Oct. 12, 1954 M. J. LEWIS 2,691,693

METER SUPPORT

Filed Nov. 16, 1950 4 Sheets-Sheet 1

Fig. 1.

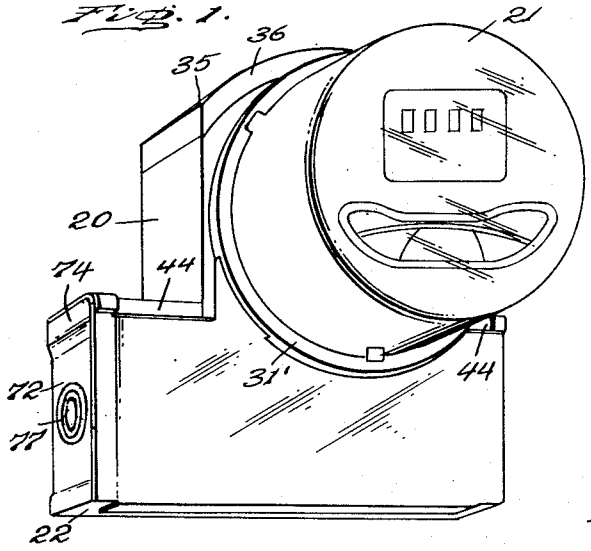


Fig. 10.

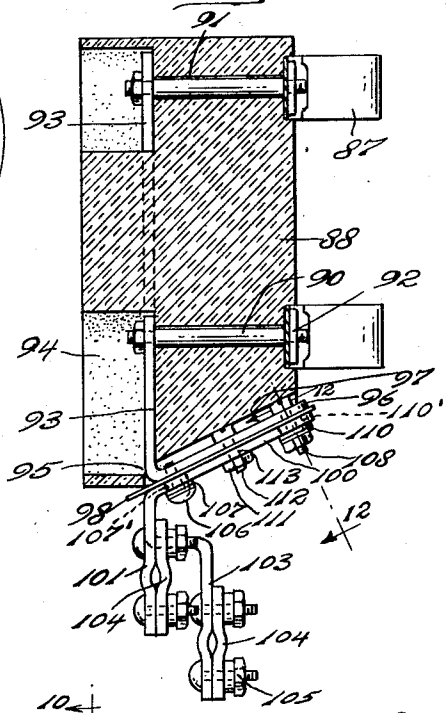


Fig. 2.

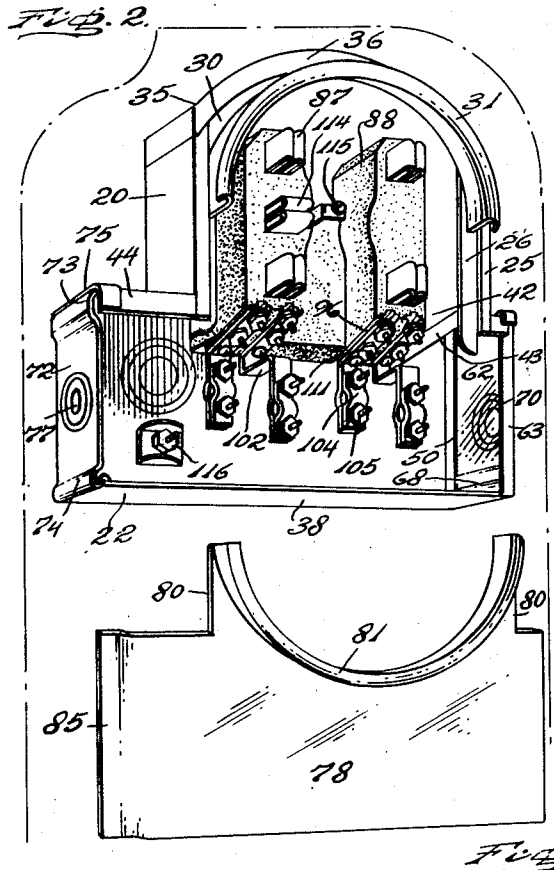
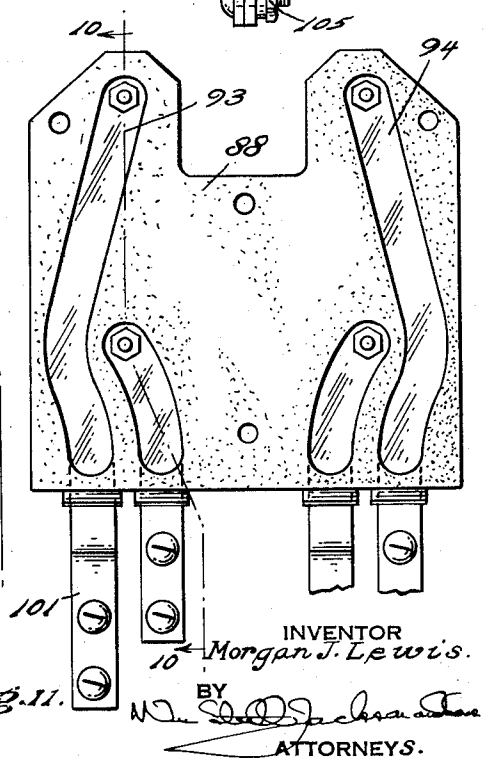


