolito, que comprende:

una tapa primaria, que tiene un lado superior, un lado inferior o de fondo, y por lo menos un caño que se extiende alejándose de dicho lado inferior;

una tapa secundaria, montada en dicha parte

superior de la tapa primaria, y que tiene un lado superior, un lado inferior o de fondo, y por lo menos una abertura concéntrica con dicho caño de la tapa primaria; y

un tapón con deflector, dispuesto en dicha abertura de la tapa secundaria y que se extiende dentro de dicho caño.

10.-La tapa de batería de acuerdo con la reivindicación 9, en la cual dicho tapón con deflector tiene un miembro de retención para retener dicho tapón en dicha abertura.

11.-La tapa de batería de acuerdo con la reivindicación 9, en la cual dicho tapón con deflector forma un sello en dicha abertura.

12.-La tapa de batería de acuerdo con la reivindicación 11, en la cual dicho sello está formado por un flujo frío de material que rodea a dicho tapón con deflector.

13.-La tapa de batería de acuerdo con la reivindicación 9, en la cual dicho tapón con deflector tiene un miembro de retención temporario para retener dicho tapón en dicha abertura antes de acoplarse con dicho miembro de retención.

14.-La tapa de batería de acuerdo con la reivindicación 9, en la cual un miembro de retención rodea a dicha abertura.

15. - La tapa de batería de acuerdo con la reivindicación 9, en la cual una cresta configurada en o formada sobre dicha tapa secundaria rodea a dicha abertura y se corresponde con una cresta configurada en c formada en el lado inferior de la tapa primaria.

16.-La tapa de batería de acuerdo con la

reivindicación 15, en la cual un diente formado en dicha cresta configurada en o se extiende al interior de una abertura formada por dicha cresta configurada en c.

17.-La tapa de batería de acuerdo con la reivindicación 9, en la cual el tapón con deflector tiene una tapa con un fondo, una guarda contra salpicaduras interior y tubular que se extiende alejándose desde dicho fondo de la tapa, una guarda contra salpicaduras exterior separado concéntricamente con respecto a dicha guarda contra salpicaduras tubular interior, y un miembro de retención primario que forma parte de dicha guarda contra salpicaduras exterior.

18.-Una tapón con deflector para electrolito, que comprende:

una tapa, que tiene un fondo:

una guarda contra salpicaduras, tubular interior, que se extiende alejándose con respecto a dicho fondo de la tapa:

una guarda contra salpicaduras, exterior, separada concéntricamente con respecto a dicha guarda contra salpicaduras, tubular interior; y

un miembro de retención primario, que forma parte de dicha guarda contra salpicaduras.

19.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual hay un miembro de retención temporario formado en dicha guarda contra salpicaduras, exterior.

20.-El tapón con deflector de acuerdo con la reivindicación 19, en el cual dicho miembro de retención temporal es una cresta formada en una superficie exterior de dicha guarda contra

