

July 15, 1941.

K. PERKINS

2,249,618

ELECTRICAL CONNECTOR

Filed Sept. 30, 1939

FIG. 1

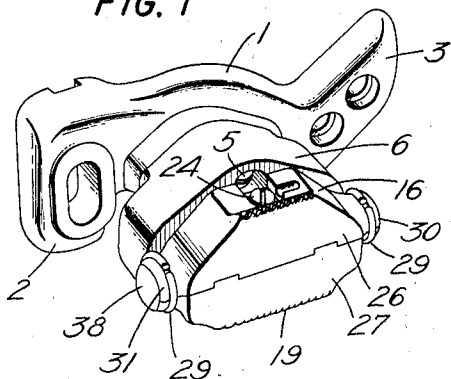


FIG. 2

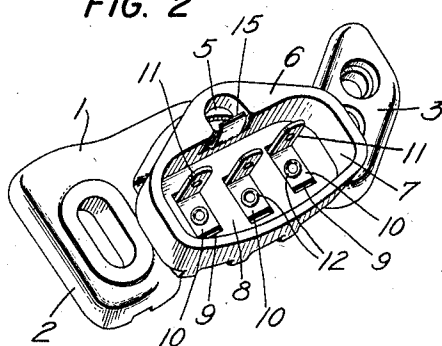


FIG. 6

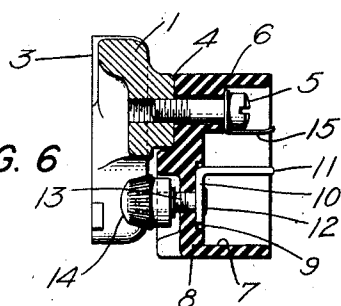


FIG. 3

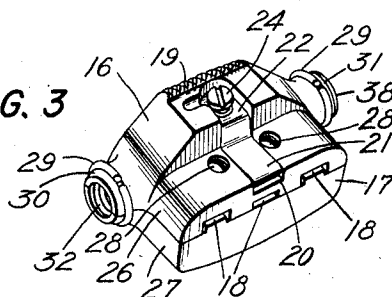


FIG. 4

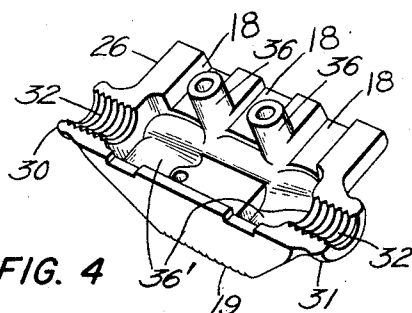


FIG. 5

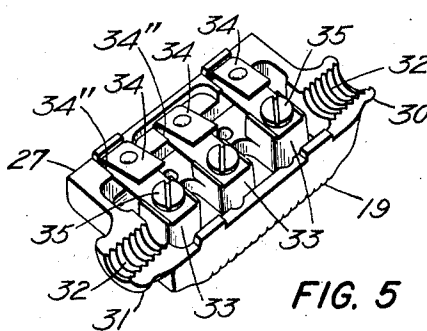
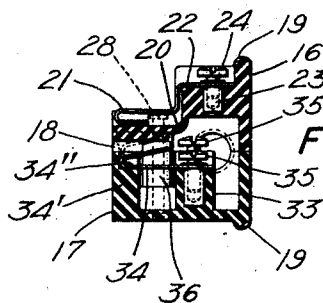


FIG. 7



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2,249,618

ELECTRICAL CONNECTOR

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Application September 30, 1939, Serial No. 297,268

1 Claim. (Cl. 173—332)

This invention relates to electrical plug receiving connectors adapted, more particularly, for use with motor-driven family sewing machines.

An object of the invention is to provide a plug-receiving connector having improved casing and contact elements which are readily manufactured and assembled.