Fig. 11.



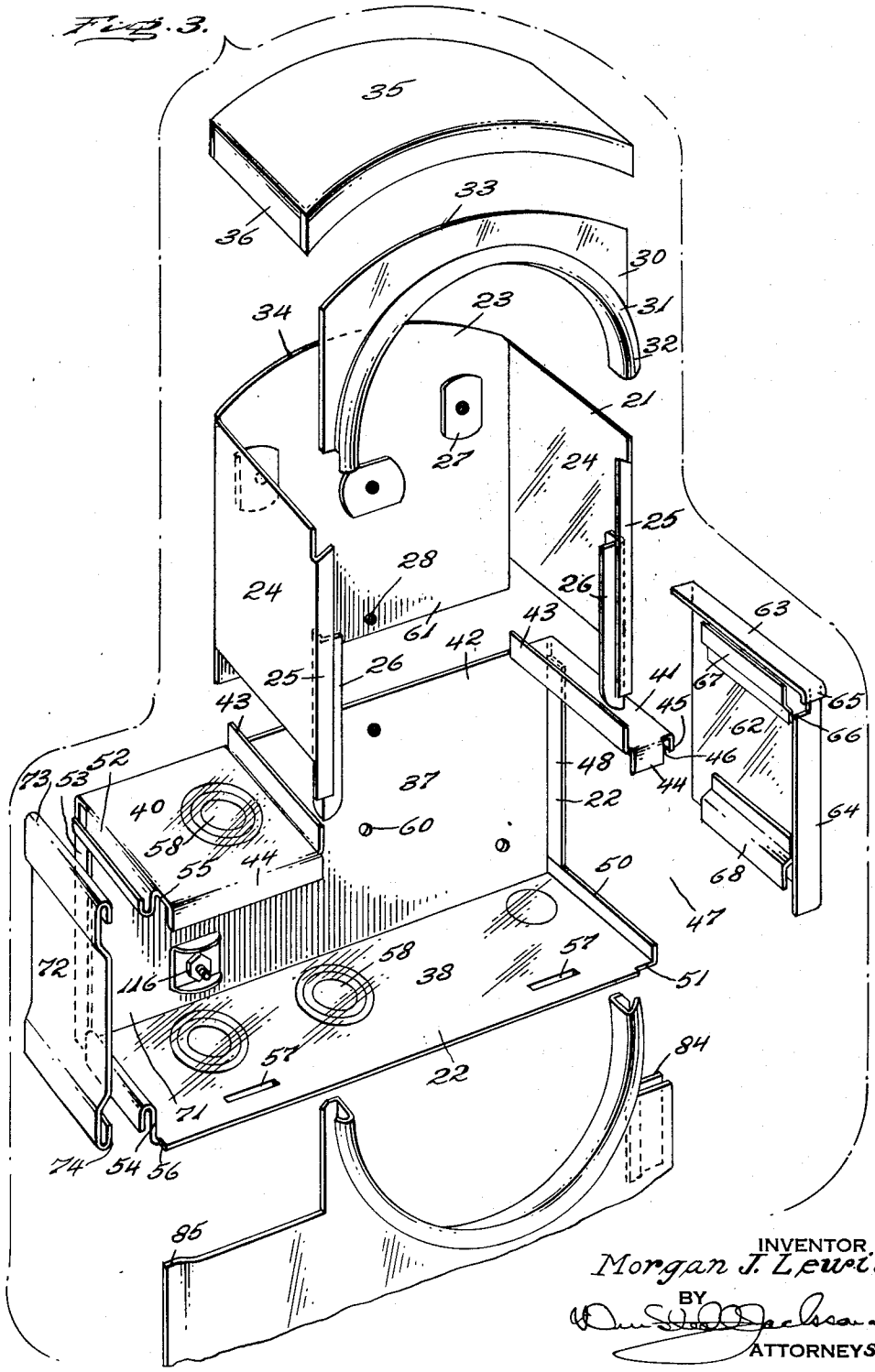
INVENTOR
Morgan J. Lewis.
BY
ATTORNEYS.

