O. M. TUSTISON.

CIRCUIT CLOSER.

APPLICATION FILED JUNE 30, 1908.

928,824. Patented July 20, 1909.

Fig. 1.

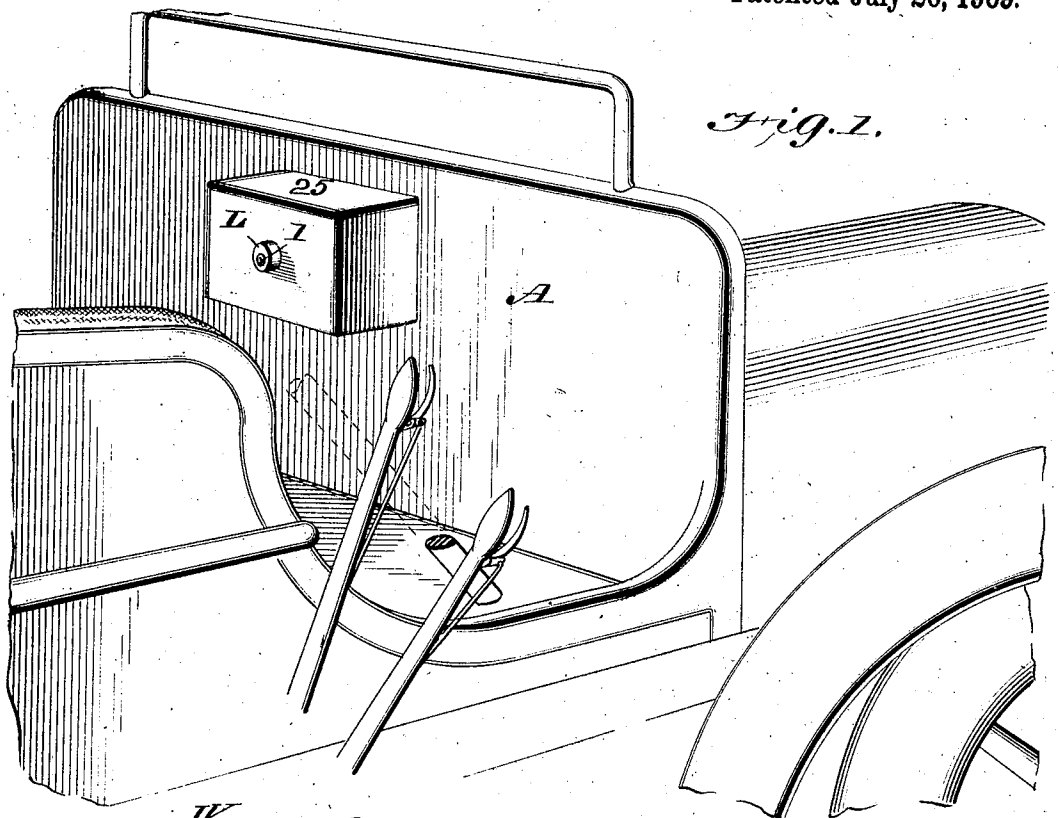


Fig. 2.

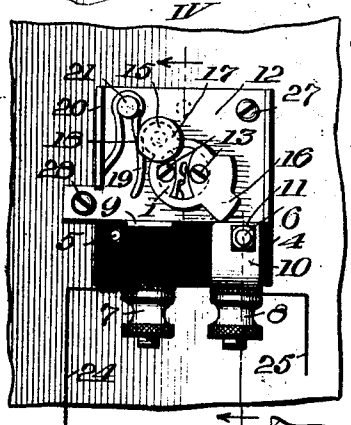


Fig. 3.

