

A. K. ANDRIANO.
JUNCTION BLOCK FOR MAKING ELECTRICAL CONNECTIONS.
APPLICATION FILED OCT. 20, 1910.

1,056,725.

Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.

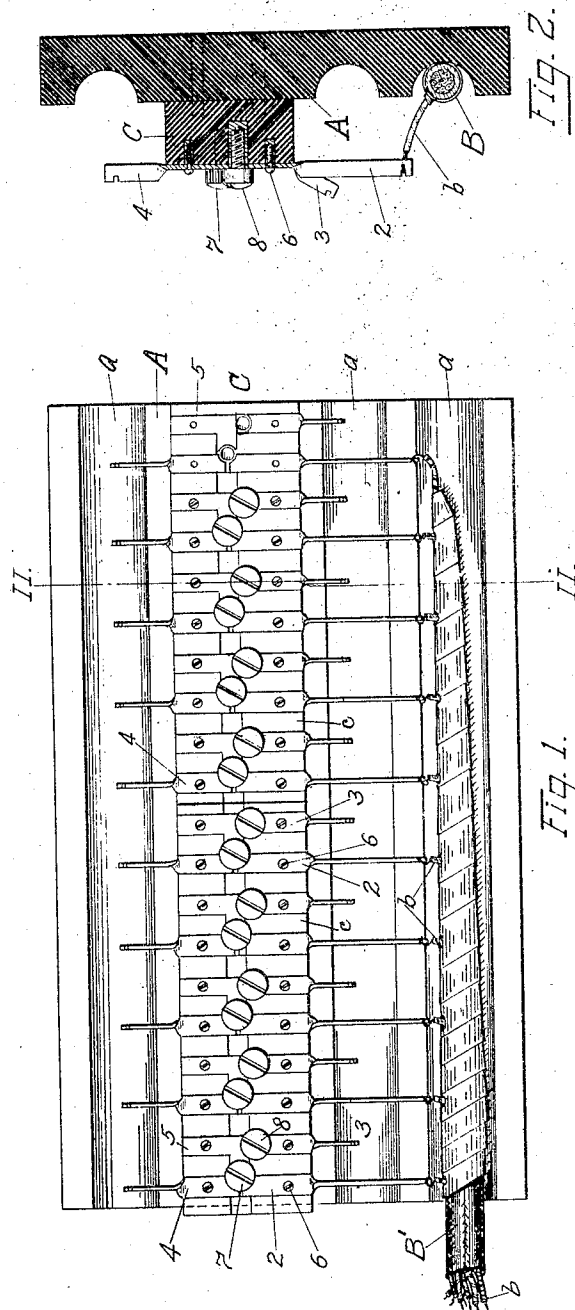


Fig. 2.

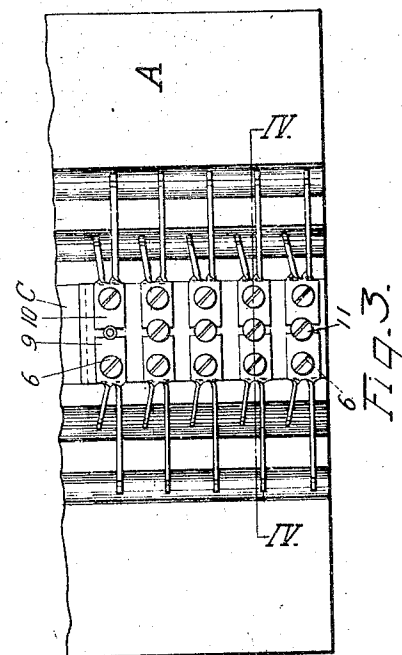


Fig. 3.

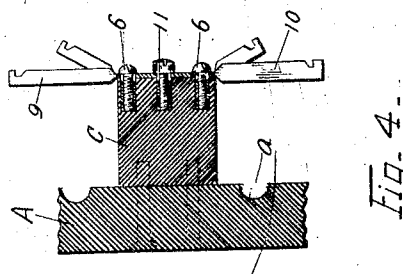


Fig. 4.

