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3,375,409

MOUNTING TERMINAL WITH FIXED AND MOVING RIGID JAW MEMBERS

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2 Sheets-Sheet 1

Fig. 1.

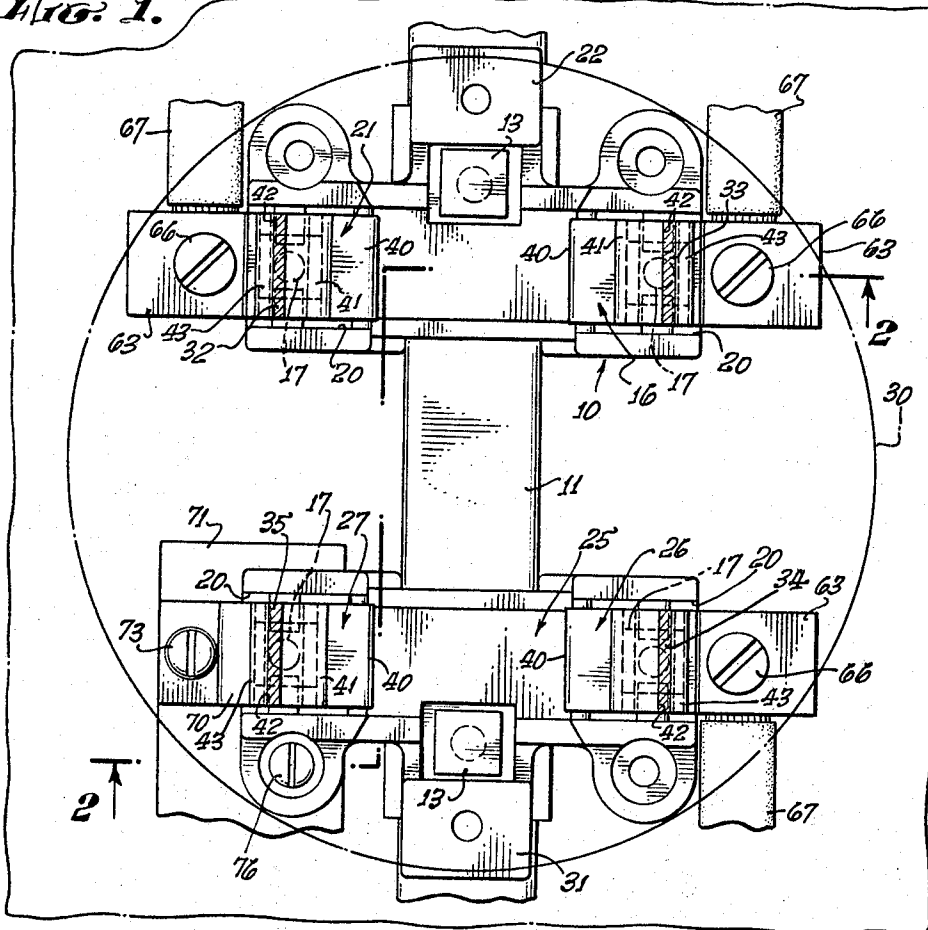
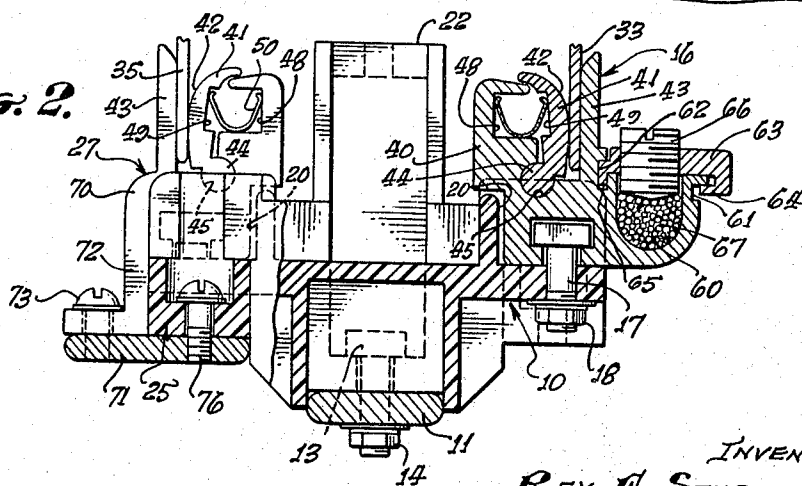


Fig. 2.



