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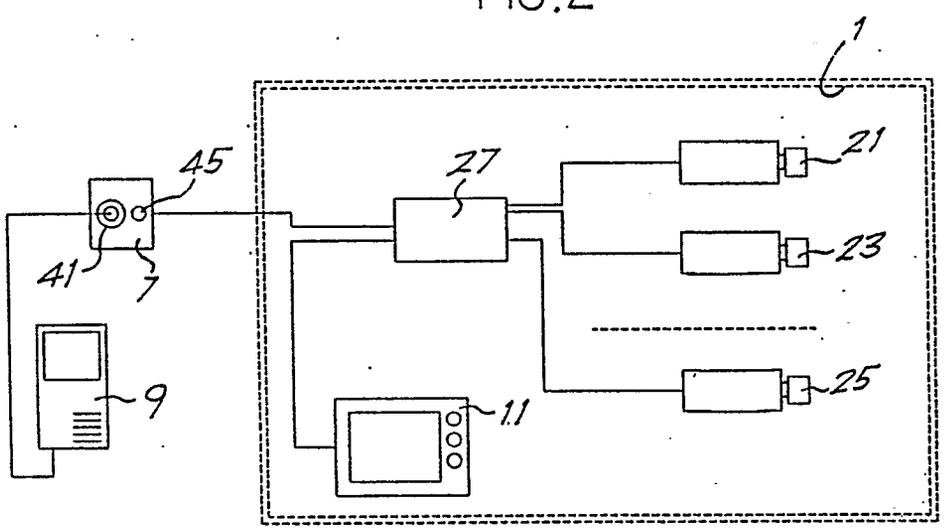
(54) Method and apparatus for surveillance of premises.

(57) The apparatus comprises detection means (21 23, 25) located inside the premises to be kept under surveillance, which means are connected to devices (7) located outside the premises to be watched over. Instruments (9) can be connected by means of said devices (7) for reading signals coming from said detection means located inside the premises to be watched over.

FIG.2



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METHOD AND APPARATUS FOR SURVEILLANCE OF PREMISES

The invention refers to a method and apparatus for premises surveillance.

The surveillance of premises - such as trade or industrial facilities - during night-time or, anyway, within periods they are not guarded over, takes place nowdays through inspections by skilled surveillance personnel who, in general, have access into the premises to watch and inspect that everything inside is in normal condition. In case of anomalies, the surveillance personnel warns the central station about this fact; it may also occur that the watchman should face directly and unexpectedly the criminals that have broken into the premises.

Patrol duties require a long time so that they are extremely expensive. Moreover, the risks run by the personnel for attacks by criminals caught inside the premises are high especially because, often, the watchman has to face the situation by himself. Moreover, for patrolling it is necessary that each person in charge of the surveillance be in possession of the keys for the access to all the premises to be inspected. This entails the necessity of special attention in selecting the personnel in order to ensure the maximum reliability and, furthermore, it brings about the risk that the keys may be taken away by force from the surveillance personnel by criminals which want to gain access into the premises with impunity.

It is the object of the invention to provide a surveillance method and apparatus which allow to overcome the above mentioned drawbacks.

Substantially, the apparatus for the surveillance of premises according to the invention comprises detection means located inside the premises to be guarded; these detection means are connected to devices outside the premises to be guarded, for the connection to instruments for the reading of signals coming from said detection means located inside the premises to be guarded. In particular, the detection means may comprise at least a telecamera, a power supply and - when the telecameras are more than one -a cyclic selector switch to allow the control of several telecameras connected to the reading instruments. In this case, the reading instruments to be connected to the detection means comprise a portable monitor possibly provided with an earphone or a loudspeaker, in case the detection means comprise also one or more ambient microphones. In practice, the detection means are activated by connecting said instruments to the connection devices outside the premises.

By means of the apparatus according to the invention, the premises may be watched over by avoiding entering said premises during patrolling. In fact, while patrolling the watchman without having to enter the premises must merely connect his own portable monitor to the detection means located inside the premises and check that everything is in normal condition. In this way, not only the time required for the inspection is reduced, but there is also avoided the risk of attack by ill-intentioned persons who may be inside the premises. Only in case of anomalies detected by the person in charge of the surveillance there will be the need of breaking into the premises after calling the central station for help. There will be also avoided the risks of having entrusted the access keys to the patrol personnel.

The invention also refers to a method for the surveillance of premises by using the described apparatus.

The invention will be better understood by following the description and the attached drawing, which shows a practical, non-limiting example of the same invention. In the drawing:

Fig.1 shows a simplified diagram of a first embodiment of the invention;

Fig.2 shows the simplified diagram of a second embodiment of the invention;

Fig.3 shows diagrammatically the application of the invention to trade premises;

Fig.4 shows an outside connection box in a section taken on line IV-IV of Fig.5; and

Fig.5 shows the outside connection box in a section taken on line V-V of Fig.4.

