June 15, 1926. 1,588,984

W. B. NUTTING

SAFETY IGNITION LOCK

Filed Sept. 3, 1925

Fig. I.

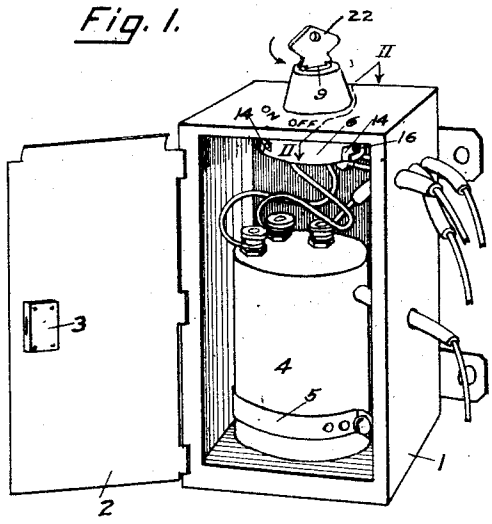


Fig. III.

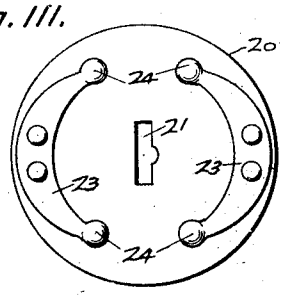


Fig. II.

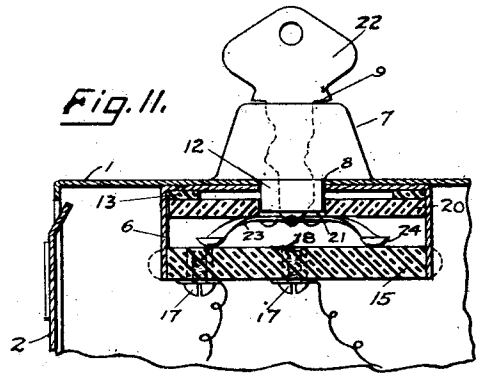
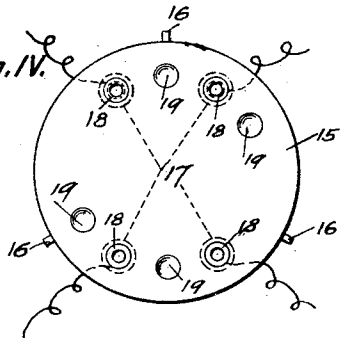


Fig. IV.



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UNITED STATES PATENT OFFICE.

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SAFETY IGNITION LOCK.

Application filed September 3, 1925. Serial No. 54,266.

My invention relates to locking apparatus for motor ignition systems, as a class.

The object of my invention is to provide such an apparatus, wherein there is a mechanism for breaking and closing the circuits of all terminals in a magneto coil or other device used in a motor ignition system and to lock the circuit breaker thereon rigidly when the circuits are broken, and thus prevent the ignition system from being operated. I attain these objects, as well as others, by the construction, combination, and arrangement of parts illustrated in the accompanying drawings which form a part hereof.

Fig. I is a perspective view of an opened coil box with coil therein and my device in position in the upper part, with wiring system connections indicated.

Fig. II is a vertical section through the center of the upper part of the coil box and of my device on the line II—II in Fig. I.

Fig. III is a bottom plan view of the terminal control or breaker disc.

Fig. IV is a top plan view of the terminal plate, showing terminals and wire connections therefrom.

Like characters refer to like parts in the views.