Oct. 12, 1954 M. J. LEWIS 2,691,693

METER SUPPORT

Filed Nov. 16, 1950 4 Sheets-Sheet 2

Fig. 3.



INVENTOR.
Morgan J. Lewis.
BY
ATTORNEYS.

Oct. 12, 1954 M. J. LEWIS 2,691,693

METER SUPPORT

Filed Nov. 16, 1950 4 Sheets-Sheet 3

Fig. 5.

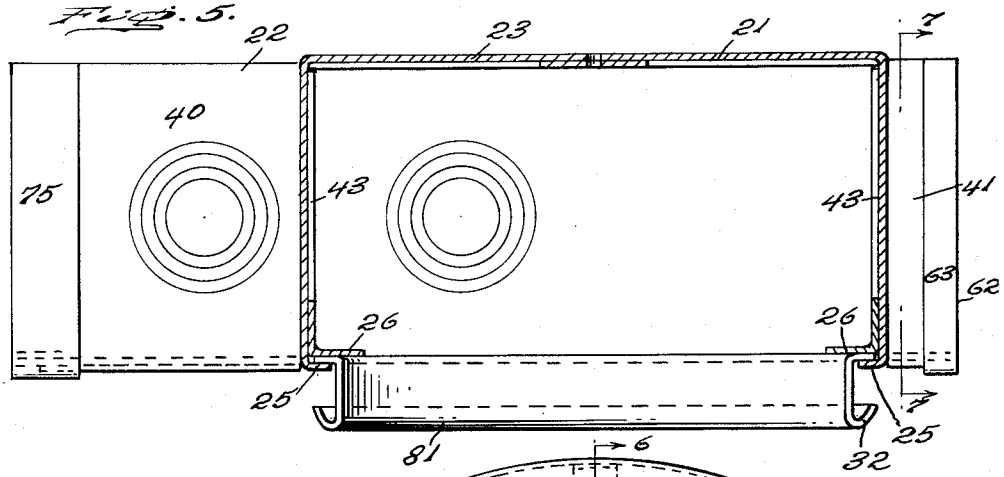


Fig. 4.

