No. 755,165. PATENTED MAR. 22, 1904.

A. P. PECK.

ELECTRIC SWITCH.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 2.

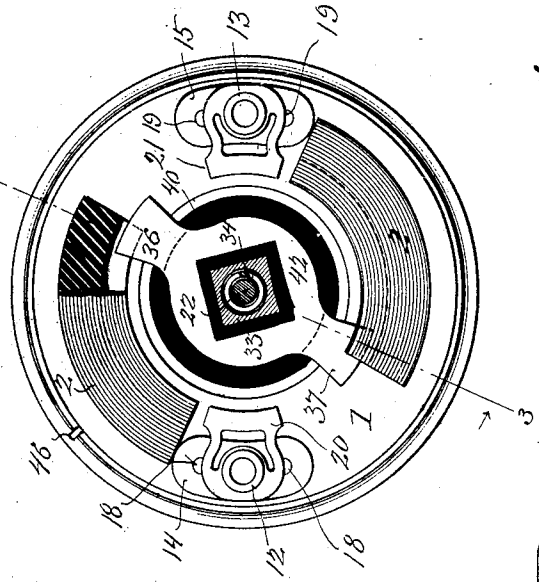


Fig. 9.

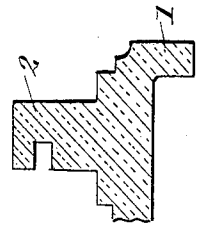


Fig. 1.

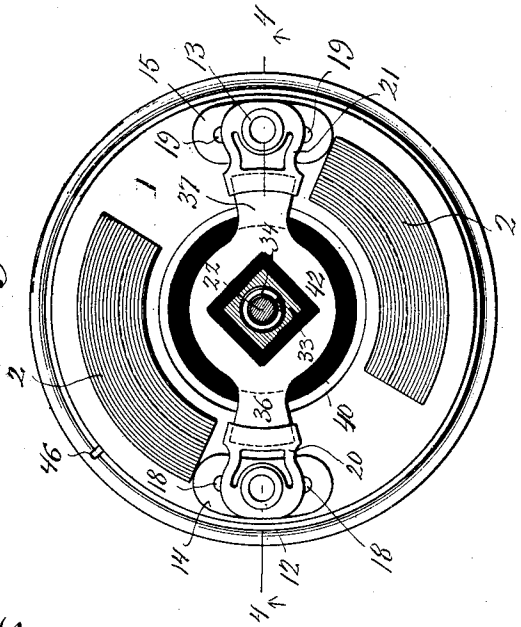
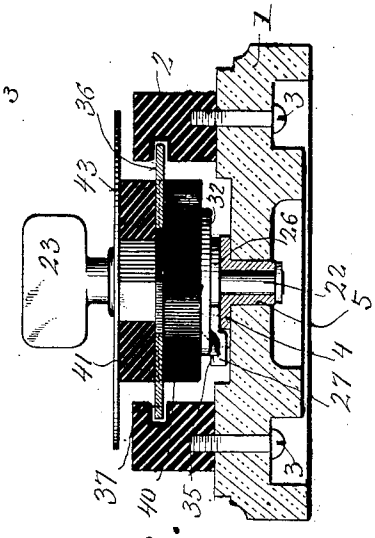


Fig. 3.



Witnesses
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By H. G. Underwood.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 7.

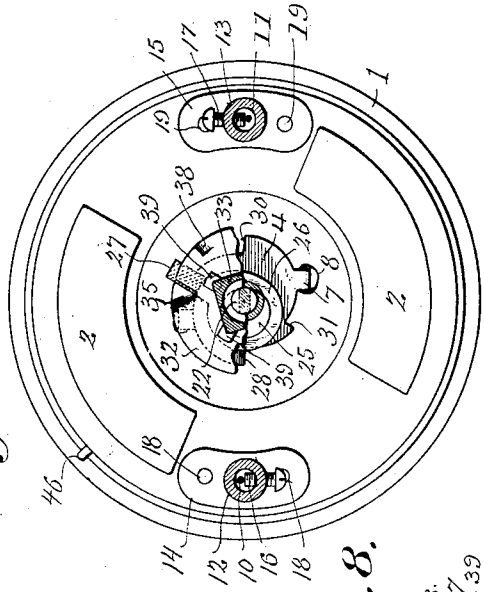


Fig. 8.

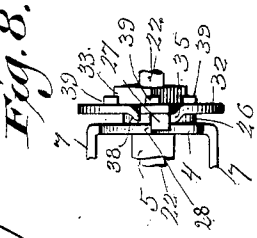


Fig. 5.

