

Sept. 20, 1960

W. J. MCGINLEY ET AL
QUICK-DETACHABLE ELECTRIC PLUG

2,953,770

Filed May 15, 1958

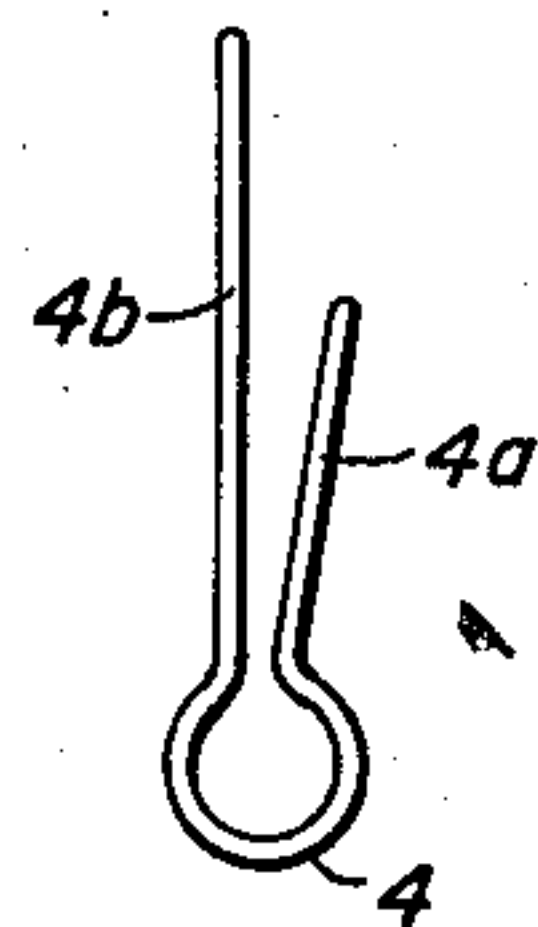
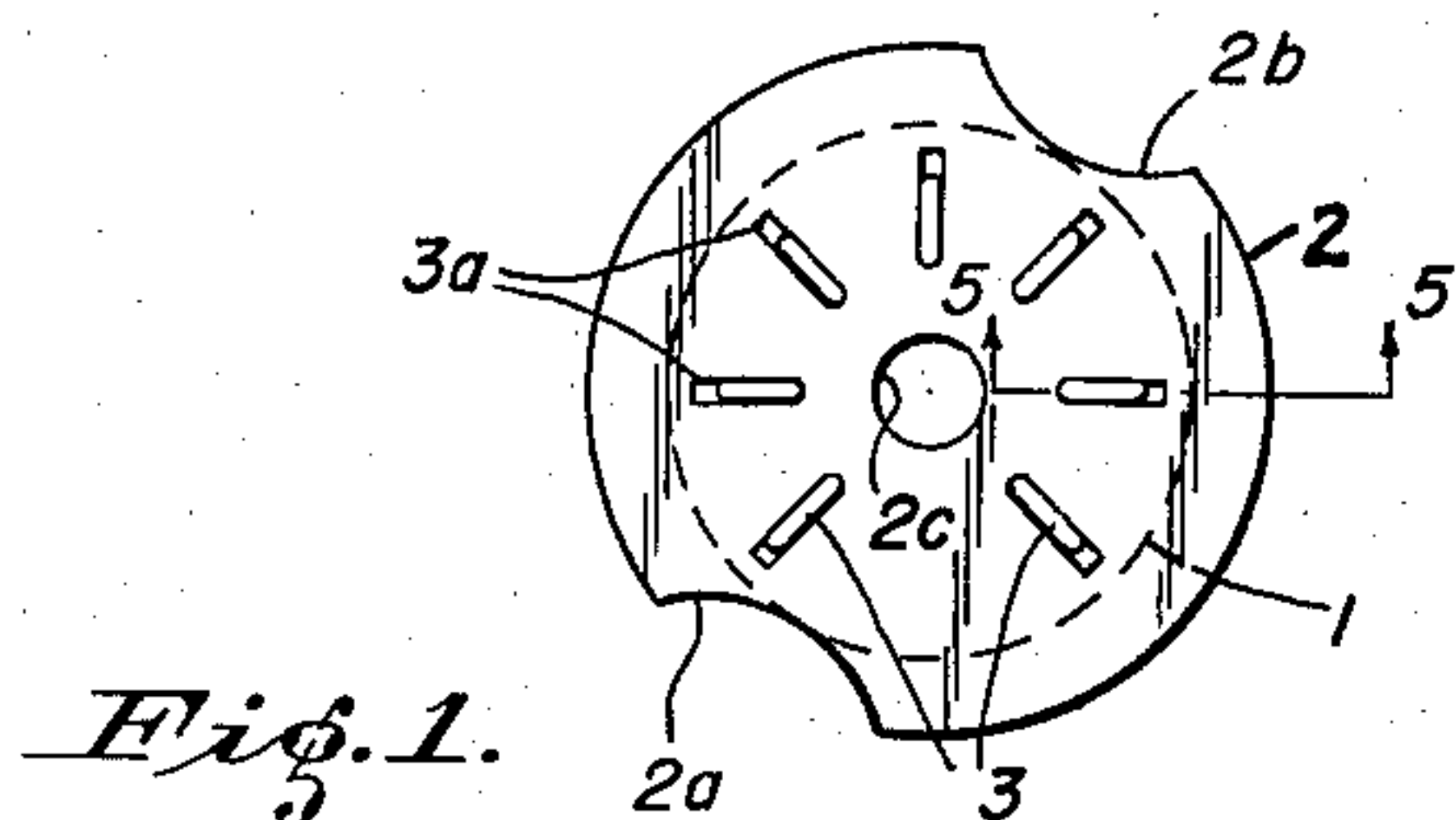