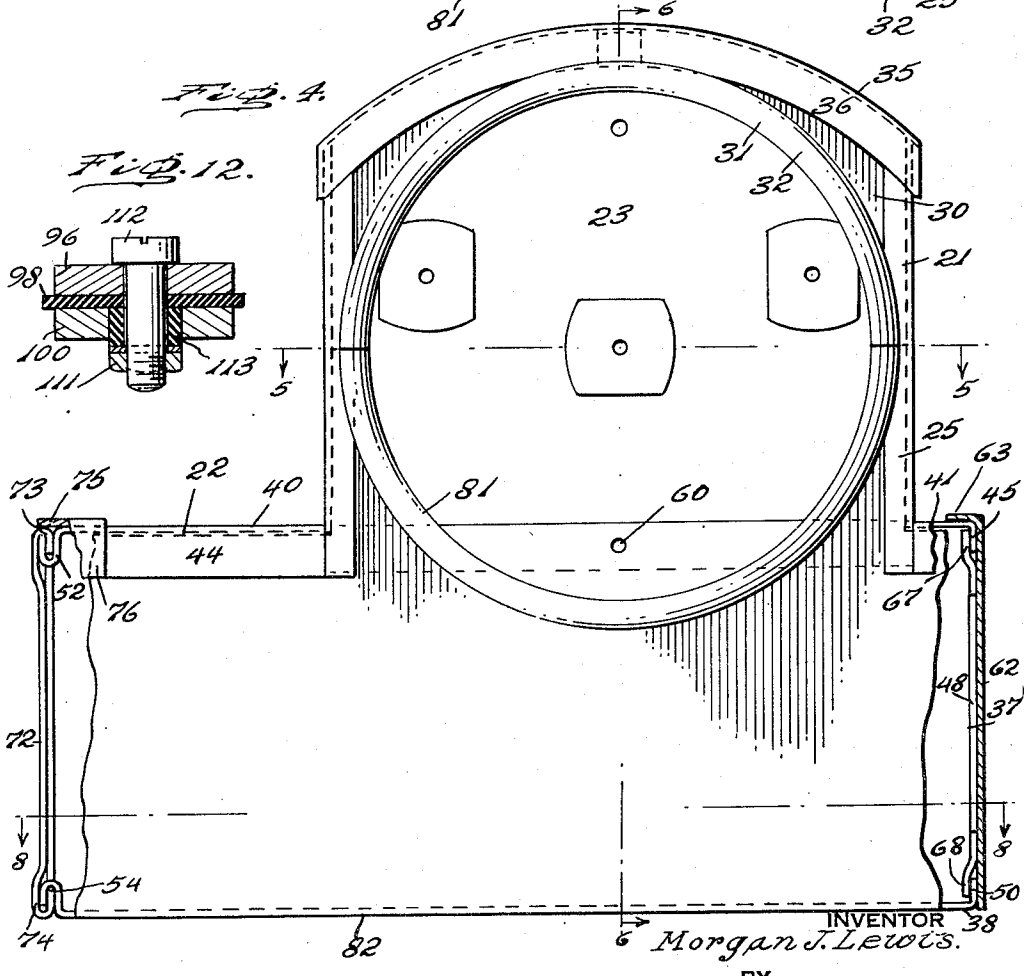


Fig. 12.

INVENTOR
Morgan J. Lewis.

BY

ATTORNEYS.

Oct. 12, 1954 M. J. LEWIS 2,691,693

METER SUPPORT

Filed Nov. 16, 1950 4 Sheets-Sheet 4

Fig. 6.

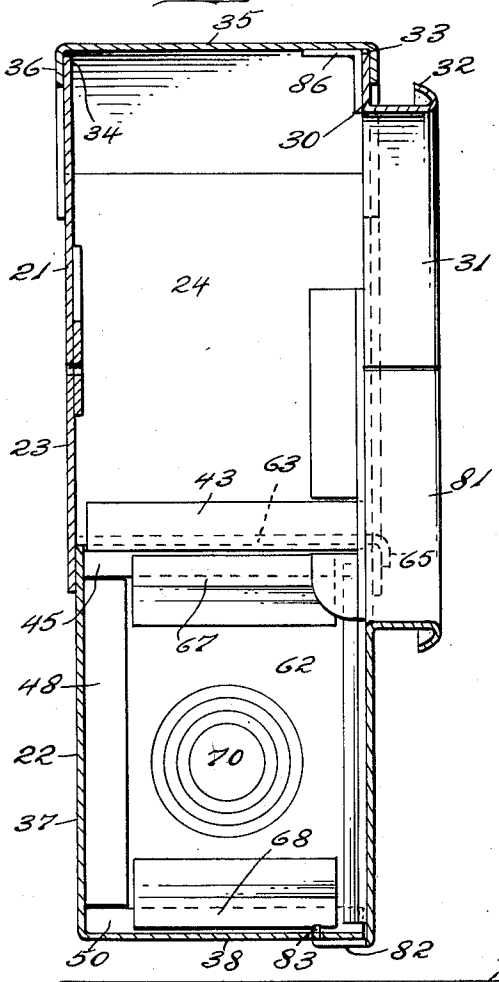


Fig. 7.

