

W. KAISLING.
ELECTRICAL SWITCH KEY.
APPLICATION FILED JUNE 19, 1913.

1,138,224.

Patented May 4, 1915.

Fig. 1.

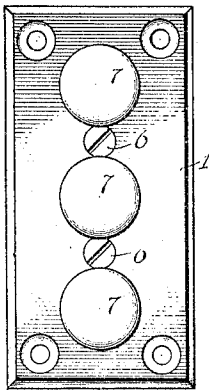


Fig. 4.

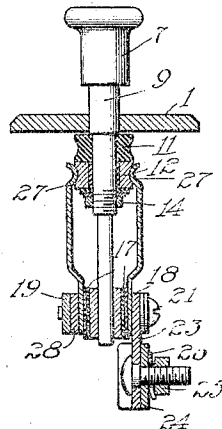


Fig. 2.

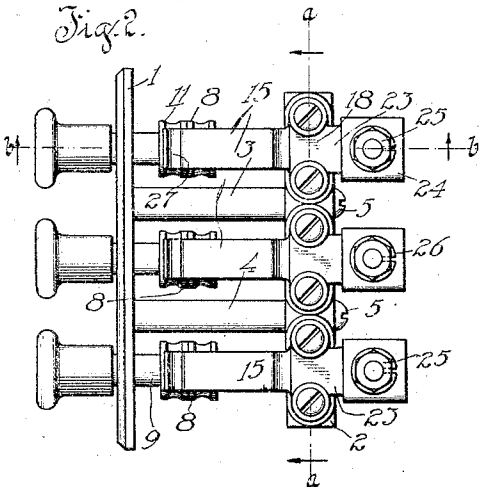


Fig. 3.

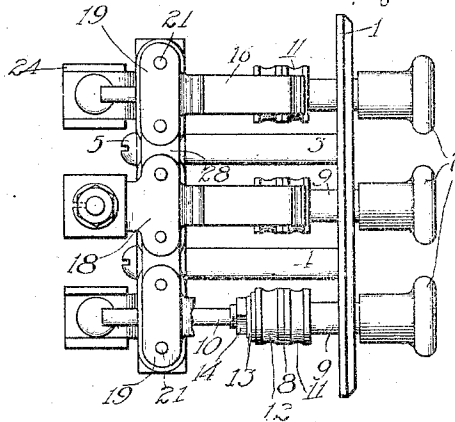
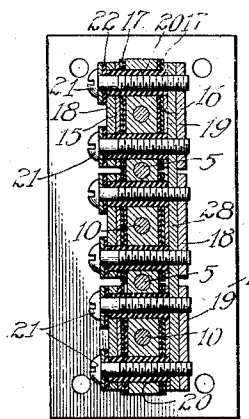


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM KAISLING, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD & SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ELECTRICAL-SWITCH KEY.

1,138,224.

Specification of Letters Patent.

Patented May 4, 1915.

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To all whom it may concern:

Be it known that I, WILLIAM KAISLING, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electrical-Switch Keys, of which the following is a specification.

My invention relates to electrical switch keys and more particularly to keys of the multiple type.

In a form of the invention which is herein disclosed my improved key is of the plunger type, there being several plungers in association with an equal number of push buttons for controlling preferably a like plurality of circuits. In this same form illustrated herein it may be said that the key is of particular utility for instance for controlling lamp circuits such as the various lamp circuits used in an automobile.

My improved key is compact, structural features being employed which permit of such compactness, the structural features also being such as to enable ready assembling of the key, easy inspection of all of the operating parts, and ready removal and replacement of such parts requiring attention.

I will describe this particular form of my improved key more in detail by referring to the accompanying drawing in which:

Figure 1 is a top view of my improved key; Fig. 2 is a side view thereof; Fig. 3 is a side view thereof looking at the opposite side to that of Fig. 2; Fig. 4 is a sectional view on line *b-b* of Fig. 2, and Fig. 5 is a sectional view on line *a-a* of Fig. 2.