Fig. 4.

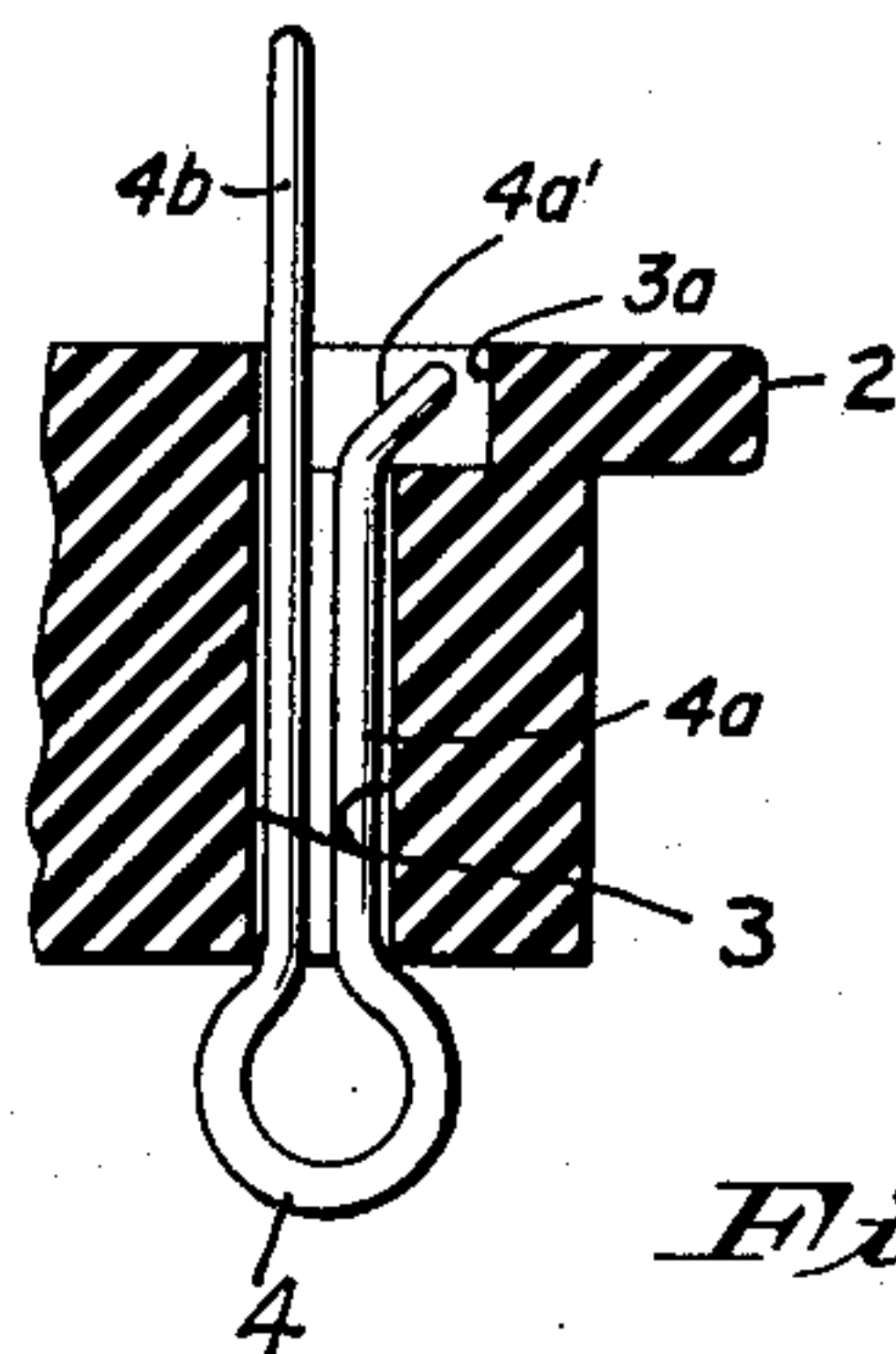
