

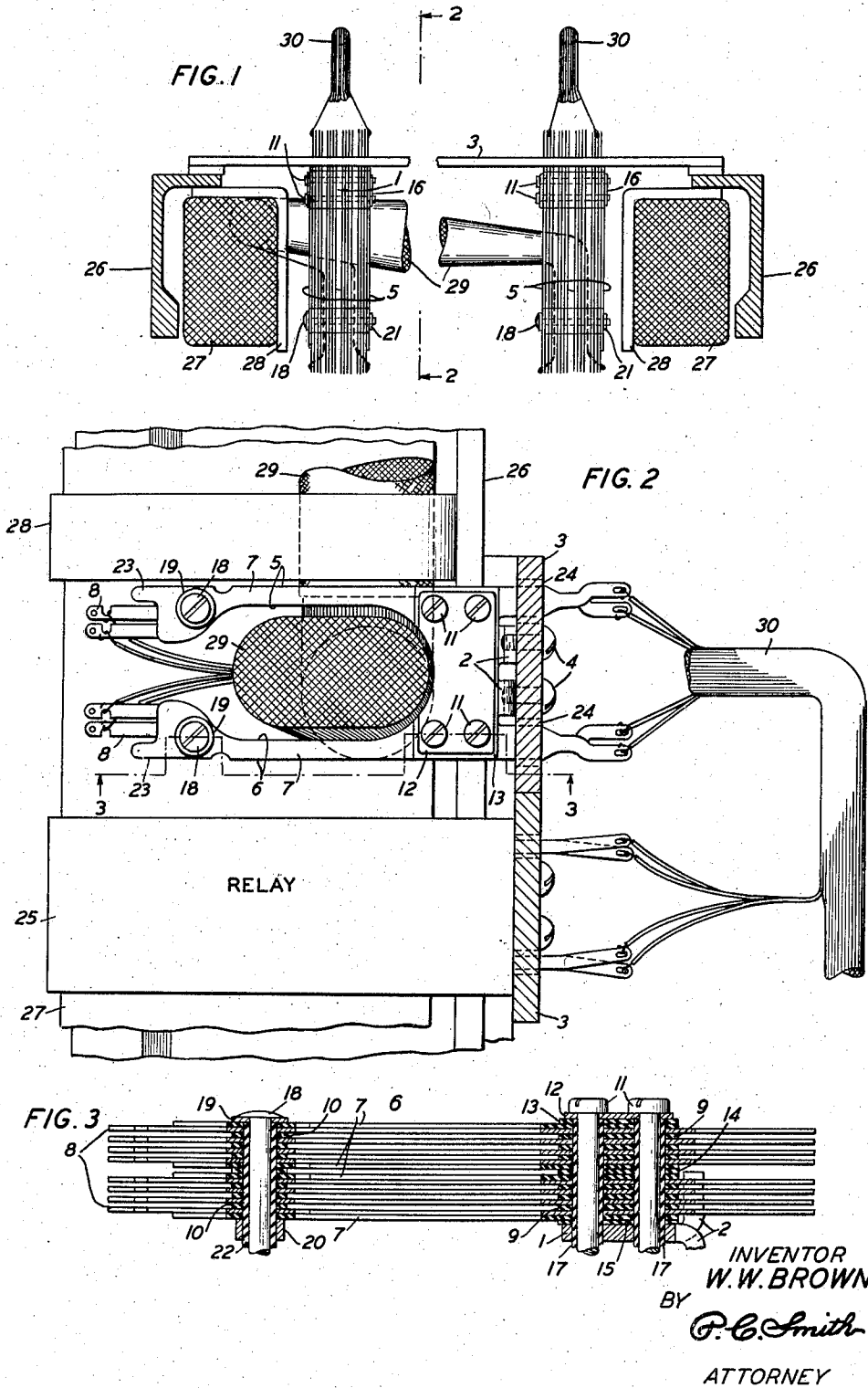
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W. W. BROWN

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TERMINAL STRIP

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TERMINAL STRIP

Wolfe W. Brown, Short Hills, N. J., assignor to
Bell Telephone Laboratories, Incorporated,
New York, N. Y., a corporation of New York

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This invention relates to terminal strips and more particularly to a terminal strip unit for distributing switchboard cable conductors among local cables extending to apparatus units.

