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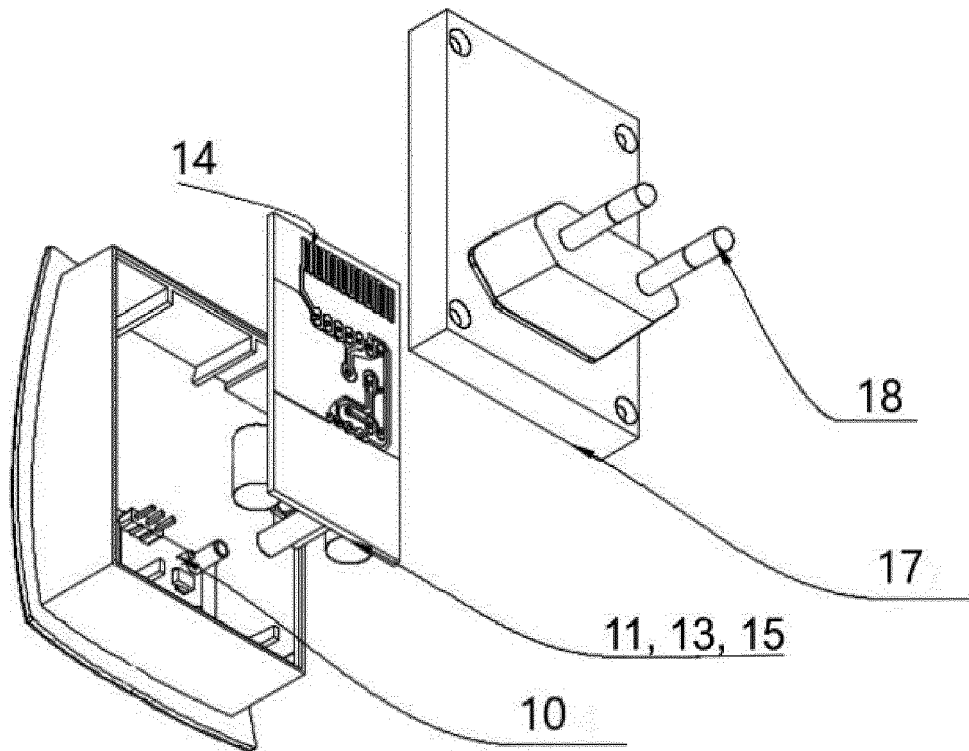
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(54) **A MOTION SENSOR EQUIPPED WITH A RADIO TRANSMITTER**

(57) A motion sensor equipped with a radio transmitter, connectable as a whole to a wall socket, which includes a motion sensor electronics (PIR or a microwave transmitter with receiver) (10), a power source (11), a radio transmitter (13) and coding electronics of a radio

signal (15). The presented motion sensor is thus independent of batteries or rechargeable batteries and allows to send a radio signal with the use of a radio transmitter (13) to the central alarm unit, wi-fi router or a wireless network gateway.

Picture 3 - Motion sensor equipped with a radio transmitter - example of housing:



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Description

[0001] The presented invention is a device for the motion detection, equipped with a built-in radio transmitter. It is designed for protecting the premises from an unauthorised access of third persons. The device for the motion detection with a built-in radio transmitter is located together with a voltage transformer and an electric rectifier in the device that can be plugged into an electric socket.

[0002] The nowadays existing and produced devices for the motion detection (pict. 1) with radio transmitters are powered by batteries (6) and are usually attached by a mounting bracket (5) e.g. to the walls of the object under surveillance or in another suitable place. That generally available devices for the motion detection consist of a plastic box (1 + 7), lens (2), motion sensor (usually a passive infrared sensor or a microwave transmitter with receiver), electronics to evaluate the signal from this sensor (8) and electronics for sending the signal to the home alarm control panel, wi-fi router or communication node of a wireless network. The aforementioned solution is yet limited particularly by the capacity of the used battery (6). The part of electronics involved in the process of sending the signal may be activated in case the motion sensor (8) detects the motion and thus energy of its battery is saved. The motion sensor itself must be however powered constantly in order to fulfill its function. That is the reason for short lifetime of the battery and necessity to change or charge the battery after some time. The subject matter of the presented invention is a device for the motion detection which neither depends on batteries nor rechargeable batteries with possibility to transmit the signal to the central alarm unit, wi-fi router or a wireless network communication node immediately after the motion is detected.

