

Jan. 2, 1962

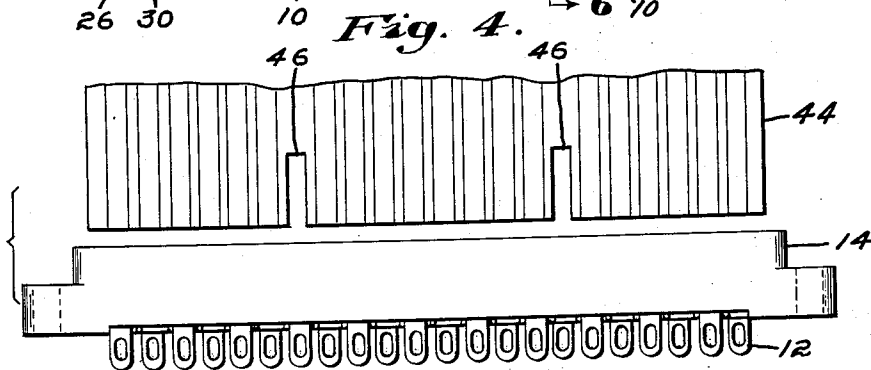
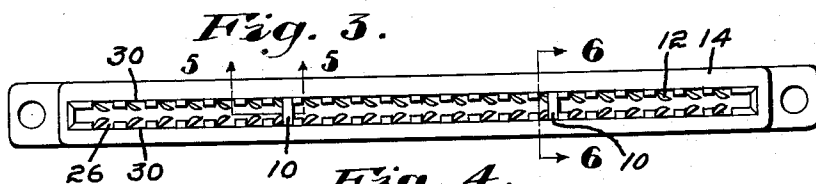
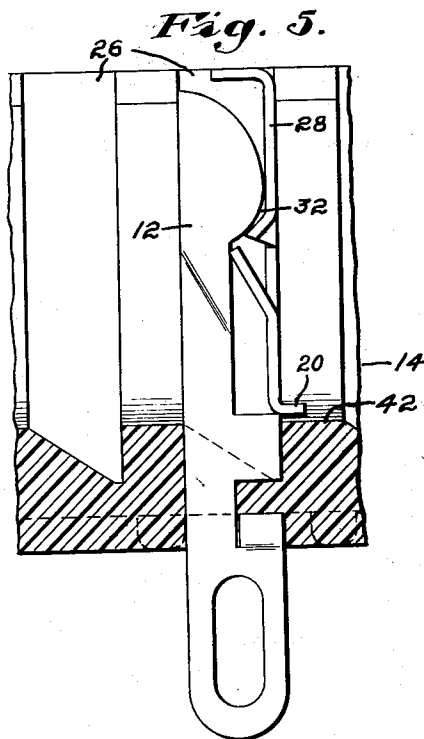
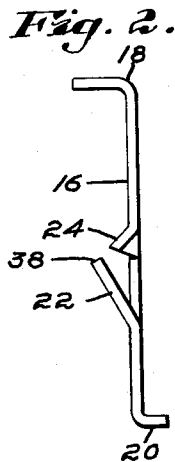
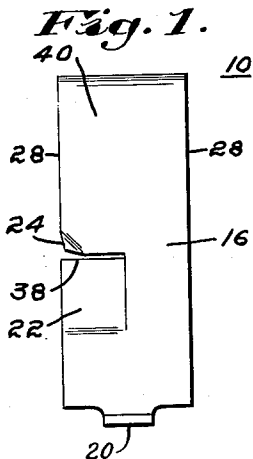
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3,015,797

ELECTRICAL CONNECTOR WITH POLARIZING KEY

Filed Oct. 28, 1958

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 6.

