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JACK STRIP FOR TELEPHONE PURPOSES

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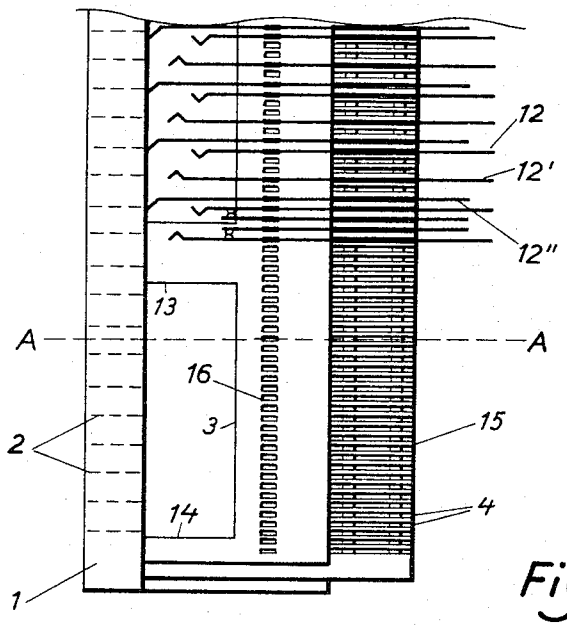


Fig. 1

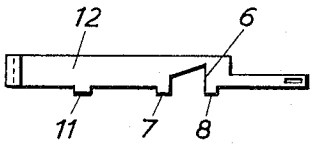


Fig. 3

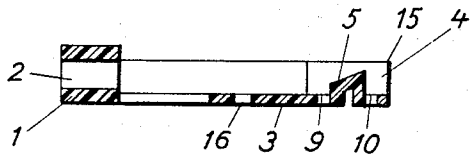


Fig. 2

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7 Claims. (Cl. 179—97)

ABSTRACT OF THE DISCLOSURE

A jack strip in which the rear part of a one-piece frame made of plastic material has in one side a plurality of parallel grooves. A contact spring is inserted into each of said grooves and each spring is secured in its groove by one of several lugs protruding from the respective lengthwise edge of the spring through holes extending from the base of the grooves through the thickness of the rear part of the frame, the protruding portion of each lug being secured to the opposite side of the rear part for instance, by bending over.

The present invention relates to a jack strip for telephone switchboards. Such jack strips as now known have a supporting frame of sheet metal on which are fastened in a suitable manner a front piece of insulating material, provided with jack holes, and a rear bar, likewise of insulating material to which the contact springs of the jacks are fastened.

With the present availability of suitable plastic materials attempts have been made to produce as far as possible the frame of the jack strip of plastic material in order to reduce the cost of the manufacture. However, there is the difficulty that a jack strip frame of plastic material made all in one piece will easily become curved. This defect may be traced back to the fact that the most suitable location of the contact springs, from a constructional point of view, is along the one plane side of the strip and that this location of the springs renders impossible a sufficiently symmetrical design of the plastic frame on both sides of a center plane parallel to the plane side.

The contact springs are usually accommodated in grooves provided transversally in the bar, the springs being tilted in relation to the plane side of the strip. When the springs are tensioned, they will exercise pressure against the side walls of the grooves which causes the curving of the bar. This is especially the case if the contact springs are pre-tensioned so that the walls of the groove are exposed to a permanent pressure.

In order to avoid said curving of the bar, various measures have been tried. The springs may for example be cast in the bar or a stiffening plate may be used that is screwed to the bar after having inserted the springs in the grooves and which plate then also serves to fasten the springs. All these measures, however, make the manufacture more complicated and more expensive.

The invention avoids the curving of the bar in a simple way. The contact springs are inserted into grooves in the bar on its one side and fastened to the bar by means of lugs projecting from the springs. The lugs are extended through holes in the bar and secured on its other side by bending or deforming the same similar to a rivet. The invention is especially characterized by the fact that the depth of the groove is at the end portions of the grooves substantially equal to the width of the spring and at an intermediate portion less than half the width of the spring and in that the springs have a recess corresponding to the less deep portion of the groove.