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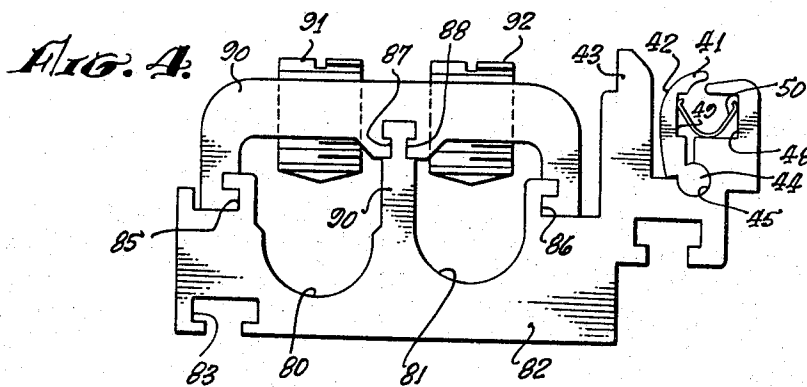
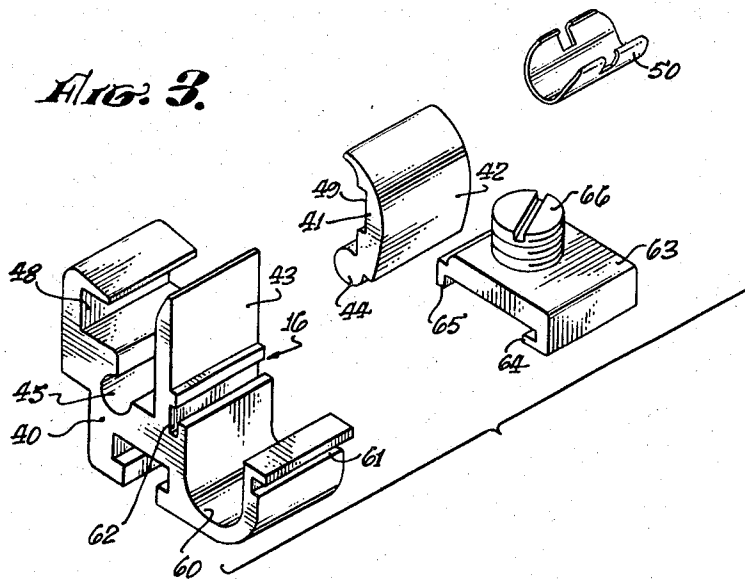
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## MOUNTING TERMINAL WITH FIXED AND MOVING RIGID JAW MEMBERS

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### ABSTRACT OF THE DISCLOSURE

A meter mounting terminal with extruded fixed and moving rigid jaw members and a spring for applying clamping pressure. An open top lug design permitting laying in of cable. A unitary construction omitting contact surfaces except at the meter stab and the cable.

This invention relates to a new and improved meter mount for an electrical watt-hour meter or the like and, in particular, to a mounting terminal adapted for use in conjunction with similar mounting terminals for receiving the stab terminals of a plug-in meter or the like.

It is an object of the invention to provide a mounting terminal for a meter stab or the like having improved performance and reliability and at the same time having reduced cost of manufacture. A further object is to provide a mounting terminal with a unitary structure eliminating contact surfaces except of course at the meter terminal and at the conductor clamping section. A particular object is to provide a meter terminal having a uniform cross section permitting manufacture by extrusion in a long bar with individual terminals being produced by slicing the extruded bar.