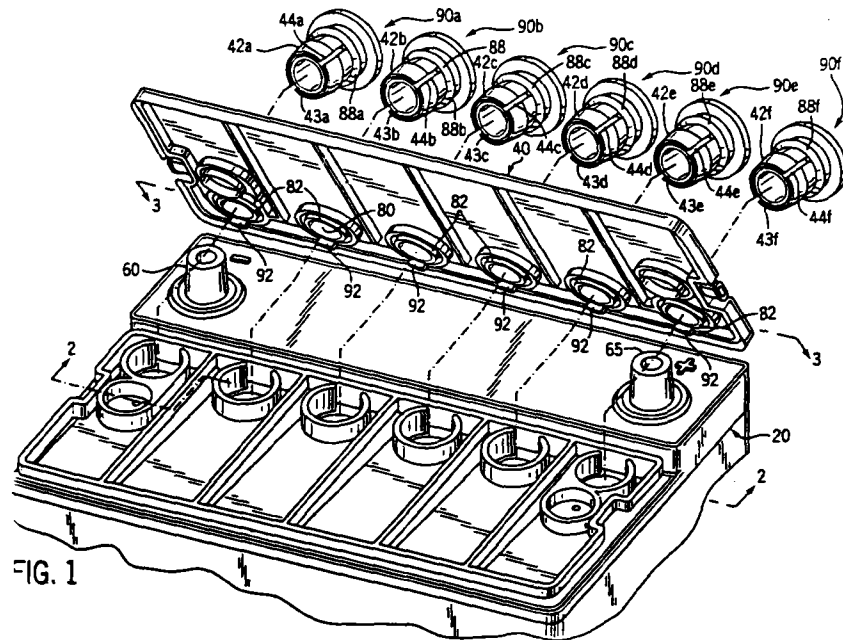
96 f

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salpicaduras, exterior.

21.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual se han formado ranuras en dicha guarda contra salpicaduras, exterior.

22.-El tapón con deflector de acuerdo con la reivindicación 18, en el cual dicho miembro de retención primario es un reborde que forma parte de dicha guarda contra salpicaduras, exterior, y que tiene una superficie de acoplamiento.





CESION PODER

ASSIGNMENT AND POWER OF ATTORNEY

El (los) suscrito (s) Brian J. Thomas y William J. Ross

The undersigned _____

en consideración al pago de la suma de _____

in consideration of the sum of _____

(10.-) que he (mos) recibido, por el presente documento cedido (cedemos) a JOHNSON CONTROLS TECHNOLOGY COMPANY

(_____), the receipt of which is hereby acknowledged, by these presents do sell, assign and transfer unto _____

una compañía constituida de conformidad con las leyes de los Estados Unidos de America

a corporation organized under the laws of _____

con oficinas en 49200 Halyard Drive, PLYMOUTH, MI 48170

having a place of business at _____

todos los derechos y títulos sobre la invención denominada "TAPON CON DEFLECTOR PARA ELECTROLITO"

all rights and title to the invention related to _____

EL CESIONARIO firma también el presente y declara que acepta dicha cesión y que confiere poder especial pero amplio y suficiente cuánto en derecho se requiere a **XIMENA CASTELLANOS A. y/o MARGARITA CASTELLANOS A.** abogadas domiciliadas en la Carrera 9 No. 93-09, Bogotá - COLOMBIA, para que conjunta o separadamente gestionen ante las competentes Oficinas o Autoridades Nacionales de Colombia la obtención del correspondiente certificado de patente para dicha invención.

THE ASSIGNEE signs these presents and declares that accepts the aforesaid assignment and that grants special power of attorney, full and sufficient as required by law, to **XIMENA CASTELLANOS A. and/or MARGARITA CASTELLANOS A.** lawyers domiciled in Carrera 9 No. 93-09, Bogotá - COLOMBIA to represent the company, jointly or separately, before the competent National Offices and Authorities of Colombia to apply for and obtain the corresponding letters Patent for said invention.

Los apoderados mencionados podrán realizar todos los actos necesarios o convenientes para los fines indicados y con este fin autorizamos a dichos apoderados para que nos representen ante cualesquiera autoridades o personas de los órdenes administrativo, contencioso-administrativo y judicial en todo lo relacionado con los siguientes actos y gestiones: a) obtención de patentes de invención, diseños industriales y modelos de utilidad; su prórroga, inscripción de su traspaso y cambio de nombre o domicilio, cancelación voluntaria y el registro de licencias de uso de esos derechos; b) Obtención de Registros Sanitarios; c) Acciones de oposición, cancelación, nulidad, medidas cautelares y en general los juicios civiles, penales, administrativos o contencioso-administrativos que promovamos o se nos promuevan pudiendo en todos los actos y gestiones arriba determinados sustituir este mandato, transigir, desistir, recibir, cancelar, renunciar, aceptar notificaciones y nombrar apoderados judiciales o extrajudiciales.

