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SWITCH CONTACT

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Fig. 1.

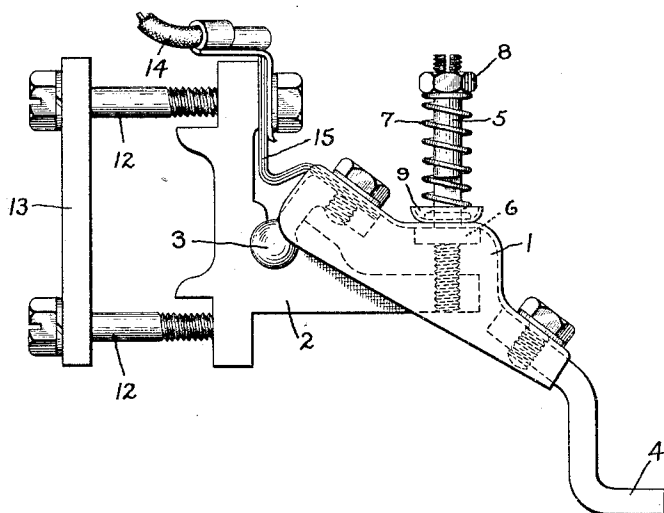
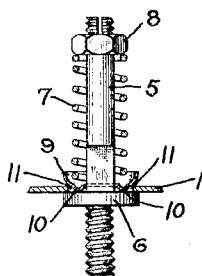


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SWITCH CONTACT.

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This invention relates to devices for electric circuits and more particularly to devices of the type in which contacts carried by a rotatable drum engage with pivoted fingers.

5 In such devices it is essential to provide means for adjusting the pivoted finger so as to vary the pressure with which it engages the contact, and it has hitherto been customary to provide a spring for this purpose
10 which surrounds an adjusting member such as a stud passing through the finger and secured to the stationary member on which it is pivoted. It has been difficult to obtain a satisfactory method of locking the adjusting
15 stud so as to prevent it from working loose if subjected to vibration or from any cause. One of the objects of the present invention is to provide an improved and efficient method of locking such adjusting studs, and to that
20 end it consists in providing a stud adapted to be screwed into the stationary member of the contact finger and provided with a squared portion engaging with a washer which has projections on its under side
25 which enter slots or depressions formed in the pivoted member of the finger, the spring being mounted between the washer and a nut secured to the outer end of the stud. A further
30 object of the invention is to provide an improved form of pivot for such fingers, and to that end it consists in forming the pivot for the finger with a cylindrical portion capable of rotating through a considerable angle in a socket formed in the fixed member.
35 This socket is so shaped that while the cylindrical portion of the pivot can rotate through a considerable angle within the socket it can only be removed from it by movement in a longitudinal direction, which
40 movement is normally prevented when the finger is completely assembled.

The accompanying drawings illustrate this invention, Fig. 1 being a side elevation of a complete finger and Fig. 2 a view of the adjusting stud.

45 In the drawings 1 represents the movable contact member which is pivoted on the stationary member or support 2 at 3 and carrying a contact 4 adapted to engage the contacts on a drum. The contact tip 4 and the
50 member 1 including the pivot 3 comprise what is known in the art as a contact finger. Member 1 is made channel-shaped in cross section and the adjusting member or stud 5
55 passes through its upper side and is screwed

into the stationary member 2 as shown in dotted lines. The stud is provided with a collar 6, secured to or formed integral with it, upon which the member 1 is supported. A coiled spring 7 surrounds the upper portion of the stud and a nut 8 is secured to the outer end of the stud, so that the stud and spring form a resilient connection between the contact member and the stationary support. This nut may be made rigid with the stud by screwing it down to the end of the threaded portion and splitting and opening the end of the stud. This prevents any possibility of the nut working loose and at the same time permits of the renewal of the spring if required. The lower end of the spring is supported on a washer 9 which has a square aperture through which the squared portion of the stud passes, so that the washer is interlocked with the stud to rotate therewith. The lower side of the washer is provided with two projections 10 which cooperate with slots or depressions 11 formed in the upper side of the member 1, and this washer forms a pin and slot connection between the stud, the support and the contact member.

The pivot 3 for the member 1 consists of a substantially L-shaped piece of metal having a cylindrical enlargement at the extremity of one of the limbs, which fits into a socket or slot formed in the member 2. The cross section of this socket is circular for more than 180° so that the enlargement can only be inserted from the side but when inserted can rotate through a considerable angle. The side portions of the member 1 enclose the ends of the L-shaped piece and prevent it from becoming displaced after the contact has been assembled. In pivoted contacts as hitherto constructed the pivot was prevented from coming out of its socket only by arranging the adjusting spring in close proximity to the pivot. Such an arrangement was not entirely satisfactory as the pivot was not positively locked in its socket and a very strong spring was required otherwise the pressure exerted by it on the contacting portion of the finger was very small.

