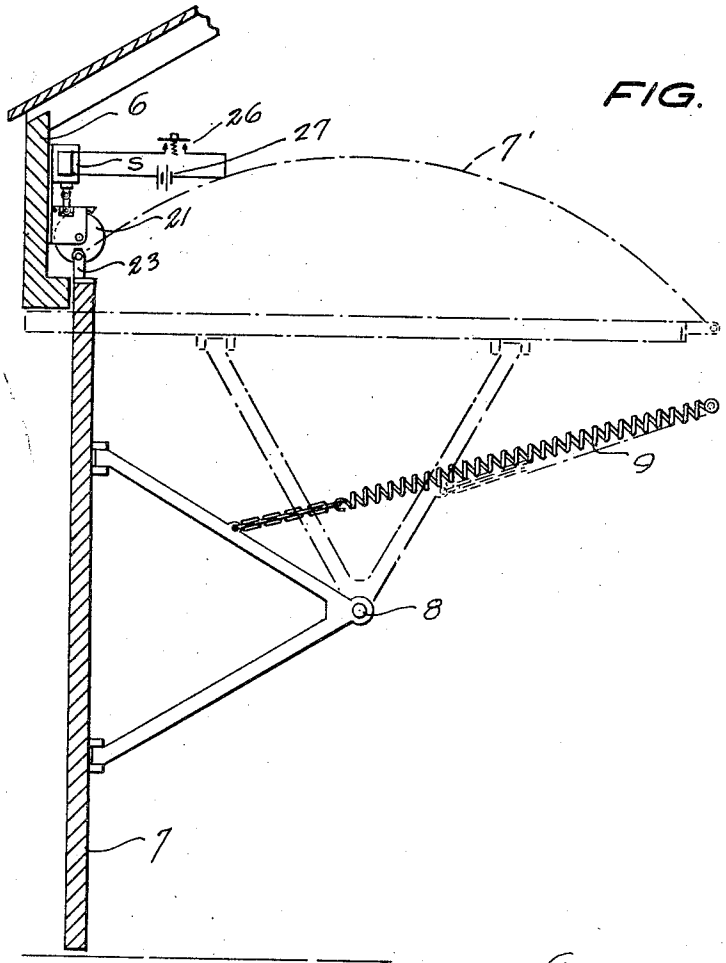
July 23, 1957 V. A. PARSLEY 2,800,348

ELECTRIC LOCK

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FIG. 1.



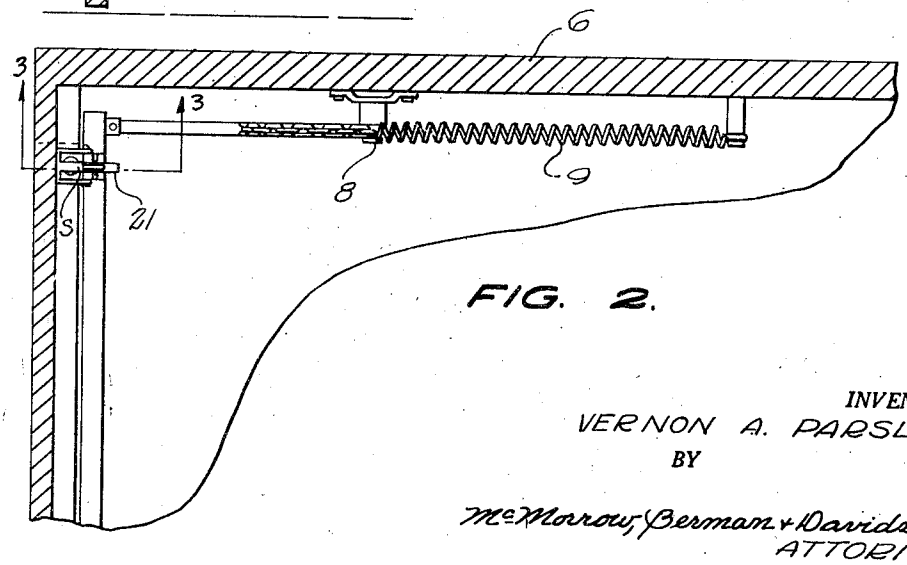


FIG. 2.

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FIG. 3.

