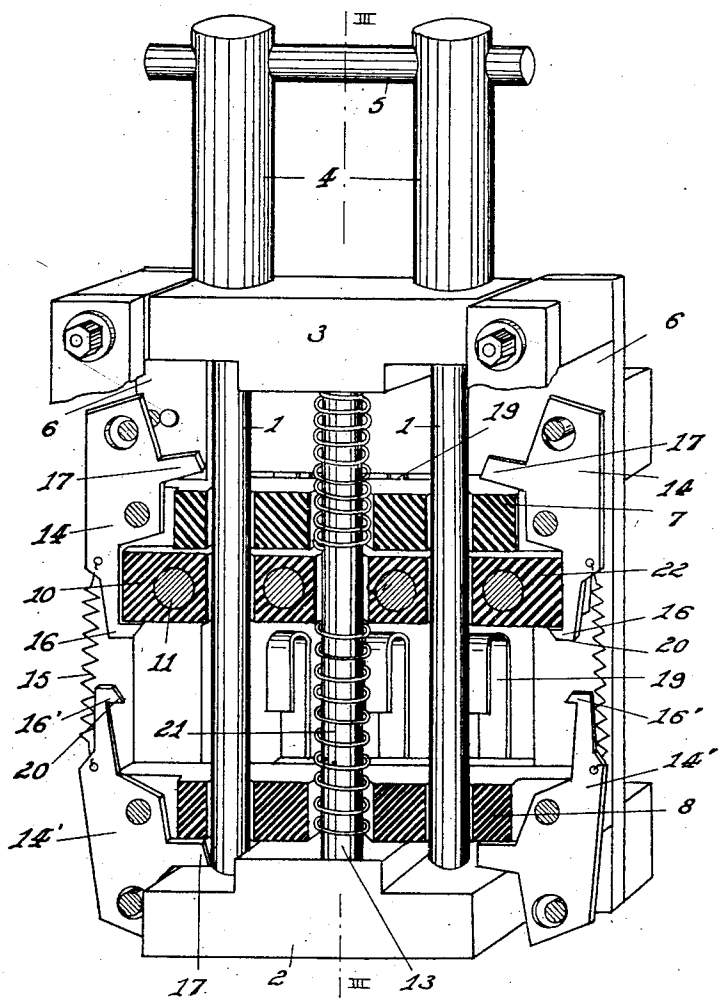
Oct. 27, 1925. 1,559,329

N. LEMLYN

ELECTRIC CIRCUIT SWITCH

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Fig. 1.



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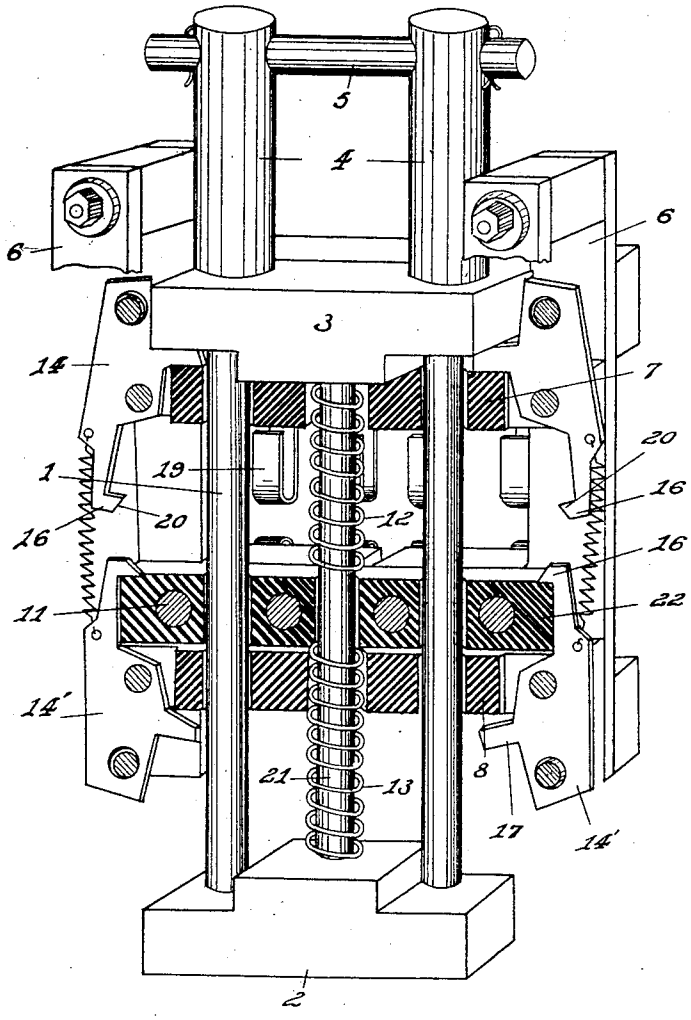
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Fig. 2.