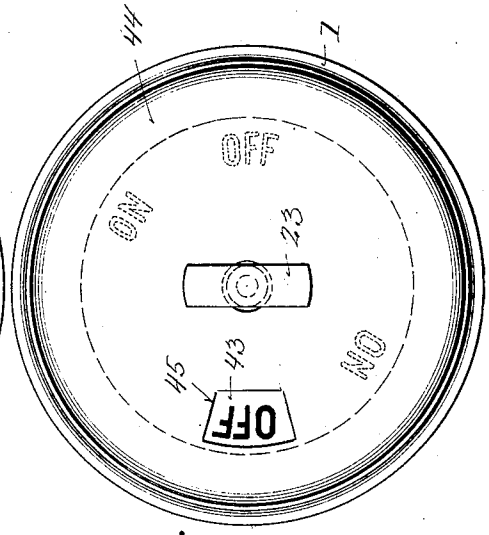


Fig. 6.

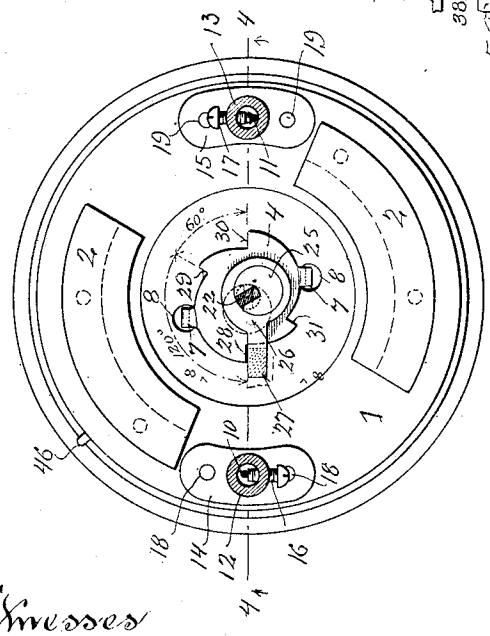
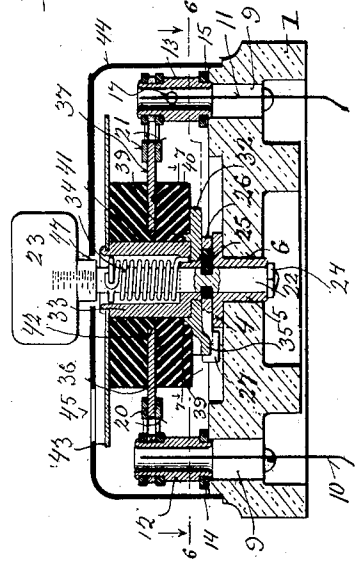


Fig. 4.



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No. 755,165. Patented March 22, 1904.

UNITED STATES PATENT OFFICE.

ASHLEY P. PECK, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO HART & HEGEMAN MANUFACTURING COMPANY OF HARTFORD, CONNECTICUT.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 755,165, dated March 22, 1904.

Application filed September 21, 1903. Serial No. 174,125. (No model.)

To all whom it may concern:

Be it known that I, ASHLEY P. PECK, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Electric Switches; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to a rotary snap electric switch.

The object of the invention is to reduce the liability of an arc forming between the stationary contacts and the movable contacts when the latter are thrown for opening the circuit.

To this end the invention resides in a switch of this nature having insulating-barriers so arranged that when the ends of the movable contacts leave the stationary contacts in opening the circuit they are practically inclosed in insulating material, so that any arc which has a tendency to form is smothered in the insulation.

Figure 1 of the accompanying drawings shows a plan of the switch with the cover and the handle omitted, the parts being in the positions occupied when the circuit is closed. Fig. 2 shows a similar view with the parts in the positions occupied when the circuit is open. Fig. 3 shows a vertical section of the switch on the plane indicated by the line 3 3 on Fig. 2. Fig. 4 shows a vertical section on the plane indicated by the line 4 4 on Fig. 1 with the cover-handle and indicating-dial in place. Fig. 5 shows a plan of the switch. Fig. 6 shows a horizontal section taken on the plane indicated by the line 6 6 on Fig. 4 with the parts in the positions occupied when the circuit is closed. Fig. 7 shows a similar view with the parts in the positions occupied with the circuit opened. Fig. 8 shows a detail side elevation of the locking parts of the switch, and Fig. 9 shows a detail section of a portion of the base and insulating-barrier.

