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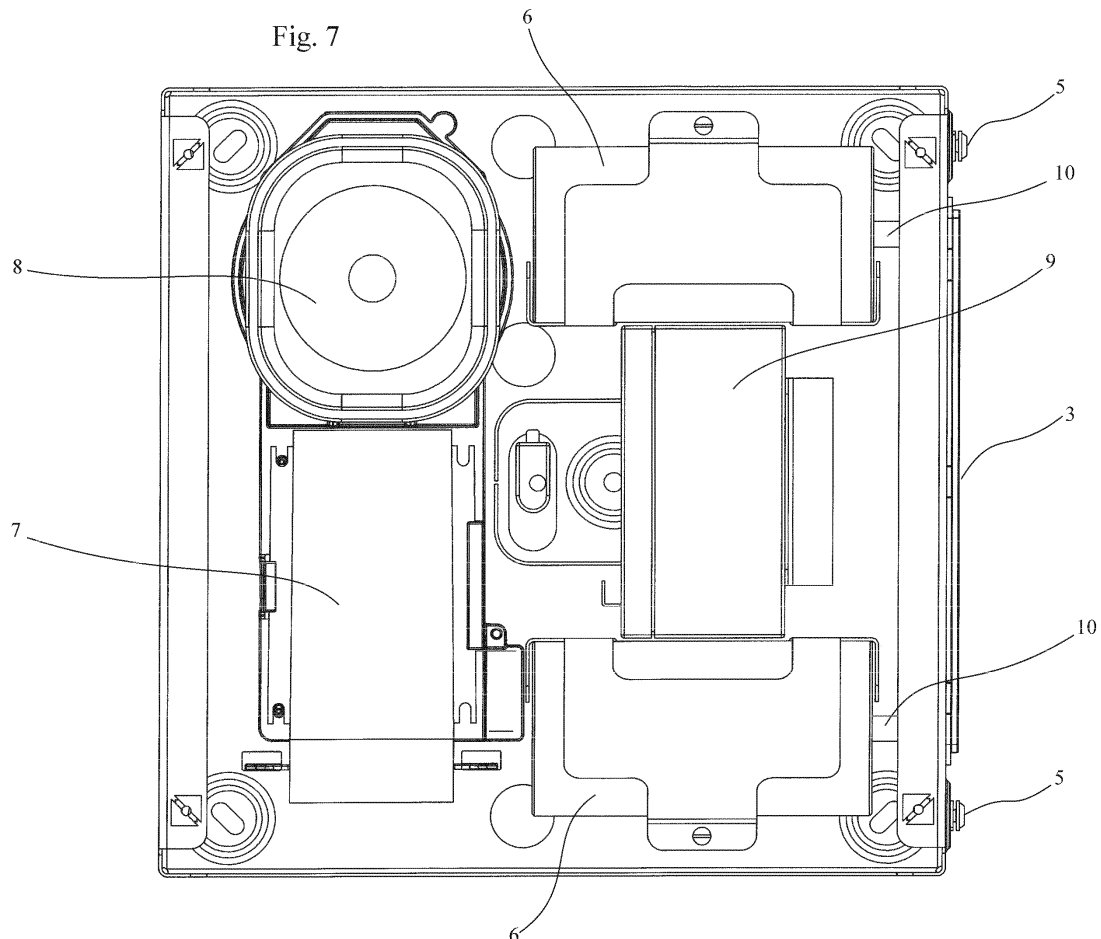
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(54) **LAMP WITH MULTISENSORY ALARM SYSTEM**

(57) The invention relates to a lamp, inside the body of which there is an alarm system, which emits alarm signals that affects the senses of hearing, sight, and smell

in order to deter intruders. In particular a siren, a strobe light and an unpleasant smoke are activated by a controller in the lamp.

Fig. 7



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Description

[0001] The object of this invention relates to a lamp inside the body of which there is an alarm system.

Prior art

[0002] Alarm systems using acoustic sirens are well-known.

[0003] Such acoustic sirens are very often used outside the premises or buildings to be protected.

[0004] Sometimes the container that houses said sirens also has a luminous flashing light to facilitate the identification of the source of the sound.

[0005] However, due to the oversaturation of such alarm systems, which are sometimes installed by inexperienced persons, and due to the unintended triggering of the alarms because of spurious signals, such systems are ineffective. Therefore intruders are in no way put off by such systems, continuing undeterred in their plans and carrying out their criminal actions.

[0006] Moreover, said systems can be easily recognised because of their traditional external appearance and because of the presence of the respective flashing light. These systems are therefore first of all rendered ineffective by intruders so that they can continue with their criminal designs.

[0007] Sometimes these acoustic optical alarm systems are installed indoors, i.e. inside the premises to be protected. But in addition to the fact that they can be easily circumvented, they can easily be rendered ineffective because the sabotage operations can be done out of plain sight.

[0008] So, alarm systems fitted with a simple siren inside the premises to be protected, are easily disabled by an intruder who is already in the room itself, since it can be immediately identified and accessed.

[0009] Recently, therefore, some premises with a high break-in rate have been providing themselves with a different alarm system inside the premises to be protected. This is a so-called foggy system that is activated after the burglary of the premises, and which is able to impair the intruder's ability to see clearly. However, these systems are very expensive and require regular maintenance, which is also very expensive, since the glycol necessary for the formation of the fog needs to be replaced regularly.

[0010] Moreover, since the effects of the release of the fog need a certain time to be produced and propagate, they allow time for the intruder to locate the objective and to continue about his business even when there is fog.

[0011] We should also point out that even once these systems have been identified, they can be easily stopped from producing the fog by disabling the power source.

Objects of the invention

[0012] A primary object of this invention is to make

available a lamp fitted with an alarm system that can overcome the drawbacks of the prior art.

[0013] A further object of this invention is to make available a lamp fitted with an alarm system that can overcome one or more of the drawbacks described above.

[0014] An important object of this invention is to make available a lamp fitted with an alarm system that does not arouse the suspicion of the intruder.