The said attorneys shall be empowered to take all steps that might be convenient or necessary for the purpose above stated, for which purpose we authorize said attorneys to represent us before any authorities or persons, specially those administrative, administrative contentious and judicial, in all matters concerning the following: a) Obtainment of patents, utility models and industrial designs; its extension, recordal of assignments, change of name or domicile, voluntary cancellation; and the registration of licenses of use of the above rights; b) Obtention of Sanitary Registrations; c) Actions of opposition, cancellation, nullity, infringement, granting of licenses; and in general the civil, criminal and administrative suits relating to those rights; actions and suits instituted by us or against us; and that in all the above matters they may substitute this Power of Attorney, compromise, desist, cancel, receive, renounce, accept notifications and appoint attorneys in fact, in or out of Court.

Dado y firmado hoy Agosto 17, 2000

Given and signed this _____

en Milwaukee, WI.

in _____

Inventors _____

Assignee _____

ALVARO CASTELLANOS M. & CIA.

ABOGADOS COLOMBIA

Carrera 9 No. 93-09 - P.O. Box 6349 - Bogotá, Colombia.
Tels.: (571) 610 7420 / 60 / 80 - Fax: (571) 610 0706 - e-mail: acastell@impsat.net.co

By: B. J. Thomas

Brian J. Thomas

Dated: 08/17/00

By: William J. Ross

William J. Ross

Dated: 8/17/00

CERTIFICACION NOTARIAL (Sociedades)

Yo, Notario Público, CERTIFICO que el _____ de 19 _____ compareció (eron) ante mí _____ a quien (es) conozco y de quien (es) me consta que tiene (n) capacidad legal y que es (son) la (s) persona (s) que firmó (aron) el documento anterior como _____ y en representación de _____ sociedad debidamente constituida y que existe legalmente bajo las leyes del Estado de _____ con domicilio en _____ Certifico además que dicha (s) persona (s) están debidamente facultada (s) para firmar el anterior documento en nombre de la citada sociedad y que los _____ para los cuales se otorga están comprendidos dentro de los fines y actividades de tal sociedad.

Lo antedicho se basa en _____ de fecha _____ que he tenido a la vista. _____ Doy fé. _____ firmado en _____

NOTARIO PUBLICO

(Individual)

Yo, Notario Público, CERTIFICO que el 17 de Agosto - 2000 de 19 _____ compareció (eron) ante mí Brian J. Thomas y William J. Ross a quien (es) conozco y de quien (es) me consta que tiene (n) capacidad legal y reconoció (eron) como suya (s) la (s) firma (s) que aparece (n) en el documento anterior, cuyo contenido ratificó (aron).

Doy fé.

Firmado en Milwaukee, WI.

NOTARIO PUBLICO

NOTARIAL CERTIFICATE (Corporations)

I, a Notary Public, CERTIFY that on _____ 19 _____ before me personally appeared _____ to me known and known to me to be of legal capacity and to be the person (s) who signed the foregoing instrument as _____ and on behalf of _____ a corporation duly organized and existing under the laws of the State of _____ whose home office is located in _____ I further certify that said individual (s) is (are) _____ authorized to sign the foregoing instrument in the name of said corporation and that the purposes for which said instrument is granted are within the scope of the object or activities of said corporation .

The foregoing is based on _____ dated _____ which I have seen. _____ I attest, _____ Signed in _____

NOTARY PUBLIC

(Individual)