The base 1, which may be of any size and shape, is preferably made of porcelain. The barriers 2, which are arc-shaped blocks with slots for the passage of the ends of the movable poles, project from the face of the base. These barriers may be formed of the same material as the base and integral therewith, as indicated in Fig. 9, or they may be formed of a different material and fastened to the base by screws 3, as indicated in Fig. 3. The stop-plate 4 is rigidly secured to the center of the base by a sleeve 5, that extends downwardly through the perforations 6, and two downwardly-extending lugs 7, which pass through holes 8.

The tubular binding-posts 12 and 13 are held in place by plates 14 and 15, which are secured to the base by screws 18 and 19, and the circuit-wires 10 and 11 pass through perforations 9 in the base into these binding-posts and are secured therein by binding-screws 16 and 17. Extending from the upper end of each post are the spring contact-plates 20 and 21.

The operating-spindle 22 extends through the hollow sleeve at the center of the base and is held therein by the washer 24, that is slipped upon the lower end of the spindle. The handle 23 is screwed upon the other end of the spindle. Secured to the spindle next to the locking-plate is an eccentric 25, and about the eccentric is an eccentric-plate 26, that has a lug 27, which is adapted to engage with the teeth or stop-shoulders 28, 29, 30, and 31 on the edge of the locking-plate that is secured to the base. When the eccentric is in its normal position, the lug engages one of the stop-shoulders. When the eccentric is turned, the lug is move outwardly from a stop-shoulder, and when the eccentric-plate is thrown and the eccentric is held the lug is drawn inward, so as to engage with a stop-shoulder.

The detent-plate 32 is rigidly connected to the squared sleeve 33, which is placed upon the spindle. In a chamber in the sleeve is the actuating-spring 34, which has one end connected with the sleeve and the other end connected with the spindle. The detent-plate has a depending lug 35, which lies in the plane of the lug on the eccentric-plate and serves to stop the rotation of the sleeve and the movable contact-blades 36 and 37, which

are carried by the sleeve. The detent-plate is also provided with a depending lug 38, which is designed to prevent any back play of the contact-blades. The upper surface of the detent-plate is formed with a series of projections 39, which extend into corresponding recesses in the insulating-block 40, which snugly fits the squared sleeve. The movable contact-blades, which are preferably formed integral with a plate 42, are held between the insulating-block 40 and the insulating-block 41, which snugly fits the squared sleeve, so that only the ends of the blades project in the plane of the openings between the stationary spring contact-plates. These insulating-blocks securely hold the blade-plate and completely insulate it from all of the mechanisms. Above the upper insulating-block is an indicating-dial 43, bearing the words "Off" and "On," and over the mechanism is a cover 44, which is provided with a window 45, through which the word which designates the condition of the switch may be observed. The base is provided with a lug 46, adapted to engage a recess in the lower edge of the cover, so that the cover will always be put on in the same position.

When the handle of this switch is turned, the spring connected between the spindle and the sleeve is tightened, for the sleeve is held against movement until the eccentric fastened to the spindle through the eccentric-plate moves the dog outwardly from engagement with a shoulder of the stop-plate. When the lug is disengaged from the shoulder, the spring which has been made tense throws the sleeve carrying the insulating-blocks and movable contact-blades until the movement of the eccentric-plate on the eccentric draws the lug back so that it engages the next shoulder of the stop-plate. When the contact-blades are thus thrown, they pass between the stationary spring contact-plates projecting from the binding-posts and close the circuit through the switch. When they are thrown from between the spring contact-plates, the projecting portions of the blades immediately pass into the grooves in the insulating-barriers, and as they sweep around through the grooves any arc which tends to follow is smothered by the insulating material.

The invention claimed is—

1. An electric snap-switch having a base of insulating material, stationary spring-contacts mounted upon the base, rotatory contacts adapted to make and break contact with the stationary spring-contacts, and barriers of insulating material extending upwardly from the base and inclosing a section of the path of the rotatory contacts between but not inclosing the stationary contacts, substantially as specified.

2. An electric snap-switch having a base of insulating material, stationary contacts mounted upon the base, rotatory contacts adapted to make and break contact with the stationary contacts, and barriers of insulating material extending upwardly from the base between the stationary contacts in the path of the rotatory contacts and having grooves through which the movable contacts pass, substantially as specified.

3. An electric snap-switch having a base of insulating material, stationary contacts mounted upon the base, rotatory contacts adapted to make and break contact with the stationary contacts, blocks of insulating material inclosing all but the ends of the rotatory contacts, and barriers of insulating material extending upwardly from the base between but not inclosing the stationary contacts and adapted to shield the exposed ends of the rotatory contacts immediately as they leave the stationary contacts when moved to open the circuit, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

ASHLEY P. PECK.

Witnesses:
H. G. UNDERWOOD,
E. W. HELLER.