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(54) **Safe with an electronic combination opening system and alarm combination**

(57) Safe with an electronic combination opening system, comprising a keypad (12) by means of which it is possible to program and memorise a first secret numerical combination for operating means (9) for locking/releasing the lock (4) which opens and closes the door (2) of the safe, **characterized in that** via said keypad (12) it is possible to program and memorise a second secret numerical combination which likewise causes activation of said means (9) for locking/releasing the lock (4) which opens and closes the door (2), but at the same time activates a transmitter (14) which sends a signal or makes one or more emergency calls to predetermined numbers.

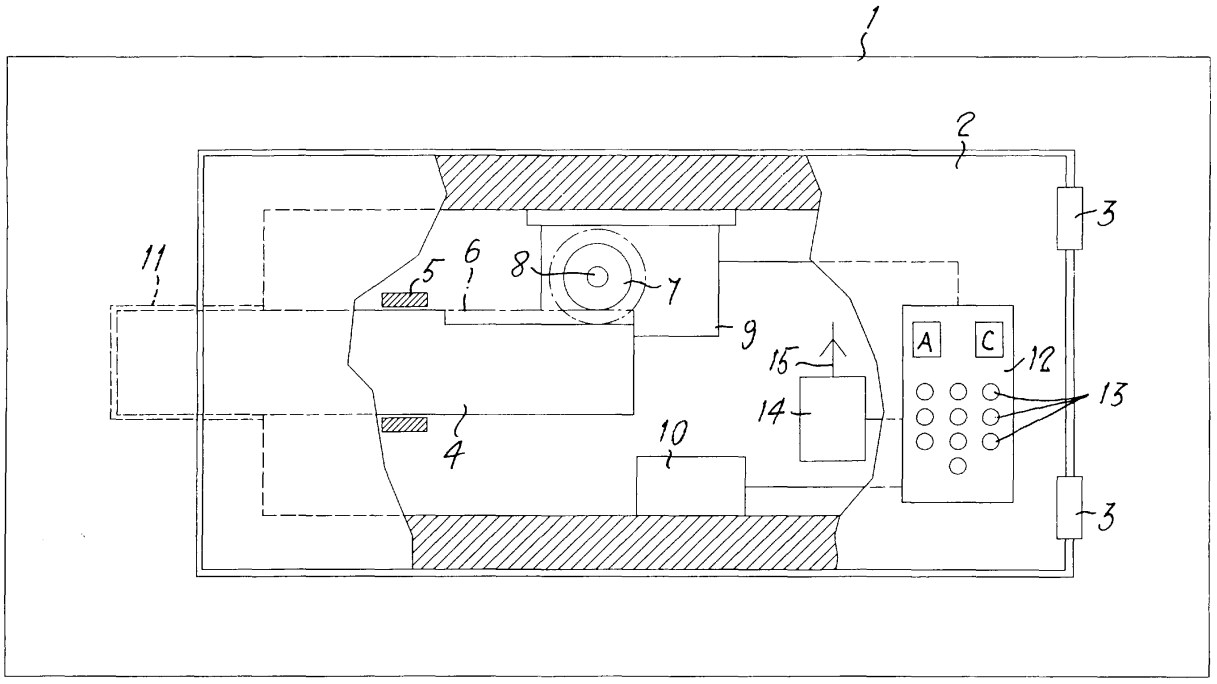

Fig. 1

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Description

[0001] The present invention relates to safes with an electronic combination opening system and, more particularly, a safe with an electronic combination able to send an alarm signal whenever the owner of the safe is being threatened and forced to open the safe.

[0002] Break-ins into villas or apartments, where the owners are forced by an armed intruder to open the safe, are becoming increasingly more common.

[0003] According to the present invention a system has therefore been devised where a safe of the electronic combination type is provided with a double combination, i.e.: a first combination for normal use, which operates the lock causing opening of the safe in the usual manner, and a second combination to be used when being threatened, which, in addition to operating the safe opening lock, in an apparently entirely normal manner, also causes sending of an emergency signal via a (GSM or similar) transmitter associated with activation of this second combination.

[0004] This emergency signal may be sent to one or more mobile phones or to a security company or the like. Advantageously, this signal may be repeated so as to send out a first warning and then an actual message which, when sent to a security company, could also include the address from where it is being sent.

