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(54) **Perennial Votive Light**

(57) The invention of the "light votive perennial" addresses the serious and long-standing problems of the cemeteries in the municipalities and provinces of the country and Europe from north to south, including the islands.

With the innovative votive lamp in eternal light without battery replacement will be carried out the slaughter of all the cost of establishment, connection and maintenance for the illumination of spaces cemetery with zero environmental impact, but first of all it will be assured their loved ones a constant light, 24-24h, without the risk of "cemeteries in the dark" for an unlimited time and in any event not less than fifteen years.

The votive lamp made of a single monolithic block resistant to all weather conditions is fed in an innovative way, instead of the more common mode current, such as the repeated application of the replacement of the batteries (highly polluting products) capable of producing new electricity or appeal to the public network (also polluting the subsoil) of the cemetery complex, permanently abolishing the repeated replacement of the batteries over time that in the present case do not stop and do not change their constant supply of energy to the LED, for an unlimited time or but not less than fifteen years.

The device invented "votive light perennial" lies in the use of a LED lamp, a rechargeable electrical batteries and a tensile allocated inside the cylindrical monoblock in polyester resin, all assembled in one body unmodifiable outside, perfectly waterproof that resists for its compactness to any atmospheric agents, maintaining the energy charge of the rechargeable battery for an unlimited time, without any need for maintenance (except for manufacturing defects that necessarily requires the total replacement of the building) resisting perfectly natural sources of heat which the solar rays and all temperature changes related to weather conditions and all of the ex-

ternal cemeterial agents environment particularly corrosive which do not alter the original conditions of the product, which maintains constant its energy capacity, for an unlimited time, without the need for maintenance, to replace the batteries in support of the energy photovoltaic panel, and a solar panel outside the central body monolithic, overcoming insecurity and the decay of all existing products on the market that illegally distributed on the European market because pollutants and destitute of the EEC certification, have nothing to do with the invention in question.

The source of accumulation of energy by the internal batteries to monoblock cylindrical resides exclusively in the capacity of the photovoltaic panel that provides the same amount of energy calculated previously for a time of at least eight consecutive days, in the total absence of light.

The invention is unique in its kind, it doesn't need a battery change and it is certainly not just a process of innovation in technology but also, and above all, an innovative process in the context of environmental protection in a social context, the cemetery where the repeated replacement of exhausted batteries, considered the products currently in the market, could further aggravate environmental degradation in a country where the collection is still struggling to absorb two-thirds of toxic waste, especially in the southern provinces, and especially in cemeteries.

It is to add that the device invented is the only safe alternative to electrical systems currently present in cemeteries that are a major factor of pollution of the subsoil is not to be underestimated and a waste of electricity prohibitive as well as a safe alternative to photovoltaic centralized equally prohibitive for the coffers of municipalities, now completely dry and, moreover, equally polluting the underground cemetery sites.

The light votive perennial, is composed of a single monolithic body as it is indicated in the table produced and relied 1a which comprises inside:

1) Isolation Chamber: characterized by a one-piece monolithic cylindrical with a diameter of 3.00 cm and a height of cm. 7.00 polyester resin, catalyzed at the time of installation by a peroxide-based catalyst resistant to weathering, high reactivity, rapid hardening (1-6%), good chemical resistance and high durability. High inertia and homogeneity of the artifact.

This "piece" monolithic is designed to protect the components referred to in paragraphs 2, 3.5.

2) **Number two rechargeable Nickel Metal Hydride (NL-MH)**, allocated within the isolation chamber (in resin polyester) referred to in point 1) with a nominal voltage of 1.2 V and with each possible amperage: 750, 800, 900 or 1000 mA which, hermetically protected inside the isolation chamber (monobloc) from degradation caused by

atmospheric agents and wear, do not allow the heavy metals with which the same are built its dispersion in the air of harmful dust or the escape of liquids harmful to human health and environmental pollution

3) **280 Ω resistor inside** the piece polyester referred to in point 1) for the limitation of the power supply to the LED

