

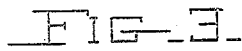
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W. A. SENSINGER

SELECTIVE SWITCH

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INVENTOR.
Wilbur A. Sensinger

BY *Bodell & Thompson*
ATTORNEYS

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SELECTIVE SWITCH

Wilbur A. Sensinger, Syracuse, N. Y., assignor to
Crouse-Hinds Company, Syracuse, N. Y., a cor-
poration of New York

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1 Claim. (Cl. 200—4)

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This invention relates to a selective switch for selectively energizing one of a plurality of circuits.

The invention has as an object a selective switch embodying a particularly simple and economical structure operable to close a selected pair of contacts of a series, and to deenergize the circuit to the series of contacts while the selection is being made.

The invention consists in the novel features and in the combinations and constructions herein-after set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a top plan view of a switch structure embodying my invention.

Figure 2 is a vertical sectional view of the structure shown in Figure 1.

Figure 3 is a bottom plan view.

In general, the switch comprises a body on which is mounted a series of contacts, or pairs of contacts, which are normally open, and a pair of normally closed contacts. A contact actuating member is movably mounted on the body and is operable to successively close the contacts of the series respectively, and to maintain the normally closed contacts open while the contact actuating member is being moved from one pair of the contacts in the series to the next pair.

The body 10 of the switch is of tubular formation being open at one end and closed at the opposite end. A contact actuating member 11 is carried by a stem 12 journaled in the closed end of the body and provided at its outer end with an operating handle 13. The series of contacts connected to the various load circuits are arranged in an annular formation on the exterior of the body, these contacts being arranged in pairs comprising a stationary contact 15 and a movable contact 16, the contacts of each pair being mounted in suitable insulating blocks 17 secured to the body, as by means of screws 18. The side wall of the body 10 is formed with a series of circumferentially spaced apertures 19 to receive pins 20 of insulating material secured to the ends of the movable contacts 16, as by screws 22. The arrangement is such that the contacts 15, 16, are normally opened, as shown at the right, Figure 2. The actuating member 11 is formed with a cam lobe 23 which, upon rotation of the member 11, successively engages the pins 20 causing them and the contacts 16 to move outwardly into engagement with the contacts 15, as illustrated at the left, Figure 2.

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A pair of contacts 24, 25, are mounted within the tubular body on suitable insulating blocks 26 secured to the body as by screws 27. The contacts 24, 25, are normally closed, or in engagement, and are provided at their upper ends with diverging portions 28 positioned in axial registration with the stem 12, the lower end of which is provided with a pin 30 of insulating material.

The actuating member 11 is secured to the stem 12, as by a retaining pin 31, and the upper portion of the stem 12 is encircled by a compression spring 32 acting between the body and a collar 34 mounted upon the stem and held from axial movement by a screw 35 threaded into the stem. The under side of the operating handle 13 is formed with a recess 36 to receive the projecting portion of the screw 35, and thus retain the handle against rotation relative to the stem. The handle is detachably secured to the upper end of the stem as by screw 37. Preferably, the handle is formed with a reduced portion 39 arranged in register with the cam lobe 23 on the contact actuating member and thereby, the portion 39 serves as a pointer to indicate which contacts of the series are closed.

The contacts 24 are in the nature of control contacts, they being connected in series with all of the contacts 15, 16.

The structure embodies an arrangement whereby the control contacts 24, 25, are opened previous to rotation of the member 11 from one end 20 to the next. As previously explained, the stem 12 and the member 11 secured thereto are yieldingly urged upwardly or outwardly by the spring 32, see Figure 2. The upper surface of the member 11 adjacent the periphery thereof is formed with a plurality of notches 41. One of these notches is arranged in register with the cam lobe 23, and the remaining notches are arranged in the same uniform spacing as the pins 20. A restraining member, in the nature of the pin 44, projects downwardly through the closed end of the body to engage one of the notches 41 and thus restrain the actuating member from rotation relative to the body.

When it is desired to select a circuit, the handle 13 is pushed inwardly against the compression of spring 32, thereby disengaging the member 11 from the pin 44. This axial movement of the handle results in the pin 30 separating the normally closed contacts 24, 25. The actuating member may be now rotated to move the cam lobe 23 into engagement with the selected pin 20 to close the contacts associated therewith. Accordingly, during this movement of the cam lobe from one pin to another, the contacts 24, 25, are

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opened and momentary closing of any of the pairs of contacts 15, 16, during rotation of the member 11 does not energize the circuits connected thereto. When the proper contacts, or circuit, has been selected, release of the handle 13 results in the actuating assembly moving outwardly under the influence of spring 32, and permitting the member 11 to again move into engagement with the retaining pin 44, and the contacts 24, 25 to close.

In order to advise the operator when the cam lobe 23 is properly positioned with respect to any one of the pins 20, the member 11 is formed with a groove 46 extending axially on the periphery thereof, and is engaged by the pin 20 opposite to the one engaged by the cam lobe 23. With this arrangement, the actuating member 11 is yieldingly retained in engagement with each contact. The operator can feel this engagement during the manipulation of the handle 13 and is accordingly advised the contacts he has selected are closed, and the handle may be released under the influence of spring 32.

What I claim is:

A selective switch comprising a tubular body closed at one end, an annular series of pairs of normally open contacts detachably mounted on the exterior of the body, one contact of each

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pair having a pin extending through the side wall of the body, a stem journaled in the end wall of the body, an actuating member arranged within the body and mounted upon said stem and having a projection movable successively into engagement with said pins to successively close said normally open contacts, means normally locking said actuating member against rotation, and said member being movable out of engagement with said locking means upon axial shifting of said stem, a pair of normally closed contacts mounted within the body, and said stem being cooperable upon such axial movement to open said normally closed contacts.

WILBUR A. SENSINGER.

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