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2,022,486

ELECTRICAL TERMINAL CONNECTION BLOCK

Filed March 7, 1935

Fig. 1

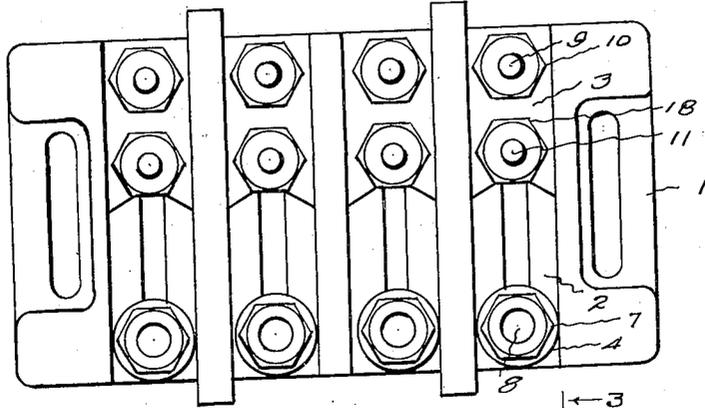


Fig. 2

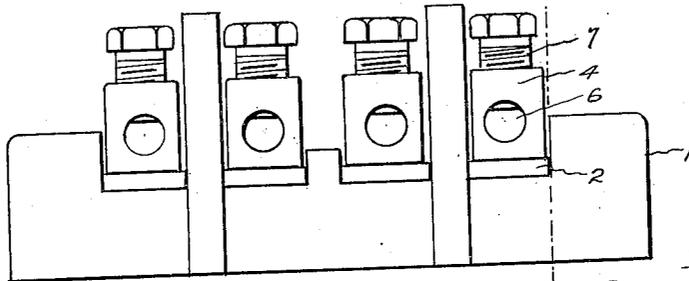


Fig. 3

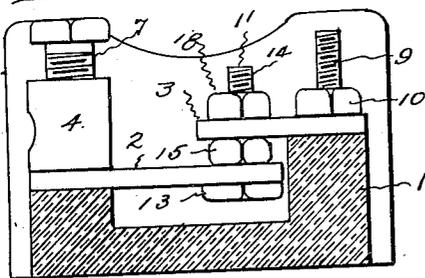


Fig. 4

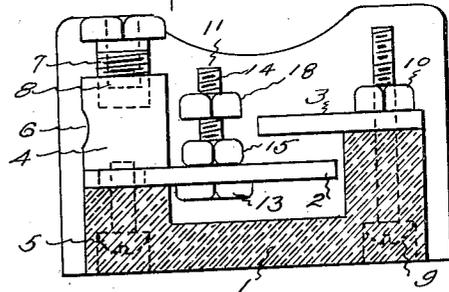


Fig. 5

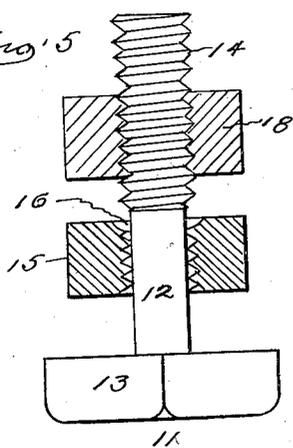


Fig. 6

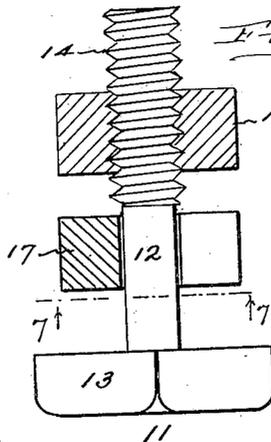
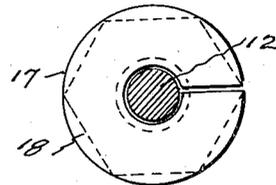


Fig. 7



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UNITED STATES PATENT OFFICE

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ELECTRICAL TERMINAL CONNECTION BLOCK

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Application March 7, 1935, Serial No. 9,776

5 Claims. (Cl. 200—163)

This invention relates to blocks which are employed for connecting electrical conductors that at times are temporarily required to be disconnected and reconnected in different relations, more particularly such blocks as are located on switch boards and in testing boxes installed between meters and line and load wires.

The present conception is an improvement on the block illustrated and described in Patent No. 1,891,212, issued December 13, 1932, the object being to simplify and cheapen the construction and assembling of the parts of such a block and at the same time to render it easier to open and close and shift the current paths when such manipulation is desired.

Fig. 1 shows a plan view of a block that embodies the invention.

Fig. 2 is an elevation of the block.

Fig. 3 is a section on plane denoted by dotted line 3—3 on Fig. 2, with the circuit closed.

Fig. 4 is a similar section with the circuit open.

Fig. 5 on greatly enlarged scale shows an elevation of the screw and sections of the nuts which form the circuit connecting and disconnecting member.

Fig. 6 is a similar view of a modification.

Fig. 7 is a section on dotted line 7—7 on Fig. 6.