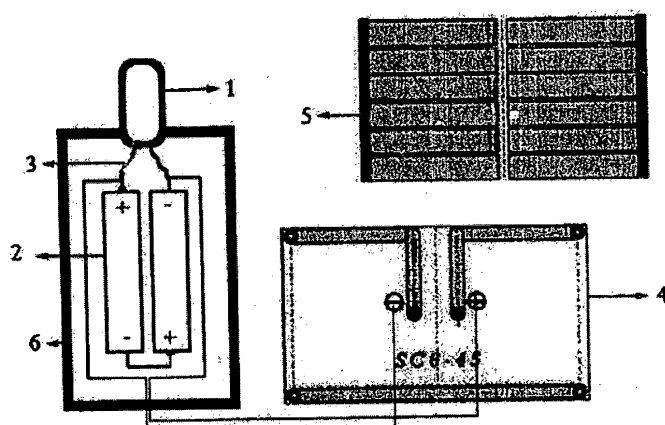
4) **A photovoltaic cell external to the block** referred to in point 1), characterized by a mini photovoltaic solar panel capable of delivering 6V and 45mA. The panel made of monocrystalline silicon is characterized by the size 40mm x 70mm x 28mm and coated with transparent plastic material for protection from atmospheric agents.

5) no. 1 LED light, weather-resistant exterior, yellow, red or flashing red with a diameter of 5 mm.

6) **Cables strips** for connection of the parts.

For the foregoing reference is made to the graphic table n. 1a

particular construction of monolithic group of light votive ecological permanent light without battery replacement



Legend

- 1. Led
- 2. AAA batteries rechargeable
- 3. Resistance
- 4. Photovoltaic panel (rear)
- 5. Photovoltaic panel (front)
- 6. Casing monolithic exterior resistant to weathering

Table 1a
Title: Industrial invention light votive ecological

Author: Salvatore Russo

Votive lamp applicable to any support for light cemetery

Description

State of the Art

[0001] Currently, the state of the art offers products crumbling, inadequate to withstand the environmental conditions of the cemetery areas characterized by particularly severe climatic variations capable of eroding any media inserted, in its context as it happens even to the metal such as bronze.

[0002] It should also be borne in mind that the votive lamps are supplied with electricity with plants too dilapidated, dangerous and polluting, or powered by rechargeable electric batteries replaced after a short time of exposure to the elements and therefore unusable within a very reduced, not fitted with EEC certification, unreliable, then, crumbling and also highly polluting areas cemetery.

[0003] The "light votive perennial" solves all the above problems faced by the products used above giving the end user quality and reliability for an unlimited period of time, certainly superior to a minimum period of fifteen years.

[0004] The application of the invention of the "perennial votive lamp", has already been tried for several years, it solves the serious and long-standing problems of many cemeteries of Municipalities and Provinces of the country from north to south islands.

[0005] With the innovative votive lamp replacement without perennial batteries will be carried out the slaughter of all the costs of both conventional electrical installations and photovoltaic, connection and maintenance for the illumination of spaces cemetery with zero environmental impact, but before everything will be assured their loved ones a steady light 24-24h, without the risk of "cemeteries in the dark."

[0006] The light votive perennial, is composed of a single monolithic body as indicated in the table produced and relied 1a which comprises inside:

1) Isolation Chamber (monolithic block):

characterized by a monolithic monoblock cylindrical diameter of 3.00 cm and a height of cm. 7.00 polyester resin, catalyzed at commissioning operates as a catalyst based on peroxide resistant to atmospheric agents, high reactivity, rapid hardening (1 - 6%), good chemical inertness and high durability. High inertia and homogeneity of the artifact.

This "piece" monolithic is designed to protect the components referred to in paragraphs 2, 3.5.

