

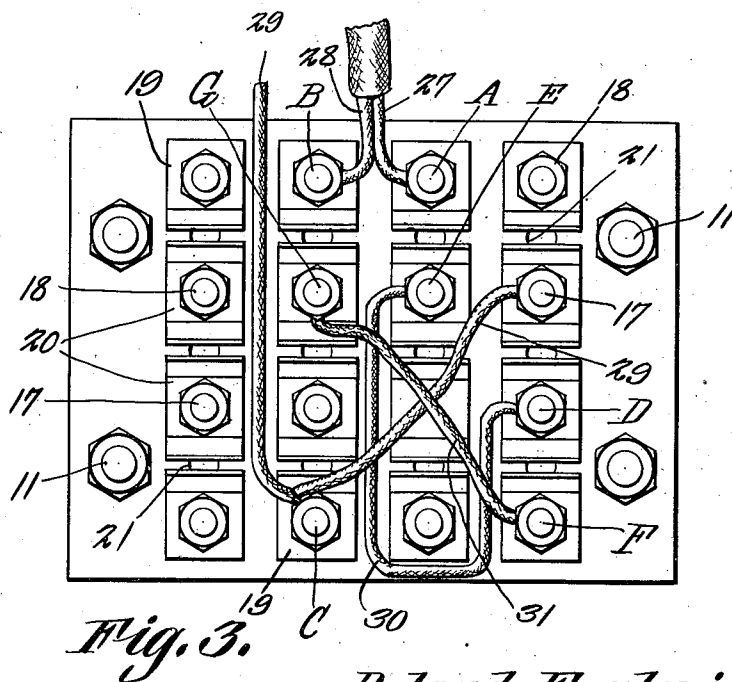
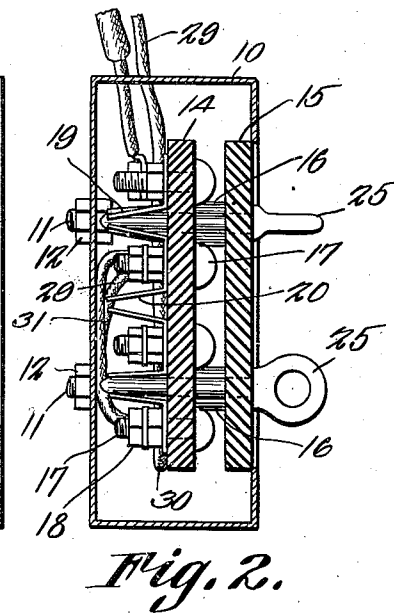
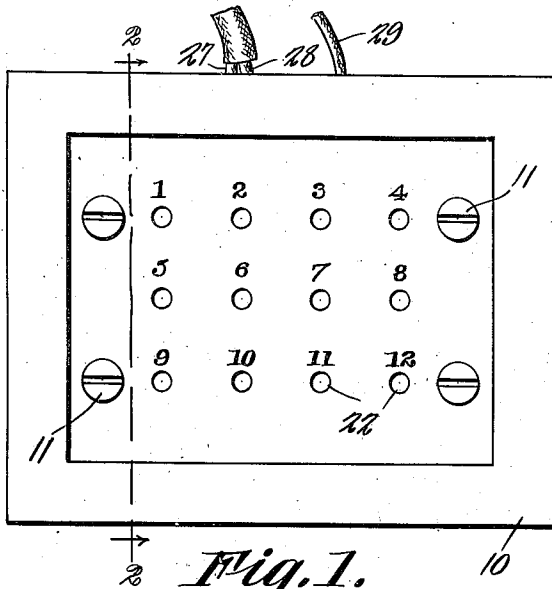
Apr. 10, 1923.

1,451,569

R. FREDERICK
PERMUTATION SWITCH

Filed Dec. 6, 1920

2 sheets-sheet 1



Roland Frederick

INVENTOR,

BY Victor J. Evans

ATTORNEY.

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2 sheets-sheet 2

Fig. 4.

