

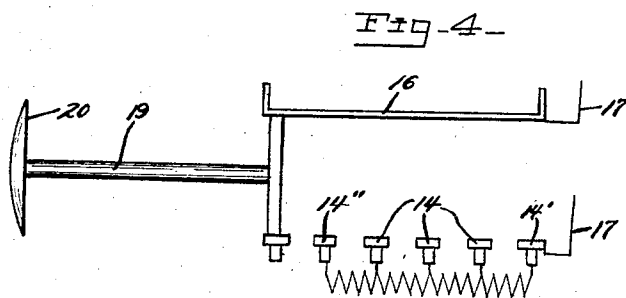
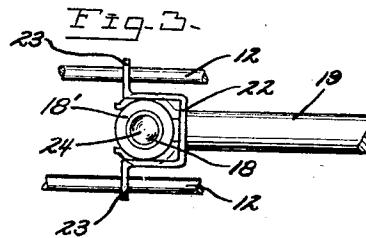
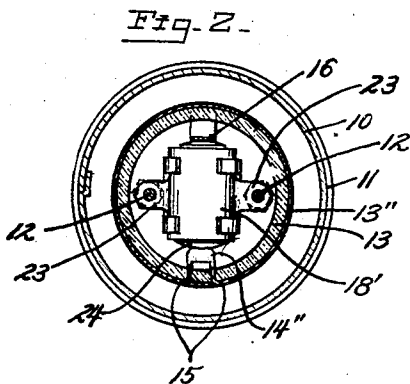
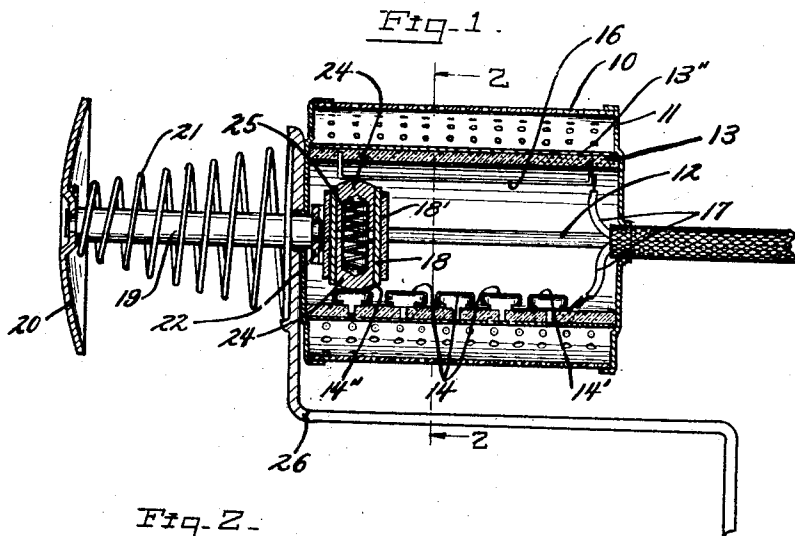
March 15, 1927.

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CONTROLLING DEVICE

Filed Jan. 7, 1924

1,621,233



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CONTROLLING DEVICE.

Application filed January 7, 1924. Serial No. 684,904.

This invention relates to means for controlling devices and particularly to means for controlling current to small electric motors used for running sewing machines and the like.

One of the objects of the invention is to provide a controlling device wherein the active resistance included in the motor circuit may be varied so that the speed of the sewing machine motor may be consequently varied, this invention offering the possibility of providing a controlling device of this character distinguished by its simplicity, its compactness of construction and its efficiency of operation.

The invention will be described more in detail and the various features thereof made more apparent in the accompanying specification, reference being had to the drawings wherein:

Figure 1 is a longitudinal sectional view through a controller constructed in accordance with this invention;

Fig. 2 is a transverse sectional view, taken substantially on the plane indicated by the line 2—2 in Fig. 1;

Fig. 3 is a fragmentary detail view, showing the guiding means for the movable contact member; and,

Fig. 4 is a diagrammatic view illustrating the electrical connection.

Referring now particularly to the drawings wherein like reference characters indicate like parts, it will be noted that there is provided a casing 10 preferably tubular, and perforated to readily permit the passage of air to the interior of this casing. The ends of the casing are closed by a pair of end members 11, and a pair of longitudinally arranged bolts 12 pass through these end members for securing the same in place.

