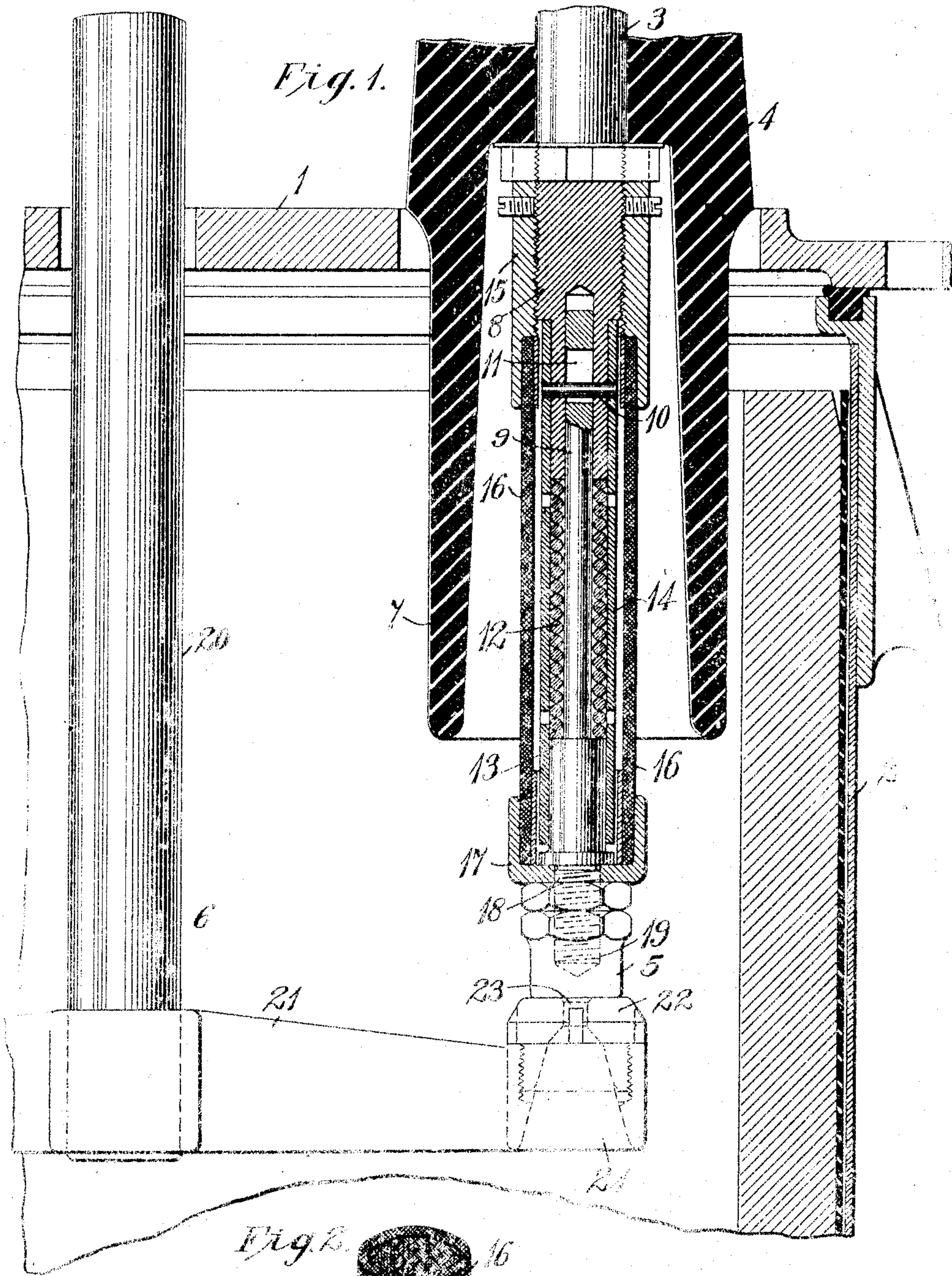


C. A. TUCKER.  
 CONTACT MEMBER FOR ELECTRIC SWITCHING DEVICES.  
 APPLICATION FILED JULY 6, 1908.

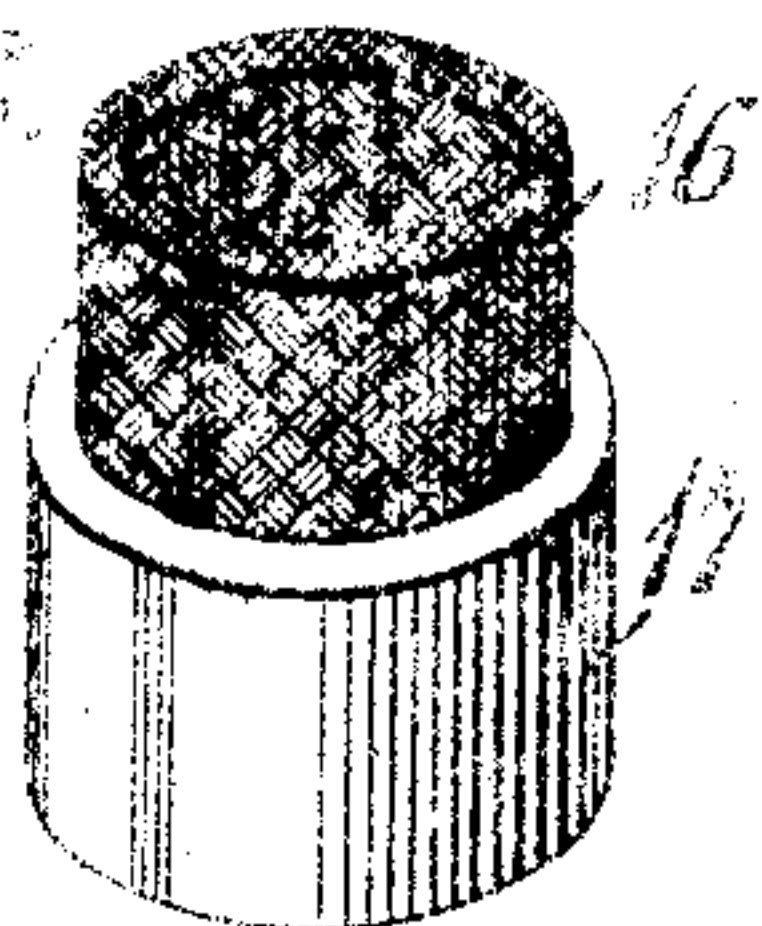
981,821.

Patented Jan. 17, 1911.



WITNESSES:

Fred H. Miller  
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INVENTOR

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 By Wesley E. Carr  
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# UNITED STATES PATENT OFFICE.

CURTIS A. TUCKER, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, OF EAST PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CONTACT MEMBER FOR ELECTRIC SWITCHING DEVICES.

981,821.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed July 6, 1908. Serial No. 442,224.

*To all whom it may concern:*

Be it known that I, CURTIS A. TUCKER, a citizen of the United States, and a resident of Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Contact Members for Electric Switching Devices, of which the following is a specification.

My invention relates to contact members for circuit breakers and other electric switching devices and it has for its object to provide a simple and efficient contact member, the component parts of which shall be compactly arranged and the contact portion of which shall be resiliently supported.

Circuit interrupters which are adapted to transmit relatively large electric currents at high voltages often comprise one or more groups of stationary contact members which project downwardly from a suitable support and a movable bridging contact member to cooperate therewith. In such structures, the movable bridging members are usually provided with cylindrical contact blocks which are resiliently secured to the bridging arm and are electrically connected thereto by means of a flexible shunt conductor.

In order to simplify the movable contact member, I resiliently mount the lower portions or contact blocks of the stationary contact members and establish electrical connections between the contact blocks and the rigid terminals above them by means of flexible tubular conductors, the arrangement of parts being such that the resilient supports for the blocks are disposed within the flexible tubes.

Figure 1 of the accompanying drawings is a sectional elevation of a portion of a circuit interrupter having cooperating stationary and movable contact members constructed in accordance with my invention and Fig. 2 is a detail view of the tubular shunt conductor which is associated with the stationary contact member.

