

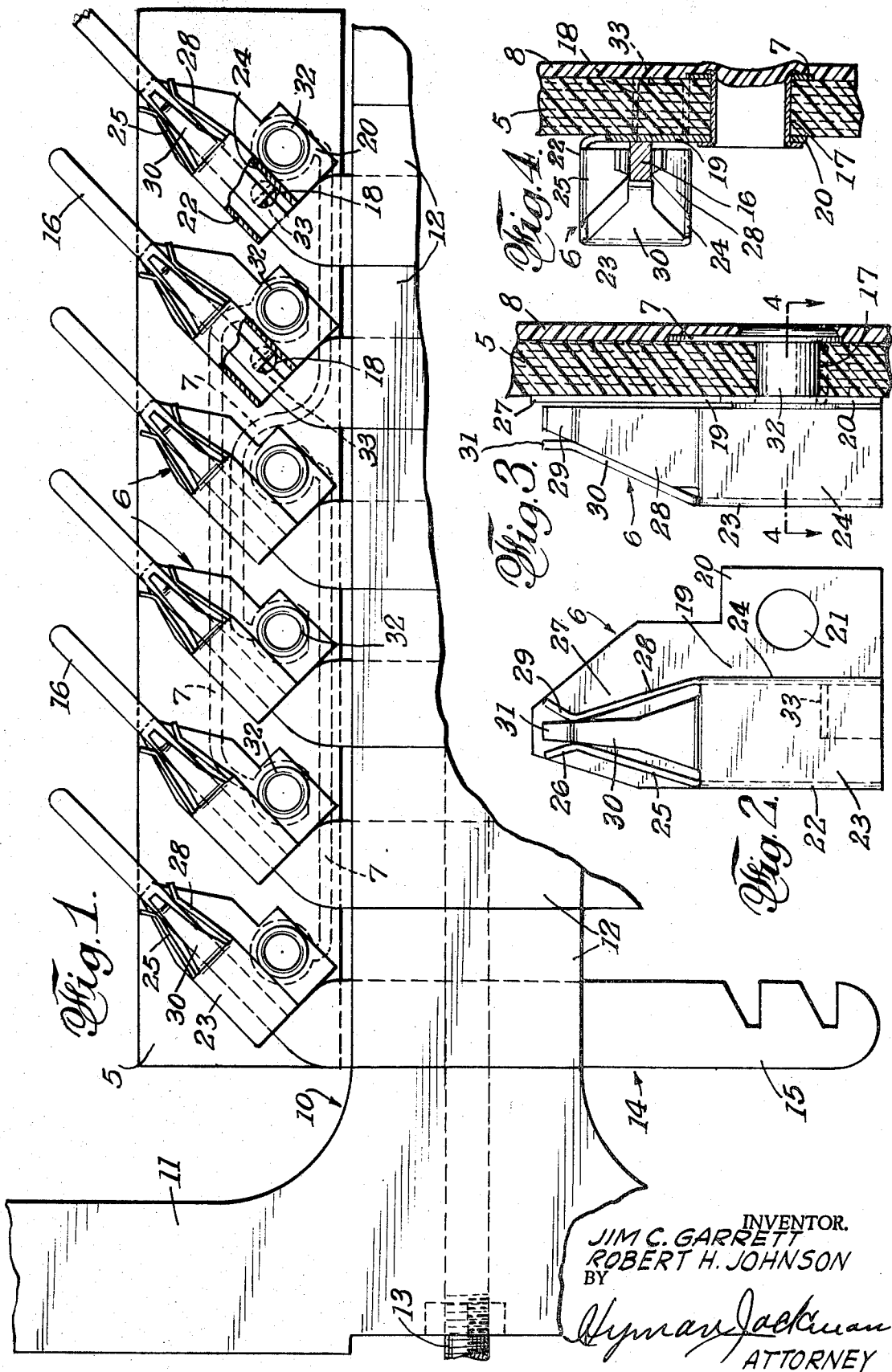
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INTERCEPT STRAPPING BRIDGE AND CONTACTS

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INTERCEPT STRAPPING BRIDGE AND CONTACTS
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5 Claims

ABSTRACT OF THE DISCLOSURE

A telephone intercept bridge for use in telephone systems by which phone calls made to disconnected telephones may be intercepted by and cross-connected to an intercept operator, a recorded message and/or referral to other equipment, the same being provided with a set of angularly directed contacts which are adapted to be operatively engaged with the angularly directed terminals of an aligned series thereof, said contacts being provided with resilient contacting portions that electrically engage the terminals on four sides thereof.