Within the casing 10 is a resistance element 13, which may be formed of resistance material or may be provided with a resistance wire wound thereon. In the present construction there is illustrated a tube 13' of insulating material provided with a coating 13'' of resistance material. Arranged within the resistance element are a plurality of contacts 14, these contacts being spaced and arranged in a longitudinal row, as clearly illustrated, each contact member consisting essentially of a staple-shaped member, the prongs 15 of which pass through the resistance element and are clinched on

the outer surface thereof. In the event resistance wire is employed, these prongs will extend around the same and be clinched against the outer surface of the wire.

Arranged diametrically opposite the row of spaced contacts 14 are elongated contacts 16. Lead wires 17 are connected respectively to the elongated contacts 16 and the last of the spaced contacts 14', which wires are connected to the source of power and to the motor. The contact 14'' arranged at the other end of the row of straight contacts is usually a dummy contact and affords a rest for the movable contact in its off position.

Arranged within the tubular resistance element 13 and adapted to be longitudinally displaced therein, is a movable contact member 18. This movable contact is reciprocated by means of an operating rod 19, extending through one of the end plates 11 and provided with a cap 20. A coiled spring 21, surrounding the operating rod 19, normally holds the movable contact in the position illustrated in Fig. 1, that is in its off position. The movable contact is guidingly mounted within the tubular resistance element by means of the bolts 12, a guiding clip 22 being connected to the movable contact, this guiding clip being formed with a pair of apertured ears 23, which engage the bolts 12, as clearly illustrated in Fig. 3.

The movable contact member is of tubular formation transversely of the resistance element, and is provided with a pair of opposed plunger contacts 24, normally urged outwardly by a pair of coiled springs 25, these plunger contacts engaging respectively the elongated stationary contact 16 and the row of contacts 14. The plunger contacts of said contact member are insulated from other portions of the frame by the insulating tubular member 18'.

Fixed to the casing 10, and particularly to one of the end plates 11 is a bracket arm 26, which is of such shape as to enable the same to be conveniently connected to the sewing machine, whereupon the cap 20 is in position to be engaged by the knee of the operator, whereby the cap 20, and consequently the movable contact member 18 may be pressed toward the right, as viewed in Fig. 1, whereby the amount of active resistance in circuit with the motor may be successively reduced, thus increasing the speed

of the motor, as will be immediately apparent.

From the foregoing it will be immediately apparent that a control for electric circuits is provided, which is distinguished particularly by its compactness and also by its adaptability, for instance, to the control of sewing machine motors, whereby the operator of the sewing machine may conveniently move the movable contact member 18 toward the right, against the action of the spring 21, by pressing the cap 20 with, for instance, her knee, the spring tending normally to return the movable contact to its extreme left hand position, where it engages the dummy contact 14' and breaks the circuit to the motor.

Obvious modifications will suggest themselves, and to this end reservation is made to make such changes in the details of construction and combination and arrangement of parts as will come within the purview of the accompanying claims.

Having thus described the invention what is claimed is:

1. A controlling device for electric circuits comprising a tubular resistance element, a row of aligned contacts and an elongated contact arranged in diametrically opposed relation within said resistance element, a movable contact member in engagement with said row and elongated contacts and means for actuating said movable contact member.

2. A controlling device for electric circuits comprising a tubular resistance element, a row of aligned contacts and an elongated contact arranged in diametrically opposed

relation within said resistance element, a movable contact member in engagement with said row and elongated contacts, means for actuating said movable contact member and spring means for returning said movable contact member to its initial position.

3. A controlling device for electric circuits comprising a tubular resistance element, a row of contacts and an elongated contact arranged within said resistance element, in opposed relation, a movable contact member in engagement with said row and elongated contacts, said movable contact including a pair of oppositely facing buttons, spaced from each other by a helical spring and means for actuating said movable contact member.

4. A controlling device for electric circuits comprising a tubular insulating member; a resistance element carried upon the outer surface of said member; an elongated contact member mounted within said tubular member, having portions embedded therein; a row of aligned contact members mounted within said tubular member in spaced relation to said elongated contact member, each of said aligned contacts comprising a staple-like element, the prongs of which are embedded in and pass through said insulating member, and are conductively connected to said resistance element at separated points; a movable contact member in engagement with said elongated and aligned contact members; and means for actuating said movable contact member.

In testimony whereof, I affix my signature.

HARRY E. CAMPBELL.