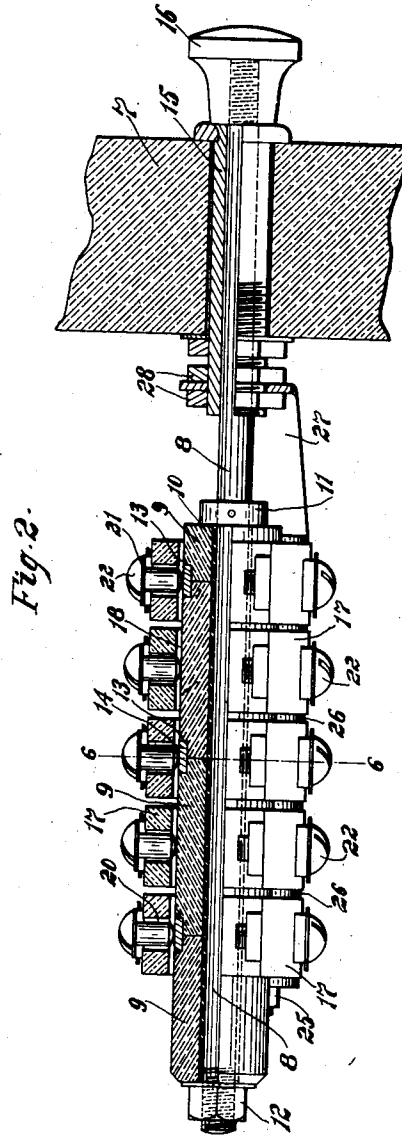
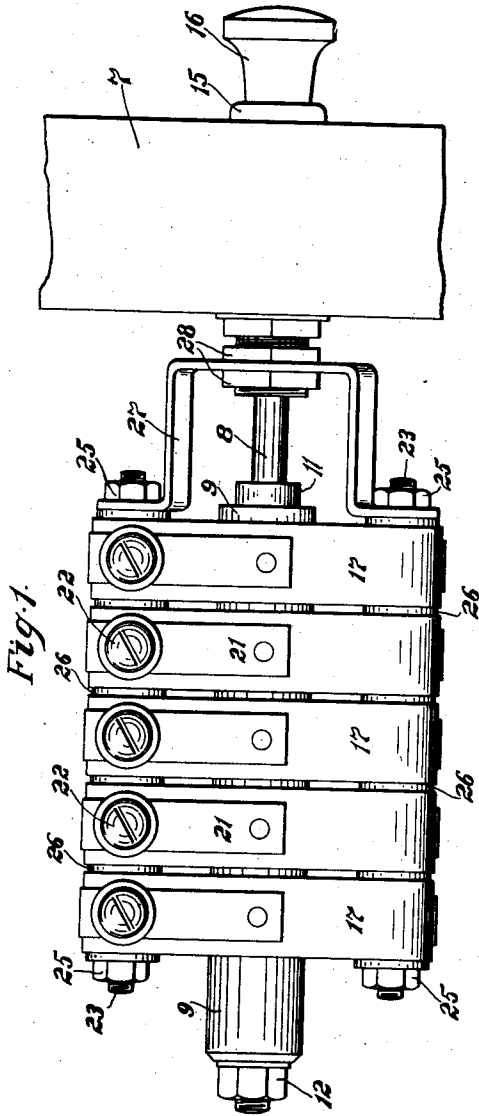


H. L. VAN VALKENBURG.
 SWITCH CONSTRUCTION.
 APPLICATION FILED JUNE 22, 1905.

960,450.

Patented June 7, 1910.

2 SHEETS—SHEET 1.



Witnesses:

George J. Schwartz.
Fred J. Kinsley.

Inventor:

Herman L. Van Valkenburg.