BACKGROUND OF THE INVENTION

(1) *Field of the invention.*—Automatic and non-automatic telephone systems in which certain terminals, carried by terminal blocks, are connected on one side to particular telephones and on the other side to connector switch contacts of the switching system, and other terminals are connected to one side of the block and normally free of connections on the other side.

(2) *Description of the prior art.*—Pat. No. 3,138,417, dated June 23, 1964, represents the prior art in that the same discloses an intercept strapping bridge by means of which a telephone line which has been moved to a new number or disconnected may be readily cross-connected to an intercept operator.

SUMMARY OF THE INVENTION

An intercept strapping bridge comprising, generally, a dielectric board or plate 5, a plurality (in this case six) of terminal-engaging contacts 6 mounted on one side of said board, and a set of electrical straps 7 arranged on the opposite side of said board and comprising metal members connecting said contacts in pairs, said opposite side of the board and the straps 7 being covered by an insulating coating 8 which is preferably transparent, permitting visual inspection of the straps.

It is an object of the invention to provide an intercept strapping bridge of the character above generally described, in which the terminal-engaging contacts are formed to have improved frictional and electrical engagement with the terminals.

Another object of the invention is to provide such contacts with resilient contacting portions that engage the terminals on two mutually transverse planes to effect desired efficient terminal engagement.

This invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description, which is based on the accompanying drawing. However, said drawing merely shows, and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing, like reference characters designate similar parts in the several views.

FIG. 1 is a side elevational view of the contact side of an intercept strapping bridge in operative position on the terminals of a terminal block, two of the six contacts shown being partly in section.

FIG. 2 is an enlarged face view of one of the contacts.

FIG. 3 is a side view thereof and shown mounted on an intercept board.

FIG. 4 is a top view of the contact shown in FIG. 3 and partly in section on the plane of line 4—4 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The intercept strapping bridge of the present invention is usually carried by a terminal block 10 comprising a fanning strip 11 from which a series or set of insulating separators 12, held assembled by means such as bolts 13, extends normally, generally as shown. This block 10 is fitted with a plurality of banks or rows of terminals 14, of which one bank is shown. In practice, there may be twenty or more such rows on each terminal block. Each said terminal has a generally conventional extension 15 on one side of the block for connection to and representing one telephone line, and an extension 16 that is angularly directed away from the fanning strip 11 and, typically, has a uniformly rectangular cross-sectional form, as indicated in FIG. 4. It will be seen that the same has a four-sided form which sides, as can be seen from FIG. 1, are in coplanar relation one with the other. The angles of the extensions are alike, i.e., the same are parallel.

As will become clear, the mounting of the present strapping bridge on the banks of terminal extensions 16 is rendered easier, due to the above-mentioned forward angular disposition thereof. It will be evident that said extension may extend normally relative to the longitudinal extent of the assembled separators 12 or the angle may be varied, as desired.

The board 5 of the intercept strapping bridge preferably has the elongated rectangular form that is shown, the same being provided with a set of holes 17 adjacent to one longitudinal edge, arranged along a line parallel to said edge, and uniformly spaced from each other in conformance to the spacing of the terminal extensions 16, and provided also with a second set of holes 18, each uniformly spaced from the respective holes 17, as indicated at the right in FIG. 1.

The contacts 6 are alike, each being formed of sheet metal to have a back wall 19 having a laterally extending mounting tab portion 20 in which is formed a hole 21 preferably of the approximate size of the holes 17 in the board 5. A side wall 22 is bent at right angles from the edge of the back wall 19 opposite the tab portion 20. A front wall 23 is bent at right angles from the wall 22 to be forwardly spaced from and parallel to the plate part 19; and a side wall 24 is bent at right angles from the wall 23 to be laterally spaced from and parallel to the side wall 22. As can be seen best from FIG. 4, the four walls 19, 22, 23, and 24 define a lead-in space substantially larger than the cross-sectional form of a terminal 16, thereby allowing for facile introduction of said terminals into the spaces of a plurality of contacts 6 on the board 5.