[0015] An important object of this invention is to make available a lamp fitted with an alarm system that is effective.

[0016] An advantageous object of this invention is to make available a lamp fitted with an alarm system that is self-protected.

[0017] Another object of this invention is to make available a lamp fitted with an alarm system that is effective and that cannot be deactivated.

[0018] An important object of this invention is to make available a lamp fitted with an alarm system that is inexpensive.

[0019] All the aforesaid objects, and other objects that will become evident from the continuation of the description, are achieved by a lamp that integrates a multi-sensory alarm system that is the object of this invention as set out in the appended claims and characterised by the characterising part of the claims.

Explanation of the invention

[0020] The lamp that integrates a multi-sensory alarm system that is the object of this invention is composed of a lamp body inside of which there is an alarm system comprising at least one acoustic alarm siren and at least one fog release system triggered by an alarm control unit, whose fumes are conveyed through openings on said container to the outside, in the premises to be protected.

[0021] In particular, it is a standard lamp whose function is both for standard lighting and also as a courtesy light, which in no way arouses the suspicion of the intruder.

Advantageous characteristics of the invention

[0022] Advantageously, said lamp also has a flash operation mode related to the alarm strategy, the protection of the premises and self-protection.

[0023] Advantageously, the activation of the acoustic signal with respect to the flash mode of the lamp and/or to the time of triggering of the smoke can be regulated with delay and/or advance operation for the best strategy.

[0024] Advantageously the smoke released by the canisters inside the lamp body are stinging/tear gas fumes.

[0025] Advantageously, said lamp with an alarm system can be defined as multi-sensory because it involves an alarm device whose emissions are directed at the sense of hearing by means of the sound signal, and at the sense of sight by means of the flashing of the light

source, and also the sense of smell due to the acrid characteristic the smoke emitted by the smoke canister, as well as being directed at the sensitivity of the skin/eyes from the stinging/tear gas characteristic of the smoke emitted by the canister and because of the repellent/disgusting/nauseous characteristic of the smoke.

[0026] Advantageously, there are at least two openings on the body of the lamp for the fumes to come out.

[0027] Advantageously, said lamp fitted with a multi-sensory alarm system is safe to activate, because it is protected by systems that prevent it being tampered with, such as an antifoam system combined with the anti-drilling system, and also because once it is activated it is impossible to block the emission of one/more alarm signals, with or without an autonomous power supply.

[0028] These advantages and other objects are all achieved by the lamp fitted with an alarm system according to the appended claims.

Brief description of the drawings

[0029] The technical characteristics of the invention, according to the aforesaid objects, can clearly be seen in the content of the claims below, and its advantages will become more readily apparent in the detailed description that follows, made with reference to the accompanying drawings, which illustrate a preferred embodiment, which is purely exemplary and not limiting, in which:

figures 1, 2 and 3 show the lamp that is the object of the invention from the outside and from diverse perspective views;

figures 4, 5 and 6 show what is shown in the corresponding figures 1, 2, 3 with the front part of the body removed, highlighting the constituent parts of the lamp that is the object of the invention;

figure 7 shows a front plan view as shown in figures 4, 5 and 6;

figure 8 shows the lamp that is the object of this invention accompanied by the antifoam system and the anti-drilling system.

Detailed description of an example of a preferred embodiment

[0030] This lamp 1 that is the object of the invention can therefore implement a deterrent strategy, especially because its primary function does not arouse the suspicion of the intruder, behaving evidently like traditional lighting and/or courtesy lamp.

[0031] Because said lamp 1 is very often located in an easily accessible position and therefore easily tampered with, an antifoam system 11 can be used to protect it, which prevents the acoustic siren from being rendered innocuous, activating and triggering the alarm as soon as an intruder inserts an expanding foam into the casing through the slots 4 on the body 2 of the lamp 1.

[0032] Furthermore, the body 2 of this lamp 1 is ex-

pected to be protected by an anti-drilling system 12, rendering any attempt at tampering with it ineffective. Finally, a lighting lamp 3 does not arouse any suspicion whether installed outdoors or if it is installed in areas inside the premises, surprising the person who is nearby or has already entered the protected premises.

[0033] One of the advantages of the new alarm system is that it cannot be blocked once triggered.

[0034] The smoke canisters 6 in fact, after the initial triggering, cannot be further limited, stopped and/or blocked.

[0035] This new alarm system therefore integrates in a multi-sensory way the effective defences of a place or a premises, forcing an intruder to desist from his intentions almost immediately.

[0036] Moreover, in the event such an intruder sees and wants to resist the optical and visual acoustic stimuli that invite him to leave the place and go away, he would not be able to defuse the alarms coming from the alarm system.

[0037] In fact, the smoke canister 6 creates an impenetrable curtain that disorientates the person, removing all points of reference.

[0038] The smoke combined with a teargas compound, not only disorientates, but also forces the person to close their eyes due to the tears, and the acrid smell stimulates a sense of suffocation.

[0039] Even approaching the installation of the alarm system, the painful shrill sound stuns the person all the more as the intruder comes closer to the source, discouraging any attempt to sabotage it.

[0040] Finally, the lighting 3 with a stroboscopic flash function, in the event that the intruder has moved close to the alarm system to tamper with it despite the tear gas and claustrophobic smoke and the stupefying sound, would be disoriented by the flashing light, which, in combination with the smoke that in the meantime continues to flow, would render the intruder uncoordinated as if he were having a panic attack.

[0041] Not least, this alarm system, which as we said can only be approached after the previous dissuasive effects have been overcome, and therefore by a person whose eyes cannot easily make things out, welled up as they are with tears from the effects of the smoke, blinded by the continuous flashes, only by feeling his way around could the intruder try to close one of the possible openings 5 for the smoke to escape and not all the openings and/or those corresponding to each smoke canister 6, if the alarm system is provided with more than one smoke canister 6.

[0042] In fact, also so that it works safely, said alarm system is provided with more than one canister 6, so as to provide the certainty and reliability of triggering even a long time after the alarm system was installed.