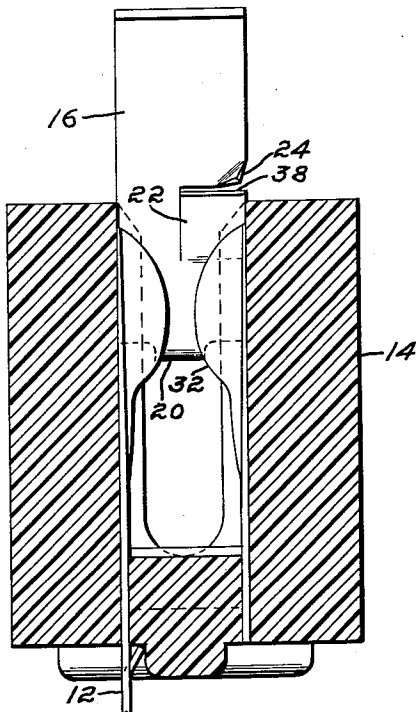


Fig. 7.

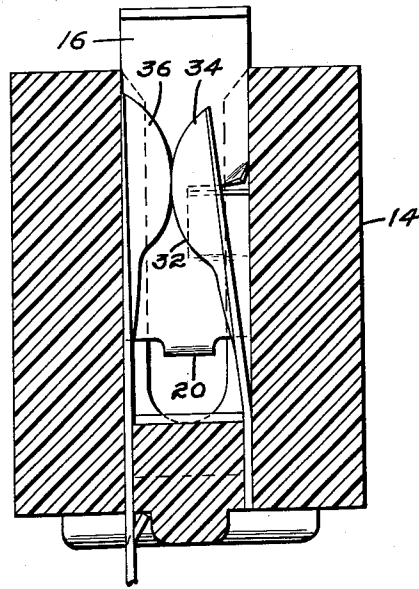


Fig. 9.

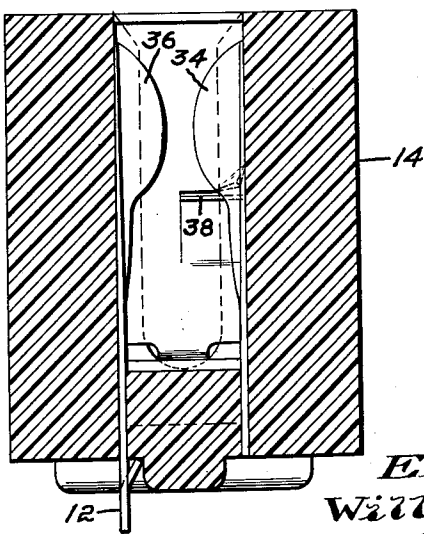
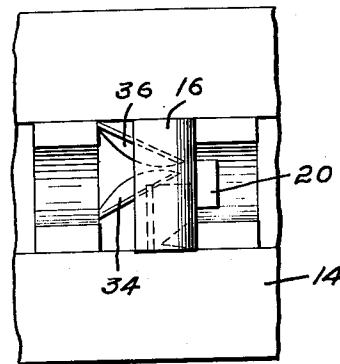


Fig. 8.



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1

3,015,797

ELECTRICAL CONNECTOR WITH POLARIZING KEY

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1 Claim. (Cl. 339-17)

This invention relates generally to electrical connector assemblies and has particular reference to a polarizing key for use in a printed circuit board edge connector having a plurality of contacts such as described in a co-pending application, Serial No. 614,442, now Patent No. 2,926,328, dated Feb. 23, 1960.

Variations of polarizing keys are in use in the electronic industry to prevent inadvertent substitution of circuit boards having difficult electronic characteristics. A majority of these keys are usually fixed in place or require the removal of contact members for their insertion. A definite need has developed for a universal edge connector which may be provided with polarizing keys to adapt the connector for printed circuit boards having a variety of keyways.

The object of this invention is to provide a simple and inexpensive polarizing key which is adapted for snap engagement over the contacts in the edge connector to prevent improper insertion of the printed circuit board.

A further object of this invention is to provide polarizing keys which may be supplied independently of the edge connector so that electronic technicians may supply and easily adapt the edge connectors to printed circuit panels having a variety of keyways cut therein.

