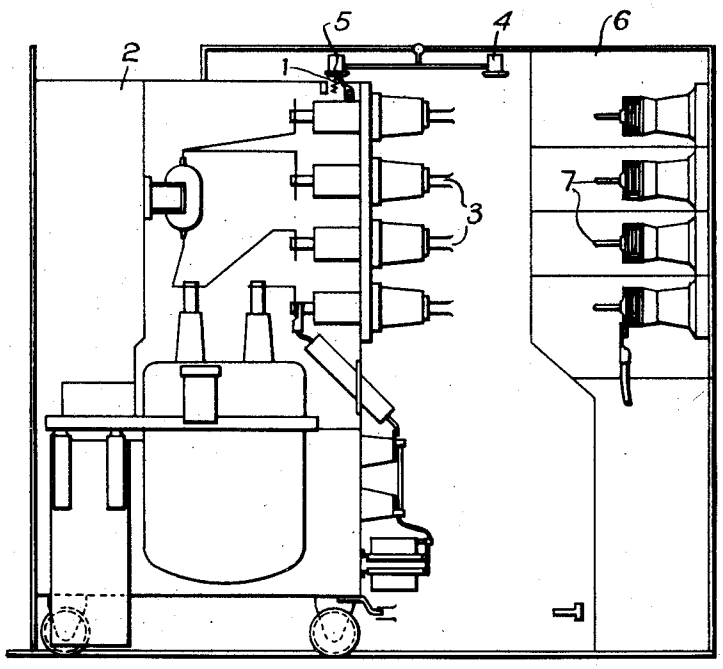
Jan. 27, 1931. G. C. SINCLAIR ET AL 1,790,116

SWITCH MECHANISM

Filed Nov. 1, 1926 2 Sheets-Sheet 1

Fig. 1.



WITNESSES:
A. J. Schiefelbein
W. D. O'Connor

INVENTORS
Gilbert C. Sinclair and
James M. Brown by
Jane D. Brown, Administratrix
BY
Wesley G. Carr
ATTORNEY

Jan. 27, 1931. G. C. SINCLAIR ET AL 1,790,116

SWITCH MECHANISM

Filed Nov. 1, 1926 2 Sheets-Sheet 2

Fig. 2.

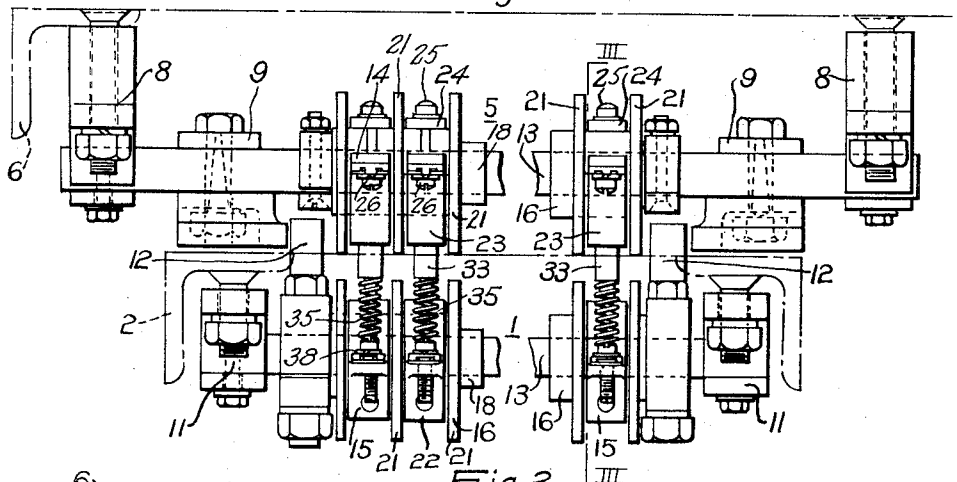


Fig. 3.