[0043] This system, therefore, although very suitable for operating in and protecting premises is also suitable for installation outdoors.

[0044] In fact nowadays, as we have seen, optical-

acoustic alarm systems are mostly ignored, because of unintended triggering and much more often also because they are difficult to detect.

[0045] On the other hand, the lamp 1 fitted with an alarm system could be installed in a highly visible position, and in combination with a smoke generator such systems become highly effective and efficient.

[0046] In fact, the smoke released by the canisters 6 certainly does not leave people who hear and see the activated optical and acoustic alarm indifferent.

[0047] We should also point out that the efficiency of the system is also guaranteed by installations carried out in a workmanlike manner, since the refurbishment of the canister 6 is an expensive specialised operation, forcing the system owner to take extra care when installing and to take steps to avoid unintended triggering.

[0048] It is evident that such a system can also replace an emergency and/or aid signal device.

[0049] With reference to the attached drawings, we can see the composition of the lighting lamp fitted with an alarm system that is the object of the invention. This lamp 1 consists of a body 2, preferably fitted with an anti-drilling system (12) and/or vandal-resistant system and/or anti-tampering system, with an opening closed by a transparent element for the passage of the light beam of the light source 3.

[0050] The openings or slits 4 for the emission of the sound signal of the acoustic siren 8 included within the body 2 are easily mistaken for external aesthetic ornamental reliefs of the body 2 of the lamp 1.

[0051] Inside the body 2 there are two smoke canisters 6, whose smoke outlet is connected to an opening 5 for the escape of the fumes on the body 2 through suitable ducts 10. As has been advantageously seen, the outlet for the escape of the fumes is always at least one.

[0052] In the event that an outlet hole 5 is obstructed, the smoke will be channelled to a secondary circuit, if overpressure is reached, so as not to compromise the operation of the internal parts of the system.

[0053] Possibly said lamp could be self-powered with an internal battery 9, and the light could also act as a safety and/or emergency lighting.

[0054] Advantageously, within the same body 2 of the lamp 1 there could be an electronic management and control part 7 for the various components of the lamp 1.