The invention will be described by means of an embodiment with reference to the attached drawing in which FIG. 1 shows in part a plan view of a jack strip, FIG. 2 shows a cross section of the jack strip along the line A—A in FIG. 1 and FIG. 3 shows a contact spring.

The frame of the jack strip, cast in one single piece of a suitable plastic material consists of a front piece 1 provided with jack holes 2 and of a rear bar 3 connected with the front piece by means of transverse supports 13 and 14. The bar 3 has a longitudinal ridge 15 in which are arranged the required number of grooves 4 for receiving the contact springs. The free ends of the contact springs may be of different shape and length according to the purpose they serve; *a*-, *b*- or *c*-springs 12, 12', 12'', springs for an additional make contact a.s.o.

Each spring 12 (FIG. 3) is provided with three lugs 7, 8 and 11 the two first-mentioned of which serve to fasten the spring to the bar 3. When the spring is inserted into a groove 4 each of the lugs 7 and 8 projects through a hole 9 or 10 respectively in the bar. The spring is fastened by bending or deforming the lugs on the bottom side of the bar. The third lug engages another hole 16 in the bar and the spring can be given a pre-tension by bending it a little before mounting. After insertion, it is held straight by the lug 11 bearing against the one edge of the hole 16. The pre-tension will cause a certain pressure of the spring against the side walls of the groove 4. To avoid that the bar will become curved the groove has been provided with a shallow intermediate stiffening portion or rib 5 extending along th length of the groove. The depth of the groove is at the end portion of the groove, i.e. where the groove faces the sides of the ridge 15, is equal to the width of the spring. At the intermediate portion the depth of the groove, at least along part of the shallow portion, is less than half the width of the spring. The spring has a recess 6 corresponding to the shallow portion so that the shallow portion of the groove does not prevent the insertion of the spring into the groove.

The recess 6 of the spring extends in the embodiment according to FIG. 3 between the lugs 7 and 8 and is deeper at the rear lug 8 than at the fore lug 7. Owing to this shape of the recess the spring has better resilience properties than it would have if the recess were equally deep along the whole of its length.

I claim:

1. A jack strip comprising in combination:
   - a one-piece support frame of plastic material, said frame having an elongate front part including transverse jack holes for receiving pole elements therein and an elongate rear part parallel to the front part and having in one of its sides lengthwise spaced transverse grooves, at least one hole extending through the thickness of said rear part from the base of each of the grooves therein; and
   - a plurality of contact springs, one for each of said grooves, inserted into the same extending toward said front part, each of said contact springs having secured thereto a lug protruding through the respective hole in the rear part, the protruding portion of each lug being secured on the opposite side of the rear part.

2. A jack strip according to claim 1 wherein said front part and said rear part of the frame are separated by an intermediate elongate part including a plurality of holes, one for each groove, extending through the thickness of said intermediate part, each of said contact springs having a further lug extending from the respective lengthwise edge of the spring and engaged with the respective hole in the intermediate part.

3. A jack strip according to claim 2, wherein said contact springs are slightly transversely curved to tension the same against a side wall of said grooves.

4. A jack strip according to claim 1, wherein a transverse rib protrudes from the base of each groove intermediate the ends thereof, each of said contact springs having in its respective lengthwise edge a recess engaged with said rib.

5. A jack strip according to claim 4, wherein the top wall of each of said ribs is plane and downwardly slanted toward said front part, the peripheral outline of said recess in each contact spring matching the peripheral outline of said rib.

6. The jack strip according to claim 5, wherein the maximal height of each of said ribs is more than half the width of the contact spring engaged with the respective rib.

7. A jack strip according to claim 4, wherein each of said grooves has two holes through the thickness of the rear part extending from the base of the grooves therein, said holes being disposed on opposite sides of the rib, and wherein each of said contact springs has two lugs secured thereto, each of said lugs protruding through one of said holes, the protruding portion of each of said lugs being secured to the opposite side of the rear part.

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