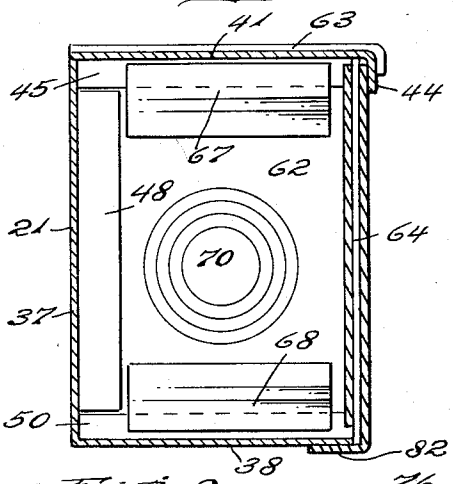
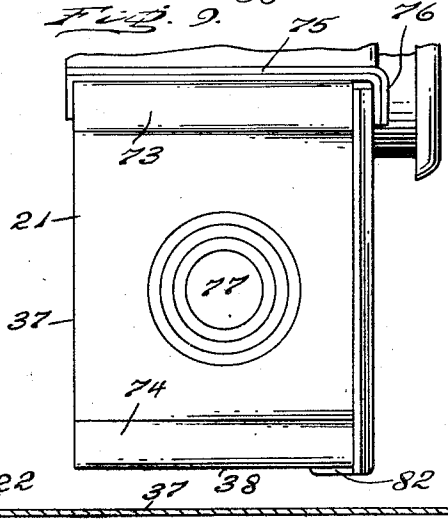


Fig. 9.



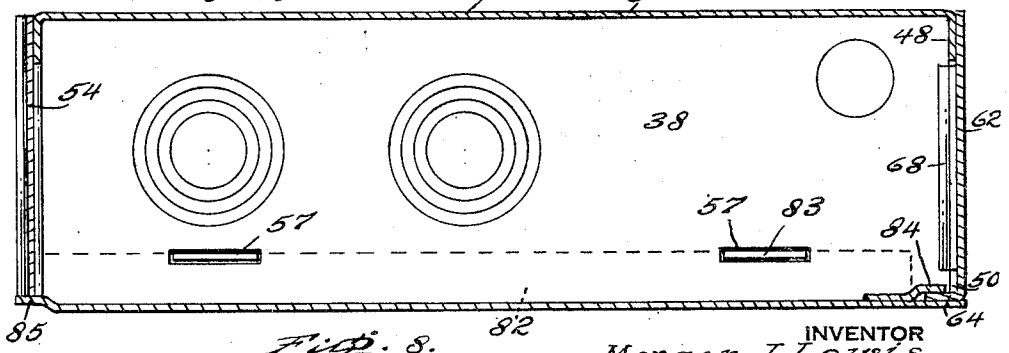


Fig. 8.

INVENTOR
Morgan J. Lewis.
BY
ATTORNEYS.

Patented Oct. 12, 1954 2,691,693

UNITED STATES PATENT OFFICE

2,691,693

METER SUPPORT

Morgan J. Lewis, Philadelphia, Pa.

Application November 16, 1950, Serial No. 195,936

3 Claims. (Cl. 174—52)

1

The present invention relates to supports for electric meters.

A purpose of the invention is to facilitate the construction of an electric meter support by making the trough form a unitary U-shaped portion having a rear wall, side walls, inwardly directed flanges at the front and guideways at the insides of the side walls adjoining the front and inside the flanges, to mount an upper front portion containing the upper half of the socket ring in the space between the flanges and the guideways and to make the lower front portion containing the lower half of the socket ring slidable in the space between the flanges and the guideways.

A further purpose is to close the top by a cap extending over the trough and upper front portion.

A further purpose is to make the box from a separate element having an open top which connects suitably by flanges to the trough.

A further purpose is to provide connector strips from the back of the jaw contacts which extend out to the side or preferably to a position below the jaw contacts and then extend abruptly outwardly and to unite these connector strips by test nuts to terminals secured thereto.

Further purposes appear in the specification and in the claims.

In the drawings I have chosen to illustrate one only of the numerous embodiments in which my invention may appear, selecting the forms shown from the standpoints of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

Figure 1 is a perspective of a meter trough and box in accordance with the invention, to which a meter has been applied.

Figure 2 is a detached perspective of the meter trough and box with the cover removed.

Figure 3 is a fragmentary exploded perspective of the meter trough and box in the process of assembly.

Figure 4 is a fragmentary front elevation of the meter trough and box from which the jaw contacts and the insulation block have been removed.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 is a section on the line 6—6 of Figure 4.

Figure 7 is a section on the line 7—7 of Figure 5.

Figure 8 is a section on the line 8—8 of Figure 4.

Figure 9 is a fragmentary left end elevation of Figure 4.

Figure 10 is a section through the jaw contacts and insulation block on the line 10—10 of Figure 11.

Figure 11 is a bottom plan view of the insulation block of Figure 10.