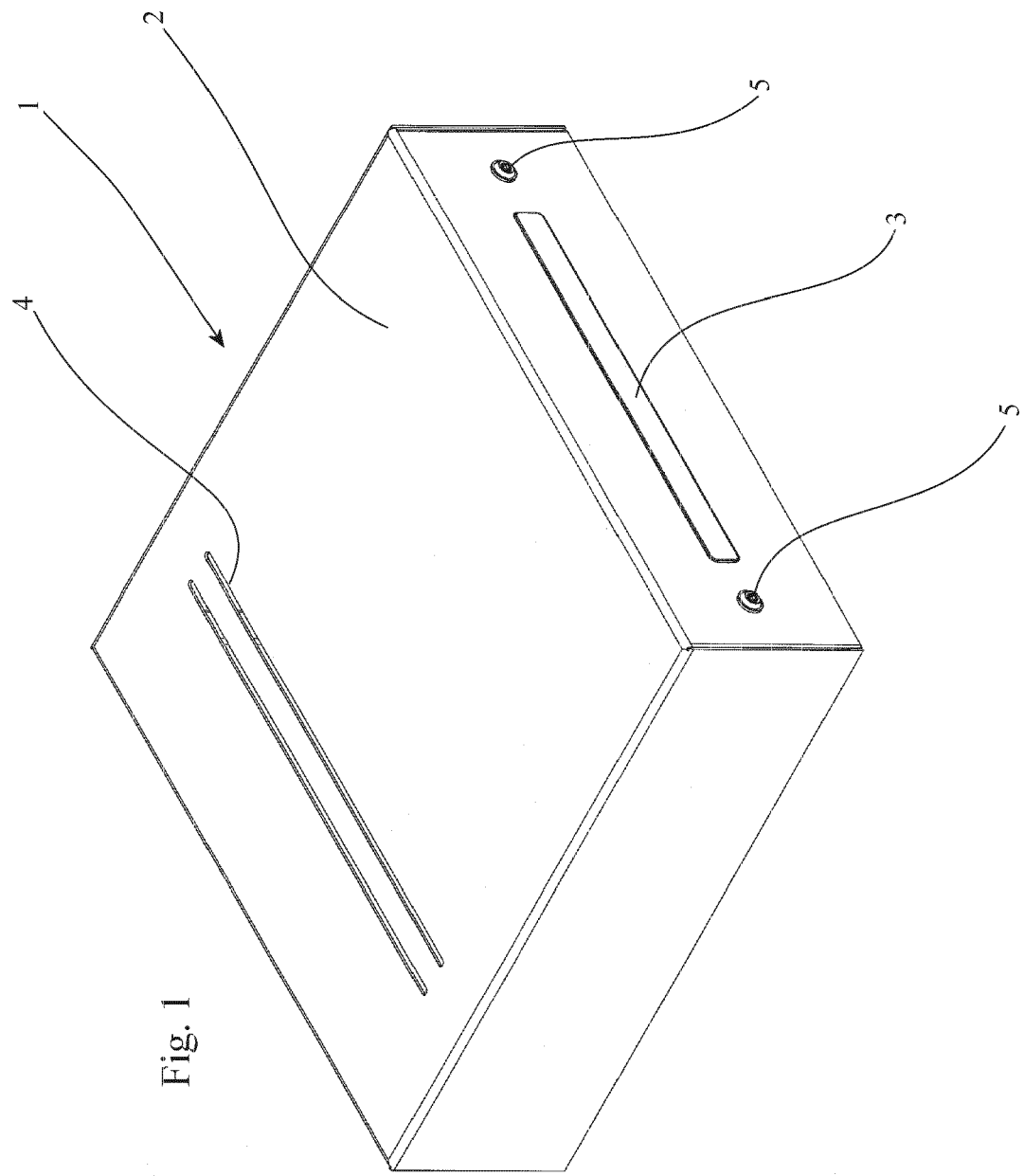
Claims

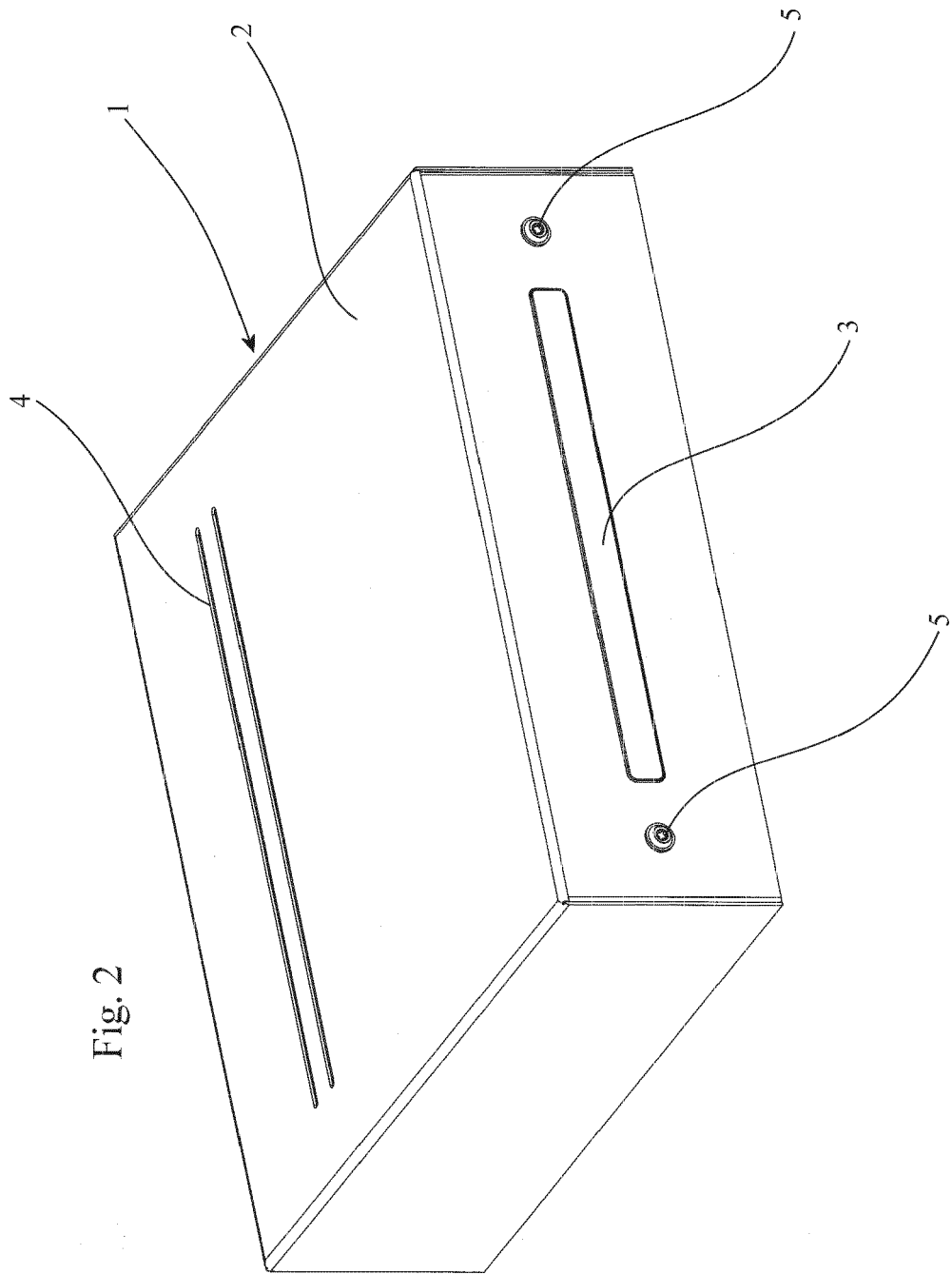
1. Lamp with multi-sensory alarm system composed of a lamp body (2) inside which there is an alarm system comprising at least one acoustic alarm (8) and at least one smoke canister (6) triggered by an alarm control unit (7), whose fumes are conveyed through ducts (10) towards openings (5) on said body (2) towards the outside in the premises to be protected.
2. Lamp with multisensory alarm system according to