Witnesses
A. P. Connor
L. C. Brady

Inventor,
Albert K. Andriano
By *J. S. Barker*
His Attorney

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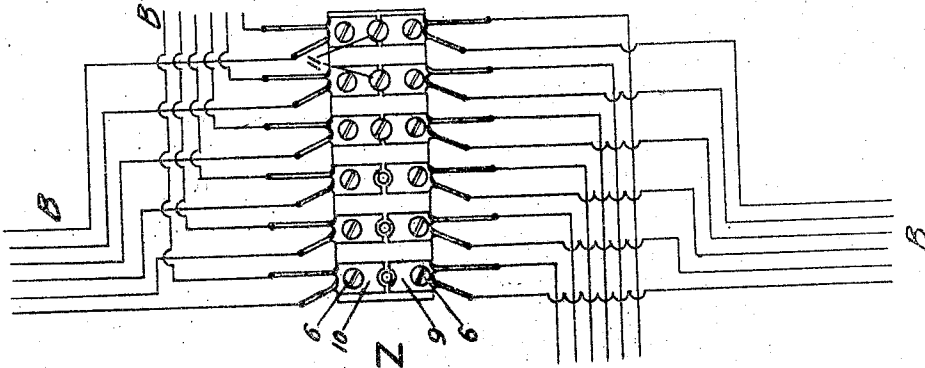
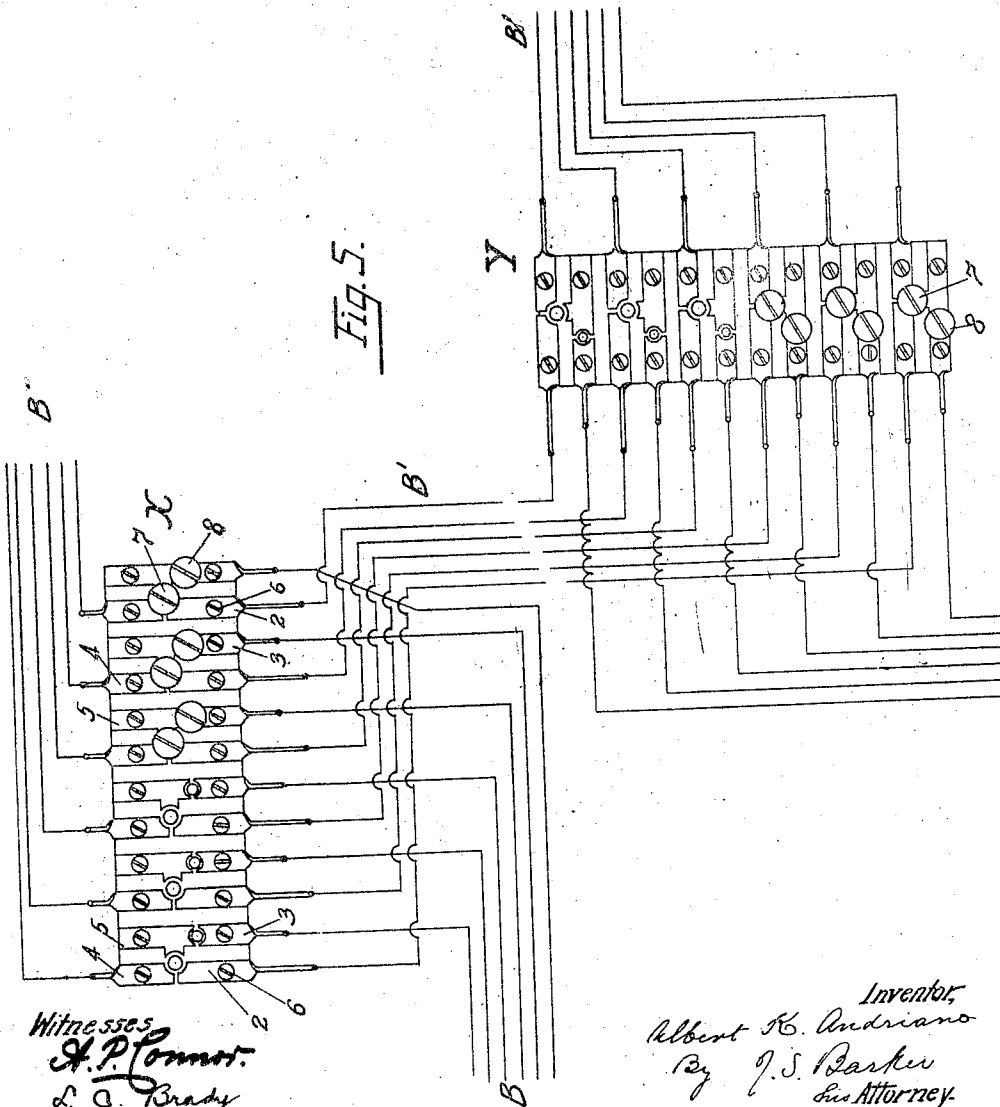