By

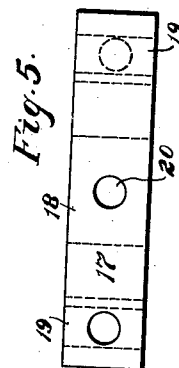
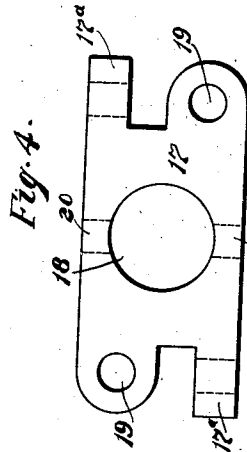
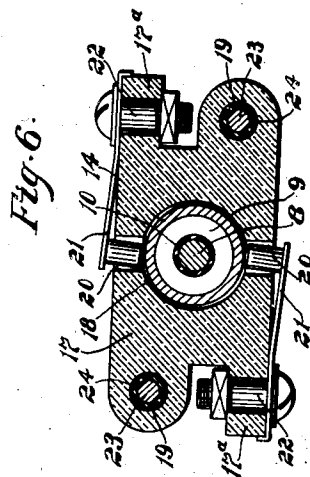
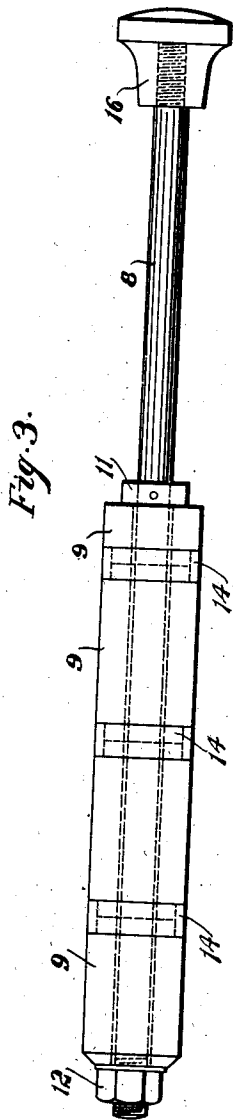
Chas. E. Lord
 Attorney.

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2 SHEETS—SHEET 2.



Witnesses:

George J. Schwartz.
 Fred J. Kinsey.

Inventor:

Herman L. Van Valkenburg.

By

Chas. E. Lord
 Attorney.

UNITED STATES PATENT OFFICE.

HERMON L. VAN VALKENBURG, OF NORWOOD, OHIO, ASSIGNOR TO THE BULLOCK
ELECTRIC MANUFACTURING COMPANY, A CORPORATION OF OHIO.

SWITCH CONSTRUCTION.

960,450.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed June 22, 1905. Serial No. 266,521.

To all whom it may concern:

Be it known that I, HERMON L. VAN VALKENBURG, a citizen of the United States, residing at Norwood, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Switch Construction, of which the following is a full, clear, and exact specification.

My present invention relates to improvements in the construction of electric switches and particularly such switches as are applicable for use in controlling the connections to electrical measuring instruments on power station switch-boards.

The object of my invention is to simplify the form and arrangement of a switch adapted to be employed in connection with voltmeters, ammeters, and other measuring instruments on a switch-board whereby a single measuring instrument may be connected to a variety of circuits or several instruments may be connected to the same circuit by said switch.

A further object is to so construct and arrange the switch that it may be extended or reduced in size by the employment of more or less elements or units of similar construction to adapt it for use in a great variety of ways.

The invention, in one of its aspects, consists of a switch having a plurality of stationary switch units each comprising a block of insulating material having an opening extending through the same, and a pair of contact members secured to the block, the blocks being supported in any suitable manner with their openings in alinement, and a movable switch member which is arranged to be shifted longitudinally in said openings and is provided with one or more contact members adapted to cooperate with the contact members of the stationary switch units.

In the preferred form of my invention the contact members of each stationary switch unit consists of contact fingers which are secured to the exterior of the block and have portions extending into the opening of the block so that they can be engaged and electrically connected by a bridging contact of the movable switch member.

My invention may be further briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be de-

scribed in the specification and set forth in the appended claims.