With the present construction, in order to increase the pressure of the finger 4 upon the drum contact, the nut 8 is rotated, this causes the stud to be screwed into the member 2. It will also be observed that the

adjustment of the stud does not change the tension of the spring while finger 4 is out of contact with its cooperating contact. As the washer has to rotate with the stud the projections 10 are withdrawn from the slots and ride over the surface of member 1 until they again come into register with the slots when the stud will again be locked in position against accidental displacement.

10 The member 2 may be secured to an insulated rod by means of bolts 12 and strap 13 and current is led to finger 4 from flexible conductor 14 secured to the upper bolt, through conducting strips 15 and member 1.

15 What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A switch contact comprising a contact finger, a support for the same, a resilient connection between the contact finger and the support comprising an adjusting member extending through the contact finger intermediate the ends of the finger for adjusting the position of the contact finger with respect to the support, the said connection including a spring surrounding said member and co-acting with said finger, and an interlocking connection between the said adjusting member and the said contact finger for locking the adjusting member with the support.

2. As an element of a switch contact provided with a contact member which is mounted to move pivotally about a support and which is adjusted to and yieldingly restrained in a predetermined position with respect to the support by means of an adjusting member and a spring interposed between the adjusting member and the contact member, a washer mounted upon and interlocked with the adjusting member and arranged to interlock with the contact member for maintaining the adjustment of the adjusting member.

3. As an element of a contact finger provided with a contact member which is mounted to move pivotally about a support and which is adjusted to and yieldingly restrained in a predetermined position with respect to the support by means of a rotatable adjusting member and a spring interposed between the adjusting member and the contact member, a washer interposed between the contact member and the spring, the said washer arranged to interlock with the adjusting member to be rotated therewith and arranged to be held in interlocking engagement with the contact member by the spring so as to maintain the adjustment of the adjusting member.

4. As an element of a switch contact provided with a contact member which is mounted to move pivotally about a support and which is adjusted to and yieldingly restrained in a predetermined position with respect to the support by means of a ro-

tatable adjusting member and a spring interposed between the adjusting member and the contact member, a washer interposed between the contact member and the spring upon which the one end of the spring presses so as to yieldingly hold the contact member in a predetermined position with respect to the support, the said washer having an opening which registers with the adjusting member so as to rotate with the rotation of the adjusting member and having projections which cooperate with corresponding apertures in the contact member so as to maintain the adjustment of the adjusting member.

5. A switch contact comprising a support, a contact member having at one end a part cylindrical pivotal bearing on said support which permits the contact member to rotate through a considerable angle and normally prevents the removal of the contact member, an adjusting stud mounted for adjustment on said support and extending through the contact member intermediate its ends, a coil spring surrounding said stud for yieldingly holding the contact member in position with respect to the support, and a washer upon which the one end of the said spring presses which interlocks with the said stud and forms a pin and slot connection between the contact member and the stud for maintaining the adjustment of the stud.

6. A switch contact comprising a contact member with an opening therein, a stud extending through said opening, the opening and stud being so formed as to permit rotation of the stud with respect to said contact member, said contact member being movable with respect to the stud longitudinally thereof irrespective of the rotation of the stud, means engaging the stud and the contact member to prevent rotation of the stud with respect to the contact member and disengageable from one of these elements to permit such rotation.

7. A switch contact comprising a contact member with an opening therein, a stud extending through said opening, the opening and stud being so formed as to permit rotation of the stud with respect to said contact member, said contact member being movable with respect to the stud longitudinally thereof irrespective of the rotation of the stud, a washer fitted upon the stud to prevent rotation and to permit longitudinal movement of the washer with respect to the stud, and cooperating means upon the washer and contact member which are engageable to prevent rotation of said washer with respect to said contact member, and disengageable to permit such rotation.

8. A switch contact comprising a contact member with an opening therein, a stud extending through said opening, said opening and stud being so formed as to permit rota-

tion of the stud with respect to said contact member, said contact member being movable with respect to the stud longitudinally thereof irrespective of the rotation of the stud, a
5 washer fitted upon the stud to prevent rotation and to permit longitudinal movement of the washer with respect to the stud, a coiled spring mounted on said stud and pressing the washer against the contact member, said washer and contact member provided
10 respectively with a projection and recess which are releasably held in engagement by the pressure of the coiled spring upon the washer.

In witness whereof, I have hereunto set
15 my hand this ninth day of December, 1922.

CHARLES THOMAS HANNA.