A flexible, inwardly bent, tapered tongue 25, with an outwardly bent tip 26, extends upwardly from the side wall 22, said tongue and its tip being generally coextensive with an upper extension 27 of the wall 19; a similar tongue 28 and tip 29 extend upwardly from the side wall

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24 with the respective tongues 25 and 28 directed toward each other to form a constriction smaller than the transverse cross-sectional dimension of a terminal 16; and a tapered, flexible tongue 30, having an outwardly bent tip 31 extends from the wall 23 toward the upper wall extension 27 to form a constriction therebetween that is smaller than the cross-sectional terminal dimension that is normal to the above-mentioned cross-sectional dimension.

It will be clear that a terminal 16 introduced into the mentioned leadin space, and projected beyond the mentioned constriction, will cause outward flexure of the tongues 25, 28, and 30, as can be seen in FIG. 1, thereby effecting resilient yet firm electrical engagement of the contact with the four faces of the terminal.

The above-described contacts are each mounted on the board 5 as by means of eyelets 32 applied in the aligned holes 17 and 21, respectively, of the board and the contact tab 20. A rearwardly bent lug 33 on the contact wall 19 is located so as to enter the hole 18 associated with each hole 17 in the board 5. The angles of the contacts, as above discussed, are determined by the location of said holes 18, the same being maintained by the engagement in said holes of the lugs 33.

It will be noted from FIG. 1 that the several contacts 6 mounted on the board 5, as described, are physically and electrically separated from each other. The electrical connection, in pairs as desired, is effected by the metal straps 7 that, according to the characteristics of the circuits desired, extend between two of the contacts and in electrical connection therewith by means of the eyelets 32. The connections shown in FIG. 1 are by way of example: The leftmost or first contact being connected to the fourth contact to the right; the second contact to the fifth and the third contact to the sixth. Said straps constitute the only means that electrically connect the contacts in pairs and, therefore, the terminals 16 of the bank are electrically connected in the same manner. The insulating coating 8 seals said arrangement of straps to prevent accidental shorting thereof.

The space-saving properties of the present intercept strapping bridge are deemed to be evident, as is the convenient manner of replacing bridges as such replacement is required.

While the foregoing has illustrated and described what is now contemplated to be the best mode of carrying out the invention, the construction is, of course, subject to modification without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. In an intercept strapping bridge adapted for separable connection to a bank of rectangular-sectioned terminals of a terminal block, said bridge having a dielectric mounting board,

(a) a complement of parallel contacts mounted on said board and spaced according to the spacing of

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the terminals of said bank, each said contact comprising

(b) a metal member formed to have a four-sided leadin portion for one of said terminals when said bridge is operatively applied to said terminals, said portion defining a space substantially larger than the cross-sectional size of each said terminal, and

(c) a resilient, inwardly angularly bent tongue extending from each of three of the four sides of said leadin portions, the ends of said tongues constricting the entry path of a terminal and being engaged by and outwardly flexed by three of the sides of said terminal, and the normal bias of said outwardly flexed tongues resiliently electrically engaging the corresponding three sides of the terminal.

2. In an intercept strapping bridge as defined in claim 1, an eyelet connecting each contact to said mounting board, and a lug on each contact engaged in a hole in said board to retain the position of the contact on the board.

3. In an intercept strapping bridge as defined in claim 1, the mentioned four sides of the leadin portions being bent from a piece of sheet metal and the fourth side defining the leadin space having a lateral extension for connection with the contact-mounting eyelet and having the contact-locating lug provided thereon.

4. In an intercept strapping bridge as defined in claim 2, the mounting board having a longitudinal edge, the contacts being positioned in uniform spaced relation along a line parallel to said longitudinal edge, and the longitudinal extent of the leadin portions and the tongue-defined extensions of the respective contacts being both parallel to each other and at an angle less than normal relative to said longitudinal edge, said contacts thereby being adapted for operative engagement with a bank of terminals angularly directed with relation to the terminal block mounting the same.

5. In an intercept strapping bridge as defined in claim 1, the mentioned tongues being tapered toward the ends thereof, and said ends being provided with outwardly bent tips.

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