A further object of the invention is the incorporation in the connector of an improved ground connection for establishing metallic contact between a grounded conductor and machine-frame without increase in the overall dimensions of the connector.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawing of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawing, Fig. 1 is a perspective view of the motor-bracket of an electric sewing machine carrying a plug-receiving connector embodying the invention. Fig. 2 is a similar view with the plug-member removed from the socket-member shown. Fig. 3 is a perspective view of a suitable plug-member complete. Figs. 4 and 5 are perspective views of the two halves of the plug-member. Fig. 6 is a central transverse section through the socket-member. Fig. 7 is a central transverse section through the plug-member.

1 represents the cast iron motor-supporting bracket of a sewing machine, such as represented in U. S. Patent No. 1,498,234, dated Mar. 25, 1924. As shown in said patent this bracket has a slotted foot portion 2 which is bolted to the bracket-arm standard of a sewing machine and an inclined end-portion 3 which carries the sewing machine driving motor. The bracket 1 is also formed with a seat 4 to which is secured by the screw 5 the socket-member 6. The socket-member 6 comprises a casing of molded insulation material, preferably Bakelite, having a plug-receiving cavity 7 in the bottom end wall 8 of which are formed three parallel grooves 9 for reception and fixation of the feet 10 of the flat connector-blades 11 standing in edge-to-edge spaced relation. The feet 10 of the blades 11 are held in place by the headed-over ends 12 of the metal screw-inserts 13, Fig. 6, on which the binding post nuts 14 are threaded for connection of the blades 11 with the lead wires of a sewing machine light, motor and

motor-controller. There may be fastened under the head of the screw 5 a ground contact blade 15 which is in metallic connection with the iron bracket 1 and hence with the frame of the sewing machine to which the bracket 1 is bolted. This blade 15, when used, is preferably set substantially flush with the top side wall of the cavity 7, as shown in Fig. 6.

A suitable plug-member to be inserted in the cavity 7 of the socket-member 6 may comprise a hollow casing 16, Fig. 3, having a projecting portion 17 which enters the socket-member cavity 7 and is formed with three openings 18 to receive the contact-blades 11. The plug-member 16 is also formed at two opposite edges with the roughened finger-grip flanges 19. There may also be an external groove 20 in which may be disposed the reversely bent end of the spring contact blade 21 the shank 22 of which is held by the headed-over end of the metal insert 23, Fig. 7, in which the binding screw 24 for a ground-conductor 25 is threaded.

The plug-casing 16 is made of two molded separable sections 26 and 27 of Bakelite held together by screws 28 and snap-rings 29 which embrace the conductor-receiving coaxial tubular extensions 30, 31 formed internally with the strain-relieving ribs 32 which grip the conductor-cord insulation when the parts are assembled. The longitudinal axes of the tubular projections 30, 31 lie substantially in the parting plane of the separable sections 26, 27.

The plug-section 27 is preferably formed internally with three square posts 33 which are spaced apart and from the side walls of the section 27. Into the grooved top ends of these posts are riveted, by metal inserts, the shanks of the return-bent spring-contacts 34 which all face in the same direction and are within the openings 18 so as to be engaged by the contact blades 11 when the plug 16 is inserted in the socket-cavity 7. Binding screws 35 for the lead-in wires are threaded into the metal inserts by which the contacts 34 are riveted in position. One of the side walls 34', Fig. 7, is formed with contact-spring rest grooves 34''.

The plug-section 26 is formed with the internal tubular portions 36 which surround the fastening screws 28. It is also formed with a cavity 36' for the lead-in wires.

The device is structurally well adapted for convenient use with the various known types of electrically lighted and motor-driven sewing machine outfits.

Having thus set forth the nature of the invention what I claim herein is:

An electrical connector comprising a body of insulating material formed with a plug-receiving cavity having side and bottom end walls, a portion of said side wall having a lateral recess therein, a fastening screw having a head in said side wall recess, a plurality of prong contacts

mounted on said bottom end wall and spaced from the side wall portions of said cavity, and a ground contact blade set in said side wall recess and having a foot bent to lie at an angle to said blade and extend into said recess and under the head of said fastening screw.

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