Figure 12 is a section through a test nut on the line 12—12 of Figure 10.

Describing in illustration but not in limitation and referring to the drawings:

The present application comprises a further

2

development of the subject matter of application Serial No. 103,681, filed August 5, 1949, for Meter Troughs and Boxes.

In accordance with the present invention, the construction of the trough and box has been simplified and rendered less expensive, while improved guiding has been provided for the sliding lower cover and also for the fixed upper front cover.

The cap has been separated from the trough and improved attachment to the trough is provided. The box is separate from the trough, and the two are radially joined together by flanges.

Improved accessibility of test nuts is provided without the necessity of removing the meter. Thus any one or more of the terminals can be disconnected from the jaw contacts without physically removing the meter.

As shown in Figure 1, the support of the invention comprises a trough 20 which supports an electric watt-hour meter 21 and connects to a lower terminal box 22. The trough as well shown in Figure 3 is a unitary U-shaped sheet metal component having a back wall 23, side walls 24 and inwardly directed flanges 25 along the front edge. The top, bottom and front are open. Inside the side walls near the front and behind the flanges 25 are sheet metal guideways 26 suitably of angle formation secured to the insides of the side walls 24 as by spot welding. Thus there is a guide space between the flanges 25 and guideways 26. Pads 27 are provided at the back for mounting of the insulating block to be described, the pads having suitable screw openings. An opening 28 is also provided for mounting on the wall.

An upper front portion 30, also suitably of sheet metal, is provided having at its lower edge a segment 31 (suitably half) of the socket ring desirably formed integral with the upper front portion. The socket ring has the usual external flange 32, creating a channel shape which is capable of locking to the meter by the usual meter clamping ring which engages the socket ring and the meter ring 31' on the meter. The upper edge 33 of the upper front portion is suitably upwardly curved toward the middle to conform with the curvature 34 at the upper edge of the back of the trough. The upper front portion fits between the side walls 24 of the trough immediately inside of the flanges 25 and suitably immediately outside of the guideways 26 at the lower portion and is united to the trough as by spot welding through the flanges 25.

A suitably arched cap 35 has flanges 36 downwardly extending all around, and the cap fits over the outsides of the back and side walls of the trough and the upper front portion 30 and is united thereto as by spot welding around the flanges 36.

The box 22 is made from sheet metal, and has a back 37, a bottom 38, a left hand top portion 40 and a right hand top portion 41. The top por-

tions 40 and 41 are separated by an open space 42 (best seen in Figure 3) and at either side of the open space the top portions are upwardly flanged at 43 to engage and connect as by spot welding with the sides 24 of the trough.

The top portions at the outer edge are downwardly flanged at 44. At the right hand side the top portion 41 is downwardly flanged at 45 and the front flange 44 at the right is slotted at 46 to permit access in sliding relation to the flange 45 from the front. At the right hand end the box is open at 47 (Figure 3) and the back is outwardly flanged at 48, while the bottom is upwardly flanged at 50. The front of the bottom adjoining the flange 50 is notched at 51.

Over at the left of the box, the top portion 41 has a downwardly and reversely bent U-shaped flange 52. The hollow of the U is upwardly directed. The back is outwardly flanged at 53 and the bottom has an upwardly directed reversely bent flange 54, the hollow of the U facing downwardly. The flange 52 is cut back at the front at 55 and the flange 54 is cut back at the front at 56.

The bottom is slotted near the front at 57 at spaced points. Suitable knock-outs 58 are provided for insertion of conduits in the top wall 40, the bottom wall 38 and the back wall 37. Openings 60 are provided in the back wall, one of which lines up with the opening 26 in the back of the trough, for mounting of the structure on the wall of a building or the like.

A skirt portion 61 extends downwardly from the back of the trough behind the back of the box and is joined thereto as by spot welding.

The boxes are capable of use singly or in sets joined side to side as later explained. When used singly or without interconnection with another box at the right side, the right side opening 47 is closed by a side closure 62 which removably fits in the side flanges 45 and 50. The side closure is flanged at the top at 63 and at the front at 64. The top flange 63 is bent down over the front flange for a short distance at 65, and immediately below this point the flange 64 is slotted at 66 to pass the flange 45 of the top portion 41 of the box. At the top beneath the flange 63 and spaced therefrom on the inside is an interlock channel 67 suitably joined to the side 62 as by spot welding and presenting an upwardly directed slot for engagement with a downwardly directed flange 45. Similarly at the bottom on the inside of the side 62 is a downwardly directed interlock guideway 68 presenting a downwardly directed slot which slidably interlocks with the upwardly directed flange 59. The guideways 67 and 68 are short enough at the inner end so as to clear the flange 48 when the structure is interlocked. A knockout 70 is provided in the side wall 62 for engagement with a conduit.