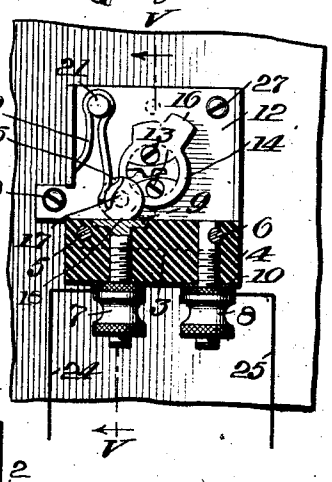


Fig. 4.

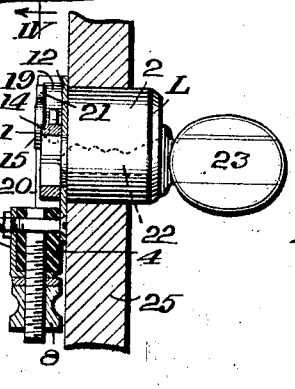
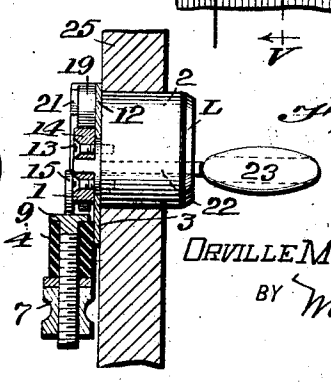


Fig. 5.



WITNESSES

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CIRCUIT-CLOSER.

No. 928,824. Specification of Letters Patent. Patented July 20, 1909.

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To all whom it may concern:

Be it known that I, ORVILLE M. TUSTISON, a citizen of the United States, and a resident of Bainbridge, in the county of Putnam and State of Indiana, have made certain new and useful Improvements in Circuit-Closers, of which the following is a specification.

My invention relates to circuit closers, and particularly to those circuit closers which are used in connection with the spark coils of automobiles or similar power-driven vehicles.

The main object of my invention is to provide a circuit closer which can be operated only by a special key, and which, therefore, is not capable of being operated by any person other than the possessor of the key.

A further object of my invention is to provide a circuit closer, in which the actuating member is held securely in place while it is in use, thereby rendering it impossible for a separation of the circuit closing contacts.

My invention is illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view of an automobile showing my circuit closer attached thereto. Fig. 2 is a side view showing the working parts of the circuit closer, the contacts being open. Fig. 3 is a side view partly in section showing the contacts closed. Fig. 4 is a view partly in section, taken at right angles along the line IV—IV of Fig. 2, and looking in the direction of the arrows. Fig. 5 is a view partly in section, taken at right angles to Fig. 3 along the line V—V and looking in the direction of the arrows.

In carrying out my invention I make use of a lock of the pin tumbler type, in which a cylinder or barrel may be made to rotate after the key, having cam surfaces on one edge, is inserted, thereby bringing all of the spring-actuated pins in a position to permit the turning of the cylinder or barrel. The commonly known Yale locks are of this type, and for the sake of illustration I have shown a Yale lock in the drawings, to which I have added certain parts; the combination of the locking mechanism with the contacts, cams and electrical connections constituting the novel features of my invention.

