Aug. 21, 1962 J. H. DUESCHER 3,050,703

COIL MOUNTING

Filed Aug. 28, 1957

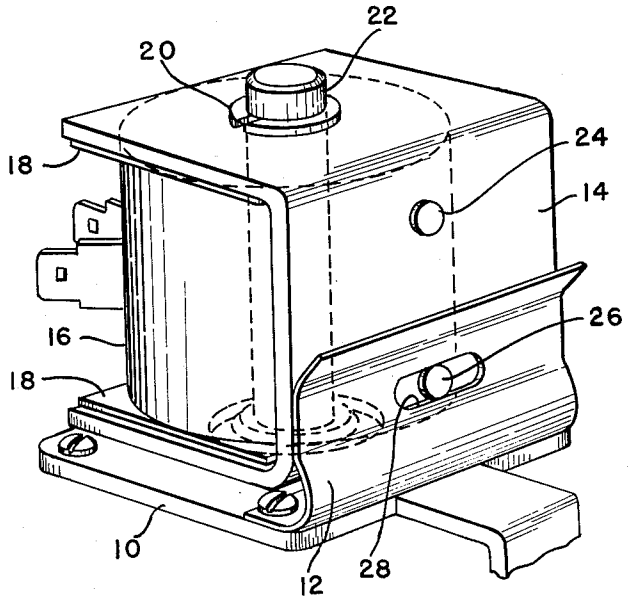


Fig. 1

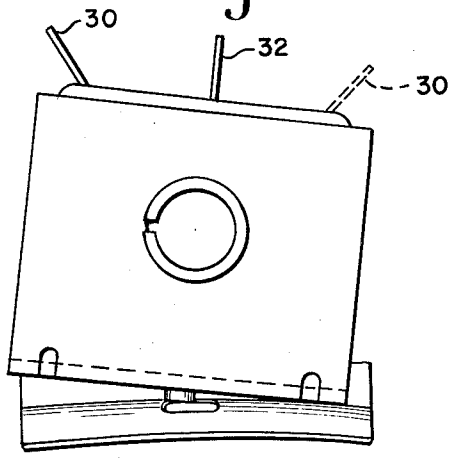


Fig. 2

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COIL MOUNTING

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This invention relates to a coil mounting assembly and particularly to a clip for mounting a coil to permit easy removal or mounting of the coil.

The principal object of this invention is to provide a simplified mounting for a coil.

Another object of this invention is to provide a coil mount which permits easy removal of the coil for replacement if that should become necessary.

Another object of the invention is to provide a coil mount which requires the use of no tools to either mount or dismount the coil to the part carrying the coil.

Other objects and advantages will be pointed out in, or be apparent from, the specification and claims, as will obvious modifications of the single embodiment shown in the drawings, in which:

FIGURE 1 is a perspective view of the coil mount; and

FIGURE 2 is a top view showing the manner in which the coil can be removed and also showing in dotted lines the manner in which the terminal positions can be reversed by merely inverting the coil.

FIGURE 1 shows mounting plate **10** which is carried by the part upon which the coil is to be mounted and has secured thereto the coil mounting clip **12**. This clip is made of spring steel (or other suitable material) and is self-biased to lie firmly against the rear face of the coil frame **14** when the coil frame is mounted in position. The coil frame is a U or channel-like member supporting coil **16** on a bobbin **18**. Magnetic sleeve **20** may be mounted centrally of the frame and bobbin core.

The frame carrying the coil and bobbin is adapted to slide down over the non-magnetic tube **22** in which the armature is movable. The rear face of the frame is provided with a pair of projections **24**, **26** which are formed by partly perforating the frame in the forming process. One of these projections, **26** in the drawings, is adapted to engage the hole **28** in the coil clip **12** when the frame is mounted as shown. It will be noted that the upper edge of the coil clip is turned away from the frame so that as the frame is moved down the projection will act against the upper edge to cam the clip away from the frame and permit the projection to slide along the inner face of the clip until it reaches the hole **28** at which time the coil clip will snap back over the projection **26** and thus lock the frame in position.

It will be noted that hole **28** in the coil clip **12** is elongated. With this arrangement the coil can be removed very readily by turning it about the axis of sleeve **22** as illustrated in FIGURE 2. It will be seen that as the frame is turned about its vertical axis the corner of the frame strikes the clip and acts to cam the clip away from the frame until the projection is free of the hole **28**. At this time the frame can be pulled away from the mount. Thus, mounting or removal can be effected without use of tools.

If desired, the hole **28** can be made circular instead of elongated. With a circular hole the rearwardly turned

upper edge of the clip can be engaged with a finger or with a screw driver and pushed back to release projection **26** from the hole. Removal with this arrangement is very simple but cannot be done by the camming action noted above as being possible with respect to an elongated hole in the coil clip.

In the illustrated embodiment the coil is provided with terminals **30**, **32** and it will be noted that the terminal **30** projects substantially from a corner of the coil. If the arrangement of terminals thus provided is not satisfactory for the particular installation the terminals can be effectively moved by merely turning the frame over so that projection **24** would engage the hole **28** instead of projection **26** engaging the hole. If this is done the terminal **30** would then occupy the position shown in dotted lines in FIGURE 2. It will be appreciated that the terminals could be made to come out of the coil at the sides if desired so that the terminal location could be made on either side of the frame if desired merely by inverting the frame on the mount. With this in mind it will be appreciated that the two projections **24**, **26** have utility so far as they permit reversal of terminal locations.

Although but one embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims. As an example of such a change, if the mount does not include the armature guide **22** which prevents movement of the coil frame away from the clip other structure could be provided to restrain the frame.

I claim:

1. A coil mounting assembly comprising, a part to which the coil is to be mounted and having a guide projecting therefrom, a coil carried in a frame having a bore therethrough, said coil and frame being mounted on said guide, and being rotatable thereon, said frame having a face generally normal to the plane of the part to which the coil is to be mounted, a projection on said face, a spring clip fixed to said part and bearing against said face to prevent rotary motion of said frame, a hole in said clip receiving said projection to prevent axial motion of the frame with respect to said part guide, said coil and frame being removable from said guide by imparting a small rotary motion to said coil and frame.

2. Apparatus according to claim 1 in which the face is provided with another projection which is adapted to be received in said hole if the frame is turned over on said guide.

3. Apparatus according to claim 1 in which the hole in said clip is elongated with the major axis of the hole being generally parallel to said part so the projection will be released from the clip when the frame is rotated on the guide.

4. A coil mounting assembly comprising, a mounting plate including a spring clip projecting from the plate, a coil frame, a coil carried in the frame, said coil having an axial hole therethrough, means carried by said plate and projecting into said hole for restraining the coil to generally angular and axial motion with respect to said projecting means, said spring clip bearing against a surface of said frame when the frame is positioned on said projecting means to prevent angular motion of said frame

on said projecting means, a projection on said surface, and a hole in said spring clip receiving said projection to prevent axial motion of the frame on the projecting means, said projection being releasable from the hole in the spring clip upon imparting a small angular motion to said frame, so that the coil and frame can be removed from the projecting means.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,050,703 August 21, 1962

John H. Duescher

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 44, strike out "part".

Signed and sealed this 11th day of December 1962.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents

UNITED STATES PATENT OFFICE
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