On apparatus frames of dial switching telephone systems it is customary to lead in switchboard cables and to terminate the conductors thereof upon terminal strips from which the conductors of cables local to the frame may be extended to apparatus units. Heretofore, such terminal strips have been of such a character that they occupied a large amount of mounting space and did not lend themselves readily to a unified systematic distribution of wiring to the apparatus units. In the development of the so-called cross-bar dial switching system it has, for the purpose of economy, been considered desirable to so design all switching frames and relay racks in such a manner that a maximum of assembly and wiring operations could be carried out in the factory thus reducing materially the work of installation on specific projects.

It is, therefore, the object of the present invention to provide a terminal strip unit which is compact in structure and economical to manufacture and assemble on apparatus racks.

While the terminal strip unit in accordance with the present invention was developed particularly for use in cross-bar dial systems, it is to be understood that it is not limited to use in such systems but is of general applicability to all types of systems where the expeditious distribution of electrical conductors is desired. The terminal strip unit is so designed that it may be mounted on a relay mounting plate in the space ordinarily provided for the mounting of a relay and is of such configuration that it provides a well through which the switchboard cable may extend with the conductors thereof fanned out to the terminals of the unit on the front or apparatus side of the rack. The local cables are then connected to the terminals of the units on the rear side of the rack. The units have the further advantage in that the over-all thickness of the rack may be reduced thus saving valuable floor space.

The terminal strip unit comprises a flat mounting plate having integral ears extending at right angles therefrom for attachment to the relay rack and two banks of terminal strips insulatedly attached in parallel relation to the ends of the plate. One-half of each bank is disposed on each face of the plate and each bank comprises a plurality of terminal strips, each having a soldering lug on each end and separated from

the adjacent strips by strips of insulating material. When assembled, the terminal strips unit is of substantially H shape, the sides of the H being formed by the two banks of terminal strips and the mounting plate forming the cross-bar. The free ends of the bank are much longer on one side of the mounting plate than on the other, thus affording sufficient space between the two banks on the apparatus side of the mounting rack to enable a switchboard cable to be run therebetween, the conductors of which may then be fanned out and connected to the adjacent ends of the terminal strips.

For a more complete understanding of the invention, reference may be made to the accompanying detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a horizontal view of a relay rack, partly in cross-section, showing one relay mounting plate with two terminal strip units mounted thereon;

Fig. 2 is a vertical sectional view taken on section line 2—2 of Fig. 1; and

Fig. 3 is a partial sectional view taken on section line 3—3 of Fig. 2.

The terminal strip unit is provided with a mounting plate 1 having integral ears 2 extending at right angles therefrom for attachment to the relay mounting plate 3 by screws 4. Two banks of terminal strips 5 and 6 are mounted respectively on the ends of the mounting plate 1. As most clearly disclosed in Fig. 1, each bank of strips is divided, one-half being positioned on each face of the plate 1. As disclosed in Fig. 3, each half of a bank comprises two groups of terminal strips, each group including two outside strips 7 of insulating material, for example, of phenol fiber, a plurality of metal terminal strips 8 and separators 9 and 10 of insulating material which may also be of phenol fiber. The terminal strips 8 are thus effectively insulated from each other by the separators 9 and 10.

For securing the two halves of each bank to the opposite sides of the mounting plate 1, screws 11 are provided which extend through outer metal clamping member 12, the insulating separator 13, strips 7 and 8, insulating separators 9, 14 and 15, the plate 1 and through similar elements of the other half of the bank into a second clamping member 16. The screws 11 are effectively insulated from the terminal strips 8 and plate 1 by the sleeves 17 of insulating material.

In order that the longer free end of each bank may be held in more rigid assembly, a rivet or screw 18 is provided which extends through an

outer clamping washer 19, strips 7 and 8 and insulating separators 10 of one-half of the bank, through separator 20 and through similar elements of the other half of the bank into a second clamping washer 21. The screw 18 is insulated from the terminal strips by the sleeve 22 of insulating material.