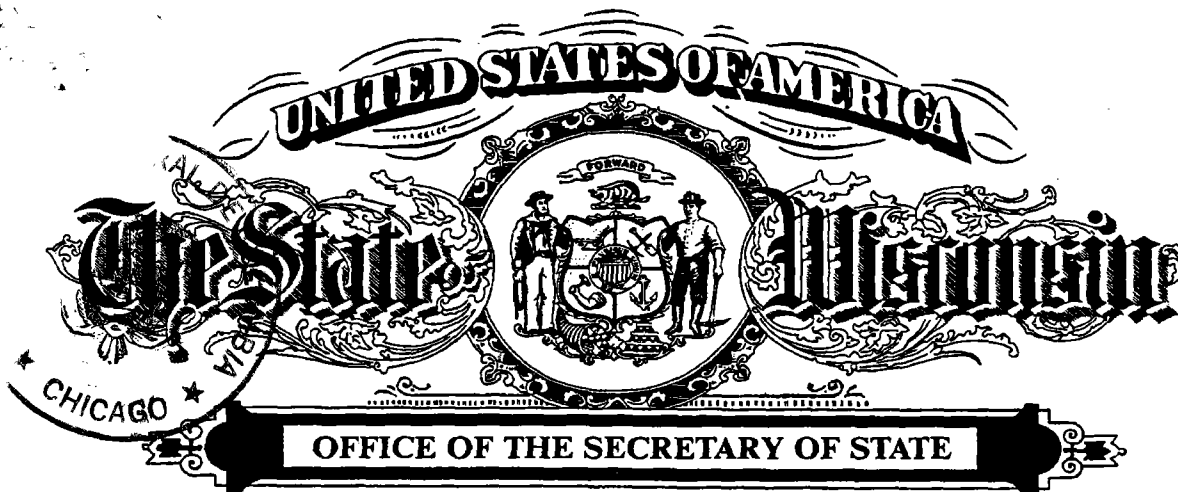
I, a Notary Public, CERTIFY that on Aug. 17, 2000 19 _____ before me personally appeared Brian Thomas & Wm. Ross to me known and known to me to be of legal capacity and acknowledge his (their) signature (s) appeareing on the foregoing instrument and ratified the same.

I attest.

Signed in Milwaukee, WI
Carol L. Riddell

NOTARY PUBLIC

My Commission Expires
3/21/04.



TO ALL TO WHOM THESE PRESENTS SHALL COME:

I, DOUGLAS LA FOLLETTE, Secretary of State of the State of Wisconsin, pursuant to §137.01(6)(a) of the Wisconsin Statutes, do hereby certify that

CAROL L. RIDDELL

whose signature and seal or stamp, as represented, appear on the annexed document, was at that time a duly commissioned and qualified Notary Public in and for the State of Wisconsin.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Wisconsin, in the City of Madison, on this day: August 24, 2000



DOUGLAS LA FOLLETTE
Secretary of State



Consulado General de Colombia

500 NORTH MICHIGAN AVENUE, SUITE 2040
CHICAGO, ILLINOIS 60611

TEL. (312) 923-1196 FAX (312) 923-1197

35719
165
10

No.1325

Chicago, agosto 31 de 2000

El suscrito Cónsul General de Colombia, **CERTIFICA**, que el señor(a) **DOUGLAS LA FOLLETTE**, quien como **SECRETARIO DE ESTADO DE WISCONSIN**, autenticó la firma del signatario del poder precedente, ejercía en la fecha las funciones indicadas y su firma corresponde a la registrada en este Consulado. Que la compañía **JOHNSON CONTROLS TECHNOLOGY COMPANY**, es una sociedad constituida de acuerdo con las leyes de EE.UU. y cumple su objeto conforme a las mismas. Que el(la) señor(a) **BRIAN J. THOMAS y WILLIAM J. ROSS**, quien en su carácter de representante legal de la citada compañía confiere el poder precedente.

La presente certificación se expide en cumplimiento del artículo 480 del Código de Comercio.

El Cónsul General no asume responsabilidad alguna por el contenido del documento.

PAGADO IMPUESTO DE TIMBRE Y DERECHOS CONSULARES

US\$57.00 (Cincuenta y siete dólares)



MINISTERIO DE RELACIONES
EXTERIORES

439013
Fernando Giron
SECRETARIA DE ESTADO
DE RELACIONES EXTERIORES
LAS FUENTES DEL CAJON

NO SE ASUME
RESPONSABILIDAD DEL TIPO

1000 SET 21 A 10 41

UIC DE LEGALIZACIONES
SANTO DOMINGO D.C.