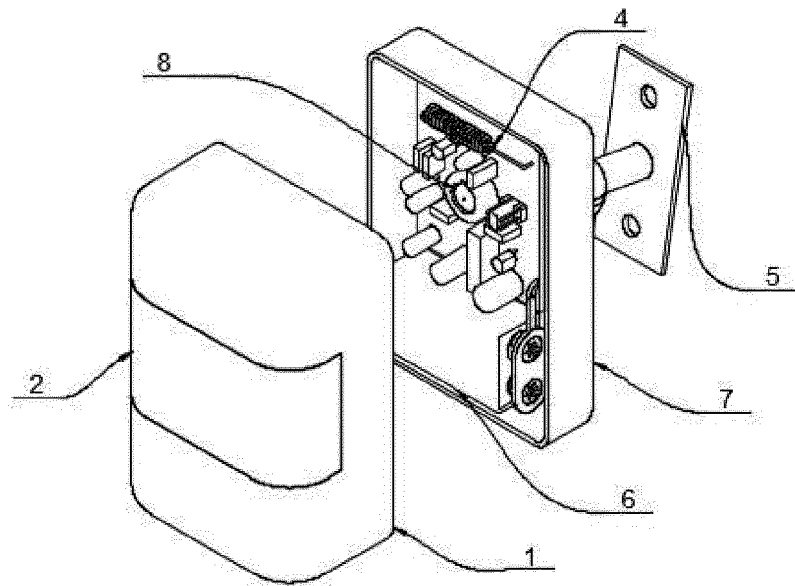
[0003] The presented invention is the device for the motion detection that includes a connector for a power socket, a current rectifier and voltage regulator unit, a motion sensor (PIR or a microwave transmitter with receiver), evaluating electronics and a radio transmitter. The function of the presented motion sensor is described in the pict. 2. The device (16) for the motion detection is powered by a power socket (12) into which the entire device is plugged. The device (16) consists of the motion sensor and electronics for analysing the motion (10), a power element (11), a radio transmitter (13) and radio signal coding electronics (15). AC power from the socket (12) is transferred to a power module (11) where AC is changed for DC and the voltage level transforms from high to low. The motion sensor (10) and the radio transmitter (13) are powered by DC. At the moment the motion sensor (10) detects some motion, the coding electronics is activated (15) which then activates the radio transmitter (13) which in turns transmits the radio signal from the device with the use of an internal (14) or external (19) aerial. This radio signal can be detected and evaluated by the central unit (20) of the alarm system, wi-fi router

(21) or a wireless network gateway (22). The box of the device (16) will be made in a shape that allows the entire motion sensor device (16) to be plugged into an electrical socket. An exemplary shape of the box is presented in the pict. 3. A part from the elements described in pict.2, the device includes at least 2 pins of the power connector (18) which can be produced differently according to certain norms and standards. Inside the device there is also an aerial (14) which may be produced as a part of a printed circuit board (as in pict. 3), as a coil wire aerial or an aerial mounted outside the motion sensor box.

