[54] MAGNETIC CONTROLLED DOOR LOCK

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ABSTRACT

A lock for a door, the lock including a safety feature that prevents an intruder or unauthorized person from opening the lock; the safety feature consisting of a magnetically operated mechanism which is operative by a special key of unconventional design and which magnetically pulls a part of the mechanism into an operational position so it can co-operate with the remainder of the mechanism for sliding a bolt between a locked and an unlocked position.

2 Claims, 3 Drawing Figures
MAGNETIC CONTROLLED DOOR LOCK

This invention relates generally to locks. More specifically it relates to key operated locks. A principal object of the present invention is to provide a lock of unusual design that does not receive a conventional type of key, so that it is not able to be picked by a thief in the usual way so to slide a lock bolt in an unlocked position.

Another object is to provide a lock which is magnetically operated by a magnetic key instead of a conventional profile shape key.

Yet another object is to provide a magnetic controlled lock which accordingly is ideal for use on doors so to assure unauthorized entry is prevented.

Other objects are to provide a MAGNETIC CONTROLLED DOOR LOCK, which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

FIG. 1 is a side cross sectional view of the invention.
FIG. 2 is a cross sectional view taken on line 2—2 of FIG. 1.
FIG. 3 is a cross sectional view taken on line 3—3 of FIG. 1.

Referring now to the drawing in detail, the reference numeral 10 represents a magnetic controlled door lock according to the present invention wherein there is a lock case 11 for being mounted in a door and which includes a mechanism 12 therewithin for operating a slidable bolt 13 for sliding outward of a side edge of the case and into a bolt opening 14 located in a door jamb 15, so that the door can be thus locked.

The mechanism 12 includes stationary block 16 secured by weld 17 to the case, the block having an opening 18 therethrough in which there is a stationary barrel 19, the barrel having a cylindrical central opening 20 therethrough and for receiving a key 21 in one end thereof, the other end of the opening having a shaft 22 fitted thereinto, the shaft being on one end of the slidable unit 23 supported slidably free in a bearing opening 24 of a stationary support bracket 25 secured by weld 26 to the case. The unit 23 included a gear 27 integral with the shaft 22 and which is located on one side of the bracket 25, the other end of the shaft extending outward of an opening 28 of the case through which a knob K integral with the shaft protrudes so it can be manually operated by a person on the secured side of the door, such as the inside of a house or apartment. A compression coil spring 29 around the shaft bears at one end against the stationary bracket, and at its other end bears against a shoulder 30 of the knob so to normally keep the gear 27 from engaging a toothed rack 31 formed on an edge of the bolt 13. The end of the shaft 22 which extends into the opening 20 of the barrel 19 has a concentric opening 32 within the interior end of which there is secured a steel block or permanent magnet 33. The edge 34 around the opening 32 of the shaft has a pair of diametrically opposite notches 35 therethrough; the notches, magnet and opening 32 being associated with operation of the key 21.

The key 21 comprises a cylindrical shank 36 with a flat handle 37 on one end, the other end of the shank having a concentric opening 38 in which a magnet 39 is secured; the end of the magnet 39 protruding outwardly from the edge 40 a distance equal or slightly longer than the length of the opening 32 between edge 34 and the face of magnet or steel block 33. The edge 40 of the key has a pair of opposite protrusions 41 thereon for fitting into notches 35. As shown in FIG. 1, if part 33 is a magnet, it is polarized aligned so to be attracted by magnet 39 when the key is inserted into opening 20.

The key is normally prevented entry into the lock by a cross pin 42 but which can be slid out of the way by a second key 43 being inserted into a lock 44 mounted in the case 11, the lock 44 permitting rotation of a radial arm 45 connected pivotally by rivet 46 to one end of a lever 47 which at its other end is pivotally connected by a rivet 48 to protruding end 49 of the cross pin 42. The lock 44 comprises any conventional key operated lock in which the turning of the key causes a rotation of the lock output shaft.

Thus in operative use, an authorized person can open the door for entry by employing two keys 43 and 21. He first inserts key 43 and rotates the lock so that the cross pin 42 slides out of opening 20 so to prevent entry of key 21 therein. He then inserts the key 21 fully in until the magnets 39 and 33 contact. He then pulls slightly outwardly so to cause the unit 23 to slide in an outwardly direction until gear 27 engages rack 31. He then rotates the key 21, the protrusions 41 being engaged in notches 35, thus causing the bolt 13 to slide back into case 11 so that the door is thus unlocked. To lock the door the process is reversed. The lock is operable from the inner side by the knob K.

While certain novel features of my invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing from the spirit of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a magnetic controlled door lock, the combination of a case containing a magnetic controlled lock mechanism and a conventional lock, said conventional lock being operative by a first key, and said magnetic controlled lock mechanism being operative by a second key, said conventional lock being connected to a cross pin that normally blocks entry of said second key into said magnetic controlled lock mechanism, said magnetic controlled lock mechanism including a stationary barrel with an opening therethrough and into which said second key is insertable, said second key having a permanent magnet on an end thereof, a shaft of said magnetic controlled lock mechanism having a forward end thereof slidably seated in an inner end of said barrel opening, a magnet secured on said end of said shaft, said key magnet being engagable with said shaft magnet so to cause said shaft to slide forwardly when said magnets are engaged and said key is pulled in a direction outwardly of said barrel, said shaft forming a unit with a gear integral with an intermediate portion of said shaft and a knob secured on an opposite rear end of
said shaft, a bolt slidable inwardly or outwardly of said case to respectively unlock or lock a door, said bolt having a toothed rack, and a spring means normally urging said unit rearwardly in said case so that the gear is normally out of engagement with the rack, forward movement of said shaft causing engagement of the gear with the rack whereby turning of the gear will cause the bolt to slide inwardly or outwardly of the case.

2. The combination as set forth in claim 1 wherein said key, when pulled, moves said unit so said gear engages said toothed rack of said bolt, said unit and second key having interfitting notches and protrusions respectively so to permit rotation of said gear for sliding said bolt.

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