Fig.1 shows a diagram of a first, particularly simple embodiment of the invention. Numeral 1 generally indicates the external wall of the room or premises to be watched over. Inside the room there is installed a telecamera connected to a power supply 5. The supply 5 is in turn connected to a connection box 7 located outside the room delimited by wall 1. The box 7, to be described in greater detail later on, comprises a connector for the connection of a portable monitor 9 supplied to the surveillance personnel.

In the illustrated example, to the supply 5 there is also connected an interior, optional monitor 11 which can be used for the continuous surveillance through the telecamera 3 during the time the premises are under control.

Fig.2 illustrates a diagram of a second embodiment of the invention. In this case, within the external wall 1 delimiting the premises to be watched over, more telecameras 21, 23, 25 are located, each of which is connected to a cyclic selector switch and supply 27 of usual type. The cyclic switch is in turn connected to the outside connec-

tion box 7 to which there can be connected the portable monitor supplied to the surveillance personnel. Also in this case there is provided an internal optional monitor 11 for the continuous surveillance during the time the premises are under control.

Fig.3 illustrates an apparatus, according to the invention, as applied to trade premises consisting of two adjacent rooms 31, 33. Inside each of said two rooms 31, 33 there are installed telecameras 35, 37 connected to a cyclic selector switch and supply 39, which is in turn connected to the connection box 7 outside the premises. The connection box 7 allows the portable monitor 9 to be connected to the interior system made up of telecameras 35, 37 and by the cyclic selector switch and supply 39. Corresponding ambient microphones able to be either suitably located inside the premises to be watched or installed on the telecamera may be combined to each telecamera 35, 37; 3; 21, 23, 25. In this case the portable monitor 9 is provided with loudspeaker or earphone to allow, in addition to the detection of images taken by the telecameras, also the detection of possible noises inside the guarded premises.

Figs.4 and 5 show two sections of a feasible embodiment of connection box 7. The box, applied in an easily accessable position outside the premises, includes a bayonet or quick connection 41 or the like, applied to the inner panel 43 of the box. The connector shall have mechanical strength features so as to allow a high number of connection and disconnection operations of the corresponding pin combined to the portable monitor 9. The contacts may be suitably treated, for example gold-plated to prevent damages caused by atmopheric agents. By plugging the pin of the portable monitor 9 into connector 41 there is obtained the feeding of the portable monitor itself with low-voltage direct current supplied by the same supply of the internal telecameras or by other suitable supply, and with the video and audio signals from telecameras and/or microphones located inside the premises to be watched over. The connection of pin into connector 41 loses also the power contact of the internal devices (telecameras, microphones, possible cyclic selector switch).

The connection box 7 accomodates also a button 45 for the purposes to be indicated below. The box 7 is closed by a small door 47 with lock 49. Advantageously, the locks of all the boxes installed by the surveillance service can be alike for sake of practicality.

By using the described apparatus, the surveillance is really simplified and safe. For each of the premises to be patrolled, the person in charge of the surveillance has only to open the door 47 of box 7 and plug the pin of the portable monitor 9 into connector 41. The connection of the pin closes at the same time the power contact of the devices inside the premises and the power contact of same monitor 9. The audio and video signals from the detection means (telecameras and/or microphones) installed within the premises to be watched, are detected by the person in charge of the surveillance through the portable monitor 9 and the loudspeaker or the earphone combined therewith. When more telecameras are installed within the premises, as in the examples of Figs.2 and 3, the cyclic selector switch provides for cycling feeding the portable monitor with signals coming from the various telecameras (and possibly from the microphones combined therewith). If the watchman finds out an anomalous situation inside one of the premises where the telecameras are installed, he may stop the automatic advancement of the cyclic selector switch by pressing button 45. In this way the selector switch cycle stops and the watchman is able to check for a longer time the situation in the zone controlled by the telecamera on which the cyclic switch has come to a stop.

The drawing shows only an exemplification of the invention which may vary in the forms and dispositions.

Claims

1. Apparatus for the surveillance of premises comprising detection means (3; 21, 23, 25; 35, 37) located inside the premises (31, 33) to be watched over, which means are connected to devices (7), outside the premises to be watched over, for the connection of instruments (9) intended to read signals coming from said detection means located inside the premises to be watched over.

2. Apparatus according to claim 1, wherein said detection means (3; 21, 23, 25; 35, 37) are activated by connecting said instruments (9) to the devices (7) provided for the connection outside the premises.