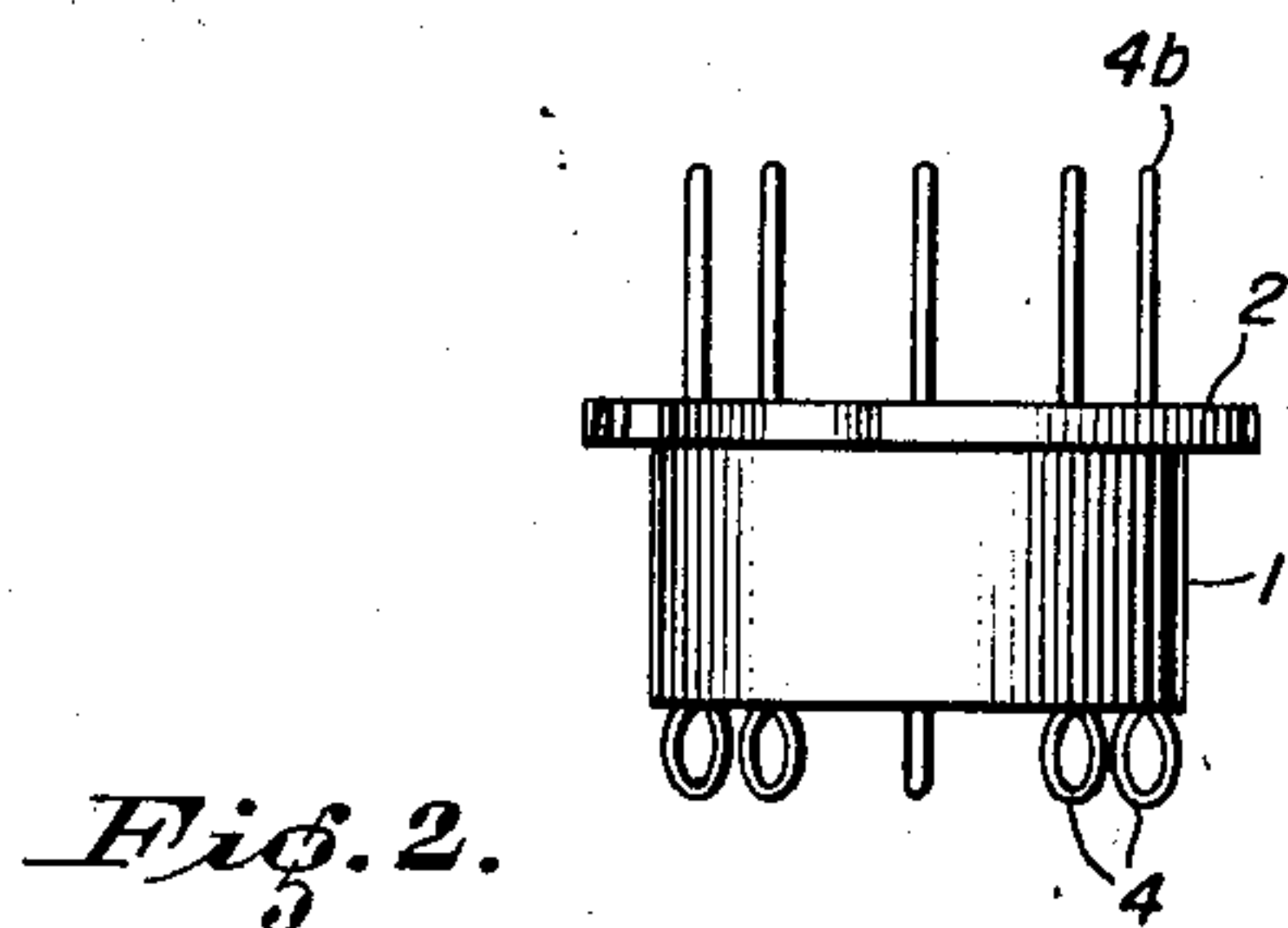