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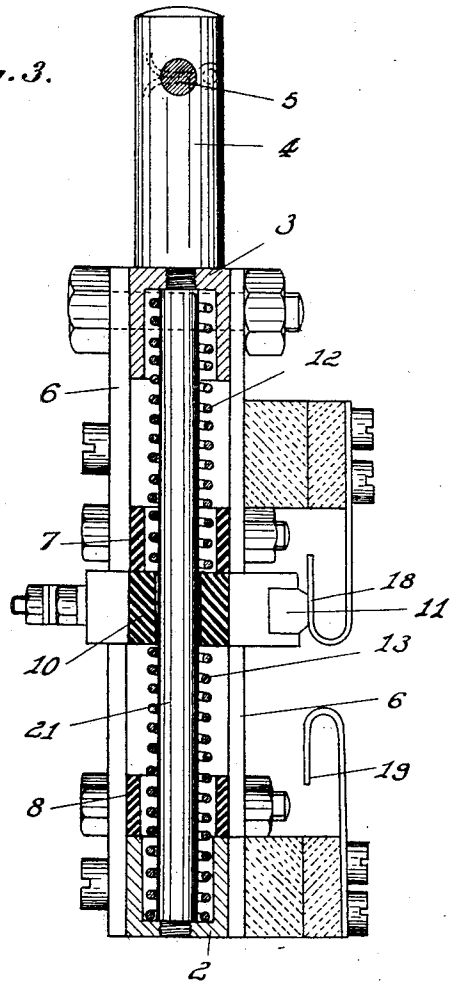
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Fig. 3.



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UNITED STATES PATENT OFFICE.

NICOLAS LEMLYN, OF BRUSSELS, BELGIUM.

ELECTRIC-CIRCUIT SWITCH.

Application filed June 24, 1924. Serial No. 722,143.

To all whom it may concern:

Be it known that I, NICOLAS LEMLYN, a subject of the King of the Belgians, and resident of Brussels, Belgium, have invented certain new and useful Improvements in Electric-Circuit Switches, of which the following is a specification.

My present invention relates to electric circuit switches and has for its object to provide a device of this character whereby electric circuits may be closed and broken by quick movements of movable contacts, so as to reduce the prejudicial effects of sparking.

My invention relates more particularly to devices in which the movable contacts are urged to be moved suddenly by means of springs tensioned as the operating member of the device is displaced.

A further object of my invention is to provide a device of the character set forth which is simple in construction, whereby a quick and reliable operation in both directions will be secured.

To this end the springs mentioned above are arranged symmetrically with relation to said contacts so that similar phenomena will be produced as the operating member is moved in both directions of operation.

In order to obtain a quick displacement of the cross piece usually supporting the movable contacts, said cross-piece will be held in its end positions by means of pawls pivoted on a stationary part of the device and disengaged by said operating member after the springs have been tensioned.

To this end said pawls are urged by means of springs towards the cross-piece.

The same are provided with inclines whereby the cross-piece will be enabled to tilt the same against the action of said springs as the cross-piece approaches its end positions. In order to avoid any jamming, the said movable cross-piece is guided laterally on the stationary part of the device and inside the same by means of rods made integral with the operating member whereby said movable cross-piece is moved.