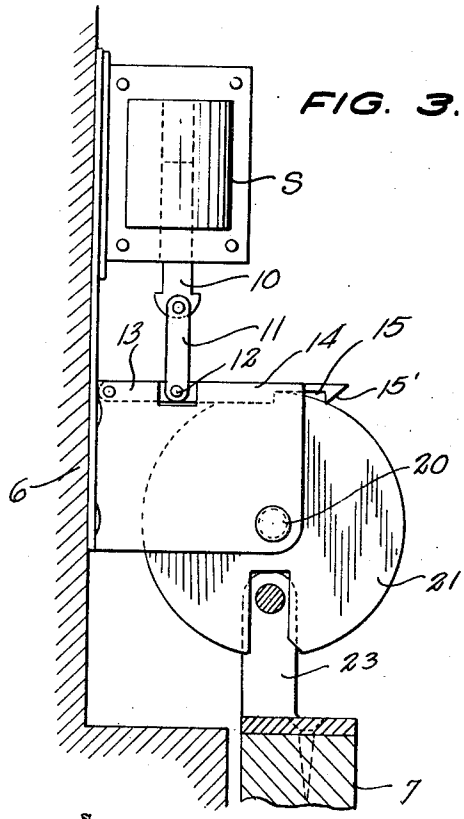


FIG. 4.

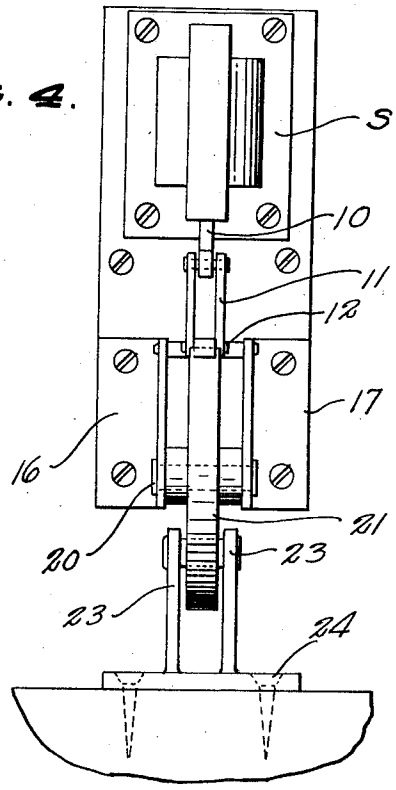
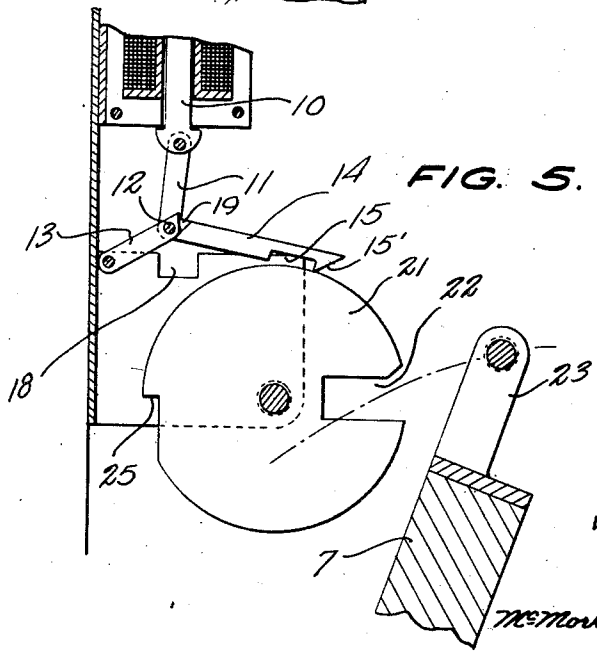


FIG. 5.



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ELECTRIC LOCK

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Application April 29, 1955, Serial No. 504,805

2 Claims. (Cl. 292—201)

This invention relates to electric locks. While this lock may be used in a wide range of applications, it is ideally suited for use on overhead garage doors.

The principal object of this invention is to provide an improved electric lock.

Another object of this invention is to provide an improved electric door lock incorporating an effective self-locking toggle mechanism.

According to an improved aspect of this invention there is provided a rotatable locking member including a latch receiving notch and a locking detent, a toggle locking means oriented to normally engage the locking detent and prevent rotation of the locking member, and a solenoid coupled to the toggle locking means whereby said locking member can rotate and release a latch in said notch when the solenoid is energized.

Further objects, purposes, and characteristic features of the invention, will appear, as the description progresses, reference being made to the accompanying drawings, showing, solely, by way of example, and in no way, in a limiting sense, one form which the invention can assume.

In the drawings:

Figure 1 is a vertical cross sectional view taken through a garage doorway and door provided with an improved electric lock constructed in accordance with the present invention.