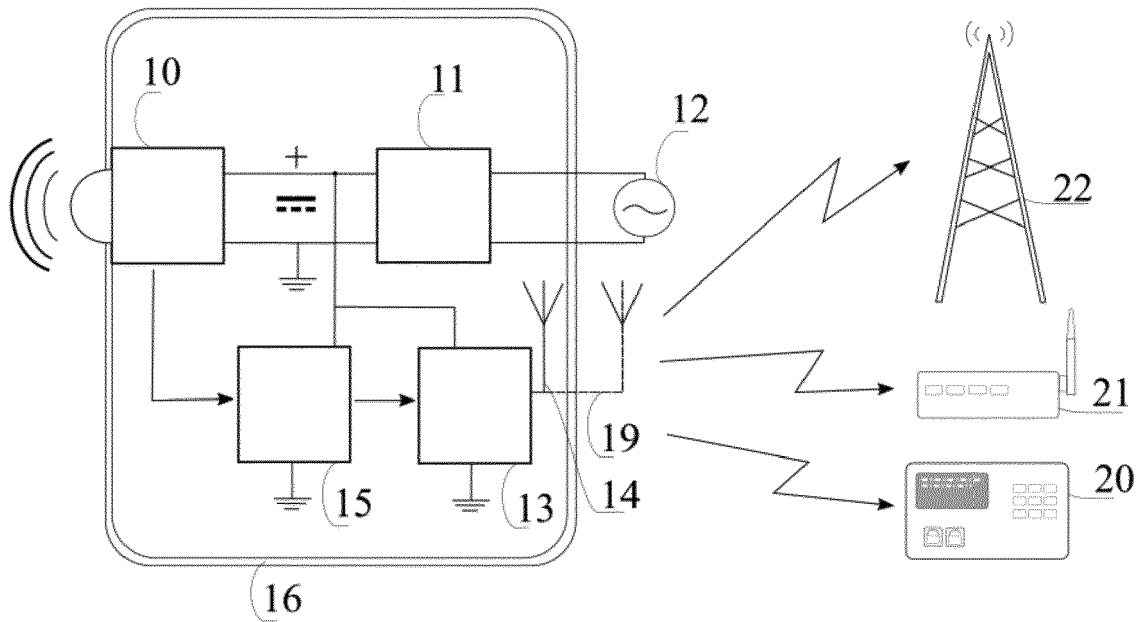
Claims

1. A motion sensor device, connectable as a whole to a wall socket, which includes a motion sensor, electronics of a motion sensor, a power source for obtaining DC from AC, a radio transmitter and coding electronics of a radio signal.

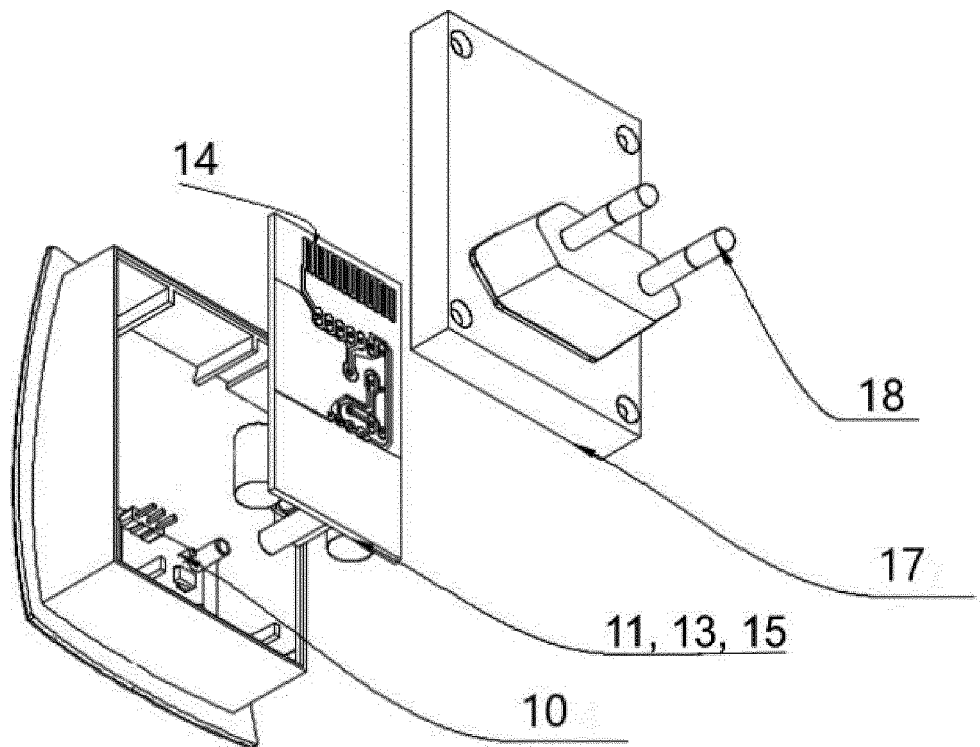
Picture 1 - nowadays existing and produced devices for the motion detection



Picture 2 – Motion sensor equipped with a radio transmitter block diagram:



Picture 3 - Motion sensor equipped with a radio transmitter - example of housing:





EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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X	EP 2 574 840 A1 (GEN ELECTRIC [US]) 3 April 2013 (2013-04-03) * the whole document *	1	TECHNICAL FIELDS SEARCHED (IPC) G08B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 23 March 2020	Examiner Kurzbauer, Werner
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	

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

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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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