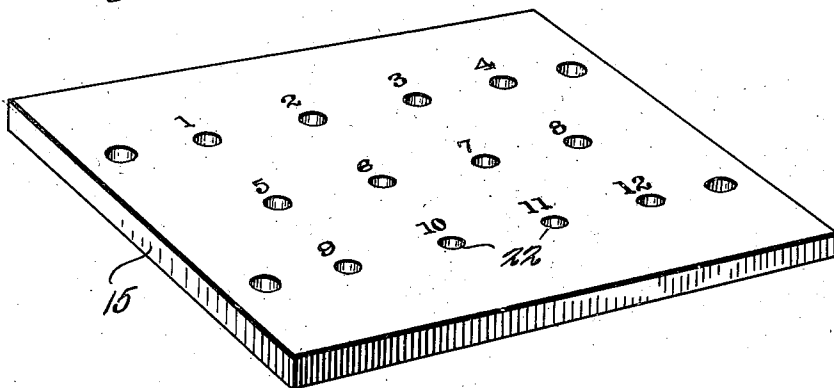


Fig. 5.

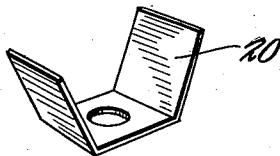
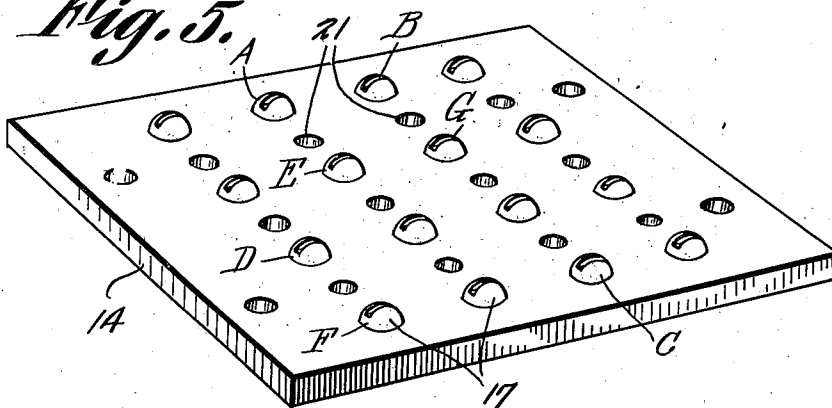


Fig. 6.

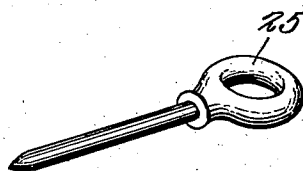


Fig. 7.

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UNITED STATES PATENT OFFICE.

ROLAND FREDERICK, OF FAIRMOUNT, INDIANA.

PERMUTATION SWITCH.

Application filed December 6, 1920. Serial No. 428,708.

To all whom it may concern:

Be it known that I, ROLAND FREDERICK, a citizen of the United States, residing at Fairmount, in the county of Grant and State of Indiana, have invented new and useful Improvements in Permutation Switches, of which the following is a specification.

This invention comprehends the provision of a combination lock and ignition switch, wherein use is made of a plurality of switch keys adapted to be inserted in predetermined openings in the switch to render the same perfect, the switch being provided with a large number of openings of a size to accommodate the switch keys, thereby making it difficult for anyone other than the driver of the machine to close the circuit through the switch.

Another object of the invention resides in the provision of a combination lock and ignition switch designed to permit a large number of combinations to be effected by changing the positions of the terminals of the conducting wires, so that the combination can be changed from time to time by the driver of the vehicle.

Another object of the invention resides in the provision of a device of the above mentioned character which is simple in construction so that it can be manufactured and sold at a nominal cost, and readily applied to any make of vehicle. The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application like numerals of reference indicate similar parts in the several views and wherein:

Figure 1 is a plan view of the device forming the subject matter of my invention.

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a rear plan view of the switch removed from the casing.

Figure 4 is a perspective view of the outermost insulated member.

Figure 5 is a similar view of the companion insulated member with the binding posts associated therewith.

Figure 6 is a detailed view of one of the contacts.

Figure 7 is a view of one of the keys.

Referring to the drawings in detail, 10 indicates a casing in which the switch is arranged, the switch being held associated with the casing 10 by means of fastening elements 11 which are equipped with nuts 12. The casing 10 may be secured on the dash board of the vehicle (not shown) in any suitable manner.