3. Apparatus according to claim 1 or 2, wherein said detection means comprise at least a telecamera (3; 21, 23, 25; 35, 37), a power supply (5) and - if the telecameras are more than one - a cyclic selector switch (27); and wherein said reading instruments comprise a portable monitor (9).

4. Apparatus according to one or more preceding claims, in which said detection means comprise one or more ambient microphones and said instruments comprise a sound reproducer.

5. Apparatus according to one or more preceding claims, in which to said connection means (7) there are combined means for blocking the switching cycle of the selector switch (27).

6. Method for the discontinuous surveillance of

premises, characterized in that said surveillance is carried out by remaining outside the premises (31, 33) to be watched inside which detection means (3; 21, 23, 25; 35, 37) are located, by making a connection between said detection means and reading instruments (9) for the reading of signals emitted by said detection means.

7. Method according to claim 6, wherein said detection means are activated only during the signals reading phase, when the reading instruments (9) are connected to said detection means.

FIG.2

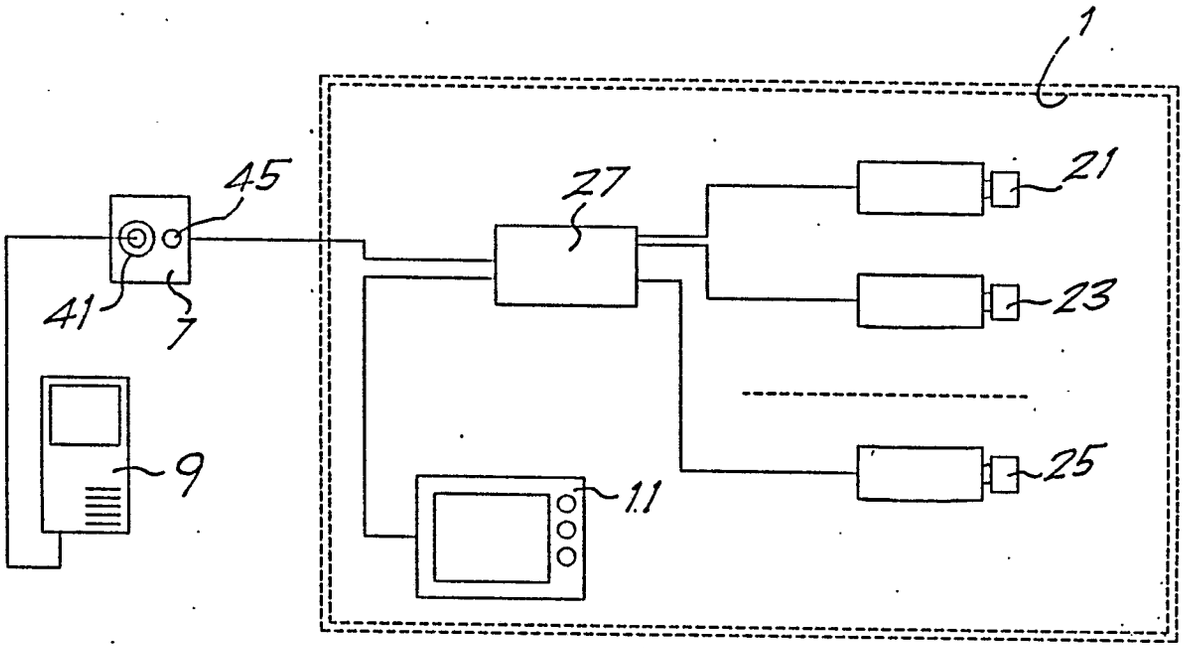
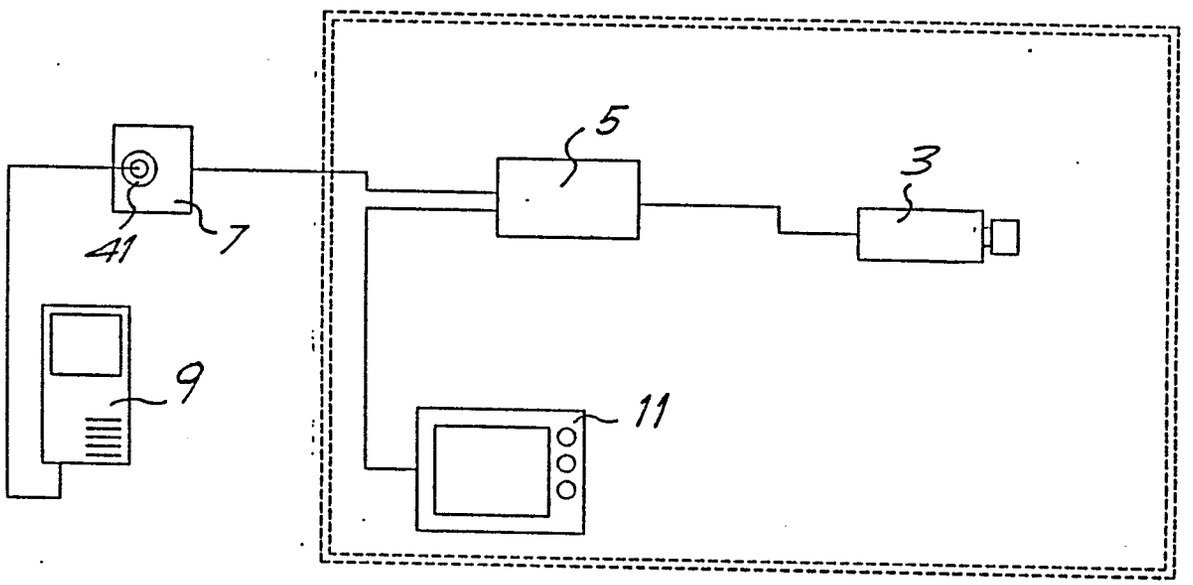