The base 1 of the block is formed of insulation, usually porcelain, of a width and length depending upon the number and character of the circuit paths that are to be accommodated. The base illustrated has four paths in each of which is a long slotted arm 2 that extends inward from the bottom edge at a lower level, and a short slotted arm 3 that extends inward from the top edge at a higher level, so that the inner ends of the arms will overlap with a space between them.

Secured to and extending up from the outer end of the arm 2 is a tubular post 4. A screw 5 passes through the base into this post for holding the arm in place. In the side of the post is an opening 6 for the end of a wire, and threaded into the top of the post is a binding screw 7 that has an axial socket 8. A screw 9 is passed through the base and threaded into the arm 3 for holding this arm in place, and a nut 10 is threaded on this screw for binding the end of a wire.

The connecting member comprises a stud 11 that has a smooth shank 12, an enlarged head 13 at its inner end, and a threaded section 14 at its outer end, the shank being of a diameter that enables it to move freely back and forth in the slot in the lower arm 2 and the thread being

somewhat greater in diameter than the shank. On the shank is a nut 15 that is screwed down the thread and when on the reduced shank has its upper thread mutilated, or its surface around the thread perforation deformed as at 16, to an extent that limits its upward movement, that is, permits the nut to move freely up and down the shank but prevents it from again engaging the thread and backing away from the head 13. This member may be a split washer 17 which is slipped down the thread and compressed on the shank so that its upward movement will be obstructed by the thread. The nut 18 has a thread that fits the threaded section of the stud.

In normal closed circuit position the stud 15 extends through the slot in the lower arm 2 and slot in the upper arm 3, with the head 13 below the lower arm, the nut 15 or washer 17 between the arms, and the nut 18 screwed down on top of the upper arm so as to clamp these parts tightly and securely together. To open the circuit the nut 18 is loosened and then the stud may be slipped along the lower arm out of engagement with the upper arm and the nut 18 turned down against the nut 15 or washer 17 so as to hold the stud in this position.

As a result of the construction described all of the clamping elements may be simple commercial pieces of the same size and character, and the studs and screws of standard sizes and form, thus reducing the cost to a minimum. By limiting the outward axial movement of the intermediate member it always remains adjacent to the upper surface of the lower arm and in position to easily pass into and out of the space between the arms, but as a result of such axial freedom as this loose member has, the elements may be clamped into tight electrical contact.

For testing purposes the electrical paths on a block are opened by sliding the necessary connecting members along the lower arms and out of contact with the upper arms, and then plugging into the sockets in the binding posts the studs of a jack which will make the required cross circuit connections and connections with the testing instrument.

The invention claimed is:—

1. An electrical terminal connection block having a base, conducting arms extending inward from opposite edges of the base and having their inner ends overlapping and spaced apart, and a conducting connector movable along one arm into and out of engagement with the other arm, said connector comprising a stud with an enlarged head, a reduced shank section and a

threaded section of larger diameter than the shank section, a member that is loose upon and has a limited axial movement on the shank section between the head and threaded section of the stud, and a nut threaded upon the threaded section.

2. An electrical terminal connection block having a base, conducting arms extending inward at different levels from opposite edges of the base and having their inner ends overlapping and spaced apart, and a conducting connector movable along the lower arm into and out of engagement with the upper arm, said connector comprising a stud with an enlarged head below the lower arm, a reduced shank section above the lower arm and a threaded section of larger diameter than the shank section, above the upper arm, a member that is loose upon and has a limited axial movement on said shank section between the head and threaded section of the stud, and a nut threaded upon said threaded section.

3. An electrical terminal connection block having a base, slotted conducting arms extending inward at different levels from opposite edges of the base and having their inner ends overlapping and spaced apart, and a conducting connector movable along the slot in the lower arm into and out of the slot in the upper arm, said connector comprising a stud with an enlarged head below the lower arm, a smooth shank section above the lower arm and a threaded section of larger diameter than the shank section, above the upper arm, a nut that is loose upon and has a limited axial

movement on said shank section between the head and threaded section of the stud and a nut threaded upon said threaded section.

4. An electrical terminal connection block having a base, conducting arms extending inward from opposite edges of the base and having their inner ends overlapping and spaced apart, and a conducting connector movable along the lower arm into and out of engagement with the upper arm, said connector comprising a stud with an enlarged head below the lower arm, a reduced shank section above the lower arm and a threaded section of larger diameter than the shank section, above the upper arm, a nut threaded upon said threaded section, and a member independent of said nut having an opening less in diameter than the diameter of the threaded section of the stud, that is loose upon and has an axial movement on said shank section.

5. An electrical terminal connection having a support, conducting arms mounted on the support and extending toward each other with their inner ends overlapping and spaced apart, and a conducting connector slidable along the lower arm into and out of engagement with the upper arm, said connector comprising a stud with an enlarged head below the lower arm, a reduced shank section and a threaded section of larger diameter than the shank section, a member with a limited axial movement on said shank section, a nut threaded upon said threaded section, and a terminal post with a binding screw having a test jack socket in its head fastened to the lower arm.

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