Referring now to the drawings, L designates in general a lock provided with the operating mechanism heretofore referred to. The lock is provided with the usual barrel 1, located in the cylindrical casing 2, which also contains the spring-actuated pins of this type of lock. In carrying out my invention, I remove part of the casing and the bolt-actuating mechanism, and substitute for the latter the circuit closing contacts and the necessary terminals in the following manner: After removing the back plate of the casing, I bend down an end flange, indicated at 3 in dotted lines in Fig. 3, and upon this flange is secured an insulating block 4 of hard rubber, fiber, or other suitable insulating material, by means of the screws 5 and 6. Carried by the insulating block 4 are the two binding posts 7 and 8. The former projects through the insulating block and terminates in a head 9 flush with the edge of the block, and which constitutes one of the circuit closing contacts. The other post is in electrical contact with an L-shaped conducting piece 10, one arm of which is secured by the thumb nut of the binding screw, the other being held in electrical connection with the screw 6 by means of the nut 11. The screw 6, it will be remembered, forms one of the securing members for the block 4, and hence the binding post 8 is electrically connected with the frame 12 through the medium of the post 6 and the conducting strip 10. In the usual construction of locks of this kind, the barrel 1 has attached to it by means of the screws 13 a member 14, which is provided with extensions or arms, such as 15 and 16, for actuating the sliding bolt and the other lock mechanism. Upon one of these arms 15 I secure a contact, which may consist of a conducting member 17, such as a metal screw, having one part of its circular edge cut away, as shown at 18, to form a large contact surface for engagement with the contact member 9. The contact 17 being thus secured to the rotary cylinder 1 through the medium of the member 14, as described, is capable of a movement about the axis of the cylinder. In the position shown in Fig. 2, the contact 17 is forced away from the contact 9 by means of a spring 19, one end of which bears against the contact member 17, and the other end of which bears against one of the side flanges 20 of the casing. The central part of this spring 19 is looped around the pin 21, which is provided with a head for retaining the spring in position. In Fig. 3 I have shown the closed position of the contacts. The barrel of the lock has been rotated by means of the key and the contact member 17 has been brought into engagement with the binding

post 7. The two contacting pieces are firmly held together by means of the spring 19, which, as will be seen, serves to hold the contacts closed or open, as the case may be.

In Figs. 4 and 5 I have shown the use of the key. The key is shown in outline in Fig. 4 at 22, and is provided with a button 23, which may be of hard rubber, wood, or other suitable material.

In the operation of my improved device, the key 22 is inserted in the slot in the cylinder, as in the operation of locking, and is given a quarter of a turn. Before the key was inserted the contact member 17 was in the position shown in Fig. 2. After the key has been turned it assumes the position shown in Fig. 3, where it is held in engagement with the binding post 7. Since the contact member 17 is in direct electrical connection with the frame, and the latter is electrically connected to the binding post 8, electrical connection is effected between the two binding posts 7 and 8. The conductors 24 and 25 lead from the binding posts 7 and 8 respectively, to the spark coil and battery, and thus when the key is turned, the circuit is in condition for operation. When the key is turned a quarter of a revolution, it is impossible to withdraw it and the only means for doing so is by turning it back to its original position, when of course the circuit will be broken as before.

In the use of my invention the circuit closer may be applied to the interior of the box or casing 25, which may hold other necessary devices or equipment of the automobile, and which is preferably attached to the dashboard A of the automobile, as shown in Fig. 1. The box 25 is perforated and the cylindrical casing 2 is allowed to project through the wall of the box, while the frame 12 is secured to the inner side of the box by means of the screws 27 and 28.

It will thus be seen that I have provided a device which positively obviates the danger of the tampering with the spark coil circuit by mischievous or meddlesome persons, or for putting the mechanism of the automobile out of commission, and for preventing the danger of the theft of the vehicle when it is left unoccupied.

I claim—

1. In a circuit closer, the combination of a rotatable cylinder having a zigzag slot, a lateral extension secured to the inner end of said cylinder, a contact screw secured to said lateral extension, a frame in electrical connection with said contact, an insulating block secured to said frame, a pair of binding posts carried by said block, one of said binding posts being in electrical connection with said frame, and the other of said posts being insulated from said frame and having a flattened contact head, a spring secured to said frame and having one end in engagement with said contact, and the other arranged to bear against a flange on said frame, and a key adapted to enter said zigzag slot and to turn said cylinder a quarter of a revolution, thereby bringing said contact into engagement with said head.

2. In a circuit closer, the combination of a rotatable cylinder having a slot, a key adapted to enter said slot and to turn said cylinder, a lateral extension on the inner end of said cylinder, a contact member secured to said lateral extension, an insulating block provided with a pair of binding posts, one of said binding posts having a head, and a spring arranged to bear against the contact member and to hold the latter in close engagement with the head when the cylinder is turned.

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