The switch proper comprises a pair of insulated members 14 and 15 respectively which are of substantially rectangular formation and of equal dimensions, these members being held associated by the fastening elements 11 utilized to hold the switch positioned within the casing 10. The members 14 and 15 are further held in spaced relation by means of nuts 16 carried by the fastening elements 11 and interposed between the members 14 and 15. The member 14 supports a plurality of binding posts 17 which are arranged in spaced parallel rows as shown, each binding post being equipped with a contact which is held positioned upon the binding posts by the nuts 18. The contacts 19 for the two outermost rows of binding posts are of substantially L shaped formation, while the contacts 20 for the remaining rows of binding posts are of substantially U shaped formation, so that the limbs of all the contacts of one row are spaced from the adjacent limbs of the contacts of the other rows. The insulated member 14 is further provided with spaced parallel rows of openings 21 which correspond in number with the openings 22 of the insulating member 15, the openings 21 and 22 of the respective members being disposed in alignment, with the openings 21 of the member 14 arranged in spaced parallel rows interposed between the parallel rows of binding posts. The openings 22 of the insulating member 15 are numbered as shown in Figure 1 so that the driver of the machine may readily operate the switch by inserting a number of pointed keys such as is shown in Figure 7 in the proper openings, it being understood that the combination lock may be changed in a manner to be hereinafter described. There are preferably three switch keys 25, in conjunction

with this switch, and which keys must be inserted through circuit openings in the switch to cooperate with circuit contacts in order to complete the circuit through the switch.

5 As shown in Figure 2, the contact wire leading from the battery is indicated at 27 and has its terminal connected to the adjacent binding post indicated at A. A short wire is indicated at 29, being connected with
10 the binding post C which wire is a ground wire. An additional wire indicated at 30 has one terminal connected to the binding post D and its opposite terminal connected to the binding post E arranged adjacent the
15 binding post A. Another wire indicated at 31 has one terminal connected with the binding post F and its opposite terminal connected with the binding post G which latter is arranged adjacent the binding post B.
20 With the terminals of the respective wires connected with the binding posts above mentioned, the combination to operate the switch in this particular instance are openings 2, 3 and 9 through which the switch
25 keys must be inserted. When one of these keys is inserted through opening 2 in the member 15 it is passed through the corresponding opening of the member 14 and passes between the adjacent limbs of the contacts carried by the binding posts A and E
30 respectively. When a second key is inserted through opening 3 in the member 15 it is passed through the corresponding opening in the member 14 of the switch and between the limbs of the contacts carried by the
35 binding posts B and G respectively. The other key when inserted in the opening 9 of the member 15 is passed through the corresponding opening of the member 14 and
40 between the limbs of the contacts carried by the binding posts D and F respectively. Consequently the current from the battery is conducted through wire 27 and through the binding posts A and E, from where the
45 current passed through the wire 30, to the binding post D, and from the latter mentioned binding post through the binding post F, from where the current is conveyed by the wire 31 from the binding post F to the
50 binding post G and then thru the switch and wire 28 completing the circuit and rendering the switch operative for the purpose intended. Should the switch keys be inserted in any of the other openings except
55 the openings 2, 3 and 9 the switch will be

shorted or grounded through the wire 29. It is obvious that by connecting the terminals of the various wires with the different binding posts, the various combinations may be effected to operate the switch.

60 While it is believed that from the foregoing description the nature and advantages of the invention will be readily understood, I desire to have it known that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim is:—

1. A device of the class described comprising a casing, an insulated member located in said casing having a plurality of openings therein, a second insulated member located in the casing and provided with a plurality of openings to correspond with the openings in the first member, a plurality of binding posts extending through the second member between said openings, a plurality of L-shaped contacts surrounding the posts adjacent the edges of the second member, a plurality of U-shaped contacts surrounding the other posts extending through said member and a plurality of pointed keys adapted to extend through the openings in said members and engaging said contacts.

2. A device of the class described comprising a casing having an opening therein, an insulated member located in said casing adjacent to the opening and provided with a plurality of spaced parallel rows of openings and bearing suitable indicia above the openings, a second insulated member located in the casing and being provided with a plurality of openings corresponding with the openings in the first mentioned member, securing elements extending through said members and secured to the rear wall of said casing, spacing nuts surrounding said elements between said members, a plurality of binding posts extending through the second member and terminating short of the rear wall of said casing, a plurality of L-shaped contacts surrounding the posts adjacent to the edges of the second member, a plurality of U-shaped contacts surrounding the other posts, and a plurality of pointed keys adapted to extend through the openings in said members and engage said contacts.

In testimony whereof I affix my signature.
ROLAND FREDERICK.