It is an object of the invention to provide a mounting terminal having two rigid jaw members defining a terminal receiving space therebetween, with one of the jaw members movable relative to the other and incorporating a spring means for urging the members together to clamp the meter terminal therebetween. A particular object is to provide such a structure in which the movable jaw member is pivotally mounted in a fixed jaw member. An additional object is to provide such a structure, in which both jaw members have a uniform cross section permitting manufacture by extrusion and one in which the pivoting member has a substantially cylindrical edge for sliding engagement in a mating groove of the fixed jaw member.

It is an object of the invention to provide a mounting terminal incorporating an open top lug construction for receiving conductors permitting a conductor to be laid into the conductor groove with a lateral movement. A further object is to provide such a construction which may be used with one conductor or with a plurality of conductors. An additional object is to provide such a structure in which the components have longitudinal sliding interengaging members and one in which the components can be manufactured by extrusion.

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. The drawings merely show and the description merely describes preferred embodiments of the present invention which are given by way of illustration or example.

In the drawings:

FIG. 1 is a side view of a watt-hour meter mounting structure with the meter shown in phantom lines;

FIG. 2 is a sectional view taken along the line 2—2 of FIG. 1;

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FIG. 3 is an exploded view of a terminal of FIG. 1; and

FIG. 4 is a bottom view of an alternative form of terminal.

In the structure of FIG. 1, an insulator block 10 is carried on a support strip 11 which may be a bracket or may be the neutral bus. The block 10 is fixed to the support 11 by a bolt 13 and a nut 14. A mounting terminal 16 is carried at one end of the block 10 by a bolt 17 and nut 18, with the head of the bolt 17 engaging a T-shaped groove in the terminal 16 and with the terminal resting in a cup-shaped section 20 of the block. The block 10 typically may be a plastic molding. Another terminal 21 is mounted on the other end of the block 10 and a meter pad 22 is formed intermediate the terminals.

Another block 25 identical to the block 10 is mounted on the support 11 in spaced relation with the block 10. Meter terminals 26, 27 are carried on the block 25, the terminal 26 being identical to the terminals 16 and 21 while the terminal 27 incorporates an alternative type of conductor engaging section.

A meter 30 may be positioned on the pads 22, 31 with the meter stabs 32, 33, 34, 35 engaging the terminals 21, 16, 26, 27, respectively.

Referring to the terminal 16, the terminal structure preferably incorporates a fixed jaw member 40 and a moving jaw member 41 with the moving member carried on the fixed member so that the wall section 42 of the moving member can be moved toward and away from the wall section 43 of the fixed member. The moving jaw member preferably is pivotally mounted in the fixed jaw member by sliding engagement of a cylindrical edge 44 with a corresponding groove 45 in the fixed member, with the groove 45 being more than a semicylinder so that the moving member cannot be moved laterally out of the groove. In the preferred form illustrated, the groove 45 is about three-quarters of a cylinder.

A spring may be positioned in opposing grooves 48, 49 of the jaw members 40, 41, respectively, for urging the wall sections of the two members together to clamp the stab terminal 33 therebetween. Various forms of springs can be utilized such as a coil spring or the U-shaped leaf spring 50.

Means are provided on the terminal for connecting a cable and in an alternative form, a bus bar. The preferred structure utilizes an open top cable lug permitting the cable to be laid in with a lateral cable movement. With this type of construction, the requirement for threading ends of cables through openings is eliminated. Also, this open top lug construction permits the laying of a single length of cable into a plurality of lugs. The known advantages of bus bar construction for junction boxes can be achieved equally well utilizing cable and the open top lugs.

A conductor groove 60 is provided in the jaw member 40 with clamp receiving grooves 61, 62 disposed on opposite sides of the conductor groove 60. A clamp member 63 having edges 64, 65 engageable with the grooves 61, 62, respectively, is positioned over the conductor groove 60 after the cable has been inserted. A screw 66 is positioned in a threaded opening in the clamp member 63 for clamping the cable 67 in the groove 60.

The engagement of the edges 64, 65 of the clamp member 63 with the grooves 61, 62 of the fixed jaw member 40 provides guidance for the sliding insertion of the clamp member except by the sliding operation. It should be noted that while the complete grooves as shown in the drawings are preferred, any form of interengaging shoulder structures could be utilized and the word

"groove" as used herein is intended to cover the shoulder construction.