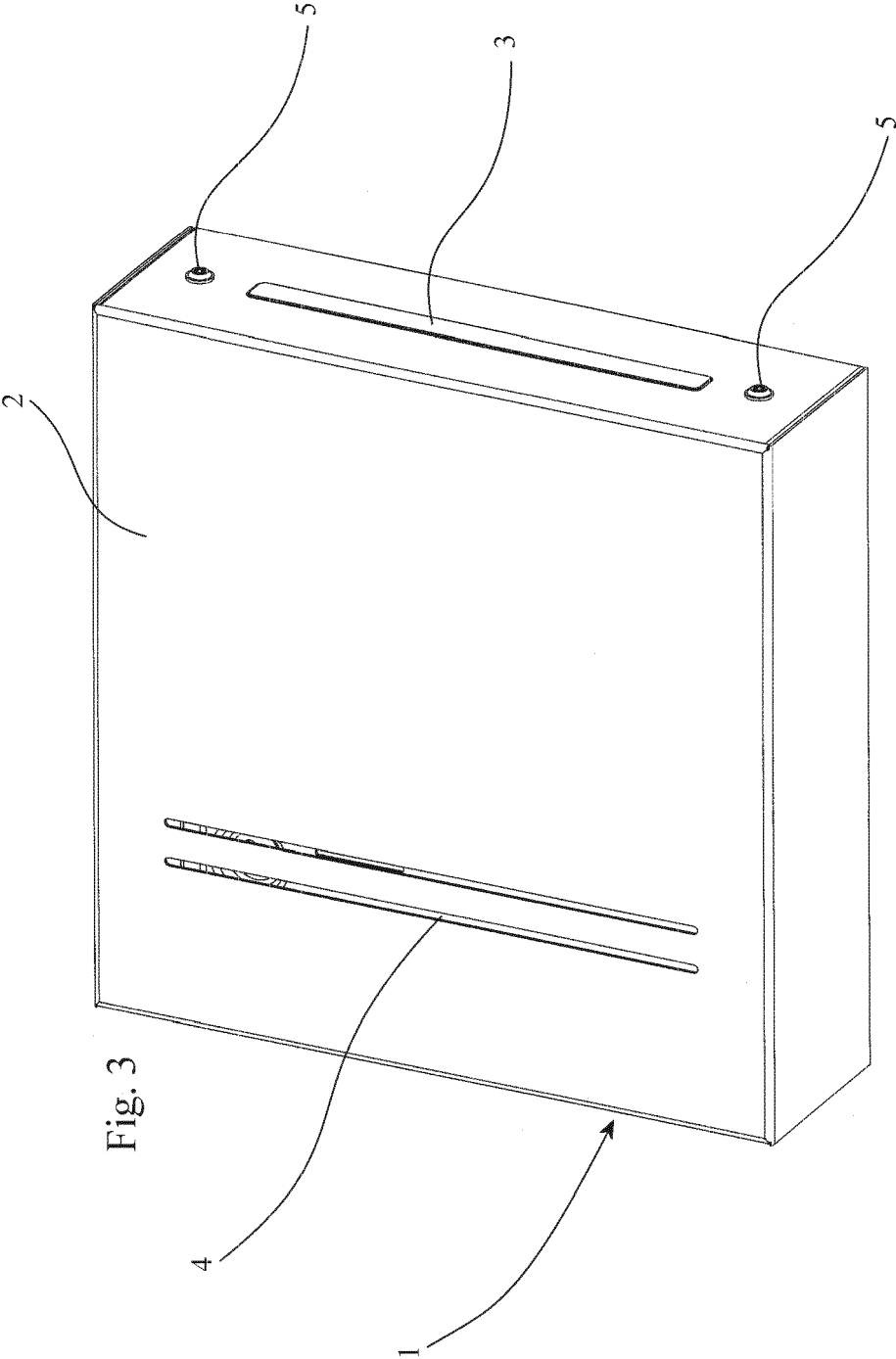
claim 1 **characterised by** the fact that the light source (3) of said lamp (1) is standard lighting and/or courtesy lighting.

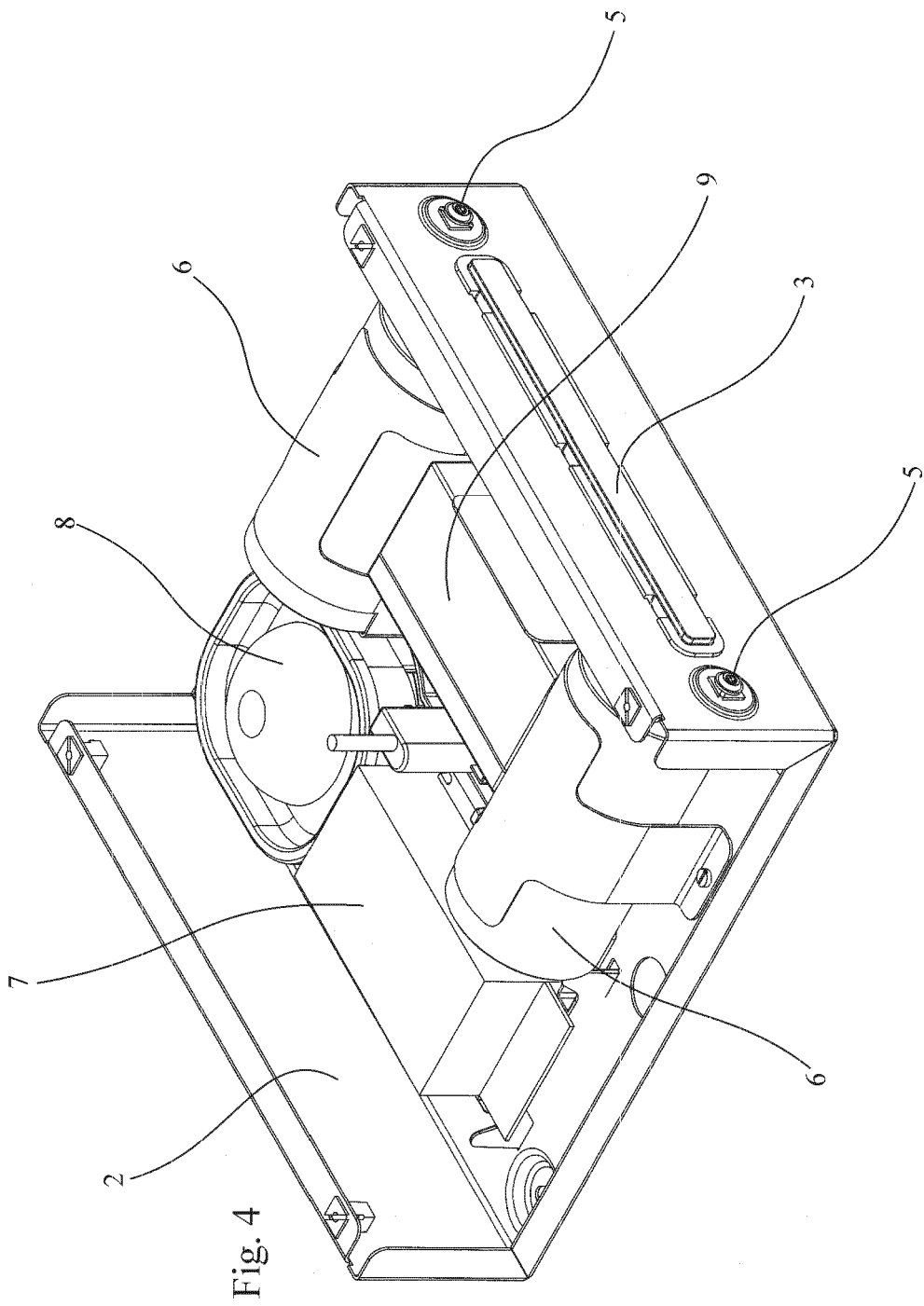
3. Lamp with a multisensory alarm system according to claim 1, **characterised by** the fact that said light source (3) is excitable in strobe mode.
4. Lamp with multisensory alarm system according to claim 1 **characterised by** the fact that the activation of the sound of the acoustic siren (8) with respect to the strobe mode of the light source (3) and/or the triggering times of the smoke canister (6) for the emission of fumes is adjustable with a delay and/or earlier activation.
5. Lamp with a multisensory alarm system according to claim 1, **characterised by** the fact that the said fumes released by the smoke canisters (6) inside the body (2) of the lamp (1) are stinging/tear gas fumes.
6. Lamp with multisensory alarm system according to claim 1 **characterised by** the fact that the said there are at least two openings (5) on the body (2) of the lamp (1) for the escape of the fumes.
7. Lamp with multisensory alarm system according to claim 1 **characterised by** the fact that on the body (2) there are slots (4) as openings for the emission of the sound of the acoustic siren (8), which have an appearance that can be confused with reliefs of an aesthetic value.
8. Advantageously, said lamp fitted with an alarm system according to claim 1 **characterised by** the fact that it involves an alarm device whose emissions are directed at the sense of hearing by means of the sound signal, and at the sense of sight by means of the flashing of the light source, and also the sense of smell due to the acrid characteristic of the smoke emitted by the smoke canister, as well as the sensitivity of the skin/eyes from the stinging/tear gas characteristic of the smoke emitted by the smoke and because of the repellent/disgusting/nauseous characteristic of the smoke.