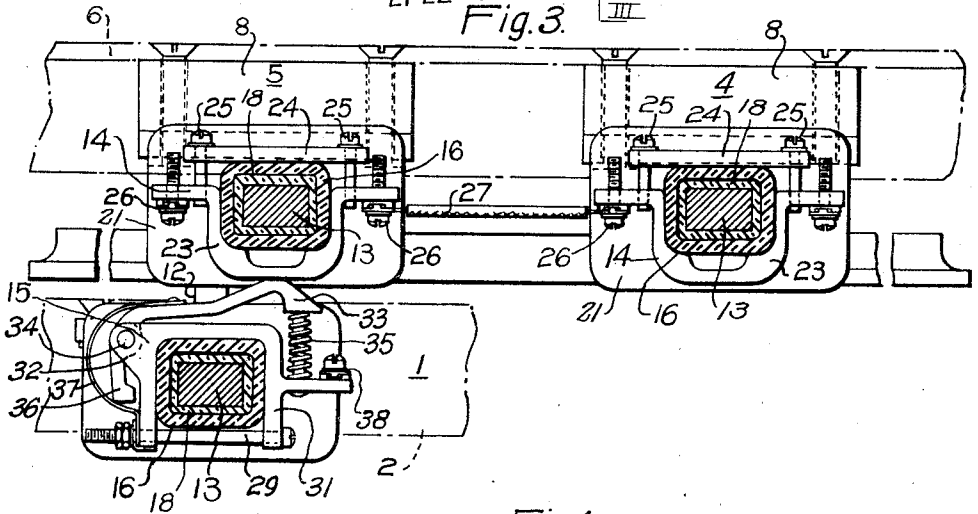


Fig. 4.

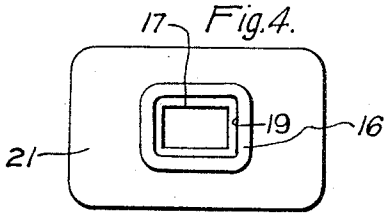
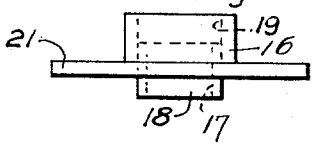


Fig. 5.



WITNESSES:

A. J. Schiefelbein.

W. D. O'Connor

INVENTORS
Gilbert C. Sinclair, and
James M. Brown by
Jane D. Brown, Administratrix

BY

ATTORNEY

Patented Jan. 27, 1931 1,790,116

UNITED STATES PATENT OFFICE

GILBERT C. SINCLAIR, OF MURRAYSVILLE, PENNSYLVANIA, AND JAMES M. BROWN, DECEASED, LATE OF PITTSBURGH, PENNSYLVANIA, BY JANE D. BROWN, ADMINISTRATRIX, OF PITTSBURGH, PENNSYLVANIA, ASSIGNORS TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA

SWITCH MECHANISM

Application filed November 1, 1926. Serial No. 145,652.

Our invention relates to switch mechanisms and particularly to control circuits for truck-type switches.

One object of our invention is to provide control circuit contact members for truck type switches that are adapted to maintain electrical contact both while the truck is in an operating position and when it is in a disconnected test position.

Heretofore, control circuit connections for truck type switches were so made that when the truck was withdrawn from the operating position the control circuit was broken, and the circuit breaker could not be operated for test while in a disconnected position.

Our invention resides in an auxiliary disconnecting device for control circuits of truck-type switches that comprises contact members mounted on the cell for engaging contact fingers on the truck when it is in an operating position and a second set of contact members on the cell for engaging the contact fingers on the truck when it is in a disconnected or test position.

Each group of contact members or fingers, comprises a supporting rod mounted transversely of the truck and having a number of insulating bushings thereon. The bushings are provided with tongues and grooves and integral barrier plates. When in place on the supporting rod, they form a series of annular chambers completely insulated from each other and from the supporting rod for receiving the contact members or the contact fingers, as the case may be.

The contact member supporting rods are so mounted in the cell that they may be moved axially and are provided with guide members. The contact finger supporting rod is rigidly mounted on the truck and is provided with guide pins for engaging the guide members when the truck is moved into the cell to bring the contact members into alinement with the contact fingers.

In the drawings:

Fig. 1 is a longitudinal sectional view of a cell and circuit breaker, showing the auxiliary disconnecting contact members embodying our invention.

Fig. 2 is a view in front elevation of the contact members shown in Fig. 1.

Fig. 3 is a view in cross-section of the contact members of Figs. 1 and 2 taken on the line III—III of Fig. 2.

Figs. 4 and 5 are elevational and plan views respectively, of a barrier member embodied in the auxiliary disconnecting devices.

Referring to the drawings, the auxiliary disconnecting device in general, comprises a contact finger assembly 1 on a circuit breaker truck 2 having main contact members 3 and stationary contact member assemblies 4 and 5, mounted on a truck cell 6 having main contact members 7.

The contact member assemblies 4 and 5 are loosely mounted in the brackets 8, that are fastened to the top of the cell 6 and are provided with guide members 9. The contact finger member assembly 1 is rigidly secured to the top of the truck 2 by means of brackets 11. Guide pins 12 are provided on the contact finger assembly 1 for cooperating with the guide members 9 to bring the contact member assemblies 4 and 5 into alinement with the contact finger assembly 1 when the truck is moved into the cell.

