

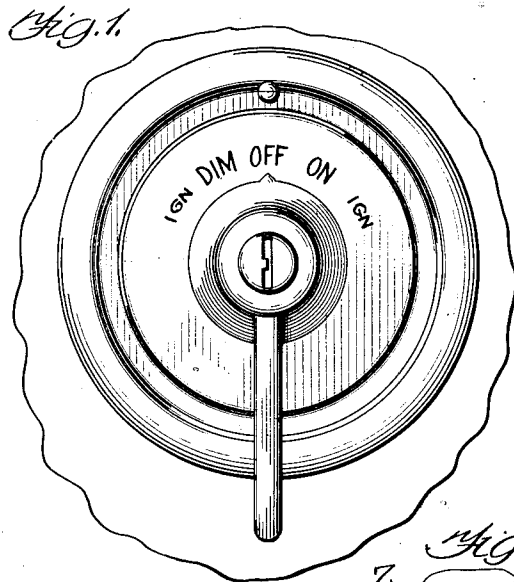
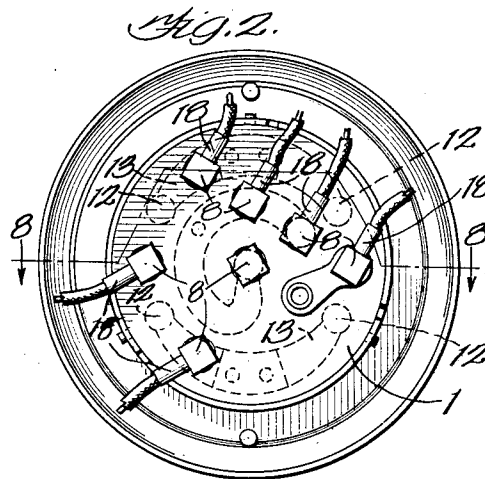
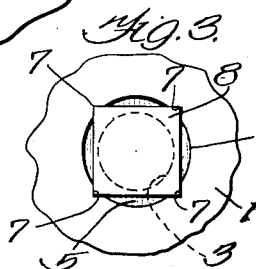
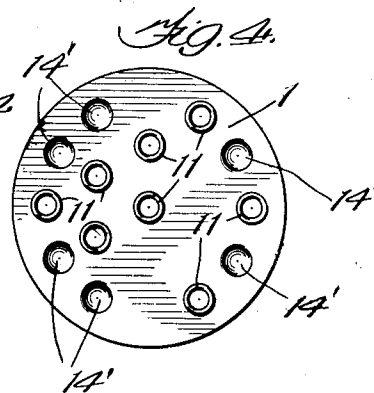
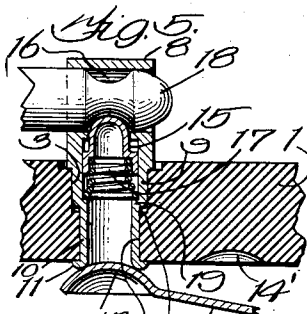
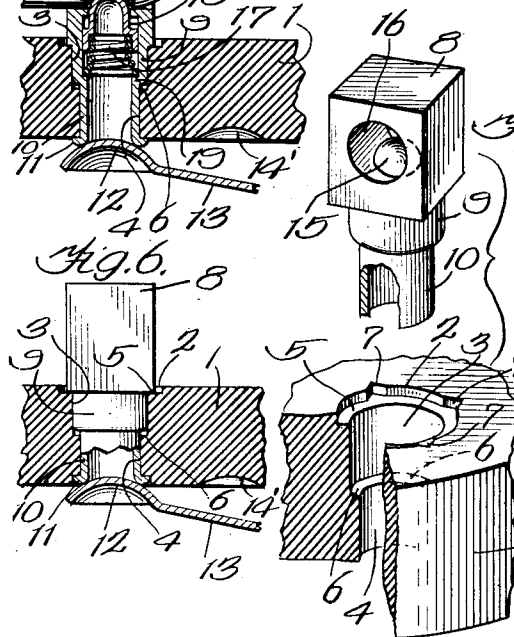
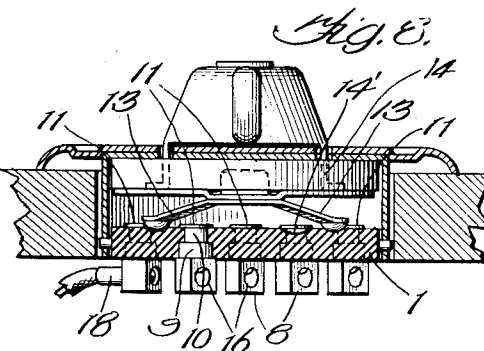
Nov. 3, 1925.

1,559,683

H. A. DOUGLAS

ELECTRIC SWITCH

Filed April 17, 1922



Inventor:
Harry A. Douglas
By *H. A. Douglas* Att'y.

UNITED STATES PATENT OFFICE.

HARRY A. DOUGLAS, OF BRONSON, MICHIGAN.

ELECTRIC SWITCH.

Application filed April 17, 1922. Serial No. 554,273.

To all whom it may concern:

Be it known that I, HARRY A. DOUGLAS, citizen of the United States, residing at Bronson, in the county of Branch and State of Michigan, have invented a certain new and useful Improvement in Electric Switches, of which the following is a full, clear, concise, and exact description.