Fig. 5.



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L. O. Brady

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Albert K. Andriano
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 his Attorney.

UNITED STATES PATENT OFFICE.

ALBERT KOCH ANDRIANO, OF NEW YORK, N. Y., ASSIGNOR TO DIRECT-LINE GENERAL TELEPHONE COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

JUNCTION-BLOCK FOR MAKING ELECTRICAL CONNECTIONS.

1,056,725.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed October 20, 1910. Serial No. 588,143.

To all whom it may concern:

Be it known that I, ALBERT KOCH ANDRIANO, a citizen of the United States, residing in the city and county of New York and State of New York, have invented certain new and useful Improvements in Junction-Blocks for Making Electrical Connections, of which the following is a specification.

This invention relates to junction devices for making electrical connections, and has for its object to produce a junction block or distribution box that is especially adapted to be used for making some of the connections required in an interconnecting telephone system, although the invention is not limited in its useful applications to this particular use.

In the accompanying drawings—Figure 1 is a plan view of a junction block embodying my invention for a three cable connection. Fig. 2 is a cross sectional view taken on the line II—II of Fig. 1. Fig. 3 is a plan view of a junction block or connection embodying my invention for a four cable connection. Fig. 4 is a cross sectional view taken on the line IV—IV of Fig. 3. Fig. 5 is a diagram illustrating the use of both forms of the invention, three distribution blocks or boxes being represented.

In the installation of interconnecting telephone systems it is usually customary to have all of the wires go to each of the instruments, and it is for use in connection with such a system that my invention is especially adapted. It frequently becomes necessary in such telephone systems to change the number of instruments in use from time to time, increasing or diminishing the number as may be desired. While it is usual, as above stated, to have every instrument connect with each other one, in some cases it is desirable that only certain stations or instruments of the system should be interconnected, and the present invention is devised for the purpose of making the changes and connections above suggested. Again, the invention is of use in locating short circuits and other troubles that are incident to telephone systems, as the line which may be out of order can be quickly determined and then easily disconnected from the balance of the system until the necessary repairs have been made.

In the accompanying drawings A indicates a base piece on which are supported the connections to be described. It is preferably formed of insulating material and is adapted to be secured to any suitable support, or arranged within any desired form of casing or closure. It may be longitudinally grooved on its exposed face, as indicated at *a* to receive the cables B. Between the grooves, when present, there is a raised insulating support C which may be integral with the base piece A, though I prefer to make it separate therefrom, and to form it in sections, *c, c*, adapted to be brought together end to end and secured to the base and each carrying a small number of the electrical connection pieces, as this arrangement permits the ready building up of the junction block to suit the number of wires in use and to be connected. The conducting pieces to which the individual wires of the cables are connected are preferably formed of thin flat metal, and comprise each a plate-like section resting flatwise upon the support C, and an arm extending therefrom and disposed edgewise relative to the face of the support. The attaching plate and connecting arm of each conducting section are preferably integral and the metal of which they are formed is given a quarter turn adjacent to where the two parts unite in order to bring them into planes at right angles to each other as described and shown. On that side of the raised support C on which are located two grooves *a*, the connection arms of the conducting pieces are arranged in two series, the individual members of which preferably alternate with each other, extending respectively over or in proximity to the two grooves *a, a*, so that the arms of one series are longer than those of the other. The wires from one cable are connected with one series of arms and those from the other cable are connected with the other series. The arms are not only arranged in two series and of different lengths, but are disposed in different planes, as shown in Figs. 2 and 4 where the shorter arms are indicated as being inclined relatively to the longer ones and as having their outer ends disposed above the longer arms. This construction and arrangement of parts very greatly facilitates the attachment of