A coil container or box 1 is provided. It has a hinged door 2 with a lock 3 thereon. An ignition coil 4, of common type, is secured in rigid position within the box by fastening means 5. A circular casing 6 is rigidly secured to the lower surface of the top of the box. Upon the top of the box a lock casing or housing 7 is rigidly secured. Below the same the top has an opening 8. Within the housing 7 a tumbler lock mechanism of any convenient type is arranged. A barrel of this lock extends through the opening 8 and on its lower end is a rigid, rectangular projection 12, which extends downwardly a convenient distance. The lock has the usual key opening or slot 9, which extends downwardly and through the projection 12. A ring 13 of insulating material is positioned within the casing 6 and in engagement with its lower top surface. In the lower part of the casing 6 are slots 14. A terminal plate 15 of insulating material and having pins 16 is adapted to be adjusted within the lower end of the casing and secured in rigid position there by the engagement of its pins 16 in the slots 14 as shown in Fig. I. The plate 15 has wire connections extending from its four terminals 17 to connections with the coil and generator or battery in the usual manner in which ignition systems of common type are arranged, and for example as illustrated in the drawing. In the upper surface of the plate 15 there is a concave depression 18 above each terminal, and between the terminals are similar depressions 19 in the plate. Between the plate 15 and the ring 13 is a breaker disc 20. It has a central slot 21 to receive the rectangular projection 12. Upon the lower surface of the disc 20 a pair of spring connection strips 23 are rigidly secured. Upon the lower free ends of each strip are buttons 24. The strips and buttons are positioned to allow the buttons to be slid along the surface of the plate 15 and to enter the respective terminal depressions 18 simultaneously, and thus close the proper circuits through the strips for operation of the ignition system. When the key has moved the disc 20 to such position, its notches engage the tumblers and stops in the usual manner of ignition switch locks so that it cannot be withdrawn. Upon rotating the barrel with the key until the strip buttons enter and engage the depressions 19, the circuits are broken, and the key is released in the manner common to such locks so that it may be withdrawn and the disc is locked in this position. The upper surface of the disc is in sliding engagement with the ring 13 and the buttons 24 are retained in sliding engagement with the surface of the terminal plate 15 by the spring connections 23.

It will now be apparent that when the disc 20 is in locked position the strip buttons 24 repose in the depressions 19, and all circuits are broken. The key is withdrawn, and, the door 2 being locked, no connection can be made between the terminals by exterior means, as they are all within the box and not accessible. By inserting the key and rotating the disc 20 so that the buttons 24 enter the terminal depressions 18, all connections are instantly made and the ignition system is ready for operation. It is well known that various locking devices have heretofore been used but none has locked all the terminals from access so that connections could not be made between them by exterior wires. My device provides against this and locks the ignition system in a manner to prevent tampering with it by unauthorized persons or those not having the key. By reason of all wires terminating in

the plate 15 no connection can be made on the outside with the coil while it is locked in the box and the circuits are broken. A coil connection must be had to allow the ignition system to function.

I claim—

1. In an ignition system locking apparatus, a lock of convenient type having a rectangular projection extending outwardly and rotatable by the lock mechanism, a rigid ignition coil terminal plate of insulating material, having concave depressions above each terminal, and like depressions in its insulating portion between said terminals, and a disc circuit breaker having a central slot arranged to receive the aforesaid lock projection in a manner to be engaged and rotated by it, also having a pair of spring connection strips rigidly secured at its lower surface, with buttons on their free ends, the buttons being arranged for sliding engagement upon the surface of the terminal plate and to register with opposing terminal depressions and engage the terminals therein simultaneously to close the ignition circuits, also to register with and engage the intermediate insulated depressions simultaneously and thus break the ignition circuits, respectively as the lock is operated to be unlocked or locked.

2. In an ignition system, an apparatus between an operating control means and a coil and battery, comprising in combination, a supporting frame, a lock of convenient type rigidly secured upon the top of the frame and provided with an integral, movable projection extending therefrom below the frame top, a casing secured below the top, a rigid plate of insulating material in the casing, said plate having terminals in its upper surface connectable with a coil and ignition system, also having depressions above each terminal and intermediate depressions in the insulated portion thereof, and a member in the casing movably positioned above the plate, having a slot arranged to receive the aforesaid projection in a manner to be engaged and moved by it, said member also having connection strips rigidly secured near their central portions upon the lower surface of the member, the opposing free ends of the strips being resilient and provided with contact buttons adapted to slide upon the opposing surface of the plate and into and out of the aforesaid depressions to close or break the circuit respectively and to be prevented from moving from the said positions automatically, the depressions and buttons being arranged to register respectively for the positions mentioned.

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