Each terminal strip 8 is provided with a soldering terminal on each end thereof, suitably tinned to enable conductors to be readily secured thereto, the soldering terminals of alternate strips being staggered as disclosed in Fig. 2 in order that they may be more accessible for the connection of conductors thereto.

The insulating strips 7 serve as guides for a cover (not shown) which may, if desired, be slipped over the terminal strip unit, the inner sides of the cover engaging against the outer edges of the strip 7 and the extensions 23 of the strips protecting the soldering terminals of the terminal strips 8 against a possible short circuit when the cover is being installed or removed. The cover may be of the general type disclosed in Patent 1,343,880 granted June 15, 1920 to W. O. Beck.

One or more of the terminal strip units may be mounted on the usual relay mounting plate 3 with the shorter soldering terminals of the terminal strips extending through slots 24 in the plate in the same manner as the soldering terminals of the spring pile-ups of relay 25. The relay mounting plates 3 are suitably secured to the uprights 26 of the relay rack. Groups 27 of switchboard cables are run vertically on the rack in the inside of the L-shaped uprights 26 and are held in position by the supports 28 which are also secured to the uprights 26, the several cables of each group being turned to run horizontally across the rack. One of these cables 29 is disclosed as extending through the well formed between the terminal banks of terminal units with the conductors of the cable fanned out and connected to the soldering lugs of the terminal strips on the apparatus side of the rack. Local cables 30 are run vertically on the rear of the rack and the conductors thereof are connected to the soldering lugs of the terminal units and fanned out to relays or other apparatus mounted on the rack.

From the foregoing it will be apparent that the terminal strip unit in accordance with the present invention affords a simple compact means for wire distribution which enables the conservation of valuable space and renders the economical assembly and installation of apparatus.

What is claimed is:

1. A terminal strip assembly comprising a mounting plate and two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, each of said banks comprising a plurality of terminal strips insulated from each other and each strip having a soldering lug on each end thereof, the space between the longer ends of said banks enabling the placement of a cable of wires for connection to the adjacent ends of the strips of said banks.

2. A terminal strip assembly comprising a flat mounting plate having integral attachment ears extending at right angles therefrom and two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, one-half of each bank being disposed on each face of said plate, each of said banks comprising a plurality of terminal strips insulated from each other and each strip having a soldering lug on each end thereof, the space between the longer ends of said banks enabling the placement of a cable of wires for connection to the adjacent ends of said strips.

3. A terminal strip assembly comprising a mounting plate, two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, one-half of each bank being disposed on each face of said plate, each of said banks comprising a plurality of terminal strips insulated from each other and each strip having a soldering lug on each end thereof, and means extending through the longer ends of each bank and insulated from the terminal strips thereof for holding the free ends of the terminal strips rigidly in assembled position.

4. A terminal strip assembly comprising a mounting plate, two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, one-half of each bank being disposed on each face of said plate, each of said banks comprising a plurality of terminal strips insulated from each other and each strip having a soldering lug on each end thereof and a rivet extending through the longer end of each bank and insulated from the terminal strips thereof for holding the free ends of the terminal strips rigidly in assembled position.

5. A terminal strip assembly comprising a mounting plate and two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, each of said banks comprising a plurality of terminal strips insulated from each other, each strip having a soldering lug on each end thereof, and a plurality of insulating members extending laterally beyond said strips and serving as guides for a cover to enclose said assembly, the space between the longer ends of said banks enabling the placement of a cable of wires for connection to the adjacent ends of the strips of said banks.

6. A terminal strip assembly comprising a mounting plate and two banks of terminal strips insulatedly attached near one end in parallel relation to the ends of said plate, one half of each bank being disposed on each face of said plate, each of said banks comprising a plurality of terminal strips insulated from each other, each strip having a soldering lug on each end thereof, and a plurality of insulating members extending laterally beyond said strips and serving as guides for a cover to enclose said assembly, the space between the longer ends of said banks enabling the placement of a cable of wires for connection to the adjacent ends of the strips of said banks.

WOLFE W. BROWN.