2) Number two rechargeable Nickel Metal Hydride (NL-MH),

allocated within the isolation chamber (in resin polyester) referred to in point 1) with a nominal voltage of 1.2 V each and amperage available: 750, 800, 900 or 1000 mA, hermetically protected inside the chamber isolation (block) from the degradation caused by weather and wear, do not allow the heavy metals

with which they are dispersed in Build it harmful dust or liquids from spilling harmful to human health and environmental pollution

3) Resistance from 280 Ω

inside the piece polyester referred to in point 1) for the limitation of the power supply to the LED

4) A photovoltaic cell outside the block

referred to in point 1), characterized by a mini photovoltaic solar panel capable of delivering 6V and 45mA. The panel made of monocrystalline silicon is characterized by the size 40mm x 70mm x 28mm and coated with transparent plastic material for protection from atmospheric agents.

5) number 1 LED light,

weather-resistant exterior, yellow, red or flashing red with a diameter of 5 mm.

6) Cables strips

for the connection of the parts.

[0007] The votive light is fed in an innovative way, replacing the most common mode current (Such as the repeated application of the batteries are changed to produce new electricity to the public grid or the use of the cemetery complex) permanently abolishing the repeated replacement over time of rechargeable batteries that in the present case do not stop and do not change their constant supply of energy to the LED, for an unlimited time;

[0008] Unlike similar products currently using the same components and the use of which is currently very limited in time, beyond the necessary replacement of batteries whose duration does not exceed necessarily a few months, for the exposure of the components to agents atmospheric, losing more their original functionality specified in the technical specifications of these products, the votive lamp solar "Votive lamp perennial" is absolute mind innovative and unique because:

1) it exerts its function indefinitely even if immersed in water while preserving its prerogatives techniques of production, as well as the solar panel waterproof which prevents the fiberglass to lose its functionality originating in contact with atmospheric agents.

2) the experiments conducted by the inventor of "Votive lamp perennial" for humbug detect the user of the same products marketed today compared to the technical bids. In fact, a few months after the end-user is located in front of a product, the solar panel is crumbling and eroded by weathering, forks irreversibly blighted disastrously led, rechargeable batteries, whose contacts exposed to climatic variations, however, do not allow the transmission of energy to the LED, the conductors of electricity useless

because attacked by adverse weather conditions.

[0009] The "Light Votive perennial", solving all the dynamics of electric power transmission is well exposed to any thermal variation and in adverse weather conditions, it doesn't require battery replacement for an unlimited time, provides the user with a high quality product, ecological and maintains the technical prerogatives specified by the manufacturer for an unlimited time.

[0010] Two batteries V1, 2, led a perfectly assembled, the electrical conductors be properly safeguarded in a monolithic block which also includes a resistor for limiting the power supply, set to the shelter from the elements specific components of the product preserving them for an unlimited time to its original state, not allowing for the more heavy metals that manufactures batteries dispersed in harmful dust or liquids from spilling harmful to human health.

[0011] Lab tests have shown that "Light Votive perennial" does not alter its original quality Factory for an unlimited time even in the presence of various environmental factors found in cemeteries where all the elements present in the atmosphere contribute to the deterioration of heavy any product currently on the market today.

[0012] The "Light Votive perennial" also allows the recording of used batteries allowing recovery of a corresponding number of batteries than those used by favoring not only the disposal, by personnel from this, the same protected from monolithic block which includes integral but also mini photovoltaic panels to protecting the environment from pollution by batteries and mini solar panels scattered in the external environment in an uncontrolled manner.

[0013] "Light votive perennial", is able to resist even in cemeteries to external factors that determine the atmospheric deterioration of bronze and steel procuring in turn serious damage to any external support in cemeteries and then to the lamps votive cemeterial currently in trade.

Product Innovation "Light Votive perennial":

[0014] The patented innovation of the product "Eternal Light" mentioned in the patent application and allocation of patent for invention, as specified above, is the use of a LED lamp, rechargeable electric batteries and a mini solar panel, all assembled in one body from the outside unchangeable, fully waterproof which resists for its compactness to any atmospheric agents, maintaining the energy charge of the rechargeable battery for an unlimited time, without any need for maintenance (except for manufacturing defects that require necessarily the total replacement of the building) resisting perfectly natural sources of heat such as sunlight and temperature changes related to all weather conditions and all corrosive agents in the external environment that do not alter the original condition of the product, while keeping its ability energy, for an unlimited time, without the need for maintenance, replacement of the rechargeable batteries in

support of the photovoltaic panel energy, overcoming the insecurity of all existing products on the market and wide-spread.

