J. G. PETERSON.

ELECTRIC SWITCH HANDLE.

APPLICATION FILED AUG. 31, 1909.

954,463. Patented Apr. 12, 1910.

FIG. 1

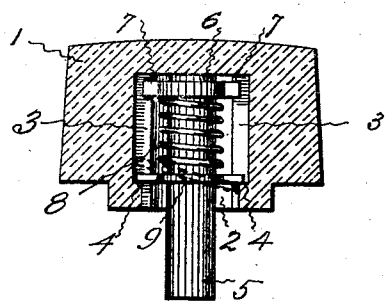


FIG. 2

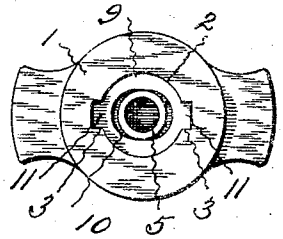


FIG. 4

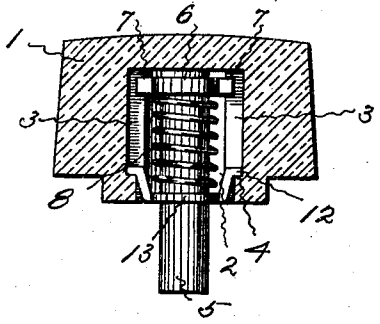
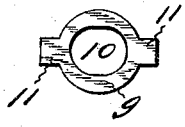


FIG. 3



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UNITED STATES PATENT OFFICE.

JOHANN G. PETERSON, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE ARROW ELECTRIC COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC-SWITCH HANDLE.

954,463. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed August 31, 1909. Serial No. 515,411.

To all whom it may concern:

Be it known that I, JOHANN GODFREY PETERSON, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Electric-Switch Handles, of which the following is a specification.

This invention relates to those turn button handles for rotary snap electric switches which have yielding stems. Such handles when screwed upon the switch actuating spindles are utilized for rotating the spindles and for holding the covers or face plates firmly in position, regardless of variations in the lengths of the spindles, or of inaccuracies in the dimensions of the porcelain bases or other parts of the switches.

The object of this invention is the production of a handle of this nature which is very simple, cheap and strong.

This invention is particularly applicable to the construction of turn button handles which are made of porcelain, glass, or other mineral substances and it is illustrated and described herein in connection with such a handle, although the invention may be utilized in constructing handles of other materials.

Figure 1 of the accompanying drawings shows a section of a handle which embodies the invention. Fig. 2 is a view looking at the underside of Fig. 1. Fig. 3 shows a plan of the thrust plate. Fig. 4 shows a section of the handle with a modified form of thrust plate.

The body 1 of the handle, which may be made of porcelain, glass or any other substance, in any desired design and required size, has a cylindrical socket 2 opening into it from the underside. Extending laterally from this cylindrical socket desirably in line with the width of the handle are grooves 3. These grooves are deeper in the body of the handle than they are near the mouth of the socket, so that shoulders 4 are formed a short distance in from the bottom edge of the body. The stem 5, which is designed to be screwed onto the actuating spindle of the switch, has a head 6 at its inner end, which head is provided with lugs 7 that extend into the grooves so that while the head and stem are free to move inwardly and outwardly in the socket in the handle, these parts turn when the handle is turned. Surrounding the stem beneath the head is a spiral spring 8. This spring thrusts between the head of the stem and a thrust plate 9 which is located in the socket in the handle. The thrust plate has an opening 10 slightly longer in diameter than the spindle, and outwardly projecting lugs 11 that rest upon the shoulders 4 so that the thrust plate cannot be forced by the spring out of the opening in the handle. The stem head lugs 7 are of such size that they readily pass through the grooves at the mouth of the socket when the stem and spring are inserted therein. The thrust plate 9 with its lugs 11 is longer than the width of the opening from the bottom of one groove to the bottom of the other groove at the mouth of the socket. In order to put the thrust plate in position, it is slipped upon the stem and turned obliquely with relation thereto, the opening 10 in the plate permitting, sufficiently for one end to be inserted beyond the shoulder 4 on one side. The plate is then pushed in, against the spring, in this oblique position as shown by the dotted lines in Fig. 1, until the other end is beyond the other shoulder 4. When both ends of the thrust plate are pushed in beyond the shoulders, the plate is released and then the spring thrusts and holds the plate with the ends of the lugs against both shoulders. With the parts in this position, none of them will become displaced, and while the handle will turn the stem and attached switch spindle, the handle has a movement longitudinally of the stem and spindle in order to permit it to adjust itself to cover or face plate of the switch.

If for any purpose, it is desired to remove the stem from the handle, the thrust plate, by a suitable tool, may be pushed in on one end until it is sufficiently oblique, as illustrated by the dotted lines in Fig. 1, to release one end from the shoulder it bears against. The plate is then allowed to spring out until the other end is free from its shoulder 4.

The handle shown in Fig. 4 is exactly like that shown in Fig. 1, except that the lugs 12 of the thrust plate 13 are offset from the plane of the plate so that the plate will be a little lower on the stem, and there will be more space between the plate and the stem head for the spring.

This handle can be cheaply made and easily assembled. There are few parts and

none requires special fitting, thus making the structure particularly advantageous for the construction of handles of porcelain or the like, which during the process of manufacture are subjected to such heat that metal pieces cannot readily be molded therein, and which so change their size and form when cooling that great accuracy cannot be obtained. This construction permits the production of a porcelain handle without any opening in the top, which is a marked advantage.

The invention claimed is:

1. A switch handle having a body of insulating material with a socket opening into the body from the bottom edge, said body being so formed that the socket is of greater diameter in the interior of the body than at its mouth, a stem having a head movable within the socket, a plate loose in the socket, said plate having a greater diameter than the diameter of the mouth of the socket, and a spring thrusting between the stem head and the plate.

2. A switch handle having a body of insulating material with a cylindrical socket opening from the bottom edge, and grooves extending outwardly from the socket, said body being so formed that the grooves are deeper in the interior than they are at the mouth of the socket, so as to form integral shoulders near the mouth, a stem having a head movable in the socket, lugs projecting from the head into the grooves, a plate in the socket said plate having lugs projecting into the grooves, which lugs extend outwardly from the plate and rest upon the shoulders, and a spring thrusting between the stem head and the plate.

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