The contact finger assembly 1 and the contact member assemblies 4 and 5 comprise rectangular bars 13 upon which the desired number of contact members 14 of contact fingers 15 may be mounted. Insulating bushings 16 provided with rectangular openings 17 for receiving the supporting bar 13 and having annular tongues 18 and grooves 19 are threaded on the bars 13 in such manner that the tongue 18 of one bushing engages the groove 19 of the next thereby forming a complete insulating casing over the bar 13. Integral barrier plates 21 are provided for dividing the sup-

porting structure into a series of annular chambers 22. The contact members 14 comprise conducting contact shoes 23 that are clamped to the bushings 16 in each chamber 22, by means of retaining straps 24 and bolts 25. Terminals 26 are provided at either end of the contact shoes 23 for securing conductors 27.

The contact finger mechanisms 15 are clamped to the bushings 16 in the chambers 22 by means of bolts 29 in much the same manner that the contact members 14 are mounted. The contact finger mechanism 15 comprises a U-shaped base member 31 having integral brackets 32 and a contact finger 33 that is pivotally mounted in the brackets 32 by means of a pin 34. The contact finger 33 is biased in the counter-clockwise direction, as viewed in Fig. 3, by a spring 35 and is restrained to movement in a limited arc by an integral stop 36. A flexible shunt 37 is provided for conducting current from the contact finger 33 to the base member 31 and a terminal 38 is provided for securing a conductor.

When the truck 2 is moved into the cell to the position shown in Fig. 1, the contact finger assembly 1 engages the contact member assembly 5. However, the main contact members 3 and 7 do not make contact and therefore the truck switch is not connected to the main circuit and may be operated for testing with assurance that current can not be accidentally thrown on. Upon moving the truck 2 into the operating position, the main contact members 3 engage the contact members 7 and the contact finger assembly 1 engages the contact member assembly 4. Both the main circuit and the control circuit are thereby closed and the switch is in readiness to be operated in service.

It is apparent from the foregoing that we have invented a truck-type switch auxiliary disconnecting contact member that is adapted to maintain contact when the breaker is in an operating position and while it is in a disconnected test position.

We do not wish to be limited by the specific arrangement of parts herein set forth, as it is obvious to those skilled in the art that various modifications and substitutions may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

We claim as our invention:

1. The combination with an electrically controlled truck-type circuit breaker, a cell therefor and a control circuit, of a contact finger for the control circuit and a pair of stationary contact members so mounted that the contact finger makes contact with one of said contact members when the truck is in the operating position and with the other contact member when the truck is in the disconnected or test position.

2. The combination with an electrically controlled truck-type circuit breaker, a cell therefor and a control circuit, of a contact finger for the control circuit mounted on the truck and a pair of stationary contact members mounted on the cell wall in such manner that the contact finger makes contact with one of said contact members when the truck is in the operating position and with the other contact member when the truck is in the disconnected or test position.

3. The combination with a truck-type circuit breaker having main disconnecting contact members and a cell therefor having corresponding stationary disconnecting contact members, of a control circuit for operating the breaker that comprises a contact finger and a pair of spaced auxiliary contact members so mounted that the contact finger makes contact with one auxiliary contact member when the main disconnecting contact members are closed and makes contact with the other auxiliary contact member when said main disconnecting contact members are open.

4. In an auxiliary disconnecting device for controlling truck-type circuit breakers enclosed within a stationary structure, a plurality of contact fingers mounted on a stationary supporting bar upon the circuit breaker, a plurality of contact members mounted on a movable supporting bar substantially parallel to the first named bar and mounted upon the said structure, and means for moving the movable bar alining the contact fingers with the corresponding contact members.

5. In an auxiliary disconnecting device for controlling truck-type circuit breakers provided with a plurality of contact members, a supporting bar, a plurality of overlapping insulating collars having integral barrier members mounted on the supporting bar and cooperating contact members mounted on the insulating collars and insulated from each other by the barrier members for engaging the first named contact members.

6. The combination with a truck-type circuit breaker and a cell therefor provided with a plurality of contact members and a plurality of contact fingers for engaging the contact members, of a supporting bar for the contact fingers mounted rigidly on the truck, a supporting bar for the contact members mounted on the cell substantially parallel to the first named bar and free to move axially, guide members on the supporting bars for co-operating to properly align said bars.

7. In an auxiliary disconnecting device for the control circuits of truck-type circuit breakers provided with a plurality of pairs of cooperating contact members, a pair of relatively movable supporting bars each carrying contact members adapted to cooperate

with the contact members of the other bar, bracket members in which one of the bars is loosely mounted to permit axial movement thereof with respect to the other, cooperating guide members on the bars for so axially positioning the bars when moved laterally toward one another that the contact members of each pair are aligned.

In testimony whereof, we have hereunto subscribed our names this 27th day of October, 1926.

GILBERT C. SINCLAIR.
JANE D. BROWN,
Administratrix of James M. Brown, Deceased.