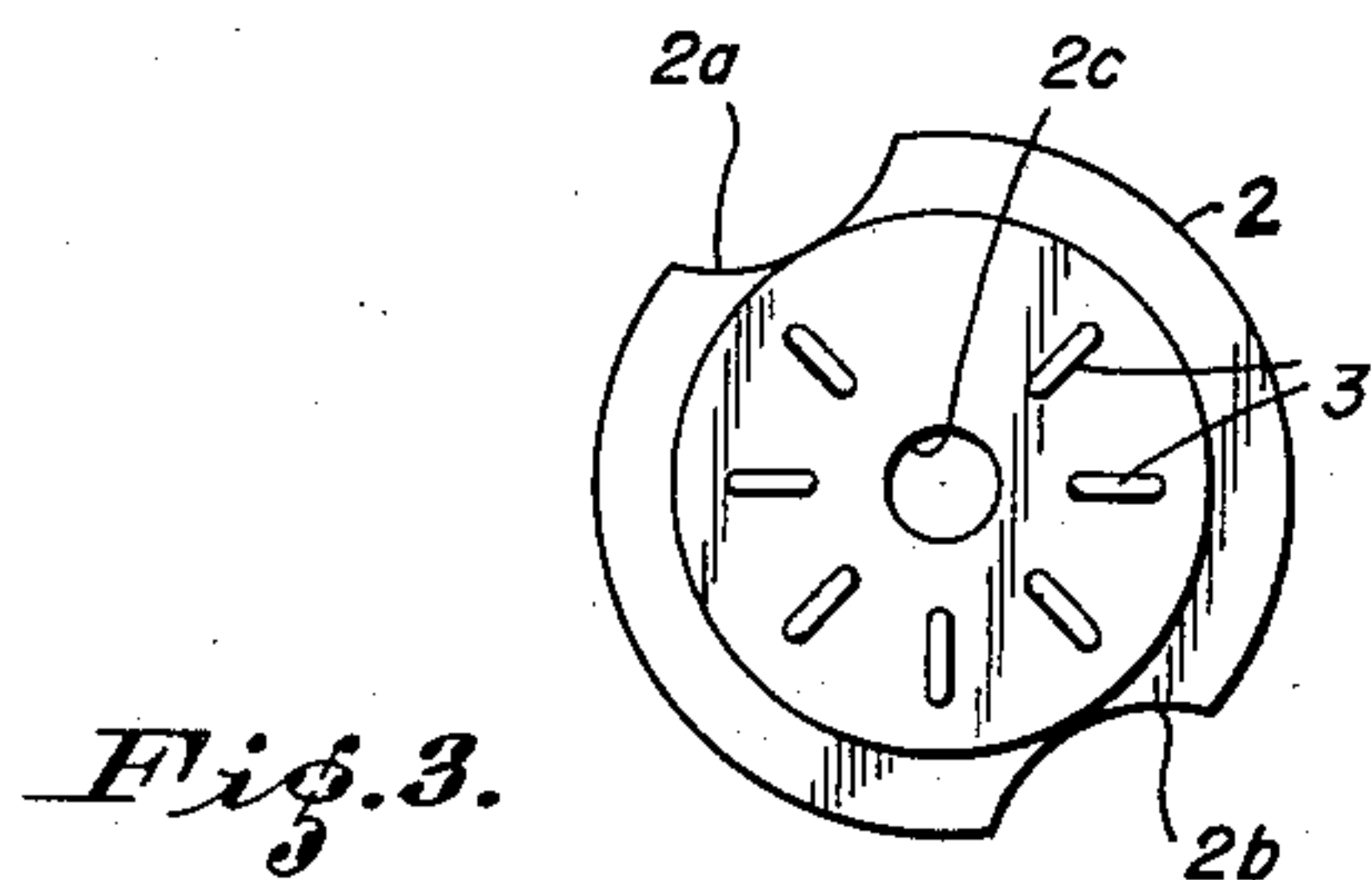