[0015] All components are assembled into a block of simple but elegant that can be placed on the tombstone of our deceased loved ones in the many versions produced by the home user of industrial invention patent which will be granted a license to use the patent.

"Light Votive perennial" not subject over time to replace the batteries:

[0016] The essential prerogative of the product is, as stated above, the absence of the necessity of replacement of batteries which, moreover, including in one monoblock, could not in any case be replaced.

[0017] Their source of accumulation of energy resides exclusively in the capacity of the photovoltaic panel that provides the same amount of energy calculated previously for a time of at least thirty consecutive days, in the total absence of light.

[0018] As soon restated to light the LED, and then the group as a whole, resumes its normal operation for an unlimited time without replacing the battery pack.

[0019] The "Eternal Light" doesn't require a battery change is certainly not just a process of innovation in technology but also, and above all, an innovative process in the context of environmental protection in a social context, the cemetery, where the repeated replacement of exhausted batteries, considered the products currently in the market, could further aggravate environmental degradation in a country where the collection is still struggling to absorb two-thirds of toxic waste, especially in the southern provinces, and especially in cemeteries.

"Light Votive perennial" to protect the environment:

[0020] "Is a product aimed at reducing chemical pollution given by the excess of synthetic substances in the environment, put into circulation as a result of human activities, particularly industrial ones. These are a great danger to human health and of all forms of life.

[0021] Heavy metals, normally present in the environment, such as cadmium, become potentially harmful at levels higher than normal and the control of their use is of primary importance for human health.

[0022] In fact, the cadmium is used mainly in the manufacture of batteries, solar panels and electric cables and enters the circulation in the atmosphere causing diseases of the kidneys, bone marrow and lung emphysema.

[0023] When handling cadmium and its compounds is therefore important to work under a fume hood so as not to inhale the vapors. The long-term exposure to cadmium produces serious toxicity problems. The powders of cadmium is absorbed mainly by inhalation and through the skin and mucous membrane fraction. Once absorbed, cadmium binds to red blood cells and plasma proteins then accumulate in the liver and kidneys. In these organs

can persist for several years, making it difficult biological monitoring of acute exposure. Once filed, the cadmium is disposed of very slowly through the fecal and urinary incontinence.

[0024] Avoid handling batteries by non-experts, that is the user, and to avoid the possible abandonment of spent batteries into complexes cemetery is a matter of primary importance for the creator of this project, which aims to control production More and more polluting batteries and dispose of those no longer be used with proper contract with companies authorized by the Ministry of Environment, specialized disposal of products "Light Votive perennial" that have become unusable for any manufacturing defect, without manipulation part of the staff at the disposal of heavy metals, such as cadmium, which will remain so sealed inside the product "light votive perennial" without possibility of release of harmful dust to the external environment.

[0025] The cooling of cadmium and then inside the "Light Votive perennial" and the impenetrability of the latter will not allow the escape of dust into the atmosphere that heavy metal and therefore the product will not be even harmful to the health of user.

Protection from cadmium mini photovoltaic panels

[0026] The mini solar panels like those in normal format necessary for the realization of a photovoltaic plant capable of supplying electricity to an entire cemetery area containing an active layer in the CdTe CdTe. The presence of cadmium in the manufacture of solar panels is harmful to health, considering for more than the mini solar panels leaves Cadmium essential part of the photovoltaic panel are not even protected by the layer of glass which protects the hand from contact with CdTe external environment. It must remember in this regard that the European Council has revised directive on hazardous substances in electrical and electronic equipment.

[0027] It is a breakthrough that will lead to greater protection from chemicals and improve the safety of products such as mobile phones, refrigerators and electronic games. The list includes also cadmium, but the manufacturers of solar panels can rest assured that they can still use it, at least for now.

[0028] Adopted in 2003, the law bans 6 special substances indicated in point a) of the following paragraph, including mercury and cadmium, as part of Community production. The revision now extends this invitation to more types of uses, including the production of cables and components or spare parts for the aforementioned objects of daily use, will have to do less of hazardous substances.