Referring to the drawings, the mechanism here illustrated comprises a substantially horizontal supporting plate 1 which may constitute a part of a well-known form of circuit interrupter, a tank 2 secured to the plate 1 and adapted to contain insulating fluid, a stationary terminal 3, an insulating bushing 4 therefor, a cylindrical contact

block 5 which is resiliently supported by the terminal 3 and a movable bridging member 6 which cooperates with the stationary members.

The downwardly projecting portion 8 of the stationary terminal 3 is screw-threaded and is disposed in the center of a flange or bell 7 of insulation which forms a part of the bushing 4. The lower end of the terminal projection 8 is materially reduced in size and is bored out to receive a shank 9 that projects from the contact block 5, a lost motion connection being provided between the two parts by means of a transverse pin 10 which extends through a longitudinal slot 11 in the shank 9. The portion of the shank which is adjacent to the contact block 5 is materially larger in diameter than its upper portion and a helical spring 12 surrounds the smaller portion and is interposed between the lower end of the projection 8 and the shoulder 13 formed by the upper end of the enlarged portion of the shank. A tube 14 is fitted upon the lower end of the projection 8, which is of less diameter than the screw-threaded portion, and extends downwardly therefrom over the spring 12 and the cylindrical surface of the larger portion of the shank 9. Surrounding the tube 14 is a sleeve which comprises a bushing 15, a flexible tubular conductor 16 (preferably of copper fabric) and a cap 17.

The shank 9 is removably attached to the body of the block 5 by means of a screw-threaded projection 19 with which the shank is provided. After the shank 9, the spring 12 and the tube 14 are assembled in position, the outer sleeve 16 is slipped over these parts into position, the bushing 15 being screwed upon the projection 8 and the cap 17 being provided with the hole 18 through which the screw-threaded projection 19 may project. The tubular shunt 16 is preferably brazed into the bushing 15 and the cap 17 in order that a good electrical connection may be established from the terminal 3 to the contact block 5 which is finally screwed upon the projection 19 against the cap 17.

The structure of the flexible shunt is such that a material adjustment of the contact block is permitted without tending to injure or rupture its fabric and, by this means, a material saving in the space occupied by the contact member is effected.



The movable bridging contact member comprises a rod or shaft 20 having a cross arm 21 at its lower end on which the contact blocks 22 are carried. The blocks 22 are adapted to engage the stationary contact blocks 5 and are detachably secured to the cross arm. The contact surface of the movable block is provided with a small hole 23 which is materially enlarged below the surface and coöperates with a similar hole in the cross arm to form a funnel-shaped opening 24. This opening serves to produce the usual oil jet against the contact surfaces when they are separated suddenly in opening the interrupter.

It will be understood that various structural modifications may be effected within the scope of my invention and that either of the contact members may be considered as stationary and, consequently, I desire that only such limitations shall be imposed as are indicated in the appended claims.

I claim as my invention:

1. In a switching device, the combination with a terminal, a contact member movably connected to and supported by said terminal, and a second contact member coöperating therewith, of a flexible tubular shunt surrounding the connection between the terminal and its contact member and having its respective ends fastened to said terminal and to said contact member.

2. In a switching device, the combination with a stationary terminal, and a contact block secured thereto by a lost-motion connection, of a coöperating contact terminal,

and a flexible tubular shunt surrounding the lost-motion connection and having its respective ends fastened to said terminal and to said contact block.

3. In a switching device, the combination with a terminal having a tubular portion, and a contact block having a shank that projects into said tubular portion and is secured therein by a lost-motion connection, of resilient means interposed between said terminal and said contact block and a flexible tubular shunt surrounding said shank and resilient means and having its respective ends fastened to said terminal and to said contact block.

4. In a switching device, the combination with a stationary terminal having a screw-threaded portion and a tubular extension of reduced diameter, and a contact block having a shank that projects into the tubular extension and is attached thereto by a lost-motion connection, of a spring interposed between the end of the tubular extension and the contact block and tending to separate the parts, a tubular guide secured to the tubular extension and a tubular shunt of woven conducting material surrounding the tubular guide and electrically connecting the terminal and the contact block together.

In testimony whereof, I have hereunto subscribed my name this 24th day of June, 1908.

CURTIS A. TUCKER.

Witnesses:

A. H. BAKKEN,  
BIRNEY HINES.