15
97
-----TRADUCCION OFICIAL No. 2K-0909-----

de un documento escrito en Inglés, el cual para su identificación lleva el sello de la Traductora e Intérprete Oficial, Res. 2755/68 y 01144/97 de Minjusticia, al igual que la presente.

(Anexos a un poder con cesión de JOHNSON CONTROLS TECHNOLOGY CO. De Brian J. Thomas y William J. Ross)

ESTADOS UNIDOS DE AMERICA

ESTADO DE WISCONSIN

OFICINA DEL SECRETARIO DE ESTADO

A TODOS A QUIENES LOS PRESENTES LLEGAREN:

Yo, DOUGLAS LA FOLLETTE, Secretario de Estado del estado de Wisconsin, según la sección 137.01(6)(a) de los estatutos de Wisconsin, certifico por medio del presente que CAROL L. RIDDELL cuya firma y sello o estampación, según lo presentado, aparecen en el documento anexo, era en ese momento un Notario Público debidamente comisionado y habilitado en y para el Estado de Wisconsin.

EN TESTIMONIO DE LO CUAL, he impuesto aquí mi firma y he fijado el Gran sello del Estado de Wisconsin, en la ciudad de Madison, hoy día 24 de Agosto de 2000.

(fdo) Douglas La Follette

DOUGLAS LA FOLLETTE

Secretario de Estado

DORA BLIQUE DE BERNAL
TRADUCTORA E INTERPRETE OFICIAL
RES. 08750/97
REP. DEMOCRATICA

(Sello en oblea dorada)

EN ESPAÑOL, la legalización de la firma anterior por el Consulado de Colombia en Chicago No.1325 de fecha Agosto 31, 2000 y autenticación de la firma consular de Jose Fernando Gomez Mora por el Ministerio de Relaciones Exteriores de Colombia bajo el número 439013 de fecha Septiembre 21, 2000. ES TRADUCCION FIEL Y COMPLETA, a la cual me remito para su confrontación.

Bogotá, Septiembre 22, 2000.

Dora Duque de Bernal

DORA DUQUE DE BERNAL
TRADUCTORA E INTERPRETE OFICIAL
RES. 02755/68 Y 04111/97 - MINJUSTICIA
REP. DE COLOMBIA

NO SE ASUME
RESPONSABILIDAD DEL TEXTO

2000 SEP 25 A 11:50

McGonera
JEFE DE LEGALIZACIONES
SANTAFE DE BOGOTA D.C.

MINISTERIO DE RELACIONES
EXTERIORES

Dora Duque de Bernal
537921
CUNA FIRMA APARECE EN EL
DOCUMENTO DESEMPENA
LAS FIRMAS INDICADAS

COPIA 1

ALVARO CASTELLANOS M. & CIA.
ABOGADOS
Carrera 9 No. 93 - 09
A.A. 6349
Santa Fe de Bogotá, D.C., COLOMBIA

Señora

Jefe de la División de Nuevas Creaciones

Superintendencia de Industria y Comercio

Ministerio de Desarrollo Económico

E. S. D.

Ref.: Expediente No. 00.052.291

Solicitud de Patente de Invención titulada : "TAPON CON DEFLECTOR
PARA ELECTROLITO".

Solicitante: JOHSON CONTROLS TECHNOLOGY COMPANY

Yo, **MARGARITA CASTELLANOS ABONDANO**, mayor de edad,
identificada y domiciliada como aparece al pié de mi firma, atentamente me
permito presentar a usted la copia certificada del documento de Prioridad
de Americana No. 09/351,701 de Julio 12 de 1.999, junto con su
traducción.

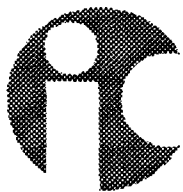
En consecuencia atentamente solicito a Ud. se anexe dicho
documento al expediente correspondiente a esta solicitud de Patente de
Invención.