[0029] "Light Votive perennial" provided for the resolution of the fragility of mini solar panel exposed to climatic variations and not protected by glass, properly protecting the integrity and endurance, over time, the mini solar panel and electric cables connected to it by treating entire panel with protective cover.

[0030] Heavy metal pollution protection from the pond of the welds and the components of the batteries.

a) **General:**

[0031] The "Light Votive perennial" to protect the sources of pollution that could harm your health and the environment.

[0032] It is a group of heavy metals, highly harmful content in rechargeable batteries and particularly pollutants, which in the present case are absolutely isolated from the external environment having a density above 5 g/cm³, even if the category includes light metals and non-metals similar to them in origin, source of pollution, the mechanism of action in organisms.

[0033] Many of these metals are essential in small amounts (micro-nutrients) to the development of animal and plant organisms (iron, calcium, magnesium, potassium, zinc, copper, selenium, molybdenum). Other if taken in doses higher than a certain threshold are toxic (cadmium, mercury, lead, nickel, ...).

b) **Sources of pollution:**

[0034] These elements are of natural origin and may be present in the environment in the form of salts, complexes, organic and inorganic, of gas. At the concentrations originally present in nature did not constitute a risk to the living, but the extraction of the mineral deposits and utilization in industry and agriculture has led to the production of gaseous emissions in the atmosphere, the production of solid waste and wastewater containing heavy metals.

c) **Consequences of:**

[0035] The danger is due to the fact that they are not biodegradable and can accumulate in food chains. They can accumulate in soil rich in humus and clay. The waters that contain heavy metals are dangerous to human health and of all the living.

"Light Votive perennial" and the problem of energy from underground Cadmium

[0036] Light votive perpetual to protect subsoil pollution derived from electrical cables from electrical room or solar power generation

[0037] From studies carried out worldwide by the Amateur Astronomers Astronomers and, initially in the United States by the International Dark Sky Association, showed that a major fraction of the electricity used for the operation of outdoor lighting systems (at least 30 - 35%) is used to directly illuminate the sky.

[0038] Dark sky, in agreement with the IAU and the IDA Italy, is particularly committed and involved, through its technicians and experts in the study of this phenomenon and identifying the means to limit it.

[0039] The data collected to date (certainly incomplete but rounded down) confirm in dramatic and worrying that, only in Italy, are squandered every year about 400 billion lire for defects design, construction or operation of plants of external illumination or for the use of light fixtures that are excessively dispersants or for installations dilapidated made not to rule.

[0040] According to data provided by ENEL in 1997, only for the public lighting have been used as something 4,800 million kWh (this figure includes approximately even small producers of electricity).

[0041] This value should be increased by about 5% per year, it should be added about 30% to the private outdoor lighting of any kind.

[0042] In 1998, therefore in our country have been used approximately 6,240,000,000 Wh dik to illuminate streets, monuments, cemeteries and more.

[0043] However, as mentioned previously, at least 30-35% (2,184 million kWh) of this energy is sent, without any sense, directly towards the sky producing, for the consequent waste of fuel, approximately 1.2 million tons of carbon dioxide that are unnecessarily being released into the atmosphere we breathe. The elimination of this waste would be in the benefit provided, the budget of carbon dioxide, by an extension of forest trees of nearly 200,000 hectares.

[0044] The use of votive lamp solar "Light Votive perennial" is an alternative waste fuel by providing an additional contribution of alternative and ecological restoration that will change the face of the cemeteries that citizens become more functional, but also considered the safest that will be deleted the dense network of electric wires concealed along the avenues and around all the tombs. The modern electrical system, which will replace the existing one was old and dilapidated, in almost all complexes cemetery, must necessarily provide for the placement of new solar LED lamps, ecological, permanent light to protect the environment with each powered mini solar panel in order to eliminate energy waste and unnecessary investment by the PA and a considerable economic burden for the traditional user.