[0005] In this way an alarm signal is sent out promptly without arousing the suspicion of the person threatening the owner.

[0006] Further characteristic features and advantages of the present invention will emerge more clearly from the following detailed description of a preferred embodiment thereof, provided by way of a non-limiting example in Figure 1 of the accompanying set of drawings, which shows the front side of a safe according to the invention with its door partially cross-sectioned.

[0007] With reference to the drawing, 1 denotes the front side of the safe, provided with a door 2 which is hinged at 3 on the body of the safe 1. The door 1 has, on its inner side, the lock 4 which is slidably guided in a horizontal plane by special guides 5 and is provided at one end with a rack portion 6 engaging with a toothed wheel 7 keyed onto the shaft 8 of an electric motor 9 powered by batteries 10. The other end of the lock cooperates with the recess 11 formed in the body of the safe 1.

[0008] On its outer side, the door 2 has, in a manner known per se, a keypad 12 provided with a series of ten numerical keys 13 as well as two keys identified by the letters A and C. The keypad 12 has associated with it, in a manner known per se, a memory circuit which allows memorisation of a numerical combination such as, for example, 1-3-5-6 which is entered via the keypad 12 itself. Consequently, in order to open the safe 1, it is merely required to key in this combination and then press the key A in order to operate the motor 9 so as to cause rotation of the toothed wheel 7 in an anti-clockwise direction so that the lock 4 is retracted from the recess 11, allowing opening of the safe. When, instead, it is required to close the safe again, it is merely needed to key in again the secret combination and press the key C so as to cause rotation of the toothed wheel 7 in a clockwise direction, moving the lock 4 into the closed position inside the recess 11.

[0009] According to the invention, the keypad 12 may also be programmed to memorise a second secret combination, for example the numerical combination 2-3-5-6, different from the combination for so-called "normal use".

[0010] When this second combination is keyed in, the safe opening mechanism is likewise activated, namely the motor 9 is activated, causing anti-clockwise rotation of the toothed wheel 7 which engages with the rack 6 of the lock 4 so that the latter is retracted from the recess 11, allowing the safe to be opened. At the same time, however, the transmitter 14 equipped with an antenna 15 is also activated and sends out a predefined emergency signal in the form of an SMS to a predetermined mobile telephone number and/or to a transmitter of a security company or the like. Advantageously, this signal may be repeated so as to send out a first warning and then an actual message which, when sent to a security company, could also include the address from where it is being sent.

[0011] All of this happens without arousing the slightest suspicion on the part of the intruders who forced the owner to open the safe.

[0012] This allows prompt intervention of the police or security company.

[0013] Obviously the present invention is not limited to the embodiment thereof illustrated and described, being provided only by way of an example of one of the many possible embodiments of the invention, which comprises all those variations and modifications which fall within the broader scope of the inventive idea, as claimed below.

[0014] Thus, for example, although the lock has been described as being operated to open and close by means of an electric motor, it is possible to envisage manual operation of the lock and that the opening combination activates a device which may be of an electromagnetic or other type so as to lock and/or release the lock, allowing opening thereof.

[0015] In accordance with a variant of the present invention, it has been found that it is particularly advantageous to arrange the transmitting antenna behind the keypad 12 for keying in the safe combination since, being at least partially made of non-metallic material, said keypad 12 forms the zone where there is less or no screening of the outgoing signal and therefore the zone where the signal can be best transmitted.

Claims

1. Safe with an electronic combination opening system, comprising a keypad (12) by means of which it is

possible to program and memorise a first secret numerical combination for operating means (9) for locking/releasing the lock (4) which opens and closes the door (2) of the safe, **characterized in that** via said keypad (12) it is possible to program and memorise a second secret numerical combination which likewise causes activation of said means (9) for locking/releasing the lock (4) which opens and closes the door (2), but at the same time activates a transmitter (14) which sends a signal or makes one or more emergency calls to predetermined numbers.

2. Safe according to Claim 1, in which said means for locking/releasing the lock comprise a motor (9) for operating the lock (4) which opens and closes the door (2).

3. Safe according to any one of the preceding claims, in which said signal activates a control unit or other alarm device.

4. Safe according to Claim 1, **characterized in that** said transmitter is a GSM transmitter and that the signal sent is preferably repeated so as to provide a first warning and then send an actual message which, when sent to a security company, could also comprise the address of the premises from where it is being sent.