Del Señor Jefe,


Margarita Castellanos Abondano
C.C. No. 39.779.654 de Usaquén
T.P.A. No. 70819 del Consejo Sup. de la Judicatura
Carrera 9ª. No. 93 - 09 -de Bogotá
Teléfonos: 610 74 80 y 610 74 60

Santa Fe de Bogotá, D.C.,
xgt/4754.

6 OCT. 2000



2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio 109

Radicación no 00-52291

Concepto Técnico no 1851

Clasificación Internacional de Patentes: H01M 2/12, 2/04

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de **Patente de Invención**:

- SI ☒ NO ☐ Contiene un resumen de la invención (Art.26-e).
- SI ☒ NO ☐ Contiene el título o nombre de la invención (Art.27-d).
- SI ☒ NO ☐ Contiene la descripción de la invención (Art.26-b).
- SI ☒ NO ☐ NO ES APLICABLE ☐ Contiene los dibujos necesarios para comprender la invención (Art.26-d)
- SI ☒ NO ☐ Contiene una o más reivindicaciones. (Art.26-c).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h).
- SI ☐ NO ☐ NO ES APLICABLE ☒ Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afroamericanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-i).
- SI ☐ NO ☒ La invención se refiere a un producto relativo a un material biológico. (Art.26-J).
- SI ☒ NO ☐ NO ES APLICABLE ☐ La prioridad coincide con la materia reivindicada.
- SI ☒ NO ☐ **CUMPLE LOS REQUISITOS TÉCNICOS**

OBSERVACIONES Y OTROS: SI ☐ NO ☐ ver hoja(s) anexa(s)

☐ NUEVO TITULO, FOLIO: 90

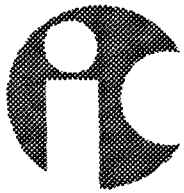
☐ NUEVAS REIVINDICACIONES, FOLIOS: 92 - 96

☐ NUEVOS DIBUJOS FOLIOS: 77 - 81

☐

EXAMINADOR TÉCNICO
202051

Bogotá D. C., diciembre 6 de 2002



2020
Bogotá DC

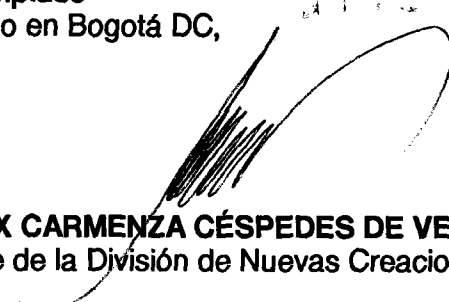
Doctor(a)
MARGARITA CASTELLANOS ABONDANO
Apoderado(a)

REFERENCIA:	Radicación No.	00-52291
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	292
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión.

Cúmplase
Dado en Bogotá DC,

11 FEB 2000


ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones

202051

DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. **00-052291**

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**
FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **529**, DE
FECHA **27 DE JUNIO DE 2003**, EL TERMINO HABIL SEÑALADO POR LA LEY
EXPIRA EL **24 DE SEPTIEMBRE DE 2003**.

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**

Bogotá D.C., Diciembre de 2003

103

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: 0-52291

EDICTO No. 1297

LA SECRETARÍA GENERAL AD-HOC HACE SABER:

Que esta Superintendencia profirió **Resolución No. 37140 de 30-DIC-2003**. Que el contenido de la parte resolutive es como sigue: E Superintendente de Industria y Comercio.

RESUELVE

ARTICULO PRIMERO: Declarar abandonada la solicitud de privilegio de patente de invención contenida en el expediente de la referencia.

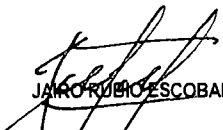
ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución a la doctora Margarita Castellanos Abondano, o a quien haga sus veces, quien actúa como apoderada de Johnson Controls Technology Company., entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE

Dada en Bogotá, D.C., a los

30 DIC. 2003

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,


JAIRO RUBIO ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc 22-ENE-2004
Secretaría General Ad-Hoc
EDICTO No. 1297

Este edicto se desfija hoy 04-FEB-2004 a las cinco (5:00 p.m.)