At the left side the box has an open space 71 which is closed by side closure 72 when not interlocked with another box to make a series. The side closure is an opposite counterpart of the right side closure and is equipped to engage in the reversely bent flanges 52 and 54. At the top there is a reversely bent flange 73 on the side closure which forms a downwardly directed slot for receiving the upwardly extending flange portion of the reversely bent flange 52. At the bottom there is a reversely bent flange portion 74 on the side closure 72 which presents an upwardly directed slot for engagement in the slot of the downwardly directed flange portion of the reversely bent flange 54.

The upwardly directed slot of the reversely bent flange portion 52 at the top is covered by a strip 75 united as by spot welding to the top of the side closure 72 and bent downwardly at 76 over the front. The side closure 72 is provided with a knockout 77 for receiving a conduit.

The box and the lower part of the trough is covered by a removable cover 78 which has guiding portions 80 on either side near the upper end which guide under inwardly directed flanges 25 and over guideways 26 of the trough. At the upper end the cover 80 carries suitably integrally therewith lower socket ring segmental portion 81. The segmental portion 81 is of the same cross section as the segmental portion 31 and with the segmental portion 31 completes the socket ring. Therefore if the upper segmental portion covers 180° the lower segment portion will cover the remaining 180°. When the two segmental portions are brought together and locked by the locking ring to the meter, the socket ring is held in complete relationship and the cover is also held both against motion to separate the parts of the socket ring and also against motion away from the trough and box due to the engagement of the guiding portions 80 behind the flanges 25 and in front of the guideways 26.

At the bottom the cover 78 has an inwardly directed flange 82 which has upwardly directed tongues 83 engaging in the slots 57 in the bottom of the box and locking the lower end of the cover against being pried outwardly away from the box. In closed position the cover engages behind flanges 44 at the top.

The cover is equipped to be laterally interlocked with the covers of adjoining boxes. Thus at the right hand side it has an inner guideway 84 (Figure 3) which provides a slot which can receive the left hand guiding tongue 85 of the next box. The tongue is slightly deformed toward the box to fit the slot provided by the guideway 84.

In assembling the cap 35 on the upper front portion, it is desirable to brace the inside of the upper front portion by an angle 86 (Figure 6) which runs along the inside of the front of the cap and is spot welded or otherwise suitably joined to the cap and the upper front portion.

The meter trough contacts which cooperate with the usual meter knife contacts desirably comprise jaw contacts 87 mounted suitably in rectangular relationship to correspond with the positions of the knife contacts. The jaw contacts are mounted on an insulating block 88 by studs 90 passing through openings 91 in the block and having nuts 92 threaded on the studs inside the jaw contacts.

The studs at the rear connect with metallic contact strips 93 in slots 94 of the insulating block which extend out into the box through openings 95 at the lower edge of the insulating block and then have generally outwardly or transversely extending portions 96 which are preferably slightly reversely bent and inclined along a lower inclined face 97 of the block. As seen in Figure 2 the various reverse bent portions of the respective contacts are side by side so that access to them can be gained separately.

An insulating strip 98 extends over the lower face of each outwardly bent portion 96 of the contact strips and on the lower side of the insulating strip a generally parallel metallic terminal strip 100 is mounted, physically secured to the strip portion 96 but capable of electric insulation

as later explained. The terminal strip portion 100 on certain lines has a transversely bent portion at 101 which extends in prolongation of the connector strip portion 93. Certain of the terminal strip portions 101 have reverse bends 102 to separate downwardly extending portions 103 farther from adjoining terminals. The depending portions 101 and 103 have terminal clamping members 104 which are tightened in position to engage the lead-in wires by clamping bolts 105.