Further objects of this invention will, in part, be obvious, and will, in part, appear hereinafter.

In the drawing:

FIG. 1 is an enlarged view in front elevation of the polarizing key;

FIG. 2 is a view of the polarizing key of FIG. 1 as seen from the left side;

FIG. 3 is a top plan view of an edge connector showing polarizing keys in assembly;

FIG. 4 is a view in front elevation of the edge connector with a printed circuit board having keyways juxtaposed in axial alignment;

FIG. 5 is an enlarged view of the polarizing key in elevation and in assembly with an edge connector taken in line 5-5 of FIG. 3;

FIG. 6 is an enlarged view in section taken on line 6-6 of FIG. 3, illustrating the first step in assembly of the polarizing key with the connector;

FIG. 7 is a view in section similar to FIG. 6 and taken on line 6-6 of FIG. 3 at the midway point of insertion of the key;

FIG. 8 is a top plan view of FIG. 7 showing the torquing action of the contacts; and

FIG. 9 is a view in section like FIG. 6 and taken on line 6-6 of FIG. 3 showing the key in final assembly.

Referring to the drawings, there is illustrated a polarizing key 10 adapted for axial snap engagement with contacts 12 located within a slotted edge connector 14.

The polarizing key 10, as illustrated in the drawings, comprises a strip of flat sheet metal having a body portion 16 with the uppermost terminal end 18 bent at substantially right angles to the body portion 16 in one direction and the lower terminal end 20 bent at substantially

2

a right angle to the body portion 16 in the opposite direction for a purpose to be described hereinafter. An arm 22 is formed on body portion 16 from one edge intermediate the terminal end portion inclining upwardly and away from the body portion 16 in the direction of the upper terminal end 18. A tang 24 is formed from the base portion on the same edge as the arm 6 and extending in the same general direction and axially spaced therefrom.

Referring to FIGS. 6, 7 and 9, to insert the key 10 in the slotted edge connector 14, said key 10 superposed above the connector with the lower end 20 entering one of the spaced apertures 26 containing a contact 12 having a torsion arm and an enlarged head portion. By executing axial downward pressure the edges of the key 28 will enter into sliding engagement with the walls 30 of the aperture 26. Further downward pressure will lead the arm 22 into engagement with the radius 32 of one of the flexible legs 24 of the contact 12 causing it to torque toward the other flexible leg 36 as shown in FIG. 7. The tang 24, formed in the base portion 16 prevents the edge of the key 10 from catching the upper surface of the connector. When the distal end 38 of the arm 22 has passed the outermost radius of the flexible leg 34, the leg will resiliently snap back to its original position with the distal end 38 lying in abutting relationship to the lateral face 40 of the contact 12 as shown in FIG. 9 preventing withdrawal. The upper terminal end 18 after assembly covers the blade contact opening preventing the entrance of a printed circuit board not having a corresponding keyway.

The lower terminal end 20 rests on the bottom 42 of the spaced aperture 26 to prevent tension on the key by pressures applied to the upper end portion 18.

It will be seen that the printed circuit board 44 having corresponding keyways 46 cut to conform to the positioning of the polarizing keys 10 can be inserted therein.

Since certain other obvious modifications may be made in this device without departing from the scope of the invention, it is intended that all matter contained herein be interpreted in an illustrative and not in a limiting sense.

We claim:

An electronic assembly comprising in combination a slotted printed circuit board edge connector having therein a plurality of resilient contact members each having a torsion arm spaced from each other and one or more polarizing keys adapted for axial snap engagement with a radius of a torsion arm of said contact members, said polarizing keys being formed of a flat strip having a body portion with the free extremities bent substantially perpendicular to the body portion and in opposite directions, an arm extending from one face of the body portion inclining upwardly and away from the plane of said body portion, a tang axially spaced from said arm extending from said body portion and inclined downwardly in the direction of said arm, whereby said arm portion will enter into snap engagement with the contact to secure the key within the edge connector.

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