Referring now to the terminal 27, the meter stab engaging portion thereof is identical to that of the terminal 16, including the wall section 43 of the fixed jaw member 70, the moving jaw member 41 and the spring 50. The terminal 27 provides for connection to a bus bar 71 rather than to a cable, with the conductor clamping section 72 being formed as an L-shaped bracket having an opening for a screw 73 which engages a threaded opening in the bus bar 71. The bus bar may be clamped against the block 25 by a screw 76. Where bus bars are used in place of cables for the terminals, the support member 11 may be omitted with the blocks 10 and 25 carried on the line and load bus bars.

Another form of open top lug construction providing for connection of two cables is shown in FIG. 4. Conductor grooves 80, 81 are disposed in parallel in the fixed jaw member 82. The meter stab portion of the terminal shown at the right of FIG. 4 may be the same as that previously described. An additional T-shaped groove 83 may be provided at the left edge of the fixed member 82 for additional mounting support if desired. Slide grooves 85 and 86 may be provided at the outer edges of the conductor grooves and additional grooves 87, 88 may be provided on a T-shaped rib 89 between the two conductor grooves 80, 81. A clamp member 90 having edges engageable with the grooves of the fixed jaw member is slidably positioned over the conductor grooves and carries screws 91, 92. With this arrangement a single cable can be utilized in either groove 80 or 81, or two cables can be utilized, providing for higher current capacity and/or for interconnection of cables.

The components of the terminal member including the fixed jaw members 40, 70, 82, the moving jaw member 41, and the clamp members 63, 90 are of uniform cross section permitting manufacture by extrusion, preferably with an electrical grade of aluminum alloy. Manufacture of the parts is completed by slicing the extruded bar into units of appropriate width. No other machining is required except drilling and tapping of holes for the screws where utilized. The fixed jaw members 40, 70, 82 are unitary structures with no contact surfaces to introduce resistance loads, heat losses and hot spots. The only contacts are at the wall section 43 where the meter stab or other conductor is pressed against the wall section by the moving member, and at the conductor groove or bus bar bracket where the conductor or bus bar is clamped against the fixed jaw member.

Although exemplary embodiments of the invention have been disclosed and discussed, it will be understood that other applications of the invention are possible and that the embodiments disclosed may be subjected to various changes, modifications and substitutions without necessarily departing from the spirit of the invention.

I claim as my invention:

1. In a mounting terminal for a meter stab or the like, the combination of:
  - a fixed rigid jaw member having a first wall section;

a moving rigid jaw member having a second wall section and mounted in said fixed jaw member for pivoting toward and away from said first wall section defining a terminal space therebetween;

spring means engaging said jaw members urging said second wall section toward said first wall section for clamping a terminal member therebetween; and means for connecting an electrical conductor to said fixed jaw member.

2. In a mounting terminal for a meter stab or the like, the combination of:

a unitary fixed rigid jaw member of uniform cross section having a first wall section, a conductor clamping section, and a more than semicylindrical groove;

a moving rigid jaw member having a second wall section and a substantially cylindrical edge slidably mounted in said groove of said fixed jaw member for pivoting toward and away from said first wall section defining a terminal space between said wall sections; and

spring means engaging said jaw members urging said second wall section toward said first wall section for clamping a terminal member therebetween;

said conductor clamping section including means for engaging means for clamping a conductor thereto.

3. In a mounting terminal for a meter stab or the like, the combination of:

a fixed jaw member having a first wall section and a conductor clamping section including a conductor groove and a clamp receiving groove on each side of and parallel with the conductor groove;

a moving jaw member having a second wall section and carried on said fixed jaw member for movement toward and away from said first wall section defining a terminal space between said wall sections and including spring means urging said second wall section toward said first wall section for clamping a terminal member therebetween;

a clamp member having edges slidably engageable with said clamp receiving grooves for maintaining said clamp member overlying said conductor groove; and

means for engaging a conductor in said conductor groove and urging said clamp member away from said clamping section of said fixed jaw member.

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