

Innovative modes of operation of door locking systems

The invention entitled “*Method of operation of a door locking system*” (Patent UA 127400, 09.08.2023) ensure reliable protection against unauthorized opening of doors of residential and service premises, garages, shopping pavilions, etc. It can be used in advanced door locking systems containing a mortise lock or a rim lock with a stand-alone or built-in electromechanical device with an *electronic control unit* (hereinafter referred to as “CU”). This device fixes the deadbolt when closing the lock or additionally blocks it in an already closed lock.

The invention provides a significant increase in the resistance of such locking systems to unauthorized opening by non-destructive methods, as well as the emergence of new and unique modes of operation. Here are just a few of them:

1. The mode providing reliable protection against consequences of an accidental or a criminal action on the setting device installed at the outside of the door (Claim 1). This device generates a command for the CU to unblock the lock deadbolt. For example, the keypad, RFID and DS readers, finger or iris scanners, which are commonly used in conventional security systems, can be used as such setting devices. In standard security systems all these devices are almost always installed inside the secured premises, i.e. protected by the front door.

2. The possibility to work in a mode that does not require any *external* setting devices at all. In this case, the command to unblock the deadbolt of a closed lock is generated directly in the CU using patented actions with the *regular lock key* (Claim 2). At that unblocking of a closed lock deadbolt can be made virtually impossible for the scammers, even if they use the whole arsenal of criminal tools and are not limited in time. But a legitimate user (e.g., an apartment owner) can easily unblock the deadbolt and open this lock in about one minute.

3. The possibility to generate a digital command for *emergency unblocking* of the deadbolt with the regular key in case of a loss of operability of the setting device (if it continuously monitored by CU) or the two-way connection between them (Claim 3). So, in the case of a such popular device as a mobile phone is used as the setting device, the invention provides the possibility of unblocking the deadbolt of a closed lock even in the absence of GSM network connection due to technical reasons or when it is locally jammed by an intruder.

For more information about the innovative door locking system with the “*Lock-security*” low-budget multifunctional autonomous blocking device, which uses this invention, go to:

<https://hag.com.ua/index.php?p=62>.

On October 12, 2021, an international application PCT/IB2021/059324 was filed for this invention, which was published on February 17, 2021 (<https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2022034569>).

Summary:

This significant invention in the field of lock products enables millions of mobile phone owners to freely use them as setting devices in advanced electronically controlled door locking systems. Moreover, it gives them the opportunity to refuse the use of any external setting devices, incl. cell phones.