In the accompanying drawings I have illustrated by way of example one form of my present invention. In these drawings:

Fig. 1 is a sectional perspective view of the device, the parts being in their upper end positions.

Fig. 2 shows the parts of Fig. 1 on their lower end positions.

Fig. 3 is a cross section of the device on line III—III of Fig. 1.

It will be seen from the accompanying drawings that the device comprises a movable frame and a stationary frame.

The movable frame is formed of rods 1 connected at their ends by means of cross-bars 2 and 3. The cross-bar 3 is rigidly connected by means of uprights 4 to a pivotal connection 5 whereby the movements of a lever (not shown) will be transmitted to the movable frame so that the latter will fulfil the function of the operating member of the device.

The stationary frame is formed of uprights 6 connected together by means of cross-bars 7 and 8, each of which carries fixed contacts.

Moreover the movable frame has a movable cross-bar 10 supporting movable contacts 11 and adapted to be moved suddenly by means of springs tensioned by the movement of the movable frame.

In order to obtain sudden interruption in both directions of operation, the springs 12 and 13 are arranged symmetrically with relation to the movable cross-bar 10 so as to obtain similar phenomena as the frame is moved upwardly and downwardly.

In order to hold the cross bar 10 in its end positions as the spring is being tensioned, pawls 14 and 14′ are pivoted on the stationary frame, said pawls being urged by springs 15 so that the noses 16 and 16′ thereof will have tendency to engage said cross-bar. From the foregoing it will be seen that if the movable frame is moved downwardly into the position shown in Fig. 2, the spring 12 held between the cross-bar 10 locked by means of the noses 16 of the pawls 14 and the cross-bar 3, will be compressed or tensioned and urge the said cross-bar 10 downwardly. As this movement is taking place, the ends of said cross-bar 3 will engage the shoulders 17 of the pawls 14 so as to cause the same to tilt, whereby the cross-bar 10 will be released. Thus the latter will be suddenly moved downwardly by means of the spring 12.

The contact which was closed previously between the movable contacts 11 and stationary contacts 18 (Fig. 3) will be broken. However in the lower end position a contact will be closed between the stationary contacts 19 and movable contacts 11.

As the cross-bar 10 is thus being moved, it

will engage the inclines or cam portions 20 of the noses of the pawls so as to space the same against the action of the springs 15.

In order to avoid any jamming of the cross-bar 10 as it is being moved, the same is guided by a central rod 21 serving to guide the springs 12 and 13 and moreover by means of the rods 1. Furthermore the ends 22 thereof are guided by uprights 6, arranged in pairs so as to form slots in which said ends 22 of the movable cross-bar 10 will be moved.

It will be obvious that the springs 12 and 13 may, by any conventional means, be secured to the elements against which they are described as bearing, thus making these springs both tension and compression in their action. As any securing means may be employed, it is not believed necessary to illustrate any particular means.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent, is:

1. In an electric switch, a fixed frame carrying a contact, a movable frame slidably guided in the fixed frame, a rod fixed in the movable frame, a movable contact member slidably mounted on said rod and slidably guided in the movable frame, pawls carried by the fixed frame and adapted to engage the movable contact in its respective operative positions, springs on said rod and held between the movable contact and the movable frame, and means mounted in the fixed frame for limiting the opening movement of the pawls.

2. In an electric switch, a fixed frame carrying a contact, a movable frame slidably guided in the fixed frame, a rod fixed in the movable frame, a movable contact member slidably mounted on said rod and slidably guided in the movable frame, pawls carried by the fixed frame and adapted to engage the movable contact in its respective operative positions, springs on said rod and held between the movable contact and the movable frame, means mounted in the fixed frame for limiting the opening movement of the pawls, and means carried by the movable frame to rock the pawls to release positions at the limit of movement of such frame.

In testimony whereof I have hereunto set my hand.

NICOLAS LEMLYN.