Figure 2 is a horizontal cross sectional view taken through one side portion of the garage of Figure 1 at a plane above the electric lock shown in Figure 1.

Figure 3 is an enlarged vertical cross sectional detail view taken on line 3—3 of Figure 2, showing the electric lock in side elevation.

Figure 4 is a rear elevational view of the structure shown in Figure 3.

Figure 5 is a fragmentary transverse vertical cross sectional view taken through the lower portion of the structure shown in Figure 3 and Figure 4, and illustrating the lock in a released position.

Referring to the drawings, there is shown a garage **6**, with an overhead door **7**, supported on a pivot **8**, and counterweighted by a spring **9**. The door, when it opens, swings up and back, as shown by the dashed line **7'**.

Carried by the garage **6**, and above the top edge of door **7**, is a solenoid S, having a core **10**, pivoted to a link **11** which in turn is pivoted, at **12**, to a toggle locking means having an arm **13**, and a lock arm **14**, with a lock notch **15** in the end thereof, and a pointed portion **15'** which makes for quick action and short stroke of the lock arm. Arm **13** is pivoted between two support plates **16** and **17** fixed to the garage **6**, and the break-down joint of the toggle, at **12**, lies below the center line of the two arms **13** and **14**, when locked and fits into notches **18**, in these plates, when the toggle is straight, as in Figure 3. Shoulders on arms **13** and **14**, as at **19**, prevent the joint from dropping below the straight line position of Figure 3.

Pivoted between plates **16** and **17**, on pivot **20**, is a rotatable locking member **21**, in the form of a disc with

an open-ended latch-receiving slot **22**, in which can engage the transverse pin element of a latch **23**, fixed to the top of the door, as at **24**.

Also, in member **21**, is a locking detent **25**, diametrically opposite slot **22**, for receiving the lock notch **15** of arm **14**, when the toggle is lowered, as in Figure 3, so as to lock member **21** against counterclockwise rotation.

The solenoid **5** can be energized through a circuit including, a switch **26**, and a source of potential, as battery **27**.

The operation of the device should now be clear.

With solenoid S de-energized, the lock arm **14** engages the detent **25** to prevent rotation of member **21** and hence the pin element of latch **23** cannot be moved out of slot **22**, and door **7** cannot be opened. This condition is shown in Figure 3.

Upon energizing the solenoid, arm **14** is moved out of detent **25**, to permit rotation of **21** counterclockwise, and release latch **23** on the door, so that the door can be swung open, as indicated in Figure 5.

When the door **7** is swung shut, the parts are restored to the positions shown in Figure 3.

Also, the door can be opened from different places, by means of buttons or keys. It can also be operated by placing a hose across the driveway to control an air operated switch, so, with the spring **9** sufficiently tensioned, the door will open automatically. Also, in case of power shortage, the locking means can be operated by hand, by means of a cable suitably connected.

The above specific description, of one form which the invention can assume, has been given solely by way of example, and is not intended, in any way, in a limiting sense.

Having described the invention, it is now claimed:

1. A locking device comprising, in combination, a rotatable locking disc formed with an open-ended latch-receiving slot and a locking detent located diametrically opposite said slot, a transverse locking pin element connected to a lockable member, a toggle locking means oriented to normally engage the locking detent and prevent rotation of the locking disc, and a solenoid coupled to said toggle locking means, whereby the locking disc can rotate and release the pin element when in the slot, only when the solenoid is energized.

2. A locking device comprising, in combination, a rotatable locking disc formed with an open-ended latch-receiving slot and a locking detent located diametrically opposite said slot, a transverse locking pin element connected to a lockable member, a toggle locking means oriented to normally engage the locking detent and prevent rotation of the locking disc, and a solenoid coupled to said toggle locking means, whereby the locking member can rotate and release the pin element when in the slot, only when the solenoid is energized, the toggle locking means including, two arms pivoted together, and shoulders on the pivoted ends of the arms and contacting, when the toggle is closed to prevent the toggle from dropping below a straight line through the two arms, one arm having a notch to engage the locking detent, and a pointed end on the said one arm and beyond the notch, and resting on the periphery of the locking disc when the notch engages the detent.

References Cited in the file of this patent

UNITED STATES PATENTS

791,113	Staehle	May 30, 1905
1,283,669	Chrisman et al.	Nov. 5, 1918
2,166,898	Wolf	July 18, 1939
2,231,075	Lakin	Feb. 11, 1941
2,601,983	Schoelkopf	July 1, 1952