the separate wires and yet permits the connections to be compactly arranged and made within a limited space.

Referring to Figs. 1 and 2, and to the junctions X and Y, Fig. 5, wherein is illustrated an arrangement for connecting the wires of three cables, two of which, B, B', are arranged on one side of the insulated support C and the third, B'', on the opposite side, it will be seen that each group of connections supported upon the raised part C of the block comprises four elements. One of these is the strip 2 to which a wire from the cable B' is connected, and comprises a long arm to which the wire is secured and a strip supported upon the block, and preferably lying in a groove formed in the face thereof, where it is held by a screw 6. Another of the elements comprises a strip 3 with a shorter arm, to which a wire from the cable B may be secured, and an attaching portion secured to the block. A third element 4 comprises an arm extending from the support in a direction opposite from that of the arms of the parts 2 and 3, and to which a wire from the cable B'' may be secured, and an attaching or securing plate. The fourth element, 5, is a connecting piece without an arm for the attachment of a wire. The two strips, 3 and 5, together constitute what may be considered a broken or interrupted terminal for the wire B, the two parts being arranged to be united at pleasure, by the screw 8. The attaching plates of the elements 2, 4 and 5, are brought close together so that they may be connected by a binding screw 7 which has a screw-threaded connection with a socket seated in the support C. When this screw is adjusted so that its head comes into engagement with the connecting plates of the said elements the wires from the cables B' and B'' are united. The elements 3 and 5 may be electrically connected by a binding screw 8. When both screws 7 and 8 are set down upon the connecting strips the wires from the three cables are interconnected. By loosening the screw 7 the wires are all separated, while by maintaining the connections made by the screw 7 and breaking that of the screw 8, the wire from the cable B is disconnected from the other two which, however, are maintained in connection.

In Figs. 3 and 4, and at the junction Z,

Fig. 5, I have illustrated an arrangement for connecting the wires of four cables, two on each side of the central raised support C. The conducting members mounted upon this support are arranged in sets of two elements each, designated respectively 9 and 10. Each of these members consists of an attaching plate secured to the support C by a screw 6, and a pair of arms. The arms correspond in general arrangement and disposition with the arms of the conducting pieces 2 and 3 in the construction already described, and illustrated in Figs. 1 and 2, that is to say, there is a longer arm to which a wire from the cable B' is secured and a shorter arm to which a wire from the cable B is secured, these arms lying in different planes. Each arm is preferably integral with the attaching plate of the conducting element of which it forms a part and stands edgewise relative thereto. The conducting elements 9 and 10 may be duplicates of each other, or they may be rights and lefts, as represented in the drawings, and they are arranged upon the support in pairs with their inner ends in proximity so they may be brought into electrical connection by means of a screw 11.

What I claim is:—

1. In an electric junction device, the combination of a base piece having parallel grooves in its face for electric cables, a raised insulating support on the base, and conducting pieces having arms to which the individual wires of the cables are attached extending out from the said raised insulating support, the arms being arranged in series corresponding with the cables.

2. In an electric junction device, the combination of a base having an insulating support, a pair of cables to one side of the support disposed substantially parallel therewith, and conducting strips mounted upon the support and having arms extending out therefrom toward the cables, to which the individual wires of the latter are secured, the arms being arranged in two series, the arms of one series being longer than those of the other and arranged in a different plane.

ALBERT KOCH ANDRIANO.

Witnesses:

BRADFORD DONALD, Jr.,
ELIZABETH ROONEY.