"Light Votive perennial" in place of "photovoltaic" Autonomous"

[0045]

1) "Light votive perennial" is the only product, compared to those currently on the market, able to replace the stand-alone photovoltaic (with accumulation or stand alone, ie not connected to the network) or connected to the network (or grid connected) not only for its unlimited duration but also because it exceeds the bureaucratic implications involved in the authorizations of PV, also does not require public interventions aimed at infrastructure necessary for the installation of bulky solar panels, with huge cost savings for the same public bodies involved in the

maintenance of cemeteries, who will be responsible only the task of monitoring products "Light Votive perennial" installed and it intervene where there has been a malfunction for any manufacturing defect. For this assistance, the managing body of the cemeteries may charge a fee certainly negligible (about three euros) for the user by increasing the economic resources of the same public authority in respect of a service rendered to citizens at no cost.

2) "Light Votive perennial" is zero environmental impact

because it doesn't require any kind of connection to the autonomous photovoltaic power plant (with storage tank or stand alone, ie not connected to the network) or connected to the network (or grid connected) so as to avoid pollution of the subsoil of the cemetery areas with the installation of pipes and electrical cables that now constitute the subsoil humus cemetery dangerous for any electrical leakage avoiding more against intrusion by third parties into the electrical circuitry public, non-compliant, and often in the "blackout".

[0046] It's 'to consider, however, that in Italy 80% of the electrical cemeteries are not compliant with EU directives.

[0047] 3) "Light Votive perennial", solving all the dynamics of electric power transmission is well exposed to any thermal variation and in adverse weather conditions, it doesn't require battery replacement for an unlimited time, provides the user with a high quality product, ecological and maintains the technical prerogatives specified by the manufacturer for an unlimited time.

[0048] - Two batteries of V1, 2, led a perfectly assembled, the electrical conductors be properly safeguarded in a monolithic block which also includes a resistor for limiting the power supply, set to the shelter from the elements specific components of the product preserving them for an unlimited time to the original state, not allowing for more, as already said, to the heavy metals with which the batteries are built the dispersion of harmful dust in the air or the discharge of liquid harmful to human health. and laboratory tests have shown that "Light Votive perennial" doesn't alter its original quality Factory for an unlimited time even in the presence of various environmental factors found in cemeteries where all the elements present in the atmosphere contribute to the deterioration of heavy any product currently on the market today.

[0049] 4) "Light Votive perennial" also allows the recording of used batteries allowing recovery of a corresponding number of batteries than those used by favoring not only the disposal, by personnel involved in this, the same protected from monolithic block of which they are an integral part but also mini solar panels to protect the environment from pollution by batteries and mini solar panels to the batteries together that otherwise would surely be scattered in the environment outside in an un-

controlled manner.

[0050] The characteristics of the device invented are singular:

- The light is able to exert its function even if immersed in water while preserving its prerogatives origin techniques. 5
- The solar panel is sealed so as to prevent the fiberglass to lose its original functionality for contact with atmospheric agents, therefore eliminating the factor of environmental pollution photovoltaic panels) 10
- The two batteries, the LED, the electrical leads are properly safeguarded in a monolithic block which also includes a resistor for limiting the power supply, so as to shelter from the elements specific components of the invented device. 15

[0051] The working procedure of the device invented already provided permitting and marking CE, the industry is particularly interesting for large-scale production of the invention of the present invention "Light Votive perennial"

Processing steps:

[0052]

- Connect the LED light to the rechargeable batteries
- Use the straps to connect the rechargeable battery with the solar cell
- Perform welds, use the cooker hood to collect welding fume
- Protective cover: on the panel to the sun and water
- Realization of the form on the mold
- Insert the LED light to the rechargeable batteries in the form
- Carry casting with mastic resin and catalyst (about 40 g. And 2-3% of catalyst), mix evenly
- To control the rate of catalysis, insert the artifact into the water to cool for about 10-15 min.
- Wait until the hardening, and then drying (about one day)
- Upon installation of the product, connect the photovoltaic panel
- Verification of operation: 25

the proper functioning stood for a few minutes if it resists the charge (continuous operation of light) covering the photovoltaic panel.

