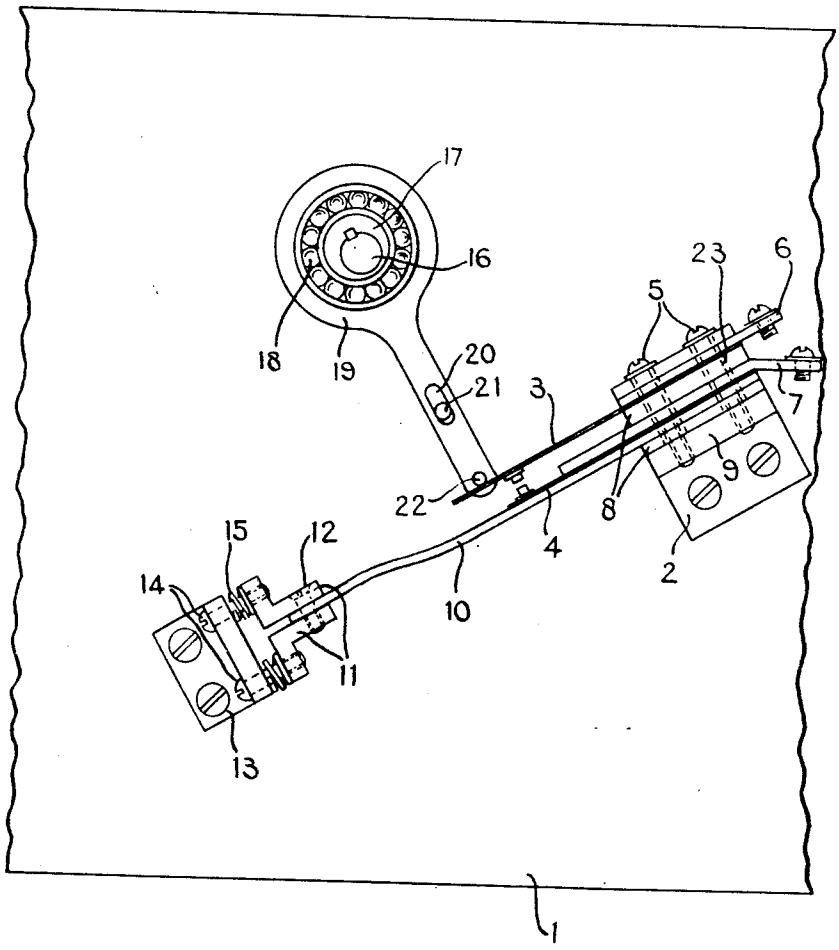
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ELECTRICAL CONTACT DEVICE

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ELECTRICAL CONTACT DEVICE

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5 Claims. (Cl. 200—30)

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This invention relates to mechanically operated electrical contact devices.

The object of the invention is to provide an improved mechanically operated electrical contact device particularly adapted for operation at high speed.

According to the invention a mechanically operated electrical contact device has movement of the non-driven contact blade in one direction limited by a non-resilient stop and in the other direction restrained by a strip of resilient material.

The invention will now be described by way of example with reference to the accompanying drawing.

A right angle bracket 2 is secured to a mounting plate 1. Two screws 5 pass through the upstanding part of the bracket. On these screws are held a brass terminal strip 6, a spring contact blade 3 in contact therewith, an insulating separator 8, a brass terminal strip 7, a spring contact blade 4 in contact therewith, a strip of rubber 10, a second insulating spacer 8 and a clamping block 9. The contact blades and terminal strips are insulated from the screws by sleeves 23.

The strip of rubber 10 extends beyond the free end of the contact blade 4 and the free end of the strip is held between two L-shaped members 11 which are drawn together by a screw 12. The members 11 are supported by screws 14 passing through a bracket 13 secured to the plate 1. Two compression springs 15 separate the members 11 and the bracket 13, so that the tension of the strip 10 may be set by adjusting the screws 14. The position of the bracket 13 is such that the strip 10 is tensioned to press the contact blade 4 against the terminal strip 7 which extends part of the way along the contact blade.

Journalled in bearings in the plate 1 is an operating shaft 16. A bushing 17 is mounted eccentrically on this shaft and keyed to it. The bushing is a tight push fit in the inner ring of a ball race 17. The outer ring of the ball race is a tight push fit in a hole in a plate 19.