The portion 96 of the connecting strip is physically united to the portion 100 of the terminal by a screw 106 which has insulating washers 107 under the head and passes through enlarged insulating-bushed opening 107' free from electrical connection with the terminal and by a bolt 108 which has insulating washers 110 under the nut and passes through enlarged insulating-bushed opening 110' in the terminal portion 100 so as to be free from electric connection. Electrical connection is accomplished by a test nut 111 on a test bolt 112 which is threaded into the connecting strip portion 96 and has insulating bushing 113 around the position at which the bolt passes through the terminal portion 100. Accordingly contact is only made when the nut 111 is screwed down tight, and when any one of the nuts is partially unscrewed electrical contact ceases on that particular line.

An optional jaw contact 114 is provided between two of the normal jaw contacts with a suitable terminal 115 for any special purpose as desired. This may connect to a special contact on the meter or may be specially wired for an electric clock circuit.

A ground connection is provided at 116 as well known for grounding the trough and box.

In operation it will be understood that the components are assembled to make the box by sliding the upper front portion of the socket ring into position and spot welding it into place, then applying and spot welding the cap 35, and finally joining the trough to the box. The insulating block and its contacts and terminals are then installed into place, after which the side closures are fitted in and the front is slid on in the position shown, locking the side closures by covering their ends. For installation purposes the front is removed and the side closures are removed if connection is to be made to other boxes. Other boxes are then slid into mating relationship, and the electrical wiring is completed to the terminals. The end boxes of the series retain side closures on the respective sides. The sliding on of the cover locks the boxes on either side, and the locking of the locking ring around the socket ring and the meter ring holds the removable cover in place on the trough and the box.

When the meter is to be tested, it need not be removed. The locking ring it released and the meter remains in place while the cover is taken off exposing the terminals. The test nuts are then unscrewed as required, permitting separation of individual terminals from the corresponding jaw contacts of the socket. Test connections can be made to bolts 108, without connecting to the terminals, since each of the bolts 108 is insulated from the corresponding terminal.

In this way testing can be carried on without difficulty and without breaking the service of the subscriber.

In view of my invention and disclosure, variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art to obtain all or part

of the benefits of my invention, without copying the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a meter support, a unitary U-shaped trough comprising a back wall, side walls, a front, and inwardly directed flanges at the front, guideways secured to the interior of the side walls near the front but behind the inwardly directed flanges, an upper front portion including half of a meter socket ring secured to the upper portion of the front of the trough, a cap secured to the trough and extending over the top thereof, a box having an open top and an open front, joined around the edges of the open top to the bottom of the trough, and a lower front portion including a cooperating half of the meter socket ring extending into the space between the inwardly directed flanges and the guideways at the front of the trough and covering the front of the box.

2. In a meter support, a U-shaped unitary trough having a rear wall, side walls and inwardly directed flanges at the front, guideways on the inside of the side walls near the front but behind the inwardly directed flanges, an upper front portion secured to the upper portion of the inwardly directed flanges and having a half segment portion of a socket ring, a cap secured to the trough and extending over the otherwise open top thereof, a box having a back, top portions at either side with an open intermediate portion provided with flanges secured to the side walls of the trough, a bottom wall and side walls, and a removable lower front portion covering the front of the box, having a lower half of the socket ring and extending in slidable relation with the upper half of the socket ring into the space between the inwardly directed flanges and the guideways.

3. In a meter box, a U-shaped unitary trough having a rear wall, side walls and inwardly directed flanges at the front, guideways on the inside of the side walls near the front but behind the inwardly directed flanges, an upper front portion secured to the upper portion of the inwardly directed flanges and having a half segment portion of a socket ring, a cap secured to the trough and extending over the otherwise open top thereof, a box having a back, top portions at either side with an open intermediate portion provided with flanges secured to the side walls of the trough, a bottom wall and side walls, and a lower front portion covering the front of the box, having a lower half of the socket ring and extending in slidable relation with the upper half of the socket ring into the space between the inwardly directed flanges and the guideways, the sides of the box being removable and provided with interlocks for connecting to adjoining boxes on either side.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
916,537	Davis	Mar. 30, 1909
1,493,478	Dake	May 13, 1924
1,631,606	Scott et al.	June 7, 1927
2,402,360	Bevins	June 18, 1946
2,429,093	Johansson	Oct. 14, 1947
2,436,914	Breisch	Mar. 2, 1948
2,474,328	Rothfuchs	June 28, 1949
2,538,912	Road et al.	Jan. 23, 1951
2,582,638	Lewis	Jan. 15, 1952