Use of Invention "Light Votive perennial":

[0053]

- The product is supplied with rechargeable batteries discharged, then the first use is necessary to proceed with the full battery recharge: 55
 - Expose the solar panel or solar outdoor light

or artificial

- In the case of exposure to external light, fully charge the battery takes about 8 hours;
- or In the case of exposure to artificial light, the full charge of the battery occurs in about 16-24 hours variable in function of the amount of light available to the photovoltaic panel;

- in the absence of light to power the solar panel, batteries, when fully charged, can keep the LED lighting for at least thirty days;
- In case of malfunction, the end user will contact only qualified personnel: the user should not attempt any kind of repair or modification to direct;
- all components are assembled and protected in order to protect the product from weather and wear, it is still to avoid prolonged contact with water or other liquids;
- operating temperature: $-25^{\circ}\text{C} + 65^{\circ}\text{C}$ -
- The product must not be disposed with other household wastes at the end of the life cycle. To prevent possible harm to the environment or human health from uncontrolled waste disposal, the user is encouraged to separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources;
- The product will be covered by a warranty for manufacturing defects, valid for ten years.

Standards Applied in the embodiment of the invention "Light Votive perennial"

[0054] The certification has been obtained in accordance with the provisions to' Annex II of Directive 2008/104/CE (on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/CEE), which provides a "Internal control of production" that meets all the requirements of Article 5 and Annex I of the Directive.

- DIRECTIVE 2008/104/EC of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/CEE
- DIRECTIVE 2011/65/EU of 8 June 2011 on the restriction of use of certain hazardous substances in electrical and electronic equipment
- IEC 61547: 2010 Equipment for general lighting purposes - EMC immunity requirements
- IEC 55015: 2008 Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
- IEC 62471: 2010 Photobiological safety of lamps and lamp systems

[0055] The invention has achieved the CEE approval mark and is therefore in possession of all the requirements for its production in industrial and marketed as

part of the whole territory of the CEE.