In the accompanying drawings which illustrate the preferred embodiment of my invention, Figure 1 is a plan view of a multiple-unit switch mounted upon a switch-board panel; Fig. 2 is a side elevation, partly in section, of said switch; Fig. 3 is a view of the movable element of the switch; Figs. 4 and 5 are side and plan views respectively of the block of insulating material forming part of the units of the relatively fixed element; and Fig. 6 is a section on line 6—6 of Fig. 2.

Referring now to the drawings, 7 indicates the switch-board panel upon which the multiple-unit switch is mounted. The movable element of the switch comprises the spindle 8 upon which are mounted the sleeves 9 of wood, fiber, porcelain or other insulating material, preferably separated from said spindle by the strip 10 of insulating paper or cloth. These sleeves are held in position on said spindle between the fixed collar 11 and the nut 12, and said sleeves are shouldered at 13 to receive the bridging contacts or rings 14 of conducting material. The spindle 8 is reciprocally mounted in the bushing 15 in panel 7 and is provided at its outer end with an operating knob 16. Any desired number of sleeves 9 and contact rings 14 may be employed, merely necessitating a longer or shorter spindle. This movable element is clearly shown in Figs. 2 and 3.

The relatively fixed member of the switch comprises one or more elements or units. These units are duplicates of each other, and each includes the block 17 of porcelain or other insulating material preferably molded into the shape illustrated. This block is provided with a large opening 18 to receive the movable member of the switch and with the smaller openings 19 adjacent to said large opening. The block is also provided with openings 20 at right angles to the large opening 18 and communicating therewith. Through said openings 20 project the ends of the yieldingly-mounted contact-fingers 21 fastened by bolts 22 to the exterior of the block 17, said bolts preferably passing through the diametrically opposite lugs 17^a (Fig. 6) formed upon said block. The bolts 22 also act as binding

posts for the leads from the measuring instruments and the circuits to which said instruments are to be connected. The blocks are supported with the openings 18 in alignment. This is accomplished by means of the rods 23 which pass through the openings 19 and are preferably surrounded by the strips 24 of insulating paper or cloth, the blocks being clamped between the nuts 25 and spaced apart the desired distance by means of the washers 26. The several units of the relatively fixed member are mounted (as shown in Fig. 1) upon the bracket 27, which is adjustably fastened between the nuts 28 upon an extension of bushing 15. Any number of units may be employed depending upon the nature of the work to be accomplished by said switch. When the spindle 8 is reciprocated the bridging contact rings 14 are moved into and out of engagement with the contact fingers 21 to complete or break the desired circuit or circuits.

In the appended claims, I aim to cover all changes and modifications not involving a departure from the spirit and scope of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a switch, a plurality of stationary switch units, each comprising a block of insulating material, having an opening extending through the same and a pair of contact members secured to the block, means for supporting said units with the openings of the blocks in alinement, and a movable switch member adapted to be shifted longi-

tudinally in said openings, said switch member having one or more contact members adapted to cooperate with the contact members of the stationary switch units.

2. In a switch, a plurality of stationary switch units each comprising a block of insulating material and a pair of yieldable contact fingers secured to the block, said blocks having openings extending there-through, means for supporting said units with the openings of the blocks in alinement, and a movable switch member adapted to be shifted longitudinally in said openings, said switch member having spaced insulated bridging contact members adapted to cooperate with said contact fingers.

3. In a switch, a plurality of stationary switch units, each comprising a block of insulating material and a pair of contact fingers secured to the exterior of the block, each block having an opening extending therethrough and the contact fingers carried by the block having portions extending into the opening, means for supporting said units with the openings of the blocks in alinement, and a movable switch member adapted to be shifted longitudinally in said openings, said movable switch member having one or more bridging contacts adapted to cooperate with said contact fingers.

In testimony whereof I affix my signature, in the presence of two witnesses.

HERMON L. VAN VALKENBURG.

Witnesses:

L. LOWENBERG,
FRED J. KINSEY.