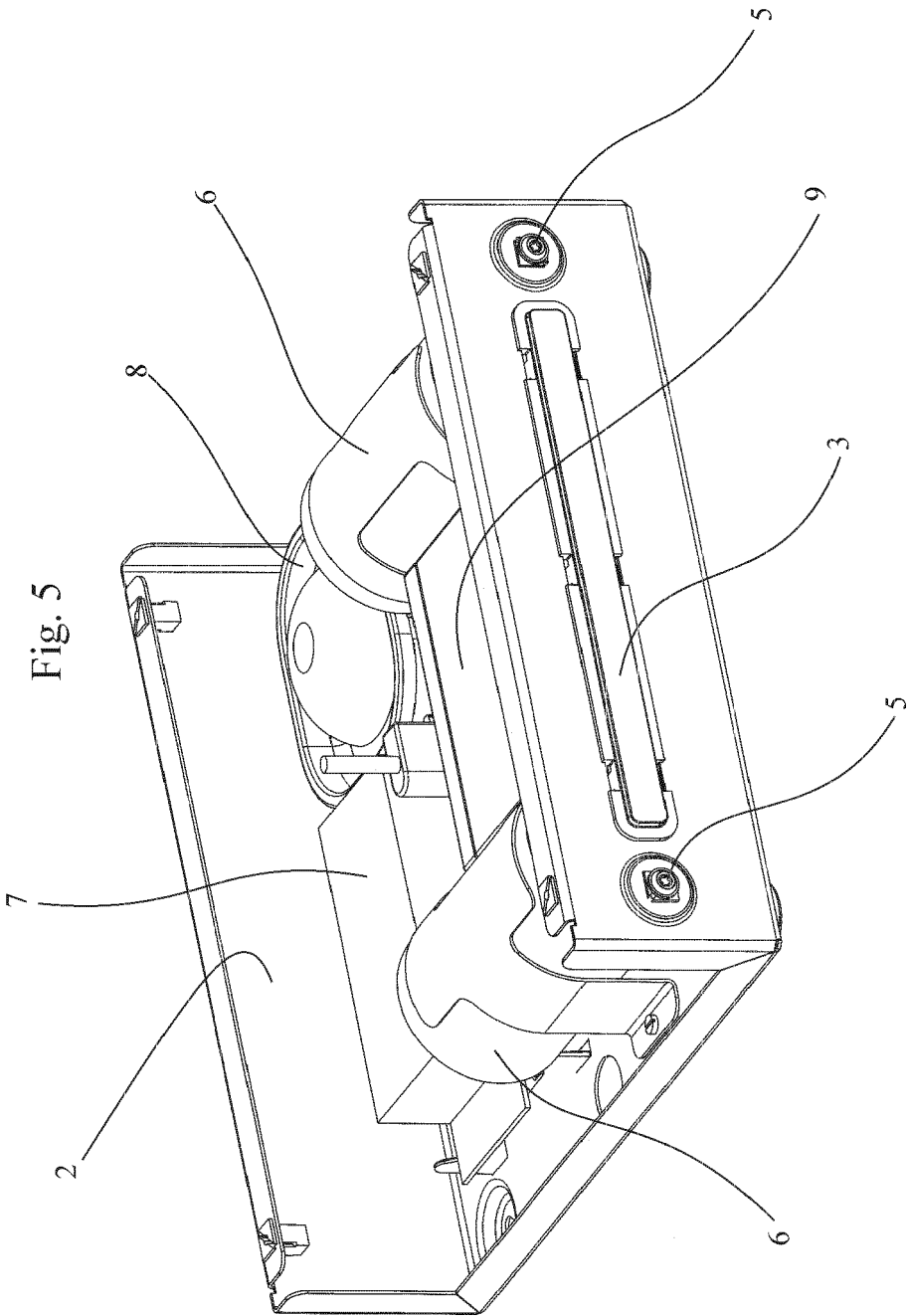
9. Lamp with multisensory alarm system according to claim 1 **characterised by** the fact that the use of an anti-foam system (11), combined with an anti-drilling system (12) and the impossibility of blocking the emission of one or more alarm signals, with or without an autonomous power supply, makes this alarm system safe to activate.