Fig. 5.



INVENTOR
Wm. J. McGinley
W. T. Jensen
By *Ralph B. Stewart*
ATTORNEY

1

2,953,770

QUICK-DETACHABLE ELECTRIC PLUG

William J. McGinley, Park Ridge Manor, and William T. Jensen, Libertyville, Ill., assignors to Methode Manufacturing Corporation, Chicago, Ill., a corporation of Illinois

Filed May 15, 1958, Ser. No. 735,422

2 Claims. (Cl. 339—195)

This invention relates to electric plugs of the type having contact prongs or pins for quick detachable connection with a socket member.

The plugs of this invention can be used to take off connections from conventional vacuum tube sockets. The plugs, in combination with suitable sockets, may be used for making harness to harness connections, or connections from harness to chassis, or harness to printed circuit panel connections.

The object of the invention is to devise a plug which is simple in construction and easy to assemble.

A further object is to devise an electric plug having contact pieces which are formed from simple wire stock and which may be fabricated automatically by spring making machines.

The electric plug of our invention includes contact pieces mounted in parallel holes formed in a plug body, each contact piece having a prong portion extending outwardly from the plug body at one end thereof and having a soldering portion extending outwardly from the other end of the body. Each contact piece is formed from a single length of wire stock which is bent into the general shape of a cotter pin except that one leg of the pin is shorter than the other and functions to lock the contact piece in the plug body.

One embodiment of the invention is illustrated in the accompanying drawing in which Fig. 1 is a plan view of the front face of the plug body without contact pieces; Fig. 2 is an elevational view of a complete plug showing the plug body with contact pieces mounted therein; Fig. 3 is a plan view of the rear end of the plug body without contact pieces; Fig. 4 is a side view of the contact piece before being mounted in the plug body; and Fig. 5 is an enlarged sectional view taken along the line 5—5 of Fig. 1 but showing a contact piece mounted within the plug body.

In the embodiment illustrated in the drawing, the plug body 1 is of cylindrical form and is provided with an annular flange 2 extending radially from one end thereof. The flange 2 is provided with recesses 2a and 2b on opposite sides thereof to receive positioning lugs carried by a suitable cylindrical cover member, not shown, but which would cover the soldering portions of the contact pieces and would have a sliding fit over the cylindrical body of the plug. The body 1 is provided with a plurality of contact mounting holes 3 extending entirely through the body from one end to the other. The holes 3 are arranged in a circular array about a center hole 1a extending entirely through the plug body at the center thereof. As shown in Figs. 1 and 3, the holes 3 have a greater width radially than circumferentially of the body 1, and at the front end of the plug each hole is extended radially outward to provide a pocket or cavity 3a, see Fig. 5.

2

The contact pieces are all alike and are formed from a single piece of wire stock, preferably round wire stock. As shown in Fig. 4, each contact piece is formed of a single length of wire stock bent into the general shape of a cotter pin, having an eye 4, a short leg 4a and a long leg 4b. Initially, it is preferred to form the contact pieces with the two legs 4a and 4b spaced apart somewhat in the manner shown at Fig. 4. As shown in Fig. 5, the leg 4a has a length sufficient only to extend from one end of the body 1 to the other end, while the leg 4b is of a longer length to provide the necessary prong portion of the contact piece extending away from the front face of the plug body. As shown in Fig. 5, the holes 3 are formed with a radial width to accommodate both legs 4a and 4b of the contact piece, and the width of the holes 3 circumferentially of body 1 is only about one half the radial width. The side walls of the holes 3 are in close engagement with the sides of the parallel legs 4a and 4b but sufficient clearance is provided to allow free sliding of the contact pieces within the holes. In placing the contact pieces within the holes 3, the leg 4a is pressed against leg 4b to insert the ends of the two legs in the hole, and the natural resilience of the wire material in loop 4 tends to spread the two legs apart and thereby frictionally holds the contact pieces within the mounting holes temporarily. As shown in Fig. 5, the contact pieces are permanently locked within the plug body by bending over the end portion 4a' of the leg 4a into the radial recess 3a. This may be accomplished in a single operation by the use of a suitable tool provided with a bending prong for each contact piece, the ends of which are wedge shaped to effect outward bending of the portions 4a' when the wedging prongs are inserted between the legs 4a and 4b.

We claim:

1. A multiprong plug type electrical connector comprising in combination: a unitary insulating body member having an array of non-circular openings therethrough, parallel to each other, said openings including an enlarged portion adjacent one face of said member; and a plurality of contact pieces, one mounted in each of said openings and each comprising a length of wire stock formed as a cotter pin, the head portion being mounted adjacent the opposite face of said member, a shank portion formed of parallel legs of the cotter pin received within said body openings and snugly filling each non-circular opening thereby preventing rotation of said contact pieces with respect to said body, one leg of each pin extending beyond the said one face of said member forming a prong element and the other leg terminating in a portion bent away from said prong portion and snugly received entirely within the enlarged portion of said opening.

2. The combination defined by claim 1 in which said body member is cylindrical, said array is circular, and the head portions of said cotter pins lie on radii of said cylindrical body member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,535,780	Jones	Apr. 28, 1925
2,846,672	Hennessey	Aug. 5, 1958

FOREIGN PATENTS

541,250	Great Britain	Nov. 19, 1941
878,231	Germany	June 1, 1953