FIG.1



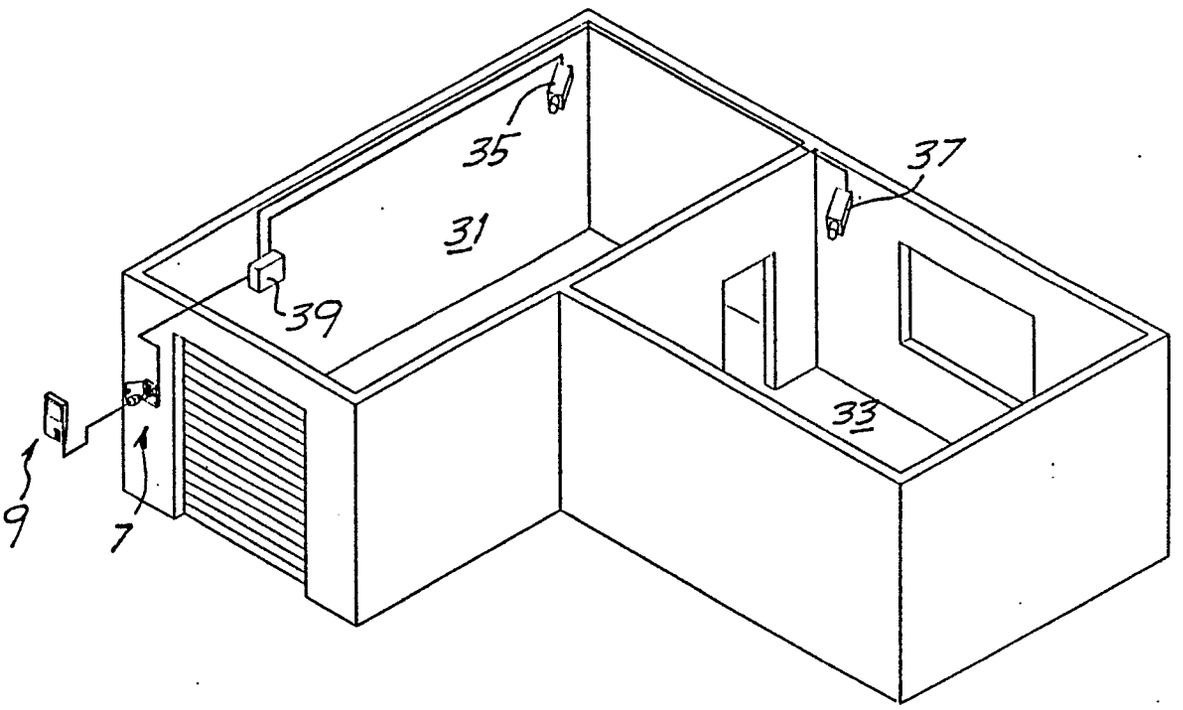


FIG.3

FIG.4

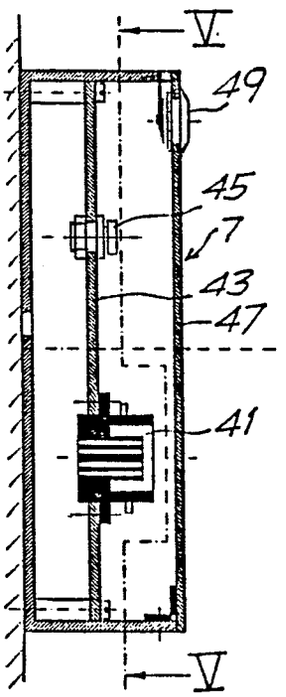


FIG.5