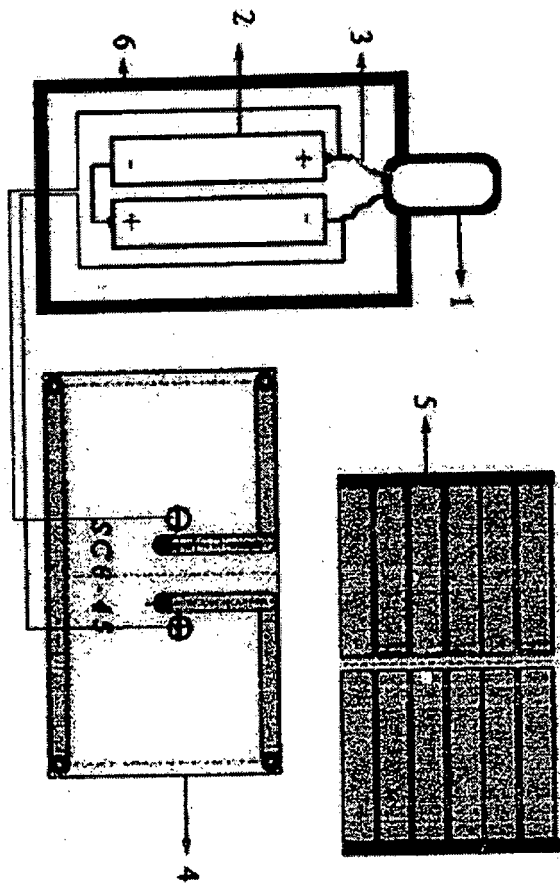
Claims

1. Light Votive perennial **characterized by** Chamber of insulation made of monolithic monoblock cylindrical with a diameter of 3.00 cm and a height of cm. 7.00 polyester resin, catalyzed at the time of installation by a peroxide-based catalyst resistant to weathering, high reactivity, rapid hardening (1-6%), good chemical resistance and high durability. High inertia and homogeneity of the artifact.
2. Light votive perennial according to claim 1, **characterized by** polyester resin with a high reactivity, rapid hardening, hardening modest shrinkage (1-6%) capable of good chemical inertia and high durability in time for the realization of the inseparable monoblock (room insulation) cylindrical, referred to in point 1), which holds, at its core, as stated in paragraph 5), 8) and 10) and at the top with regard to point 6), prepared by mixing the putty with 2 - 3% of catalyst (dibenzoyl peroxide) whose version in paste facilitates dosing and homogeneous mixture which favors uniform catalysis.
3. Light Votive perennial according to claim 1 and 2, **characterized by** Hardener - dibenzoyl peroxide catalyst for organic mastics polyester, used for the isolation chamber (block) referred to in point 1) and **characterized by** a usage amount of 2% - 3% of the mastic used - physical paste, white color specific gravity 1.20 grammi/c3 active substance of which 50% catalysis speed is influenced by temperature and the amount of catalyst / hardener.
4. Light Votive perennial according to claims 1,2,3, **characterized by** four carved eaves side exhaust outside the isolation room (in resin polyester) referred to in point 1) **characterized by** drip for disposal along the circumference external and along the length of the cylinder block moisture is caused by environmental phenomena of exudation of the product or rainwater to safeguard the LED lighting referred to in point 6).
5. Light Votive perennial according to claims 1,2,3 **characterized by** number two rechargeable Nickel Metal Hydride (NL-MH), allocated within the isolation chamber (monoblock polyester resin) according to claim 1) with nominal voltage of 1.2 V each and amperage available: 750, 800, 900 or 1000 mA, hermetically protected inside the isolation chamber (monoblock) from deterioration caused by weather and wear, do not allow the heavy metals with Build it which they are dispersed in harmful dust or liquids from spilling harmful to human health and environ-

mental pollution

6. Light Votive perennial according to claims 1,2,3 **characterized by** one LED light outside the block of claims in point 1), 2), 3) yellow, red or flashing red, with a diameter of 5 mm.
7. Light votive perennial according to claims 1,2,3 **characterized by** a photovoltaic cell outside the monoblock referred to in point 1), 2), 3), consisting of a mini photovoltaic solar panel capable of delivering 6V and 45mA. The panel made of monocrystalline silicon is **characterized by** the size 40mm x 70mm x 28mm and covered with transparent plastic material for protection from atmospheric agents.
8. Light votive perennial according to claims 1,2,3 **characterized by** a resistance of 280 Ω internal piece polyester according to claims 1,2,3
9. Light Votive perennial according to claims 1,2,3,7,10 **characterized by** transparent protective varnish for professional application used for vaporization for photovoltaic cell **characterized by** colorless liquid mixture suitable to prevent the fiberglass to lose its original functionality in contact with atmospheric agents and prolonged exposure to sunlight.
10. Light votive perennial according to claims 1,2,3, **characterized by** electrical cables for the connection of the internal parts of the engine block in polyester resin of claim 1,2,3 and external parts for connection to the photovoltaic cell of claim 7 strips polarized type 2 x 1.50 mm Cu CuSn PVC.
11. a method of realization of "Light votive perennial" according to claims 1,2,3,4,5,6,7,8,9,10 **characterized by** successive stages of the construction process of the invention thus identifiable: connect the LED light with rechargeable batteries, use straps to connect the rechargeable batteries with solar panel, do the welding, producing the shape on the mold, insert the LED light with rechargeable batteries inside the form, make casting with mastic resin and catalyst (about 40 ge 2-3% of catalyst and mix homogeneously, control the rate of catalysis, insert the artifact in water to cool for about 10 - 15 minutes, to wait for the hardening and then drying the product (about 1 day).

particular construction of monolithic group of light votive ecological
permanent light without battery replacement



Legend

1. Led
2. AAA batteries rechargeable
3. Resistance
4. Photovoltaic panel (rear)
5. Photovoltaic panel (front)
6. Casing monolithic exterior resistant to weathering

Table 1a
Title: Industrial invention light votive ecological

Author: Salvatore Russo

Votive lamp applicable to any support for light cemetery