My invention relates to electric switches and to terminal posts employed in conjunction therewith. The terminal post of my invention is formed with an opening at one end thereof and a flange surrounds this opening. A switch element, such as a switch arm, has separable engagement with the flanged end of the post.

In the preferred embodiment of the invention the post is formed with a head at its other end, the head and flange clamping or holding the mounting for the post therebetween. When a switch arm is employed it is movable laterally of the post into and out of engagement with the flanged end thereof, the hollow at the flanged end of the post being adapted to receive a portion of the switch arm to promote the effectiveness of the contact and to secure the retention of the arm in circuit closing position. The post is desirably hollow along the shank thereof and the head of the post is formed with an opening extending transversely of the hollow of the post and communicating with such hollow. There is a contact within the hollow of the post that is spring pressed to project into the opening in the head so that a connecting plug inserted in the opening in the head will have engagement with said contact. The head of the post is desirably polygonal in contour, the corners of the post head being receivable within notches in the post mounting either formed before the assembly of the post with the mounting or by the post head in being assembled with the mounting.

I will explain my invention more fully by reference to the accompanying drawing showing the preferred embodiment thereof as applied to one of many switches to which the invention is adaptable; Fig. 1 being a view in elevation of such a switch; Fig. 2 is a rear view thereof; Fig. 3 is a view on a larger scale of one of the posts as it appears in Fig. 2; Fig. 4 shows a mounting employed in the switch free of conducting parts; Fig. 5 is a sectional view through one of the

posts, this mounting, and the contiguous portion of a switch arm, a plug end being shown in elevation within the post head; Fig. 6 illustrates another form of post, parts being shown in section and parts in elevation; Fig. 7 illustrates a post and its mounting in separated relation; and Fig. 8 is a sectional view on line 8—8 of Fig. 2.

Like parts are indicated by similar characters of reference throughout the different figures.

The mounting illustrated is in the form of a plate 1 of insulating material. This plate has a number of cylindrical openings formed therethrough, each opening having three portions 2, 3 and 4 of successively increasing diameters whereby two steps or shoulders 5 and 6 are formed. The side of the mounting plate 1 where the opening portion 2 of largest diameter is located has notches 7 formed therein and communicating therewith. These notches receive the head portion of a post as will later appear, such notches being formed either before the post and its mounting are assembled or in the process of such assembly.

Each terminal post illustrated has a head 8 that approximates a cube in formation, the head being polygonal in contour. The head being four sided, there are desirably four notches each receiving a corner of the head, the base of which rests upon the shoulder 5. By this arrangement the post is prevented from turning within the opening that receives it. The post is desirably provided with two additional and cylindrical portions 9 and 10 that desirably respectively substantially fit the remaining portions 3 and 4 of the post receiving opening. The length of the post portion 9 is such that it is free of abutting engagement with the step or shoulder 6.

In the process of assembly the post portion 10 is initially straight. After the post has been fully inserted the flange 11 is formed, this flange serving tightly to clamp the mounting against the post head. The axial length of the post portion 9 being less than that of the hole portion 3, it is obvious that the shoulder 6 will not interfere with the firm clamping engagement effected by the shoulder 11 and head 8 upon the mounting 1 interposed therebetween.

The post is hollow to form a depression in which the contacting end 12 of a switch

arm 13 may be received. This switch arm is shown as being pivotally mounted upon a support 14 which is adapted to be turned to bring the contacting portion 12 of the arm into and out of engagement with the flange 11, the arm being thus movable laterally of the post. When the circuit is closed the flanged end of the post engaging the same serves to hold the arm in circuit closing position. When the circuit is to be opened the switch arm is desirably swung to bring its contacting end to rest within a cup-shaped cavity 14' in the switch mounting.

The drawing illustrates a plurality of such switch arms, a plurality of terminal posts and a plurality of cavities 14, but as the circuit system in which the switch is employed forms no part of my present invention further description of the switch, as a whole, is not required.

A contact 15 is disposed in the hollow of the post shank and projects into the opening 16 formed in the post head 8 transversely of the hollow of the post shank. A spring 17 presses outwardly upon the contact 15 to force the outer end of this contact into the opening 16 so that a circuit continuing plug 18, inserted into the opening 16, may have electrical connection with the contact 15.

By reason of the different sizes of the posts 9 and 10 and of the bores in these parts that are respectively of different size transversely, a shoulder 19 is formed within the hollow of the post shank upon which the spring 17 is bottomed. The engaging coil of the spring is larger than the balance of the spring so that movement of the spring

is not retarded by contact thereof with the sides of the post.

The advantages in the construction and operation of the different elements of my invention will be readily appreciated by those skilled in the art.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following:

The combination with a mounting board having an opening therethrough formed with three portions of successively increasing sizes whereby two steps or shoulders are formed in said opening; of a terminal post having a head receivable in the opening portion of largest size and resting upon the shoulder thereat, said post being also formed with two parts of different sizes in addition to said head and formed with bores of different transverse dimensions with the larger bore in the larger part, these additional post parts substantially respectively fitting the remaining two portions of said opening; a spring within the larger bore and abutting against the shoulder between the two bores; and a contact in the larger bore and pressed outwardly by said spring, said post having a flange on its end opposite the head of the post and engageable with said mounting.

In witness whereof I hereunto subscribe my name this 14th day of April, A. D., 1922.

HARRY A. DOUGLAS.