My improved key comprises a face plate 1 which supports a bridge member 2 suitably held by the face plate 1 through the interposition of posts 3 and 4, which posts abut respectively the face plate 1 and the bridge element 2. Screws 5 passing through the bridge member into the posts secure the bridge 2 thereto, and screws 6 countersunk in the face plate 1 also enter said posts to secure said posts to said face plate. Three buttons 7 are fastened to and actuate switch elements 8 respectively, these switch elements and buttons being fastened through the agency of rods 9, which rods have tail pieces or extensions 10 adapted to pass through the bridge piece 2. Thus the entire unitary structure comprising the button

7, the rod 9, switch element 8, and tail piece 10 is held in place by passing through the openings provided therefor respectively in the bridge piece and the face plate, and may thus reciprocate to and fro. The bridge piece 2 also carries suitable switch springs, whose circuit therethrough is controlled respectively by the switch element 8 with which said springs are associated.

The switch element 8 consists of an insulating annularly grooved element 11 fixedly mounted upon the rod 9 and an annularly grooved conducting element 12 fixed upon an insulating sleeve 13 and held in place upon the rod 9 by the nut 14, which nut has screw threaded engagement with a portion of said rod. The conducting element 12 is thus entirely insulated from the said rod. The annular grooves provided respectively in the elements 11 and 12 serve to co-act with suitable switching springs 15 and 16 mounted respectively on opposite sides of the bridge member 2. There are interposed between the springs 15 and 16 and the bridge member, distance pieces of insulation 17, and on the exterior of said springs retaining pieces 18 and 19 respectively, of conducting material, are mounted. An insulating sleeve 20 passes through the springs 15 and 16, the insulating distance pieces 17 and also through the conducting piece 18. A screw 21 then passes through the sleeve 20, the said screw being insulated from the conducting piece 18 through the agency of the insulating washer 22, and this screw 21 then has threaded engagement with the retaining piece 19. There are two screws 21 for each pair of springs 15 and 16 so as to prevent displacement of these springs 15 and 16 after they are mounted in place. It will be seen from this that the springs 15 and 16 are insulated from the bridge member 2. The retaining pieces 18 have downwardly extending arms 23 carrying clamping elements 24 held in place by nuts 25 and spring washers 26. These downwardly extending elements 23 together with the clamping elements 24 are used for the purpose of making electrical connection to the springs 15 and 16 respectively. The springs 15 and 16 have hooked extremities as shown at 27 so that these springs enter the annular grooves of the elements 11 and 12 respectively whenever one or the other of said elements is brought in juxtaposition to said

bent portions 27. When the buttons are in the position shown in Fig. 3, the circuits through all of springs 15 and 16 are open. Now in order to close a circuit through a pair of springs the particular button is pulled outwardly to bring the conducting section 12 between the springs 15 and 16, whereupon circuit through these springs is closed. To again open the circuit through these springs the button 7 is pressed inwardly toward the face plate, back to the position occupied in Fig. 3. A plate 28 connects elements 19, 18 and 19 electrically.

From what has been described it is thought the peculiar advantageous features of my improved key construction will be readily apparent to those skilled in the art, as will also the fact that modifications may be readily made from the specific structure herein set forth, without departing from the spirit of my invention.

Having however thus described one form which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. A switching device comprising an elongated face plate, a switch element supporting bridge to the rear thereof consisting of an elongated bar, a plurality of plunger rods slidably supported by the face and bridge elements, a pair of contact springs for each plunger rod insulatingly mounted upon opposite sides of the bridge element and having free ends extending toward the face plate, and an annularly grooved conducting element and an annularly grooved

insulating element carried upon each plunger rod for coöperation with the associated contact springs whereby when a plunger rod is moved to one position the conducting element connects the associated contact springs, and when moved to another position the insulating element insulates said contact springs.

2. A switching device comprising an elongated face plate, a switch element supporting bridge to the rear thereof consisting of an elongated bar, a plurality of plunger rods slidably supported by the face and bridge elements, connecting studs extending from the face plate to the bridge element and positioned between the plungers, a pair of contact springs for each plunger rod insulatingly mounted upon opposite sides of the bridge element and having free ends extending to a point adjacent the inner side of the face plate, and an annularly grooved conducting element and an annularly grooved insulating element adjacently mounted upon each plunger rod for coöperation with the associated contact springs whereby when a plunger rod is moved to one position the conducting element connects the associated contact springs and when moved to another position the insulating element insulates said contact springs.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

WILLIAM KAISLING.

Witnesses:

G. E. MUELLER,
M. R. ROCHFORD.