5. Safe according to any one of the preceding claims, in which said transmitter (14) with an associated antenna (15) is housed on the inner side of the door (2) of the safe (1) and is activated a few moments after the door (2) has been opened.

6. Safe according to Claim 5, **characterized in that** the antenna (15) of the transmitter (14) is arranged behind the keypad (12) for keying in the combination of the safe.

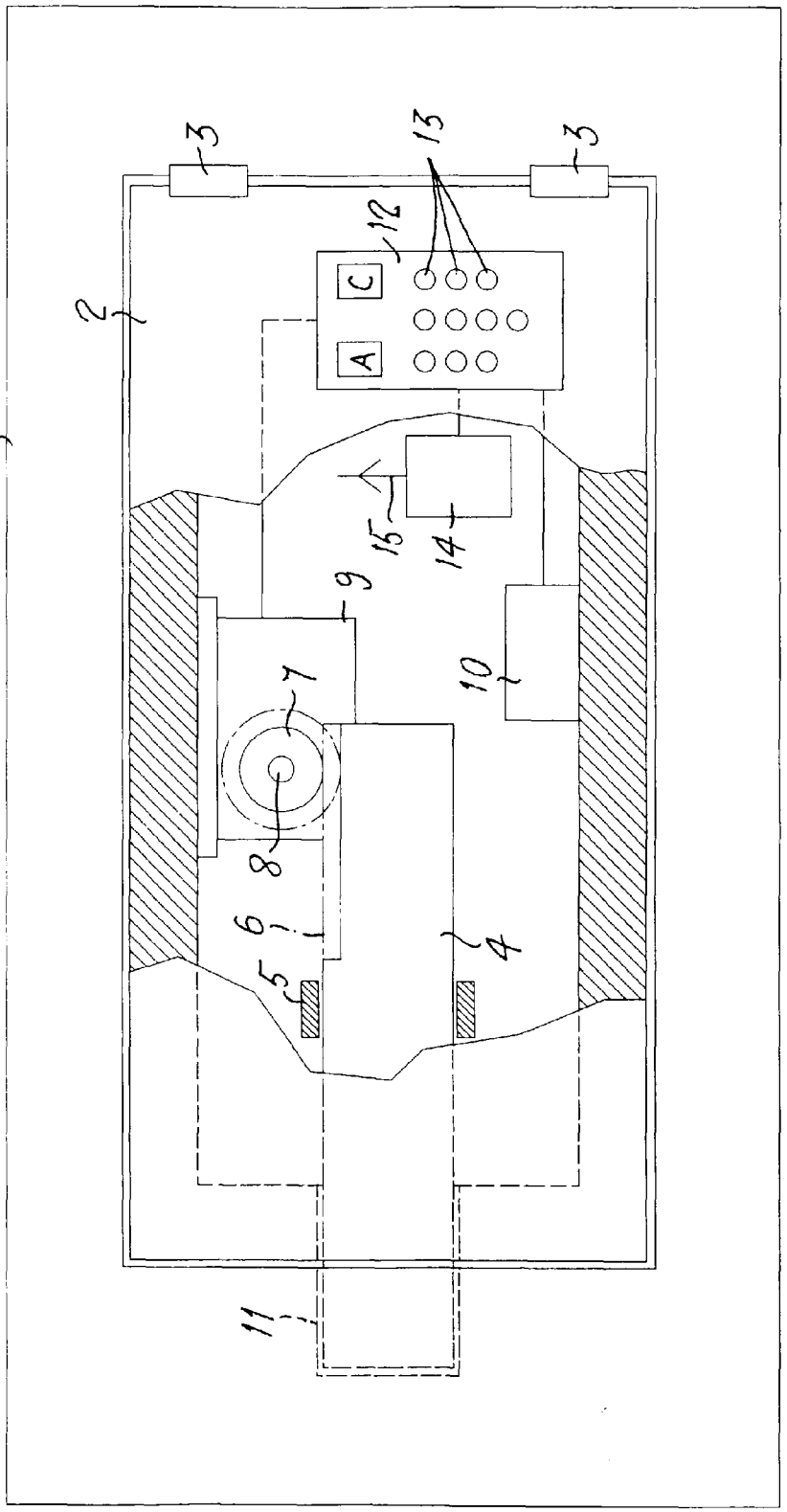

Fig. 1