An extension of the plate 19 carries a pin 22 which engages the contact blade 3. Formed in this extension is a slot 20 which engages a pin 21 fixed to the plate 1.

Thus as the shaft 16 rotates, the plate 19 is reciprocated by the eccentric bushing 17. The pin 22 moves the contact blade 3 towards the blade 4 and when the contacts make continues to move both blades downwards. The plate then begins to move upwards and the contact blades follow until movement of the blade 4 is limited

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by the terminal strip 7. The blade 3 continues to move upward, so breaking the contact, under its own spring tension, until it reaches approximately the position shown in the drawing. In this way, the contacts are made once during each revolution of the shaft 16.

The rubber strip 10 is always in contact with the blade 4 and so damps out any tendency for the blade to "bounce" when it is contacted by the blade 3 and when it is restrained by the strip 7, thus improving the operation at high speeds. The tension of the strip is adjusted to provide effective damping at the particular operating speed required, such as 10,000 operations per minute.

Furthermore, the present construction is an improvement over cam operated contacts in that the contact blade 3 is not subjected to wear by frictional engagements with a cam surface, nor is it subjected to shocks since the blade is always maintained in contact with the pin 22 by the spring tension of the blade.

What I claim is:

1. An electrical contact device comprising first and second springy contact blades, one end of each being fixed and the other ends being normally spaced but being mutually engageable by bending of said second contact, a non-resilient fixed stop limiting movement of said first blade towards said second blade, a strip of resilient material in tension anchored at one end and attached to said first blade, said strip restraining movement of said first blade in the direction away from said second blade although permitting movement of said first blade away from said stop under restraint, and mechanical means for positively driving said second blade towards said first blade through a distance causing said second blade to contact said first blade and thereafter said first blade to move away from said stop against the resilient restraint of said strip.

2. An electrical contact device comprising first and second springy contact blades, one end of each being fixed and the other ends being normally spaced but being mutually engageable by bending of said second contact, a non-resilient fixed stop limiting movement of said first blade towards said second blade, a strip of resilient material in tension anchored at one end and attached to said first blade, said strip restraining movement of said first blade in the direction away from said second blade although permitting movement of said first blade away from said stop under restraint, and cyclically operating means for alternately positively driving and

withdrawing said second blade towards and from said first blade, the throw of said means being such as to move said second blade into contact with said first blade and thereafter to move said first blade away from said stop against the resilient restraint of said strip.

3. An electrical contact device comprising first and second light springy contact blades, one end of each being fixed and the other ends being normally spaced but being mutually engageable by bending of said second contact, a non-resilient fixed stop normally engaged by said first member and limiting movement of said first blade towards said second blade, a strip of resilient material in tension anchored at one end and attached to said first blade, said strip permitting movement of said first blade away from said stop against the restraint exerted thereby, means for adjusting the tension in said strip, and mechanical means for positively driving said second blade towards said first blade through a distance causing said second blade to contact said first blade and thereafter said first blade to move away from said stop against said restraint.

4. An electrical contact device comprising first and second light springy contact blades, one end of each being fixed and the other ends being normally spaced but being mutually engageable by bending of said second contact, a non-resilient fixed stop limiting movement of said first blade towards said second blade, a strip of resilient material in tension attached to said first blade, said strip restraining movement of said first blade in a direction away from said stop, a rotary driving shaft, a bushing secured to said shaft, a ball race mounted on said bushing, a reciprocating

member mounted on said ball race, means for limiting the movement of said member to reciprocation, and means mounted on said member for positively driving said second blade into contact with said first blade and thereby moving said first blade away from said stop against the action of said resilient strip.

5. An electrical contact device comprising first and second light springy contact blades, one end of each being fixed and the other ends being normally spaced but being mutually engageable by bending of said second contact, a non-resilient fixed stop limiting movement of said first blade towards said second blade, resilient stop means attached to said first blade and restraining movement of said first blade in a direction away from said stop, a rotary driving shaft, a bushing secured to said shaft, a ball race mounted on said bushing, a reciprocating member mounted on said ball race, means for limiting the movement of said member to reciprocation, and means mounted on said member for positively driving said second blade into contact with said first blade and thereby moving said first blade away from said stop against the action of said resilient stop means.

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