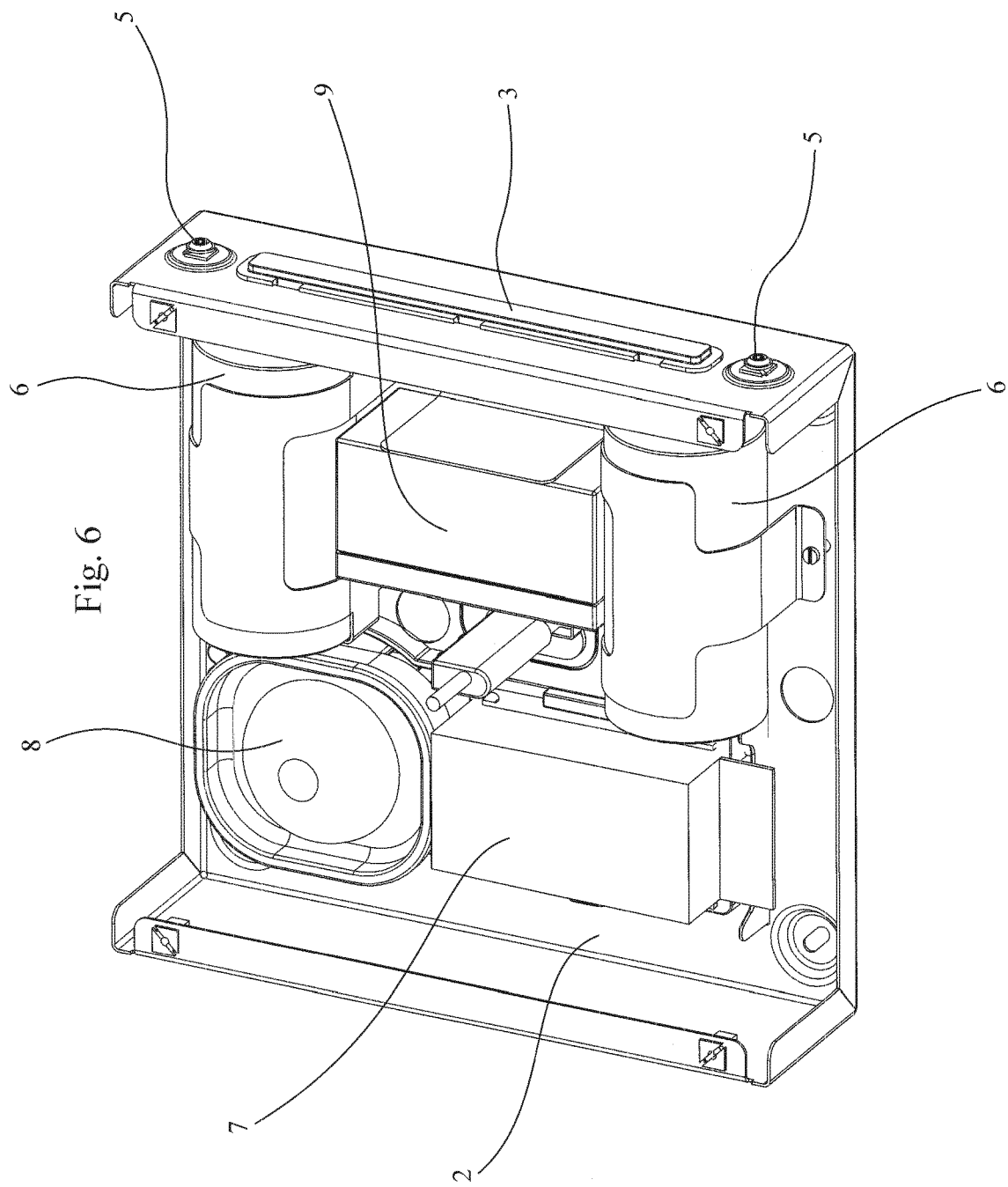












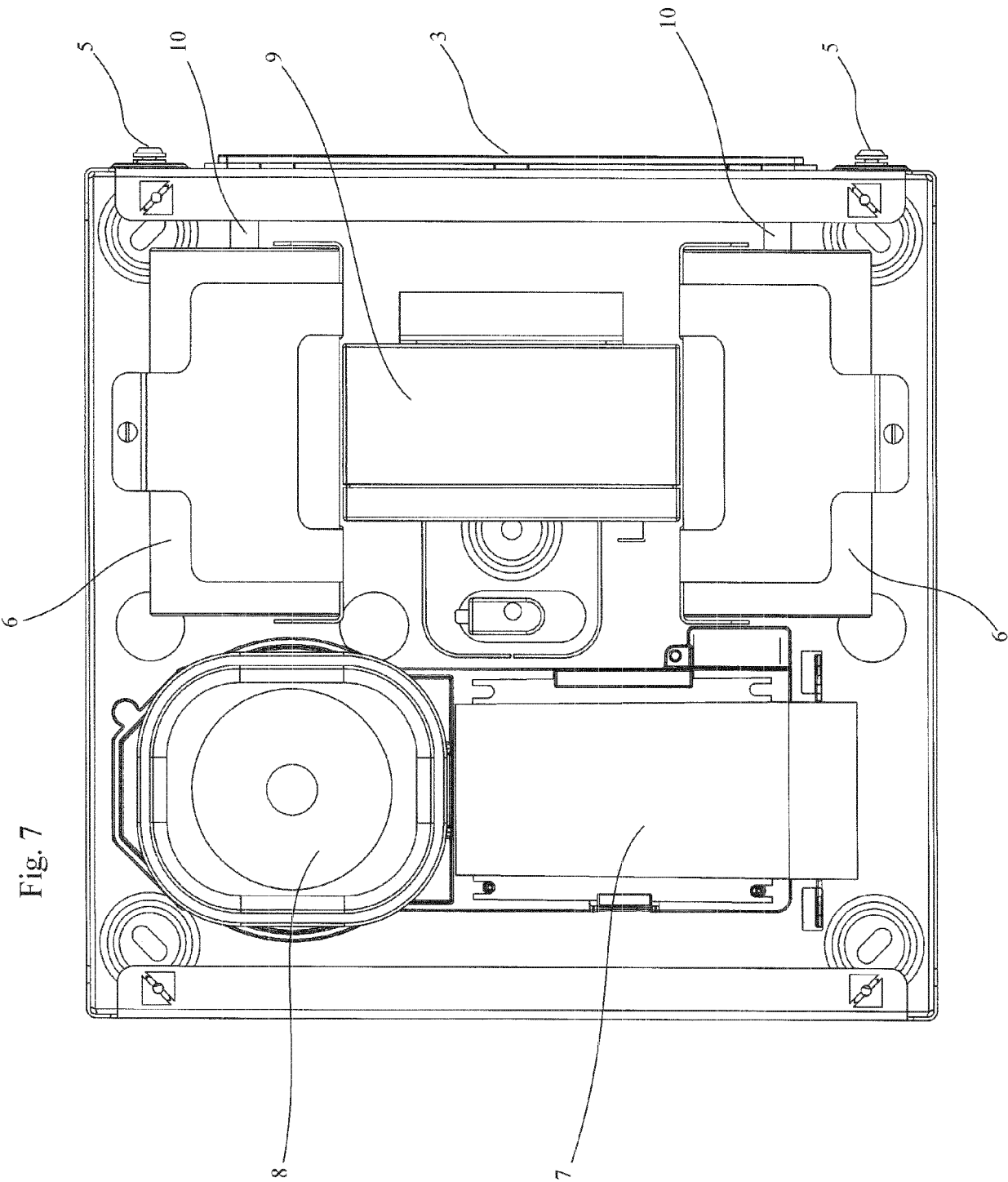
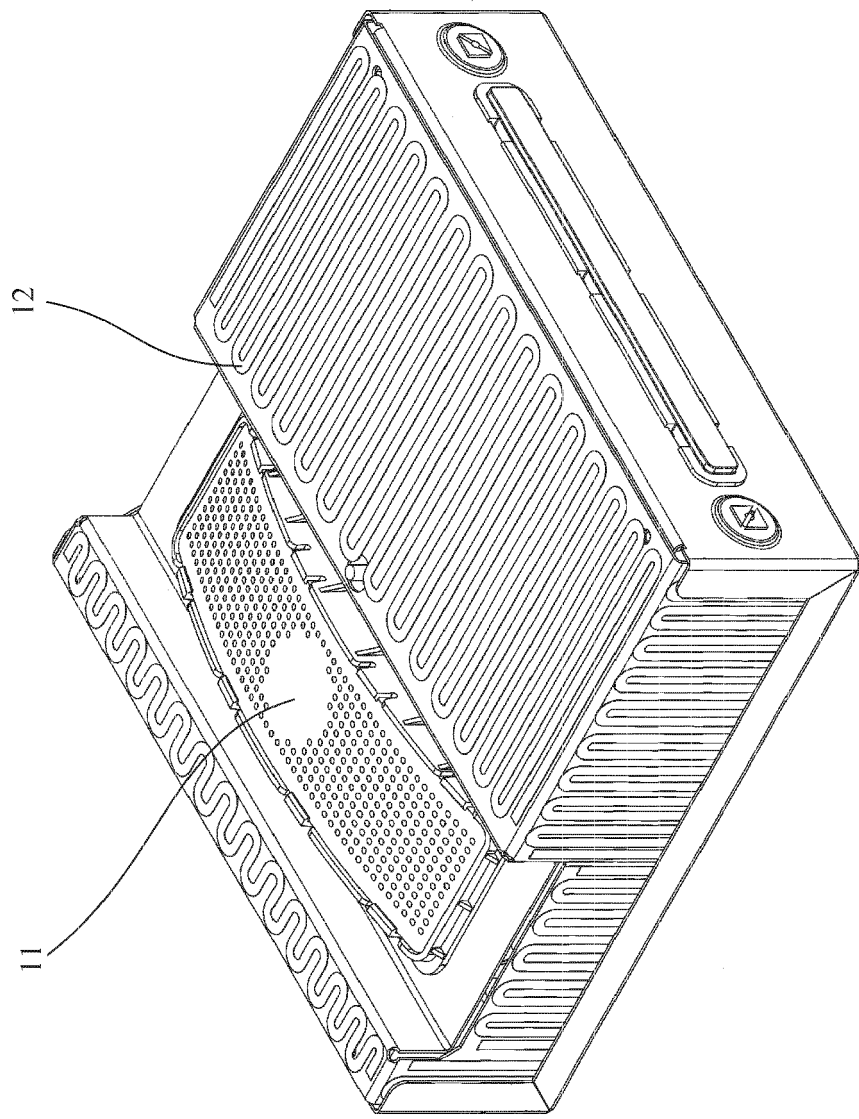


Fig. 7

Fig. 8





EUROPEAN SEARCH REPORT

Application Number
EP 18 15 6254

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 5 402 000 A (OWENS II JOE B [US]) 28 March 1995 (1995-03-28) * column 1, lines 6-11 * * column 1, line 54 - column 2, line 33 * * column 2, line 56 - column 3, line 30; figures 1-3 *	1-9	INV. G08B15/02 F21V33/00
Y	US 2011/279270 A1 (MARCKWALD A HUNT [US] ET AL) 17 November 2011 (2011-11-17) * paragraphs [0002], [0015] - [0017], [0019], [0021], [0022], [0024] - [0026], [0028], [0029], [0032]; figures 1,2a,2b *	1-9	
Y	US 8 258 949 B1 (JAYNES RONALD [US]) 4 September 2012 (2012-09-04) * column 1, line 22 - column 2, line 52 * * column 4, line 57 - column 6, line 49; figures 1,4,6 *	1-9	
Y	EP 0 623 906 A1 (SECOM CO LTD [JP]) 9 November 1994 (1994-11-09) * column 1, lines 3-8 * * column 4, line 16 - column 7, line 3; figure 1 * * column 10, line 50 - column 11, line 49; figures 4-5 * * column 15, line 29 - column 16, line 53; figures 8-9 *	4,6	TECHNICAL FIELDS SEARCHED (IPC) G08B F21V
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 June 2018	Examiner Russo, Michela
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 15 6254

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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